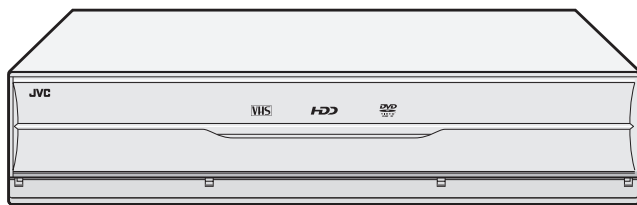


# JVC

## SERVICE MANUAL

DVD / HDD VIDEO RECORDER & VIDEO CASSETTE RECORDER

### DR-MX1SEF, DR-MX1SEK, DR-MX1SEU, DR-MX1SEY, DR-MX1SEZ



DR-MX1SEF, DR-MX1SEK, DR-MX1SEU, DR-MX1SEY, DR-MX1SEZ [D4VC21]

For disassembling and assembling of MECHANISM ASSEMBLY, refer to the SERVICE MANUAL No.86700(MECHANISM ASSEMBLY).

### TABLE OF CONTENTS

1	PRECAUTION.....	1-3
2	SPECIFIC SERVICE INSTRUCTIONS.....	1-6
3	DISASSEMBLY.....	1-9
4	ADJUSTMENT.....	1-12
5	TROUBLESHOOTING.....	1-18

# SPECIFICATION

	DR-MX1SEK	DR-MX1SEU / EY / EZ	DR-MX1SEF
<b>GENERAL</b>			
Power requirement	AC 220 V - 240 V, 50 Hz / 60 Hz		
Power consumption			
Power on	47 W		
Power off	16.6 W		
Temperature			
Operating	5°C to 35°C		
Storage	-20°C to 60°C		
Operating position	Horizontal only		
Dimensions (W × H × D)	435 mm × 96 mm × 383 mm		
Weight	7.2 kg		
Input/Output			
Video input	0.5 - 2.0 Vp-p, 75 Ω (pin jack)		
Audio input	-8 dB, 50 kΩ (pin jack), Corresponding to mono (left)		
Audio output	-8 dB, 1 kΩ (pin jack)		
21-pin SCART connectors	IN / OUT × 1, IN / DECODER × 1		
Input / Output (HDD & DVD Deck Only)			
S-video input	Y: 0.8 - 1.2 Vp-p, 75 Ω, C: 0.2 - 0.4 Vp-p, 75 Ω		
i.Link	4-pin for DV input		
Component video output	Y: 1.0 Vp-p, 75 Ω, CB/CR, PB/PR: 0.7 Vp-p, 75 Ω, Corresponding to copy protection		
SAT Control	Ø3.5mm		
Digital audio output	Optical: -18 dBm, 660 nm, Coaxial: 0.7 Vp-p, 75 Ω, Corresponding to Dolby Digital and DTS Digital Surround Bit stream. Selectable in digital audio output setting menu		
<b>VIDEO/AUDIO (DVD Deck)</b>			
Recording time	Maximum 8 hours (with 4.7 GB disc), (XP): Approx. 1 hour, (SP): Approx. 2 hours, (LP): Approx. 4 hours (EP): Approx. 6 hours, (FR): Approx. 1 hour - 8 hours		
Audio recording system	Dolby Digital (2 ch), Linear PCM (XP mode only)		
Video recording compression system	MPEG2 (CBR/VBR)		
<b>VIDEO/AUDIO (HDD Deck)</b>			
Video recording compression system	MPEG2 (VBR)		
Audio recording system	Dolby Digital (2 ch), Linear PCM (XP mode only)		
Recording time	Maximum 300 hours (with 160 GB HDD), (XP): Approx. 34 hours, (SP): Approx. 69 hours, (LP): Approx. 138 hours (EP): Approx. 209 hours, (FR): Approx. 36 - 300 hours		
<b>VIDEO/AUDIO (VHS Deck)</b>			
Signal system	PAL colour signal and CCIR monochrome signal, 625 lines / 50 fields	PAL/SECAM colour signal and CCIR monochrome signal, 625 lines/50 fields	
Recording system	DA4 (Double Azimuth) head helical scan system		
Format	VHS PAL standard	VHS PAL/SECAM standard	
Tape width	12.65 mm		
Tape speed			
(SP)	23.39 mm/s		
(LP)	11.70 mm/s		
Maximum recording time			
(SP)	240 min. with E-240 video cassette		
(LP)	480 min. with E-240 video cassette		
Signal-to-noise ratio	45 dB		
Horizontal resolution	230 lines		
Frequency range	70 Hz to 10,000 Hz (Normal audio) 20 Hz to 20,000 Hz (Hi-Fi audio)		
<b>TUNER/TIMER</b>			
TV channel storage capacity	99 positions (+AUX position)		
Tuning system	Frequency synthesized tuner		
Channel coverage (PAL)	VHF : 44.5 MHz - 143 MHz/143 MHz - 470 MHz UHF : 470 MHz - 862 MHz	VHF : 47 MHz - 89 MHz/104 MHz - 300 MHz/302 MHz - 470 MHz UHF : 470 MHz - 862 MHz	VHF(LOW): 47MHz - 89MHz(E2 - E4,X,Y,Z) VHF(HIGH): 104MHz-300MHz(E5 - E12, S1-S20, M1 - M10, U1 - U10) Hyper: 302MHz - 470MHz (S21-S41) UHF: 470MHz - 862MHz (E21 - E69)
Channel coverage(SECAM-L)	-		VHF(LOW): 49MHz - 65MHz (2-4) VHF(HIGH): 104MHz - 300 MHz (5-10, CATV) Hyper : 300MHz - 470MHz (CATV) UHF : 470MHz - 862MHz (21 - 69)
Memory backup time	Approx. 60 minutes		
<b>ACCESSORIES</b>			
Provided accessories	RF cable, 21-pin SCART cable, Satellite Controller, Infrared remote control unit, "AA(R6)" battery × 2		



- Specifications shown are for SP mode unless otherwise specified.
- E.& O.E. Design and specifications subject to change without notice.
- Manufactured under license from Dolby Laboratories. "Do by" and the double-D symbol are trademarks of Dolby Laboratories.
- "DTS" and "DTS Digital Out" are trademarks of Digital Theater Systems, Inc.
- SHOWVIEW is a trademark of Gemstar Development Corporation. The SHOWVIEW system is manufactured under licence from Gemstar Development Corporation.(EU/EY/EZ/EF MODEL)
- VIDEO Plus+ and PlusCode are registered trademarks of Gemstar Development Corporation. The VIDEO Plus+ system is manufactured under license from Gemstar Development Corporation.(EK MODEL)
- i.Link refers to the IEEE1394-1995 industry specification and extensions thereof. The i.Link logo is used for products compliant with the i.Link standard.

# SECTION 1 PRECAUTION

## 1.1 SAFTY PRECAUTIONS

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

### 1.1.1 Precautions during Servicing

- (1) Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.
- (2) Parts identified by the  symbol and shaded (  ) parts are critical for safety. Replace only with specified part numbers.

#### NOTE :

**Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.**

- (3) Fuse replacement caution notice.  
Caution for continued protection against fire hazard.  
Replace only with same type and rated fuse(s) as specified.
- (4) Use specified internal wiring. Note especially:
  - Wires covered with PVC tubing
  - Double insulated wires
  - High voltage leads
- (5) Use specified insulating materials for hazardous live parts. Note especially:
  - Insulation Tape
  - PVC tubing
  - Spacers
  - Insulation sheets for transistors
  - Barrier
- (6) When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

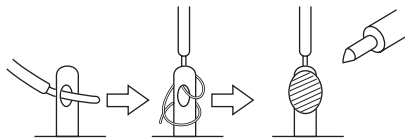


Fig. 1-1-1

- (7) Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)
- (8) Check that replaced wires do not contact sharp edged or pointed parts.
- (9) When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

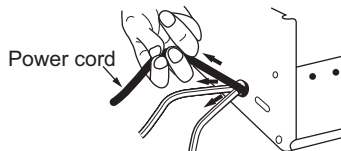


Fig. 1-1-2

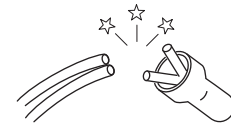
- (10) Also check areas surrounding repaired locations.
- (11) Products using cathode ray tubes (CRTs) In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission.

Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

- (12) Crimp type wire connector In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

- **Connector part number** :E03830-001
- **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
- **Replacement procedure**

- a) Remove the old connector by cutting the wires at a point close to the connector. Important : Do not reuse a connector (discard it).



cut close to connector

Fig. 1-1-3

- b) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

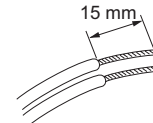


Fig. 1-1-4

- c) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

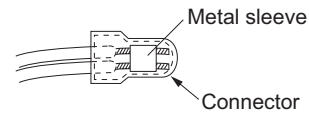


Fig. 1-1-5

- d) As shown in Fig. 1-1-6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

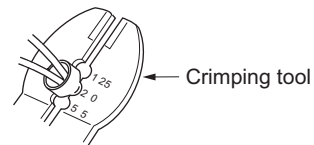


Fig. 1-1-6

- e) Check the four points noted in Fig. 1-1-7.

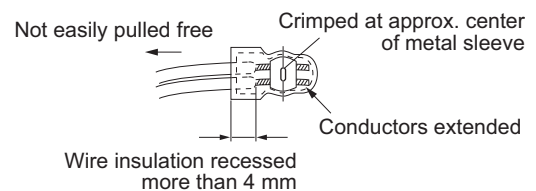


Fig. 1-1-7

### 1.1.2 Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

#### (1) Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

#### (2) Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See Fig.1-1-11 below.

#### (3) Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See Fig.1-1-11 below.

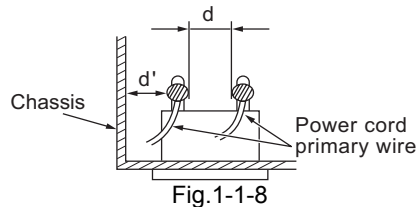


Fig.1-1-8

#### (4) Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method : (Power ON) Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See Fig.1-1-9 and following Fig.1-1-12.

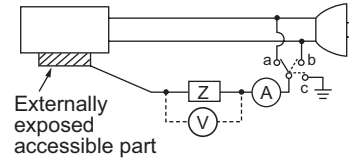
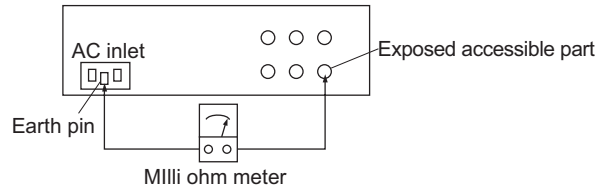


Fig.1-1-9

#### (5) Grounding (Class 1 model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.). Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See Fig.1-1-10 and grounding specifications.



#### Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	$Z \leq 0.1 \text{ ohm}$
Europe & Australia	$Z \leq 0.5 \text{ ohm}$

Fig.1-1-10

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	$R \geq 1 \text{ M}\Omega/500 \text{ V DC}$	AC 1 kV 1 minute	$d, d' \geq 3 \text{ mm}$
100 to 240 V			AC 1.5 kV 1 minute	$d, d' \geq 4 \text{ mm}$
110 to 130 V	USA & Canada	$1 \text{ M}\Omega \leq R \leq 12 \text{ M}\Omega/500 \text{ V DC}$	AC 1 kV 1 minute	$d, d' \geq 3.2 \text{ mm}$
110 to 130 V 200 to 240 V	Europe & Australia	$R \geq 10 \text{ M}\Omega/500 \text{ V DC}$	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	$d \geq 4 \text{ mm}$ $d' \geq 8 \text{ mm}$ (Power cord) $d' \geq 6 \text{ mm}$ (Primary wire)

Fig.1-1-11

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	$1 \text{ k}\Omega$	$i \leq 1 \text{ mA rms}$	Exposed accessible parts
110 to 130 V	USA & Canada	$0.15 \mu\text{F}$ and $1.5 \text{ k}\Omega$	$i \leq 0.5 \text{ mA rms}$	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	$2 \text{ k}\Omega$	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Antenna earth terminals
		$50 \text{ k}\Omega$	$i \leq 0.7 \text{ mA peak}$ $i \leq 2 \text{ mA dc}$	Other terminals

Fig.1-1-12

#### NOTE :

These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.



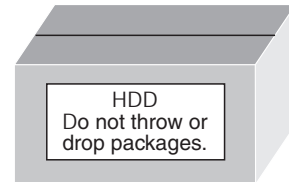
## 1.2 Hard Disk Drive (HDD) Handling Precautions

The HDD is a precision device for use in reading and writing a large amount of data on or from a disk rotating at a high speed. If it is not handled carefully, either abnormal operation may result or it may not be possible to read data. The HDD is sensitive to the following items and special care is required in safeguarding against them when handling an HDD. Also take care in handling a set incorporating an HDD.

- (1) Vibrations and impacts
- (2) Static electricity
- (3) Rough handling

### 1.2.1 Handling in transport, etc.

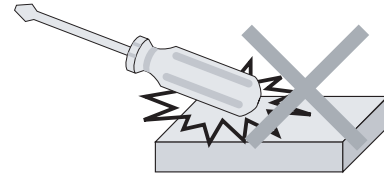
- Be sure to place the HDD in the manufacturer's specified package carton before transport.
- When receiving a package containing an HDD, check that the package carton is not damaged (such as having holes in the carton, crushed corners, etc.).
- Do not impact the packaging carton when loading or unloading it.
- It is not permitted to use the inner package carton only for transporting an HDD.
- Do not stack package cartons one upon another.



Be sure to package and transport the HDDs correctly.

### 1.2.2 Handling an HDD in the stand-alone status

- When handling an HDD on a hard workbench, place an anti-static mat (rubber sheet) or similar object on the hard surface (to prevent any impacts occurring between the HDD and bench).
- Do not stack the HDDs one upon another.
- Do not knock an HDD with a hard object (such as a screwdriver).
- Do not place an HDD on its side panel without using a support (do not place an HDD in an unstable position).



### 1.2.3 Handling the installation of an HDD

- Place antistatic mats or similar sheets on all of the surfaces on which work is conducted or when the HDD is transported.
- Do not permit the HDD to knock against the set's brackets.
- When screwing the brackets, be careful not to knock the HDD. When using a power screwdriver, use a low-shock model and arrange the tightening torque properly.
- When mounting an HDD in a main body, take care not to apply excessive force to the brackets.

## SECTION 2

### SPECIFIC SERVICE INSTRUCTIONS

#### 2.1 Different table of features

The following table indicates main different points between models DR-MX1SEK, DR-MX1SEU/EY/EZ and DR-MX1SEF.

ITEM	DR-MX1SEK	DR-MX1SEU / EY / EZ	DR-MX1SEF
POWER PLUG	3PIN	CEE	←
VHS	PAL/NTSC PB on PAL TV with HiFi	PAL/MESECAM (MANUAL) / NTSC PB on PAL TV with HiFi	←
BROADCASTING STANDARD	I	B/G, D/K	L, L', B/G
STEREO DECODER	NICAM	NICAM/A2	NICAM(L, B/G) / A2(B/G)
VCR PLUS+	VIDEO Plus+DELUXE	SHOWVIEW DELUXE	←
VPS/PDC	NOT USED	USED	NOT USED

#### Note:

Mark ← as same as left.

#### 2.2 Service position

This unit has been designed so that the Mechanism and Main board assemblies can be removed together from the bottom chassis. Before diagnosing or servicing the circuit boards, take out the major parts from the bottom chassis.

##### 2.2.1 How to set the "Service position"

- (1) Refer to the disassembly procedure and perform the disassembly of the major parts before removing the Mechanism assembly.
- (2) Remove the screws that fix the Mechanism, Main board assembly to the bottom chassis. If any other screws are used to fix the boards, remove them also.
- (3) Remove the combined Mechanism, HDD, DVD unit, switching regulator, digital, junction and Main board assemblies.
- (4) If any other major parts are used, remove them also.
- (5) Connect the wires and connectors of the major parts that have been removed in steps (1) to (4). (Refer to Fig. 2-2a.)
- (6) Place the combined Mechanism, Main board and other board assemblies upside down.
- (7) Insert the power cord plug into the power outlet and then proceed with the diagnostics and servicing of the board assembly.

#### Notes:

- Before inserting the power cord plug into the power outlet, make sure that none of the electrical parts are able to short-circuit between the workbench and the board assembly.
- For the disassembly procedure of the major parts and details of the precautions to be taken, see "Removing the major parts".
- If there are wire connections from the Main board and Mechanism assemblies to the other major parts, be sure to remove them (including wires connected to the major parts) first before performing step (2).
- When carrying out diagnosis and repair of the Main board assembly in the "Service position", be sure to ground both the Main board and Mechanism assemblies. If they are improperly grounded, there may be noise on the playback picture or FDP counter display may move even when the mechanism is kept in an inoperative status.

- In order to diagnose the playback or recording of the cassette tape, set the Mechanism assembly to the required mode before placing it upside down. If the mechanism mode is changed (including ejection) while it is in an upside down position the tape inside may be damaged.
- For some models, the mechanism and board assemblies are attached by connectors only. When carrying out a diagnosis or repair of the boards in the "Service position", make sure that the connectors are not disconnected.

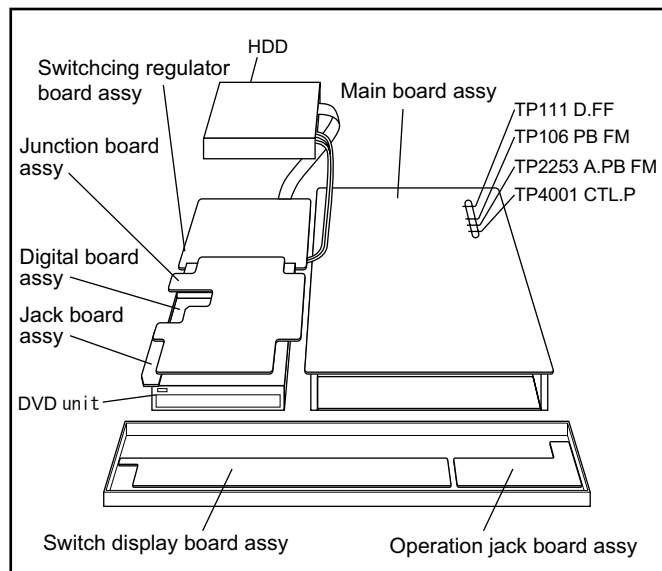


Fig.2-2a

### 2.3 Jig RCU mode

This unit uses the following two modes for receiving remote control codes.

- (1) User RCU mode: Ordinary mode for use by the user.
- (2) Jig RCU mode: Mode for use in production and servicing.

When using the Jig RCU, it is required to set the unit to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). As both of the above two modes are stored in the EEPROM, it is required to set the unit back to the User RCU mode each time that an adjustment is made or to check that the necessary operations have been completed. These modes can be set by the operations described below.

#### Note:

- When the unit is set to Jig RCU mode and when the unit is under Jig RCU mode, the remote control unit attached to product operates only in "Remote Control Code 1". Since the unit is in "Remote Control Code 3" when it is shipped and just after its batteries are changed, "Remote Control Code 3" needs to be changed to "Remote Control Code 1."
- Confirm the RCU mode when exchanged parts. Since some SERVICE PARTS sets the unit to the Jig RCU mode as initial setting. Therefore please set the unit to the user RCU mode after replacing the EEPROM.

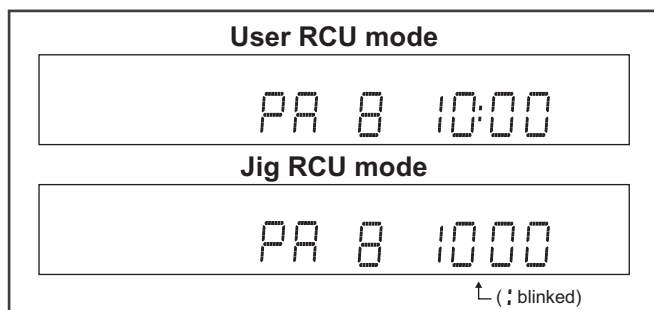


Fig.2-3a User/Jig RCU mode

#### 2.3.1 Changing Remote Control Code

- (1) Slide the TV/CABLE/SAT/DVD switch to DVD.
- (2) Press the numeric button "1" of the remote control unit while pressing the "SET UP" button of the remote control unit. Then, press the "ENTER" button, and then release the "SET UP" button.
- (3) Press the "POWER" button on the unit to turn off the unit.
- (4) Press the "PLAY" button on the unit for over 5 seconds while the unit is turned off. The code currently set appears on the front display panel.
- (5) Press the "STOP" button on the remote control to change the unit's code. When FDP indicator displays "DVD1," it means that the Remote Control Code has been changed to "1."

#### 2.3.2 Setting the Jig RCU mode

- (1) Turn on the power.
- (2) Press the "VHS/HDD/DVD SELECT" button repeatedly on the unit so that the VHS lamp lights up on the unit.
- (3) Press the following remote keys continuously within 2 seconds " SET UP " → " 2 " → " 8 " → " ENTER ".

When the unit is set to the Jig RCU mode, the symbols ( " : " ) in the time display of the FDP are blinked.  
(Refer to Fig.2-3a User/Jig RCU mode)

#### 2.3.3 Setting the User RCU mode

- (1) Turn off the power.

- (2) Press the "REC" and "PAUSE" buttons of the VCR simultaneously. Alternatively, transmit the code "43-9D" from the Jig RCU.

### 2.4 Mechanism service mode

This model has a unique function to enter the mechanism into every operation mode without loading of any cassette tape. This function is called the "Mechanism service mode".

#### 2.4.1 How to set the "Mechanism service mode"

- (1) Set the unit to the Jig RCU mode (the mode in which codes from the Jig RCU can be received)
- (2) Transmit the code "43-E5" from the Jig RCU.
- (3) Release the lug of the Cassette holder and then slide the Cassette holder toward the direction where the Cassette holder is loaded by manually.
- (4) The cassette holder lowers and, when the loading has completed, the mechanism enters the desired mode. When the unit is set to the Mechanism service mode, the symbols ("TIMER") in the FDP (LED) are blinked.

#### 2.4.2 How to exit from the "Mechanism service mode"

- (1) Unplug the power cord plug from the power outlet.

### 2.5 Maintenance and inspection

#### 2.5.1 Cleaning

Regular cleaning of the transport system parts is desirable but practically impossible. So make it a rule to carry out cleaning of the tape transport system whenever the machine is serviced. When the video head, tape guide and/or brush get soiled, the playback picture may appear inferior or at worst disappear, resulting in possible tape damage.

#### Note:

- Absolutely avoid sweeping the upper drum vertically as this will cause damage to the video head.
- (1) When cleaning the upper drum (especially the video head), soak a piece of closely woven cloth with alcohol and while holding the cloth onto the upper drum by the fingers, turn the upper drum counterclockwise.
  - (2) To clean the parts of the tape transport system other than the upper drum, use a piece of closely woven cloth or a cotton swab soaked with alcohol.
  - (3) After cleaning, make sure that the cleaned parts are completely dry before using the cassette tape.

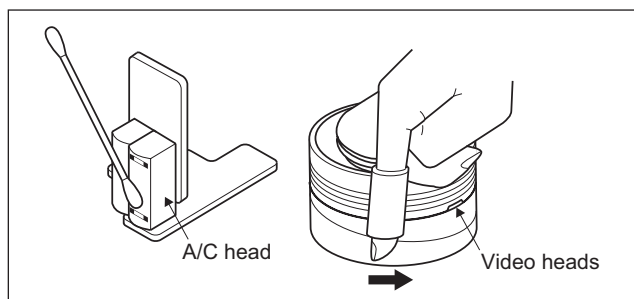


Fig.2-5a

#### 2.5.2 Lubrication

With no need for periodical lubrication, you have only to lubricate new parts after replacement. If any oil or grease on contact parts is soiled, wipe it off and newly lubricate the parts.

#### Note:

- See the "mechanism assembly" diagram of the "parts list" for the lubricating or greasing spots, and for the types of oil or grease to be used.

### 2.5.3 Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning, lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions. However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary. Also note that rubber parts may deform in time, even if the set is not used.

System	Parts name	Operation hours	
		1000H	2000H
Tape transport	Drum assembly	C,X	X
	A/C head	C,X	C,X
	Pinch roller arm assembly	C	C
	Full erase head	C	C
	Tension arm assembly	C	C
	Capstan motor (Shaft)	C	C
	Guide arm assembly	C	C
Drive	Capstan motor		X
	Capstan brake assembly		X
	Main brake assembly		X
	Belt (Capstan)	X	X
	Loading motor		X
	Clutch unit		X
	Worm gear		X
	Control plate		X
Other	Rotary encoder		X

C : Cleaning

X : Inspection or Replacement if necessary

## SECTION 3 DISASSEMBLY

### 3.1 Removing the major parts

#### 3.1.1 Destination of connectors

Two kinds of double-arrows in connection tables respectively show kinds of connector/wires.

↔ : Flat wire ↔ : Wire ↔ : Board to board (B-B)

◻ : The connector of the side to remove

CONN. No.	CONNECTOR				PIN No.	
WR2a	Main	CN101	↔	Digital	CN761	40
WR2b	Main	CN103	↔	Digital	CN762	10

#### ■ Destination of connectors

CONN. No.	CONNECTOR				PIN No.	
WR2a	Main	CN7112	↔	Operation/jack	CN7201	9
WR2b	Main	CN3102	↔	Switch/display	CN7001	11
WR2c	Junction	CN7103	↔	Switch/display	CN7002	4
WR3a	Main	CN2001	↔	A/C head		6
WR3b	Drum assembly		↔	Main	CN1	9
WR4a	DVD unit		↔	Digital	CN2201	40
WR4b	DVD unit		↔	Junction	CN5304	4
WR5a	HDD		↔	Digital	CN2101	40
WR5b	Junction	CN7106	↔	Digital	CN1405	4
WR5c	Junction	CN5502	↔	Digital	CN1003	6
CN7108 (CN1001)	Junction	CN7108	↔	Digital	CN1001	28
CN7109 (CN1002)	Junction	CN7109	↔	Digital	CN1002	20
CN7121 (CN1801)	Junction	CN7121	↔	Digital	CN1801	10
WR6a	Junction	CN7126	↔	Jack	CN4104	6
WR7a	Junction	CN7123	↔	Video switch	CN501	4
WR7b	Main	CN3103	↔	Junction	CN7102	15
WR7c	Main	CN2601	↔	Junction	CN8001	11
WR7d	Junction	CN7107	↔	Main	CN7111	9
WR7e	SW. REG.	CN5304	↔	Junction	CN5501	19
WR8a	SW. REG.	CN5301	↔	Main	CN5311	15
WR8b	SW. REG.	CN5302	↔	Fun motor		2
WR8c	SW. REG.	CN5303	↔	HDD		4
WR12a	Tuner	CN6001	↔	Main	CN7116	14
WR12b	Tuner	CN6003	↔	Main	CN7118	7
WR12c	Tuner	CN6002	↔	Main	CN7117	13
WR13a	Main	CN7119	↔	SECAM	CN301	15
WR13b	Video switch	CN504	↔	SECAM	CN4302	6

#### 3.1.2 How to read the procedure table

This table shows the steps for disassembly of the externally furnished parts and board assemblies. Reverse these steps when re-assembling them.

Step/Loc No.	Part Name	Fig. No.	Point	Note
[1]	Top cover	3 1a	4(S1a),(S1b),3(L1a), 2(SD1a),(P1a),(W1a), CN1(WR1a), 2(S1c)	<Note 1a>
	Bracket			

↑ (1)                    ↑ (2)                    ↑ (3)                    ↑ (4)                    ↑ (5)

#### (1) Order of steps in Procedure

When reassembling, perform the step(s) in the reverse order.

These numbers are also used as the identification (location) No. of parts Figures.

#### (2) Part name to be removed or installed.

#### (3) Fig. No. showing procedure or part location.

#### (4) Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.

P= Spring, W= Washer, S= Screw, L= Locking tab, SD= Solder, CN\*\*(WR\*\*)= Remove the wire (WR\*\*) from the connector (CN\*\*).

#### Note:

- The bracketed ( ) WR of the connector symbol are assigned nos. in priority order and do not correspond to those on the spare parts list.

#### (5) Adjustment information for installation

#### 3.1.3 Disassembly procedure

Step/Loc No.	Part Name	Fig. No.	Point	Note
[1]	Top cover	3 1d	8(S1a)	
[2]	Front panel assembly (Operation/jack board assembly) (Switch/display board assembly)	3 1a, 3 1d 3 1e	3(L2a),5(L2b) CN7112(WR2a) CN3102(WR2b) CN7103(WR2c)	<Note2a> <Note2b>
[3]	Mechanism assembly (Drum assembly)	3 1b, 3 1c, 3 1d 3 1e	CN2001(WR3a) 3(S3a),(S3b) CN(WR3b) (S3c),(S3d),(S3e)	<Note2a> <Note3a> <Note3b>
[4]	DVD unit (Bracket)	3 1d 3 1e	4(S4a),4(S4b) (WR4a),(WR4b)	<Note2a>
[5]	Digital board assembly	3 1d 3 1e	4(S5a),CN2101(WR5a) CN7106(WR5b),CN5502(WR5c) CN7108(CN1001),CN7109(CN1002), CN7121(CN1801)	<Note2a>
[6]	Jack board assembly	3 1d	2(S6a),CN7126(WR6a)	
[7]	Junction board assembly	3 1d 3 1e	(S7a),CN7123(WR7a), CN3103(WR7b),CN2601 (WR7c),CN7107(WR7d), CN5304(WR7e)	<Note2a>
[8]	Switching Regulator board assembly	3 1d 3 1e	4(S8a) CN5301(WR8a), CN5302(WR8b), CN5303(WR8c)	<Note2a>
[9]	Rear cover	3 1d	(S9a),8(S9b),(S9c),3(L9a)	
[10]	HDD (Bracket, sheet)	3 1d 3 1e	4(S10a),4(S10b)	
[11]	Main board assembly	3 1d	2(S11a)	
[12]	Tuner board assembly	3 1d 3 1e	CN6001(WR12a),CN6003 (WR12b),CN6002(WR12c)	
[13]	SECAM board assembly (EF model)	3 1d 3 1e	2(S13a), CN7119(WR13a) CN504(WR13b)	

#### <Note 2a>

- Be careful not to damage the connector and wire etc. during connection and disconnection.
- When connecting the flat wire to the connector, be careful with the flat wire direction.

**<Note 2b>**

- When reattaching the Front panel assembly, make sure that the door opener of the Side frame (R) is lowered in position prior to the reinstallation.
- When reattaching the Front panel assembly, pay careful attention to the switch lever of the Front panel assembly not to make it touch the switch knob of the Main board assembly from the side.
- When reattaching the Front panel assembly, lift the Cassette door slightly.

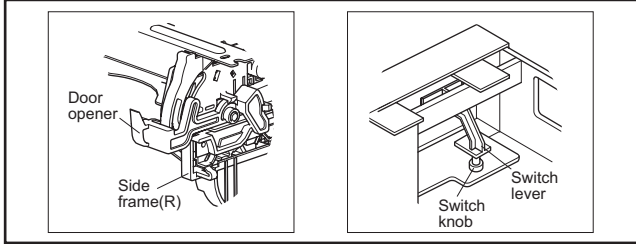


Fig.3-1a

**<Note 3a>**

- When reattaching the Mechanism assembly, secure the screws (S3a to S3b) in the order of 1,2,3.

**<Note 3b>**

- When reattaching the Mechanism assembly, be sure to align the phase of the Rotary encoder on the Main board assembly.
- When reattaching the Mechanism assembly, set the "Mechanism assembling mode". [See "MECHANISM ASSEMBLY SERVICE MANUAL (No. 86700)".]

- When reattaching the Mechanism assembly to the Main board assembly, take care not to damage the sensors and switch on the Main board assembly.

**<Note 3c>**

- When reattaching the Drum assembly, secure the screws (S3c to S3e) in the order of c, d, e.

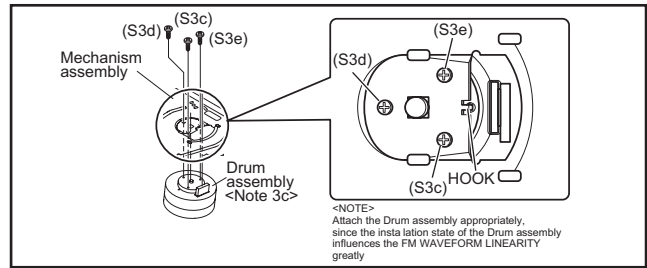


Fig.3-1b

- When handling the drum assembly alone, hold it by the motor or shaft. Be careful not to touch other parts, especially the video heads. Also take care not to damage the connectors.

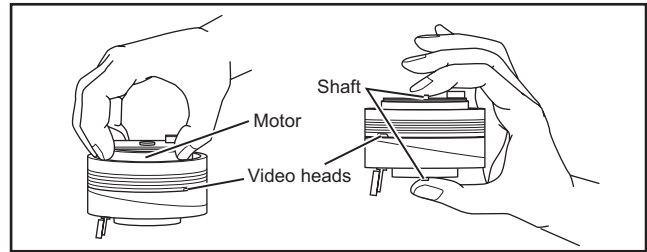


Fig.3-1c

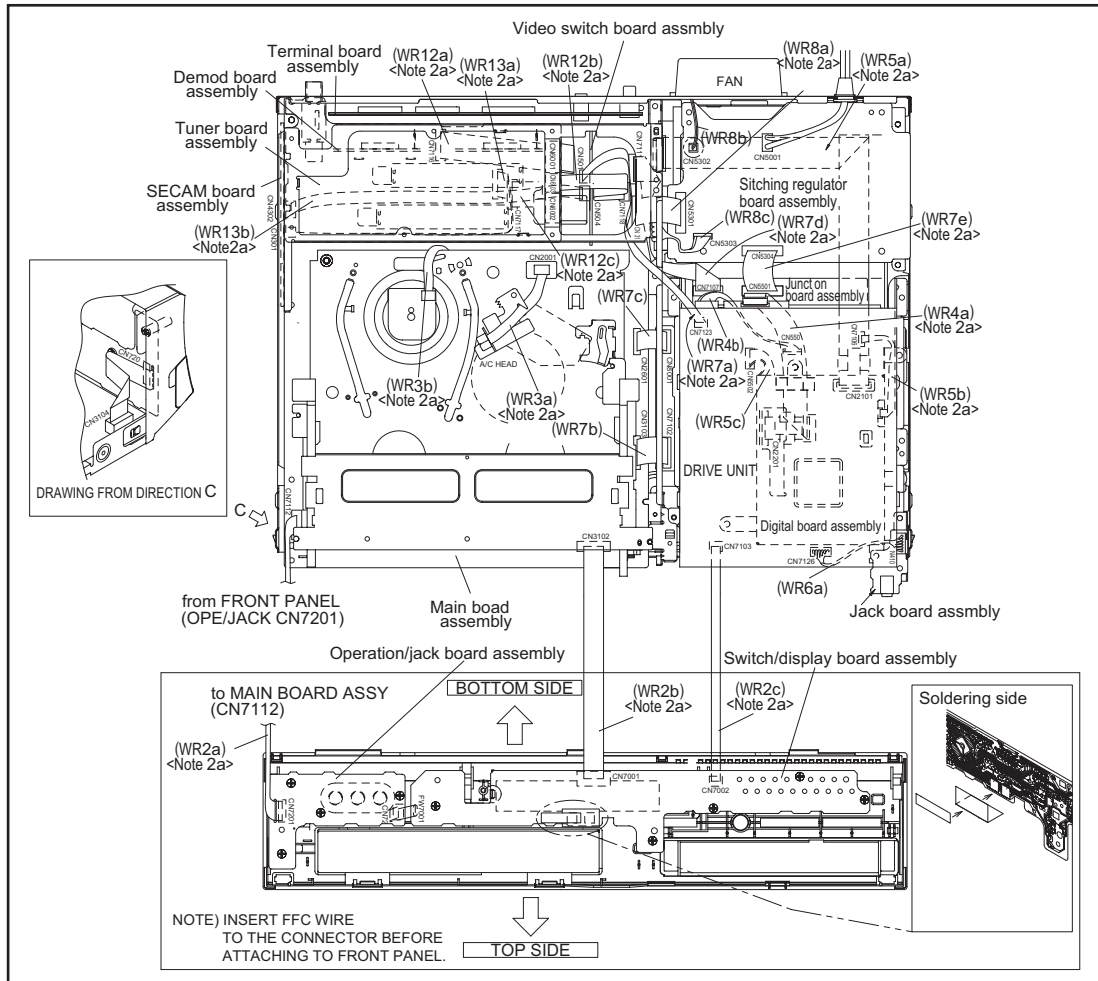


Fig.3-1d

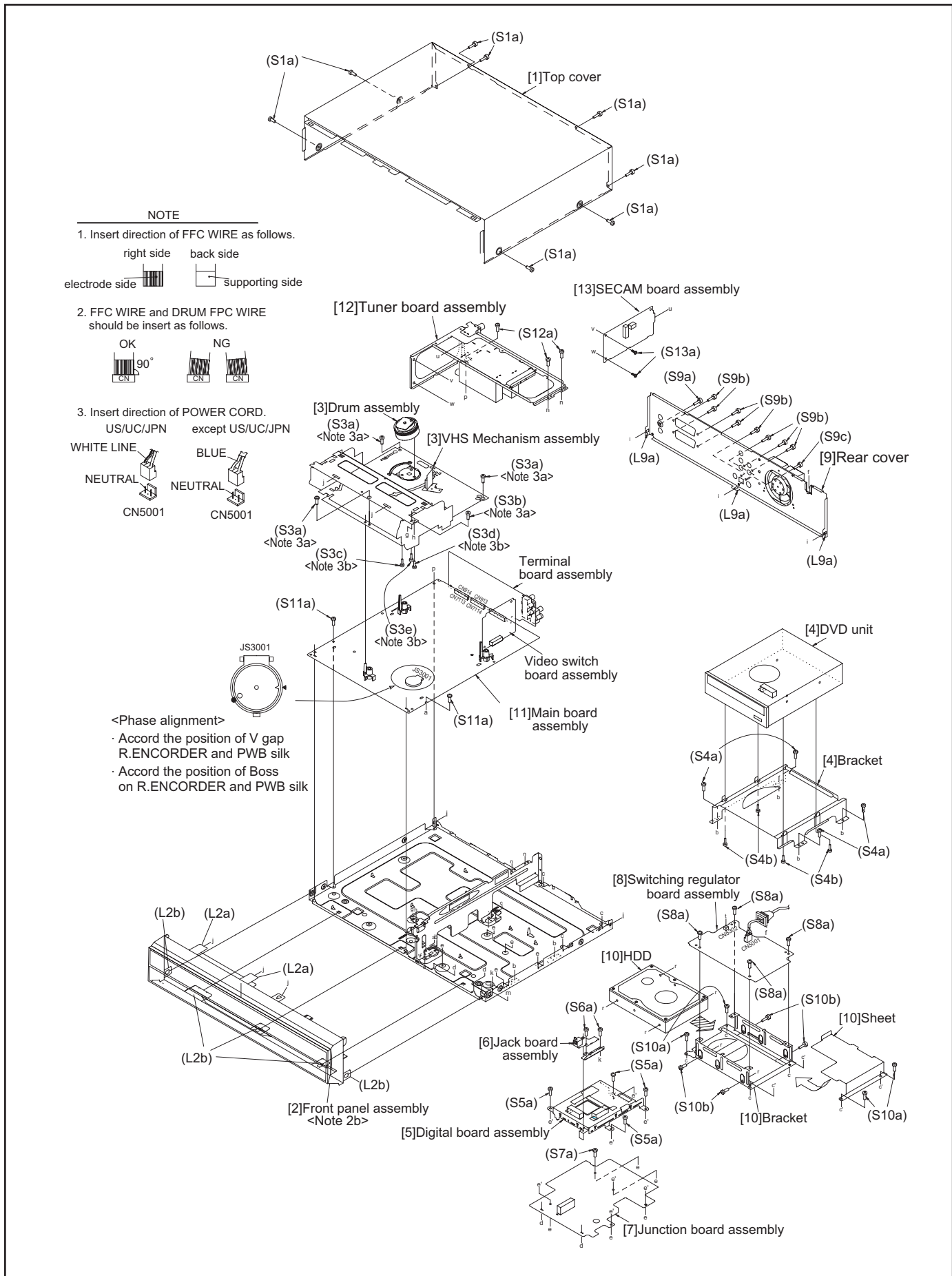


Fig.3-1e



# SECTION 4 ADJUSTMENT

## 4.1 Before adjustment

### 4.1.1 Precaution

- The adjustments of this unit include the mechanism compatibility and electrical adjustments. During the performance of this work, be sure to observe the precautions for each type of adjustment.
- If there is a reference to a signal input method in the signal column of the adjustment chart, "Ext. S-input" means the Y/C separated video signal and "Ext. input" means the composite video signal input.
- Unless otherwise specified, all measuring points and adjustment parts are located on the Main board.

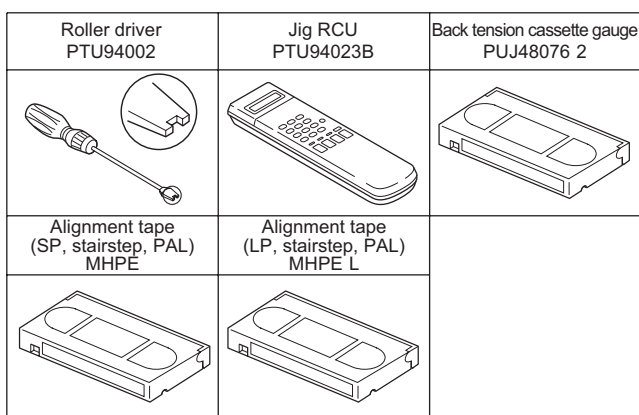
### 4.1.2 Required test equipments

- Color (colour) television or monitor
- Oscilloscope: wide-band, dual-trace, triggered delayed sweep
- Signal generator: RF / IF sweep / marker
- Signal generator: stairstep, color (colour) bar [PAL]
- Recording tape
- Digit-key remote controller(provided)

### 4.1.3 Required adjustment tools

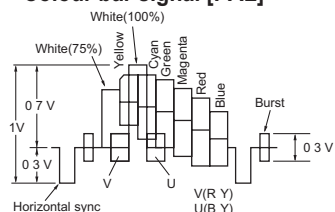
● : Used --- : Not used

	Mechanism compatibility adjustment	Electrical adjustment
Roller driver	●	---
Jig RCU	---	●
Back tension cassette gauge	●	---
Alignment tape(MHPE)	●	---
Alignment tape(MHPE-L)	●	●

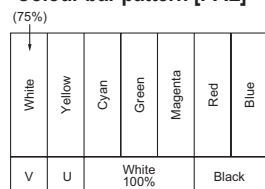


### 4.1.4 Color (colour) bar signal,Color (colour) bar pattern

#### • Colour bar signal [PAL]



#### • Colour bar pattern [PAL]



### 4.1.5 Switch settings

When adjusting this unit, set the VCR mode and switches as described below.

- When using the Jig RCU, it is required to set the unit to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). (See "section 2 SPECIFIC SERVICE INSTRUCTIONS".)

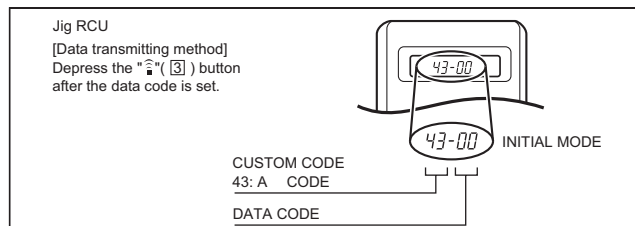


Fig.4-1a Jig RCU [PTU94023B]

- Set the switches as shown below unless otherwise specified on the relevant adjustment chart. The switches that are not listed below can be set as desired.

If the VCR is not equipped with the functions detailed below, setup is not required.

AUTO PICTURE/VIDEO CALIBRATION/ B.E.S.T./D.S.P.C.	OFF
PICTURE CONTROL/SMART PICTURE	NORMAL/NATURAL
VIDEO STABILIZER	OFF
TBC	ON
Digital 3R	ON
VIDEO NAVIGATION/TAPE MANAGER	OFF
BLUE BACK	OFF

### 4.1.6 Manual tracking mode (Auto tracking ON/OFF) setting

- (1) In order to set to the manual tracking mode during tape playback, press the "CHANNEL +/-" button on the unit simultaneously.
  - When the manual tracking mode is set, the tracking is placed at the center position.
- (2) Press "CHANNEL +/-" to adjust the tracking manually.

### 4.1.7 EVR Adjustment

Some of the electrical adjustments require the adjustment performed by the EVR system. The main unit have EEPROMs for storing the EVR adjustment data and user setups.

#### Notes:

- In the EVR adjustment mode, the value is varied with the channel buttons (+, -). The adjusted data is stored when the setting mode changes (from PB to STOP, when the tape speed is changed, etc.). Take care to identify the current mode of each adjustment item when making an adjustment.
- When changing the address setting in the EVR adjustment mode, use the Jig RCU or the remote controller having numeric keypad with which a numeric code can be directly input.  
The remote control code of the Jig RCU corresponds to each of the digit keys on the remote controller as follows.



Digit-key	0	1	2	3	4	5	6	7	8	9
Code	20	21	22	23	24	25	26	27	28	29

- As the counter indication and remaining tape indication are not displayed FDP during the EVR adjustment mode, check them on the TV monitor screen.
- When performing the EVR adjustment, confirm that the FDP indication is changed to the EVR mode.

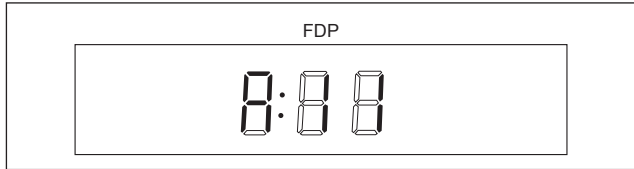


Fig.4-1b EVR mode

#### 4.2 Mechanism compatibility adjustment (VHS SECTION)

##### Notes:

- Although compatibility adjustment is very important, it is not necessary to perform this as part of the normal servicing work. It will be required when you have replaced the A/C head, drum assembly or any part of the tape transport system.
- To prevent damaging the alignment tape in the compatibility adjustment, prepare a cassette tape (for self-recording/playback), perform a test on it by transporting it and making sure that the tape is not bent by the tape transport mechanisms such as in the guide rollers. (See Fig.4-2b.)

##### 4.2.1 Tension pole position

##### Notes:

- This adjustment must be performed every time the tension band is replaced.

Signal	(A)	• Back tension cassette gauge [PUJ48076-2]
Mode	(B1) (B2)	• PB • Eject end
Adjustment part	(F)	• Adjust pin [Mechansim assembly]
Specified value	(G)	• 25 - 51 gf·cm (2.45 - 5 x 10 <sup>-3</sup> Nm)

- (1) Play back the back tension cassette gauge (A).
- (2) Check that the indicated value on the left side gauge is within the specified value (G).
- (3) If the indicated value is not within the specified value (G), perform the adjustment in a following procedure. (See Fig.4-2a.)
  - a) Remove the top frame, cassette holder and side frames (L/R) all together. (Refer to the SERVICE MANUAL No.86700 [MECHANISM ASSEMBLY].)
  - b) Rotate the loading motor gear to move the control plate so that the triangular stamping to the left of the "P" stamping is aligned with the stamping (a) on the main deck. This positioning is mode (B1).
  - c) Adjust by turning the adjustment pin so that the tip of the tension arm is aligned with the stamping (b) on the main deck.
  - d) Rotate the reel disk (S) by about one turn clockwise and make sure that the round hole of the adjustment pin is located in the "OK" range. If it is outside this range, restart the adjustment from the beginning.

After completion of the adjustment, rotate the loading gear motor to return it to the mode (B2) position.

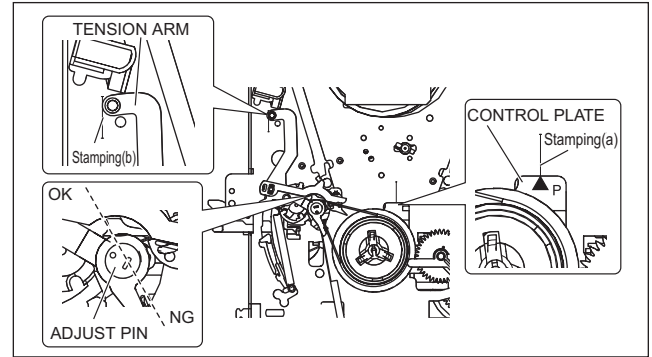


Fig.4-2a

##### 4.2.2 FM waveform linearity

Signal	(A1) (A2)	• Alignment tape(SP, staircase, PAL) [MHPE] • Alignment tape(LP, staircase, PAL) [MHPE-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB, FM)
External trigger	(E)	• TP111 (D,FF)
Adjustment part	(F)	• Guide roller [Mechanism assembly]
Specified value	(G)	• Flat V.PB FM waveform
Adjustment tool	(H)	• Roller driver [PTU94002]

- (1) Play back the alignment tape (A1).
- (2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
- (3) Set the VCR to the manual tracking mode.
- (4) Make sure that there is no significant level drop of the V.PB FM waveform caused by the tracking operation, with its generally parallel and linear variation ensured. Perform the following adjustments when required. (See Fig. 4-2c.)
- (5) Reduce the V.PB FM waveform by the tracking operation. If a drop in level is found on the left side, turn the guide roller of the pole base assembly (supply side) with the roller driver to make the V.PB FM waveform linear. If a drop in level is on the right side, likewise turn the guide roller of the pole base assembly (take-up side) with the roller driver to make it linear. (See Fig. 4-2c.)
- (6) Make sure that the V.PB FM waveform varies in parallel and linearly with the tracking operation again. When required, perform fine-adjustment of the guide roller of the pole base assembly (supply or take-up side).
- (7) Unload the cassette tape once, play back the alignment tape (A1) again and confirm the V.PB FM waveform.
- (8) After adjustment, confirm that the tape wrinkling does not occur at the roller upper or lower limits. (See Fig. 4-2b.) [Perform adjustment step (9) only for the models equipped with SP mode and EP (or LP) mode.]

**[Perform adjustment step (9) only for the models equipped with SP mode and EP (or LP) mode.]**

- (9) Repeat steps (1) to (8) by using the alignment tape (A2).

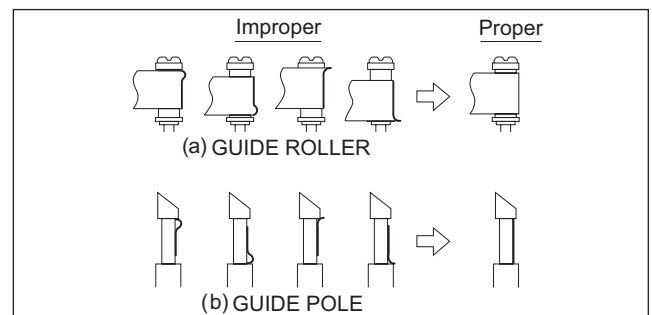


Fig.4-2b

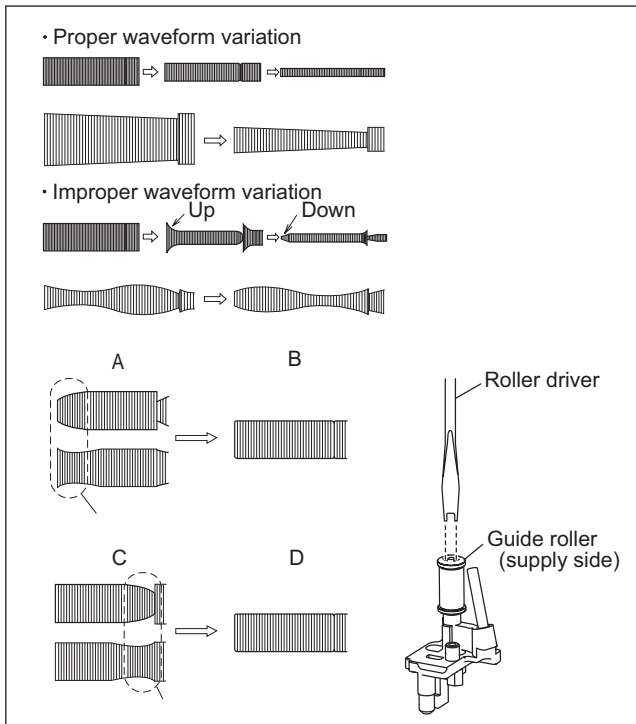


Fig.4-2c

#### 4.2.4 A/C head phase (X-value)

Signal	(A1)	• Alignment tape(SP, stairstep, PAL) [MHPE]
	(A2)	• Alignment tape(LP, stairstep, PAL) [MHPE-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB, FM)
External trigger	(E)	• TP111 (D,FF)
Adjustment part	(F)	• A/C head base [Mechanism assembly]
Specified value	(G)	• Flat V.PB FM waveform
Adjustment tool	(H)	• Roller driver [PTU94002]

- (1) Play back the alignment tape (A1).
- (2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
- (3) Set the VCR to the manual tracking mode.
- (4) Loosen the screws (4) and (5), then set the Roller driver to the innermost projected part of the A/C head. (See Fig. 4-2e.)
- (5) Rotate the roller driver so that the A/C head comes closest to the capstan. From there, move the A/C head back gradually toward the drum until the point where the FM waveform is maximized for the second time, and then tighten the screws (4) and (5) temporarily.
- (6) Play an alignment tape (A2) and set to the manual-tracking mode.
- (7) Fine-adjust A/C head base position to maximize the FM waveform, and then tighten the screws (4) and (5) firmly.
- (8) Play alignment tapes (A1) and (A2) and confirm that the FM waveforms are maximized when the tracking is at the center position.

#### 4.2.3 Height and tilt of the A/C head

##### Note:

- Set a temporary level of the height of the A/C head in advance to make the adjustment easier after the A/C head has been replaced. (Refer to the SERVICE MANUAL No.86700 [MECHANISM ASSEMBLY].)

Signal	(A)	• Alignment tape(SP, stairstep, PAL) [MHPE]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D1)	• TP106 (PB, FM)
	(D2)	• TP4001 (CTL, P)
External trigger	(E)	• TP111 (D,FF)
Adjustment part	(F)	• A/C head [Mechanism assembly]
Specified value	(G)	• Maximum waveform

- (1) Play back the alignment tape (A).
- (2) Apply the external trigger signal to D.FF (E), to observe the AUDIO OUT waveform and Control pulse waveform at the measuring points (D1) and (D2) in the ALT mode.
- (3) Set the unit to the manual tracking mode.
- (4) Adjust the AUDIO OUT waveform and Control pulse waveform by turning the screws (1), (2) and (3) little by little until both waveforms reach maximum. The screw (1) and (3) are for adjustment of tilt and the screw (2) for azimuth.

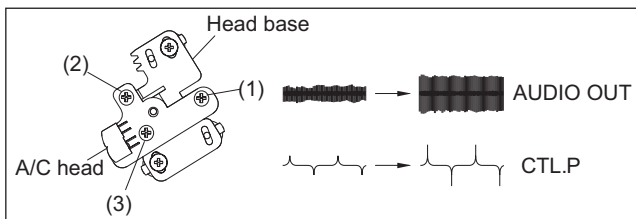


Fig.4-2d

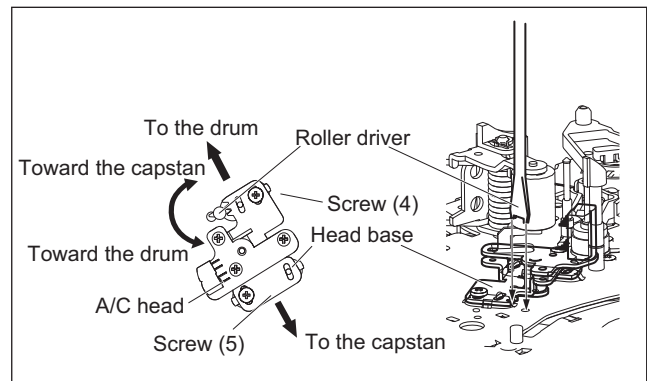


Fig.4-2e

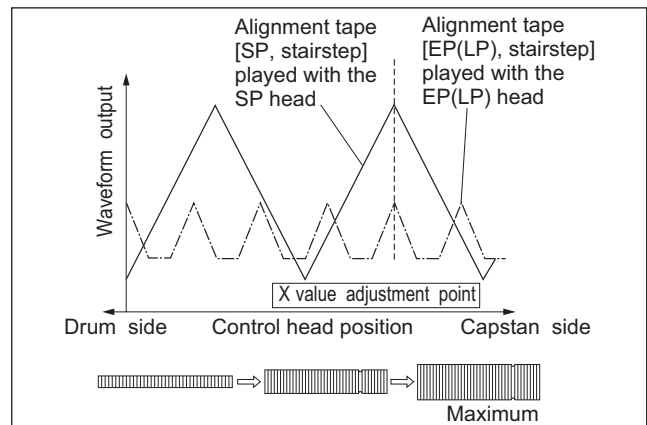


Fig.4-2f

### 4.3 Electrical adjustment

#### Note:

The following adjustment procedures are not only necessary after replacement of consumable mechanical parts or board assemblies, but are also provided as references to be referred to when servicing the electrical circuitry.

In case of trouble with the electrical circuitry, always begin a service by identifying the defective points by using the measuring instruments as described in the following electrical adjustment procedures. After this, proceed to the repair, replacement and/or adjustment. If the required measuring instruments are not available in the field, do not change the adjustment parts (variable resistor, etc.) carelessly.

#### 4.3.1 Servo circuit

##### 4.3.1.1 Switching point

Signal	(A1) (A2)	• Stairstep signal • Alignment tape(LP, stairstep, PAL) [MHPE-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• VIDEO OUT terminal (75 ohm terminated) • TP106 (PB, FM)
External trigger	(E)	• TP111 (D,FF)
Adjustment part	(F)	• Jig RCU: Code "43-5A"
Specified value	(G)	• $6.5 \pm 0.5H$
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Play back the signal (A1) of the alignment tape (A2).
- (2) Apply the external trigger signal to D,FF (E) to observe the VIDEO OUT waveform and V.PB FM waveform at the measuring points (D1) and (D2).
- (3) Set the VCR to the manual tracking mode.
- (4) Adjust tracking so that the V.PB FM waveform becomes maximum.
- (5) Set the VCR to the Auto adjust mode by transmitting the code (F) from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed.
- (6) If the VCR enters the eject mode, repeat steps (1) to (5) again.
- (7) Play back the alignment tape (A2) again, confirm that the switching point is the specified value (G).

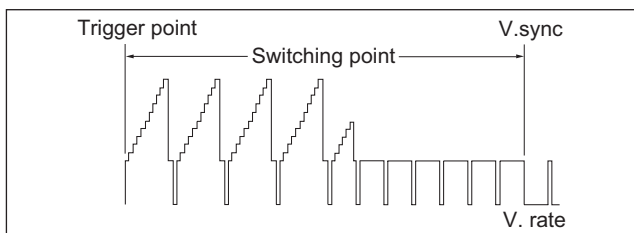


Fig.4-3a Switching point

##### 4.3.1.2 Slow tracking preset

Signal	(A1) (A2)	• Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2)	• VHS SP • VHS LP
Measuring point	(D)	• TV-Monitor
Adjustment part	(F)	• Jig RCU: Code "43-71" or "43-72"
Specified value	(G)	• minimum noise
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Record the signal (A2) in the mode (B1), and play back the recorded signal.
- (2) Set the VCR to the manual tracking mode.
- (3) Set the VCR to the FWD slow (+1/6x) mode.
- (4) Transmit the code (F) from the Jig RCU to adjust so that the noise bar becomes the specified value (G) on the TV monitor in the slow mode.
- (5) Set the VCR to the Stop mode.
- (6) Confirm that the noise bar is (G) on the TV monitor in the slow mode.
- (7) Repeat steps (3) to (6) in the REV slow (+1/6x) mode.
- (8) Repeat steps (1) to (7) in the mode (B2).

#### Note:

- For FWD slow (+1/6x) playback, transmit the code "43-08" from the Jig RCU to enter the slow playback mode, and transmit the code "43-D0" for REV slow (-1/6x) mode.

#### 4.3.2 DVD Video circuit

##### Note

- When perform these adjustments, set the unit to DVD mode.(DVD lamp lights up)

##### 4.3.2.1 EE Composite Y level

Signal	(A)	• Internal colour bar
Mode	(B)	• EE
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• L-1 connector pin19
EVR mode	(F1)	• Jig code "43-95"
EVR address	(F2) (F3) (F4) (F5)	• "ADJUST01 : **" • Jig code "43-21" • Jig code "43-18" or "43-19" (Channel +/-) • Jig code "43-3C"
Specified value	(G)	• $1.00 \pm 0.02$ Vp-p (terminated)
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Observe the V OUT waveform at the measuring point (D).
- (2) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- (3) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.
- (4) Transmit the code (F4) from the Jig RCU to adjust so that the Y level of the V OUT waveform becomes the specified value (G).
- (5) Release the EVR mode of the VCR by transmitting the code (F5) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)

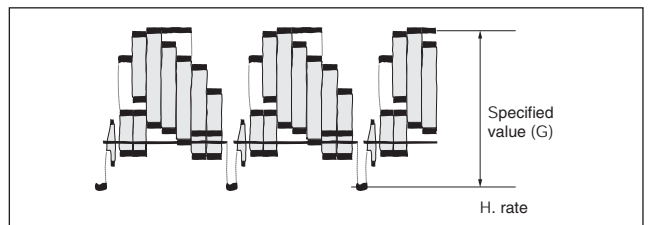


Fig.4-3b EE composite Y level

#### 4.3.2.2 EE Y level

Signal	(A1)	• Ext. input
	(A2)	• Color (colour) bar signal
Mode	(B)	• EE
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• L-1 connector pin19
EVR mode	(F1)	• Jig code "43-95"
EVR address	(F2)	• "ADJUST02 : ***"
	(F3)	• Jig code "43-22"
	(F4)	• Jig code "43-18" or "43-19" (Channel +/-)
	(F5)	• Jig code "43-3C"
Specified value	(G)	• $1.00 \pm 0.02$ Vp-p (terminated)
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Observe the V OUT waveform at the measuring point (D).
- (2) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- (3) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.
- (4) Transmit the code (F4) from the Jig RCU to adjust so that the Y level of the V OUT waveform becomes the specified value (G).
- (5) Release the EVR mode of the VCR by transmitting the code (F5) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)

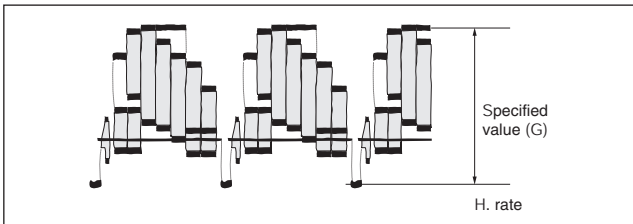


Fig.4-3c EE Y level

#### 4.3.2.3 EE composite burst level

Signal	(A)	• Internal colour bar
Mode	(B)	• EE
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• L-1 connector pin19
EVR mode	(F1)	• Jig code "43-95"
EVR address	(F2)	• "ADJUST00 : ***"
	(F3)	• Jig code "43-20"
	(F4)	• Jig code "43-18" or "43-19" (Channel +/-)
	(F5)	• Jig code "43-3C"
Specified value	(G)	• $0.30 \pm 0.01$ Vp-p (terminated)
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Observe the V OUT waveform at the measuring point (D).
- (2) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- (3) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.
- (4) Transmit the code (F4) from the Jig RCU to adjust so that the burst level of the V OUT waveform becomes the specified value (G).
- (5) Release the EVR mode of the VCR by transmitting the code (F5) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)

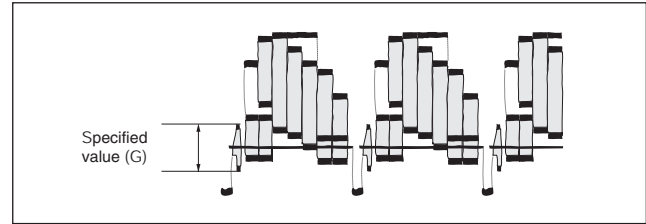


Fig.4-3d EE composite burst level

#### 4.3.2.4 EE R/G/B level

Signal	(A)	• Internal colour bar
Mode	(B)	• EE
Equipment	(C)	• Oscilloscope
Measuring point	(D1)	• L-1 connector pin15(R)
	(D2)	• L-1 connector pin11(G)
	(D3)	• L-1 connector pin7(B)
EVR mode	(F1)	• Jig code "43-95"
EVR address	(F2)	• "ADJUST05 : ***"
	(F3)	• Jig code "43-25"
	(F4)	• Jig code "43-18" or "43-19" (Channel +/-)
	(F5)	• Jig code "43-3C"
Specified value	(G)	• $0.70 \pm 0.02$ Vp-p (terminated)
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Observe the R OUT waveform at the measuring point (D1).
- (2) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- (3) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.
- (4) Transmit the code (F4) from the Jig RCU to adjust so that the R level of the R OUT waveform becomes the specified value (G).
- (5) Release the EVR mode of the VCR by transmitting the code (F5) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
- (6) Observe the G OUT waveform at the measuring point (D2).
- (7) Repeat steps (2) to (5) above.
- (8) Observe the B OUT waveform at the measuring point (D3).
- (9) Repeat steps (2) to (5) above.

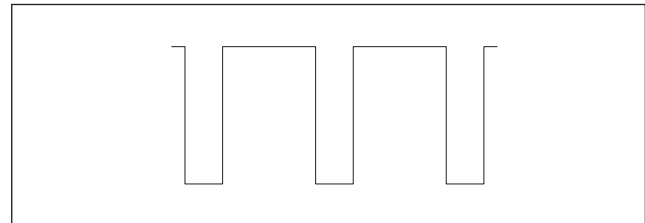


Fig.4-3e EE R/G/B level

#### 4.3.2.5 EE COMPONENT PB/CB level

Signal	(A)	• Internal colour bar
Mode	(B)	• EE
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• COMPONENT PB/CB terminal
EVR mode	(F1)	• Jig code "43-95"
EVR address	(F2)	• "ADJUST06 : ***"
	(F3)	• Jig code "43-26"
	(F4)	• Jig code "43-18" or "43-19" (Channel +/-)
	(F5)	• Jig code "43-3C"
Specified value	(G)	• $0.70 \pm 0.02$ Vp-p (terminated)
Adjustment tool	(H)	• Jig RCU [PTU94023B]

- (1) Observe the CB OUT waveform at the measuring point (D).
- (2) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
- (3) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.
- (4) Transmit the code (F4) from the Jig RCU to adjust so that the CB level of the CB OUT waveform becomes the specified value (G).
- (5) Release the EVR mode of the VCR by transmitting the code (F5) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)

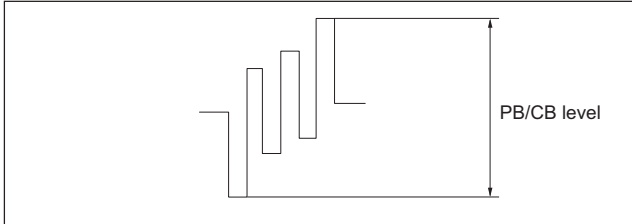


Fig.4-3f EE component PB/CB level

### 4.3.3 Syscon circuit

#### 4.3.3.1 Timer clock

Signal (A)	• No signal
Mode (B)	• EE
Equipment (C)	• Frequency counter
Measuring point (D1)	• IC3001 pin 61
(D2)	• IC3001 pin 17
(D3)	• C3026 + and -
Adjustment part (F)	• C3025 (TIMER CLOCK)
Specified value (G)	• 1024.008 ± 0.01 Hz (976.5549 ± 0.0010 usec)

- (1) Connect the frequency counter to the measuring point (D1).
- (2) Connect the short wire between the short point (D2) and Vcc (5V).
- (3) Short the leads of capacitor (D3) once in order to reset the microprocessor of the Syscon.
- (4) Disconnect the short wire between the short point (D2) and Vcc then connect it again.
- (5) Adjust the Adjustment part (F) so that the output frequency becomes the specified value (G).



## SECTION 5 TROUBLESHOOTING

### 5.1 Manually removing the cassette tape

If you cannot remove the cassette tape which is loaded because of any electrical or mechanical failures, manually remove it by taking the following steps.

- (1) Unplug the power cord plug from the power outlet.
- (2) Refer to the disassembly procedure of the unit and perform the disassembly of the major parts before removing the mechanism assembly. (See Fig. 5-1a)

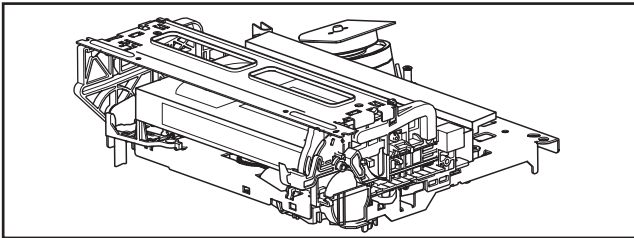


Fig.5-1a

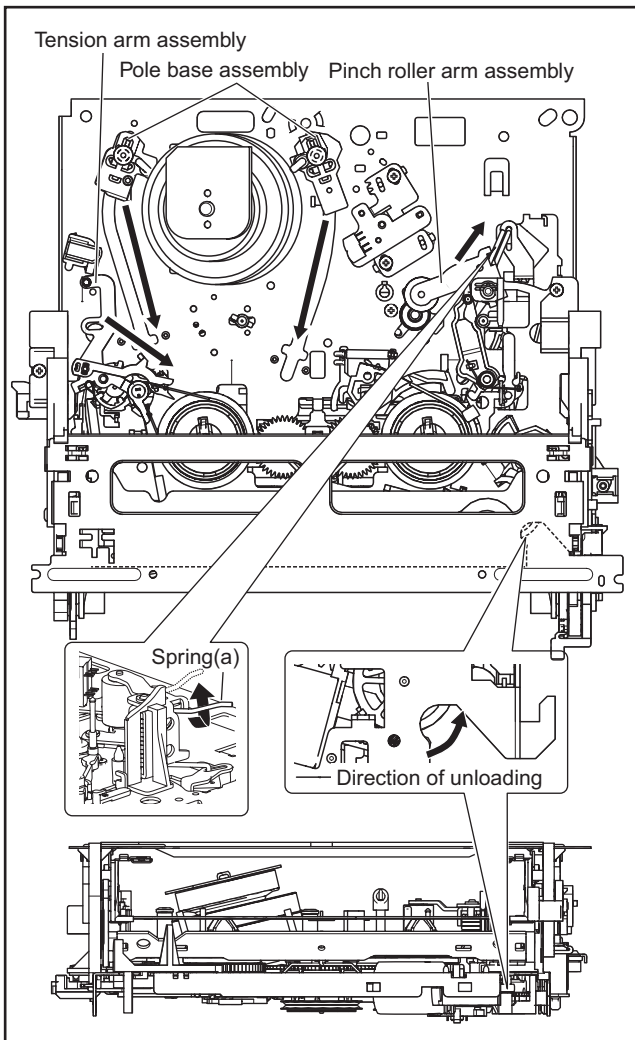


Fig.5-1b

- (3) Unload the pole base assembly by manually turning the gear of the loading motor until the pole base assembly is hidden behind the cassette lid. In doing so, hold the tape by the hand to keep the slack away from any grease. (See Fig.5-1b )

**In case of mechanical failures, while keeping the ten-**

**sion arm assembly free from tension, pull out the tape on the pole base assembly. Take the spring(a) of the pinch roller arm assembly off the hook, and detach it from the tape.**

- (4) Remove the screw (a) of the side frame (L/R).
- (5) Hold the slack tape and cassette cover together, lift the cassette tape, top frame, cassette holder and side frames (L, R) together from the rear and remove them by dis-engaging the hooks (a) and (b).

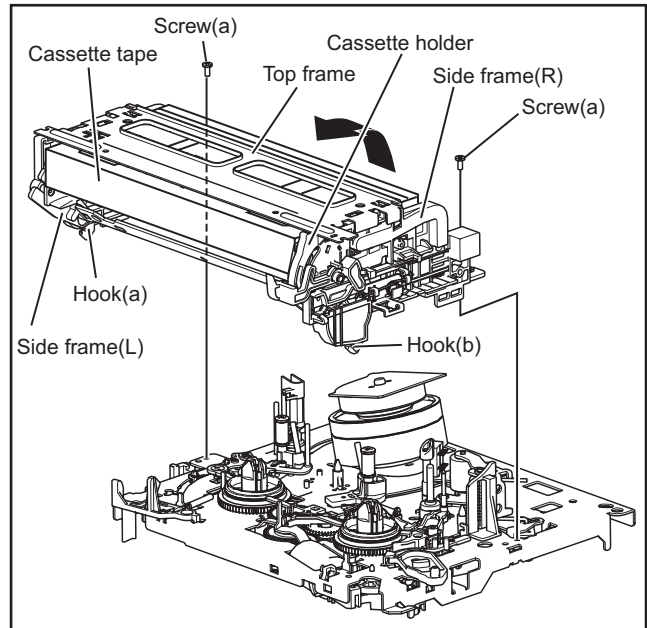


Fig.5-1c

- (6) Take up the slack of the tape into the cassette. This completes removal of the cassette tape.

### 5.2 Manually removing the disk(DVD/CD)

If you cannot remove the disk which is loaded because of any electrical or mechanical failures, manually remove it by taking the following steps.

#### 5.2.1 Method 1

- (1) AC Plug is pulled out at once and inserted again.
- (2) It is displayed on FDP as "LOADING", and while it blinks, pushing the OPEN/CLOSE button is continued.
- (3) After a while, a tray opens (About 20 seconds).
- (4) After removed a disk, press the OPEN/CLOSE button again to close the tray.
- (5) The "LOADING" blink display of FDP disappears and it will be in a standby mode.
- (6) If the POWER button is pushed, it will usually be operating.

#### 5.2.2 Method 2

- (1) Unplug the AC power cord from the AC outlet.
- (2) Remove the top cover and front panel assembly. (Refer to the disassembly procedure and perform the disassembly of the major parts before removing)
- (3) Pass a thin wire through a hole in the DVD unit.
- (4) The disc tray comes out slightly. Take out the disc tray manually. (See Fig.5-2a)

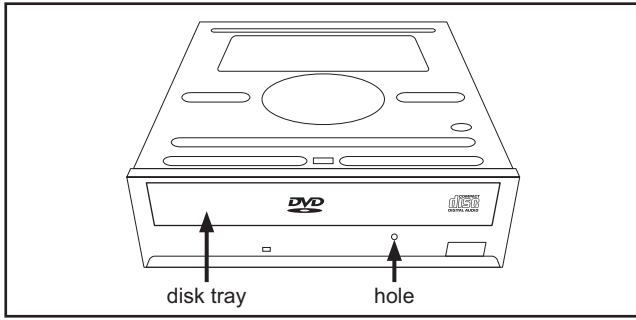


Fig.5-2a

### 5.3 Emergency display function (VHS SECTION)

This unit saves details of the last two emergencies as the EMG history and allows the status of the unit and the mechanism of each emergency to be shown both on the display and as OSD information.

When using the emergency function, it is required to set the unit to the Jig RCU mode.

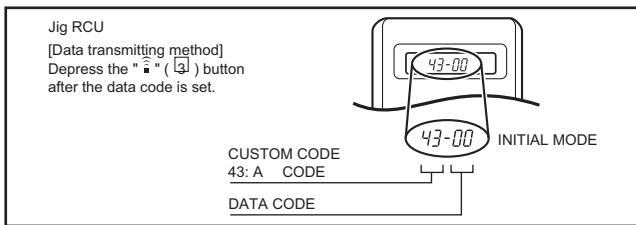


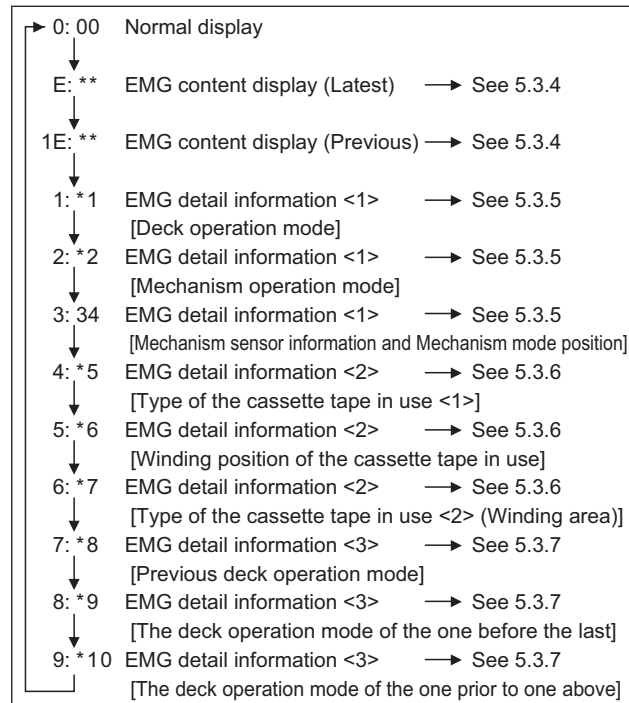
Fig.5-3a Jig RCU [PTU94023B]

#### 5.3.1 Displaying the EMG information

The EMG detail of information can be displayed by transmitting the code "43-59" from the Jig RCU.

##### Note:

- Press VHS/HDD/DVD SELECT button on the unit repeatedly first so that the VHS lamp lights up on the unit.
- The EMG detail information <1><2> show the information on the latest EMG. It becomes " - : - : - : - " when there is no latest EMG record.



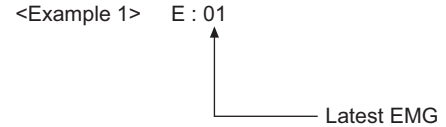
EMG display of 7 FDP display model

Fig.5-3b

#### EMG display of FDP display mode

- (1) Transmit the code "43-59" from the Jig RCU.

The FDP shows the EMG content in the form of "E:\*\*:\*\*".



- (2) Transmit the code "43-59" from the Jig RCU again. The FDP shows the EMG detail information <1> in the form of " \*1 : \*2 : 34 ".

- \*1 : Deck operation mode at the moment of EMG
- \*2 : Mechanism operation mode at the moment of EMG
- 3- : Mechanism sensor information at the moment of EMG
- 4 : Mechanism mode position at the moment of EMG

- (3) Transmit the code "43-59" from the Jig RCU once again. The FDP shows the EMG detail information <2> in the form of " \*5 : \*6 : \*7 ".

- \*5 : Type of the cassette tape in use <1> .
- \*6 : Winding position of the cassette tape in use
- \*7 : Type of the cassette tape in use <2> (Winding area)

- (4) Transmit the code "43-59" from the Jig RCU once again. The FDP shows the EMG detail information <3> in the form of " \*8 : \*9 : \*10 ".

- \*8 : Previous deck operation mode at the moment of EMG
- \*9 : The deck operation mode of the one before the last at the moment of EMG
- \*10: The deck operation mode of the one prior to one above at the moment of EMG

- (5) Transmit the code "43-59" from the Jig RCU once again to reset the display.

#### 5.3.2 Clearing the EMG history

- (1) Display the EMG history.
- (2) Transmit the code "43-36" from the Jig RCU.
- (3) Reset the EMG display.

#### 5.3.3 Details of the OSD display in the EMG display mode

During the EMG display, the OSD shows the data on the deck mode, etc. The details of the display contents are as follows.

##### Notes:

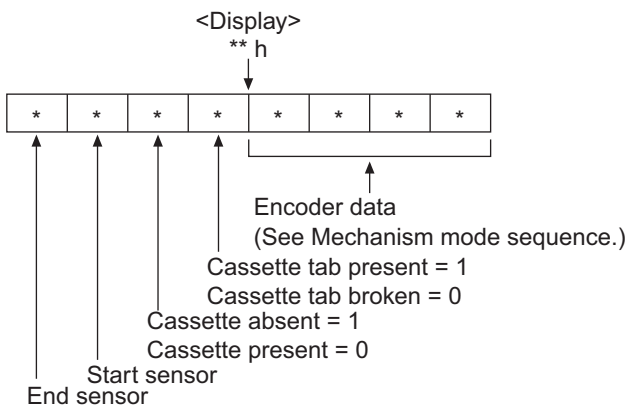
- The display is variable depending on the part No. of the System Control microcomputer (IC3001) built into the VCR. In the following, refer to the figure carrying the same two characters as the top two characters of the part number of your IC.
- The sensor information in the OSD display contents is partially different from the mechanism sensor information in EMG detail information <1>.

[For MN\* only]

AA	BB	CC	DD	EE
FF	GG	HH	II	JJ
KK	LL	MM	NN	OO
PP	QQ	RR	SS	TT
UU	VV	WW	XX	YY

- AA : Deck operation mode (See EMG detail information <1>.)
- BB : Mechanism operation mode (See EMG detail of information <1>.)
- CC : Mechanism transition flag
- DD : Capstan motor control status
- EE : Loading motor control status
- FF : Sensor information (See sensor information details.)
- GG : Capstan motor speed
- HH : Key code (JVC code)
- II : Supply reel winding diameter data higher 8 bits.
- JJ : Supply reel winding diameter data lower 8 bits.
- KK : Mechanism sensor information & mechanism mode position (See EMG detail of information <1>.)
- LL : Tape speed data higher 8 bits.
- MM : Tape speed data lower 8 bits.
- NN : Cassette tape type <2> higher 8 bits. (See EMG detail of information <2>.)
- OO : Cassette tape type <2> lower 8 bits. (See EMG detail of information <2>.)
- PP : General data display area
  
- YY : General data display area

**\*FF: Sensor information details**

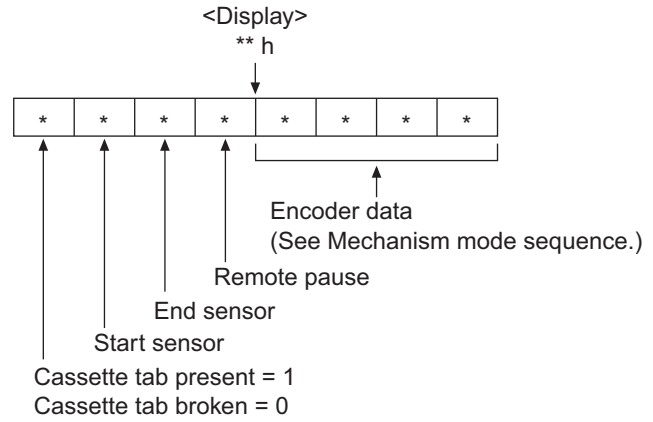


**[For \*HD only]**

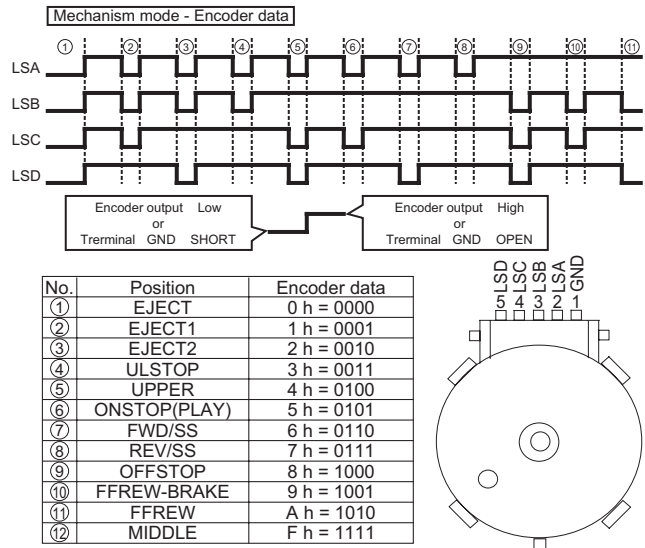
AA	BB	CC
DD	EE	FF
GGGG	HHHH	
II	JJJJ	
KKKK	LLLL	MMMM
ROM No.		

- AA : Key code (JVC code)
- BB : Deck operation mode (See EMG detail information <1>.)
- CC : Mechanism operation mode (See EMG detail information <1>.)
- DD : Sensor information (See sensor information details.)
- EE : Capstan motor speed (Search, double speed)
- FF : Tracking value
- GGGG : Cassette tape type <2>, 16 bits. (See EMG detail information <2>.)
- HHHH : Supply reel winding diameter data
- II : Capstan motor speed (FF/REW, double speed)
- JJJJ : Tape speed data, lower 8 bits.
- KKKK : General data display area
- LLLL : General data display area
- MMMM : General data display area

**\*DD: Sensor information details**



**[For both MN\*/HD\*]  
Mechanism mode sequence**





### 5.3.4 EMG content description

**Note:**

**EMG contents "E09" are for the model with Dynamic Drum (DD).**

FDP	CONTENT	CAUSE
E01: Loading EMG	If the mechanism mode does not change to the next mode within 4 seconds after the loading motor starts rotating in the loading direction, while the mechanism is in the after-loading position (with the tape up against the pole base), [E:01] is identified and the power is switched OFF. However, if the tape loading is not completed within 4 seconds after the loading motor starts rotating in the loading direction, the tape is simply unloaded and ejected. No EMG data is recorded in this case.	<ol style="list-style-type: none"> <li>The mechanism is locked in the middle of the mode transition during a tape loading operation.</li> <li>The mechanism overruns during the tape loading operation because the SYSCON cannot recognize the mechanism mode normally. This problem is due to a cause such as a rotary encoder failure.</li> <li>Power is not supplied to the loading MDA. (M12V/Vcc/Vref/ICP are disconnected in the middle.)</li> </ol>
E02: Unloading EMG	When the mechanism mode cannot be changed to another mode even when the loading motor has rotated for more than 4 seconds in the unloading direction, [E:02] is identified and the power is turned off.	<ol style="list-style-type: none"> <li>The mechanism is locked in the middle of mode transition.</li> <li>Without an eject signal being sent from the SYSCON, unloading is attempted (i.e. Ejection is attempted while the tape is still inside the mechanism.) because the SYSCON cannot recognize the mechanism mode normally. This is due to a cause such as a rotary encoder failure. (Mechanism position: UPPER)</li> <li>Power is not supplied to the loading MDA. (M12V/Vcc/Vref/ICP are disconnected in the middle.)</li> </ol>
E03: Take Up Reel Pulse EMG	When the falling edge of the take-up reel pulse has not been generated for more than 4 seconds in the capstan rotating mode, [E:03] is identified, the pinch rollers are turned off and stopped, and the power is turned off. In this case, however, the mechanism should be in position after tape loading. Note that the reel EMG is not detected during Slow/Frame advance operations.	<ol style="list-style-type: none"> <li>The take-up reel pulse is not generated in the FWD transport modes (PLAY/FWD SEARCH/FF, etc.) because; <ol style="list-style-type: none"> <li>The idler gear is not meshed with the take-up reel gear because the mechanism mal-functions for some reason.</li> <li>The idler gear is meshed with the take-up reel gear, but incapable of winding due to too large mechanical load (abnormal tension);</li> <li>The reel is rotating normally but an FG pulse is not generated due to the take-up reel sensor failure.</li> </ol> </li> <li>The supply reel pulse is not generated in the REV transport modes (REV SEARCH/REW, etc.) because; <ol style="list-style-type: none"> <li>The idler gear is not meshed with the supply reel gear because the mechanism mal-functions for some reason.</li> <li>The idler gear is meshed with the supply reel gear, but incapable of winding due to too large a mechanical load (abnormal tension);</li> <li>The reel rotates normally but the FG pulse is not generated due to a supply reel sensor failure.</li> </ol> </li> <li>Power(SW5V) is not supplied to the reel sensor on the tape winding side.</li> </ol>
E04: Drum FG EMG	When the drum FG pulse has not been input for more than 3 seconds in the drum rotating mode, [E:04] is identified, the pinch rollers are turned off and stopped, and the power is turned off.	<ol style="list-style-type: none"> <li>The drum could not start or the drum rotation has stopped due to too large a load on the tape, because; <ol style="list-style-type: none"> <li>The tape tension is abnormally high;</li> <li>The tape is damaged or a foreign object (grease, etc.) adheres to the tape.</li> </ol> </li> <li>The drum FG pulse did not reach the System controller CPU because; <ol style="list-style-type: none"> <li>The signal circuit is disconnected in the middle;</li> <li>The FG pulse generator (hall device) of the drum is faulty.</li> </ol> </li> <li>The drum control voltage (DRUM CTL V) is not supplied to the MDA.</li> <li>Power (M12V) is not supplied to the drum MDA.</li> </ol>
E05: Cassette Eject EMG	If the cassette does not reach the eject position within about 0.7 seconds after the cassette housing has started the cassette ejection operation, [E:05] is identified, the drive direction is reversed to load the tape, the mode is switched to STOP mode with the pinch roller OFF, and the power is switched OFF. During the cassette insertion process, the drive direction is reversed and the cassette is ejected if the tape is not up against the pole base within about 3 seconds after the start of the cassette pulling-in operation. If the cassette does not reach the eject position within about 0.7 seconds after the drive mode reversal operation, [E:05] is identified and the power is switched OFF immediately.	<ol style="list-style-type: none"> <li>The cassette cannot be ejected due to a failure in the drive mechanism of the housing.</li> <li>When the housing load increases during ejection, the loading motor is stopped because of lack of headroom in its drive torque. <ul style="list-style-type: none"> <li>Housing load increasing factors: Temperature environment (low temperature, etc.), mechanism wear or failure.</li> </ul> </li> <li>The sensor/switch for detecting the end of ejection are not functioning normally.</li> <li>The loading motor drive voltage is lower than specified or power (M12V) is not supplied to the motor (MDA).</li> <li>When the user attempted to eject a cassette, a foreign object (or perhaps the user's hand) was caught in the opening of the housing.</li> </ol>
E06: Capstan FG EMG	When the capstan FG pulse has not been generated for more than 1 second in the capstan rotating mode, [E:06] is identified, the pinch rollers are turned off and stopped, and the power is turned off. However, the capstan EMG is not detected in SLOW/STILL modes. Note that, if the part number of the System Control IC begins with "MN" or "M3", the capstan EMG is not detected even during the FF/REW operation.	<ol style="list-style-type: none"> <li>The capstan could not start or the capstan rotation has stopped due to too large a load on the tape, because; <ol style="list-style-type: none"> <li>The tape tension is abnormally high (mechanical lock);</li> <li>The tape is damaged or a foreign object (grease, etc.) is adhered to the tape (occurrence of tape entangling, etc.).</li> </ol> </li> <li>The capstan FG pulse did not reach the System controller CPU because; <ol style="list-style-type: none"> <li>The signal circuit is disconnected in the middle;</li> <li>The FG pulse generator (MR device) of the capstans is faulty.</li> </ol> </li> <li>The capstan control voltage (CAPSTAN CTL V) is not supplied to the MDA.</li> <li>Power (M12V, SW5V) are not supplied to the capstan MDA.</li> </ol>
E07: SW Power Short-Circuit EMG	When short-circuiting of the SW power supply with GND has lasted for 0.5 second or more, [E:07] is identified, all the motors are stopped and the power is turned off.	<ol style="list-style-type: none"> <li>The SW 5 V power supply circuit is shorted with GND.</li> <li>The SW 12 V power supply circuit is shorted with GND.</li> </ol>
E08: DVD EMG	When communication with a system computer of VHS side is not carried out because of the defective DVD unit, or when the DVD unit must be reset	<ol style="list-style-type: none"> <li>The DVD unit is defective.</li> <li>Contact failure of the wires in the DVD unit or VHS side.</li> </ol>
E09: DD FG EMG	When the DD FG pulse is not generated within 2.5 seconds, [E:09] is identified, the tilt motor is stopped and the power is turned off.	<ol style="list-style-type: none"> <li>The FG sensor is defective. (The soldered parts have separated.)</li> <li>The pull-up resistor at the FG sensor output is defective. (The soldered parts have separated.)</li> <li>Contact failure or soldering failure of the pins of the connector (board-to-board) to the FG sensor.</li> <li>The power (5V) to the sensor is not supplied. (Connection failure/soldering failure)</li> <li>The FG pulse is not sent to the System Controller CPU.</li> <li>The tilt motor is defective. (The soldered parts have separated.)</li> <li>The drive power to the tilt motor is not supplied. (Connection failure/soldering failure)</li> <li>The tilt motor drive MDA - IC is defective.</li> <li>Auto-recovery of the DD tilting cannot take place due to overrun.</li> </ol>
E0A: Supply Reel Pulse EMG	When the falling edge of the supply reel pulse has not been generated for more than 10 seconds in the capstan rotating mode, [E:0A] is identified and the cassette is ejected (but the power is not turned off). In this case, however, the mechanism should be in the position after tape loading (with the tape up against the pole base). Also note that the reel EMG is not detected during Slow/Frame advance operations.	<ol style="list-style-type: none"> <li>The supply reel pulse is not generated in the FWD transport mode (PLAY/FWD SEARCH/FF, etc.) because; <ol style="list-style-type: none"> <li>PLAY/FWD or SEARCH/FF is started while the tape in the inserted cassette is cut in the middle;</li> <li>A mechanical factor caused tape slack inside and outside the supply reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the FWD transport, so the pulse is not generated until then;</li> <li>The reel is rotating normally but the FG pulse is not generated due to a supply reel sensor failure.</li> </ol> </li> <li>The take-up reel pulse is not generated in the REV transport mode (REV SEARCH/REW, etc.). <ol style="list-style-type: none"> <li>REV SEARCH/REW is started when the tape in the inserted cassette has been cut in the middle;</li> <li>A mechanical factor caused tape slack inside and outside the take-up reel side of the cassette shell. In this case, the take up will not rotate until the tape slack is removed by the REV transport, so the pulse will not be generated until that time;</li> <li>The reel is rotating normally but the FG pulse is not generated due to a take-up reel sensor failure.</li> </ol> </li> <li>The power (SW 5V) to a reel sensor is not supplied.</li> </ol>
EU1: Head clog warning history	Presupposing the presence of the control pulse output in the PLAY mode, when the value obtained by mixing the two V.FM output channels (without regard to the A.FM output) has remained below a certain threshold level for more than 10 seconds, [E:U1] is identified and recorded in the emergency history. During the period in which the head clog is detected, the FDP shows "U:01" and the OSD repeats the "3 seconds of warning display" and the "7 seconds of noise picture display" alternately. EMG code : "E:C1" or "E:U1" / FDP : "U:01" / OSD : "Try cleaning tape." or "Use cleaning cassette." The head clog warning is reset when the above-mentioned threshold has been exceeded for more than 2 seconds or the mode is changed to another mode than PLAY.	

### 5.3.5 EMG detail information <1>

The status (electrical operation mode) of the VCR and the status (mechanism operation mode/sensor information) of the mechanism in the latest EMG can be confirmed based on the figure in EMG detail information <1> .

[FDP/OSD display] \*1 : \*2 : 34

- \*1 : Deck operation mode at the moment of EMG
- \*2 : Mechanism operation mode at the moment of EMG
- 3- : Mechanism sensor information at the moment of EMG
- 4 : Mechanism mode position at the moment of EMG

#### Note:

- For EMG detailed information <1>, the content of the code that is shown on the display (or OSD) differs depending on the parts number of the system control microprocessor (IC3001) of the VCR. The system control microprocessor parts number starts with two letters, refer these to the corresponding table.

#### \*1 : Deck operation mode

[Common table of MN\* and HD]

Display		Deck operation mode
MN*	HD*	
00	-	Mechanism being initialized
01	00	STOP with pinch roller pressure off (or tape present with P.OFF)
02	01	STOP with pinch roller pressure on
03	-	POWER OFF as a result of EMG
04	04	PLAY (Normal playback)
0C	0E	REC
10	11	Cassette ejected
20	22	FF
21	-	Tape fully loaded, START sensor ON, short FF
22	-	Cassette identification FWD SEARCH before transition to FF (SPx7-speed)
24	26	FWD SEARCH (variable speed) including x2-speed
2C	2E	INSERT REC
40	43	REW
42	-	Cassette identification REV SEARCH before transition to REW (SPx7-speed)
44	47	REV SEARCH (variable speed)
4C	4C	AUDIO DUB
6C	6E	INSERT REC (VIDEO + AUDIO)
84	84	FWD STILL / SLOW
85	85	REV STILL / SLOW
8C	8F	REC PAUSE
8D	-	Back spacing
8E	-	Forward spacing (FWD transport mode with BEST function)
AC	AF	INSERT REC PAUSE
AD	-	INSERT REC back spacing
CC	CD	AUDIO DUB PAUSE
CD	-	AUDIO DUB back spacing
EC	EF	INSERT REC (VIDEO + AUDIO) PAUSE
ED	-	INSERT REC (VIDEO + AUDIO) back spacing

### \*2 : Mechanism operation mode

[Table of MN\*]

Display	Mechanism operation mode
00	Command standby (No command to be executed)
01	Immediate Power OFF after EMG occurrence
02	Loading from an intermediate position during mechanism initialization
03	Unloading due to EMG occurrence during mechanism initialization
04	Ejecting cassette (ULSTOP to EJECT)
05	Inserting cassette (EJECT to ULSTOP)
06	Loading tape (ULSTOP to PLAY)
07	Unloading tape (PLAY to ULSTOP)
08	Transition from pinch roller ON to STOP
09	Transition from pinch roller OFF to STOP (PLAY to OFFSTOP)
0A	Transition from pinch roller OFF to STOP at power OFF
0B	Transition from pinch roller ON to STOP at power ON
0C	Transition to PLAY
0D	Transition to Search FF
0E	Transition to REC
0F	Transition to FWD STILL/SLOW
10	Transition to REV STILL/SLOW
11	Transition to Search REV
12	Transition from FF/REW to STOP
13	Transition to FF
14	Transition to REW
15	Tape end detection processing during loading
16	Short FWD/REV at tape sensor ON during unloading
17	Transition to FF/REW brake mode

[Table of HD\*]

Display	Mechanism operation mode
00	STOP with pinch roller pressure off
01	STOP with pinch roller pressure on
02	U/L STOP (or tape being loaded)
04	PLAY (Normal playback)
05	PLAY (x1-speed playback using JOG)
0E	REC
11	Cassette ejected
22	FF
26	FWD SEARCH (variable speed) including x2-speed
2E	INSERT REC
43	REW
47	REV SEARCH
4C	AUDIO DUB
6E	INSERT REC (VIDEO + AUDIO)
84	FWD STILL/SLOW
85	REV STILL/SLOW
8F	REC PAUSE
AF	INSERT REC PAUSE
C7	REV SEARCH (x1-speed reverse playback using JOG)
CD	AUDIO DUB PAUSE
EF	INSERT REC (VIDEO + AUDIO) PAUSE
F0	Mechanism being initialized
F1	POWER OFF as a result of EMG
F2	Cassette being inserted
F3	Cassette being ejected
F4	Transition from STOP with pinch roller pressure on to STOP with pinch roller pressure off
F5	Transition from STOP with pinch roller pressure on to PLAY
F6	Transition from STOP with pinch roller pressure on to REC
F7	Cassette type detection SEARCH before FF/REW is being executed
F8	Tape being unloaded
F9	Transition from STOP with pinch roller pressure off to STOP with pinch roller pressure on
FA	Transition from STOP with pinch roller pressure off to FF/REW
FB	Transition from STOP with pinch roller pressure off to REC.P (T.REC,etc.)
FC	Transition from STOP with pinch roller pressure off to cassette type detection SEARCH
FD	Short REV being executed after END sensor on during unloading
FE	Tension loosening being executed after tape loading (STOP with pinch roller pressure on)
FF	Tape being unloaded

### 3- : Mechanism sensor information

[Common table of MN\* and HD\*]

Display	Mechanism sensor information			
	REC safety SW	Start sensor	End sensor	Mechanism position sensor
0-	Tab broken	ON	ON	ON
1-	Tab broken	ON	ON	OFF
2-	Tab broken	ON	OFF	ON
3-	Tab broken	ON	OFF	OFF
4-	Tab present	OFF	ON	ON
5-	Tab present	OFF	ON	OFF
6-	Tab present	OFF	OFF	ON
7-	Tab present	OFF	OFF	OFF
8-	Tab broken	ON	ON	ON
9-	Tab broken	ON	ON	OFF
A-	Tab broken	ON	OFF	ON
B-	Tab broken	ON	OFF	OFF
C-	Tab present	OFF	ON	ON
D-	Tab present	OFF	ON	OFF
E-	Tab present	OFF	OFF	ON
F-	Tab present	OFF	OFF	OFF

Tab broken = 0      Sensor ON = 0      Sensor ON = 0  
 Tab present = 1      sensor OFF = 1      Sensor OFF = 1

### 4 : Mechanism mode position

[Common table of MN\* and HD\*]

Mechanism sensor information	Display	Deck operation mode	
Even number (0, 2, 4, 6, 8, A, C, E)	0	Not established	
	1	EJECT	EJECT position
	2	EJECT EJECT1	Intermodal position
	3	EJECT1	EJECT1 position
	4	EJECT1 EJECT2	Intermodal position
	5	EJECT2	EJECT2 position
	6	EJECT2 ULSTOP	Intermodal position
	7	ULSTOP	ULSTOP position
	8	ULSTOP UPPER	Intermodal position
	9	UPPER	Loading (unloading) tape
	A	UPPER ONSTOP	Intermodal position
	B	ONSTOP	PLAY position
	C	PLAY FWD/SS	Intermodal position
	D	FWD/SS	FWD (FWD Still/Slow) position
	E	FWD/SS REV	Intermodal position
	F	REV	REV (REV Still/Slow) position
Odd number (1, 3, 5, 7, 9, B, D, F)	0	REV OFFSTOP	Intermodal position
	1	OFFSTOP	Pinch roller OFF position
	2	OFFSTOP FFREWB	Intermodal position
	3	FFREWB	FF/REW Brake position
	4	FFREWB FFREW	Intermodal position
5	FFREW	FF/REW position	

#### 5.3.6 EMG detail information <2>

The type of the cassette tape and the cassette tape winding position can be confirmed based on the figure in EMG detail information <2> .

Note:

- EMG detail information <2> is the reference information stored using the remaining tape detection function of the cassette tape. As a result, it may not identify cassette correctly when a special cassette tape is used or when the tape has variable thickness.

### \*5 : Cassette tape type <1>

Display	Cassette tape type <1>
00	Cassette type not identified
16	Large reel/small reel (T-0 to T-15/T-130 to T-210) not classified
82	Small reel, thick tape (T-120) identified/thin tape (T-140) identified
84	Large reel (T-0 to T-60) identified
92	Small reel, thick tape (T-130) identified/thin tape (T-160 to T-210) identified
93	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) not classified
C3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
D3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
E1	C cassette, thick tape (TC-10 to TC-20) identified
E2	Small reel, thick tape (T-0 to T-100) identified
E9	C cassette, thin tape (TC-30 to TC-40) identified
F1	C cassette, thick tape/thin tape (TC-10 to TC-40) not classified

Notes:

- Cassette tape type <1> is identified a few times during mode transition and the identification count is variable depending on the cassette tape type. If an EMG occurs in the middle of identification, the cassette tape type may not be able to be identified.
- If other value than those listed in the above table is displayed, the cassette tape type is not identified.

### \*6 : Cassette tape winding position

The cassette tape winding position at the moment of EMG is displayed by dividing the entire tape (from the beginning to the end) in 21 sections using a hex number from "00" to "14".

00 : End of winding

14 : Beginning of winding

FF : Tape position not identified

### \*7 : Cassette tape type <2> (Winding area)

Display	Cassette tape type <2>	(Reference) Word data (Beginning) (End)
00	Cassette type not identified	
04 - 08	C cassette, thick tape TC-10	(0497 - 0506)(0732 - 0858)
05 - 06	Small reel, thick tape T-20	(05A9 - 0661)
05 - 0C	C cassette, thick tape TC-20P	(0599 - 05FF)(0AA1 - 0C07)
06 - 0C	C cassette, thin tape TC-40	(0623 - 063D)(0C41 - 0CC3)
06 - 0C	C cassette, thin tape TC-30	(0611 - 0638)(0C0C - 0CB2)
07 - 08	Small reel, thick tape T-40	(07CC - 08E5)
09 - 0B	Small reel, thick tape T-60	(09FD - 0B78)
0C - 0D	Small reel, thick tape T-80(DF-160)	(0C20 - 0DFC)
0D - 0F	Small reel, thick tape T-90(DF-180)	(0D31 - 0F3E)
0E - 10	Small reel, thick tape T-100	(0E43 - 107F)
10 - 12	Small reel, thin tape T-140	(10E1 - 120C)
10 - 13	Small reel, thick tape T-120(DF-240)	(1073 - 1313)
11 - 14	Small reel, thick tape T-130	(1185 - 1429)
12 - 14	Small reel, thin tape T-160	(12D3 - 141F)
13 - 14	Small reel, thin tape T-210(DF-420)	(1373 - 14C3)
13 - 14	Small reel, thin tape T-180(DF-360)	(1357 - 14C0)
13 - 14	Small reel, thin tape T-168	(1395 - 14EE)
13 - 14	Small reel, thick tape DF-300	(13A8 - 14CE)
15 - 16	Large reel T-20	(1536 - 1618)
16 - 17	Large reel T-30	(1647 - 175A)
17 - 18	Large reel T-40	(1759 - 189C)
19 - 1B	Large reel T-60	(1989 - 1B2F)

Note:

- The values of cassette tape type <2> in the above table are typical values with representative cassette tapes.

### 5.3.7 EMG detail information <3>

Three deck operation modes preceding the deck operation mode in which the EMG occurs may be confirmed based on the figures in the EMG information detail <3>. For the contents of the displayed information, see the table "Deck operation mode" in section "5.3.5 EMG detail information <1>".

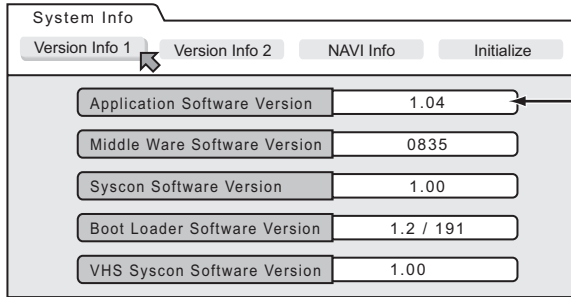
## 5.4 Display function of DVD section

### 5.4.1 Displaying SYSTEM INFO

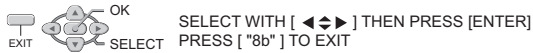
SYSTEM INFO contains information on firmware version of the unit and the mechanism drive, and an initialize execution menu.

- (1) Set the unit to the Jig RCU mode.
- (2) Press VHS/HDD/DVD SELECT button on the unit repeatedly so that the HDD lamp lights up on the unit.
- (3) Transmit "43-8b" from the Jig RCU.
- (4) SYSTEM INFORMATION menu is displayed in the screen.
- (5) To move cursor in SYSTEM INFO, use the "▲", "▼", "◀", and "▶" buttons of a remote control unit attached to product.
- (6) To quit the SYSTEM INFO menu, transmit "43-8b" from the Jig RCU..
- (7) Cancel Jig RCU mode.

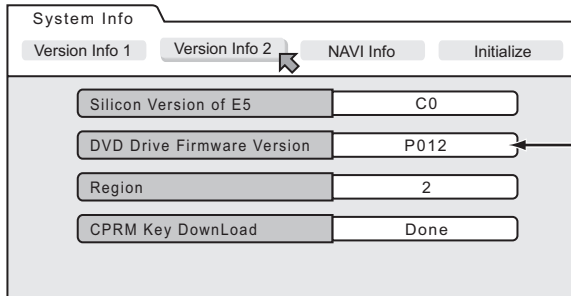
#### The example of a display < Version Info 1 >



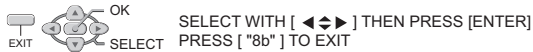
Firmware Version of the unit  
When the Firmware of the unit is updated,  
this part is changed.



#### The example of a display < Version Info 2 >



Firmware Version of the Drive unit  
When the Firmware of the drive unit is updated,  
this part is changed.



#### NOTE:

Items other than the ones described above are not used in service work.

#### 5.4.2 Updating the firmware of the unit

- Firmware update disc supports CD-R media.
- When firmware update is necessary, information is available from the homepage of DIGITAL VIDEO STORAGE CATEGORY, CS group.

##### 5.4.2.1 Creating an update disc

Please check the details of the update disc creation method by JS-NET.

- (1) Down load the update file from JS-NET.
  - (2) Write the update file into CD-R. Pay attention in the following points when writing the update disc.
- Make sure to write in "Disc at Once".
  - Set the file compatibility to "ISO9660 format". (ROMEO, JOLIET are disapproved.)  
If the writing method is not correct, the update results in an error.

##### 5.4.2.2 Update procedure

- There are two methods of updating firmware, using JIG RCU mode <method 1> or not using JIG mode(User update mode) <method 2>.
- Updating can be operated in either method.

##### <Method 1>

- (1) Set to the Jig RCU mode.
- (2) Press VHS/HDD/DVD SELECT button on the unit repeatedly so that the DVD lamp lights up on the unit.
- (3) Load the update disc on the tray, and then close the tray.
- (4) When the disc reading operation is completed, transmit "43-70" with the Jig remote control unit.  
If the update disc is not correct, FDP indicator displays an "ERROR" after transmitting "43-70". Transmit "43-70" once and make the FDP indicator to normal display, and then reload the disc then transmit "43-70" again.
- (5) "UPDATE" is displayed in the FDP indicator, and the FDP indicator changes to "FL UPDATE" afterwards. It takes approx. 2 minutes for the change.
- (6) Remove the disc as the tray is ejected, and then transmit "43-70" with the Jig remote control unit. Then the FDP indicator changes from "UPDATE" to the normal display.
- (7) Close the tray and turn the unit OFF. Pull out the power code from the wall socket, then plug the power cord into the wall socket again.
- (8) When "LOADING" in the FDP indicator disappears, turn the unit ON.
- (9) Display the SYSTEM INFO menu, and check the version of the firmware.
- (10) Cancel the Jig RCU mode.

##### <Method 2>

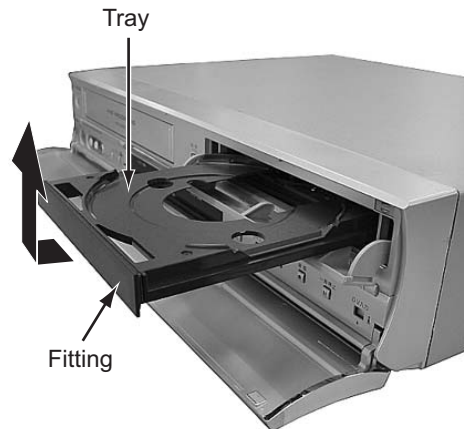
- (1) Turn the power ON. Load the update disc on the tray and close the tray.
- (2) When the disc reading operation is completed, turn the power OFF.
- (3) Keep pressing the "PAUSE" button and the "POWER" button at the same time. (Until FDP indicator changes to "UPDATE").
- (4) In approx. 2 minutes the tray is ejected. Remove the disc and close the tray.
- (5) Reset operation is carried out automatically, and it becomes standby condition.
- (6) Then, display the SYSTEM INFO menu in the Jig RCU mode and check the version.

#### 5.4.3 Updating the firmware of the drive unit

- Firmware update disc supports only DVD-RAM media.
  - When firmware update is necessary, written discs are distributed by DIGITAL VIDEO STORAGE CATEGORY, CS group.
- (1) Turn the unit ON.
  - (2) Press VHS/HDD/DVD SELECT button on the unit repeatedly so that the DVD lamp lights up on the unit.
  - (3) Load the update DVD-RAM disc on the tray and close the tray.
  - (4) "READING" is displayed in the FDP indicator and the update is started.
  - (5) In a short while "READING" in the FDP indicator disappears, open the tray to remove the disc and close the tray.
  - (6) Turn the power OFF and pull out the power code from the wall socket, then plug the power cord into the wall socket again.
  - (7) Set to the Jig RCU mode and check the firmware version of the drive.

#### 5.4.4 Exchanging the fitting

As the fitting that comes with the service drive unit cannot be used, make sure to attach a service fitting when the drive unit is exchanged. The fitting that is removed from the old drive unit can be attached to the new drive unit. The fitting can be removed by pulling upwards while opening out the lower part of the fitting outwards.



#### 5.4.5 Initialization to the factory shipment state

When the initialization is operated, internal information changes as follows. It is essential to obtain the client's permission before the operation.

- All DVD library is all deleted.
- All the DVD initial settings go back to the initial status.
  - (1) Set to the Jig RCU mode.
  - (2) Press VHS/HDD/DVD SELECT button on the unit repeatedly so that the DVD lamp lights up on the unit.
  - (3) Transmit "43-6F" with the Jig remote control unit.
  - (4) FDP indicator displays "FACTORY", and changes to "CHECK OK" after blinking for a short while.
  - (5) Pull out the power code from the wall socket.
  - (6) The Jig RCU mode is forced to cancel at the same time with the initialization, check whether the Jig RCU mode is canceled by plugging the power code into the wall socket again. (The colon ":" in time display should be continuously ON, not blinking.)  
If the Jig RCU mode is not canceled, transmit "43-9D" with Jig remote control unit to cancel the Jig RCU mode.

#### 5.4.6 Setting after the drive unit replacement

When the drive unit is replaced, it is necessary to set a region code. Service drive units for replacement are not set for any region code, and they are in an indefinite condition.

Make sure to set region code after attaching the drive unit to the unit.

**Without the setting of the region code, discs that have regions cannot be played back.**

##### 5.4.6.1 Creating a region setting disc.

Please check the details of the region setting disc creation method by JS-NET.

- (1) Download the region setting file from JS-NET.
- (2) Write the region setting file into CD-R. Pay attention in the following points when writing the file into CD-R.
  - Make sure to write in "Disc at Once".
  - Set the file compatibility to "ISO9660 format". (ROMEO, JOLIET are disapproved).If the writing method is not correct, the normal setting cannot be performed.

##### 5.4.6.2 Setting the region

- (1) Set for the Jig RCU mode.
- (2) Press VHS/HDD/DVD SELECT button on the unit repeatedly so that the DVD lamp lights up on the unit.
- (3) Load the region setting disc on the tray, and then close the tray.
- (4) When the disc reading operation is completed, transmit "43-70" with the Jig remote control unit.
- (5) FDP indicator changes to "UPDATE". Remove the disc as the tray will open for a few seconds.
- (6) Then, check whether the FDP indicator is "REGION 1".
- (7) Transmit "43-70" with the Jig remote control unit. When FDP indicator changes to "OPEN", close the tray.
- (8) Turn the power OFF, and pull out the power code, and then plug the power code in again.
- (9) Cancel the Jig RCU mode.

#### **5.4.7 Booting the system using the CD**

The firmware of this device is stored in the Hard Disk Drive (HDD). If the firmware is collapsed for its contents, [LOADING] is repeatedly displayed on the FDP display of the main unit and the system becomes inoperative. The system operation cannot be resumed even if the AC plug is disconnected from the AC power source.

In such a situation, the operation may be resumed on a temporary basis to normal using a CD that stores the firmware. This causes the firmware in the HDD to be updated and the system may be brought to a normal operation. Refer to the following descriptions for detail.

##### **5.4.7.1 Downloading the firmware from JS-NET to create a booting disk**

###### **NOTE:**

**For details of creating the booting disk, see the instructions provided in the JS-NET web site.**

- (1) Download all the relevant files from the JS-NET and decompress it.
- (2) The file termed "bootup1.blx" will accordingly be created. Copy this file in a root directory of the CD-R.
- (3) Set the track setting to [MODE2 XA] for writing the software, and select [JOLIET] as an exchangeable file name. Be sure to write the disk in [Disk at once] mode.

##### **5.4.7.2 Booting using the Disk**

The following explanation is made assuming the system operation is being unable with [LOADING] repeatedly displayed.

- (1) Disconnect the AC plug and then connect it again. Immediately after this, press and hold the DVD ON/OFF button until the tray comes out.
- (2) Put the booting disk on the tray and close the tray.
- (3) Disconnect the AC plug. Press and hold the STOP button and connect the AC plug.
- (4) Keep the button pressed for 20 seconds and release the button (Timing must be precise).
- (5) [LOADING] will be displayed repeatedly for a while and the system will be brought to the standby state.
- (6) Press the OPEN/CLOSE button to remove the booting disk.
- (7) Turn the system on and confirm that the operation is normal. If so, the system should be properly booted from the CD-R.

##### **5.4.7.3 Updating the firmware after booting with the CD**

By updating the firmware using the CD, the built-in firmware in the HDD will be overwritten, allowing the firmware to be renovated. The system may be resumed to a normal state using this method. Be sure to download the latest version of the update firmware when you attempt to create and use the firmware. For the updating procedures, refer to 5.6.



**JVC**

Victor Company of Japan, Limited

AV & MULTIMEDIA COMPANY DIGITAL VIDEO STORAGE CATEGORY 12, 3-chome, Moriya-cho, kanagawa-ku, Yokohama, kanagawa-prefecture, 221-8528, Japan

(No.YD048)



Printed in Japan  
VPT



# JVC



## DVD / HDD VIDEO RECORDER & VIDEO CASSETTE RECORDER

# DR-MX1S

**FIRST**  
See  
**AUTO SET UP**  
on **PAGE 17**



**HDD**

**COMPACT**  
**disc**  
SUPER VIDEO

**DVD**  
VIDEO  
RAM/RW

**DOLBY**  
DIGITAL

**dts**  
DIGITAL OUT

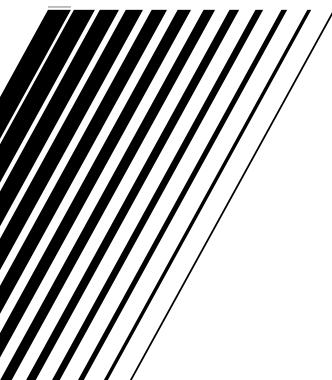
**i** *Hi-Fi*

**VHS**  
PAL

**SQP/B**

**SHOWVIEW**<sup>TM</sup>  
DELUXE

## INSTRUCTIONS



LPT0976-001B

# EN

## Safety Precautions

The rating plate and the safety caution are on the rear of the unit.

### WARNING: DANGEROUS VOLTAGE INSIDE

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.**

### CAUTION:

A UNIT IS A CLASS 1 LASER PRODUCT. HOWEVER THIS UNIT USES A VISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE THE UNIT CORRECTLY AS INSTRUCTED.

WHEN THIS UNIT IS PLUGGED INTO THE WALL OUTLET, DO NOT PLACE YOUR EYES CLOSE TO THE OPENING OF THE DISC TRAY AND OTHER OPENINGS TO LOOK INTO THE INSIDE OF THIS UNIT.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

### IMPORTANT:

- Please read the various precautions on page 2 and 3 before installing or operating the unit.
- It should be noted that it may be unlawful to re-record pre-recorded tapes, DVDs, or discs without the consent of the owner of copyright in the sound or video recording, broadcast or cable programme and in any literary, dramatic, musical, or artistic work embodied therein.

### CAUTION:

- When you are not using the unit for a long period of time, it is recommended that you disconnect the power cord from the mains outlet.
- Dangerous voltage inside. Refer internal servicing to qualified service personnel. To prevent electric shock or fire hazard, remove the power cord from the mains outlet prior to connecting or disconnecting any signal lead or aerial.

CLASS 1 LASER PRODUCT

REPRODUCTION OF LABELS

WARNING LABEL INSIDE OF THE UNIT

### CAUTION

VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.

### ADVARSEL

SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSAETTELSE FOR STRÅLING SE IKKE IND I STRÅLEN - HELLER IKKE MED OPTISKE INSTRUMENTER.

### ADVARSEL

SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNDGÅ EKSPONERING FOR STRÅLEN STIRR IKKE INN I STRÅLEN ELLER SE DIREKTE MED OPTISKE INSTRUMENTER.

### VARO!

AVATTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ TUIJOTA SÄTEESEEN ÄLÄKÄ KATSO SITÄ OPTISEN LAITTEEN LÄPI.

### WARNING

SYNLIG OCH OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD. STRÅLEN ÄR FARLIG STIRRA EJ IN I STRÅLEN OCH BETRAKTA EJ STRÅLEN MED OPTISKA INSTRUMENT.



- Manufactured under licence from Dolby Laboratories. "Dolby" and double-D symbol are trademarks of Dolby Laboratories.
- "DTS" and "DTS DIGITAL OUT" are trademarks of Digital Theater Systems, Inc.
- **SHOWVIEW** is a trademark of Gemstar Development Corporation. The **SHOWVIEW** system is manufactured under license from Gemstar Development Corporation.
- This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing users only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

**For Italy:**

"It is declared that this product, brand JVC, conforms to the Ministry Decree n. 548 of 28 Aug.'95 published in the Official Gazette of the Italian Republic n. 301 of 28 Dec.'95"

The STANDBY/ON  $\cup$ /I button does not completely shut off mains power from the unit, but switches operating current on and off. " $\cup$ " shows electrical power standby and "I" shows ON.

When the equipment is installed in a cabinet or a shelf, make sure that it has sufficient space on all sides to allow for ventilation (10 cm or more on both sides, on top and at the rear).

When discarding batteries, environmental problems must be considered and the local rules or laws governing the disposal of these batteries must be followed strictly.

**Failure to heed the following precautions may result in damage to the unit, remote control or disc.**

1. **DO NOT place the unit** —
  - in an environment prone to extreme temperatures or humidity.
  - in direct sunlight.
  - in a dusty environment.
  - in an environment where strong magnetic fields are generated.
  - on a surface that is unstable or subject to vibration.
2. **DO NOT block the unit's ventilation openings or holes.** (If the ventilation openings or holes are blocked by a newspaper or cloth, etc., the heat may not be able to get out.)
3. **DO NOT place heavy objects on the unit or remote control.**
4. **DO NOT place anything which might spill on top of the unit or remote control.** (If water or liquid is allowed to enter this equipment, fire or electric shock may be caused.)
5. **DO NOT expose the apparatus to dripping or splashing.**
6. **DO NOT use this equipment in a bathroom or places with water. Also DO NOT place any containers filled with water or liquids (such as cosmetics or medicines, flower vases, potted plants, cups, etc.) on top of this unit.**
7. **DO NOT place any naked flame sources, such as lighted candles, on the apparatus.**
8. **AVOID violent shocks to the unit during transport.**

**MOISTURE CONDENSATION**

Moisture in the air will condense on the unit when you move it from a cold place to a warm place, or under extremely humid conditions—just as water droplets form on the surface of a glass filled with cold liquid. In conditions where condensation may occur, disconnect the unit's power plug from the wall and keep it disconnected for a few hours to let the moisture dry, then turn on the unit.

**ATTENTION:****To mobile phone users:**

Using a mobile phone in the vicinity of the unit may cause picture vibration on the TV screen or change the screen to a blue back display.

**On placing the unit:**

Some TVs or other appliances generate strong magnetic fields. Do not place such appliances on top of the unit as it may cause picture disturbance.

**When moving the product:**

Press  $\cup$ /I to turn off the power, and wait at least 30 seconds before unplugging the power cord. Then, wait at least 2 minutes before moving the product.

**HOW TO USE THIS INSTRUCTION MANUAL**




- All major sections and subsections are listed in the Table Of Contents on page 4. Use this when searching for information on a specific procedure or feature.
- The Index on pages 10 – 13 illustrates the controls and connections on the front and rear panel, the front display panel and the remote control.
- The list of terms on page 99 lists frequently-used terms, and the number of the page on which they are used or explained in the manual.
- The  $\text{E}$  mark signals a reference to another page for instructions or related information.
- Operation buttons necessary for the various procedures are clearly indicated through the use of illustrations at the beginning of each major section.

<b>SAFETY FIRST</b>	<b>2</b>	<b>TIMER RECORDING ON VHS DECK</b>	<b>54</b>
Safety Precautions .....	2	<b>SHOWVIEW™</b> Timer Programming .....	54
<b>DISC INFORMATION</b>	<b>5</b>	Manual Timer Programming .....	55
About Discs .....	5	<b>NAVIGATION ON HDD/DVD DECK</b>	<b>57</b>
<b>INDEX</b>	<b>10</b>	Library Database Navigation .....	57
<b>INSTALLING YOUR NEW UNIT</b>	<b>16</b>	Edit Original Information .....	58
Basic Connections .....	16	Edit Play List Information .....	60
<b>INITIAL SETTINGS</b>	<b>17</b>	Edit Library Information .....	62
Auto Set Up .....	17	Playback With MP3/WMA/JPEG Navigation .....	63
Preset Download .....	18	<b>EDITING</b>	<b>64</b>
Language .....	20	Dubbing .....	64
Monitor Set .....	21	DV Dubbing (HDD & DVD Deck Only) .....	68
<b>SAT CONTROL SET</b>	<b>22</b>	Edit From A Camcorder .....	70
Satellite Receiver Control Setting (HDD & DVD Deck Only) .....	22	Edit To Or From Another Recorder .....	71
<b>BASIC OPERATIONS ON DVD DECK</b>	<b>24</b>	Output/Input Set .....	72
Basic Playback .....	24	Digital Audio Dubbing .....	73
Playback Features .....	25	<b>REMOTE CONTROL</b>	<b>74</b>
Using The On-screen Bar .....	29	Remote Control Functions .....	74
Parental Lock .....	33	<b>SYSTEM CONNECTIONS</b>	<b>76</b>
Basic Recording .....	34	Connecting To A Satellite Receiver .....	76
Recording Features .....	35	Connecting To A Dolby Digital Decoder Or An Amplifier With Built-in DTS .....	77
<b>BASIC OPERATIONS ON HDD DECK</b>	<b>37</b>	Connecting/Using A Decoder (HDD & DVD Deck Only) .....	77
Basic Recording .....	37	<b>SUBSIDIARY SETTINGS</b>	<b>78</b>
Recording Features .....	38	Mode Set (HDD & DVD Deck Only) .....	78
Basic Playback .....	39	Mode Set (VHS Deck Only) .....	81
Playback Features .....	39	Tray Lock (DVD Deck Only) .....	82
<b>BASIC OPERATIONS ON VHS DECK</b>	<b>41</b>	<b>SHOWVIEW™</b> System Setup .....	83
Basic Playback .....	41	Tuner Set .....	83
Playback Features .....	42	Clock Set .....	86
Basic Recording .....	44	Format A Disc (DVD Deck Only) .....	87
Recording Features .....	44	Finalise A Disc (DVD Deck Only) .....	88
<b>LIVE MEMORY PLAYBACK ON HDD/DVD DECK</b>	<b>46</b>	Scan Mode Set .....	89
Live Memory Playback .....	46	<b>TROUBLESHOOTING</b>	<b>90</b>
<b>TIMER RECORDING ON HDD/DVD DECK</b>	<b>49</b>	<b>SPECIFICATIONS</b>	<b>94</b>
<b>SHOWVIEW™</b> Timer Programming .....	49	<b>APPENDIX</b>	<b>95</b>
Manual Timer Programming .....	51	<b>LIST OF TERMS</b>	<b>99</b>
Automatic Satellite Programme Recording (HDD Deck Only) .....	53		

## About Discs

### Recordable/Playable Discs

You can use discs with the following logos for recording and playback.

 <p><b>DVD-RAM</b> 12 cm: 4.7 GB/9.4 GB 8 cm: 1.4 GB/2.8 GB Ver. 2.0/2x speed Ver. 2.1/1x – 3x speed</p>	 <p><b>DVD-RW</b> 12 cm: 4.7 GB/9.4 GB Ver. 1.1/1x – 2x speed (Video mode/VR mode) Ver. 1.2/4x speed (Video mode/VR mode)</p>
 <p><b>DVD-R</b> 12 cm: 4.7 GB 8 cm: 1.4 GB Ver. 2.0/1x – 4x/8x speed (Video mode)</p>	

- The above table is based on the information as of October 2004.
- Recording and playback may not be performed depending on the characteristics and condition of the disc used, leading to unsatisfactory results. Using discs manufactured by JVC is recommended since they have been tested to be compatible with this unit.

### DVD-RAM Discs

It is only possible to use discs which conform with DVD-RAM standard Version 2.0 or 2.1.

- It is impossible to record on DVD-RAM discs which do not conform to this standard. If you use a disc formatted under a different standard version, format it on this unit before use.
- It may not be possible to record, play back, edit or dub a DVD-RAM disc even if it conforms to the standard if it was recorded or edited on the devices from other manufacturers or on a PC, or if it has far too many titles, or if there is very little available capacity remaining on the disc.
- DVD-RAM discs recorded on this unit cannot be played back on an incompatible DVD player.
- It is possible to record copy-once programmes of digital broadcasts only onto 4.7/9.4 GB DVD-RAM discs (2.8 GB DVD-RAM discs are not compatible).
- Although this unit supports 3x speed DVD-RAM discs, dubbing cannot be achieved at 3x speed.

### DVD-R/RW Discs

It is only possible to use DVD-R discs which conform with DVD-R standard Version 2.0.

- Although this unit supports 8x speed DVD-R and 4x speed DVD-RW discs, dubbing cannot be achieved at 8x speed and 4x speed respectively.

When a DVD-R/RW disc (Video mode) is finalised (see pg. 88), it can be played back on a standard DVD player as a DVD VIDEO disc.

When a DVD-RW disc (VR mode) is finalised (see pg. 88), it can be played back on a standard DVD player compatible with the VR mode of DVD-RW discs.

### Before finalising —

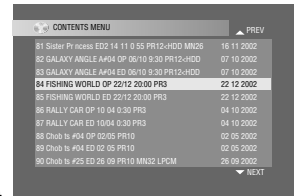
— it is possible to record on unrecorded areas of the disc, edit the disc title and programme titles, and delete programmes.

- It is impossible to record or edit DVD-R/RW discs recorded on other devices even if they have not been finalised.
- It is impossible to overwrite recorded areas of DVD-R discs.
- Available recording capacity does not increase even if a recorded programme is deleted from a DVD-R disc.

### After finalising —

After a DVD-R/RW disc (Video mode) has been finalised, it is possible to play back the recorded programmes (video and/or audio) on a standard DVD video player as a DVD VIDEO disc.

- Edited titles are displayed as the “DVD menu” in video mode.
- It is impossible to record, edit or delete the data either in video mode or in VR mode.
- Either in video mode or in VR mode, although the disc can be played back on DVD players from other manufacturers, sometimes it may not be possible to play back depending on the disc and recording conditions.
- It is impossible to record on CD-R/RW or DVD-R discs used for authoring.
- It is impossible to record onto DVD-R/RW (Video mode) discs broadcasts that allow you to copy once. The copy once programmes can only be recorded onto DVD-RW discs formatted in VR mode.




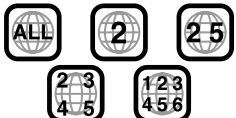






### NOTE:

The following may result if you play back a DVD-R disc recorded on another unit.

- The disc does not play.
- A mosaic pattern (block noise) appears on the screen.
- Video or audio may be dropped out.
- The unit stops during playback.

## Discs For Playback Only

You can use discs with the following logos for playback only.

 <p><b>DVD VIDEO</b></p> <p>(example of region code indications)</p> 	<p><b>Video CD/Super Video CD</b></p>  
 <p><b>Audio CD</b> CD-DA files</p>	 <p><b>CD-R</b> CD-DA/JPEG/ MP3 files</p>
 <p><b>CD-RW</b> CD-DA/JPEG/ MP3 files</p>	 <p><b>CD-ROM</b> JPEG/MP3 files</p>

- Playback may not be performed depending on the characteristics and condition of the disc used.
- DTS Audio CDs can also be played back (An optional DTS decoder is required).
- MP3 and JPEG discs can be played back on this unit only when they have been recorded in the ISO9660 or Joliet format and finalised.
- JPEG files that can be played back on this unit must conform to JFIF/Baseline process, and the maximum resolution of a JPEG file is 2,812 x 2,112 pixels.
- CD-R/RW discs recorded in music CD format need to be finalised to play back on this unit.
- Operation and audio quality of this unit are not guaranteed for discs that do not conform to the Compact Disc specification (CD-DA).  
Before you play back a CD, check for the CD logo and read the notes on the package to confirm that it conforms to the Compact Disc specification.
- Depending on the intentions of the author of the software, recording conditions of DVD discs and Video CD/SVCD discs may be restricted. Since this unit plays back discs according to the intentions of the author of the software as indicated on the disc, some functions may not operate as commanded.
- When switching from the first layer to the second layer of double-layered DVD VIDEO discs, the image and sound may be momentarily distorted. This is not a malfunction.
- DVD-AUDIO discs compatible with DVD video players can be played.
- Super Audio CDs (SACD) compatible with conventional CD players can be played.

## Unplayable Discs

The following types of discs cannot be played using this unit. Do not attempt to play back any kind of disc that is damaged (cracked, warped, or repaired with adhesive tape) or discs in unusual shapes (heart-shaped, octagonal, or other forms). If such discs are accidentally played back, it may cause noise that can lead to speaker damage.

- CD-ROM discs (including PHOTO-CD and CD-G)
- Discs recorded in Packet Write (UDF) format
- 1.3-GB double density CDs (DDCD)
- High density CDs (HDCD)

**The following discs also cannot be played back.**

- Discs of a region number other than "2"
- DVD-RAM (2.6 GB/5.2 GB)
- DVD-RAM (TYPE1)

## Region Number

The world is divided into 6 regions for DVD VIDEO discs. DVD VIDEO discs are assigned a region number to indicate which region they may be played back in. A disc cannot be played back on this unit unless the region number of the disc matches that of the unit. The region number for this unit is "2". Only discs whose region number includes "2" or "ALL" can be played back such as shown below.

**Examples of DVD VIDEO labels which can be played back using this unit.**



## Marks of discs in this instruction manual

	Allows operation with a DVD-RAM disc.		Allows operation with a Video CD/Super Video CD (SVCD) disc.
	Allows operation with a DVD-R disc.		Allows operation with an Audio CD disc.
	Allows operation with a DVD-RW disc.		Allows operation with a disc including MP3 files.
	Allows operation with a DVD VIDEO disc.		Allows operation with a disc including JPEG files.

## Recording Medium And Format

### DVD-RAM

- Recording and erasing can be performed as many times as possible on a disc.
- Editing can be performed after recording, such as deleting unwanted parts.
- While recording, it is possible not only to start playback of a programme currently being recorded, but also to watch another programme previously recorded.

### DVD-RW (VR mode)

- Recording and erasing can be performed as many times as possible on a disc.
- Editing can be performed after recording, such as deleting unwanted parts.

### DVD-RW (Video mode)

- Can be played back on other DVD players.
- New recording can be performed by erasing all the data on a disc once played back.

### DVD-R

- Can be played back on other DVD players.
- Suitable when keeping a recorded disc for a long time.

## File Structure Of Discs

### DVD VIDEO

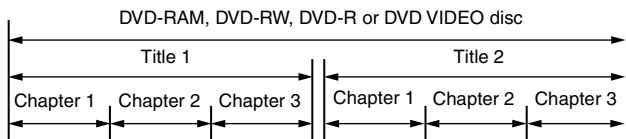
Typically, DVD VIDEO discs are made up of larger units called "titles". Each title has a number (title number) that can be used to select desired titles. Titles are further divided into units called "chapters". Each chapter has a number (chapter number) that can also be used to select desired chapters. Note that some discs are not divided into titles and chapters.

#### When you record a programme on a DVD-RAM/RW (VR mode) disc

A single recording session results in a single title (a single chapter). However, chapter marks are automatically inserted when recording is paused, or audio changes from monaural to stereo due to commercial breaks, etc. It is also possible to insert chapter marks at desired locations during playback. (pg. 27)

#### When you record a programme on a DVD-R/RW (Video mode) disc

A single recording session results in a single title (a single chapter). However, chapter marks are automatically inserted when recording is paused, or audio changes due to commercial breaks, etc. It is also possible to insert chapter marks at desired locations during either recording or playback. Once the disc has been finalised, these chapter marks are deleted and new chapter marks are assigned automatically approximately every 5 minutes.

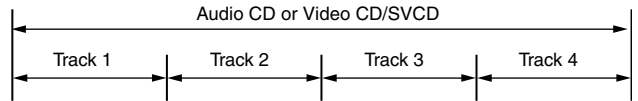


- In Video mode, even before finalising, it is impossible to perform editing operations other than changing the disc name and/or title names and deleting programmes and/or titles.
- After finalising, it is impossible to perform editing operations.

### Audio CD/Video CD/SVCD

Typically, Audio CD discs are divided into separate tracks each containing one song. Each track is assigned a number. For example, the third track is Track 3. The same is true for Video CD/SVCD discs.

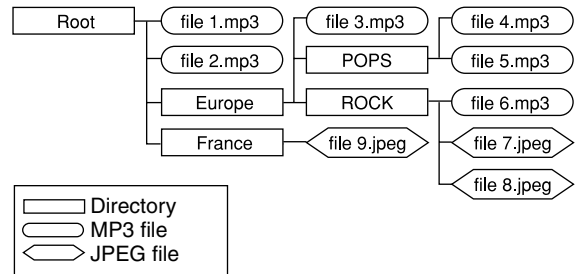
However, some discs are not divided into tracks.



### JPEG/MP3 Disc (CD-R/RW/ROM)

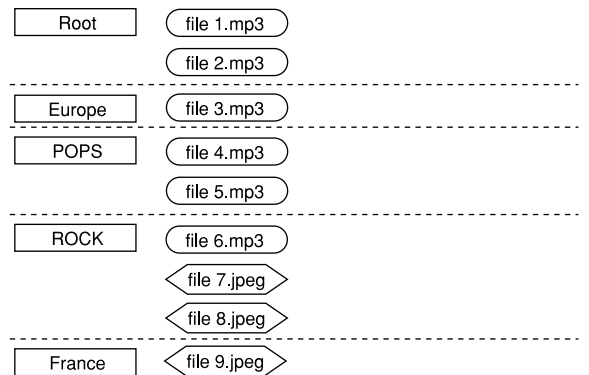
MP3/JPEG files put in directories nested in several levels on a disc will be organized as if they were put in single level directories (groups) by the MP3/JPEG Navigation of this unit. (pg. 63)

#### File structure of a disc before starting the MP3/JPEG Navigation



#### File structure of the disc after starting the MP3/JPEG Navigation

Files are automatically grouped as follows and displayed on the MP3/JPEG Navigation screen. Data is displayed in the alphabetical order of file name. Files are grouped based on roots.



- This unit can recognise up to 9 hierarchies including directories and files. Also, it can recognise up to 250 files in each group, and up to 99 groups on a disc.

### NOTES:

- **Video CD/SVCD discs that support Playback Control (PBC)**  
The contents of a disc are recorded into several hierarchies, and played back according to the instructions on the screen while navigating through the hierarchies. It is also possible to playback recorded tracks consecutively without activating the PBC function even when playing a PBC-compatible disc. (pg. 28)
- **Regarding the contents recorded on discs**  
Some files may not be played back depending on the file types and other factors.

## DVD VIDEO Marks

Sometimes marks are printed on a DVD disc and/or on its packaging to indicate information regarding the contents and functions of the disc. Check the marks indicating the contents and functions of the disc. Note, however, that in some cases a disc may not include a mark even for a function it supports.

### Marks related to video

	Number of subtitles		Number of angles
	Recorded under the standard 4:3 aspect ratio		Screen includes black bands at the top and the bottom of image which has a standard 4:3 aspect ratio (letter box)
	Video playback is in Wide video mode (16:9) on wide televisions, but in letter box on televisions with standard 4:3 aspect ratio.		
	Video playback is in Wide video mode (16:9) on wide televisions, but pan and scan is used on televisions with standard 4:3 aspect ratio (either the left or right side of the image is cut-out).		

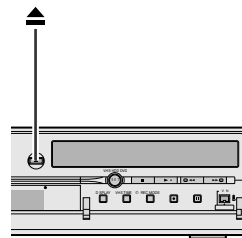
### Marks related to audio

	Number of audio tracks
	Dolby Digital mark It has been developed by Dolby Laboratories as a digital surround system.
	DTS (Digital Theater Systems) You can enjoy DTS audio if you connect an amplifier with a built-in DTS decoder to the DIGITAL OUT connector of the unit.

## Placing A Disc

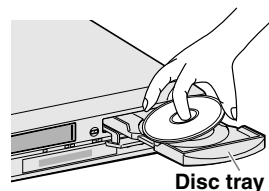
### Opening the disc tray

Press to open the disc tray.



- Pressing the button again closes the disc tray.
- Use the button to open and close the disc tray.
- Do not block the disc tray with your hand while it is opening or closing as this may result in hardware failure.
- Do not place unplayable discs or any object other than a disc on the disc tray.
- Do not press down strongly on the disc tray or place any heavy objects on it.

### Discs without cartridges



Disc tray

Place the disc on the disc tray with the label side facing up. Since disc size changes depending on the disc to be played back, be sure to correctly align the disc with the grooves for its size. If the disc is not in its groove, it may be scratched or otherwise damaged. To insert an 8 cm disc, place it according to the inner groove.

### DVD-RAM discs contained in cartridges

#### Double-sided discs:

Remove the disc from the cartridge. Align the disc with the grooves on the disc tray as shown in the illustration and insert with the side you wish to play back or record facing down. If you insert the disc with "Side A" facing down, programmes are recorded on the side A.

#### Single-sided discs:

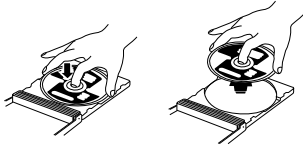
Remove the disc from the cartridge. Align the disc with the grooves on the disc tray as shown in the illustration and insert with the label side facing up.



## Care And Handling Of Discs

### How to handle discs

When handling a disc, do not touch the surface of the disc. Since discs are made of plastic, they are easily damaged. If a disc gets dirty, dusty, scratched or warped, the images and sound will not be picked up correctly, and such a disc may cause the unit to malfunction.



### Label side

Do not damage the label side, stick paper to or use any adhesives on its surface.

### Recording side

Make sure that discs are not scratched and dirty on the recording side before use. Scratches and dirt on the recording side of a disc may hinder proper playback and recording. Also be careful that a DVD-RAM disc may get scratched or dirt when removed from cartridge then put back in after use.

### Storage

Make sure that discs are kept in their cases. If discs are piled on top of one another without their protective cases, they can be damaged. Do not put discs in a location where they may be exposed to direct sunlight, or in a place where the humidity or temperature is high. Avoid leaving discs in your car!

### Maintenance of discs

If there are fingerprints or other dirt adhering to a disc, wipe with a soft dry cloth, moving from the centre outwards.

If a disc is difficult to clean, wipe with a cloth moistened with water. Never use record cleaners, petrol, alcohol or any anti-static agents.

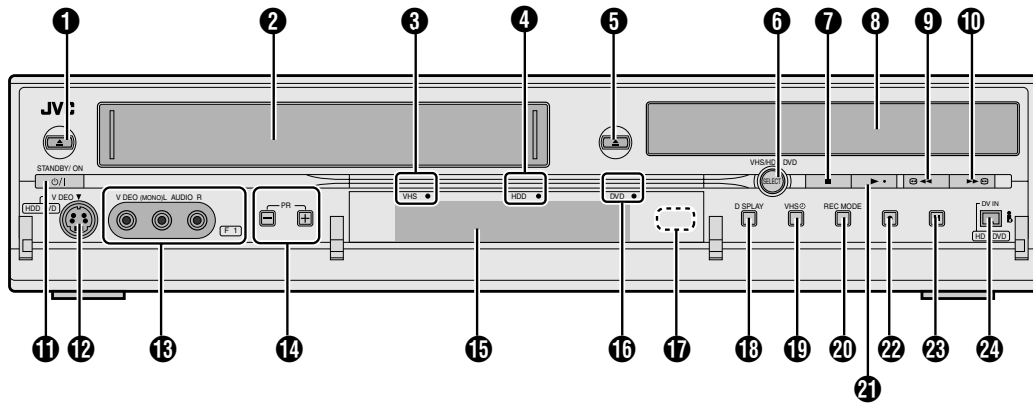


### CAUTION:

Sometimes during playback, noise may appear or images may be garbled. This is sometimes due to the disc. (It may not be up to industry standards.)

These symptoms are caused by the discs, not by the malfunction of the unit.

## Front View

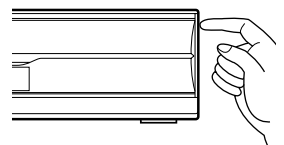


- ❶ Eject Button (▲) (VHS) ☞ pg. 41
- ❷ Cassette Loading Slot
- ❸ VHS Lamp (VHS) ☞ pg. 41  
VHS Recording Lamp (●) ☞ pg. 44
- ❹ HDD Lamp (HDD) ☞ pg. 20, 37  
HDD Recording Lamp (●) ☞ pg. 37
- ❺ Open/Close Button (▲) (DVD) ☞ pg. 8
- ❻ VHS/HDD/DVD Select Button (VHS/HDD/DVD SELECT)  
☞ pg. 24, 37, 41
  - This button will not function during navigation mode or set up mode.
- ❼ Stop Button (■) ☞ pg. 24, 39
- ❽ Disc Tray
- ❾ Reverse Search Button (◀◀) (HDD & DVD deck) ☞ pg. 25, 47  
Rewind Button (◀◀) (VHS deck) ☞ pg. 41, 42
- ❿ Forward Search Button (▶▶) (HDD & DVD deck) ☞ pg. 25, 47  
Fast Forward Button (▶▶) (VHS deck) ☞ pg. 41, 42

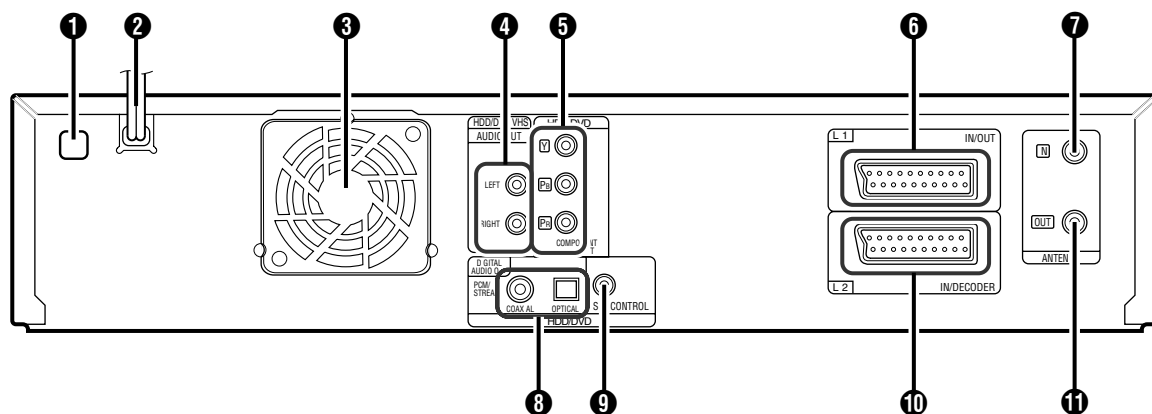
- ⓫ Standby/On Button (STANDBY/ON ⏻/⏻)
- ⓬ S-video Input Connector [S-VIDEO] (HDD & DVD deck)  
☞ pg. 70
- ⓭ Video/Audio Input Connectors [VIDEO/AUDIO ((MONO) L/R)] ☞ pg. 70
- ⓮ Programme Buttons (PR +/-) ☞ pg. 34, 37, 43, 44
- ⓯ Front Display Panel ☞ pg. 12
- ⓰ DVD Lamp (DVD) ☞ pg. 20, 24  
DVD Recording Lamp (●) ☞ pg. 34
- ⓱ Infrared Beam Receiving Window
- ⓲ Display Button (DISPLAY) ☞ pg. 27, 35
- ⓳ VHS Timer Button (VHS ⏸) ☞ pg. 54
- ⓴ Recording Mode Button (REC MODE) ☞ pg. 34, 37, 44
- ⓵ Play Button (▶) ☞ pg. 24, 39
- ⓶ Record Button (●) ☞ pg. 34, 37
- ⓷ Pause Button (⏸) ☞ pg. 24, 39
- ⓸ DV Input connector [DV IN (i,\*)] (HDD & DVD deck only)  
☞ pg. 68

\* i (i.Link) refers to the IEEE1394-1995 industry specification and extensions thereof. The i logo is used for products compliant with the i.Link standard.

To access covered connectors, pull and open the connector cover.



## Rear View

**1** Region Number Label [pg. 6](#)**2** AC Power Cord [pg. 16](#)**3** Cooling Fan

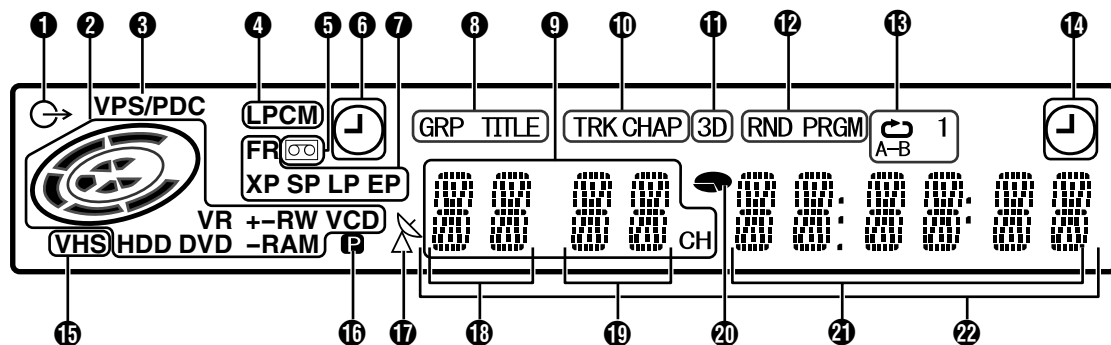
- This prevents the temperature from rising inside the unit. Do not remove it.
- Install the unit so as not to block the area around the fan.
- The unit may become hot when it is turned off, as the cooling fan on the rear of the unit is not activated. However, the cooling fan may be activated in the following cases;
  - In the Automatic Satellite Programme Recording standby mode ([pg. 53](#)), slightly before the starting time of VPS/PDC recording ([pg. 50](#)).
  - If you connect the decoder or satellite receiver to [L-2 IN/DECODER], and if “L-2 SELECT” is set to “DECODER”, “SAT VIDEO” or “SAT S-VIDEO”. ([pg. 72](#))
  - When “JUST CLOCK” is set to “ON” ([pg. 86](#)) (Set “JUST CLOCK” to “OFF” if you mind the noise of the fan.)

**4** Audio Output Connectors [AUDIO OUT (LEFT/RIGHT)] [pg. 73, 77](#)**5** Component Video Output Connectors [COMPONENT VIDEO OUT (Y/Pb/Pr)] [pg. 16](#)

- This component video output enables you to watch the images on the VHS deck in Progressive scan mode, refer to “VHS Progressive Scan” ([pg. 43](#)).

**6** L-1 Input/Output Connector [L-1 IN/OUT] [pg. 16, 71, 76, 77](#)**7** Antenna Input Connector [ANTENNA IN] [pg. 16](#)**8** Digital Audio Output Connectors [DIGITAL AUDIO OUT (OPTICAL/COAXIAL)] (HDD & DVD deck only) [pg. 73, 77](#)**9** Satellite Control Connector [SAT CONTROL] (HDD & DVD deck only) [pg. 22](#)**10** L-2 Input/Decoder Connector [L-2 IN/DECODER] [pg. 22, 71, 76, 77](#)**11** Antenna Output Connector [ANTENNA OUT] [pg. 16](#)

## Front Display Panel

**1 VIDEO Indicator (Globe icon) pg. 35, 38, 44**

Lights when VIDEO mode is selected by pressing TV AV/VIDEO. Lights off when TV mode is selected.

**2 Disc Type Indicator**

When a disc is loaded, the type of the disc is indicated.

**Disc Status Indicator**

When a disc is running, the disc marks rotate.

During High-Speed Search:

Rotate faster than normal playback.

During Slow Motion:

Rotate slower than normal playback.

While recording:

Inner red ring lights in the same way as normal playback.

During Instant Timer Recording (ITR), inner red ring slowly blinks.

While paused:

Disc marks blink when either recording or playing back.

While stopped:

Disc marks all light.

While resume stopped:

Disc marks all blink.

While the disc tray opened:

Disc marks all light out.

No disc on the disc tray:

Disc marks all light out.

**VR Mode Indicator (VR) pg. 87**

Lights when a DVD-RW disc is formatted in VR mode.

**3 VPS/PDC Indicator pg. 50**

Appears when checking if the station being received transmits a VPS/PDC signal.

**4 Linear PCM Indicator (LPCM)**

Lights when "XP MODE REC AUDIO" is set to "LINEAR PCM" (pg. 79) for recording with HDD, DVD-RAM, DVD-R and DVD-RW discs, and when Linear PCM audio is played.

**5 Cassette Loaded Mark (Cassette icon)**

Indicates the present of a cassette in the VHS deck.

Lights when a cassette is loaded into the VHS deck. Blinks when the end of the tape has been reached during timer recording, or when the unit is in timer recording standby mode with a cassette without record safety tab inserted.

**6 VHS Timer Indicator (Clock icon) pg. 54**

Lights when the VHS deck is in the timer recording standby mode or when timer recording is in progress.

**7 Recording Mode Indicator (XP/SP/LP/EP/FR) pg. 34**

Blinks when recording mode is being set.

While "FR" is blinking, the left 3 digits of the Multi Display (18) indicate setting values ranging from "60" to "480". After the value has been set, only "FR" lights.

**8 Group/Title Indicator (GRP/TITLE)**

"GRP" or "TITLE" lights depending on a disc loaded while the left 2 digits of the Multi Display (18) indicate the numbers explained below.

"GRP": Total number of groups or group number being played back are displayed on the Multi Display.

"TITLE": Total number of titles or title number being played back are displayed on the Multi Display.

**9 Channel Indicator**

Indicates the channel received.

**10 Track/Chapter Indicator (TRK/CHAP)**

"TRK" or "CHAP" lights depending on a disc loaded while the 3rd and 4th digits from the left of the Multi Display (19) indicate the numbers explained below.

"TRK": Total number of tracks or track number being played back are displayed on the Multi Display.

"CHAP": Chapter number being played back are displayed on the Multi Display.

**11 Simulated Surround Effect Indicator (3D) pg. 31**

Lights when a simulated surround effect is set to "3D-ON" on the on-screen bar.

**12 Random/Programme Playback Mode Indicator (RND/PRGM) pg. 32**

"RND": Lights when Random Playback mode is set.

"PRGM": Lights when Programme Playback mode is set.

**13 Repeat Mode Indicator (Repeat icon/1/A-B) pg. 30**

Select Repeat Playback mode on the on-screen bar.

"Repeat icon": Whole disc is played back repeatedly.

"1": A single title/chapter/track is played back repeatedly.

"A-B": The selected part (A-B) is played back repeatedly.

No display: Repeat Playback mode is off.

**14 VPS/PDC Recording Indicator pg. 50**

Lights when VPS/PDC recording function is activated.

**15 VHS Indicator**

Lights when VHS mode has been selected, during recording or when tapes recorded in VHS format are played back.

**16 Video Output Indicator (Progressive icon) pg. 43, 89**

No display: Indicates that interlace mode is engaged.

Progressive icon: Indicates that progressive mode is engaged.

(Example) Progressive icon lights when video output mode is in progressive mode.

**17 Automatic Satellite Programme Recording Indicator pg. 53**

Lights when the HDD deck is in the Auto Satellite Programme Recording standby mode.

**18 Group/Title Number Display****19 Track/Chapter Number Display****20 Remaining Time/Elapsed Time Indicator pg. 27, 35**

Lights when remaining time of HDD, DVD-RAM, DVD-R and DVD-RW discs is displayed, and lights out when elapsed time is displayed.

The right 6 digits of the Multi Display (21) indicate elapsed or remaining time of each track.

No display: Indicates elapsed time of the disc.

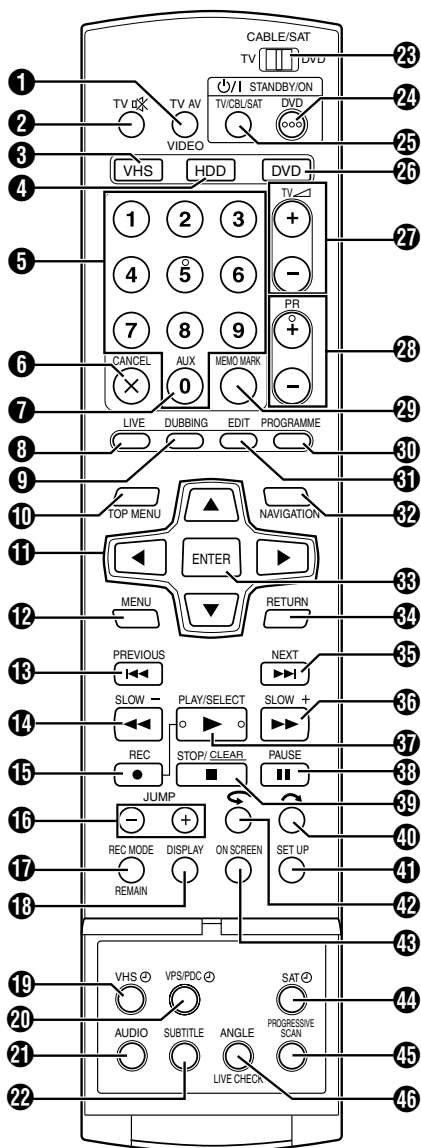
Displayed: Indicates remaining time of the disc.

**21 Remaining Time/Elapsed Time Display pg. 27, 35****22 Multi Display**

Displays clock, received channel, elapsed time, and remaining time.

Also displays status of the unit (NO DISC/OPEN/CLOSE/READING).

# Remote Control



- 1 TV AV/VIDEO Button pg. 35, 38, 44
- 2 TV Muting Button (TV ) pg. 74
- 3 VHS Button\* pg. 41  
\* This button will not function during navigation mode or set up mode.
- 4 HDD Button\* pg. 37  
\* This button will not function during navigation mode or set up mode.
- 5 Number Keys pg. 34, 37
- 6 Cancel Button (CANCEL ) pg. 32
- 7 Auxiliary Button (AUX) pg. 51, 83
- 8 Live Button (LIVE) pg. 47
- 9 Dubbing Button (DUBBING) pg. 64
- 10 Top Menu Button (TOP MENU) pg. 25
- 11 Buttons pg. 17
- 12 Menu Button (MENU) pg. 25
- 13 Reverse Skip Button () pg. 25, 47, 40  
Previous Button (PREVIOUS) pg. 28
- 14 Reverse Search Button () (HDD & DVD deck) pg. 25, 47  
Rewind Button () (VHS deck) pg. 41  
Reverse Slow Button (SLOW -) pg. 26
- 15 Record Button () pg. 34, 37
- 16 Jump Button (JUMP +/-) pg. 40

- 17 Recording Mode Button (REC MODE) pg. 34, 37  
Remain Button (REMAIN) pg. 27, 35
- 18 Display Button (DISPLAY) pg. 27, 35
- 19 VHS Timer Button (VHS ) pg. 54
- 20 VPS/PDC Recording Button (VPS/PDC ) pg. 50
- 21 Audio Button (AUDIO) pg. 28
- 22 Subtitle Button (SUBTITLE) pg. 28
- 23 TV/CABLE/SAT/DVD switch pg. 20
- 24 DVD STANDBY/ON Button (DVD ) pg. 28
- 25 TV/CBL/SAT STANDBY/ON Button (TV/CBL/SAT ) pg. 74
- 26 DVD Button\* pg. 24  
\* This button will not function during navigation mode or set up mode.
- 27 TV Volume Buttons (TV ) pg. 74
- 28 Programme Buttons (PR +/-) pg. 34, 74
- 29 Memo Button (MEMO) pg. 58, 61  
Mark Button (MARK) pg. 27
- 30 Programming Button (PROGRAMME) pg. 49, 51, 52
- 31 Edit Button (EDIT) pg. 58
- 32 Navigation Button (NAVIGATION) pg. 57
- 33 Enter Button (ENTER) pg. 20
- 34 Return Button (RETURN) pg. 28, 30, 49
- 35 Forward Skip Button () pg. 25, 47  
Next Button (NEXT) pg. 28
- 36 Forward Search Button () (HDD & DVD deck) pg. 25, 47  
Fast Forward Button () (VHS deck) pg. 41  
Forward Slow Button (SLOW +) pg. 26
- 37 Play Button () pg. 24, 39  
Select Button (SELECT) pg. 63
- 38 Pause Button () pg. 24, 39
- 39 Stop Button () pg. 24, 39  
Clear Button (CLEAR) pg. 32
- 40 Skip Search Button () pg. 26, 47
- 41 Set Up Button (SET UP) pg. 20
- 42 One Touch Replay Button () pg. 47
- 43 On-Screen Button (ON SCREEN) pg. 14, 29
- 44 Automatic Satellite Programme Recording Button (SAT ) pg. 53
- 45 Progressive Scan Button (PROGRESSIVE SCAN) pg. 43, 89
- 46 Angle Button (ANGLE) (DVD deck only) pg. 27  
Live Check Button (LIVE CHECK) pg. 47

## How To Use

Before use, insert two R6 size batteries into the remote control with the polarity (+ and -) matched correctly as indicated on the battery compartment or on the lid.

The remote control can operate most of your unit's functions, as well as basic functions of TV sets and satellite receivers and other brands. pg. 74)

- Point the remote control toward the receiving window.
- The maximum operating distance of the remote control is about 8 m.

## NOTE:

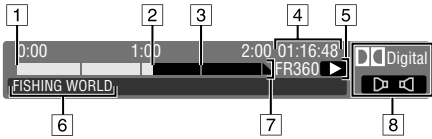
If the remote control doesn't work properly, remove its batteries, wait a short time, replace the batteries and then try again.

## On-Screen Display (HDD & DVD deck)

When "SUPERIMPOSE" is set to "AUTO" and **ON SCREEN** on the remote control is pressed, various operational indicators appear on the TV screen. To clear the operational indicators, press **ON SCREEN** twice.

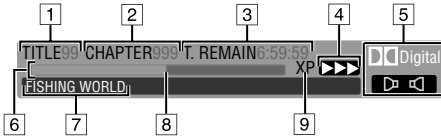
### When playing back a recorded title

#### HDD



- 1 Title start
- 2 Current playback point
- 3 Title end
- 4 Elapsed playing time
- 5 Play mode
- 6 Name of title currently being played back
- 7 Time scale (This title is an hour and a half long.)
- 8 Audio mode

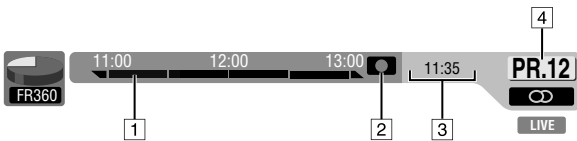
#### DVD



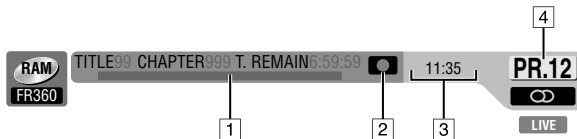
- 1 Playback title number
- 2 Playback chapter number
- 3 Disc remaining time
- 4 Current status (playback)
- 5 Audio mode
- 6 Bar meter
- 7 Name of title (or play list) currently being played back
- 8 Current playback point
- 9 Recorded mode

### When recording

#### HDD



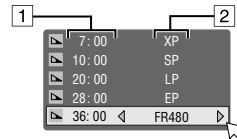
#### DVD



- 1 Recording point
- 2 Current status (recording)
- 3 Current time
- 4 Recording channel number

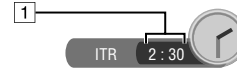
### When pressing REC MODE

(Appears for eight seconds.)



- 1 Remaining disc time for each recording speed
- 2 Recording speed

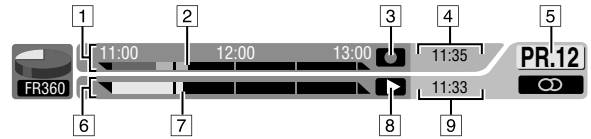
### When pressing ● during recording



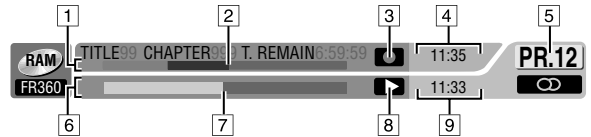
- 1 Recording time for Instant Timer Recording (ITR) mode

### When using Live Memory playback

#### HDD



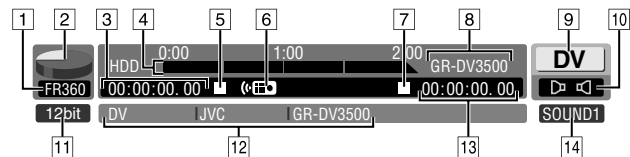
#### DVD



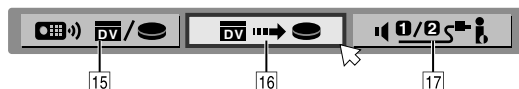
- 1 Time scale for recording (HDD deck)  
Bar meter for recording (DVD deck)
- 2 Current recording point
- 3 Recording mode
- 4 Current time
- 5 Current playback channel position number
- 6 Time scale for Live Memory Playback (HDD deck)  
Bar meter for Live Memory Playback (DVD deck)
- 7 Current playback point
- 8 Live Memory playback mode
- 9 Current playback time

## On-Screen Display (DV Dubbing)

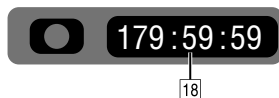
When capturing images from the external DV equipment



- 1 Recording speed
- 2 HDD capacity graph
- 3 HDD time counter
- 4 Recording time scale
- 5 HDD mode
- 6 Remote control mode
- 7 Connected DV equipment mode
- 8 Connected DV equipment model information
- 9 Input channel
- 10 Sound mode
- 11 Sound input bit-rate\*  
\* Indicates the sound bit-rate of the connected DV equipment
- 12 Connected DV equipment information\*  
\* Maker name and model name, etc. may not appear depending on the connected equipment.
- 13 Time counter for the connected DV equipment
- 14 Sound monitor mode



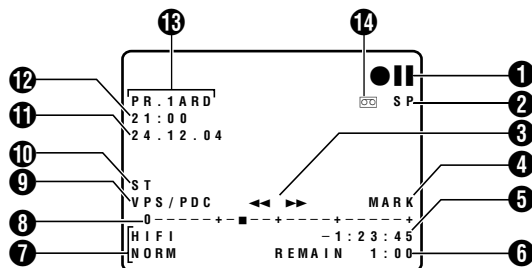
- 15 Remote control switch
- 16 Auto capture button
- 17 Sound monitor switch



- 18 Elapsed recording time

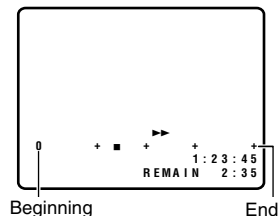
## On-Screen Display (VHS deck)

When "O.S.D." is set to "AUTO" and **ON SCREEN** on the remote control is pressed, various operational indicators appear on the TV screen. To clear the operational indicators, press **ON SCREEN** again.



- 1 Operation Mode Indicators
- 2 Tape Speed (SP/LP)
- 3 Tape Direction
- 4 Index Mark Indicator (MARK) [pg. 42](#)
- 5 Counter Display
- 6 Tape Remaining Time Indicator [pg. 45](#)
- 7 Audio Mode Display [pg. 43](#)
- 8 VPS/PDC Indicator [pg. 55](#)
- 9 Type of Broadcast [pg. 45](#)
- 10 Current Day/Month/Year
- 11 Clock Display
- 12 Channel Position Number and Station Name/Auxiliary Input Indicator (L-1, L-2, F-1 or SAT\*)  
\* When "L-2 SELECT" is set to "SAT" ([pg. 72](#)), "SAT" appears instead of "L-2".
- 13 "Cassette Loaded" Mark
- 14 "Cassette Loaded" Mark

The tape position indicator appears on the TV screen when you press **◀** or **▶** from the Stop mode or perform an Index Search. ([pg. 43](#)) The position of "■" in relation to "0" (Beginning) or "+" (End) shows you where you are on the tape.

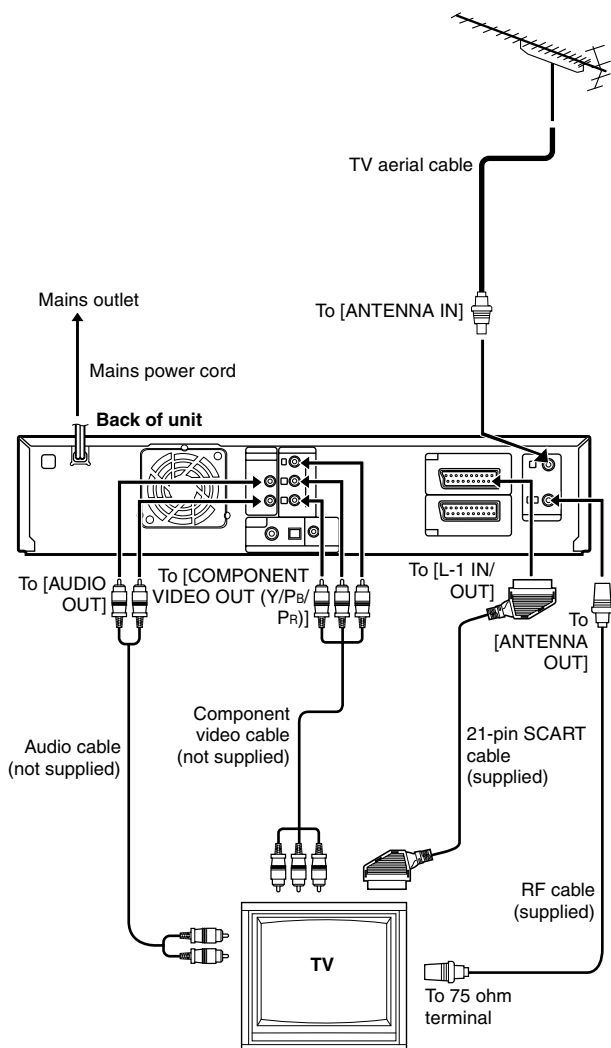


**NOTE:**

Depending on the type of tape being used, the tape position indicator may not appear correctly.

- 9 VPS/PDC Indicator [pg. 55](#)
- 10 Type of Broadcast [pg. 45](#)
- 11 Current Day/Month/Year
- 12 Clock Display
- 13 Channel Position Number and Station Name/Auxiliary Input Indicator (L-1, L-2, F-1 or SAT\*)  
\* When "L-2 SELECT" is set to "SAT" ([pg. 72](#)), "SAT" appears instead of "L-2".
- 14 "Cassette Loaded" Mark

## Basic Connections



It's essential that your unit be properly connected.

### ATTENTION:

- Your TV must have a 21-pin AV input connector (SCART) for the basic connection to the unit.
- Connect the AC plug only after all connections to the TV has been completed.

THESE STEPS MUST BE COMPLETED BEFORE ANY VIDEO OPERATION CAN BE PERFORMED.

- 1 Make sure the package contains all of the accessories listed in "SPECIFICATIONS" (☞ pg. 94).
- 2 Place the unit on a stable, horizontal surface.
- 3 Connect the unit to a TV depending on the TV and cables you use.

### Basic Connection

To connect to a TV with 21-pin SCART input connector —

- 1 Disconnect the TV aerial cable from the TV.
- 2 Connect the TV aerial cable to the [ANTENNA IN] connector on the rear panel of the unit.
- 3 Connect the [ANTENNA OUT] connector on the rear panel of the unit and the TV's aerial connector with the supplied RF cable.
- 4 Connect the [L-1 IN/OUT] connector on the rear panel of the unit and the TV's 21-pin SCART connector with a supplied 21-pin SCART cable.
  - The [L-1 IN/OUT] connector accepts and delivers either a composite signal (regular video signal), Y/C signal or RGB signal.
  - Set your TV to the VIDEO (or AV), Y/C, or RGB mode according to the type of your TV's SCART connector.

### Component Video Connection

To connect to TV's component video input connectors —

- 1 Perform 1 – 3 in "Basic Connection".
- 2 Connect the unit's [COMPONENT VIDEO OUT (Y/Pb/Pr)] connectors to the TV's component video input connectors.
- 3 Connect the unit's [AUDIO OUT] connectors to the TV's AUDIO input connectors.
  - You can obtain high-quality component video pictures.
  - If your TV is not stereo-capable, use the unit's [AUDIO OUT] connectors to connect to an audio amplifier for Hi-Fi stereo sound reproduction.
  - By using the component video connection, you can view the images in the progressive mode. For switching to the progressive mode, refer to "Scan Mode Set" (☞ pg. 89).
  - You can also watch the images on the VHS deck in Progressive scan mode via the component video output, refer to "VHS Progressive Scan" (☞ pg. 43).

### NOTE:

Select an appropriate option of "L-1 OUTPUT" as follows (☞ pg. 72):

When your TV's SCART connector accepts:	Set "L-1 OUTPUT" to:
Composite signals	"SCART VIDEO"
Y/C signal (separated luminance (brightness) and chrominance (colour) signals)	"SCART S-VIDEO"
RGB signal	"SCART RGB"
Component video signal	"COMPONENT"

When the setting selected is not in accordance with the TV connected and depending on the type of appliance connected to the unit, the correct picture will not appear.

- 4 Plug the end of the mains power cord into a mains outlet.
  - "LOADING" blinks on the front display panel when the AC plug of the mains power cord is connected into a mains outlet and it takes approximately 50 seconds for the unit to be turned on. This is not a malfunction.



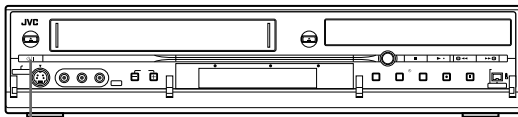
## Auto Set Up

### Auto Channel Set/Auto Clock Set/Auto Guide Programme Number Set

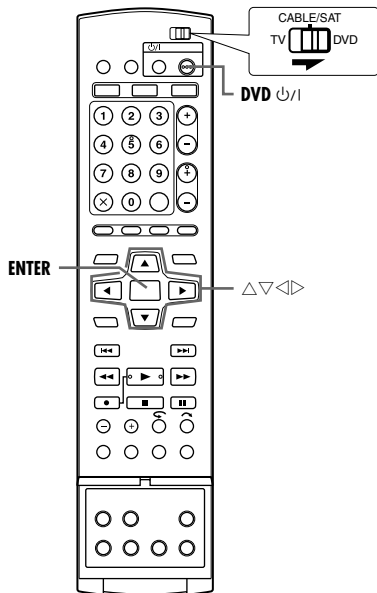
After the  $\text{O/I}$  button on the unit (or DVD  $\text{O/I}$  on the remote control) is pressed for the first time to turn on the unit, by simply selecting your country\*, the Auto Set Up function sets the tuner channels, clock\*\* and Guide Programme numbers automatically.

\* If you live in Belgium (BELGIUM) or Switzerland (SUISSE), you also need to select your language.

\*\* If you live in Hungary (MAGYARORSZÁG), Czech Republic (ČESKÁ REPUBLIKA), Poland (POLSKA) or other countries in Eastern Europe (OTHER EASTERN), set the clock manually.



$\text{O/I}$



#### Before starting, make sure of the following:

- The TV aerial cable should be connected to the unit.
- The unit's mains power cord should be connected to a mains outlet.
- Turn on the TV and select the AV mode.
- Slide the TV/CABLE/SAT/DVD switch to DVD.

**1** Press  $\text{O/I}$  on the unit or DVD  $\text{O/I}$  on the remote control to turn on the unit. The Country Set display appears on the TV screen.

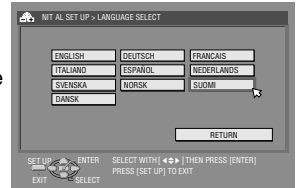
**2** Press  $\Delta\nabla\leftarrow\rightarrow$  to select your country's name, then press **ENTER**. The Language Set display appears on the TV screen.



#### NOTES:

- If you have selected "BELGIUM" or "SUISSE", go to step 3.
- If you have selected "MAGYARORSZÁG", "ČESKÁ REPUBLIKA", "POLSKA" or "OTHER EASTERN", press **ENTER**. The Clock Set screen appears. Set the clock manually (pg. 86), then go to step 4.
- If you have selected any other country name, go to step 4.

**3** Press  $\Delta\nabla\leftarrow\rightarrow$  to select the language of your choice, then press **ENTER**. The AUTO SET/T-V LINK display appears on the TV screen.



**4** Press  $\leftarrow\rightarrow$  to select "AUTO SET", then press **ENTER**. The AUTO SET screen will appear.

- When AUTO SET is completed, "SCAN COMPLETED" appears on the TV screen. After selecting "OK", "PLEASE WAIT..." appears on the screen while channel data is being transferred to the VHS deck. During this period (approximately 80 seconds), the VHS deck is not operable. It will exit the AUTO SET mode once "PLEASE WAIT..." disappears from the screen.



#### ATTENTION:

"AUTO" blinks on the front display panel; do NOT press any button on the unit or remote control until the front display panel shows "--:--:" as illustrated on page 19.

- When you have connected the unit to a TV offering T-V Link via a fully-wired 21-pin SCART cable (pg. 16) and the TV is turned on, the unit automatically performs the Preset Download (pg. 18) even if you select "AUTO SET" for Auto Set Up function.

#### ATTENTION:

Once you have performed Auto Set Up, even if the unit's memory backup has expired, all the stored stations and their Guide Programme numbers remain in the unit's memory and the unit will not perform Auto Set Up again. The unit only performs Auto Clock Set when the unit is turned on.

If you have moved to a different area, perform each setting as required.

- Tuner setting (pg. 83)
- Clock setting (pg. 86)

If a new station starts broadcasting in your area, perform tuner setting. (pg. 83)

#### NOTES:

- In areas where no TV station transmits a PDC (Programme Delivery Control) signal, the unit can perform neither Auto Clock Set nor Auto Guide Programme Number Set.
- If there is a power cut, or if you press  $\text{O/I}$  or **SET UP** while Auto Set Up is in progress, Auto Set Up will be interrupted; be sure to turn off the unit power once and try again from step 1.
- Auto Clock Set may not function properly depending on the reception condition.
- If no sound accompanies the picture or the audio sounds unnatural on some channels that have been stored by Auto Set Up, the TV system setting for those channels may be incorrect. Select the appropriate TV system for those channels. (pg. 85, "INFORMATION")

After "Auto Set Up" is completed, perform "Monitor Set" on page 21.

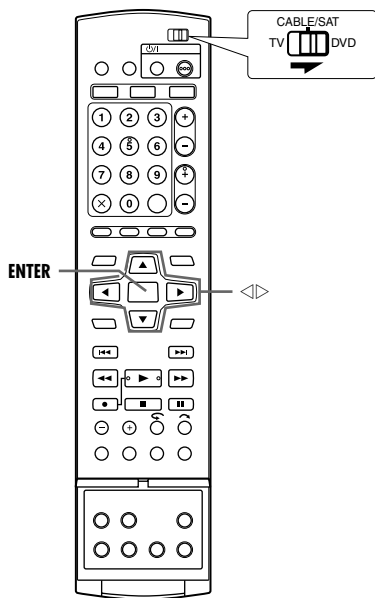
## Preset Download

### Auto Channel Set by Downloading from TV/Auto Clock Set/Auto Guide Programme Number Set

#### ATTENTION:

You can use this function only with a TV offering T-V Link, etc.\*  
Be sure to use a fully-wired 21-pin SCART cable.

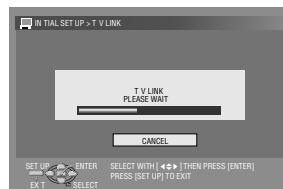
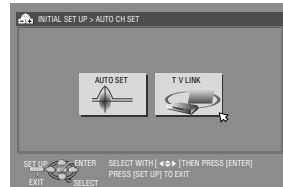
\* Compatible with TVs offering T-V Link, EasyLink, Megalogic, SMARTLINK, Q-Link or DATA LOGIC via a fully-wired 21-pin SCART cable. The degree of compatibility and available functions may differ by system.



If you have connected the unit to your TV via a 21-pin SCART cable (pg. 16), the unit will automatically perform Preset Download instead of the Auto Set Up in step 4 on page 17. After downloading, the unit sets the clock and Guide Programme numbers automatically.

- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Perform steps 1 to 3 of "Auto Set Up" (pg. 17) before continuing.

- 1 Press **<>** to select "T-V LINK" and press **ENTER**. The T-V LINK screen will appear.
  - When T-V LINK is completed, "SCAN COMPLETED" appears on the TV screen. After selecting "OK", "PLEASE WAIT..." appears on the screen while channel data is being transferred to the VHS deck. During this period (approximately 80 seconds), the VHS deck is not operable. It will exit the T-V LINK mode once "PLEASE WAIT..." disappears from the screen.



#### ATTENTION:

Preset positions on the front display panel increase from "PR 1"; do NOT press any button on the unit or remote control until the front display panel shows clock time, "PR 1" or " --:-- " as illustrated on page 19.

- If you press any button on the unit or remote control while downloading is in progress, it will be interrupted.

#### NOTES:

- For details, refer to the instruction manual of your TV.
- In the area where no TV station transmits a PDC (Programme Delivery Control) signal, the unit can perform neither Auto Clock Set nor Auto Guide Programme Number Set.
- If there is a power cut, or if you press **⏻** or **SET UP** while downloading or set up is in progress, it will be interrupted; be sure to turn off the unit power once and try again from the beginning.
- Auto Clock Set may not function properly depending on the reception condition.
- On this unit, the characters available for station names (ID) are A-Z, 0-9, -, \*, + and \_ (space). Some names of downloaded stations may differ from those of your TV. (pg. 85)

After "Preset Download" is completed, perform "Monitor Set" on page 21.

## Results Of Auto Set Up/Preset Download Appearing On The Front Display Panel

If both Auto Channel Set and Auto Clock Set have been performed successfully, the correct current time is displayed.

PR 1 20:00

Turn on the TV and select its AV mode, then make sure that all necessary stations have been stored in the unit's memory by using the **PR +/-** button(s).

- If station names (ID – pg. 98) have also been stored in the unit's memory, the station name will be displayed at the top right corner of the TV screen for about 5 seconds when the unit is tuned to a different station.
- If you want to set the tuner manually such as to add or skip channels, to change channel positions, or to set or change station names, see pages 84 – 85.

If Auto Channel Set has succeeded but Auto Clock Set has not, "PR 1" (channel position) is displayed.

PR 1 -:-:-

OR

If both Auto Channel Set and Auto Clock Set have failed, "-:-:-" is displayed.

- 1 Turn on the TV and select its AV mode, then make sure that all necessary stations have been stored in the unit's memory by using the **PR +/-** button(s).
  - If station names (ID – pg. 98) have also been stored in the unit's memory, the station name will be displayed at the top right corner of the TV screen for about 5 seconds when the unit is tuned to a different station.
  - If you want to set the tuner manually such as to add or skip channels, to change channel positions, or to set or change station names, see pages 84 – 85.
- 2 Perform "Clock Set" (pg. 86).

### ATTENTION:

After making sure the cables are connected properly, turn off the unit's power once, then turn the unit's power back on again. The Country Set display appears on the TV screen; perform "Auto Set Up" (pg. 17) or "Preset Download" (pg. 18) again.

### IMPORTANT:

- To check if the Guide Programme numbers have been set correctly, perform the **SHOWVIEW** Timer Programming. (pg. 49, 54)
- In certain reception conditions, station names may not be stored correctly, and auto Guide Programme Number Set may not work properly. If the Guide Programme numbers are not set properly when you timer-record a TV programme using the **SHOWVIEW** system, the unit will record a TV programme of a different station. When programming the timer using the **SHOWVIEW** system, be sure to check the desired channel is selected correctly. (pg. 49, 54)
- Your unit memorizes all detected stations even if reception of some of them is poor. You can delete those stations with an unacceptable picture. (pg. 85, "Delete A Channel")

## INFORMATION

### Language for the on-screen display

Auto Set Up also selects the language automatically for the on-screen display depending on the Country setting you have made in step 2 on page 17 (unless you have selected "BELGIUM" or "SUISSE"), as shown below.

SUOMI → SUOMI	ITALIA → ITALIANO
PORTUGAL → ENGLISH	MAGYARORSZÁG → ENGLISH
DEUTSCHLAND → DEUTSCH	ESPAÑA → ESPAÑOL
POLSKA → ENGLISH	NEDERLAND → NEDERLANDS
NORGE → NORSK	GREECE → ENGLISH
SVERIGE → SVENSKA	OTHER WESTERN → ENGLISH
DANMARK → DANSK	
ÖSTERREICH → DEUTSCH	OTHER EASTERN → ENGLISH
ČESKÁ REPUBLIKA → ENGLISH	

If you want to change the language setting manually, see "On-screen Language Set" (pg. 20).

### Just Clock

Your unit is equipped with the Just Clock function which provides accurate time keeping through automatic adjustments at regular intervals, by reading data from a PDC signal. If you want to take advantage of this function, simply set it to "ON". (pg. 86)

## T-V Link Functions

When you connect the unit to your TV via a fully-wired 21-pin SCART cable (pg. 16), the following functions are available. You can use these functions only with a TV offering T-V Link, etc.\*

For details, refer to the instruction manual of your TV.

\* Compatible with TVs offering T-V Link, EasyLink, Megalogic, SMARTLINK, Q-Link or DATA LOGIC via a fully-wired 21-pin SCART cable. The degree of compatibility and available functions may differ by system.

### TV Auto Power On

The TV will turn on and be set to its AV mode automatically whenever you start playback.

For details, refer to the instruction manual of your TV.

### Unit Auto Standby

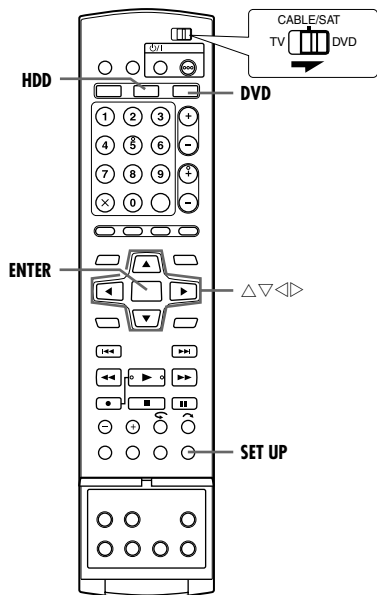
You can use your TV's remote control to turn off the unit. For details, refer to the instruction manual of your TV.

### Direct Rec

You can easily start recording the programme that you are watching on your TV. When you use this function, set "DIRECT REC" to "ON". (pg. 79)

## Language

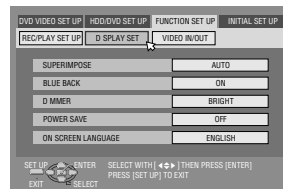
- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.



## On-screen Language Set

This unit offers you the choice to view on-screen messages in 10 different languages.

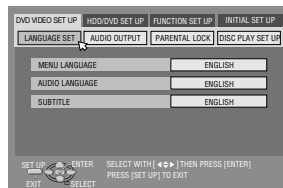
- 1 Press **HDD** or **DVD** so that the HDD or DVD lamp lights up on the unit.
- 2 Press **SET UP** to access the Main Menu screen.
- 3 Press  $\triangleleft \triangleright$  to select "FUNCTION SET UP", then press  $\nabla$ .
- 4 Press  $\triangleleft \triangleright$  to select "DISPLAY SET", then press  $\nabla$ .
- 5 Press  $\triangle \nabla$  to select "ON SCREEN LANGUAGE", then press **ENTER**.
- 6 Press  $\triangle \nabla$  to select your desired language, then press **ENTER**.
- 7 Press **SET UP** to complete the setting.



## Menu/Audio/Subtitle Language Set (DVD deck only)

Some DVD discs contain the DVD menu display, audio and subtitles in multiple languages. With these discs, you can set the default language as you like.

- The procedure shows how to set "MENU LANGUAGE" as an example.
- 1 Press **DVD** so that the DVD lamp lights up on the unit.
  - 2 Press **SET UP** to access the Main Menu screen.
  - 3 Press  $\triangleleft \triangleright$  to select "DVD VIDEO SET UP", then press  $\nabla$ .
  - 4 Press  $\triangleleft \triangleright$  to select "LANGUAGE SET", then press  $\nabla$ .
  - 5 Press  $\triangle \nabla$  to select "MENU LANGUAGE", then press **ENTER**.
  - 6 Press  $\triangle \nabla$  to select your desired language, then press **ENTER**.
    - See "Language Code List" (pg. 95).
  - 7 Press **SET UP** to complete the setting.



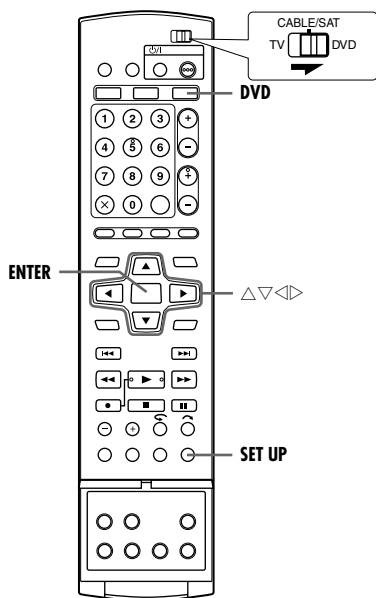
### NOTE:

When the selected language is not available on the disc, the disc's default menu language is played back.

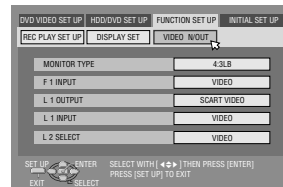
## Monitor Set

You can select the monitor type depending on the TV used when you play back DVD VIDEO discs recorded for wide-screen TVs.

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.



- 1 Press **DVD** so that the DVD lamp lights up on the unit.
- 2 Press **SET UP** to access the Main Menu screen.
  - You cannot set the monitor type during recording or playback.
- 3 Press **<D>** to select "FUNCTION SET UP", then press **∇**.
- 4 Press **<D>** to select "VIDEO IN/OUT", then press **∇**.
- 5 Press **∇** to select "MONITOR TYPE", then press **ENTER**.
- 6 Press **∇** to select the desired option, then press **ENTER**.
- 7 Press **SET UP** to complete the setting.



\* The **boldface** settings below indicate the settings at your purchase.

### ■ MONITOR TYPE – **4:3LB** / 4:3PS / 16:9AUTO / 16:9FIX

#### **4:3LB** (Letter Box conversion):

Select this when the aspect ratio of your TV is 4:3 (conventional TV). While viewing a wide screen picture, the black bars appear on the top and the bottom of the screen.

#### 4:3PS (Pan&Scan):

Select this when the aspect ratio of your TV is 4:3 (conventional TV). While viewing a wide screen picture, the black bars do not appear; however, the left and right edges of the pictures will not be shown on the screen.

#### 16:9AUTO (Wide television conversion):

Select this when the aspect ratio of your TV is 16:9 (wide TV).

#### 16:9FIX (Wide television conversion):

Select this when the aspect ratio of your TV is fixed to 16:9 (wide TV). The unit automatically adjusts the screen width of the output signal correctly when playing back a picture whose aspect ratio is 4:3.

### Pan&Scan/Letter Box

In general, DVD VIDEO disc are produced for a wide-screen TV with 16:9 aspect ratio.

Material with this ratio will not fit to a TV with 4:3 aspect ratio. There are two styles to display the image, "Pan&Scan" (PS) and "Letter Box" (LB).

#### Pan&Scan

The right and left side of the image are cut off. The image fills the screen.

- The picture will be shown in the "4:3LB" mode depending on the disc even if the "4:3PS" mode is selected.

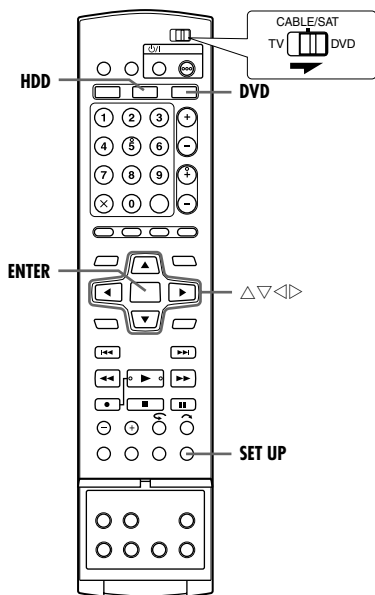
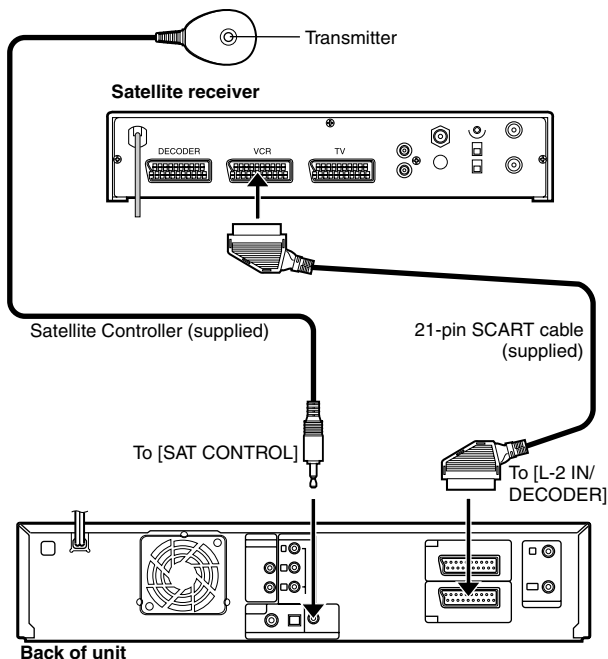
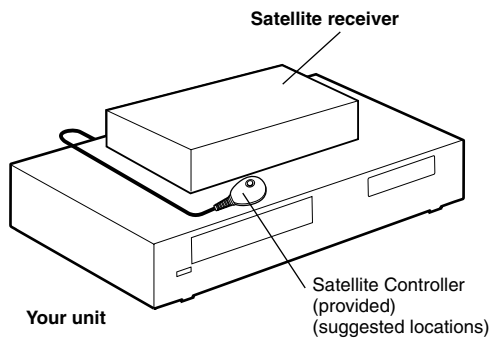


#### Letter Box

Black bands appear at the top and bottom of the image. The image itself appears in 16:9 aspect ratio.



# Satellite Receiver Control Setting (HDD & DVD Deck Only)



The following procedure is required if you receive satellite channels through a satellite receiver. Approximately 20 seconds before the **SHOWVIEW** timer programming (pg. 49) or Manual Timer programming (pg. 51) starts, the unit sets its input mode to “L-2” and automatically switches the satellite receiver’s channels using the provided Satellite Controller.

## Installing Satellite Controller

- 1 Place the Satellite Controller so that the path between its transmitter and the satellite receiver’s remote sensor is unobstructed.
- 2 Fix securely using the adhesive strip attached on the back of the Satellite Controller.
- 3 Be sure to connect the unit’s [L-2 IN/DECODER] connector to the satellite receiver’s 21-pin SCART connector.

### NOTE:

When connecting your satellite receiver, refer to its instruction manual.

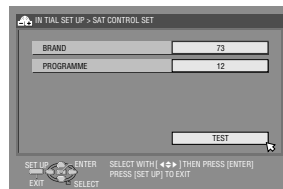
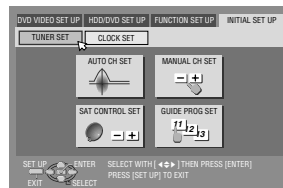
- 4 Connect the Satellite Controller to the [SAT CONTROL] connector on the rear panel.

## Setting Satellite Receiver’s Brand And Channel

After installation, set the satellite receiver’s brand and channel correctly; otherwise, the Satellite Controller cannot work correctly.

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.

- 1 Turn on the satellite receiver’s power.
- 2 Press **HDD** or **DVD** so that the HDD or DVD lamp lights up on the unit.
- 3 Press **SET UP** to access the Main Menu screen.
- 4 Press  $\triangleleft \triangleright$  to select “INITIAL SET UP”, then press  $\nabla$ .
- 5 Press  $\triangleleft \triangleright$  to select “TUNER SET”, then press  $\nabla$ .
- 6 Press  $\triangle \nabla \triangleleft \triangleright$  to select “SAT CONTROL SET”, then press **ENTER**.
- 7 Press  $\triangle \nabla$  to select “BRAND”, then press **ENTER**.
- 8 Press  $\triangle \nabla$  to select the brand code from the list on page 23, then press **ENTER**.
  - If the unit is in playback or recording mode, you cannot set the brand code.
- 9 Press  $\triangle \nabla$  to select “PROGRAMME”, then press **ENTER**.
- 10 Press  $\triangle \nabla$  to select one of the channel positions on the satellite receiver, then press **ENTER**.
  - You can select the channel position between 1 to 999.
- 11 Press  $\triangle \nabla$  to select “TEST”, then press **ENTER**. The unit enters the Test mode.



**12** Check the result of the test.

**If the satellite receiver's channel number has been changed to the same one as you set in step 10**

Press <D> to select "YES", then press **ENTER** to finish the Sat Control Set mode.

**If the satellite receiver's channel number has not been changed correctly**

Press <D> to select "NO", then press **ENTER**. Then perform the procedure again from step 7.

BRAND NAME	CODE
JVC	73
AMSTRAD	60, 61, 62, 63, 92
ASTON	97
CANAL SATELLITE	81
CANAL +	81
D-BOX	85
ECHOSTAR (VIA DIGITAL)	82
FINLUX	68
FORCE	89
GALAXIS	88
GRUNDIG	64, 65, 102
HIRSCHMANN	64, 78, 99
HUMAX	88
ITT NOKIA	68
JERROLD	75
KATHREIN	70, 71, 96
LUXOR	68
MASCOM	93
MASPRO	70
NOKIA	87, 94
PACE	65, 67, 74, 86, 92, 97
PANASONIC	74, 92
PHILIPS	66, 84, 101
RADIX	78
RFT	69
SABA	97
SAGEM	83, 90
SALORA	68
SAMSUNG	83
SIEMENS	64
SKYMASTER	69, 98
TECHNISAT	66, 100
THOMSON	97
TPS	83
TRIAx	91
WISI	64

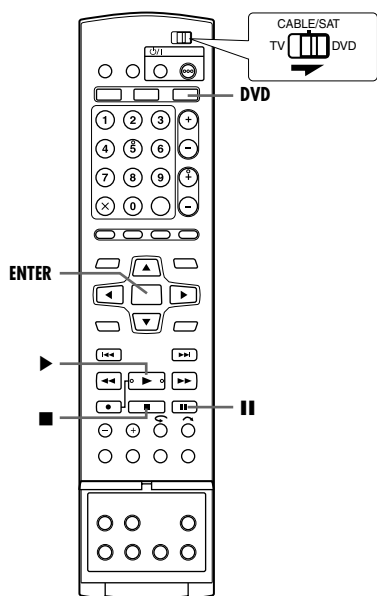
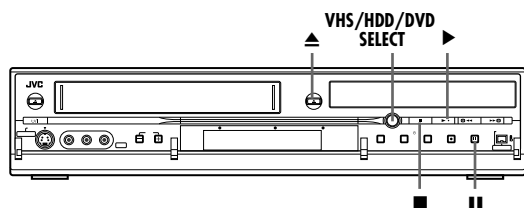
**NOTES:**

- The Satellite Controller may not work with all types of satellite receiver.
- For some satellite receivers, you need to set its channel input mode to 2-digit.
- If your satellite receiver has more than two channel modes, be sure to set to "All Channel Mode". For details, refer to the instruction manual of the satellite receiver.
- When selecting the satellite receiver's channel (see step 10), signals from the remote control may interfere with signals transmitted from the Satellite Controller. In this case, move the remote control as close to the unit's infrared beam receiving window as possible.

## Basic Playback



- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.



### ATTENTION:

- It takes approximately 30 seconds to read a disc depending on the type and condition of the disc since this unit is multi-disc compatible (DVD-RAM, DVD-RW, DVD-R). It may even take several minutes when a disc is dirty, scratched or warped.
- It may take a few seconds to start playback. This is not a malfunction.
- Forward/reverse high-speed search and other operations cannot be performed while playback is stopped.

To play back an MP3/JPEG disc, see “Playback With MP3/WMA/JPEG Navigation” (pg. 63).

- 1 Load a disc.
  - For details, refer to “Placing A Disc” (pg. 8).
  - Pressing ▶ also closes the disc tray.
  - Playback begins automatically if an auto-playback DVD disc is loaded.
- 2 Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **DVD** on the remote so that the DVD lamp lights up on the unit.
- 3 Press ▶ to start playback.
  - If you load a DVD disc whose region code does not match the unit, “REGION CODE ERROR” appears on the TV screen. For details, refer to “Region Number” (pg. 6).
  - If “CAN NOT PLAY BACK DISC UNDER CURRENT SETTING” appears on the TV screen, refer to “Parental Lock” (pg. 33).
  - With Video CD/SVCD discs with PBC control or some DVD discs, the menu display may appear on the TV screen after starting playback. In this case, select an item which you want to play back from the menu. Otherwise, the playback cannot go forward. Refer to “Playback Control (PBC) Function” (pg. 28) or “Locating A Desired Scene Using The DVD Menu” (pg. 25).
  - The Library Database Navigation also enables you to search and select the desired titles. (pg. 58)
- 4 Press ■ to pause playback.
  - To resume normal playback, press ▶.
- 5 Press ■ to stop playback.
  - When a recordable disc is played, playback stops and a programme received with the unit’s tuner resumes on the TV screen.
  - When a playback-only disc is played, playback stops and the still image at the time you press ■ remains on the TV screen. Pressing ■ again resumes a programme received with the unit’s tuner.
  - If ▲ is pressed during playback, playback stops, then the disc tray opens.

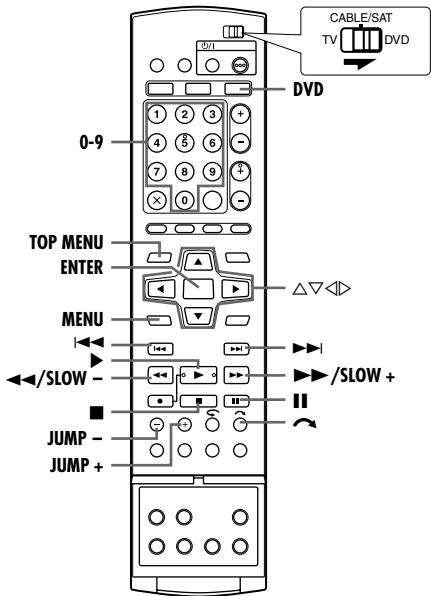
### NOTES:

- When the Library Database Navigation screen appears, choose a thumbnail image of the desired title on the TV screen, then press **ENTER**. (pg. 58)
- It is not possible to playback the DVD disc recorded in 96 kHz on DVD during recording or Live Memory Playback on HDD.



# Playback Features

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Press **DVD** so that the DVD lamp lights up on the unit.

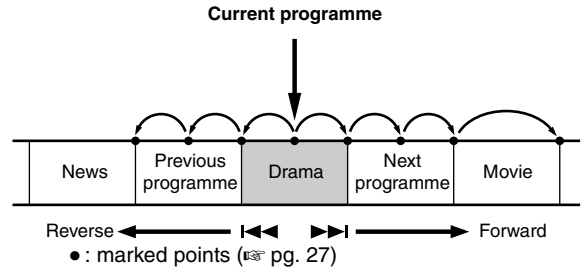


## Locating The Start Point Of The Item Or Skip The Item



- Press **◀◀** or **▶▶** during playback.
- Pressing **▶▶** locates the start point of the item or skips the item in the forward direction, then resumes playback.
  - Pressing **◀◀** locates the start point of the item or skips the item in the reverse direction, then resumes playback.

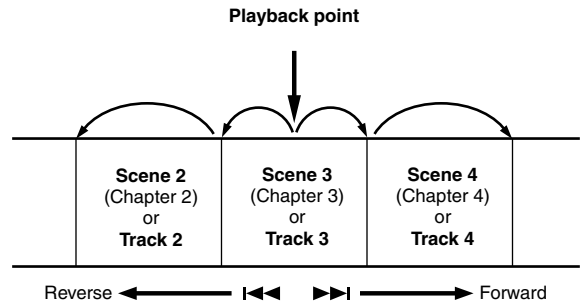
### When a DVD-RAM/RW/R disc is played



### Example:

To locate the beginning of the next item, press **▶▶** once.  
 To locate the beginning of the current item, press **◀◀** once.  
 To locate the beginning of the previous item, press **◀◀** three times.

### When a DVD VIDEO, Audio CD or Video CD/SVCD disc is played



### Example:

To locate the beginning of the next item, press **▶▶** once.  
 To locate the beginning of the current item, press **◀◀** once.

## Locating A Desired Scene Using The DVD Menu



DVD VIDEO discs may have top menu and disc menu.

### Top menu

DVD discs generally have their own menus which show the disc contents. These menus contain various items such as titles of a movie, names of songs, or artist information. You can locate a desired scene by using the top menu displayed on the TV screen. Press **TOP MENU** to access the top menu.

### Disc menu

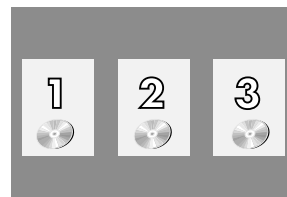
Disc menus include playback data (angle menu, subtitle menu, etc.) specific to each title.

Press **MENU** to access the disc menu.

**1** Press **TOP MENU** or **MENU** to access the DVD menu.

**2** Press **Δ▽◀▶** to select a desired title, then press **ENTER**. Playback starts.

- It may be possible to select the desired item using the **number keys** depending on the menu display.



Example:

### NOTE:

When "⊙" appears on the TV screen in step 1, the disc does not have a top menu or disc menu.

## Variable Speed Search



During playback, press **▶▶** for forward variable speed search, or **◀◀** for reverse variable speed search.

- Each press of the button increases the search speed for each direction.
- To resume normal playback, press **▶**.

### For Audio CD

You can perform 4 levels of speed search with **▶▶** and **◀◀**. (Audio is active also during variable speed search.) You cannot perform slow motion for each direction.

Reverse ◀◀																▶▶ Forward			
Reverse Search 4 steps	Reverse Play	Reverse Slow Motion 3 steps	Slow Motion 3 steps	Normal Play				Forward Search 4 steps											
60	15	5	3	1	1/2	1/4	1/6	1/6	1/4	1/2	1	3	5	15	60				

## Still Picture/Frame-By-Frame Playback



- 1 Press **II** to pause during playback.
- 2 Press **SLOW -** (◀◀) or **SLOW +** (▶▶) to activate frame-by-frame playback.
  - Each press of **SLOW -** (◀◀) or **SLOW +** (▶▶) advances/ reverses the still picture frame by frame.
  - Frame-by-frame playback for reverse direction cannot be performed with Video CD/SVCD discs.
  - To resume normal playback, press ▶.

## Slow Motion



- 1 Press **II** to pause during playback.
- 2 Press **SLOW -** (◀◀) or **SLOW +** (▶▶) for 2 or more seconds.
  - Each press of **SLOW -** (◀◀) or **SLOW +** (▶▶) increases the slow motion speed for each direction.
  - Slow motion for reverse direction cannot be performed with Video CD/SVCD discs.

## Skip Search



During playback, press ◀.

- Each press initiates an approximately 30-second period of fast-motion playback. Normal playback resumes automatically.

## Jump Search



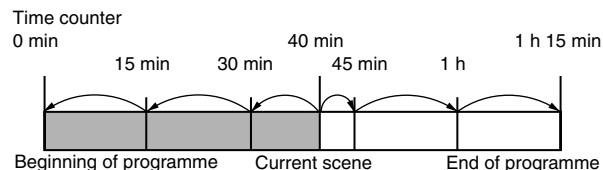
You can locate a scene ahead or behind the current one by jumping scenes according to selected time intervals (ⓘ pg. 79) during playback (or Live Memory Playback).

Press **JUMP -** or **JUMP +**.

- To advance forward or back, press **JUMP -** or **JUMP +** repeatedly within 5 seconds of each press to continue jump.
- Depending on the time from where you want to start jump search, the first press of **JUMP -** or **JUMP +** will not necessarily lead to a jump of the selected time interval. The first press will lead to a jump to the nearest quarter points of an hour (15 min/ 30 min/ 45 min/ 00 min). The subsequent jumps will then be in accordance to the selected time interval.
- When you cannot advance any further (beginning or end of programme reached), the message "UNABLE TO GO BACK ANY MORE" appears on the screen and the on-air screen resumes. In such a case, press ◀◀, ◀◀ or ■.

### Example:

Playback search when jump interval is set to 15 MIN jumps. Taking for instance, you want to start jump search 40 minutes after the beginning of the programme. Pressing **JUMP -** or **JUMP +** will result a jump to the scene at the 30 minutes point or 45 minutes point respectively as illustrated below. At the subsequent press, the scene will jump to the 15 minutes point or 1 hour point respectively, according to the selected time interval, which in this case is "15 MIN".



### NOTE:

Jump search cannot be performed with finalised DVD-R/DVD-RW (video mode) discs.

## Resume Function



It is possible to memorise the position where you stop playback and resume playback from that position.

- Be sure to set "RESUME" to "ON" or "DISC RESUME". (ⓘ pg. 79)
- Resume function always works for DVD-RAM regardless of the setting of "RESUME".

- 1 Press ■ during playback to memorise a resume point.
  - The unit enters Resume Stop mode and memorises the position where you have stopped playback as a resume point. (The inside of the disc status indicator on the front display panel blinks while memorising.)

- The unit retains a memory of the resume points of the last 30 discs played back, even though they have been ejected if "RESUME" is set to "DISC RESUME". (ⓘ pg. 79)

- To clear the resume points: (The inside of the disc status indicator stops blinking and lights.)

### When "RESUME" is set to "ON":

- Press ⏻/| to turn off the unit.
- Press ▲ to take out the disc.
- Press ■ in stop mode.
- Press **TOP MENU** to display the top menu, then start playback by selecting an item, etc.
- Press **MENU** to display the disc menu, then start playback by selecting an item, etc.

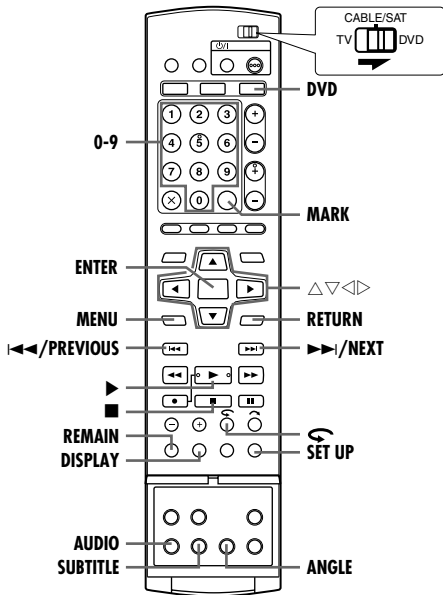
### When "RESUME" is set to "DISC RESUME":

- Set "RESUME" to "OFF". (ⓘ pg. 79)
- Press ■ in stop mode.
- Press **TOP MENU** to display the top menu, then start playback by selecting an item, etc.
- Press **MENU** to display the disc menu, then start playback by selecting an item, etc.

- 2 Press ▶ in stop mode to resume playback. The unit starts playback from the resume point.

### NOTES:

- "DISC RESUME" setting works on DVD VIDEO, VCD, SVCD and already finalised DVD-R/DVD-RW (video mode) discs. For other types of discs, the function under "ON" setting will be applied even if "RESUME" is set to "DISC RESUME". (ⓘ pg. 79)
- If you stop the playback of a disc for which a resume point has already been memorised, the memory will be updated with the new resume point.
- After the unit has memorised the resume points for 30 discs, remembering a new resume point will cause the unit to delete the oldest memorised point. Stopping playback of a disc for which a resume point is already stored may change the order in which the points are stored. This may potentially change the order in which points are deleted.
- When the unit memorises a resume point for a disc, it also remembers audio language, subtitle and angle settings.
- This function may not work for some Video CD/SVCDs.
- When "RESUME" is changed to "ON" or "OFF" (ⓘ pg. 79), resume points of the discs memorised with "RESUME" set to "DISC RESUME" will be cleared.
- Resume points are memorised for each side of a double-sided disc.
- When you switch to HDD during CD playback, playback stops. The Resume Function doesn't work when you switch to DVD thereafter to playback the disc.



## Marking Positions To Play Back Again Later

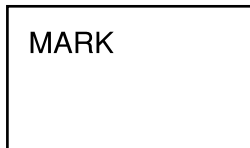


It is possible to mark positions (up to 999 points) where you want to play back once again later, and start playback from a marked position. Marking onto DVD-RAM/RW (VR mode only) discs when recording is helpful to locate a start point when you play back the discs later.

### To mark positions:

During playback, press **MARK** at positions you want to mark.

- “MARK” appears on the TV screen. You can easily locate the marked positions using **◀◀** or **▶▶** when you play back the disc.



### To delete the marked positions:

While paused, press **◀◀** or **▶▶** to locate a marked position you want to delete, then press **MARK**.

- Crossed “MARK” appears on the TV screen, and the marked position is deleted.



### NOTES:

- When a monaural programme changes to a stereo programme while recording, a mark signal is automatically recorded.
- Titles will be divided into “chapters” at the marked points according to the disc types as follows:  
 DVD-R/RW (Video mode): After finalising, titles are divided into “chapters” at the marked points that are marked automatically approximately every 5 minutes during recording before finalising. (pg. 88)  
 DVD-RW (VR mode): After finalising, titles are divided into “chapters” at the marked points that are marked at the desired locations during playback before finalising. (pg. 88)  
 DVD-RAM: Titles are divided into “chapters” at the marked points that are marked at the desired locations during playback.  
 DVD VIDEO: Creating of marked points are not permitted.

## Checking The Time Information



You can check time information of a disc on the front display panel and the TV screen.

Each press of **DISPLAY** changes the display as follows:

### ■ DVD-RAM/DVD-R/DVD-RW

#### During recording

Clock time (front display panel only) → Current title elapsed time → Disc remaining time\* → (back to the beginning)

\* only discs before finalising

- Clock time is displayed only when a recordable disc is recorded.

#### During playback

Each title elapsed time → Current title elapsed time → Disc remaining time\* → (back to the beginning)

\* only discs before finalising

#### In stop mode or during playback

- It is possible to check disc remaining time according to recording modes also by pressing **REMAIN**.
- In FR mode, it is possible to set recording time in detail. While the recording mode and the disc remaining time are displayed by pressing **REMAIN**, press **△▽** to select “FR”, then press **◁▷** to select the desired recording time. (pg. 36)
- It is not possible to switch the recording mode during playback or while recording.

### ■ Video CD/SVCD/Audio CD

#### During playback

Current track elapsed time → Current track remaining time → Total elapsed time → Total remaining time → (back to the beginning)

#### In stop mode

0:00 → Playback time of track 1 → 0:00 → Total length of a disc → (back to the beginning)


### NOTE:

When a PBC-compatible Video CD/SVCD disc is loaded, deactivate the PBC function. (pg. 28)

## Angle Selection



You can enjoy a variety of scene angles if a DVD VIDEO disc contains “multi-angle” parts, where the same scene was shot from different angles.


If the disc contains “multi-angle” parts, “” appears on the TV screen at the beginning of the “multi-angle” part.

- 1 Press **ANGLE** during playback. The angle selection display appears on the TV screen.



When 3 scene angles are contained.

- 2 Press **ANGLE** or **◁▷** to select your desired angle.

- Each time you press **ANGLE** or **◁▷**, the angle changes.
- When “” appears on the TV screen, the current scene is not recorded from multiple angles. In addition, some discs prohibit angle selection.
- To clear the angle selection display, press **ENTER**. In addition, the angle selection display disappears automatically if no operation is done for 10 seconds.

## Subtitle Selection



Some DVD VIDEO discs contain more than one subtitle language, from among which you can choose the desired subtitle language. “ ” appears on the TV screen at the beginning of the part where more than one subtitle language are recorded.

- 1 Press **SUBTITLE** during playback. The subtitle selection display appears on the TV screen.
  - Each time you press **SUBTITLE**, the subtitle display is switched on and off.



When 3 subtitle languages are contained.

- 2 Press  $\triangleleft \triangleright$  to select your desired language.
  - To clear the subtitle selection display, press **ENTER**.

### NOTES:

- When “ ” appears on the TV screen, no subtitle language is recorded.
- When the subtitle language won't be changed with the procedure above, change the subtitle on a disc menu displayed by pressing **MENU**.

## Audio Channel Selection



When watching bilingual programmes or playing discs on which you recorded bilingual or stereo programmes, you can choose the desired audio channel.

- When “SUPERIMPOSE” is set to “AUTO”, you can confirm on the TV screen the audio channel you have chosen. (see pg. 80)
- Each time you press **AUDIO**, the audio channel changes.



TRACK	USE
On-Screen Display	
	For main audio of bilingual programme
	For sub audio of bilingual programme
	For stereo discs
	For audio of left channel
	For audio of right channel

### NOTE:

It is not possible for DVD-R/DVD-RW (Video mode) disc playback to switch the audio channel. The audio channel is played back as set in “VIDEO MODE RECORDING AUDIO” setting. (see pg. 79)

### When you can't switch the audio channel of a bilingual programme

When the unit is connected with a digital audio device using an optional optical cable and “DIGITAL AUDIO OUT” is set to “DOLBY DIGITAL/PCM”, it is not possible to switch the audio channel of a bilingual programme recorded on a DVD-RAM or DVD-RW (VR mode) disc. (see pg. 77) In this case, perform the following steps using the remote control to switch “DIGITAL AUDIO OUT” from “DOLBY DIGITAL/PCM” to “PCM ONLY”.

- 1 Press **SET UP** to access the Main Menu screen.
- 2 Press  $\triangleleft \triangleright$  to select “DVD VIDEO SET UP”, then press  $\nabla$ .
- 3 Press  $\triangleleft \triangleright$  to select “AUDIO OUTPUT”, then press  $\nabla$ .
- 4 Press  $\triangle \nabla$  to select “DIGITAL AUDIO OUT”, then press **ENTER**.
- 5 Press  $\triangle \nabla$  to select “PCM ONLY”, then press **ENTER**. (see pg. 78)
- 6 Press **SET UP** to complete the setting.
- 7 Press **AUDIO** to select the desired audio channel.

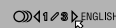
## Audio Language/Sound Selection



Some DVD VIDEO discs contain the multiple audio language or sound. You can select the desired audio language or sound. For some Video CD/SVCD discs, you can switch the audio channel to choose Karaoke either with or without the vocal.

- 1 Press **AUDIO** during playback. The Audio Language/Sound selection display appears.

For example: DVD VIDEO



When 3 audio languages are contained.

- 2 Press **AUDIO** or  $\triangleleft \triangleright$  to select your desired audio language/sound.
  - Each time you press **AUDIO** or  $\triangleleft \triangleright$ , the audio language/sound changes.
  - To clear the Audio Language/Sound selection display, press **ENTER**.

### NOTES:

- When “ ” appears on the TV screen, no audio language is recorded.
- When the audio language won't be changed with the procedure above, change the audio on a disc menu displayed by pressing **MENU**.
- Pressing **AUDIO** to select the audio language/sound is only possible during playback. It is not possible to select by pressing **AUDIO** in stop mode. However, you can select the desired audio language/sound from the setup menu while in stop mode.

## Playback Control (PBC) Function



Some Video CD/SVCD discs support the PBC function. PBC is an abbreviation of “Play Back Control”. A Video CD/SVCD disc recorded with PBC has its own menus, such as a list of the songs on the disc. You can locate a specific scene by using the menu.

- 1 Press  $\blacktriangleright$  in stop mode. The PBC menu appears.
- 2 Press the **number keys** to enter the number of the desired scene. The unit starts playback of the selected item.
  - “PBC” appears on the front display panel.
  - When “NEXT” or “PREVIOUS” appears on the TV screen: Pressing **NEXT** ( $\blacktriangleright$ ) advances to the next page. Pressing **PREVIOUS** ( $\blacktriangleleft$ ) returns to the previous page.
  - You can return to the menu by pressing **RETURN**.
  - The method of the operation is different depending on the disc.

### NOTES:

- If you want to playback a PBC-compatible Video CD/SVCD disc without activating the PBC function, start playback in stop mode by using the **number keys**, instead of the  $\blacktriangleright$  button, to choose the track, then press **ENTER**.
- To activate the PBC function when a PBC-compatible Video CD/SVCD disc is being played back without the PBC function, press **TOP MENU**, or press  $\blacksquare$  then press  $\blacktriangleright$ .

## One Touch Replay



You can move back the playback position slightly. Press  $\curvearrowright$ .

- Each press skips back for approximately 7 seconds and resumes playback.
- Pressing while paused skips back for approximately 7 seconds and resumes pause.

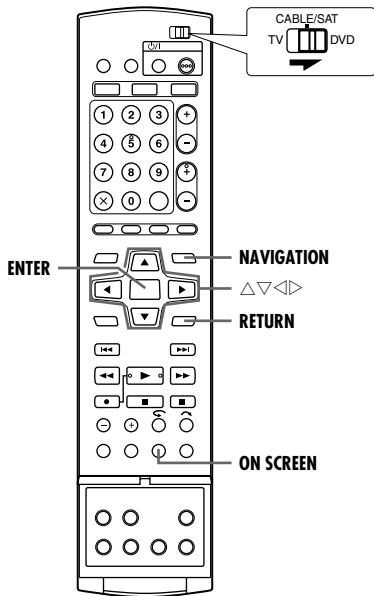
# Using The On-screen Bar



The on-screen bar allows you to control various playback functions. Some of the functions operated on Navigation Menu can be controlled on the On-screen bar.

**ATTENTION:**  
The on-screen bar can also be used for the HDD deck.

Be sure to clear Library Database Navigation screen by pressing **NAVIGATION**.

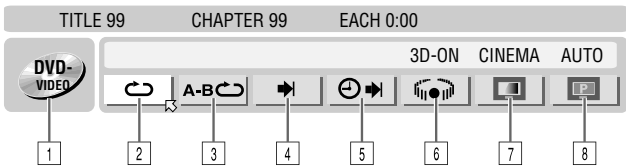


## How To Access The On-screen Bar

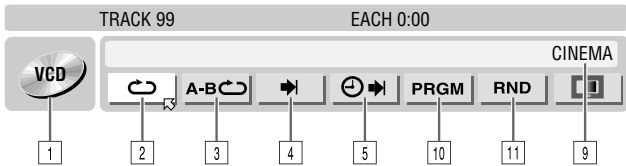
- 1 Press **ON SCREEN** twice whenever a disc is loaded.

### Contents of the on-screen bar during playback

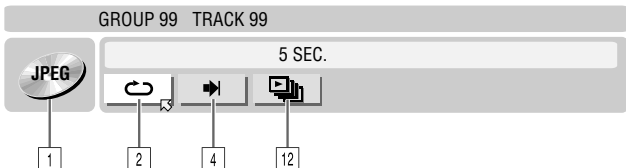
#### DVD VIDEO



#### Video CD/SVCD



#### JPEG disc



- 1 Disc type.
- 2 Select this for Repeat Playback. (pg. 29)
- 3 Select this for A-B Repeat Playback. (pg. 30)
- 4 Select this for search function. (pg. 30)
- 5 Select this for time search function. (pg. 31)
- 6 Select this to switch Simulated Surround Effect function. (pg. 31)
- 7 Select this for Picture Control function. (pg. 31)
- 8 Select this to switch picture source type. (pg. 32)
- 9 Current status area for the selected item.
- 10 Select this for Programme Playback. (pg. 32)
- 11 Select this for Random Playback. (pg. 32)
- 12 Select this to control the switching interval of the slide show. (pg. 32)

**NOTE:**

Although examples of the on-screen bar are provided here only for 3 types of discs, the on-screen bar will be displayed for whichever disc indicated in the left column.

## Basic Operation On The On-screen Bar

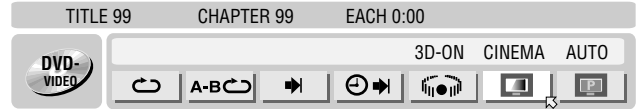
Example: When selecting Picture Control function of DVD

### During playback or while stopped

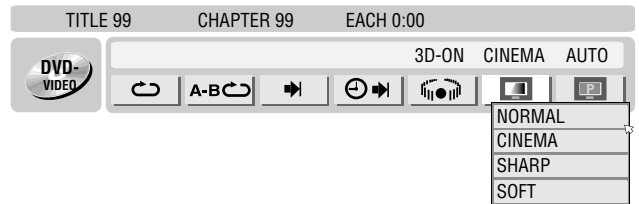
- 1 Press **ON SCREEN** twice to access the on-screen bar. The item currently selected is highlighted and pointed by  $\blacktriangleright$ .



- 2 Press  $\blacktriangleleft$  to select "CINEMA", then press **ENTER**. The pop-up window appears under the selected item.



- 3 Press  $\blacktriangledown$  to select the desired option, then press **ENTER**.



**To clear the on-screen bar**  
Press **ON SCREEN**.

**NOTE:**

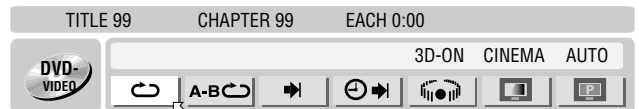
See the corresponding pages for details on each menu item.

## Repeat Playback



You can repeat playback as you like according to the type of disc.

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press  $\blacktriangleleft$  to select "A-B", then press **ENTER**. The pop-up window appears under the selected item.



- 3 Press  $\blacktriangledown$  repeatedly to select the desired Repeat mode, then press **ENTER**.

**DVD-RAM/RW/R**

**OFF:**  
Repeat playback is not performed.

**ALL REPEAT:**  
The whole disc is played back repeatedly.

**TITLE REPEAT:**  
The current title is played back repeatedly.

**DVD VIDEO**

**OFF:**  
Repeat playback is not performed.

**TITLE REPEAT:**  
The current title is played back repeatedly.

**CHAPTER REPEAT:**  
The current chapter is played back repeatedly.

**Audio CD/Video CD/SVCD/JPEG/MP3**

**OFF:**  
Repeat playback is not performed.

**ALL REPEAT:**  
The whole disc is played back repeatedly.

**TRACK REPEAT\*:**  
The current track is played back repeatedly.  
\* "TRACK REPEAT" cannot be selected for JPEG discs.

**To clear the on-screen bar**

Press **ON SCREEN**.

**To cancel Repeat Playback**

Repeat the above procedure from step 1, select "OFF" in step 3, then press **ENTER**.

**NOTES:**

- Repeat Playback is not possible for a Video CD/SVCD with PBC function.
- Repeat Playback may not work properly depending on the type of the disc being used.

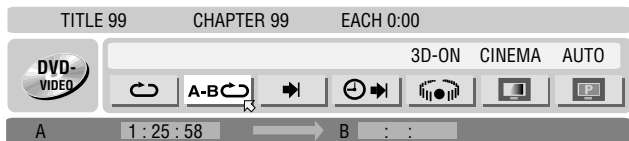
**A-B Repeat Playback**



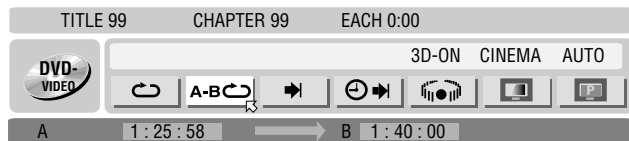
You can repeat the desired part.

**During playback**

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press <D> to select "A-B" icon.
- 3 Press **ENTER** at the beginning of the desired part you want to repeat (point A). The elapsed playing time of the point A appears.



- 4 Press **ENTER** at the end of the desired part you want to repeat (point B). The elapsed playing time of the point B appears.
- The selected part of the disc (between point A and B) is played repeatedly.



**To clear the on-screen bar**

Press **ON SCREEN**.

**To cancel A-B Repeat Playback**

Press <D> to select "A-B" icon, then press **ENTER**.

**NOTES:**

- A-B Repeat Playback may not work properly depending on the type of disc being used.
- The subtitles recorded around the A-B point may not appear.
- When the end of the item is reached before the end point is set, the on-screen bar disappears from the TV screen. In such a case, repeat the procedure from step 1.
- The point B must be set at least 3 seconds after the point A.
- When playing back a DVD, A-B Repeat Playback is possible only within the same title.
- "A-B" icon cannot be selected during Programme and Random Playback.
- "A-B" icon cannot be selected while stopped.

**Locating The Beginning Of A Desired Selection**



You can locate the beginning of a title, chapter, group or track.

**During playback or while stopped**

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press <D> to select "SEARCH" icon, then press **ENTER**.
- 3 Press <U> or <D> to select the desired item, then press **ENTER**.
  - Skip this step for Video CD/SVCD and Audio CD.

**For DVD-RAM/RW/R, DVD VIDEO**

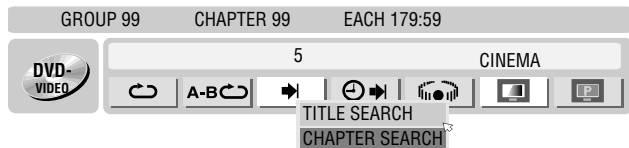
"TITLE SEARCH" or "CHAPTER SEARCH" is selectable. ("TITLE SEARCH" is selectable only while stopped.)

**For JPEG, MP3**

"GROUP SEARCH" or "TRACK SEARCH" is selectable.

**For Video CD/SVCD, Audio CD**

"TRACK" is selectable.



- 4 Press the **number keys** to enter the desired item number, then press **ENTER**.
  - Playback starts from the selected section.

**Examples:**

- 1 To select track 5, press the **number key "5"**.
- 2 To select track 15, press the **number key "1"** and "5".
- 3 To select track 25, press the **number key "2"**, then "5".

**If you have specified a wrong selection**

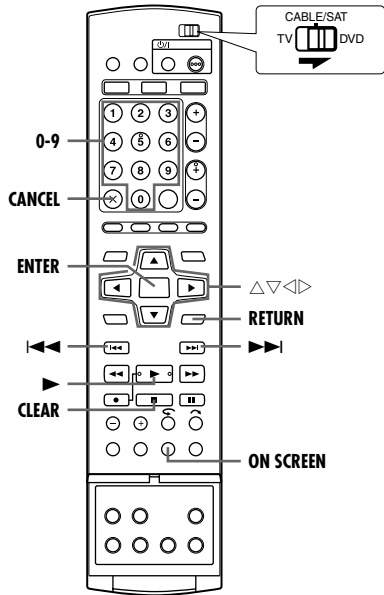
Press **RETURN** on the remote control and repeat the above procedures from step 2.

**To clear the on-screen bar**

Press **ON SCREEN**.

**NOTES:**

- When "SEARCH" is displayed on the TV screen in step 4, the chapter you have selected is not contained in the disc, or chapter search does not work on the disc.
- Before you press **ENTER**, playback may start automatically when you enter the section's number depending on the disc.
- This function is not possible for a Video CD/SVCD with PBC function.

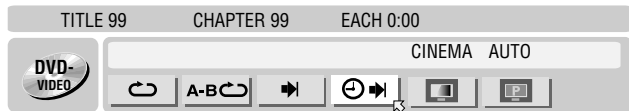


### Time Search



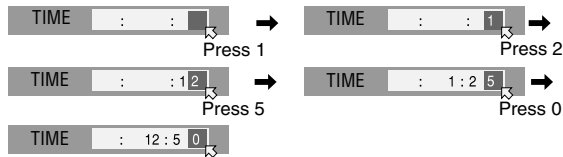
You can play back a disc from the desired point by specifying the elapsed playing time from the beginning of a programme (DVD-RAM, DVD-R, DVD-RW, DVD VIDEO and HDD) or a disc (Video CD/SVCD and Audio CD).

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press  $\langle \triangleright \rangle$  to select “”, then press **ENTER**. The pop-up window appears under the selected item.



- 3 Press the **number keys** to enter the time, then press **ENTER**. Playback starts from the specified time.

Example:  
To play back from a point 12 (minutes): 50 (seconds) elapsed.



**If you have specified a wrong selection,**  
Press **RETURN** on the remote control and repeat the above procedures from step 2.

**To clear the on-screen bar**  
Press **ON SCREEN**.

- NOTES:**
- When “” is displayed on the TV screen in step 3, you have selected a point that exceeds the recording time of the disc.
  - Some DVD VIDEO discs do not contain time information, and it is not possible to use the Time Search function. In such cases, “” is displayed on the TV screen as well.
  - This function is not possible for a Video CD/SVCD with PBC function.

### Simulated Surround Effect



It is possible to get a simulated surround effect from your stereo system. You can enjoy the virtual surround sound with your 2-channel stereo system.

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press  $\langle \triangleright \rangle$  to select “”, then press **ENTER**.
  - “3D-ON” appears above the selected item and Simulated Surround Effect is activated.
  - Each time you press **ENTER**, “3D-ON” appears and disappears alternately.



**To clear the on-screen bar**  
Press **ON SCREEN**.

**To cancel the simulated surround effect**  
Press **ENTER** to clear “3D-ON” from the screen.

- NOTES:**
- Simulated Surround Effect works correctly only when playing back a title recorded in multichannels.
  - Simulated Surround Effect does not affect the DVD VIDEO bitstream signal from the [DIGITAL AUDIO OUT] connectors.
  - When Simulated Surround Effect is activated, the settings of “ANALOG AUDIO OUT” and “D. RANGE CONTROL” are disabled. (pg. 78)
  - Simulated Surround Effect cannot be activated under the following conditions:
    - When the HDD deck is in the recording mode.
    - When the HDD or DVD deck is in the timer standby mode.
    - When a disc containing both the Dolby Digital 5.1CH and 2CH sound formats is playing back a scene that is not in the 5.1CH sound format.

### Adjusting The Picture Quality



You can obtain optimal picture quality by selecting an appropriate picture mode.

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press  $\langle \triangleright \rangle$  to select “”, then press **ENTER**. The pop-up window appears under the selected item.



- 3 Press  $\triangle \nabla$  to select the desired option, then press **ENTER**.

- NORMAL:**  
Normally select this option.
- CINEMA:**  
Suitable for a movie disc, etc.
- SHARP:**  
Clearer, sharper-edged picture when viewing images with lots of flat, same-coloured surfaces such as cartoons.
- SOFT:**  
Select this option when too much noise appears.

**To clear the on-screen bar**  
Press **ON SCREEN**.

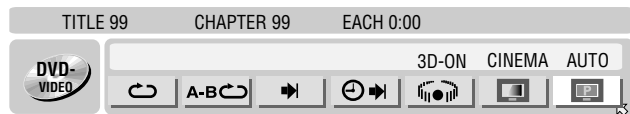


## Setting The Progressive Mode



You can obtain optimal picture quality by selecting whether the content on the disc is processed by field (video source) or by frame (film source).

- 1 Set the unit to the progressive scan mode. (pg. 89)
- 2 Press **ON SCREEN** twice to access the on-screen bar.
- 3 Press  $\triangleleft \triangleright$  to select "P", then press **ENTER**. The pop-up window appears under the selected item.



- 4 Press  $\triangle \nabla$  to select the desired option, then press **ENTER**.

### AUTO:

This mode automatically detects film and video content for progressive playback. When film content is found, flag detection is used to invoke playback of film data in full screen. When video content is found, pictures from multiple fields are used to detect sections with movement, and then this movement undergoes advanced image processing for output of sharp, detailed progressive images without any reduction in image quality where movement occurs. Normally, operation in this mode is recommended.

### FILM:

Suitable for playing back a progressive scanned film source disc.

### VIDEO:

Suitable for playing back a video source disc. The outlines on the played back pictures will be soft.

### To clear the on-screen bar

Press **ON SCREEN**.

### NOTE:

When the progressive mode is set, be sure to set "L-1 OUTPUT" to "COMPONENT" (pg. 72). Progressive scan is output only from [COMPONENT VIDEO OUT] connectors.

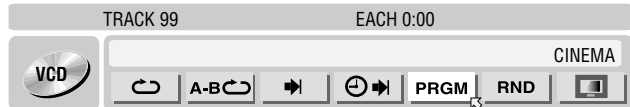
## Programme Playback



You can programme up to 30 tracks (Video CD/SVCD or Audio CD) to play back in the desired order.

### While stopped

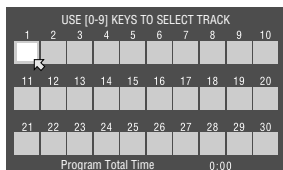
- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press  $\triangleleft \triangleright$  to select "PRGM", then press **ENTER**. The programme table appears under on-screen bar.



- 3 Press the **number keys** to enter the track numbers in the desired order.

Examples:

- 1 To select track 5, press the **number key "5"** and **ENTER**.
- 2 To select track 15, press the **number key "1"** and **"5"**.
- 3 To select track 25, press the **number key "2"** and **"5"**.



### If you have specified a wrong selection

Press **CANCEL**(X). The last selection is erased.  
Or press **CLEAR**(■). The whole selection is erased.

- 4 Press **▶**. Playback starts in the programmed order.

- When all of the programmed tracks have been played back, Programme Playback stops, but the programmed information remains.
- To add tracks to the end of the programme, perform steps 1 through 3.
- During Programme Playback, pressing **▶▶** skips to the next selection of the programme. Pressing **◀◀** returns to the beginning of the current selection.

**To clear the on-screen bar and the contents of the programme**  
Press **ON SCREEN**.

### To cancel Programme Playback

Press  $\triangleleft \triangleright$  to select "PRGM", then press **ENTER**.

### NOTE:

Programme Playback is not possible depending on the type of disc.

## Random Playback



You can play back all the tracks on the disc in random order.

### While stopped

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press  $\triangleleft \triangleright$  to select "RND", then press **ENTER**. Playback starts in random order.



### To clear the on-screen bar

Press **ON SCREEN**.

### To cancel Random Playback

Perform steps 1 and 2.

### NOTE:

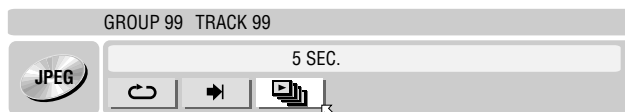
The same track will not be played back more than once during Random Playback.

## Select The Switching Interval Of The Slide Show



You can control the switching interval of the slide show.

- 1 Press **ON SCREEN** twice to access the on-screen bar.
- 2 Press  $\triangleleft \triangleright$  to select "Slide Show", then press **ENTER**. The pop-up window appears under the selected item.



- 3 Press  $\triangle \nabla$  to select the desired option, then press **ENTER**.
  - Each time you press  $\triangle \nabla$ , the interval changes as follows: 5 SEC.  $\leftrightarrow$  10 SEC.  $\leftrightarrow$  15 SEC.  $\leftrightarrow$  20 SEC.  $\leftrightarrow$  25 SEC.  $\leftrightarrow$  30 SEC.  $\leftrightarrow$  (Back to the beginning)

### To clear the on-screen bar

Press **ON SCREEN**.

### NOTE:

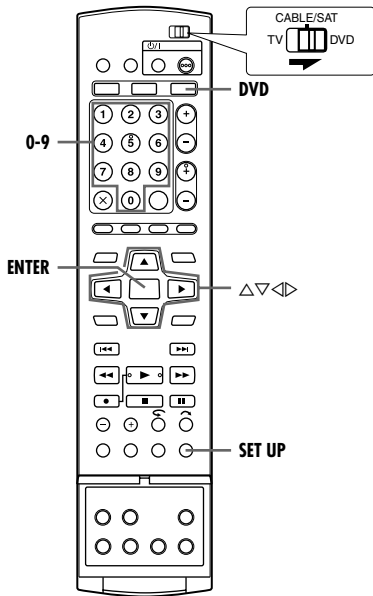
JPEG files are played back as a slide show. It may take more time to display an image with larger file size.

# Parental Lock



This function restricts playback of DVD VIDEO discs which contain violent (and other) scenes according to the level set by the user. For example, if a movie which includes violent scenes supports the parental lock feature, such scenes which you do not want to let children view can be cut or replaced by other scenes.

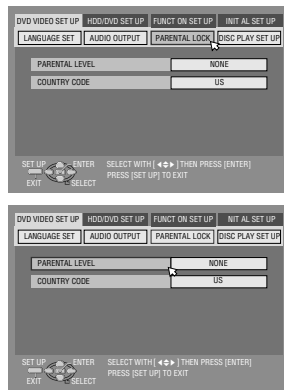
- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Press **DVD** so that the DVD lamp lights up on the unit.



## To Set Parental Lock For The First Time

**While stopped**

- 1** Press **SET UP** to access the Main Menu screen.
- 2** Press  $\langle \triangleright \rangle$  to select "DVD VIDEO SET UP", then press  $\nabla$ .
- 3** Press  $\langle \triangleright \rangle$  to select "PARENTAL LOCK", then press  $\nabla$ .
- 4** Press  $\triangle \nabla$  to select "PARENTAL LEVEL", then press **ENTER**.
- 5** Press  $\triangle \nabla$  to select the desired level, then press **ENTER**.
  - The smaller the value of level is, the more restrictive the Parental Lock level becomes.
  - Select "NONE" to cancel the restriction.
- 6** Press the **number keys** to enter your desired four-digit number, then press **ENTER**.
  - If you made a mistake, enter a correct number again.
- 7** Press  $\triangle \nabla$  to select "COUNTRY CODE", then press **ENTER**.



- 8** Press  $\triangle \nabla$  to select your country code, then press **ENTER**.
  - If you do not need to change your country code, jump to **10**.
  - See "Country/Area Code List for Parental Lock" (pg. 96).
- 9** Press the **number keys** to enter the same password as in step **6** above, then press **ENTER**.
- 10** Press **SET UP** to complete the setting.

**NOTE:**

Remember your password, or make a note of it.

## To Change The Settings

You can change the Parental Lock settings later.

- 1** Perform steps **1** to **3** of "To Set Parental Lock For The First Time" to access the "PARENTAL LOCK" screen before continuing.
- To change the level**
- 2** Press  $\triangle \nabla$  to select "PARENTAL LEVEL", then press **ENTER**.
- 3** Press  $\triangle \nabla$  to select the desired level, then press **ENTER**.
- To change the country code**
- 4** Press  $\triangle \nabla$  to select "COUNTRY CODE", then press **ENTER**.
- 5** Press  $\triangle \nabla$  to select your country code, then press **ENTER**.
  - See "Country/Area Code List for Parental Lock" (pg. 96).
- 6** Press the **number keys** to enter the same password as in step **6** of "To Set Parental Lock For The First Time", then press **ENTER**.
- 7** Press **SET UP** to complete the setting.

**NOTE:**

If you forget your password, enter "8888" in step **6**.

## To Temporarily Release Parental Lock

When you set the Parental Lock level strictly, some discs may not be played back at all. When you insert such a disc and try to play it back, the confirmation screen appears on the TV screen, asking you whether you want Parental Lock to be temporarily released or not.

- 1** Load a disc.
  - If the disc is rated higher than the selected level, the confirmation screen appears.
- 2** Press  $\langle \triangleright \rangle$  to select "YES", then press **ENTER**.
  - If you select "NO", you cannot play back that disc.
- 3** Press the **number keys** to enter the same password as in step **6** of "To Set Parental Lock For The First Time", then press **ENTER**.
  - When you enter the correct password, the Parental Lock is released and the unit starts playback.
  - If you enter a wrong password, "ENTRY ERROR" appears on the TV screen. Enter the correct password.
  - If you have successively entered wrong password three times, "ENTRY ERROR CAN NOT CHANGE PASSWORD" appears on the TV screen. In such a case, press **ENTER**. The disc will stop. Then play back the disc again, and try the procedure again from step **1**.

**NOTE:**

If you forget your password, enter "8888" in step **3**.

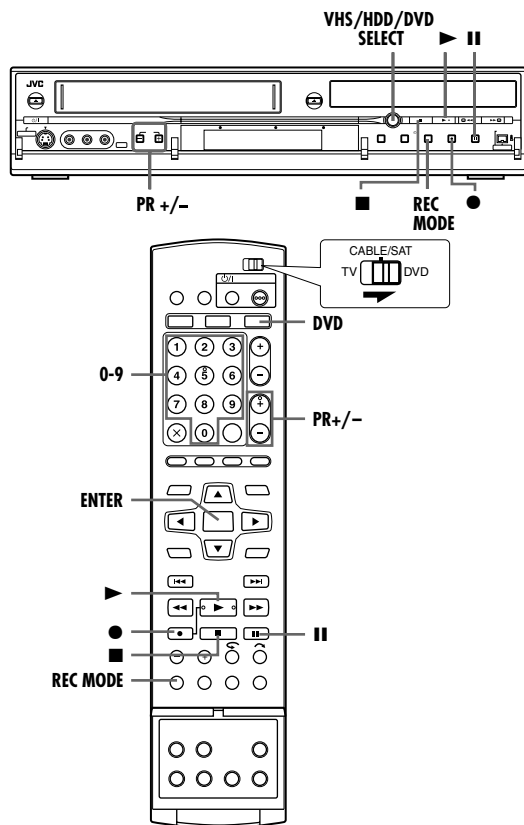
## Basic Recording



- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.

### ATTENTION:

It is not possible to record programmes on a DVD-R disc which has already been finalised.



- Load a recordable disc.
  - For details, refer to "Placing A Disc" (pg. 8).
- Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **DVD** on the remote so that the DVD lamp lights up on the unit.
- Press **PR +/-** or the **number keys** to select the channel you wish to record.
- Press **REC MODE** repeatedly to select the recording mode, then press **ENTER**.
  - Each time you press **REC MODE**, the recording mode changes as follows:  
 XP → SP → LP → EP → FR60-FR360\* → FR420, FR480 →  
 (Back to the beginning)
  - \* The value is selectable from 1 to 6 hours in 5-minutes interval by pressing <D> repeatedly after selecting "FR60-FR360". To change the value in 30-minutes interval, press and hold <D>.
  - For details on the recording mode, see the right column.
- Press ● on the unit to start recording. Or while holding ●, press ► on the remote control.
  - The DVD recording lamp lights up on the unit.
- Press ● and II on the remote control simultaneously to pause recording.
  - To resume recording, press ● and ► simultaneously.

- Press ■ twice to stop recording.

- It takes about 10 seconds to end the writing session when you stop recording.

### NOTES:

- It is recommended to format a DVD-RAM disc before use if you use the disc on this unit for the first time.
- When using a brand-new DVD-RW disc, format the disc either in VR mode or in Video mode. (pg. 87)
- Recordings made on DVD-R/RW disc must be finalised to play back on other DVD players. Perform "Finalise A Disc (DVD Deck Only)" (pg. 88).
- You can record up to 99 programmes and 999 play lists on each disc.
- Some programmes can only be recorded one time.
- When recording is started, an index of the first part of recording is automatically recorded. (pg. 57) To record satellite programmes, refer to page 53. To delete the index, refer to page 59.
- Recording sometimes may stop or cannot be performed even if there is enough available capacity remaining on the disc.
- It is not possible to record on both DVD and HDD simultaneously.

### Recording Mode

MPEG2 format is used as recording format. As a guide for picture quality, the "bps" unit is used to represent how much data can be recorded per second. The larger this value is, the better the picture quality becomes but more capacity is required for the recording. Select XP or SP for programmes where quick movement occurs, such as sports programmes, and LP or EP for talk shows, etc. with relatively less movement.

The recording modes for a 4.7 GB disc are set as follows:

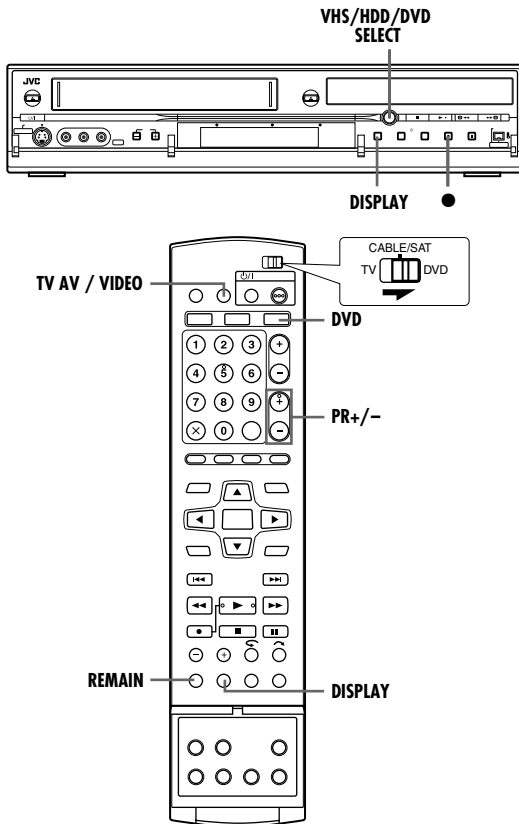
Recording mode	Recording amount (approx.)	Maximum recording time (approx.)
XP	10 Mbps	1 hour
SP	5 Mbps	2 hours
LP	2.5 Mbps	4 hours
EP	1.6 Mbps	6 hours
FR60-FR360 (pg. 36)	The amount varies depending on the selected time.	1 – 6 hours
FR420		7 hours
FR480		8 hours

- For details on FR mode, refer to "Free Rate Function" (pg. 36).

## Recording Features



- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **DVD** on the remote so that the DVD lamp lights up on the unit.



## Instant Timer Recording (ITR)

This easy method lets you record for from 30 minutes to 6 hours (selectable in 30-minutes interval), and shuts the unit off after recording is finished.

- 1 Press ● on the unit to start recording.
- 2 Press ● again to engage the ITR mode.
  - On the front display panel, "0:30" appears.
- 3 If you want to record for more than 30 minutes, press ● to extend the time. Each press extends recording time by 30 minutes.

### NOTES:

- You can only perform ITR using the ● button on the unit.
- When the recording capacity becomes full during timer recording or Instant Timer Recording, the unit automatically performs "Relief Recording" (see pg. 51).

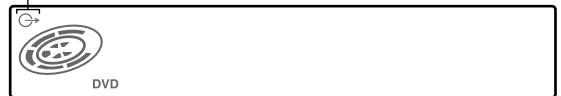
## Watch Another Programme While Recording On The Unit

While recording is going on, you can watch another programme on the TV by using the TV's tuner.

### NOTE:

It is required that the remote control is set to be able to operate the TV in advance. (see pg. 74)

- 1 During recording, press **TV AV/VIDEO** to select TV mode.
  - Video mode is disengaged, and the VIDEO indicator on the front display panel lights off.
  - VIDEO indicator lights off.



- The programme received on the TV's tuner is displayed on the TV screen.
- 2 Slide the **TV/CABLE/SAT/DVD** switch to **TV**.
  - 3 Press **PR +/-** repeatedly to select the desired channel.

### NOTE:

If a decoder is connected to the unit (see pg. 77), you can select a scrambled channel as well as other normal channels.

## Elapsed Recording Time And Disc Remaining Time Indication

During recording, press **DISPLAY** repeatedly until the desired indication appears on the front display panel.

- Each time you press **DISPLAY**, the time indication changes as follows:  
Elapsed recording time → Disc remaining time → Clock → (Back to the beginning)
- You can also check the disc remaining time by pressing **REMAIN** while the unit is stopped or recording is in progress. The list of disc remaining times for all recording modes appears on the TV screen.

## Free Rate Function

To record the entire programme, the unit automatically sets the appropriate recording mode depending on the combination of the total time of the programme to be recorded and either the remaining disc space or the specified recording time (from 60 minutes to 480 minutes).

### ■ To record the entire programme within the actual remaining disc space (DVD deck only)

Select "FR (JUST)" in a recording mode selection procedure.

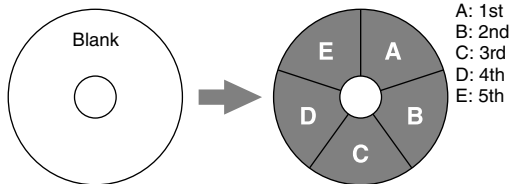
- Note that this function is available only for timer programming recording (pg. 49, 51) and dubbing from HDD to DVD (pg. 64).

### ■ To record the entire programme by specifying the desired recording time

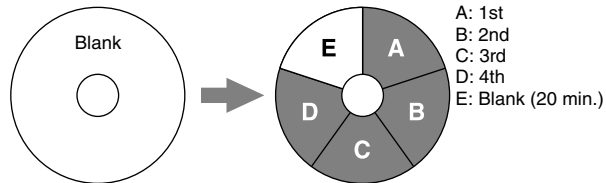
Select "FR60-FR360", "FR420" or "FR480" in a recording mode selection procedure. (pg. 34, 37, 49, 51)

### ■ To record a 25-min. long daily programme five times just on the same DVD disc for example

Perform "ShowView" Timer Programming (pg. 49) procedure. Be sure to set the recording mode to "FR125" and set Weekly/Daily Rec Function to "MON-FRI" in step 8 to fit the total recording time to the whole disc space.



When the same programme is recorded in SP mode instead of in "FR125", the 5th programme cannot be recorded.



### NOTES:

- You can programme this unit to timer-record, regardless of the disc remaining time. When the disc remaining time is not enough, the unit performs "Relief Recording" (pg. 51). To avoid this, make sure of the disc remaining time before setting timer programming.

**(Example)** If you programmed to timer-record for 60 minutes in SP mode on a 120-minute disc, the disc remaining time would be 30 minutes in XP mode, 60 minutes in SP mode, 120 minutes in LP mode, 180 minutes in EP mode, and 240 minutes in FR480 mode. Timer-recording will not complete beyond these remaining times.

- The maximum recording time of FR (JUST) mode is the same as the recording time of FR480 mode. When timer programming a long programme in FR (JUST) mode on a disc whose remaining time is short, it is recommended to check the disc remaining time in FR480 mode to see if the remaining time is enough for the programme.
- Even if more than one programme are timer programmed in FR (JUST) mode, only the first one is recorded.
- In order to ensure that the recording fits on the disc, this feature may leave a slight non-recorded section at the end of the disc.
- There may be some noise and sound disturbance at the point on the disc where the unit switches the mode.

## Receiving Stereo And Bilingual Programmes

Your unit is equipped with a Sound-Multiplex decoder (A2) and a Digital stereo sound decoder (NICAM) making reception of stereo and bilingual broadcasts possible.

When the channel is changed, the type of broadcast being received will be displayed on the TV screen for a few seconds.

Type of Broadcast Being Received	On-Screen Display
A2 Stereo	
A2 Bilingual	
Regular Monaural	
NICAM Stereo	
NICAM Bilingual	
NICAM Monaural	

### NOTES:

- "SUPERIMPOSE" must be set to "AUTO". Otherwise the on-screen displays will not appear. (pg. 80)
- If the quality of stereo sound being received is poor, the broadcast might be received in monaural with better quality.

## Selection Of The Audio Channel To Be Recorded On A Disc

When a programme is recorded on a DVD-RAM or DVD-RW disc in VR mode, all audio channels of the receiving programme are recorded on the disc. When you record a programme on a DVD-R or DVD-RW disc in video mode, select the desired audio channel ("NICAM" or "MONO") to be recorded on the disc. (pg. 79)

### NOTE:

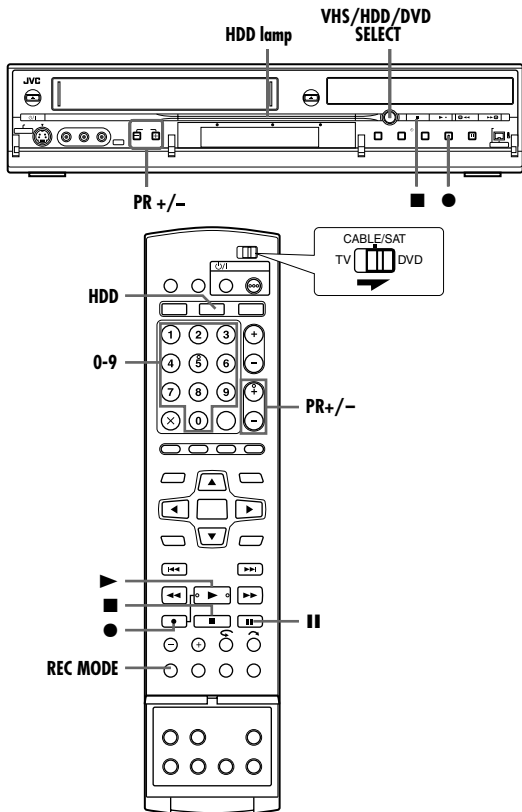
Before playing back a programme recorded in stereo, or a bilingual programme, refer to "Audio Channel Selection" (pg. 28).

## Basic Recording

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.

### ATTENTION:

The HDD on the unit requires approximately 20 seconds to start up after the unit has been turned on, during which no operation can be made.



- 1 Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **HDD** on the remote so that the HDD lamp lights up on the unit.
- 2 Press **PR +/-** or the **number keys** to select the channel you wish to record.
- 3 Press **REC MODE** repeatedly to select the recording mode, then press **ENTER**.
  - Each time you press **REC MODE**, the recording mode changes as follows:  
 XP → SP → LP → EP → FR60-FR360\* → FR420, FR480 →  
 (Back to the beginning)
  - \* The value is selectable from 1 to 6 hours in 5 minutes interval by pressing <|> repeatedly after selecting "FR60-FR360". To change the value in 30 minutes interval, press and hold <|>.
  - For details on the recording mode, see the right column.
- 4 Press ● on the unit to start recording. Or while holding ●, press ► on the remote control.
  - The HDD recording lamp lights up on the unit.
- 5 Press ■ twice to stop recording.
  - Pressing ■ once displays the confirmation message to stop recording. Press ■ again to terminate recording.

### NOTES:

- Continuous recording for over 48 hours is not possible.
- It is not possible to record on both DVD and HDD simultaneously.

### Pause recording on HDD deck

It is not possible to pause recording. Pressing **II** initiates Live Memory Playback.

However, it is still possible to pause recording only when recording the channels of external sources ("L-1", "L-2", "F-1", and "DV"). While holding ●, press **II** on the remote. To resume recording, while holding ●, press ► on the remote.

No operation can be made with the buttons on the unit.

### Recording Mode

MPEG2 format is used as recording format. As a guide for picture quality, the "bps" unit is used to represent how much data can be recorded per second. The larger this value is, the better the picture quality becomes but more capacity is required for the recording. Select XP or SP for programmes where quick movement occurs, such as sports programmes, and LP or EP for talk shows, etc. with relatively less movement.

Recording mode	Maximum recording time (approx.)
XP	34 hours
SP	69 hours
LP	138 hours
EP	209 hours
FR480	300 hours

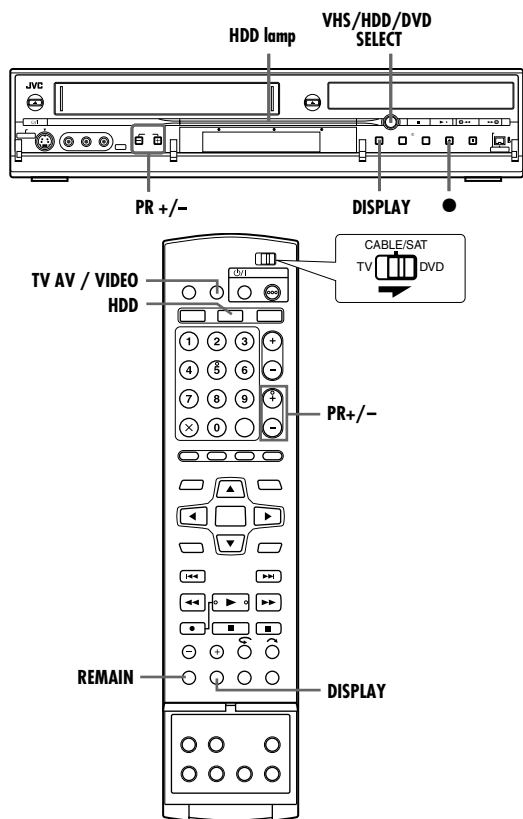
- For details on FR mode, refer to "Free Rate Function" (pg. 36).

### NOTE:

The maximum recording time stated in the above table are the approximate time under unused condition.

## Recording Features

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **HDD** on the remote so that the HDD lamp lights up on the unit.



## Watch Another Programme While Recording On The Unit

While recording is going on, you can watch another programme on the TV by using the TV's tuner.

### NOTE:

It is required that the remote control is set to be able to operate the TV in advance. (pg. 74)

- 1 During recording, press **TV AV/VIDEO** to select TV mode.
  - Video mode is disengaged, and the VIDEO indicator on the front display panel lights off.
  - VIDEO indicator lights off.



- The programme received on the TV's tuner is displayed on the TV screen.

- 2 Slide the **TV/CABLE/SAT/DVD** switch to **TV**.

- 3 Press **PR +/-** repeatedly to select the desired channel.

### NOTE:

If a decoder is connected to the unit (pg. 77), you can select a scrambled channel as well as other normal channels.

## Elapsed Recording Time And Disc Remaining Time Indication

During recording, press **DISPLAY** repeatedly until the desired indication appears on the front display panel.

- Each time you press **DISPLAY**, the time indication changes as follows:  
Elapsed recording time → Disc remaining time → Clock → (Back to the beginning)
- You can also check the disc remaining time by pressing **REMAIN** while the unit is stopped or recording is in progress. The list of disc remaining times for all recording modes appears on the TV screen.

## Receiving Stereo And Bilingual Programmes

Your unit is equipped with a Sound-Multiplex decoder (A2) and a Digital stereo sound decoder (NICAM) making reception of stereo and bilingual broadcasts possible.

When the channel is changed, the type of broadcast being received will be displayed on the TV screen for a few seconds.

Type of Broadcast Being Received	On-Screen Display
A2 Stereo	
A2 Bilingual	
Regular Monaural	
NICAM Stereo	
NICAM Bilingual	
NICAM Monaural	

### NOTES:

- "SUPERIMPOSE" must be set to "AUTO". Otherwise the on-screen displays will not appear. (pg. 80)
- If the quality of stereo sound being received is poor, the broadcast might be received in monaural with better quality.

## Instant Timer Recording (ITR)

This easy method lets you record for from 30 minutes to 6 hours (selectable in 30-minutes interval), and shuts the unit off after recording is finished.

- 1 Press **●** on the unit to start recording.
- 2 Press **●** again to engage the ITR mode.
  - On the front display panel, "0:30" appears.
- 3 If you want to record for more than 30 minutes, press **●** to extend the time. Each press extends recording time by 30 minutes.

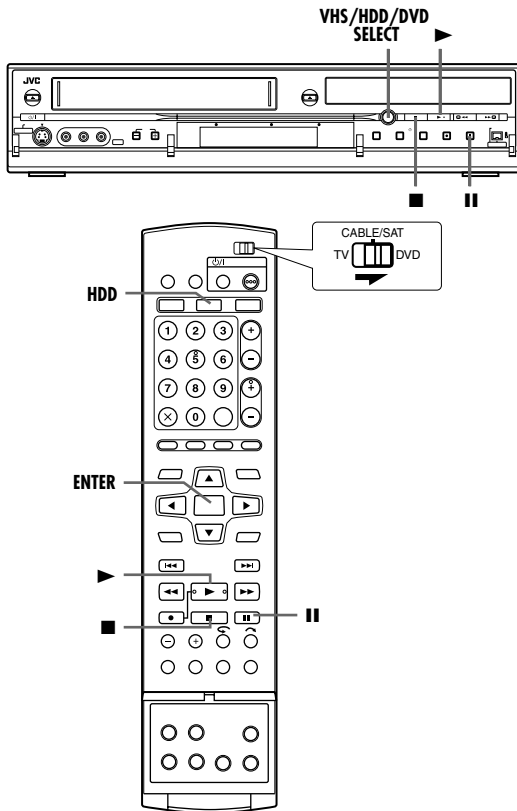
### NOTES:

- You can only perform ITR using the **●** button on the unit.
- When the recording capacity becomes full during timer recording or Instant Timer Recording, the unit is automatically shut off.



## Basic Playback

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.



### ATTENTION:

- It may take a few seconds to start playback. This is not a malfunction.
- Forward/reverse high-speed search and other operations cannot be performed while playback is stopped.

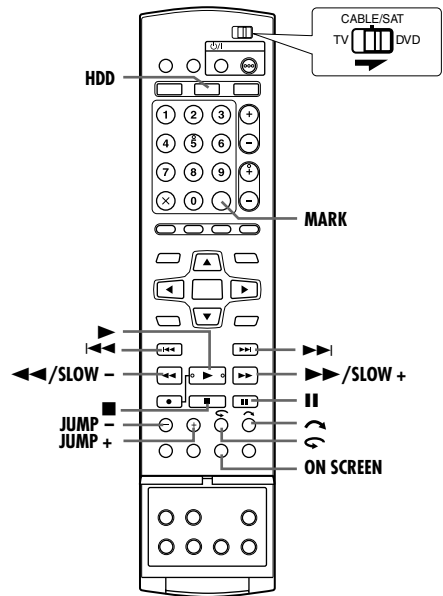
- 1 Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **HDD** on the remote so that the HDD lamp lights up on the unit.
- 2 Press **▶** to start playback.
  - The Library Database Navigation also enables you to search and select the desired programmes. (pg. 58)
- 3 Press **⏸** to pause playback.
  - To resume normal playback, press **▶**.
- 4 Press **■** to stop playback.

### NOTE:

When the Library Database Navigation screen appears, choose a thumbnail image of the desired title on the TV screen, then press **ENTER**. (pg. 58)

## Playback Features

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Press **HDD** so that the HDD lamp lights up on the unit.



## Variable Speed Search

During playback, press **▶▶** for forward variable speed search, or **◀◀** for reverse variable speed search.

- Each press of the button increases the search speed for each direction.
- To resume normal playback, press **▶**.

Reverse ◀◀				▶▶ Forward												
Reverse Search 4 steps	Reverse Play	Reverse Slow Motion 3 steps	Slow Motion 3 steps	Normal Play	Forward Search 5 steps											
60	15	5	3	1	1/2	1/4	1/16	1/16	1/4	1/2	1	1.5	3	5	15	60

### NOTE:

You can hear the (normal) audio track only during 1.5x speed search.

## Still Picture/Frame-By-Frame Playback

- 1 Press **⏸** to pause during playback.
- 2 Press **SLOW -** (◀◀) or **SLOW +** (▶▶) to activate frame-by-frame playback.
  - Each press of **SLOW -** (◀◀) or **SLOW +** (▶▶) advances/reverses the still picture frame by frame.
  - To resume normal playback, press **▶**.

## Slow Motion

- 1 Press **⏸** to pause during playback.
- 2 Press **SLOW -** (◀◀) or **SLOW +** (▶▶) for 2 or more seconds.
  - Each press of **SLOW -** (◀◀) or **SLOW +** (▶▶) increases the slow motion speed for each direction.


## Skip Search

During playback, press **↶**.

- Each press initiates an approximately 30-second period of fast-motion playback. Normal playback resumes automatically.

## One Touch Replay

You can move back the playback position slightly.


Press .


- Each press skips back for approximately 7 seconds and resumes playback.
- Pressing while paused skips back for approximately 7 seconds and resumes pause.

## 1.5x Speed Search

You can play back a title quickly during playback or Live Memory Playback (pg. 46).

1.5x speed search cannot be performed during recording on HDD or DVD.

**1** Press  to locate the point to start 1.5x speed search from.

**2** Press  to resume playback.

**3** Press  once.

- Pressing **ON SCREEN** displays “+X1.5” on the top right corner of the screen.




### NOTE:

When the unit is connected with a digital audio device using an optional optical cable, set “DIGITAL AUDIO OUT” to “PCM ONLY”. (pg. 28)

## Jump Search

You can locate a scene ahead or behind the current one by jumping scenes according to selected time intervals (pg. 79) during playback (or Live Memory Playback).

Press **JUMP -** or **JUMP +**.

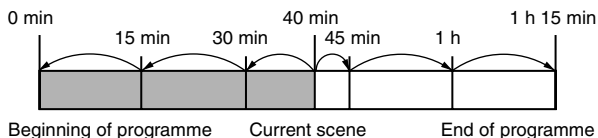
- To advance forward or back, press **JUMP -** or **JUMP +** repeatedly within 5 seconds of each press to continue jump.
- Depending on the time from where you want to start jump search, the first press of **JUMP -** or **JUMP +** will not necessarily lead to a jump of the selected time interval. The first press will lead to a jump to the nearest quarter points of an hour (15 min/ 30 min/ 45 min/ 00 min). The subsequent jumps will then be in accordance to the selected time interval.
- When you cannot advance any further (beginning or end of programme reached), the message “UNABLE TO GO BACK ANY MORE” appears on the screen and the on-air screen resumes. In such a case, press ,  or .

### Example:

Playback search when jump interval is set to 15 MIN jumps.

Taking for instance, you want to start jump search 40 minutes after the beginning of the programme. Pressing **JUMP -** or **JUMP +** will result a jump to the scene at the 30 minutes point or 45 minutes point respectively as illustrated below. At the subsequent press, the scene will jump to the 15 minutes point or 1 hour point respectively, according to the selected time interval, which in this case is “15 MIN”.

Time counter





## Marking Positions To Play Back Again Later

It is possible to mark positions (up to 999 points) where you want to play back once again later, and start playback from a marked position. Marking onto the disc when recording is helpful to locate a start point when you play back the disc later.



### To mark positions:

During playback, press **MARK** at positions you want to mark.

- “MARK” appears on the TV screen. You can easily locate the marked positions using  or  when you play back the disc.



### To delete the marked positions:

While paused, press  or  to locate a marked position you want to delete, then press **MARK**.

- Crossed “MARK” appears on the TV screen, and the marked position is deleted.

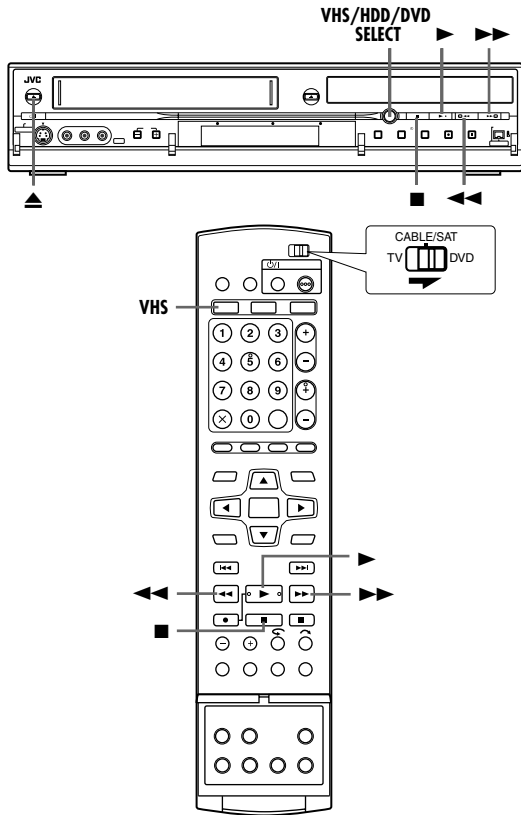


### NOTE:

When a monaural programme changes to a stereo programme while recording, a mark signal is automatically recorded.

# Basic Playback

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the TV/CABLE/SAT/DVD switch to DVD.



- 1 Load a cassette. Make sure the window side is up, the rear label side is facing you and the arrow on the front of the cassette is pointed toward the unit.
  - Do not apply too much pressure when inserting.
  - If the record safety tab has been removed, playback begins automatically. However, when "POWER SAVE" is set to "ON" (pg. 80), playback will not begin automatically even though a cassette with its record safety tab intact is inserted.
  - The unit's power comes on automatically and the counter is reset to 0:00:00.
- 2 Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **VHS** on the remote so that the VHS lamp lights up on the unit.
- 3 Find the programme start point. If the tape is advanced past the start point, press ◀◀. To go forward, press ▶▶.
- 4 Press ▶ to start playback.
  - "BEST" appears and blinks on the front display panel during automatic tracking. (pg. 45)
- 5 Press ■ to stop playback.
  - To eject the cassette, press ▲ (VHS).

## Clean the video heads using a dry cleaning cassette - TCL-2 - when:

- Rough, poor picture appears while a tape is played back.
- The picture is unclear or no picture appears.
- "USE CLEANING CASSETTE" appears on the screen (only with "O.S.D." set to "AUTO"). (pg. 81)

### NOTE:

The heads get dirty in the following cases:

- in an environment prone to extreme temperature or humidity
- in a dusty environment
- flaw, dirt or mould on video tapes
- continuous usage for a long time

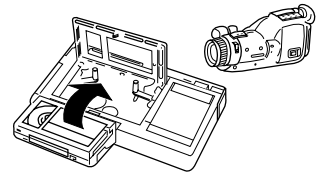
## Usable cassettes

### Full-Size VHS

- T-30 (ST-30\*\*)
- T-60 (ST-60\*\*)
- T-90
- T-120 (ST-120\*\*)
- T-160 (ST-160\*\*)
- ST-210\*\*

### Compact VHS\*

- TC-20 (ST-C20\*\*)
- TC-30 (ST-C30\*\*)
- TC-40 (ST-C40\*\*)



\* Compact VHS camcorder recordings can be played on this unit. Simply place the recorded cassette into a VHS Cassette Adapter and it can be used just like any full-sized VHS cassette.

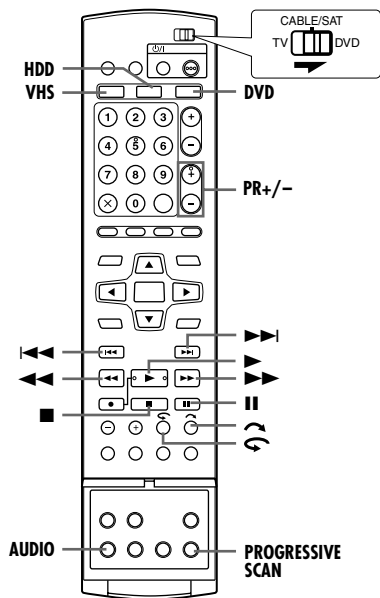
\*\*This unit can record on regular VHS and Super VHS cassettes.

However, it will record regular VHS signals only.

- S-VHS recording is not possible with this unit.
- This unit is equipped with SQPB (S-VHS QUASI PLAYBACK) that lets you watch tapes recorded in the S-VHS format and the SP mode with regular VHS resolution.
  - SQPB does not deliver Super VHS resolution.

## Playback Features

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **VHS** on the remote so that the VHS lamp lights up on the unit.



### ATTENTION:

In the search, still, slow-motion or frame-by-frame playback mode,

- the picture will be distorted.
- the noise bars will appear.
- there may be a loss of colour.
- you cannot hear the sound.

## Still Picture/Frame-By-Frame Playback

- 1 Press **II** to pause during playback.
  - If there is vertical jitter, press **PR +/-** to correct the picture.
- 2 Press **II** to activate frame-by-frame playback.
  - To resume normal playback, press **▶**.

## Slow Motion

- 1 Press **II** to pause during playback.
- 2 Press and hold **II** for 2 seconds, then release. Press **II** and release again to return to still picture.
  - Press **▶▶** for forward slow motion or **◀◀** for reverse slow motion.
  - To resume normal playback, press **▶**.

### NOTE:

During slow motion playback, some noise may appear on the TV screen. Press **PR +/-** to eliminate the noises.

## Variable Speed Search

During playback, press **▶▶** for forward variable speed search, or **◀◀** for reverse variable speed search.

- Each press of the button increases the search speed for each direction.

When pressing **▶▶**:

(SP, LP): +5x ↔ +7x

When pressing **◀◀**:

Once **◀◀** is pressed, reverse search starts in -1x normal

playback speed. After this process, each press of **◀◀** changes the search speed between -5x and -7x in both SP mode and LP mode.

(SP, LP): -1x ↔ -5x ↔ -7x

- To resume normal playback, press **▶**.

## One Touch Replay

During playback (or Live Memory Playback), press **↺**. The unit rewinds the picture a little (about 7 seconds) and resumes playback.

- If the button is pressed repeatedly, the unit rewinds the pictures continuously and resumes playback.

## Skip Search

During playback, press **↷** 1 to 6 times to skip over unwanted sections.

- Each press initiates an approximately 30-second period of fast-motion playback. Normal playback resumes automatically.
- To resume normal playback, press **▶**.

## Index Search

Your unit automatically marks index codes at the beginning of each recording. This function gives you quick access to any one of the 9 index codes in either direction.

### NOTE:

Before starting, make sure the unit is in the Stop mode.

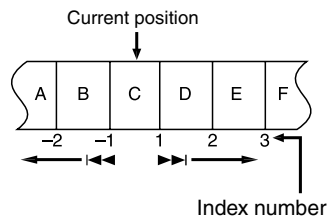
Press **◀◀** or **▶▶** to activate Index Search. "**◀◀ 1**" or "**▶▶ 1**" is displayed on the TV screen and search begins in the corresponding direction.

- To access index codes 2 through 9, press **◀◀** or **▶▶** repeatedly until the correct index number is displayed.

### Example:

To locate the beginning of B from the current position, press **◀◀** twice.

To locate the beginning of D from the current position, press **▶▶** once.



- When the specified index code is located, playback begins automatically.

## Next Function Memory

The Next Function Memory "tells" the unit what to do after rewinding. Before continuing, make sure the unit is in the Stop mode.

### For Automatic Start Of Playback

Press ◀◀, then press ▶ within 2 seconds.

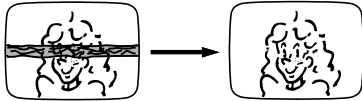
## Repeat Playback

Your unit can automatically play back the whole tape 100 times repeatedly.

- 1 Press ▶ to start playback.
- 2 Press and hold ▶ for over 5 seconds, then release.
  - "↺" lights up on the front display panel.
  - After playing back a tape 100 times, the unit stops automatically.
- 3 Press ■ at any time to stop Repeat Playback.
  - Pressing ▶, ◀◀, ▶▶ or || also stops Repeat Playback.

## Manual Tracking

Your unit is equipped with automatic tracking control. During playback, you can override this and adjust the tracking manually by pressing the PR buttons.



- 1 During playback, press PR +/- on the unit simultaneously to activate manual tracking.
- 2 Press PR +/- to adjust the tracking manually.
  - To return to automatic tracking, press PR +/- simultaneously or eject and insert the tape again.

### NOTE:

When a new tape is inserted, the unit enters the automatic tracking mode automatically.

## Soundtrack Selection

Your unit is capable of recording three soundtracks (HI-FI L, HI-FI R and NORM) and will play back the one you select.

### During Playback

Pressing AUDIO changes the soundtrack as follows:

TRACK	USE
On-Screen Display	
HI-FI L  R	For HI-FI stereo tapes
HI-FI	For main audio of Bilingual tapes
HI-FI	For sub audio of Bilingual tapes
NORM	For audio-dubbed tapes
HI-FI NORM	For audio-dubbed tapes

### NOTES:

- "HI-FI L R
- For instructions on recording stereo and bilingual programmes, refer to page 45.
- "O.S.D." must be set to "AUTO" or the on-screen displays will not appear. (pg. 81)

## VHS Progressive Scan

You can watch the images on VHS deck in the Progressive scan mode via component video.

### ATTENTION:

Your TV needs to be compatible with Progressive and to have Component video input connectors.

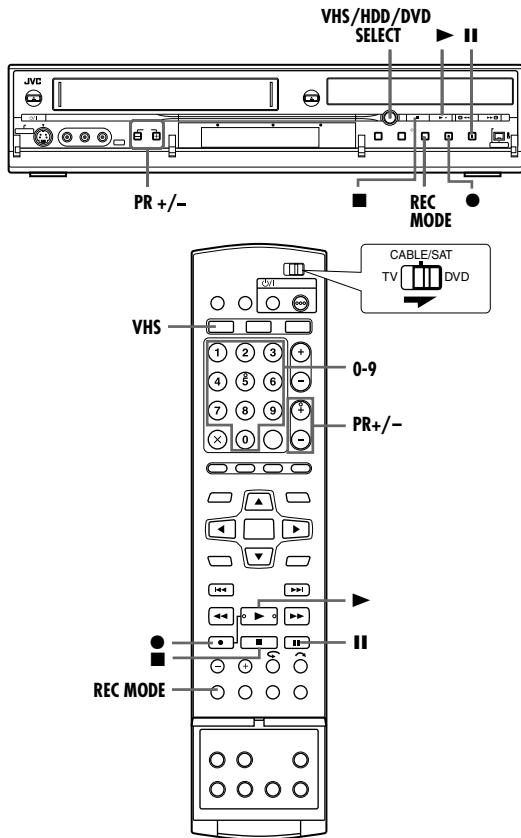
- 1 Press HDD or DVD so that the HDD or DVD lamp lights up on the unit.
- 2 Set "L-1 OUTPUT" to "COMPONENT" (pg. 72), and the Progressive-compatible TV to its component input mode.
- 3 Press PROGRESSIVE SCAN for 3 or more seconds.
  - The video output indicator lights up on the front display panel.
- 4 Press VHS so that the VHS lamp lights up on the unit, then press PROGRESSIVE SCAN.
  - "COMP OFF" is displayed on the front display panel. It will be displayed for 5 seconds.
- 5 Press PROGRESSIVE SCAN again within 5 seconds.
  - "COMP ON" is displayed on the front display panel and lights up on the front display panel.
  - The VHS progressive scan image will then be outputted from the [COMPONENT VIDEO OUT (Y/P<sub>B</sub>/P<sub>R</sub>)] connectors.

### NOTES:

- Be sure to engage the HDD or DVD deck in stop mode.
- It is possible to watch in interlace mode through the component video connection ("L-1 OUTPUT" set to "COMPONENT") simply by pressing PROGRESSIVE SCAN to switch to "COMP ON". However, will not light up on the front display panel as the image outputted is not in progressive mode.

## Basic Recording

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.



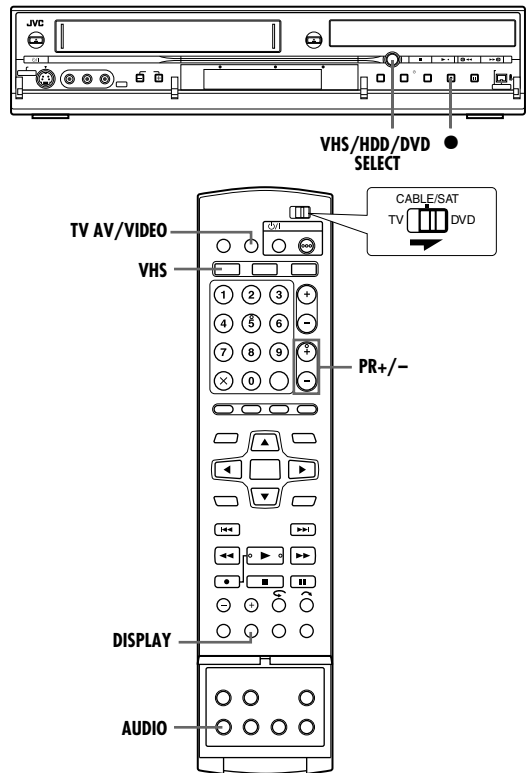
- 1 Load a cassette with the record safety tab intact.
  - The unit's power comes on automatically and the counter is reset to 0:00:00.
- 2 Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **VHS** on the remote so that the VHS lamp lights up on the unit.
- 3 Press **PR +/-** or the **number keys** to select the channel you wish to record.
- 4 Press **REC MODE** repeatedly to set the recording mode.
- 5 Press ● on the unit to start recording. Or while holding ●, press ► on the remote control.
  - The VHS recording lamp lights up on the unit.
  - If "O.S.D." is set to "AUTO" (pg. 81), "MARK" blinks on the screen while an index code is being marked.

B.E.S.T. takes place at the beginning of both the first SP and the first LP recording after inserting the cassette. (pg. 45)

- 6 Press **II** to pause recording.
  - You can select channel during the Record Pause mode.
  - To resume recording, press ►.
- 7 Press ■ to stop recording.
  - The VHS recording lamp lights off on the unit.

## Recording Features

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **VHS** on the remote so that the VHS lamp lights up on the unit.



### Watch Another Programme While Recording On The Unit

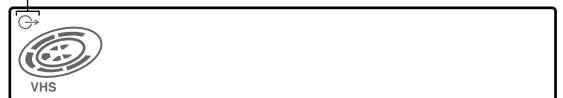
While recording is going on, you can watch another programme on the TV by using the TV's tuner.

#### NOTE:

It is required that the remote control is set to be able to operate the TV in advance. (pg. 74)

- 1 During recording, press **TV AV/VIDEO** to select TV mode.
  - Video mode is disengaged, and the VIDEO indicator on the front display panel lights off.

VIDEO indicator lights off.



- The programme received on the TV's tuner is displayed on the TV screen.

- 2 Slide the **TV/CABLE/SAT/DVD** switch to **TV**.
- 3 Press **PR +/-** repeatedly to select the desired channel.

### Elapsed Recording Time Indication

- 1 Press **DISPLAY** until a counter reading appears on the front display panel.
- 2 Press **CANCEL** to reset the counter before starting recording or playback.
  - The counter is reset to "0:00:00" and shows the exact elapsed time as the tape runs. You can check the exact time of a recording or playback.

## Instant Timer Recording (ITR)

This easy method lets you record for from 30 minutes to 6 hours (selectable in 30-minutes interval), and shuts the unit off after recording is finished.

- 1 Press ● on the unit to start recording.
- 2 Press ● again to engage the ITR mode.
  - On the front display panel, "0:30" appears.
- 3 If you want to record for more than 30 minutes, press ● to extend the time. Each press extends recording time by 30 minutes.

### NOTES:

- You can only perform ITR using the ● button on the unit.
- During Instant Timer Recording, any other timer programmed recording won't start even if their start time has come. In such a case, the timer programmed recording starts (if the end time of the timer programmed recording is set after the end of Instant Timer Recording) after the Instant Timer Recording finishes.

## Tape Remaining Time

- 1 Press **DISPLAY** until the time remaining on the tape appears.
  - By pressing the **DISPLAY** button, you can change the display to show the clock time, counter reading or tape remaining time.

### NOTES:

- When you press **DISPLAY**, the on-screen display appears on the TV screen for 5 seconds, then the displays other than the counter disappears. To clear the counter display, press **DISPLAY**.
- Depending on the type of tape being used, the tape remaining time reading may not appear right away, or is not correct. "—:—:—" may sometimes appear, or the display may blink on occasion.

## Receiving Stereo And Bilingual Programmes

Your unit is equipped with a Sound-Multiplex decoder (A2) and a Digital stereo sound decoder (NICAM) making reception of stereo and bilingual broadcasts possible.

When the channel is changed, the type of broadcast being received will be displayed on the TV screen for a few seconds.

Type of Broadcast Being Received	On-Screen Display
A2 Stereo	ST
A2 Bilingual	BIL.
Regular Monaural	(none)
NICAM Stereo	ST NICAM
NICAM Bilingual	BIL. NICAM
NICAM Monaural	NICAM

- To listen to a stereo programme, press **AUDIO** until "HI-FI L R" appears on the TV screen.
- To listen to a bilingual programme, press **AUDIO** until "HI-FI L R" or "HI-FI R" appears on the TV screen.
- To listen to the standard (Regular Monaural) audio while receiving a NICAM broadcast, press **AUDIO** until "NORM" appears on the TV screen.

### NOTE:

"O.S.D." must be set to "AUTO", or the on-screen displays will not appear. (pg. 81)

## To Record Stereo and Bilingual Programmes (A2)

Stereo programmes are automatically recorded in stereo on the Hi-Fi audio track (with the normal audio track recording mixed L and R channel sound).

- Bilingual programmes are automatically recorded in bilingual on the Hi-Fi audio track. The main soundtrack will be recorded on the normal audio track.

## To Record NICAM Stereo and Bilingual Programmes

The NICAM audio programme will be recorded on the Hi-Fi audio track, and the standard audio programme will be recorded on the normal audio track.

### NOTES:

- If the quality of stereo sound being received is poor, the broadcast will be received in monaural with better quality.
- Before playing back a programme recorded in stereo, or a bilingual programme, refer to "Soundtrack Selection" (pg. 43).

## B.E.S.T. Picture System

The B.E.S.T. (Biconditional Equalised Signal Tracking) system checks the condition of the tape in use during playback and recording, and compensates to provide the highest-possible playback and recording pictures. You can set "B.E.S.T." to "ON" or "OFF" to your preference. (pg. 81)

### Playback

The unit assesses the quality of the tape once you initiate playback.

- The unit adjusts the playback picture quality based on the quality of the tape in use.
- B.E.S.T. is active during automatic tracking. "BEST" appears and blinks on the front display panel.
- "BEST" only appears at the beginning of automatic tracking. Even though it doesn't appear after that, the B.E.S.T. function is still operative.

### Recording

The unit assesses the quality of the tape once you initiate recording.

- The unit spends approximately 7 seconds assessing the condition of the tape, then begins recording.

### ATTENTION:

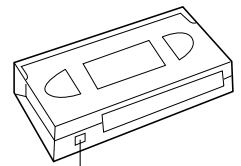
Since the B.E.S.T. system works before recording actually starts, there is a delay of approximately 7 seconds after ● and ► on the remote control are pressed, or ● on the unit is pressed. To make sure you record the desired scene or programme in its entirety, first perform the following steps:

- 1 While holding **II**, press ● to engage the Record Pause mode.
  - The unit then automatically checks the condition of the tape and, after approximately 7 seconds, re-enters Record Pause mode.
- 2 Press ► to start recording.

If you want to bypass the B.E.S.T. system and begin recording immediately, set "B.E.S.T." to "OFF". (pg. 81)

### Accidental erasure prevention

To prevent accidental recording on a recorded cassette, remove its safety tab. To record on it later, cover the hole with adhesive tape.



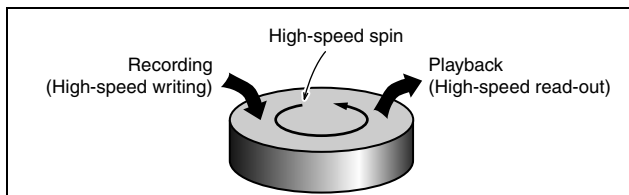
Record safety tab

## Live Memory Playback

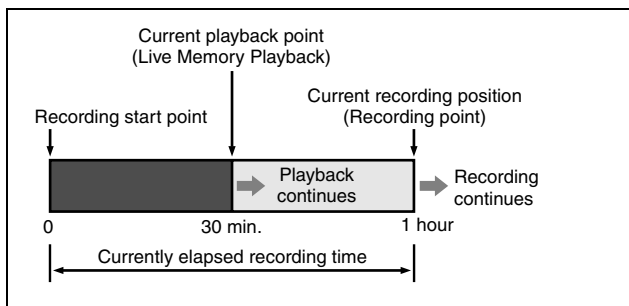


- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Press **DV/HDD/DVD** on the unit repeatedly to select the HDD or DVD deck.

This unit records pictures onto the hard disc and DVD-RAM disc instead of video tapes, then plays back the pictures recorded on the disc. This makes it possible to achieve high-speed writing and read-out that has not been possible with conventional VCRs, enabling recording and playback simultaneously.

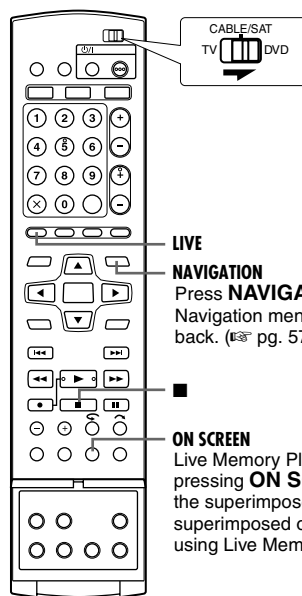


It is called "Live Memory Playback" to start playback of the programme being recorded, with a time-lag between a recording point and a playback point, as shown in the figure below.



Not only can this unit play back a programme previously recorded while recording or timer recording another programme, but the unit also allows you to play back from the beginning of a programme while continuing to record the same programme.

## Recording/playback Status Display



**LIVE**

**NAVIGATION**

Press **NAVIGATION** to display Library Database Navigation menu, then choose a programme to play back. (☞ pg. 57)

**ON SCREEN**

Live Memory Playback status can be checked by pressing **ON SCREEN** to display the bar meter on the superimpose display. The current status is superimposed on the TV screen. (☞ pg. 14, "When using Live Memory playback")

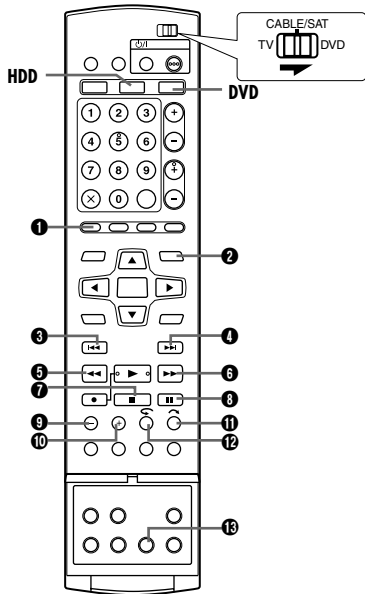
### NOTES:

- Live Memory Playback could be performed approximately 30 seconds after recording has started on the DVD-RAM disc. However, for HDD, Live Memory Playback is possible right after recording has started.
- Although high-speed search up to approximately 30 seconds before the current recording point is possible during Live Memory Playback, once the current recording point is reached, the unit resumes normal playback and maintains a delay of approximately 30 seconds so that recording and playback can continue.
- When using Live Memory Playback during timer recording, playback continues even after the end of the recording.
- When using Live Memory Playback during timer recording, playback is automatically stopped just before recording starts, and then recording starts when the time arrives for the next timer-programme.
- It is impossible to perform ITR even if you press ● during Live Memory Playback. (☞ pg. 38)  
Press ■ to display the programme being recorded, then perform ITR settings.
- Playback may be paused for a moment during Live Memory Playback, which does not interfere with recording.
- Live Memory Playback cannot be performed while recording the source from DV input. (☞ pg. 68, "DV Dubbing (HDD & DVD Deck Only)")
- When **LIVE CHECK** is pressed to display the picture currently being recorded, the picture size may not be correct.
- Press ● or **LIVE** to stop Live Memory Playback.
- Live Memory Playback cannot be performed even if the "LIVE MEMORY" in "HDD SET UP" is set to other than "OFF", as temporary recording on HDD stops during recording on DVD.



## Buttons To Be Used During Live Memory Playback

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Press **HDD** or **DVD** to select the desired deck for Live Memory Playback.



### 1 LIVE

Returns to on air programme screen. When a confirmation message appears by pressing this button during timer programming or title editing, etc., follow the instruction to return to the previous screen.

### 2 NAVIGATION

Displays Library Database Navigation menu. You can choose a title to play back.

### 3 ⏮

- Pressing once skips back to the beginning of the chapter being played back.
- Pressing down for 2 or more seconds during playback reverses playback at 5 times the normal speed while pressed. Releasing the button resumes normal playback.

#### Available only when paused

- Pressing down for 2 or more seconds reverses playback at 1/16 times the normal speed.

### 4 ⏭

- Pressing once skips forward to the beginning of the next chapter being played back.
- Pressing down for 2 or more seconds during playback advances playback at 5 times the normal speed while pressed. Releasing the button resumes normal playback.

#### Available only when paused

- Pressing down for 2 or more seconds advances playback at 1/16 times the normal speed.

### 5 ⏪

- Each press of the button during playback advances the playback speed in 5 steps in the reverse direction.

#### Available only when paused

- Each press of the button reverses the still picture frame by frame.
- Pressing down for 2 or more seconds reverses playback at 1/16 times the normal speed. Then, each press of the button reverses slow-motion at 1/16 times, 1/4 times and 1/2 times the normal playback.

### 6 ⏩

- Each press of the button during playback advances the playback speed in 4 steps in the forward direction.

#### Available only when paused

- Each press of the button advances the still picture frame by frame.
- Pressing down for 2 or more seconds advances playback at 1/16 times the normal speed. Then, each press of the button advances slow-motion at 1/16 times, 1/4 times and 1/2 times the normal playback.

### 7 ■

- Pressing once during Live Memory Playback or RetroActive Recording returns to the screen on air.
- Pressing twice during recording stops recording and returns to the screen on air.

### 8 II

- Pressing once pauses playback (still picture playback).
- Pressing repeatedly advances the still picture frame by frame.

### 9 JUMP -

Each press of the button during Live Memory Playback jumps back for the selected time interval and resumes playback. (See pg. 40, "Jump Search")

### 10 JUMP +

Each press of the button during Live Memory Playback jumps forward for the selected time interval and resumes playback. (See pg. 40, "Jump Search")

### 11 ↶

It is useful when skipping over unwanted sections.

- Each press skips forward for approximately 30 seconds and resumes playback.
- Pressing repeatedly skips forward continuously as many times as pressed.

### 12 ↷

It is useful when watching sports programmes, etc.

- Each press skips back for approximately 7 seconds and resumes playback.
- Pressing repeatedly skips back for approximately 7 seconds continuously as many times as pressed.

### 13 LIVE CHECK

You can check, for example, if the programme you are recording has already finished.

- Pressing once displays the picture currently being recorded and the one being played back simultaneously.
- Pressing successively clears the Live Check window and displays only the picture currently being played back.

## Temporary recording for Live Memory (HDD deck only)

This unit automatically records the channel being received, within the specified range of time, to the reserved space on the hard disc. The time range can be set for 30 minutes, 1 hour, and 3 hours. (pg. 79)

### NOTE:

Previous temporary recordings will be overwritten since the unit is always recording the channel being received. Thus, it is not possible to play back TV programmes recorded beyond the specified range of time since they are already overwritten. To avoid this in order to save titles, perform normal recording (pg. 37), timer recording (pg. 49, 51), or RetroActive Recording (pg. 48).

### About limitation on temporary recording

The temporary recording for Live Memory is cancelled in the following cases, and will start all over again when it is to resume.

- When the power is turned off
- When the system is powered again after a power failure was occurred
- When normal recording, timer recording, RetroActive Recording, or Automatic Satellite Programme Recording (pg. 53) is performed
- When the "LIVE MEMORY" setting is changed (pg. 79)
- When tuner channel setting is performed (pg. 83)
- When dubbing is performed by pressing **DUBBING** (pg. 64)
- When "DV" is selected by pressing **PR +/-** (pg. 68)

## RetroActive Recording (HDD deck only)

You can start recording from the previous part of the channel you are currently watching (temporarily recorded on the background). (pg. 48, "Temporary recording for Live Memory (HDD deck only)")

- 1** Press **◀◀** or **◀◀◀** to locate the point to start recording from.
  - Each press of **◀◀** increases the reverse search speed.
- 2** Press **●** on the unit to start RetroActive Recording. Or while holding **●**, press **▶** on the remote control.
- 3** Press **■** to stop RetroActive Recording.
  - The on-air screen resumes.

### NOTES:

- You cannot use RetroActive Recording for channels other than the channel you are currently watching.
- Recording speed is automatically set to FR65 mode when RetroActive Recording is started.
- Temporarily recorded data prior to the beginning of RetroActive Recording is erased when RetroActive Recording started.

## Simultaneous Recording and Playback

You can play back the previous part of the channel you are recording or other programs available in the Library Database.

- 1** Press **NAVIGATION**. The Library Database Navigation screen appears.
- 2** Press **<D>** to select "ORIGINAL", then press **ENTER**.
- 3** Press **△▽<D>** to select the desired title, then press **ENTER**.
  - For DVD-RAM, playback starts from the beginning of the title if "CONTINUOUS PLAY" in "DVD SET UP" is set to "ON" (pg. 79).
- 4** Press **<D>** to select the desired playback method ("BEGINNING", "RESUME" or "REPEAT"), then press **ENTER**.
  - Playback of the selected title begins automatically.
- 5** Press **■** to stop playback.
  - The on-air screen resumes.

### NOTES:

- You can use various playback features during Live Memory Playback. (pg. 39)
- To stop simultaneous playback, press **■**. The on-air screen resumes. To stop actual recording, press **■** again.

## One Touch Replay

You can move back the playback position slightly during recording or Live Memory Playback.

Press **↶**.

### ■ DVD-RAM

- Pressing once during recording skips back for approximately 30 seconds and starts Live Memory Playback. While pressing once during Live Memory Playback skips back for approximately 7 seconds and resumes playback.
- Each subsequent press skips back for approximately 7 seconds and resumes playback.
- Pressing while paused skips back for approximately 7 seconds and resumes pause.

### ■ HDD

- Pressing during recording skips back for approximately 7 seconds and starts Live Memory Playback. While pressing during Live Memory Playback skips back for approximately 7 seconds and resumes playback.
- Each press skips back for approximately 7 seconds and resumes playback.
- Pressing while paused skips back for approximately 7 seconds and resumes pause.

## Resuming Playback (HDD deck only)

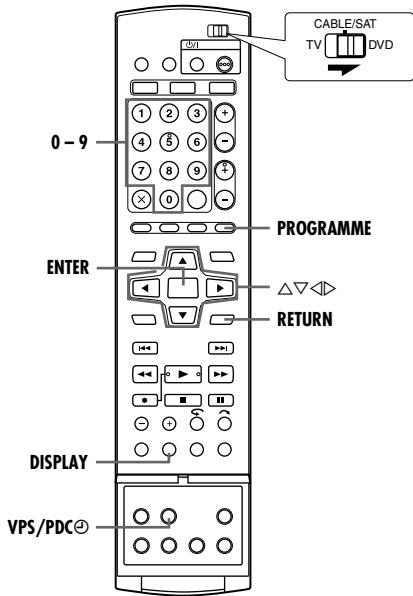
You can resume playback of a TV broadcast you were recording or watching from the point you have paused.

- 1** Press **||** to pause a TV broadcast.
  - Recording continues when recording.
- 2** Press **▶** to start Live Memory Playback.
  - Playback resumes from the paused position.
- 3** Press **■** to resume the on-air screen.

# SHOWVIEW™ DELUXE Timer Programming

You can programme this unit to timer-record as many as 16 programmes.  
 With the **SHOWVIEW** system, timer programming is greatly simplified because each TV programme has a corresponding code number which your unit is able to recognise.  
 You can use the remote control to enter the **SHOWVIEW** number.

- Make sure that the unit's built-in clock is set properly.
- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.



- 1 Load a recordable disc if recording to DVD.
- 2 Press **PROGRAMME** to access the programme top screen.
- 3 Press  $\Delta \nabla \triangleleft \triangleright$  to select "SHOWVIEW", then press **ENTER**.
  - When "PROGRAMME FULL DELETE UNWANTED TIMER PROGRAMMES" appears on the TV screen, you need to cancel some of the reserved programmes. (pg. 52)
- 4 Press the **number keys** to enter the **SHOWVIEW** number of a programme you wish to record.  
 OR  
 Press  $\Delta \nabla \triangleleft \triangleright$  to select the desired number key on the screen, then press **ENTER**. Repeat to enter all required numbers.
  - If you have made a mistake, press  $\Delta \nabla \triangleleft \triangleright$  to select "DELETE" or "DELETE ALL", then press **ENTER** and input the correct number before you press **ENTER** again.
- 5 Press  $\Delta \nabla$  to select "RECORD TO", then press **ENTER**. Press  $\Delta \nabla$  to select the desired recording deck, then press **ENTER**.
- 6 Press  $\Delta \nabla \triangleleft \triangleright$  to select "CONFIRM", then press **ENTER**.
  - If the number you entered is invalid, "SHOWVIEW NO. ERROR CONFIRM SHOWVIEW NO. THEN RETRY" appears on the TV screen. Input a valid **SHOWVIEW** number.
  - If "GUIDE PROGRAMME IS NOT SET SET GUIDE PROGRAMME THEN RETRY" appears on the TV screen, set Guide Programme Numbers manually. (pg. 83)



- 7 The **SHOWVIEW** number you entered and the matching timer-recording information are displayed on the TV screen. Check the programme data.
  - To cancel this setting, press **RETURN**.

**IMPORTANT:**  
 Make sure the channel position number you wish to record is displayed; if not, see "SHOWVIEW™ System Setup" (pg. 83) and set the Guide Programme number correctly.

- 8 Press  $\Delta \nabla$  to select the desired recording option as required. Press  $\Delta \nabla$  to select the desired setting, then press **ENTER**.
  - "INPUT TITLE" (pg. 58, "Modify Title Name")
  - "CATEGORY" (pg. 59, "Modify Category")
  - "VPS/PDC" (pg. 50, "VPS/PDC Recording")
  - "WEEKLY/DAILY" (pg. 50, "Weekly/Daily Recording")
  - "REC MODE" (pg. 34, "Recording Mode")
- 9 Press  $\Delta \nabla$  to select "OK", then press **ENTER** to access the Programme Confirmation screen.
- 10 Press  $\triangleleft \triangleright$  to select "EXIT", then press **ENTER** to complete timer programming.
  - To programme another timer, press  $\triangleleft \triangleright$  to select "CONTINUE", then press **ENTER**.
  - If "PROGRAMME OVERLAPPED" appears on the TV screen, delete or modify the programmes.

**NOTES:**

- There may be cases that the **SHOWVIEW** Timer Programming function prolongs the stop time of the programming.
- When two successive programmes are recorded on a DVD-RW disc with the **SHOWVIEW** Timer Programming function, the beginning of the second one may be left off the recording.
- If the copy limited programme is received during timer-recording, the unit enters Record Pause mode. Recording starts again if it is switched to a recordable broadcast during the time you programmed.

**IMPORTANT:**  
 If you have moved to a different area or if a broadcasting station's channel number has been changed, the wrong channel number will be displayed on the **SHOWVIEW** programme screen in step 7. When this happens, set the correct Guide Programme number for that station. (pg. 83, "SHOWVIEW™ System Setup")

**Satellite Receiver Users**  
 To timer-record a satellite broadcast using the **SHOWVIEW** system:

- 1 Perform "Satellite Receiver Control Setting (HDD & DVD Deck Only)" (pg. 22).
- 2 Perform "**SHOWVIEW**™ Timer Programming" (pg. 49).
- 3 Leave the satellite receiver's power on.

## Weekly/Daily Recording

You can record programmes with one of the following weekly/daily timer settings.

### For the HDD deck

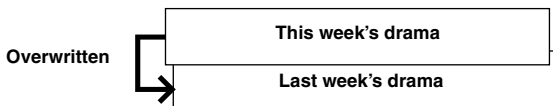
When you select a mode other than ONCE, the space on the hard disk drive is saved for new recordings by overwriting previous recordings. To prevent loss of a needed recording, backup programmes you wish to save by dubbing them to DVD discs before overwriting previous recordings. Or save the title of weekly/daily programmes to avoid overwriting of a previous week/day. (pg. 52)

#### ONCE (One Time Recording)

In this mode a programme will not be automatically overwritten.

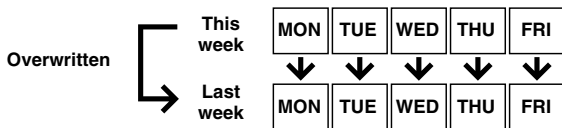
#### WEEKLY (OVERWRITE) (Weekly Recording/Weekly Overwrite)

When the set weekly programme is broadcast, the programme recorded last week is automatically deleted and overwritten by the new programme. Save the title of each programme you wish to save, then the recorded programme is saved and will not be overwritten by the new programme.



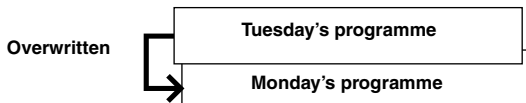
#### MON-SUN (FOR A WEEK)/ MON-SAT (FOR A WEEK)/ MON-FRI (FOR A WEEK) (Daily Recording/Weekly Overwrite)

When the set weekly programme is broadcast, the programme recorded on the same day last week is automatically deleted and overwritten by the new programme. Save the title of each programme you wish to save, then the recorded programme is saved and will not be overwritten by the new programme.



#### MON-SUN (OVERWRITE)/ MON-SAT (OVERWRITE)/ MON-FRI (OVERWRITE) (Daily Recording/Daily Overwrite)

When the set daily programme is broadcast, yesterday's programme is automatically deleted and overwritten by the new programme. Save the title of each programme you wish to save, then the recorded programme is saved and will not be overwritten by the new programme.



### For the DVD deck

#### ONCE (One Time Recording)

#### WEEKLY (Weekly Recording)

#### MON-SUN/ MON-SAT/ MON-FRI (Daily Recording)

## VPS/PDC Recording

Now available from some TV stations, PDC (Programme Delivery Control) and VPS (Video Programme System) are services designed to assure safe, accurate timer recording. With this system, special code signals are transmitted together with the audio/video signals. These code signals control your video unit and have precedence over the advertised times you may have preset into the timer. This means that your unit will start and stop recording when the preset TV programmes actually start and end—even if the broadcast time of a preset TV programme is changed.

### NOTES:

- Make sure to press **VPS/PDC** after completing timer programming procedure to activate the VPS/PDC recording function. The VPS/PDC recording indicator lights up on the front display panel when VPS/PDC recording function is activated. However, it will blink rapidly when **VPS/PDC** is pressed under the following conditions:
  - Clock is not set.
  - Timer programming has not been set.
  - Disc is not loaded.
  - HDD is full.
- When you use Manual Timer Programming, set the start time (VPS or PDC time) exactly as advertised in the TV listing. A different time than advertised will result in no recording.
- VPS/PDC recording is also possible when a satellite receiver or a cable system is connected to [L-2 IN/DECODER] connector on your unit.
- VPS/PDC recording is also possible via the [L-1 IN/OUT] connector.
- When timer recording via VPS/PDC recording is in progress, it is not possible to switch between the HDD and DVD deck, and the following menus cannot be displayed:
  - Main Menu
  - Library Database Navigation Menu
  - Editing Menu
- If the unit is powered on when set to record a timer programme onto HDD/DVD using VPS/PDC, the PDC information will not be used. The programme will be recorded using the start and stop times originally programmed.

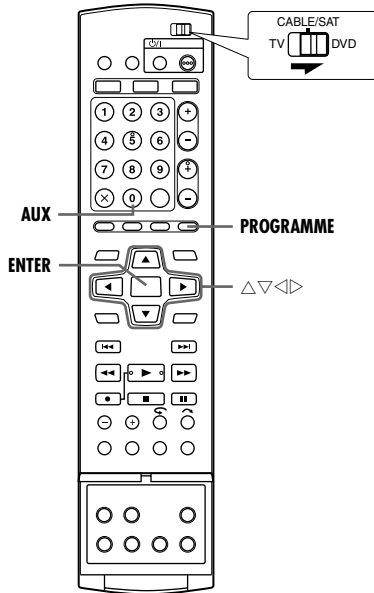
### How to check if the station being received transmits a VPS/PDC signal

- 1 Hold down **DISPLAY** for about 5 seconds. "VPS/PDC" appears and blinks on the front display panel. If a VPS/PDC signal is detected from the station, "VPS/PDC" will stop blinking. If no VPS/PDC signal is detected from the station, "VPS/PDC" will blink at a slower rate.
- 2 Press **DISPLAY** again to return to normal display.

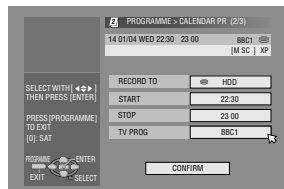
# Manual Timer Programming

You can programme this unit to timer-record as many as 16 programmes.  
If you do not know the **ShowView** number for the programme you wish to record, use the following procedure to set your unit to timer-record the programme.

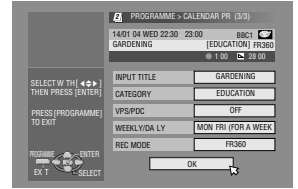
- Make sure that the unit's built-in clock is set properly.
- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.



- 1** Load a recordable disc if recording to DVD.
- 2** Press **PROGRAMME** to access the programme top screen.
- 3** Press  $\Delta \nabla \triangleleft \triangleright$  to select "CALENDAR PR.", then press **ENTER**.
  - When "PROGRAMME FULL DELETE UNWANTED TIMER PROGRAMMES" appears on the TV screen, you need to cancel some of the reserved programmes. (pg. 52)
- 4** Press  $\Delta \nabla \triangleleft \triangleright$  to select the desired date, then press **ENTER**.
- 5** Press  $\Delta \nabla$  to select "RECORD TO", then press **ENTER**. Press  $\Delta \nabla$  to select the desired recording deck, then press **ENTER**.
- 6** Press  $\Delta \nabla$  to select "START", then press **ENTER**. Press  $\Delta \nabla$  to set the desired start time, then press **ENTER**.
  - Each press of  $\Delta \nabla$  increases/decreases the start time in 1-minute interval.
  - To increase/decrease the start time in 30-minutes interval, press and hold  $\Delta \nabla$ .
- 7** Press  $\Delta \nabla$  to select "STOP", then press **ENTER**. Press  $\Delta \nabla$  to set the desired stop time, then press **ENTER**.
  - Each press of  $\Delta \nabla$  increases/decreases the stop time in 1-minute interval.
  - To increase/decrease the stop time in 30-minutes interval, press and hold  $\Delta \nabla$ .



- 8** Press  $\Delta \nabla$  to select "TV PROG", then press **ENTER**. Press  $\Delta \nabla$  to select the desired channel.
- 9** Press  $\Delta \nabla$  to select "CONFIRM", then press **ENTER**.
- 10** Set the other recording options as required.
  - Refer to step 8 in "ShowView" Timer Programming" (pg. 49).
- 11** Press  $\Delta \nabla$  to select "OK", then press **ENTER** to access the Programme Confirmation screen.
- 12** Press  $\triangleleft \triangleright$  to select "EXIT", then press **ENTER** to complete timer programming.
  - To programme another timer, press  $\triangleleft \triangleright$  to select "CONTINUE", then press **ENTER**.
  - If "PROGRAMME OVERLAPPED" appears on the TV screen, delete or modify the programmes.



### NOTES:

- When two successive programmes are recorded on a DVD-RW disc with Manual Timer Programming function, the beginning of the second one may be left off the recording.
- If the copy limited programme is received during timer-recording, the unit enters Record Pause mode. Recording starts again if it is switched to a recordable broadcast during the time you programmed.

### Satellite Receiver Users

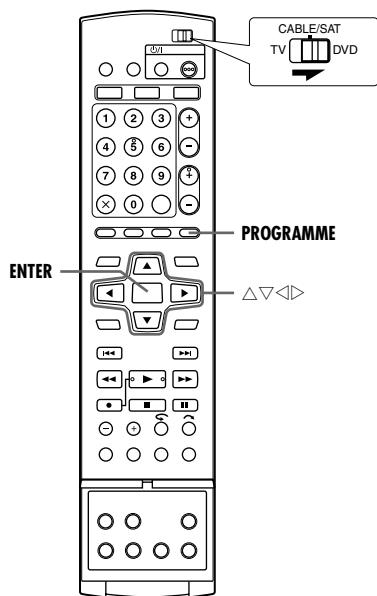
To timer-record a satellite broadcast using Manual Timer Programming:

- 1** Perform "Satellite Receiver Control Setting (HDD & DVD Deck Only)" (pg. 22).
- 2** Perform "Manual Timer Programming" (pg. 51). In step 8, press **AUX** to change "TV PROG" to "SAT". Then press  $\Delta \nabla$  to enter the channel position for the satellite broadcast.
- 3** Leave the satellite receiver's power on.

### Relief Recording

When a programme that is set for the DVD deck cannot be recorded properly, the programme is recorded to the HDD deck instead in XP mode.

- If the remaining capacity of the hard disc is not sufficient, the programme is recorded to the DVD deck until the remaining capacity of the DVD disc lasts.
- If "JUST" is selected for the recording mode, the current recording mode for the DVD deck is applied.



## Check Programmes

### To check the whole list of programmes

- 1** Press **PROGRAMME** to access the programme top screen.
- 2** Press  $\Delta \nabla \triangleleft \triangleright$  to select "PROGRAMME LIST", then press **ENTER**.
  - The details of a selected programme appear on the top of the screen.
  - The daily programme of a title is listed as one programme.

### To check the list of programmes by date

- 1** Press **PROGRAMME** to access the programme top screen.
- 2** Press  $\Delta \nabla \triangleleft \triangleright$  to select "CALENDAR LIST", then press **ENTER**.
- 3** Press  $\Delta \nabla$  to select the desired date, then press **ENTER**.

## Cancel And Change Programmes

- Repeat steps in "Check Programmes" to select a programme before proceeding.

### To cancel the programme

- 1** Press  $\Delta \nabla \triangleleft \triangleright$  to select "CANCEL", then press **ENTER**.

### To modify the programme settings

- 1** Press  $\Delta \nabla \triangleleft \triangleright$  to select "MODIFY", then press **ENTER**.
- 2** Change the settings of the desired recording options as required.
  - Refer to steps 4 – 12 in "Manual Timer Programming" (pg. 51).

### To skip the weekly/daily programmes to the next week/day

It is easy to temporarily cancel weekly/daily programmes of a week/day.

- 1** Press  $\Delta \nabla \triangleleft \triangleright$  to select "PROGRAMME SKIP", then press **ENTER**.
- 2** Press  $\triangleleft \triangleright$  to select "SKIP", then press **ENTER**.

### To save the titles of weekly/daily programmes (HDD Deck Only)

Use this function to avoid overwriting titles of weekly/daily programmes of a previous week/day.

- 1** Press  $\Delta \nabla \triangleleft \triangleright$  to select "TITLE SAVE", then press **ENTER**.
- 2** Press  $\triangleleft \triangleright$  to select "SAVE", then press **ENTER**.

### NOTE:

This function is available only when the remaining capacity of the hard disc is sufficient.

# Automatic Satellite Programme Recording (HDD Deck Only)

This function allows you to automatically record a satellite programme which is timer-programmed on your external satellite receiver. Connect a satellite receiver to the unit's [L-2 IN/DECODER] connector and programme the timer on the satellite receiver. The unit starts or stops recording by the signals input from the satellite receiver. After recording, the unit's power shuts off automatically.

### ATTENTION:

- Be sure not to turn on the satellite receiver before the programme is executed; otherwise, the unit will start recording when the satellite receiver's power is turned on.
- If you have connected another appliance other than a satellite receiver to the [L-2 IN/DECODER] connector, be sure not to engage the Automatic Satellite Programme Recording mode; otherwise, the unit will start recording when the connected appliance's power is turned on.
- Automatic Satellite Programme Recording and timer-recording cannot be done at the same time.

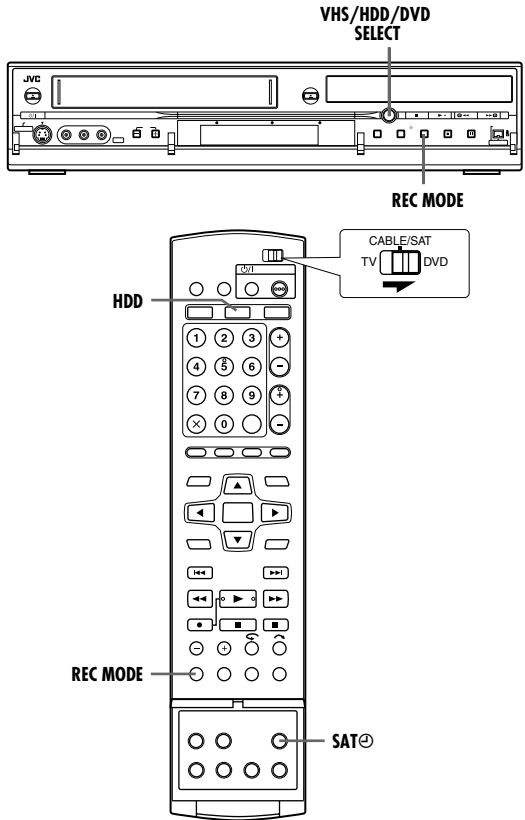
- Make sure the satellite receiver is connected to the unit's [L-2 IN/DECODER] connector.
- Programme the timer on the satellite receiver.
- Slide the TV/CABLE/SAT/DVD switch to DVD.

- 1 Press **HDD** on the remote to choose the recording deck. You can also press **VHS/HDD/DVD SELECT** on the unit repeatedly to select the recording deck.
- 2 Set "L-2 SELECT" to "SAT VIDEO" or "SAT S-VIDEO". (pg. 72)
  - Also refer to "IMPORTANT" on page 76.
- 3 Press **REC MODE** repeatedly to set the recording mode.
- 4 Press and hold **SAT** for about 2 seconds to engage the Automatic Satellite Programme Recording mode. "⏸" and "SAT" appear on the front display panel.

### NOTES:

- To disengage the Automatic Satellite Programme Recording mode, press **SAT**.
- If the unit's power is off, it is not possible to engage the Automatic Satellite Programme Recording mode.
- In step 4, if "⏸" blinks quickly on the front display panel even though your satellite receiver's power is off, Automatic Satellite Programme Recording will not work properly with that satellite receiver\*. If this is the case, perform "Manual Timer programming" (pg. 51) to timer-record a satellite programme.
 

*\* Some satellite receivers output signals even if the power is off. Automatic Satellite Programme Recording is not possible with those satellite receivers.*
- "⏸" blinks on the front display panel while Automatic Satellite Programme Recording is in progress.
- For timer programming of the satellite receiver, refer to the instruction manual of the satellite receiver.
- Automatic Satellite Programme Recording is not possible if your satellite receiver does not have a timer.
- Pressing the unit's **⏻/I** button while Automatic Satellite Programme Recording is in progress turns off the unit's power and disengages the Automatic Satellite Programme Recording mode.
- If there are more than one satellite programmes you wish to record with Automatic Satellite Programme Recording, it is not possible to set different recording modes for each programme.
- Depending on the type of satellite receiver, the unit may not record a slight portion of the beginning of the programme or may record slightly longer than the actual length of the programme.
- If you engage the Automatic Satellite Programme Recording mode when the satellite receiver's power is on, the unit will not start Automatic Satellite Programme Recording even though "⏸" blinks on the front display panel. When the satellite receiver shuts off once and is turned back on again, the unit starts recording.
- You can also record a programme from your cable system in the same way if the system has a timer.
- Just Clock (pg. 86) does not work when the Automatic Satellite Programme Recording mode is engaged.



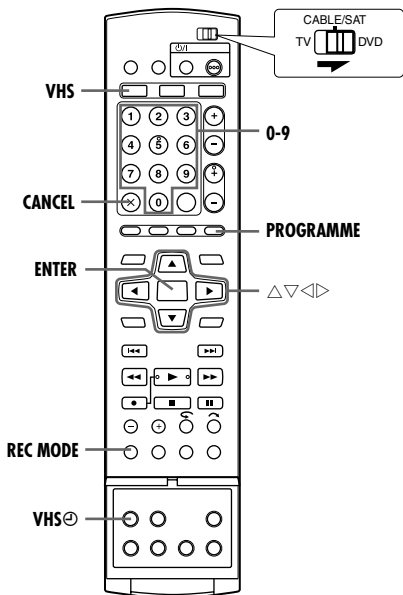
# SHOWVIEW™ Timer Programming

You can programme this unit to timer-record as many as 8 programmes.

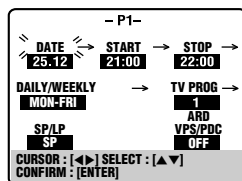
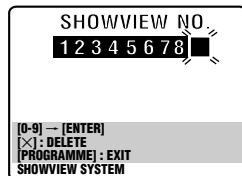
With the **SHOWVIEW** system, timer programming is greatly simplified because each TV programme has a corresponding code number which your unit is able to recognise.

You can use the remote control to enter the **SHOWVIEW** number.

- Make sure that the unit's built-in clock is set properly.
- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.



- 1 Load a cassette with the record safety tab intact.
- 2 Press **VHS** so that the VHS lamp lights up on the unit.
- 3 Press **PROGRAMME** to access the Programme screen.
- 4 Press  $\Delta \nabla$  to select "SHOWVIEW PRGM", then press **ENTER**.
- 5 Press the **number keys** to enter the **SHOWVIEW** number of a programme you wish to record, then press **ENTER**.
  - If you have made a mistake, press **CANCEL** and input the correct number before you press **ENTER**.
  - If the number you entered is invalid, "ERROR" appears on the TV screen and "Err" appears on the front display panel. Press **CANCEL** and input a valid **SHOWVIEW** number.
- 6 The **SHOWVIEW** number you entered and the matching timer-recording information are displayed on the TV screen. Check the programme data.
  - To cancel this setting, press **PROGRAMME**.



## IMPORTANT:

Make sure the channel position number you wish to record is displayed; if not, see "**SHOWVIEW** System Setup" (pg. 83) and set the Guide Programme number correctly.

- 7 Press **REC MODE** to select the desired recording mode. Or press  $\triangleleft \triangleright$  to select "SP/LP", then press  $\Delta \nabla$  to select the desired recording mode.
- 8 Press  $\triangleleft \triangleright$  to select "VPS/PDC", then press  $\Delta \nabla$  to select the desired channel.
- 9 Press **ENTER** to complete timer programming.
  - To programme another timer, repeat steps 3 – 9.
  - If "PROGRAM OVERLAPPED" appears on the TV screen, see page 56.
- 10 Press **VHS** to engage the unit's timer mode. The VHS recording lamp lights up on the unit and the HDD or DVD deck is automatically selected. Press  $\odot / \text{I}$  to turn off the unit. When the HDD or DVD deck is in timer standby mode, the unit is automatically turned off.
  - The VHS timer indicator lights up on the front display panel when the VHS deck is set to the timer recording standby mode by pressing **VHS**. However, it will blink rapidly when **VHS** is pressed under the following conditions:
    - Clock is not set.
    - Timer programming has not been set.
    - Cassette is not loaded.
    - Timer recording standby mode with a cassette without record safety tab inserted
  - To disengage the timer mode, press **VHS** again.

## IMPORTANT:

If you have moved to a different area or if a broadcasting station's programme number has been changed, the wrong programme number will be displayed on the **SHOWVIEW** programme screen in step 6. When this happens, set the correct programme number for that station. (pg. 83, "**SHOWVIEW** System Setup")

## NOTES:

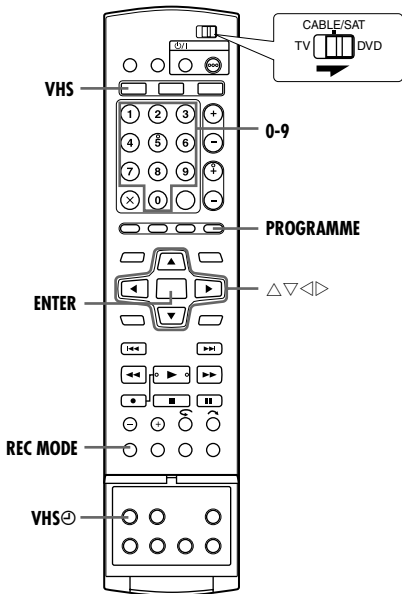
- To Timer-Record Weekly Or Daily Serials:
  - in step 6, press **number keys** "9" for weekly serials or **number keys** "8" for daily serials (Monday - Friday). Either "WEEKLY" or "DAILY" appears on the TV screen. Pressing the button again makes the corresponding indication disappear.
- You can programme this unit to timer-record as many as 8 programmes. If you try to programme the unit to record a ninth, "PROGRAM FULL" appears on the TV screen and "FULL" appears on the front display panel. To record the extra programme, you must first cancel any unnecessary programmes. (pg. 56)
- To record the programmes received by satellite receiver, record on the HDD or the DVD discs. For details, refer to "**SHOWVIEW** Timer Programming" (pg. 49)



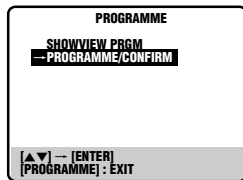
# Manual Timer Programming

You can programme this unit to timer-record as many as 8 programmes. If you do not know the **ShowView** number for the programme you wish to record, use the following procedure to set your unit to timer-record the programme.

- Make sure that the unit's built-in clock is set properly.
- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.

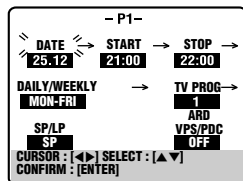


- 1 Load a cassette with the record safety tab intact.
- 2 Press **VHS** so that the VHS lamp lights up on the unit.
- 3 Press **PROGRAMME** to access the Programme screen.
- 4 Press  $\Delta \nabla$  to select "PROGRAMME/CONFIRM", then press **ENTER** access the Programme Check screen.
- 5 Press  $\Delta \nabla$  to select the blank number, then press **ENTER**. The programme screen appears.



	DATE	START	STOP	CH
1	24.12	8:00	10:00	3
2	25.12	10:00	10:45	2
3	25.12	11:30	13:00	1
4				
5				
6				
7				
8				

- 6 Press  $\triangleleft \triangleright$  to select "START", then press  $\Delta \nabla$  to set the desired start time.
  - Each press of  $\Delta \nabla$  increases/decreases the start time in 1-minute interval.
  - To increase/decrease the start time in 30-minutes interval, press and hold  $\Delta \nabla$ .



- 7 Press  $\triangleleft \triangleright$  to select "STOP", then press  $\Delta \nabla$  to set the desired stop time.
  - Each press of  $\Delta \nabla$  increases/decreases the stop time in 1-minute interval.
  - To increase/decrease the stop time in 30-minutes interval, press and hold  $\Delta \nabla$ .
- 8 Press  $\triangleleft \triangleright$  to select "DATE", then press  $\Delta \nabla$  to set the desired date.
  - The current date appears on the TV screen. The date you enter appears in its place.
- 9 Press  $\triangleleft \triangleright$  to select "TV PROG", then press  $\Delta \nabla$  to select the desired channel.
- 10 Press **REC MODE** to select the desired recording mode. Or press  $\triangleleft \triangleright$  to select "SP/LP", then press  $\Delta \nabla$  to select the desired recording mode.
- 11 Press  $\triangleleft \triangleright$  to select "VPS/PDC", then press  $\Delta \nabla$  to select the desired channel.
- 12 Press **ENTER** to access the Programme Check screen.
- 13 Press **PROGRAMME** to complete timer programming. "PROGRAM COMPLETED" appears on the TV screen for about 5 seconds, then the normal screen appears. If "PROGRAM OVERLAPPED" appears on the TV screen, see page 56.
  - To programme another timer, repeat steps 3 – 13.
- 14 Press **VHS** with a timer icon to engage the unit's timer mode. The VHS recording lamp lights up on the unit and the HDD or DVD deck is automatically selected. Press  $\text{O/I}$  to turn off the unit. When the HDD or DVD deck is in timer standby mode, the unit is automatically turned off.
  - To disengage the timer mode, press **VHS** with a timer icon again.

## NOTES:

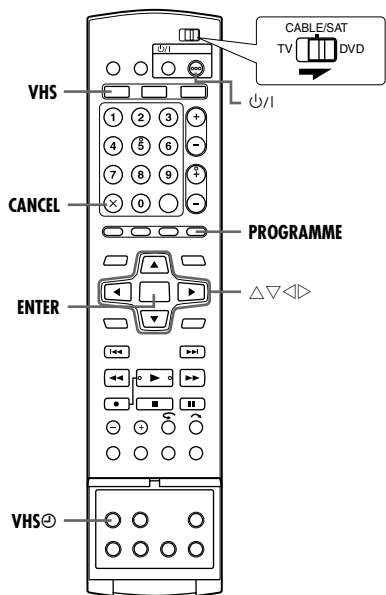
- To Timer-Record Weekly Or Daily Serials:
  - anytime during steps 8 through 10, press **number keys "9"** for weekly serials or **number keys "8"** for daily serials (Monday - Friday). Either "WEEKLY" or "DAILY" appears on the TV screen. Pressing the button again makes the corresponding indication disappear.
- You can programme this unit to timer-record as many as 8 programmes. If you try to programme the unit to record a ninth, "PROGRAM FULL" appears on the TV screen. To record the extra programme, you must first cancel any unnecessary programmes. (pg. 56)
- In case of a power failure after programming, the unit's memory backup keeps your selections for approximately 5 seconds.
- Programmes that start after midnight must have the next day's date.
- To record the programmes received by satellite receiver, record on the HDD or the DVD discs. For details, refer to "Manual Timer Programming" (pg. 51).

## VPS/PDC Recording

Now available from some TV stations, PDC (Programme Delivery Control) and VPS (Video Programme System) are services designed to assure safe, accurate timer recording. With this system, special code signals are transmitted together with the audio/video signals. These code signals control your video unit and have precedence over the advertised times you may have preset into the timer. This means that your unit will start and stop recording when the preset TV programmes actually start and end—even if the broadcast time of a preset TV programme is changed.

## NOTES:

- When you use Manual Timer Programming, set the start time (VPS or PDC time) exactly as advertised in the TV listing. A different time than advertised will result in no recording.
- VPS/PDC recording is not possible when a satellite receiver or a cable system is connected to [L-2 IN/DECODER] connector on your unit.
- VPS/PDC recording is also possible via the [L-1 IN/OUT] connector.



### Check, Cancel And Change Programmes

- When the VHS recording lamp (●) lights up on the unit Press **VHS**, then press **DVD**.  
**When the VHS lamp does not light up on the unit** Press **VHS** so that the VHS lamp lights up on the unit.

- Press **PROGRAMME** to access the Programme screen.
- Press  $\Delta \nabla$  to select "PROGRAMME/CONFIRM", then press **ENTER** to access the Programme Check screen.

	DATE	START	STOP	CH
1	24.12	8:00	10:00	3
2	25.12	10:00	10:45	2
3	25.12	11:30	13:00	1
4				
5				
6				
7				
8				

[ $\Delta \nabla$ ] -- [ENTER]  
[PROGRAMME] : EXIT

- Press  $\Delta \nabla$  to select the programme, then press **ENTER**. The programme screen appears.

- P1 -		
DATE	START	STOP
25.12	21:00	22:00
DAILY/WEEKLY		TV PROG
MON-FRI		1
SP/LP		ARD
SP		VPS/PDG
		OFF

CURSOR : [ $\Delta \nabla$ ] SELECT : [ $\Delta \nabla$ ]  
CONFIRM : [ENTER]

#### To cancel a programme

Press **CANCEL**.

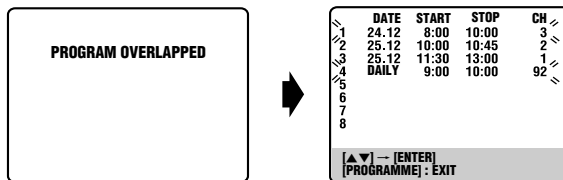
- Change the settings of the desired recording options as required.
  - Refer to steps 6 – 12 in "Manual Timer Programming" (pg. 55).

- Press **PROGRAMME** to complete timer correction. The previous screen resumes.

- Press **VHS**.
  - The VHS recording lamp lights up on the unit and the HDD or DVD deck is automatically selected. When the HDD or DVD deck is in timer standby mode, the unit is automatically turned off.

### When Programmes Overlap Each Other

If "PROGRAM OVERLAPPED" appears, you have another programme overlapping the programme you have just made. The Programme Check screen appears and conflicting programmes will start blinking.



#### Example: Programme 1 (you have just made) and Programme 4 overlap each other.

- Confirm the overlapping programmes. Overlapping programmes blink on the TV screen.
- Press  $\Delta \nabla$  to select the programme to modify, then press **ENTER** or  $\triangleright$ .
  - You can only select one of the overlapping programmes.

#### NOTE:

If you do not mind this overlap, press **PROGRAMME** to finish the timer programme setting. The programme with the lower programme number will be recorded and the other one will not be recorded correctly. If no changes are made for approximately 1 minute, the unit will return to the normal screen.

- Press  $\Delta \nabla$  to select the desired programme to be cancelled or changed.

#### To cancel the programme

- Press **CANCEL**.
- "PROGRAM COMPLETED" appears on the TV screen for about 5 seconds, then the normal screen resumes.

#### To change the programme setting

- Press **ENTER**, then go to step 4.
- Change the programme setting.
    - Refer to steps 6 – 12 in "Manual Timer Programming" (pg. 55).
  - Press **PROGRAMME** to access the Programme screen, then press  $\Delta \nabla$  to select "PROGRAMME/CONFIRM" to check if the conflict has been settled.
    - "PROGRAM COMPLETED" appears on the TV screen for about 5 seconds, then the normal screen resumes.

- Press **VHS**.

#### NOTE:

When any overlaps remain after deletion and modification of programmes, Programme Check screen remains showing the conflicting programmes. In such a case, repeat the procedure above until the conflict is solved.

# Library Database Navigation



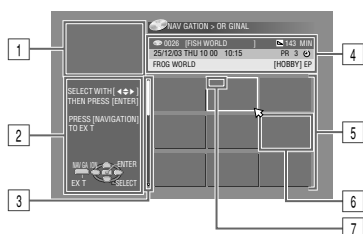
The Library Database Navigation enables you to search and select the desired titles recorded on the HDD deck and the DVD deck very easily.

You can record up to 99 titles on a disc.

Each time a title is recorded, the information of the title is registered for the Library Database Navigation automatically.

So, you can confirm the information of the titles recorded with the Library Database Navigation screen. And, you can also select one of the titles recorded using the Library Database Navigation.

The following screen appears as the Library Database Navigation screen when you press **NAVIGATION**. You can move the arrow to select the desired position on the screen by pressing  $\Delta \nabla \triangleleft \triangleright$  on the remote control.



- 1 Playback screen  
(Indicates currently received TV programme.)
- 2 Guidance for operations
- 3 Scroll bar  
(Appears when there are over nine registered titles (or play lists). The scroll bar only indicates that there are more titles (or play lists) hidden off the current screen display. To show hidden titles (or play lists), press  $\Delta \nabla \triangleleft \triangleright$  repeatedly.)
- 4 Recording information for the title indicated by the arrow
- 5 Index list  
(Thumbnail still of each title)  
Thumbnail still is not to be played back.
- 6 Index  
  - : Indicates no index is registered.
  - : Indicates title in standby for timer recording.
  - : Indicates no title is registered.
- 7 Icons  
(Indicate the record condition of each title.)

Using Library Database Navigation system, you can easily modify registered information, edit the title or play list, as well as search for the beginning of each title.

## About registration of information

The following information is automatically registered for each title when ordinary recording or timer recording is performed, then stored in an area specified on the unit.

- index\* (reduced pictures to show programme titles)
- programme title\*
- category\*
- date and time
- channel
- recording mode
- length of recording time

The items marked with an asterisk (\*) can be easily modified and registered again after recording by using Library Database Navigation system.

## The limitations of registration

You can register information up to 99 titles for the DVD deck and 200 titles for the HDD deck.

When the amount of information is at the limits of registration, you cannot record new titles any more. In this case, you need to delete old titles to register new one. (ref. pg. 59)

## NOTES:

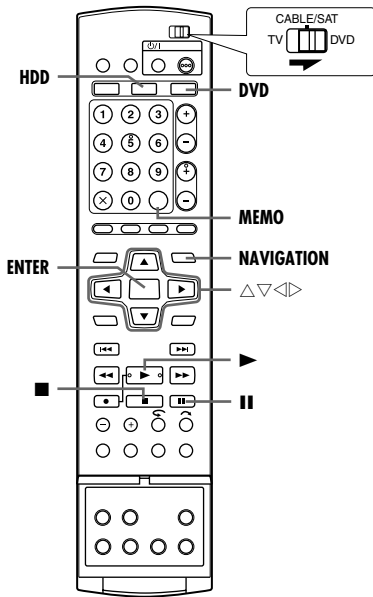
- Once a DVD-R/RW (Video mode) disc has been finalised, the displays for original and play list do not appear. Only display for library appears.
- When you move the title recorded on HDD to DVD, the icon will be changed to .
- Sound of received channel may be interrupted while the Library Database Navigation screen is displayed.
- The order of index which are displayed by pressing **DUBBING** differs from the images displayed by pressing **NAVIGATION** or **EDIT**.
- You cannot perform timer recording during editing of thumbnail images or play lists by pressing **EDIT**. Press **EDIT** to clear the Editing screen before performing timer recording.

## The Icons and their meanings

	This title is write-protected.
	This title was recorded with timer recording.
	This title is Weekly Recording/Weekly Overwrite.
	This title is Daily Recording/Daily Overwrite.
	This title is Daily Recording/Weekly Overwrite.
	This title has not been played back.
	This title is copy-protected.
	This title can only be recorded once (copy-once title).

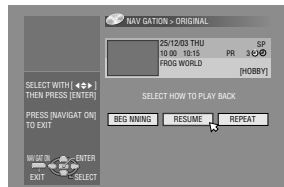
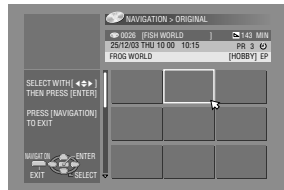
## Scan For Beginning Of Title

- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Press **HDD** or **DVD** to choose the corresponding deck.
- Load a DVD disc to scan.



You can scan the beginning of the title easily with the Library Database Navigation.

- 1 Press **NAVIGATION**. The Library Database Navigation screen appears.
- 2 Press  $\Delta \nabla \triangleleft \triangleright$  to select "ORIGINAL", then press **ENTER**.
- 3 Press  $\Delta \nabla \triangleleft \triangleright$  to select the index (small pictures) of the desired title, then press **ENTER**.
  - When you want the plural titles to be played back continuously, press **MEMO** after selecting the desired title. The numbers of the playback order appear on the index. You can select up to 8 titles.
  - When you want to correct the order, move the arrow to the desired index and press **MEMO**. The number disappears and the unit re-numbers the other programmes automatically.
  - When you want to cancel the order, press **CANCEL**(X).
- 4 Press  $\triangleleft \triangleright$  to select "BEGINNING", then press **ENTER**.
  - To resume playback from the point where playback was previously stopped, press  $\triangleleft \triangleright$  to select "RESUME", then press **ENTER**.
  - To repeat playback of a selected title, press  $\triangleleft \triangleright$  to select "REPEAT", then press **ENTER**.
- 5 Press **II** to pause playback.
  - To resume normal playback, press  $\blacktriangleright$ .
- 6 Press  $\blacksquare$  to stop playback.



## Edit Original Information



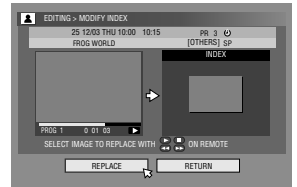
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Press **HDD** or **DVD** to choose the corresponding deck.
- Load a DVD disc to modify.

### ATTENTION:

- It is not possible to modify discs recorded on DVD units from other manufacturers.
- You cannot perform timer recording during editing the index by pressing **EDIT**. Press **EDIT** to clear the editing screen before performing timer recording.

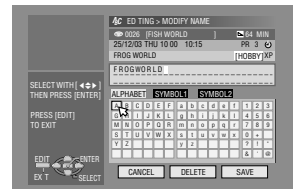
## Modify Index

- 1 Press **EDIT**. The Editing screen appears.
- 2 (DVD deck only) Press  $\Delta \nabla \triangleleft \triangleright$  to select "MODIFY" under "ORIGINAL/PLAY LIST", then press **ENTER**.
- 3 Press  $\Delta \nabla \triangleleft \triangleright$  to select "MODIFY" under "ORIGINAL", then press **ENTER**.
- 4 Press  $\Delta \nabla \triangleleft \triangleright$  to select one title you want to modify, then press **ENTER**.
- 5 Press  $\triangleleft \triangleright$  to select "INDEX".
- 6 Search for the picture from the title by pressing the appropriate buttons ( $\triangleleft \triangleright$ ,  $\blacktriangleleft \blacktriangleright$ , or **II**). The pictures of the title appear on the left window.
- 7 Confirm the arrow is on "REPLACE", then press **ENTER** to register new index. New index appears on the right window.
  - When you press **ENTER** with the arrow on "RETURN" you can return to the previous screen.
- 8 Press **EDIT** to return to the normal screen.



## Modify Title Name

- 1 Perform steps 1 – 4 of "Modify Index" (pg. 58) before continuing.
- 2 Press  $\Delta \nabla \triangleleft \triangleright$  to select "NAME", then press **ENTER**.
- 3 Press  $\Delta \nabla \triangleleft \triangleright$  to select the desired letter or symbol, then press **ENTER**. Repeat this process to complete the name.
  - To correct a letter, press  $\Delta \nabla \triangleleft \triangleright$  to select "DELETE", then press **ENTER**.
  - You can enter the letters up to 64.
- 4 Press  $\Delta \nabla \triangleleft \triangleright$  to select "SAVE", then press **ENTER**.
- 5 Press **EDIT** to return to the normal screen.




## Modify Category

- 1 Perform steps 1 – 4 of “Modify Index” (pg. 58) before continuing.
- 2 Press  $\Delta \nabla \triangleleft \triangleright$  to select “CATEGORY”, then press **ENTER**.
- 3 Press  $\Delta \nabla \triangleleft \triangleright$  to select the desired category, then press **ENTER**.
- 4 Press **EDIT** to return to the normal screen.



## Protect Title (DVD-RAM & DVD-RW (VR mode) only)

You can protect titles to prevent accidental erasure of the important titles.

- 1 Perform steps 1 – 3 of “Modify Index” (pg. 58) before continuing.
- 2 Press  $\Delta \nabla \triangleleft \triangleright$  to select “PROTECT”, then press **ENTER**.
- 3 Press  $\Delta \nabla \triangleleft \triangleright$  to select a title you want to protect, then press **ENTER**.
- 4 Press  $\triangleleft \triangleright$  to select “PROTECT”, then press **ENTER**. “” appears.
  - To cancel the protection, repeat 3 – 4 again. In step 4, select “CANCEL PROTECT”, then press **ENTER**.
- 5 Press **EDIT** to return to the normal screen.

### NOTE:

All the titles on a disc will be deleted once the disc is formatted even if they are protected titles. (pg. 59)

## Delete Title

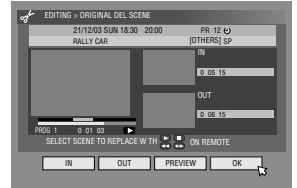
You cannot record any more with Library Database Navigation once the registered titles on the disc reach 99 titles for the DVD deck and 200 titles for the HDD deck. Deleting unnecessary titles after dubbing or other operations can increase remaining time and available recording capacity. (For DVD-R discs, although it is possible to delete recorded titles, available recording capacity does not increase.) The deleted title is never resumed. Play lists and title information in the unit’s library are also deleted.

- 1 Press **EDIT**. The Editing screen appears.
- 2 Press  $\Delta \nabla \triangleleft \triangleright$  to select “DELETE” under “ORIGINAL”, then press **ENTER**.
- 3 Press  $\Delta \nabla \triangleleft \triangleright$  to select one title you want to delete, then press **ENTER**.
- 4 Press  $\triangleleft \triangleright$  to select “DELETE”, then press **ENTER**.
  - When you cancel the deletion, select “CANCEL”, then press **ENTER**.
- 5 Press **EDIT** to return to the normal screen.

## Delete Unwanted Part Of The Title (DVD-RAM & DVD-RW (VR mode) only)

You can delete unwanted part of the title.

- 1 Perform steps 1 – 3 of “Modify Index” (pg. 58) before continuing.
- 2 Press  $\Delta \nabla \triangleleft \triangleright$  to select “DEL SCEN”, then press **ENTER**.
- 3 Press  $\Delta \nabla \triangleleft \triangleright$  to select one title whose unwanted part you want to delete, then press **ENTER**.
- 4 The playback pictures appear in the window on the screen. The elapsed playing time starts counting with the arrow on “IN”.
- 5 Find the point where you want the deletion to begin, then press **ENTER** with the arrow on “IN”. The edit-in time is fixed and the elapsed playing time starts counting again.
- 6 Find the point where you want the deletion to end, then press **ENTER** with the arrow on “OUT”. The edit-out time is fixed.
  - Press  $\triangleleft, \triangleright, \gg, \ll, \gg, \ll$  or **II** to find the edit-in and edit-out points.
- 7 Press  $\triangleleft \triangleright$  to select “PREVIEW”, then press **ENTER** to preview the edited title.
- 8 Press  $\triangleleft \triangleright$  to select “OK”, then press **ENTER**.
  - If you do not want to delete the scene, press **EDIT** or **RETURN**.



### To modify the points

- 1 Press **EDIT** or **RETURN**.
- 2 Repeat steps 4 – 8 as necessary.
- 9 Press  $\triangleleft \triangleright$  to select “DELETE”, then press **ENTER**. The selected scene is deleted.
  - To cancel the deletion, press  $\triangleleft \triangleright$  to select “CANCEL”, then press **ENTER**.
- 10 Press **EDIT** to return to the normal screen.

### NOTES:

- There may be a discrepancy of several seconds between the scene you intend to edit, and the scene which is actually edited.
- Available recording capacity may not match the deleted part after deletion.

## Divide Title (HDD deck only)

- 1 Press **EDIT**. The Editing screen appears.
- 2 Press  $\Delta \nabla \langle \rangle$  to select "DIVIDE", then press **ENTER**.
- 3 Press  $\Delta \nabla \langle \rangle$  to select a title to divide, then press **ENTER**.
- 4 Press  $\blacktriangleright$ , and press  $\blacktriangleleft$  or  $\blacktriangleright$  to locate a point to divide, then press **II**.
- 5 Confirm the arrow is on "DIVIDE", then press **ENTER** at the dividing point.
  - The first picture (start) of the newly created title appears in the bottom right window.
- 6 Press  $\langle \rangle$  to select "PREVIEW", then press **ENTER**.
  - The first several seconds of the newly created title is played back, then the playback pauses at the dividing point.
  - To undo the division, press  $\langle \rangle$  to select "RETRY", then press **ENTER**. Repeat the above procedure to locate another point to divide.
- 7 Press  $\langle \rangle$  to select "OK", then press **ENTER**.
- 8 Press **EDIT** to return to the normal screen.

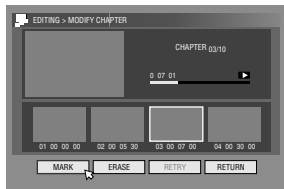
### NOTE:

There may be a discrepancy of several seconds between the scene you intend to edit, and the scene which is actually edited.

## Modify Chapter (HDD, DVD-RAM & DVD-RW (VR mode) only)

You can create and delete chapter marks in titles.

- 1 Perform steps 1 – 4 of "Modify Index" (pg. 58) before continuing.
- 2 Press  $\Delta \nabla \langle \rangle$  to select "CHAPTER", then press **ENTER**.
- 3 Confirm the arrow is on "MARK", then press **ENTER** at positions you want to mark.
  - The newly created chapter is displayed.
  - To undo the marking, press  $\langle \rangle$  to select "RETRY", then press **ENTER**. Repeat the above procedure to locate another point to mark.
- 4 Press  $\blacktriangleright$ , and press  $\blacktriangleleft$  or  $\blacktriangleright$  to select one chapter you want to delete, then press **II**.
- 5 Press  $\langle \rangle$  to select "ERASE", then press **ENTER**.
  - The selected chapter is deleted.
  - To undo the deletion, press  $\langle \rangle$  to select "RETRY", then press **ENTER**. Repeat the above procedure to locate another point to delete.
- 6 Press **EDIT** to return to the normal screen.



### NOTE:

There may be a discrepancy of several seconds between the scene you intend to edit, and the scene which is actually edited.

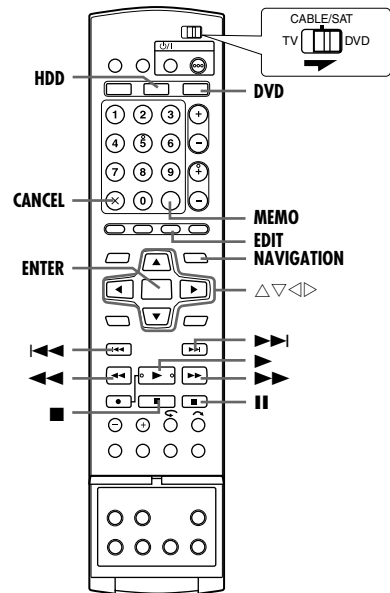
## Edit Play List Information



- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Press **HDD** or **DVD** to choose the corresponding deck.
- Load a DVD disc to modify.

### ATTENTION:

- It is not possible to modify discs recorded on DVD units from other manufacturers.
- You cannot perform timer recording during editing the index by pressing **EDIT**. Press **EDIT** to clear the editing screen before performing timer recording.



### Play List

It is a collection of the scenes. A play list can be freely edited and played back without ever changing any original recording data. Using the random access of a disc (which allows video data to be instantly read no matter where it is on the disc), a play list includes information such as the timer counter for the playback start point and end point, indexes for checking the contents of recorded data, category information, and more. Playback according to a play list you have created allows you to enjoy various combinations of video images from a single title.

## Create Play List

- 1 Press **EDIT**. The Editing screen appears.
- 2 (DVD deck only) Press  $\Delta \nabla \triangleleft \triangleright$  to select "MODIFY" under "ORIGINAL/PLAY LIST", then press **ENTER**.
- 3 Press  $\Delta \nabla \triangleleft \triangleright$  to select "CREATE", then press **ENTER**.
- 4 Press  $\Delta \nabla \triangleleft \triangleright$  to select a title that includes scenes to be included in a play list, then press **ENTER**.
- 5 The playback pictures appear in the window on the screen. The elapsed playing time starts counting with the arrow on "IN/OUT".
- 6 Find the point where you want the created play list to begin, then press **ENTER** with the arrow on "IN/OUT". The edit-in time is fixed and the elapsed playing time starts counting again.
- 7 Find the point where you want the created play list to end, then press **ENTER** with the arrow on "IN/OUT". The edit-out time is fixed.



- 7 Find the point where you want the created play list to end, then press **ENTER** with the arrow on "IN/OUT". The edit-out time is fixed.
  - Press  $\triangleleft \triangleleft$ ,  $\triangleright \triangleright$ ,  $\triangleleft \triangleright$ ,  $\triangleright \triangleleft$ ,  $\triangleright \triangleright$  or  $\parallel$  to find the edit-in and edit-out points.
  - The edit-out point must come after the edit-in point.
- 8 Press  $\Delta \nabla \triangleleft \triangleright$  to select "PREVIEW", then press **ENTER** to preview the play list.
- 9 Press  $\Delta \nabla \triangleleft \triangleright$  to select "OK", then press **ENTER**. The play list is created.

### To modify the points

- 1 Press  $\triangleleft \triangleright$  to select "MODIFY", then press **ENTER**.
- 2 Repeat steps 5 – 9 as necessary.
- 10 Press  $\triangleleft \triangleright$  to select "EXIT", then press **ENTER** to return to the normal screen.

### NOTES:

- There may be a discrepancy of several seconds between the scene you intend to edit, and the scene which is actually edited.
- The title, index and category of the play list can be modified in the same way as "ORIGINAL". (pg. 58)
- You can modify the play list that has just been created here by adding, moving, or deleting unwanted parts to create a digest edition, etc.

## Edit Scenes

- 1 Press **EDIT**. The Editing screen appears.
- 2 (DVD deck only) Press  $\Delta \nabla \triangleleft \triangleright$  to select "MODIFY" under "ORIGINAL/PLAY LIST", then press **ENTER**.
- 3 Press  $\Delta \nabla \triangleleft \triangleright$  to select "MODIFY" under "PLAY LIST", then press **ENTER**.
- 4 Press  $\Delta \nabla \triangleleft \triangleright$  to select a play list to modify, then press **ENTER**.
- 5 Press  $\Delta \nabla \triangleleft \triangleright$  to select "SCENE", then press **ENTER**.
- 6 Press  $\Delta \nabla \triangleleft \triangleright$  to select "MODIFY", then press **ENTER**.
- 7 Press  $\Delta \nabla \triangleleft \triangleright$  to select a scene to modify, then press **ENTER**.
- 8 Perform steps 5 – 10 in "Create Play List" (pg. 61).

## Add scenes

- 1 Perform steps 1 – 5 in "Edit Scenes" (pg. 61) before continuing.
- 2 Press  $\Delta \nabla \triangleleft \triangleright$  to select "SEL. TITLE", then press **ENTER**.
- 3 Perform steps 4 – 10 in "Create Play List" (pg. 61).

## Move Scenes

- 1 Perform steps 1 – 5 of "Edit Scenes" (pg. 61) before continuing.
- 2 Press  $\Delta \nabla \triangleleft \triangleright$  to select "MOVE", then press **ENTER**.
- 3 Press  $\Delta \nabla$  to select a scene to move, then press **ENTER**.
- 4 Press  $\Delta \nabla$  to select another scene to which the scene is to be moved, then press **ENTER**.
  - To cancel the move, press  $\Delta \nabla \triangleleft \triangleright$  to select "RETRY", then press **ENTER**.
- 5 Perform steps 8 – 10 in "Create Play List" (pg. 61).

## Delete Scenes

- 1 Perform steps 1 – 5 of "Create Play List" (pg. 61) before continuing.
- 2 Press  $\Delta \nabla \triangleleft \triangleright$  to select "DELETE", then press **ENTER**.
- 3 Press  $\Delta \nabla$  to select a scene to delete, then press **ENTER**.
- 4 Perform steps 8 – 10 in "Create Play List" (pg. 61).

## Play Back Play List

- 1 Press **NAVIGATION**. The Library Database Navigation screen appears.
- 2 Press  $\Delta \nabla \triangleleft \triangleright$  to select "PLAY LIST", then press **ENTER**.
- 3 Press  $\Delta \nabla \triangleleft \triangleright$  to select the index (small pictures) of the desired play list, then press **ENTER**.
  - When you want the plural play lists to be played back continuously, press **MEMO** after selecting the desired play lists. The numbers of the playback order appear on the index. You can select up to 30 play lists.
  - When you want to correct the order, move the arrow to the desired index and press **MEMO**. The number disappears and the unit re-numbers the other play lists automatically.
  - When you want to cancel the order, press **CANCEL**(X).
- 4 Press  $\triangleleft \triangleright$  to select "BEGINNING", then press **ENTER**. The playback starts.
- 5 Press  $\parallel$  to pause playback.
  - To resume normal playback, press  $\triangleright$ .
- 6 Press  $\blacksquare$  to stop playback.



## Delete Play List

- 1 Press **EDIT**. The Editing screen appears.
- 2 (DVD deck only) Press  $\Delta \nabla \langle \rangle$  to select "MODIFY" under "ORIGINAL/PLAY LIST", then press **ENTER**.
- 3 Press  $\Delta \nabla \langle \rangle$  to select "DELETE" under "PLAY LIST", then press **ENTER**.
- 4 Press  $\Delta \nabla \langle \rangle$  to select one play list you want to delete, then press **ENTER**.
- 5 Press  $\langle \rangle$  to select "DELETE", then press **ENTER**.
  - When you cancel the deletion, select "CANCEL", then press **ENTER**.
- 6 Press **EDIT** to return to the normal screen.

### NOTE:

Even if a play list is deleted, the titles recorded and the library information are not affected at all.

## Modify Index

- 1 Perform steps 1 – 4 of "Edit Scenes" (pg. 61) before continuing.
- 2 Perform steps 5 – 8 of "Modify Index" (pg. 58).

## Modify Play List Name

- 1 Perform steps 1 – 4 of "Edit Scenes" (pg. 61) before continuing.
- 2 Perform steps 2 – 5 of "Modify Title Name" (pg. 58).

## Modify Category

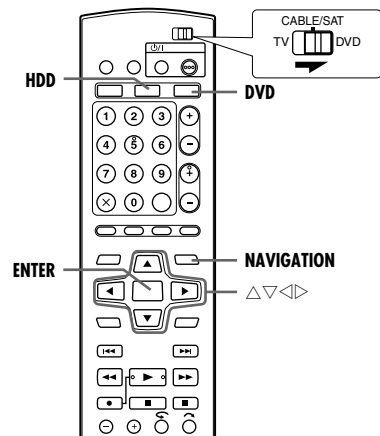
- 1 Perform steps 1 – 4 of "Edit Scenes" (pg. 61) before continuing.
- 2 Perform steps 2 – 4 of "Modify Category" (pg. 59).

## Edit Library Information



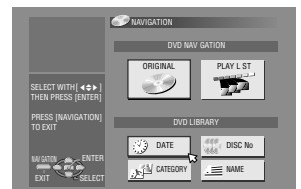
Title information can be registered in the unit's memory for up to 600 DVD discs, 2,000 titles. It is helpful when finding a desired title (or play list) by sorting according to the sort options registered during (or after) recording.

- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Press **HDD** or **DVD** to choose the corresponding deck.



## Scan For Title From Library

- 1 Press **NAVIGATION**. The Library Database Navigation screen appears.
- 2 Press  $\Delta \nabla \langle \rangle$  to select the appropriate sort button to sort the information, then press **ENTER**.
  - "DATE": Sort by date
  - "DISC No.": Sort by disc number
  - "CATEGORY": Sort by category
  - "NAME": Sort by name
  - "DATE" and "DISC No." are available for the DVD deck only.
- 3 Press  $\Delta \nabla \langle \rangle$  to select the desired title, then press **ENTER**.
  - Playback begins automatically after the selected title is located.



### NOTE:

If a disc registered in the library is recorded or modified on DVD units from other manufacturers, it may become impossible to operate properly.

## Register Disc

When a disc that is not registered in the library is loaded, a message appears confirming if the disc should be registered. If registering, perform the following procedure.

- 1 Press  $\langle \rangle$  to select "REGISTER", then press **ENTER** to confirm the registration.
- 2 Press **NAVIGATION** to return to the normal screen.

### NOTES:

- It is not possible to register discs formatted on devices other than JVC's DVD recorders.
- It is not possible to register discs recorded on devices other than JVC's DVD recorders.
- It is not possible to register discs when "SAVE AS LIBRARY" is set to "OFF". (pg. 79)



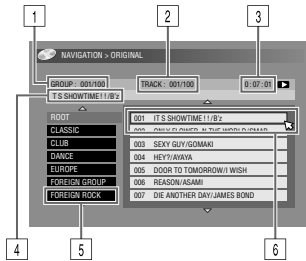
# Playback With MP3/WMA/JPEG Navigation



This unit can play back discs that MP3/WMA sound files and JPEG image files taken with digital still cameras or other devices are recorded.

The MP3/WMA/JPEG Navigation enables you to search and select the desired files recorded on CD-R/RW or CD-ROM discs very easily.

- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Press **DVD** to select the DVD deck.



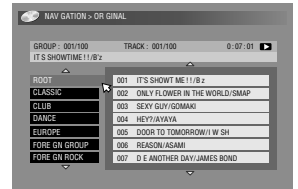
- 1 Selected group number/total number of groups on the disc
- 2 Selected file number/total number of files in the group that contains the selected file
- 3 Elapsed time (MP3 only)
- 4 Name of the selected file
- 5 Group name
- 6 Selected file

## NOTES:

- If there are more than 100 files, the rest of the files are not displayed. In this case, press **ON SCREEN** to display them on the TV screen.
- If both MP3 files and WMA files are recorded on the same disc, WMA files cannot be played back as they are not displayed on the navigation screen.

## Locating The Desired Group And Tracks

- 1 Load a disc.
- 2 Press **NAVIGATION**.
- 3 Press  $\Delta \nabla \langle \triangleright$  to select "ORIGINAL", then press **ENTER**.
- 4 Press  $\Delta \nabla$  to select the desired group, then press **ENTER**.
  - A list of files in the selected group appears.



- 5 Press  $\Delta \nabla$  to select the desired item, then press **ENTER**. The unit starts playback from the selected item.
  - The unit stops when all items in the selected group are played back.

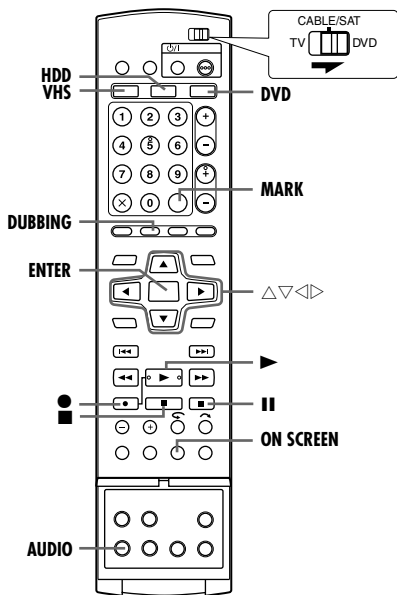


## NOTES:

- If you press **SELECT** ( $\blacktriangleright$ ) instead of **ENTER** in step 4, the unit starts playback from the first file of the group.
- JPEG files are played back as a slide show at the set intervals. (pg. 32)
- If a file name includes any 2-byte character, the unit may not show the file name correctly.
- The order of the groups and items shown in steps 4 and 5 may differ from the order shown on your PC.

## Dubbing

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.



### NOTES:

- It is not possible to dub simultaneously when timer programming is set. Select either dubbing or timer programming.
- The order of the index which are displayed by pressing **DUBBING** differs from the images displayed by pressing **NAVIGATION** or **EDIT**.
- When dubbing from VHS, SQPB (S-VHS QUASI PLAYBACK) is activated, and the original S-VHS resolution cannot be obtained.
- When dubbing from HDD or DVD to VHS, the colour system of the VHS deck must be set in accordance to the signal to be recorded. (pg. 82) When dubbing from VHS to HDD or DVD, the colour system of both the VHS deck (playback) and HDD or DVD deck (recording) must be set. (pg. 79, 82)

## High Speed Dubbing (From HDD To DVD)

It is possible to dub the original recordings and/or play lists on the HDD deck to DVD discs. The dubbing is performed in high speed, keeping the original transfer rate.

### NOTES:

- After accessing the Dubbing Menu screen, it is not possible to take out a disc.
- It is not possible to dub copy-once titles in Video mode.
- When dubbing a copy-once title, the data will be moved from HDD to DVD upon completing dubbing.
- When you cancel dubbing a copy-once title during dubbing, the original recording on the HDD deck remains and the title copied to a DVD disc is deleted.
- It is not possible to dub play lists which contain copy-once titles.
- It is not possible to dub the following programmes to DVD-R/RW disc (Video mode):
  - which contains more than one audio language.
  - which is on the play list.
  - which is edited (also RetroActive Recording).
  - which is recorded in LP mode or FP155-FP240 mode.
- Recording may not be performed in the highest speed depending on the characteristics of the disc used.

- 1 Load a recordable disc.
- 2 Press **DUBBING** to access the Dubbing Menu screen.
- 3 Press  $\Delta\nabla\triangleleft\rangle$  to select "HDD→DVD", then press **ENTER**.
- 4 Press  $\Delta\nabla\triangleleft\rangle$  to select "HIGH SPEED", then press **ENTER**.

- 5 Press  $\Delta\nabla\triangleleft\rangle$  to select indexes (small pictures) of desired original recordings and/or play lists, then press **MARK**. After selecting all indexes you want to dub, press **ENTER**.
  - You can select up to 8 original recordings and/or play lists.
  - The recordable time of the disc is displayed on the bar meter. For details, refer to "About Disc Remaining Display" (pg. 67)
- 6 Press  $\triangleleft\rangle$  to select "EXECUTE", then press **ENTER** to start dubbing.

### NOTES:

- Play lists are dubbed as programmes.
- In Video mode, if the selected play list includes the scenes recorded in the different transfer rate, the dubbing is performed in the highest transfer rate of the scenes in the selected play list.
- During dubbing, it is not possible to play back on HDD or DVD, or to set timer programming.

## Just Dubbing (From HDD To DVD)

By using Just Dubbing function, when dubbing all selected original recordings and/or play lists, the unit automatically sets the appropriate recording mode depending on the combination of the total time of the selected recordings and/or play lists to be dubbed and the available disc space.

- 1 Load a recordable disc.
- 2 Press **DUBBING** to access the Dubbing Menu screen.
- 3 Press  $\Delta\nabla\triangleleft\rangle$  to select "HDD→DVD", then press **ENTER**.
- 4 Press  $\Delta\nabla\triangleleft\rangle$  to select "JUST", then press **ENTER**.
- 5 Perform steps 5 – 6 of "High Speed Dubbing (From HDD To DVD)".

### NOTES:

- Play lists are dubbed as programmes.
- In Video mode, if the selected play list includes the scenes recorded in the different transfer rate, the dubbing is performed in the highest transfer rate of the scenes in the selected play list. However, the lower transfer rate cannot be dubbed in the higher transfer rate.
- The recordable time of the disc is displayed on the bar meter. For details, refer to "About Disc Remaining Display" (pg. 67)
- During dubbing, it is not possible to play back on HDD or DVD, or to set timer programming.

## Manual Dubbing (From HDD To DVD)

It is possible to perform dubbing in the desired transfer rate.

- 1 Load a recordable disc.
- 2 Press **DUBBING** to access the Dubbing Menu screen.
- 3 Press  $\Delta\nabla\triangleleft\rangle$  to select "HDD→DVD", then press **ENTER**.
- 4 Press  $\Delta\nabla\triangleleft\rangle$  to select "MANUAL", then press **ENTER**.
- 5 Perform step 5 of "High Speed Dubbing (From HDD To DVD)". The Manual Dubbing screen appears.
- 6 Press  $\Delta\nabla$  to select "REC MODE", then press **ENTER**. Press  $\Delta\nabla$  to select the desired option, then press **ENTER**.
- 7 Press  $\nabla$  to select "CONFIRM", then press **ENTER**.
- 8 Press  $\triangleleft\rangle$  to select "EXECUTE", then press **ENTER** to start dubbing.

### NOTES:

- In Video mode, if the selected play list includes the scenes recorded in the different transfer rate, the dubbing is performed in the highest transfer rate of the scenes in the selected play list. However, the lower transfer rate cannot be dubbed in the higher transfer rate.
- The recordable time of the disc is displayed on the bar meter. For details, refer to "About Disc Remaining Display" (pg. 67)
- During dubbing, it is not possible to play back on HDD or DVD, or to set timer programming.

## Dubbing From HDD To VHS

It is possible to perform dubbing from the HDD deck to the VHS deck.

- 1** Load a cassette with the record safety tab intact.
- 2** Press **DUBBING** to access the Dubbing Menu screen.
- 3** Press  $\Delta \nabla \langle \triangleright$  to select "HDD→VHS", then press **ENTER**.
- 4** Press  $\Delta \nabla \langle \triangleright$  to select indexes (small pictures) of desired original recordings and/or play lists, then press **MARK**. After selecting all indexes you want to dub, press **ENTER**.
  - You can select up to 8 original recordings and/or play lists.
- 5** Press  $\Delta \nabla$  to select "SELECT REC. MODE", then press **ENTER**. Press  $\Delta \nabla$  to select the desired option, then press **ENTER**.
- 6** Press  $\Delta \nabla$  to select "SELECT SND. MODE", then press **ENTER**. Press  $\Delta \nabla$  to select the desired option, then press **ENTER**.
- 7** Press  $\nabla$  to select "CONFIRM", then press **ENTER**. The confirmation screen appears.
- 8** Press **VHS** so that the VHS lamp lights up on the unit. The current display on the screen will be switched to a receiving broadcast display.
- 9** Press  $\blacktriangleright$  to locate the point from where you want to start dubbing, then press  $\bullet$  and  $\parallel$  simultaneously so that the VHS deck enters the record pause mode.
- 10** Press **HDD** so that the HDD lamp lights up on the unit.
  - The dubbing screen will appear.
- 11** Press  $\langle \triangleright$  to select "EXECUTE", then press **ENTER** for confirmation.
  - To cancel the dubbing, press the  $\blacksquare$  then  $\langle \triangleright$  to select "CANCEL" and press **ENTER** to confirm.
- 12** Upon completing dubbing, the tape stops and "DUBBING COMPLETED" appears on the TV screen. Press **ENTER** to end.

## Original Dubbing (From DVD To HDD)

It is possible to dub the original recordings on DVD discs to the HDD deck.

- 1** Load a disc you want to dub.
- 2** Press **DUBBING** to access the Dubbing Menu screen.
- 3** Press  $\Delta \nabla \langle \triangleright$  to select "DVD→HDD", then press **ENTER**.
- 4** Press  $\Delta \nabla \langle \triangleright$  to select indexes (small pictures) of desired original recordings and/or play lists, then press **MARK**. After selecting all indexes you want to dub, press **ENTER**.
  - You can select up to 8 original recordings and/or play lists.
- 5** Press  $\langle \triangleright$  to select "EXECUTE", then press **ENTER** to start dubbing.

### NOTES:

- It is not possible to dub play lists on DVD discs.
- It is not possible to dub pre-recorded DVD VIDEO discs.
- It is not possible to dub Video CDs/SVCDs or Audio CDs.

## Dubbing From DVD To VHS

It is possible to perform dubbing from the DVD deck to the VHS deck.

- 1** Load the disc you want to dub onto the DVD deck, and a cassette with the record safety tab intact to the VHS deck.
- 2** Press **DUBBING** to access the Dubbing Menu screen.
- 3** Press  $\Delta \nabla \langle \triangleright$  to select "DVD→VHS", then press **ENTER**.
- 4** Press  $\Delta \nabla \langle \triangleright$  to select indexes (small pictures) of desired original recordings and/or play lists, then press **MARK**. After selecting all indexes you want to dub, press **ENTER**.
  - You can select up to 8 original recordings and/or play lists.
- 5** Press  $\Delta \nabla$  to select "SELECT REC. MODE", then press **ENTER**. Press  $\Delta \nabla$  to select the desired option, then press **ENTER**. The confirmation screen appears.
- 6** Press  $\Delta \nabla$  to select "SELECT SND. MODE", then press **ENTER**. Press  $\Delta \nabla$  to select the desired option, then press **ENTER**.
- 7** Press  $\nabla$  to select "CONFIRM", then press **ENTER**. The confirmation screen appears.
- 8** Press **VHS** so that the VHS lamp lights up on the unit. The current display on the screen will be switched to a receiving broadcast display.
- 9** Press  $\blacktriangleright$  to locate the point from where you want to start dubbing, then press  $\bullet$  and  $\parallel$  simultaneously so that the VHS deck enters the record pause mode.
- 10** Press **DVD** so that the DVD lamp lights up on the unit.
  - The dubbing screen will appear.
- 11** Press  $\langle \triangleright$  to select "EXECUTE", then press **ENTER** to confirm.
  - To cancel the dubbing, press  $\blacksquare$  then  $\langle \triangleright$  to select "CANCEL" and press **ENTER** to confirm.
- 12** Upon completing dubbing, the tape stops and "DUBBING COMPLETED" appears on the TV screen. Press **ENTER** to end.

### NOTES:

- It is not possible to dub play lists on DVD discs.
- It is not possible to dub Video CDs/SVCDs or Audio CDs.
- When dubbing is in progress, only  $\blacksquare$  is functional.

## Dubbing From VHS To HDD (Dubbing An Entire Cassette)

It is possible to perform automatic dubbing of all the recorded programmes of a cassette from the VHS deck to the HDD deck using the "ENTIRE" dubbing.

- 1** Load the cassette you want to dub.
  - Set "PICTURE CONTROL" to "EDIT". (pg. 81)
- 2** Press **DUBBING** to access the Dubbing Menu screen.
- 3** Press  $\Delta \nabla \triangleleft$  to select "VHS→HDD", then press **ENTER**.
- 4** Press  $\triangleleft$  to select "ENTIRE", then press **ENTER**.
- 5** Press  $\Delta \nabla$  to select "SELECT REC. MODE", then press **ENTER**. Press  $\Delta \nabla$  to select the desired option, then press **ENTER**.
- 6** Press  $\Delta \nabla$  to select "SELECT SND. MODE", then press **ENTER**. Press  $\Delta \nabla$  to select the desired option, then press **ENTER**.
- 7** Press  $\nabla$  to select "CONFIRM", then press **ENTER**. The confirmation screen appears.
- 8** Press  $\triangleleft$  to select "EXECUTE", then press **ENTER** for confirmation.
  - Once dubbing starts, it will continue dubbing until the end of the tape is reached.
  - To cancel the dubbing, press ■ then  $\triangleleft$  to select "CANCEL" and press **ENTER** to confirm.
  - If the tape is not rewind, the unit will start dubbing after automatically rewinding the tape to the beginning.
- 9** Upon completing dubbing, the tape stops and "DUBBING COMPLETED" appears on the TV screen. Press **ENTER** to end.
  - The tape will automatically be rewound.

### NOTES:

- "O.S.D." is automatically set to "OFF". It will return to "AUTO" after dubbing is completed.
- The programme information at the VHS deck will not be dubbed.
- When there are blanks on the tape of more than 2 seconds, the HDD deck will enter into pause mode. Dubbing will resume once recorded portion is detected.
- Dubbing copyright guarded tape is not possible.
- When you select "EDIT" to dub tapes in step 1, be sure to select "NORM" after you finish dubbing the tapes.
- When dubbing is in progress, only ■ is functional.

## Dubbing From VHS To HDD (Dubbing A Programme From Cassette)

It is possible to dub a single title (programme) of a cassette from the VHS deck to the HDD deck using the "1 PROG." dubbing.

- 1** Load the cassette you want to dub.
  - Set "PICTURE CONTROL" to "EDIT". (pg. 81)
- 2** Press **DUBBING** to access the Dubbing Menu screen.
- 3** Press  $\Delta \nabla \triangleleft$  to select "VHS→HDD", then press **ENTER**.
- 4** Press  $\triangleleft$  to select "1 PROG.", then press **ENTER**.
- 5** Press  $\Delta \nabla$  to select "SELECT REC. MODE", then press **ENTER**. Press  $\Delta \nabla$  to select the desired option, then press **ENTER**.
- 6** Press  $\nabla$  to select "CONFIRM", then press **ENTER**. The confirmation screen appears.
- 7** Press **VHS** so that the VHS lamp lights up on the unit. The current display on the screen will be switched to a receiving broadcast display.
- 8** Press **AUDIO** to select the playback sound.
- 9** Press  $\blacktriangleright$  to locate the point from where you want to start dubbing, then press **II**.  
VHS deck enters the record pause mode.
- 10** Press **HDD** so that the HDD lamp lights up on the unit. The current display on the screen will be switched to the dubbing screen.

- 11** Press  $\triangleleft$  to select "EXECUTE", then press **ENTER** for confirmation.
  - To cancel the dubbing, press ■ then  $\triangleleft$  to select "CANCEL" and press **ENTER** to confirm.

- 12** Upon completing dubbing, the tape stops and "DUBBING COMPLETED" appears on the TV screen. Press **ENTER** to end.

### NOTES:

- "O.S.D." is automatically set to "OFF". It will return to "AUTO" after dubbing is completed.
- The programme information at the VHS deck will not be dubbed.
- When there are blanks on the tape of more than 2 seconds, the HDD deck will enter into pause mode. Dubbing will resume once recorded portion is detected.
- Dubbing copyright guarded tape is not possible.
- When you select "EDIT" to dub tapes in step 1, be sure to select "NORM" after you finish dubbing the tapes.
- When dubbing is in progress, only ■ is functional.

## Dubbing From VHS To DVD (Dubbing An Entire Cassette)

It is possible to perform automatic dubbing of all the recorded programmes of a cassette from the VHS deck to the DVD deck using the "ENTIRE" dubbing.

- 1** Load the cassette you want to dub.
  - Set "PICTURE CONTROL" to "EDIT". (pg. 81)
- 2** Press **DUBBING** to access the Dubbing Menu screen.
- 3** Press  $\Delta \nabla \triangleleft$  to select "VHS→DVD", then press **ENTER**.
- 4** Press  $\triangleleft$  to select "ENTIRE", then press **ENTER**.
- 5** Press  $\Delta \nabla$  to select "SELECT REC. MODE", then press **ENTER**. Press  $\Delta \nabla$  to select the desired option, then press **ENTER**.
- 6** Press  $\Delta \nabla$  to select "SELECT SND. MODE", then press **ENTER**. Press  $\Delta \nabla$  to select the desired option, then press **ENTER**.
- 7** Press  $\nabla$  to select "CONFIRM", then press **ENTER**. The confirmation screen appears.
- 8** Press  $\triangleleft$  to select "EXECUTE", then press **ENTER** for confirmation.
  - Once dubbing starts, it will continue dubbing until the end of the tape is reached.
  - To cancel the dubbing, press ■ then  $\triangleleft$  to select "CANCEL" and press **ENTER** to confirm.
  - If the tape is not rewind, the unit will start dubbing after automatically rewinding the tape to the beginning.
- 9** Upon completing dubbing, the tape stops and "DUBBING COMPLETED" appears on the TV screen. Press **ENTER** to end.
  - The tape will automatically be rewound.

### NOTES:

- "O.S.D." is automatically set to "OFF". It will return to "AUTO" after dubbing is completed.
- The programme information at the VHS deck will not be dubbed.
- When there are blanks on the tape of more than 2 seconds, the DVD deck will enter into pause mode. Dubbing will resume once recorded portion is detected.
- Dubbing copyright guarded tape is not possible.
- When you select "EDIT" to dub tapes in step 1, be sure to select "NORM" after you finish dubbing the tapes.
- When dubbing is in progress, only ■ is functional.

## Dubbing From VHS To DVD (Dubbing A Programme From Cassette)

It is possible to dub a single title (programme) of a cassette from the VHS deck to the DVD deck using the "1 PROG." dubbing.

- 1** Load the cassette you want to dub.
  - Set "PICTURE CONTROL" to "EDIT". (pg. 81)
- 2** Press **DUBBING** to access the Dubbing Menu screen.
- 3** Press  $\Delta \nabla \triangleleft \triangleright$  to select "VHS→DVD", then press **ENTER**.
- 4** Press  $\triangleleft \triangleright$  to select "1 PROG.", then press **ENTER**.
- 5** Press  $\Delta \nabla$  to select "SELECT REC. MODE", then press **ENTER**. Press  $\Delta \nabla$  to select the desired option, then press **ENTER**.
- 6** Press  $\nabla$  to select "CONFIRM", then press **ENTER**. The confirmation screen appears.
- 7** Press **VHS** so that the VHS lamp lights up on the unit. The current display on the screen will be switched to a receiving broadcast display.
- 8** Press **AUDIO** to select the playback sound.
- 9** Press  $\blacktriangleright$  to locate the point from where you want to start dubbing, then press **II**.  
VHS deck enters the record pause mode.
- 10** Press **DVD** so that the DVD lamp lights up on the unit. The current display on the screen will be switched to the dubbing screen.
- 11** Press  $\triangleleft \triangleright$  to select "EXECUTE", then press **ENTER** for confirmation.
  - To cancel the dubbing, press  $\blacksquare$  then  $\triangleleft \triangleright$  to select "CANCEL" and press **ENTER** to confirm.
- 12** Upon completing dubbing, the tape stops and "DUBBING COMPLETED" appears on the TV screen. Press **ENTER** to end.

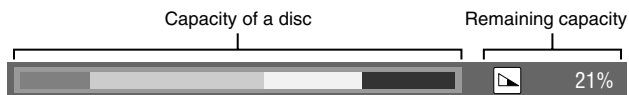
### NOTES:

- "O.S.D." is automatically set to "OFF". It will return to "AUTO" after dubbing is completed.
- The programme information at the VHS deck will not be dubbed.
- Dubbing copyright guarded tape is not possible.
- When you select "EDIT" to dub tapes in step 1, be sure to select "NORM" after you finish dubbing the tapes.
- When dubbing is in progress, only  $\blacksquare$  is functional.

### About Disc Remaining Display

When dubbing from HDD to DVD, the unit displays the time information for dubbing by bar meter. By comparing the disc remaining time and the necessary time for dubbing of the selected items, it is possible to check if the dubbing can be performed completely or not.

#### When performing the High Speed Dubbing



Dark green: Length of already recorded item  
 Light green: Length of selected item  
 Yellow: Length of the item now being selected by arrow  
 Red: Excess over the capacity

#### When performing the Just Dubbing



- The unit displays the status on the assumption that the selected items are dubbed in the lowest transfer rate.
- The total time of a loaded disc is displayed on the right of the bar meter.

#### When performing the Manual Dubbing



- The unit displays the status on the assumption that the selected items are dubbed in the lowest transfer rate.
- The available highest transfer rate is displayed on the right of the bar meter.

### NOTE:

The bar meter moves up and down regularly, but this is not a malfunction.

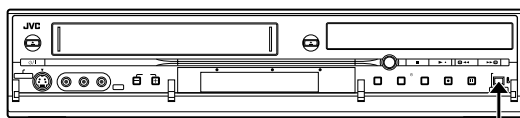
## DV Dubbing (HDD & DVD Deck Only)

You can dub programmes from a camcorder or DV equipment connected to the unit with a DV cable. The unit's remote control allows you the limited control of the connected camcorder or DV equipment functions during dubbing.

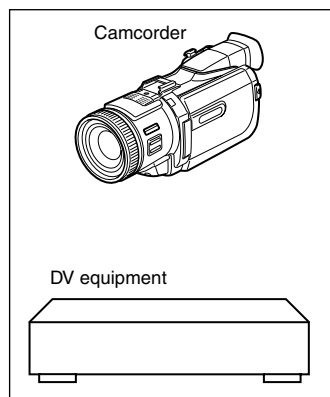
### NOTES:

- Use the DV cable VC-VDV 204U for connection.
- When you connect a PC to the [DV IN] connector, we do not assure the normal operation of this unit.

Your unit



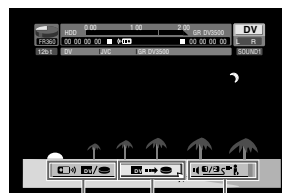
To [DV IN]



DV cable  
(VC-VDV 204U)  
(not supplied)

DV connector

The following on-screen display for DV dubbing appears when **ON SCREEN** is pressed while the channel has been set to "DV".



1 2 3

### 1 Remote control switch

To switch between the devices operable by the remote control unit. The unit is operable when the remote icon ( ) displayed faces to the left, while the DV device is operable when the remote icon is facing to the right.

### 2 Auto capture button

Select to start or pause the dubbing. If **ENTER** is pressed when the DV device is in the pause condition, preroll editing\* where it is possible to dub with a start time that is highly accurate will be activated. When the DV device cannot be operated from the unit (such as in camera mode), proceed with normal recording ( pg. 34, 37).

\* Preroll editing refers to the playback after the DV tape is slightly rewind. (For DV devices that do not support the -1x speed, the rewinding time may be longer.)

### 3 Sound monitor switch

For selecting the desired sound format for dubbing.

- 1 Connect a camcorder or DV equipment to the [DV IN] connector on the unit's front panel.
- 2 Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **HDD** on the remote so that the HDD lamp lights up on the unit.
- 3 Press **PR +/-** to set the channel to "DV".
- 4 Press **ON SCREEN**.
  - The on-screen display for DV dubbing appears.
- 5 Press **<>** to select , then press **ENTER** to display the remote icon (facing to the right) for the DV equipment.
- 6 Press **REC MODE** repeatedly to set the recording mode.
- 7 Locate the point from where you want to start dubbing, then stop or pause playback by pressing the following buttons on the remote control: **>**, **>>**, **<<**, **■**, **||**.
  - To play back in slow speed (1/10 of the normal speed), press **||** to pause playback, then press **<<** or **>>**.
  - To play back frame-by-frame, press **||** to pause playback, then press **||** repeatedly. Each press of **||** advances a frame.
  - To change the playback direction, press **<<** or **>>**.
- 8 Press **<>** to select , then press **ENTER** repeatedly until the desired sound track appears on the TV screen.

### SOUND 1:

Select this to record the original stereo sound played back on the connected DV equipment.

### SOUND 2:

Select this to record the dubbed stereo sound played back on the connected DV equipment.

### MIX:

Select this to record the sound of both "SOUND 1" and "SOUND 2".

- Note that this selection is not available when the source programme is recorded in 16BIT (48 kHz) mode.

- 9 Press **<>** to select , then press **ENTER**. The dubbing starts.
  - Playback on the external DV equipment and recording on the unit should start simultaneously.
  - To pause dubbing, press **<>** to select , then press **ENTER**. Both the unit and the external DV equipment pause dubbing. Pressing **||** on the unit also works the same way.
- 10 Press **<>** to select , then press **ENTER**. Then press **■**. The DV equipment stops.
- 11 Press **<>** to select , then press **ENTER**.

- 12** Press **■** twice on the remote control to stop dubbing.
- Both the unit and the external DV equipment stop dubbing.

**NOTES:**

- Dubbing copyright guarded programmes is not possible.
- Original DV information such as the recording date and time are not recorded.
- The superimposed indication during the operation or dubbing is not recorded.
- If the dubbing is paused while the channel is set to “DV”, you cannot switch channels.

**When you dub from DV equipment other than a camcorder**

- 1 Perform step 1 to 4.
- 2 Locate the point from where you want to start dubbing, then stop on the DV equipment.
  - If you pause the DV equipment in this step, a few second's still picture will be recorded at the beginning of the recorded programme.
- 3 Set the input mode to “DV INPUT” on the DV equipment.
  - If you select an input mode other than “DV INPUT”, unwanted pictures may be recorded at the beginning of the recorded programme.
- 4 Perform step 9 to 12.


**To skip unwanted part of the source picture**

Press **ENTER** to stop both equipment, then press <|> to select



Locate the point where you want to restart dubbing by pressing ►,

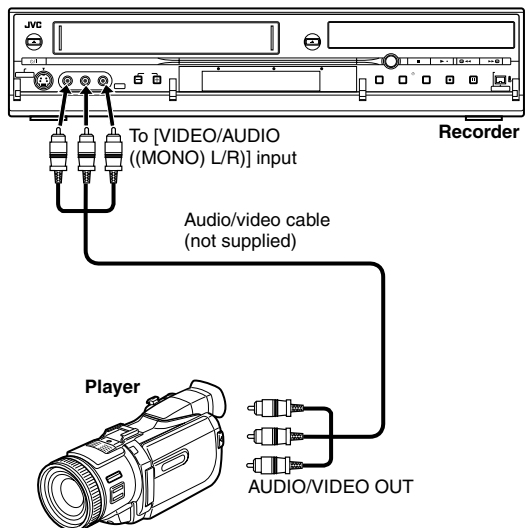
►►, or ◀◀, then press **■**.

Press <|> to select , then press **ENTER** to restart dubbing.

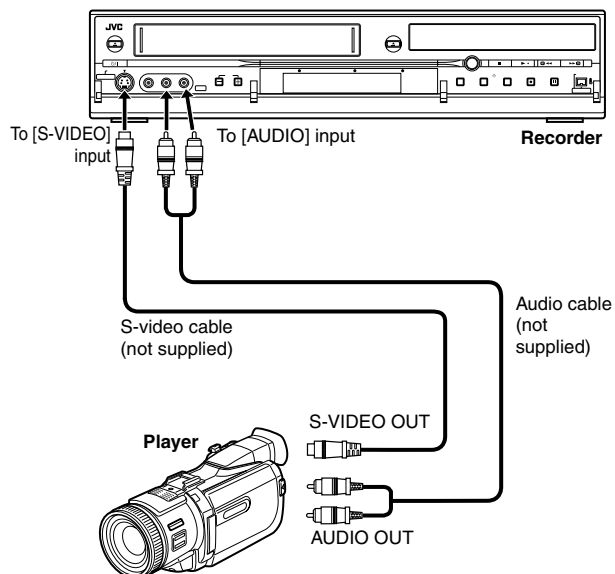
## Edit From A Camcorder

You can use a camcorder as the source player and your unit as the recording deck.

### 1 If the camcorder has no S-VIDEO output connector:



### 2 If the camcorder has an S-VIDEO output connector (HDD & DVD deck only):



- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.

### 1 Make connections.

- 1 If the camcorder has no S-VIDEO output connector:
  - connect the camcorder's AUDIO/VIDEO OUT connectors to the unit's [VIDEO/AUDIO ((MONO) L/R)] input connectors on the front panel.

- When using a monaural camcorder, connect its AUDIO OUT connector to the [AUDIO-L] input connector on your unit.

- 2 If the camcorder has an S-VIDEO output connector: (HDD & DVD deck only)

- connect the camcorder's AUDIO OUT and S-VIDEO OUT connectors to the unit's [AUDIO] and [S-VIDEO] input connectors on the front panel.

- 2 Press **VHS/HDD/DVD SELECT** on the unit repeatedly to select the recording deck.

- 3 Press **PR +/-** to select "F-1".

- Set "F-1 INPUT" to "VIDEO" for the [AUDIO] input connector, or "S-VIDEO" for the [S-VIDEO] input connector, depending on the connector being used. (pg. 73)

- 4 Press **REC MODE** repeatedly to set the recording mode.

- 5 Start playback on the camcorder slightly before the actual point from where you wish to start dubbing.

- 6 Press **●** on the unit to start recording. Or while holding **●**, press **▶** on the remote control. The dubbing starts.

- 7 Press **■** on the unit, then stop playback on the camcorder.

### NOTES:

- All necessary cables can be obtained from your dealer.
- Refer to the camcorder's instruction manual for operating procedure.
- The quality of dubbed picture becomes poorer than that of the original.



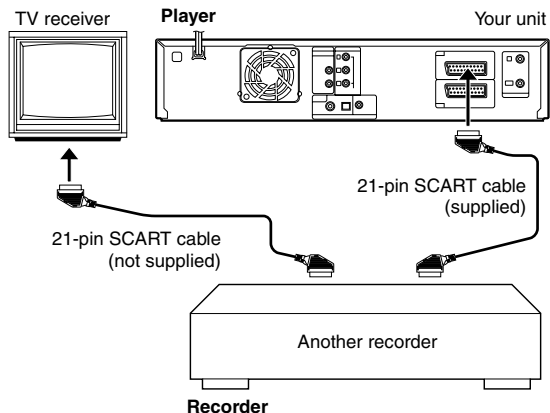
# Edit To Or From Another Recorder

You can use your unit as the source player or as the recording deck.

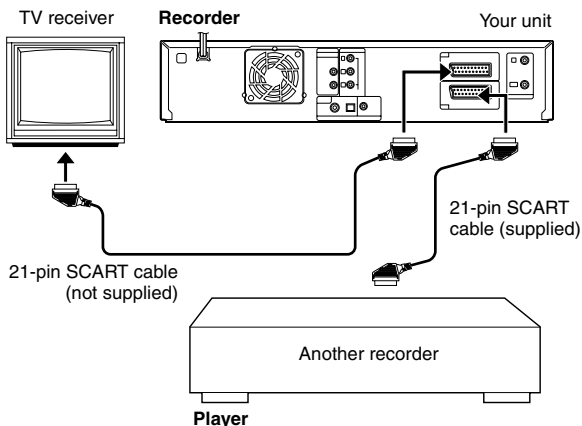
**NOTE:**

When using another recorder as the recording deck, refer to its instruction manual.

**1 When using your unit as the source player**



**2 When using your unit as the recording deck**



- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.

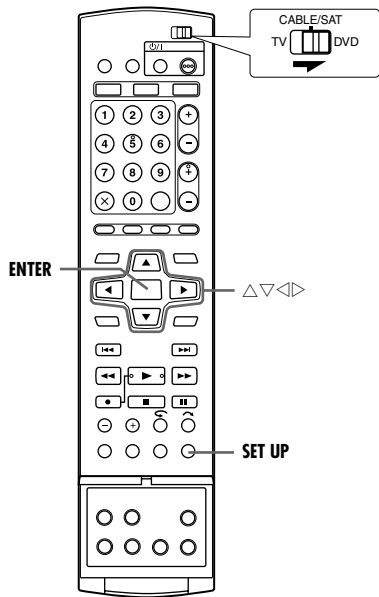
- 1** Connect another recorder's 21-pin SCART connector to the unit's 21-pin SCART connector as illustrated.
  - 1** When using your unit as the source player:
    - connect its [L-1 IN/OUT] connector to the recording deck.
  - 2** When using your unit as the recording deck:
    - connect its [L-2 IN/DECODER] connector to the source player.
- If another recorder is compatible with the Y/C signal: (HDD & DVD deck only)
  - when using your unit as the source player, set "L-1 OUTPUT" to "SCART S-VIDEO". (pg. 72)
  - when using your unit as the recording deck, set "L-2 SELECT" to "S-VIDEO". (pg. 72)
- 2** When using this unit as the recording deck, press **VHS/HDD/DVD SELECT** on the unit repeatedly to select the recording deck.
- 3** When using this unit as the recording deck, press **PR +/-** to select "L-2".
  - For HDD/DVD deck**
  - Set "L-2 SELECT" to "VIDEO" or "S-VIDEO". (pg. 72)
- 4** When using this unit as the recording deck, press **REC MODE** repeatedly to set the recording mode.
- 5** Engage the Play mode of the source player.
- 6** Engage the Record mode of the recording deck.
- 7** Stop recording on the recording deck, then stop playback on the source player.

**NOTES:**

- All necessary cables can be obtained from your dealer.
- For Y/C signal input/output, be sure to use a 21-pin SCART cable that is compatible with the Y/C signal.
- When you use this unit as the source player for editing, be sure to set "SUPERIMPOSE" or "O.S.D." to "OFF" before starting. (pg. 80, 81) If you are using another recorder with S-Video and Audio output connectors, connect its S-Video and Audio output connectors to this unit's [S-VIDEO] and [AUDIO] input connectors on the front panel. Then, set the unit's input mode to "F-1" in step 3, and set "F-1 INPUT" to "S-VIDEO". (pg. 73)

## Output/Input Set

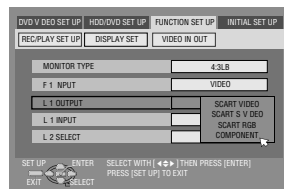
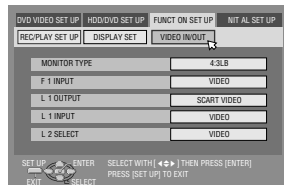
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.



### L-1 Output And L-1 Input Setting

The [L-1 IN/OUT] connector accepts and delivers either a composite signal (regular video signal) or a Y/C signal (a signal in which the luminance and chrominance signals are separated). Set "L-1 OUTPUT" and "L-1 INPUT" to the appropriate mode depending on the type of appliance connected to the unit's [L-1 IN/OUT] connector.

- 1 Press **SET UP** to access the Main Menu screen.
- 2 Press  $\triangleleft \triangleright$  to select "FUNCTION SET UP", then press  $\nabla$ .
- 3 Press  $\triangleleft \triangleright$  to select "VIDEO IN/OUT", then press  $\nabla$ .
- 4 Press  $\triangle \nabla$  to select "L-1 OUTPUT" or "L-1 INPUT", then press **ENTER**.
- 5 Press  $\triangle \nabla$  to select the appropriate setting, then press **ENTER**.
- 6 Press **SET UP** to complete the setting.



\* The **boldface** settings below indicate the settings at your purchase.

### L-1 OUTPUT — SCART VIDEO / SCART S-VIDEO / SCART RGB / COMPONENT

#### SCART VIDEO:

If a connected appliance's input is compatible only with regular video signals, set to "SCART VIDEO".

#### SCART S-VIDEO:

If a connected appliance's input is compatible with Y/C signals, set to "SCART S-VIDEO". You can obtain high-quality picture. (For connection, be sure to use a 21-pin SCART cable that is compatible with the Y/C signal.)

#### SCART RGB:

If a connected appliance's input is compatible with RGB signals, set to "SCART RGB". You can obtain a high-quality RGB picture.

#### COMPONENT:

If a connected appliance's input is compatible with Y/P/B/P<sub>R</sub> signals, set to "COMPONENT". You can obtain a high-quality Y/P/B/P<sub>R</sub> picture. Switch the TV to the input that you can watch component video pictures.

### L-1 INPUT — VIDEO / S-VIDEO

#### VIDEO:

If a connected appliance's output is compatible only with regular video signals, set to "VIDEO".

#### S-VIDEO:

If a connected appliance's output is compatible with Y/C signals, set to "S-VIDEO". You can obtain a high-quality picture. (For connection, be sure to use a 21-pin SCART cable that is compatible with the Y/C signal.)

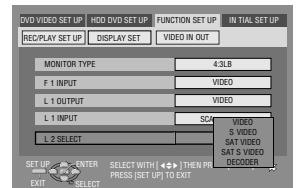
#### NOTES:

- If "L-1 OUTPUT" is set to "SCART S-VIDEO" or "SCART RGB", it is not possible to set "L-1 INPUT" to "S-VIDEO".
- If "L-2 SELECT" is set to "SAT S-VIDEO" or "DECODER", it is not possible to set "L-1 INPUT" to "S-VIDEO".
- If "L-2 SELECT" is set to "DECODER", it is only possible to set "L-1 OUTPUT" to "SCART VIDEO".
- Component video signals are not output from the [L-1 IN/OUT] connector.
- When Progressive scan mode is engaged, it is not possible to select the setting of "L-1 OUTPUT". (pg. 72)

### L-2 Select Setting

Set "L-2 SELECT" to the appropriate mode depending on the type of appliance connected to the unit's [L-2 IN/DECODER] connector.

- 1 Perform steps 1 and 2 of "L-1 Output And L-1 Input Setting" on the left column.
- 2 Press  $\triangle \nabla$  to select "L-2 SELECT", then press **ENTER**.
- 3 Press  $\triangle \nabla$  to select the appropriate setting, then press **ENTER**.
- 4 Press **SET UP** to complete the setting.



\* The **boldface** settings below indicate the settings at your purchase.

### L-2 SELECT — VIDEO / S-VIDEO / SAT VIDEO / SAT S-VIDEO / DECODER

Select "VIDEO" or "S-VIDEO" to use this unit as the recording deck with the player connected to the [L-2 IN/DECODER] connector, or to use the satellite receiver connected to the [L-2 IN/DECODER] connector.

#### VIDEO:

If a connected appliance's output is compatible only with regular video signals, set to "VIDEO".

#### S-VIDEO:

If a connected appliance's output is compatible with Y/C signals, set to "S-VIDEO". You can obtain high-quality picture. (For connection, be sure to use a 21-pin SCART cable that is compatible with the Y/C signal.)

Select "SAT VIDEO" or "SAT S-VIDEO" to view a satellite programme with the TV set while the unit is turned off. (pg. 76)

#### SAT VIDEO:

If a connected satellite receiver's output is compatible only with regular video signals, set to "SAT VIDEO".

**SAT S-VIDEO:**

If a connected satellite receiver's output is compatible with Y/C signals, set to "SAT S-VIDEO". You can obtain a high-quality S-VHS picture. (For connection, be sure to use a 21-pin SCART cable that is compatible with the Y/C signal.)

**DECODER:**

To use a decoder connected to the [L-2 IN/DECODER] connector.

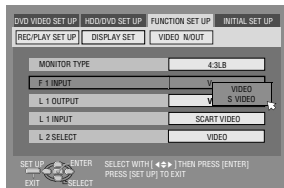
**NOTES:**

- If you have a satellite receiver or a decoder connected to the [L-2 IN/DECODER] connector, be sure to set "L-2 SELECT" back to appropriate mode after editing.
- If you are not connecting a satellite receiver or a decoder to the [L-2 IN/DECODER] connector, leave "L-2 SELECT" set to "VIDEO".
- When "L-2 SELECT" is set to "SAT VIDEO" and "SAT S-VIDEO", "SAT" appears on the TV screen or front display panel instead of "L-2".
- If "L-1 OUTPUT" is set to "SCART S-VIDEO", it is not possible to set "L-2 SELECT" to "DECODER" or "SAT VIDEO".
- If "L-1 OUTPUT" is set to "SCART RGB", it is not possible to set "L-2 SELECT" to "DECODER" or "SAT S-VIDEO".
- If "L-1 OUTPUT" is set to "COMPONENT" and "L-2 SELECT" to "SAT VIDEO", "SAT S-VIDEO" or "DECODER", be sure to connect the [L-1 IN/OUT] connector with a TV.
- If "L-2 SELECT" is set to "SAT S-VIDEO", be sure to set "L-1 OUTPUT" to "SCART S-VIDEO".

**F-1 Input Setting**

Set "F-1 INPUT" to the appropriate mode depending on the connector (VIDEO or S-VIDEO) being used on the front panel.

- 1** Perform steps 1 and 2 of "L-1 Output And L-1 Input Setting" (pg. 72).
- 2** Press  $\Delta \nabla$  to select "F-1 INPUT", then press **ENTER**.
- 3** Press  $\Delta \nabla$  to select the appropriate setting, then press **ENTER**.
- 4** Press **SET UP** to complete the setting.



\* The **boldface** settings below indicate the settings at your purchase.

**F-1 INPUT — VIDEO / S-VIDEO**

**VIDEO:**

When connecting an appliance to the [VIDEO] input connector, set to "VIDEO".

**S-VIDEO:**

When connecting an appliance to the [S-VIDEO] input connector, set to "S-VIDEO".

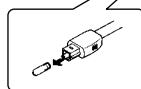
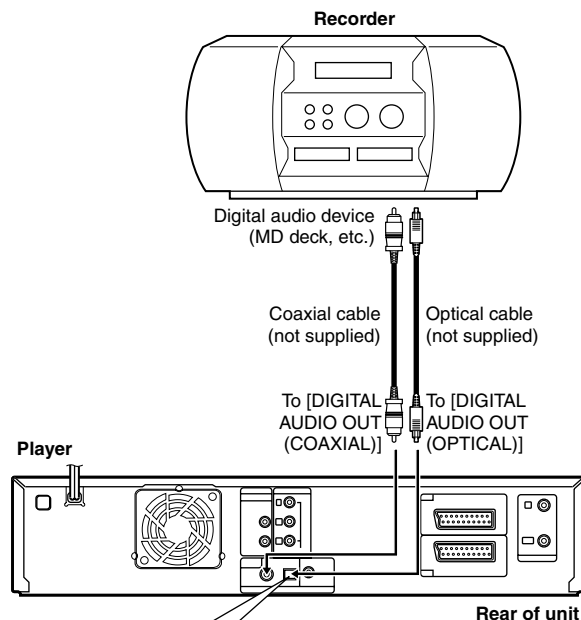
**Digital Audio Dubbing**

You can dub selected audio from a DVD or Audio CD disc to a digital audio device.

However, it is not possible to dub copy-protected discs.

- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.

**Example: Dubbing to an MD**



**Note for connection:**  
Remove the protection cap from the optical cable.

- 1** Connect the unit and a digital audio device using either an optional optical cable or an optional coaxial cable.
- 2** Place a disc on the unit and load an MD on the connected digital audio device.
- 3** Select the audio to be dubbed.
- 4** Start playback slightly before the actual point from where you wish to start dubbing.
- 5** Press **II** to pause playback.
- 6** Select the input mode on the connected digital audio device.
- 7** Press **▶** to start playback on the unit.
- 8** Start recording on the digital audio device.
- 9** Stop recording on the digital audio device. Then press **■** to stop playback on the unit.

**NOTE:**

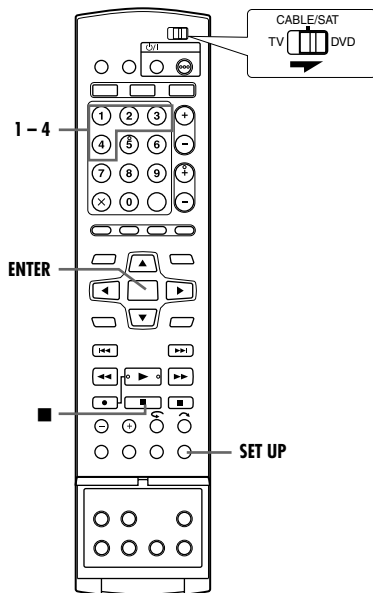
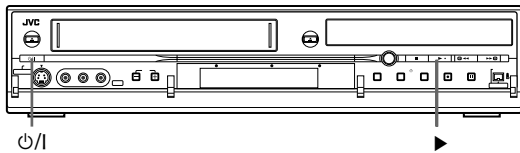
There may be a discrepancy of several seconds between where you intend editing to start, and where it actually starts.

## Remote Control Functions

### Remote Control 1/2/3/4 Code Switching

The remote control is capable of controlling four JVC video units independently. Each of the units can respond to one of four codes (1, 2, 3 or 4). The remote control is preset to send 3 code signals because your unit is initially set to respond to 3 code signals. You can easily modify your unit to respond to 1, 2 or 4 code signals.

- Slide the TV/CABLE/SAT/DVD switch to DVD.

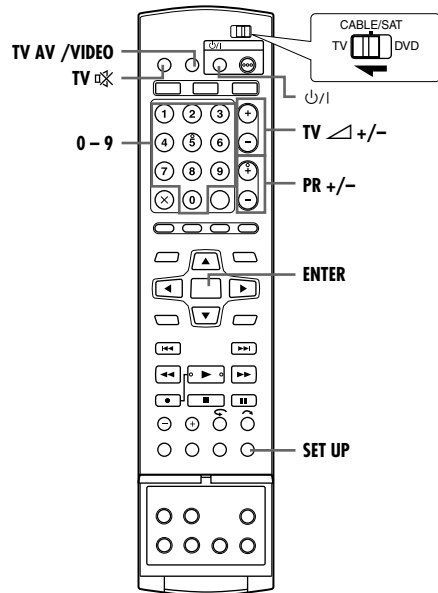


- Keep pressing **SET UP** down during step 1.

- 1 Press the **number key** "1" for 1, "2" for 2, "3" for 3 or "4" for 4 to change the remote control code, then press **ENTER**.
- 2 Press **P/I** on the unit to turn off the unit.
- 3 Press **▶** on the unit for over 5 seconds while the unit is turned off. The code currently set appears on the front display panel.
- 4 Press **■** on the remote control to change the unit's code. The code currently set on the remote control blinks on the front display panel for approximately 5 seconds, and is applied to the unit.

#### NOTE:

When "POWER SAVE" is set to "ON" (pg. 80), it is not possible to change the remote code.



### TV Multi-Brand Remote Control

Your remote control can operate the basic functions of your TV set. In addition to JVC TVs, other manufacturer's TVs can also be controlled.

- Turn off the TV using its remote control.
- Slide the TV/CABLE/SAT/DVD switch to TV.

#### IMPORTANT:

Although the provided remote control unit is compatible with JVC televisions, as well as many other models, it may not work with your TV, or in some instances, may have limited function capability.

- Keep pressing **SET UP** down during step 1.

- 1 Enter your TV's brand code using the **number keys**, then press **ENTER**.
- 2 Press **P/I** on the unit's remote control to turn on the TV and try operations (step 3).
  - Once you have set the remote control to operate the TV, you do not have to repeat this step until you replace your remote control's batteries.
  - Some brands of TVs have more than one code. If the TV does not function with one code, try entering another.
- 3 Press the corresponding buttons to operate the TV: **P/I**, **TV AV / VIDEO**, **PR +/-**, **TV +/-**, **TV**, **number keys**.
  - For some brands of TVs, you must press **ENTER** after having pressed the **number keys**.

BRAND NAME	CODE
JVC	01, 23, 24, 25
FERGUSON	27
FINLUX	30
FUNAI	32
LG/GOLDSTAR	18
GRUNDIG	19
HITACHI	10
ITT	28
MITSUBISHI	03
MIVAR	29
NEC	20
NOKIA	31
PANASONIC	04, 11
PHILIPS	02
RCA	05
SAMSUNG	12, 33, 34, 35
SANYO	13, 16
SHARP	06
SONY	07
THOMSON	26
TOSHIBA	08, 14

BRAND NAME	CODE
JVC	72, 73
AMSTRAD	60, 61, 62, 63, 92
CANAL +	81
D-BOX	85
ECHOSTAR (VIA DIGITAL)	82
FINLUX	68
FORCE	89
GALAXIS	88
GRUNDIG	64, 65
HIRSCHMANN	64
ITT NOKIA	68
KATHREIN	70, 71
LUXOR	68
MASCOM	93
MASPRO	70
NOKIA	87
PACE	67, 86, 92
PANASONIC	13, 14, 74
PHILIPS	66, 84
RFT	69
SAGEM	83
SALORA	68
SAMSUNG	05, 24
SKYMASTER	69
TPS	83
TRIAX	91
WISI	64

## Satellite Receiver Multi-Brand Remote Control

Your remote control can operate the basic functions of your satellite receiver set. In addition to JVC satellite receivers, other manufacturer's satellite receivers can also be controlled.

- Slide the **TV/CABLE/SAT/DVD** switch to **CABLE/SAT**.

### IMPORTANT:

Although the provided remote control unit is compatible with JVC satellite receivers, as well as many other models, it may not work with your satellite receiver, or in some instances, may have limited function capability.

- Keep pressing **SET UP** down during step 1.

**1** Enter your satellite receiver's brand code using the **number keys**, then press **ENTER**.

**2** Press **⏻/⏮** on the unit's remote control to turn on the satellite receiver and try operations (see step 3).

- Once you have set the remote control to operate the satellite receiver, you do not have to repeat this step until you replace your remote control's batteries.
- Some brands of satellite receivers have more than one code. If the satellite receiver does not function with one code, try entering another.

**3** Press the corresponding buttons to operate the satellite receiver: **⏻/⏮**, **PR +/-**, **number keys**.

- For some brands of satellite receivers, you must press **ENTER** after having pressed the **number keys**.
- The **number keys** may not function with some satellite receivers.

## Connecting To A Satellite Receiver

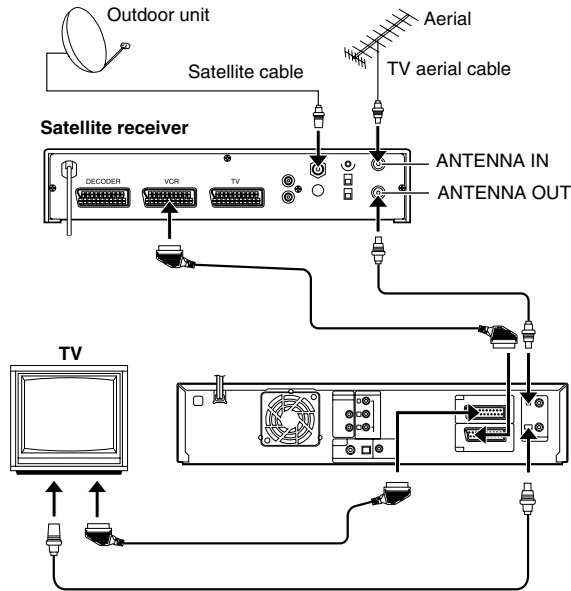
### Simple Connections

This is an example of a simple connection if your TV has one 21-pin AV input (SCART) connector.

Connect the satellite receiver to the [L-2 IN/DECODER] connector, then connect the [L-1 IN/OUT] connector to the TV's connector.

#### NOTES:

- Set "L-2 SELECT" to "VIDEO" or "S-VIDEO". (pg. 72)
- You can use the Automatic Satellite Programme Recording function (pg. 53) with this connection. (HDD deck only)
- To record a programme via the satellite receiver, select L-2 mode by pressing **PR +/-** so that "L-2" appears on the front display panel.
- For details, refer to the instruction manual of the satellite receiver.



#### IMPORTANT

When you set "L-2 SELECT" to "SAT VIDEO" or "SAT S-VIDEO" (pg. 72), it is possible to view a satellite broadcast with the TV set to its AV mode even if the unit is turned off. When the unit is in Stop mode or recording, press **TV AV/VIDEO** on the remote control to turn off the VIDEO indicator on the front display panel.

- If you turn on the unit when the satellite receiver's power is off, nothing appears on the TV screen. In this case, turn on the satellite receiver, or set the TV to its TV mode, or press **TV AV/VIDEO** on the remote control to set the unit to the AV mode.

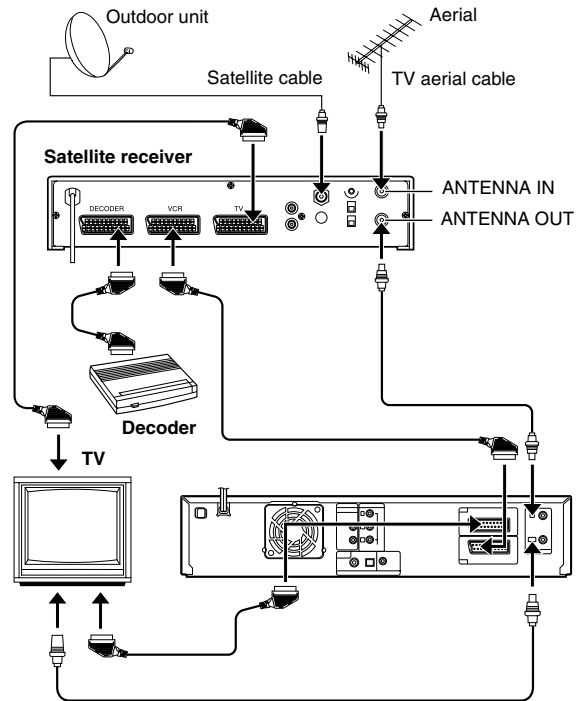
### Perfect Connections (Recommended)

This is an example of recommended connections if your TV has two 21-pin AV input (SCART) connectors.

Connect the decoder to the satellite receiver's connector if you have a decoder, [L-1 IN/OUT] connector to TV's connector, and [L-2 IN/DECODER] connector to the satellite receiver's connector. Then connect the satellite receiver and TV.

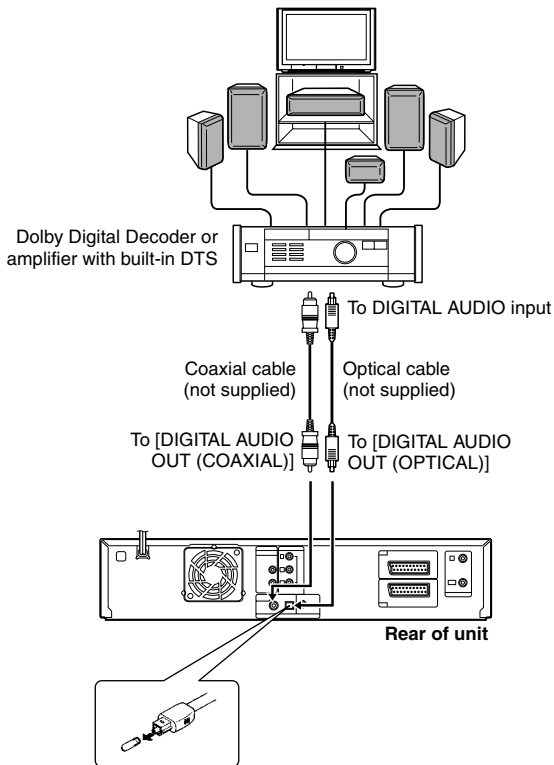
#### NOTES:

- Set "L-2 SELECT" to "VIDEO" or "S-VIDEO". (pg. 72)
- You can use the Automatic Satellite Programme Recording function (pg. 53) with this connection. (HDD deck only)
- To record a programme via the satellite receiver, select L-2 mode by pressing **PR +/-** so that "L-2" appears on the front display panel.
- To receive a scrambled broadcast, descramble the signal with the decoder connected to the satellite receiver.
- For details, refer to the instruction manual of the satellite receiver and decoder.



## Connecting To A Dolby Digital Decoder Or An Amplifier With Built-in DTS

These instructions enable you to connect your unit to a Dolby Digital Decoder or an amplifier with built-in DTS.



**Note for connection:**  
Remove the protection cap from the optical cable.

- 1 Connect the unit and a Dolby Digital Decoder or an amplifier with built-in DTS using either an optional optical cable or an optional coaxial cable.

### NOTES:

- For Dolby Digital sound, set "DIGITAL AUDIO OUT" to "DOLBY DIGITAL/PCM". (☞ pg. 78)
- For DTS sound, set "DIGITAL AUDIO OUT" to "STREAM/PCM". (☞ pg. 78)

### CAUTIONS:

- This unit has a dynamic range of more than 110 dB with regards to its Hi-Fi audio capability. It is recommended that you check the maximum level if you are going to listen to the Hi-Fi audio signals through a stereo amplifier. A sudden surge in the input level to the speakers may damage them.
- Some speakers and televisions are specially shielded to prevent television interference. If both are of the non-shielded type, do not place the speakers adjacent to the TV set as this can adversely affect the playback picture.

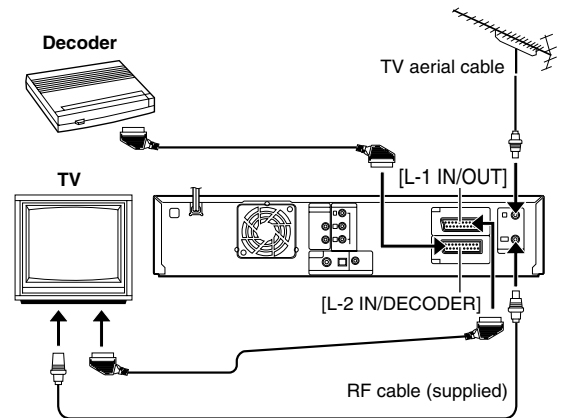
### When you can't switch the audio channel of a bilingual programme

When the unit is connected with a digital audio device using an optional optical cable and "DIGITAL AUDIO OUT" is set to "DOLBY DIGITAL/PCM", it is not possible to switch the audio channel of a bilingual programme recorded on a DVD-RAM or DVD-RW (VR mode) disc. In this case, perform the following steps using the remote control to switch "DIGITAL AUDIO OUT" from "DOLBY DIGITAL/PCM" to "PCM ONLY".

- 1 Press **SET UP** to access the Main Menu screen.
- 2 Press <◀> to select "DVD VIDEO SET UP", then press ▽.
- 3 Press <◀> to select "AUDIO OUTPUT", then press ▽.
- 4 Press △▽ to select "DIGITAL AUDIO OUT", then press **ENTER**.
- 5 Press △▽ to select "PCM ONLY", then press **ENTER**. (☞ pg. 78)
- 6 Press **SET UP** to complete the setting.
- 7 Press **AUDIO** to select the desired audio channel.

## Connecting/Using A Decoder (HDD & DVD Deck Only)

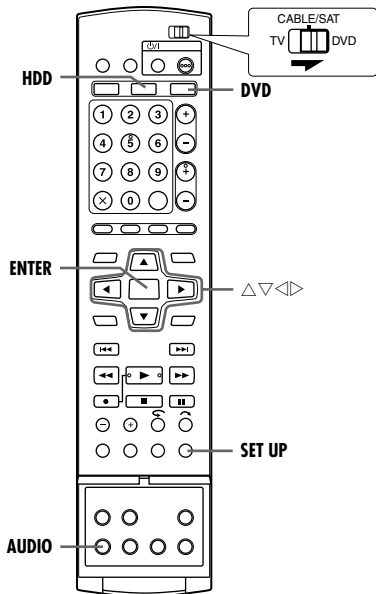
The [L-2 IN/DECODER] connector can be used as an input connector for an external decoder (descrambler). Simply connect a decoder and you can enjoy a variety of programming that is available through scrambled channels.



- 1 Set "L-2 SELECT" to "DECODER". (☞ pg. 72)
- 2 Connect your unit's [L-2 IN/DECODER] connector to the decoder's 21-pin SCART connector using a 21-pin SCART cable.
- 3 Perform the procedure as described in "When Receiving A Scrambled Broadcast (HDD & DVD Deck Only)" (☞ pg. 85).

# Mode Set (HDD & DVD Deck Only)

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.

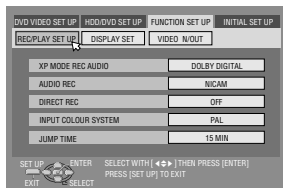


Various modes of this unit are categorized into menus nested in 2 levels shown in the following table. To change the settings of these modes, find the desired mode in the menu (for details on each menu, see pages 78 through 80), then follow the procedure below.

<b>DVD VIDEO SET UP</b>	LANGUAGE SET (pg. 20) AUDIO OUTPUT (pg. 78) PARENTAL LOCK (pg. 33) DISC PLAY SET UP (pg. 79)
<b>HDD/DVD SET UP</b>	HDD SET UP (pg. 79) DVD SET UP (pg. 79) DISC SET UP (pg. 87, 88)
<b>FUNCTION SET UP</b>	REC/PLAY SET UP (pg. 79) DISPLAY SET (pg. 80) VIDEO IN/OUT (pg. 21, 72)
<b>INITIAL SET UP</b>	TUNER SET (pg. 83) CLOCK SET (pg. 86)

- The procedure below shows how to set the desired option of the "AUDIO REC" mode as an example.

- 1 Press **HDD** or **DVD** so that the HDD or DVD lamp lights up on the unit.
- 2 Press **SET UP** to access the Main Menu screen.
- 3 Press **<>** to select "FUNCTION SET UP", then press **∇**.
- 4 Press **<>** to select "REC/PLAY SET UP", then press **∇**.
- 5 Press **△∇** to select "AUDIO REC", then press **ENTER**.
- 6 Press **△∇** to select the desired option, then press **ENTER**.
- 7 Press **SET UP** to complete the setting.



\* The **boldface** settings below indicate the settings at your purchase.

## AUDIO OUTPUT

### ■ DIGITAL AUDIO OUT — DOLBY DIGITAL/PCM / STREAM/PCM / PCM ONLY

Select the appropriate mode according to the type of the device connected to [DIGITAL AUDIO OUT] connector.

#### DOLBY DIGITAL/PCM:

Select this when you connect the digital input connector of a Dolby Digital Decoder or an amplifier with a built-in Dolby Digital Decoder.

#### STREAM/PCM:

Select this when you connect the digital input connector of an amplifier with a built-in DTS, Dolby Digital, or MPEG multichannel decoder.

#### PCM ONLY:

Select this when you connect the linear PCM digital input of other audio equipment (amplifier, MD or DAT deck, etc.).

#### NOTES:

- This setting also functions when HDD is active.
- If you watch or play back a title which contains multiple audio languages, select "PCM ONLY" in advance and choose main or sub audio with **AUDIO**.

### ■ ANALOG AUDIO OUT — STEREO / DOLBY SURROUND

Select the appropriate setting to accommodate the unit to the connected A/V equipment. This function takes effect when a DVD VIDEO disc is played back.

#### STEREO:

Select this when listening to conventional two-channel stereo audio with the unit's [AUDIO OUT] connectors connected to a stereo amplifier/receiver or TV set, or in case you want to record the audio from a DVD VIDEO disc to a Mini Disc, etc.

#### DOLBY SURROUND:

Select this when listening to multichannel surround audio with the unit's [AUDIO OUT] connectors connected to an amplifier/receiver with a built-in surround decoder or a surround decoder.

### ■ D. RANGE CONTROL — NORMAL / WIDE RANGE / TV MODE

The dynamic range (the difference between the loudest sound and the quietest one) can be compressed during playback of a programme encoded in Dolby Digital format.

This function takes effect when a DVD VIDEO disc recorded in Dolby Digital format is played back at low or middle volume.

#### NORMAL:

Normally select this setting to activate this function.

#### WIDE RANGE:

Select this to deactivate this function when you enjoy wide dynamic range programme.

#### TV MODE:

Select this when you hear the sound through the TV's speaker(s).

#### NOTES:

- This function has no effect on programmes other than that recorded in Dolby Digital format.
- This function does not work when Simulated Surround Effect is activated. (pg. 31)
- The effect of "NORMAL" and "WIDE RANGE" may not be different depending on discs.

### ■ OUTPUT LEVEL — STANDARD / LOW

You can lower the output level of analogue audio to accommodate the unit to the connected A/V equipment.

#### STANDARD:

Normally select this setting.

#### LOW:

The output level of analogue audio is lowered.



## DISC PLAY SET UP

### ■ RESUME — OFF / ON / DISC RESUME

When this function is set to "ON" or "DISC RESUME", you can use the resume function. (☞ pg. 26)

OFF:

You cannot use the resume function.

ON:

You can start playback from the resume point of the placed disc.

DISC RESUME:

The unit retains a memory of the resume points of the last 30 discs played back, even though they have been ejected.

#### NOTE:

"DISC RESUME" setting works on DVD VIDEO, VCD, SVCD and already finalised DVD-R/DVD-RW (video mode) discs. For other types of discs, the function under "ON" setting will be applied even if "RESUME" is set to "DISC RESUME".

## HDD SET UP

### ■ LIVE MEMORY — OFF / 30 MIN / 1 HR / 3 HR

When this function is set to "30 MIN", "1 HR" or "3 HR", you can apply the selected time length to "Temporary recording for Live Memory (HDD deck only)" (☞ pg. 48).

## DVD SET UP

### ■ SAVE AS LIBRARY — OFF / ON

When this function is set to "ON", the recording information is automatically stored in the library. For details, refer to "Edit Library Information" (☞ pg. 62).

### ■ CONTINUOUS PLAY — OFF / ON

When this function is set to "ON", multiple titles on a disc are played back continuously one after another.

### ■ VIDEO MODE RECORDING ASPECT — PRIORITIZE 4:3 / PRIORITIZE 16:9

This is the setting for the aspect ratio used when you dub titles to DVD discs in video mode. If the titles you want to dub are recorded in both 16:9 and 4:3, you must select one aspect ratio.

#### PRIORITIZE 4:3:

If you select "PRIORITIZE 4:3", even a title recorded in 16:9 is dubbed in 4:3.

#### PRIORITIZE 16:9:

If you select "PRIORITIZE 16:9", even a title recorded in 4:3 is dubbed in 16:9.

### ■ VIDEO MODE RECORDING AUDIO — MAIN / SUB

This is the setting for the audio channel to be selected when dubbing titles to DVD discs in video mode. Select either one of the two settings if the titles to be dubbed have two audio channels.

#### MAIN:

Select this to dub the main channel.

#### SUB:

Select this to dub the sub channel.

### ■ MP3 & WMA / JPEG — MP3 & WMA / JPEG

You can select files to play back, when both MP3&WMA files and JPEG files are recorded on a disc.

#### MP3 & WMA:

Select this to play back MP3/WMA files.

#### JPEG:

Select this to play back JPEG files.

## REC/PLAY SET UP

### ■ XP MODE REC AUDIO — DOLBY DIGITAL / LINEAR PCM

You can select the audio format when you record a title in XP mode. When this function is set to "LINEAR PCM", you can obtain a high-quality audio sound.

#### DOLBY DIGITAL:

To record in Dolby Digital format.

#### LINEAR PCM:

To record in Linear PCM format.

### ■ AUDIO REC — NICAM / MONO

You can select the desired NICAM audio channel to be recorded on a DVD-R/RW (Video mode) disc.

#### NICAM:

To record the main and sub language of NICAM audio.

#### MONO:

To record the standard (monaural) sound of NICAM audio.

#### NOTE:

This function works only for the NICAM bilingual programme.

### ■ DIRECT REC — OFF / ON

When this function is set to "ON", you can easily start recording the programme that you are watching on your TV. While holding ●, press ► on the remote control, or press ● on the unit.

#### NOTES:

- When you use the Direct Rec function, be sure to use a TV offering T-V LINK, etc. and connect a fully-wired 21-pin SCART cable between the unit and the TV. (☞ pg. 16)
- If "DIRECT REC" is set to "OFF", the ● button functions as described in "Basic Recording" (☞ pg. 34, 37).
- During Direct Rec, "--" appears on the front display panel.
- If a programme is recorded with the Direct Rec, the station name will not be registered in the library. "-- --" will be displayed for the station name.
- Even if there is no power supply for more than 60 minutes, the unit keeps the setting.

### ■ INPUT COLOUR SYSTEM — PAL / SECAM

You can play back PAL discs, or record PAL and SECAM signals on this unit. Select the appropriate colour system.

#### PAL:

To record PAL signals.

#### SECAM:

To record SECAM signals or a MESECAM tape.

### ■ JUMP TIME — 15 MIN / 30 MIN / 1 HR

You can locate a scene ahead of or behind the currently viewed one by jumping a selected time interval during playback (or Live Memory Playback). For details, refer to "Jump Search" (☞ pg. 26, 40).

---

**DISPLAY SET**

---

**■ SUPERIMPOSE — OFF / AUTO**

When this function is set to "AUTO", various operational indicators appear on the TV screen. Messages appear in the selected language. (☞ pg. 20)

**OFF:**

To turn off superimposed indications.

**AUTO:**

To superimpose operational indications for approximately five seconds just after the corresponding operation.

**NOTES:**

- Even when "SUPERIMPOSE" is set to "OFF", you can display the various operational indicators by pressing **ON SCREEN**. To clear the operational indicators, press **ON SCREEN** again.
- When you use this unit as the source player for editing, be sure to set "SUPERIMPOSE" to "OFF" before starting. (☞ pg. 71)
- When you select "AUTO", during playback, the operation mode indicators may be disturbed depending on the type of disc being used.

---

**■ BLUE BACK — OFF / ON**

When this function is set to "ON", the TV screen becomes all blue when receiving a channel not in use.

**NOTE:**

When you want to receive an unstable channel with poor signals, set this function to "OFF".

---

**■ DIMMER — BRIGHT / DIMMED**

You can change the brightness of the front display panel.

**BRIGHT:**

Normally select this.

**DIMMED:**

To dim the front display panel. (Blue lamp on the front display panel is turned off.)

---

**■ POWER SAVE — OFF / ON**

When this function is set to "ON", you can reduce the power consumption while the unit is turned off.

**NOTES:**

- During Power Save mode —
  - the front display panel will be turned off.
  - the Just Clock function (☞ pg. 86) does not work.
- Power Save does not work when —
  - the unit is in the Timer mode.
  - the unit's power is turned off after timer-recording or Instant Timer Recording.
  - the Automatic Satellite Programme Recording mode is engaged. (☞ pg. 53)
  - "L-2 SELECT" is set to "DECODER", "SAT VIDEO" or "SAT S-VIDEO". (☞ pg. 72)
- It takes some time for the unit to complete initialisation after you turn on the unit power, with "WAKE UP" blinking on the front display panel.

---

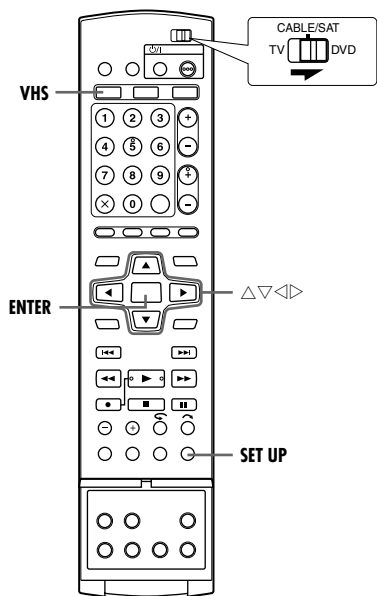
**■ ON SCREEN LANGUAGE**

This unit offers you the choice to view on-screen messages in 10 different languages. Though Auto Set Up selects the language automatically (☞ pg. 19), you can change the language setting manually as required.

For details, refer to "On-screen Language Set" (☞ pg. 20)

## Mode Set (VHS Deck Only)

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.



You can change various mode settings on the Function Set screen.

To change the settings of these modes, find the desired mode in the menu (for details on each menu, see pages 81 through 82), then follow the procedure below.

- 1 Press **VHS** so that the VHS lamp lights up on the unit.
- 2 Press **SET UP** to access the Function Set screen.
- 3 Press  $\Delta \nabla$  to select the item you want to change, then press **ENTER** or  $\triangleright$  to select the desired mode.
- 4 Press **SET UP** to complete the setting.

MODE SET	
B.E.S.T.	ON
PICTURE CONTROL	AUTO
O.S.D.	AUTO
AUTO SP—LP TIMER	OFF
COLOUR SYSTEM	PAL/NTSC
[▲▼] : [ENTER]	
[SET UP] : EXIT	

\* The **boldface** settings below indicate the settings at your purchase.

### ■ B.E.S.T. — ON / OFF

You can set the B.E.S.T. (Biconditional Equalised Signal Tracking) system to "ON" or "OFF". (☞ pg. 45)

#### NOTES:

- When watching a tape recorded with "B.E.S.T." set to "ON", it is recommended that you leave B.E.S.T. on during playback as well.
- When watching a rental tape or one recorded on another video recorder, or when using this unit as the player for editing, set B.E.S.T. to your preference.
- The B.E.S.T. system works for both SP and LP modes only after a tape has been inserted and the Record mode is first initiated. It does not work during recording.
- The B.E.S.T. system does not work while Automatic Satellite Programme Recording is in progress. (☞ pg. 45)
- In the case of timer recordings, the B.E.S.T. system works before recording is initiated.
- Once the cassette is ejected, the B.E.S.T. data is cancelled. The next time the cassette is used for recording, B.E.S.T. is re-performed.
- Pressing the unit's  $\bullet$  button while "BEST" is displayed does not start Instant Timer Recording. (☞ pg. 45)

### ■ PICTURE CONTROL — AUTO / EDIT / SOFT

This feature helps you to adjust the playback picture quality according to your preference. Normally select "AUTO".

#### AUTO:

Picture quality is adjusted automatically.

#### EDIT:

Minimises picture degradation during editing (recording and playback).

#### SOFT:

Reduces image coarseness when viewing overlapped tapes containing a lot of noise.

#### NOTES:

- When you select "EDIT" or "SOFT", the selected mode will not change until you select another mode.
- When you select "EDIT" to dub tapes, be sure to select "NORM" after you finish dubbing the tapes.
- When "B.E.S.T." is "OFF", "PICTURE CONTROL" switches automatically from "AUTO" to "NORM".

### ■ O.S.D. — AUTO / OFF

When this function is set to "AUTO", various operational indicators appear on the TV screen. Messages appear in the selected language. (☞ pg. 20)

#### NOTES:

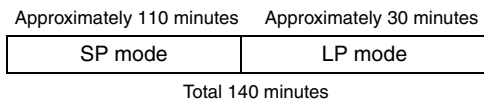
- Even when "O.S.D." is set to "OFF", you can display the various operational indicators by pressing **ON SCREEN**. To clear the operational indicators, press **ON SCREEN** again.
- When you use this unit as the source player for editing, be sure to set "O.S.D." to "OFF" before starting.
- During playback, the operation mode indicators may be disturbed depending on the type of tape being used.

**AUTO SP→LP TIMER — ON / OFF**

When this function is set to "ON", the unit automatically switches to LP mode to allow complete recording if there is not enough tape to record the entire programme while timer-recording in SP mode.

**For Example:**

Recording a programme of 140 minutes in length onto a 120-minute tape.



Make sure you set this function to "ON", before the timer-recording starts.

**NOTES:**

- If you have programmed the unit to timer-record 2 or more programmes, the second programme and those thereafter may not fit on the tape if you set "AUTO SP→LP TIMER" to "ON". In this case, make sure the mode is not engaged, then set the tape speed manually during timer programming.
- In order to ensure that the recording fits on the tape, this feature may leave a slight non-recorded section at the end of the tape.
- There may be some noise and sound disturbance at the point on the tape where the unit switches from SP to LP mode.
- The Auto SP→LP Timer feature is not available during ITR (Instant Timer Recording), and the feature will not work properly on the following tapes: T(ST)-30, T(ST)-60, T(ST)-90, and T(ST)-120.

**COLOUR SYSTEM — PAL/NTSC / MESECAM**

You can play back PAL, NTSC and MESECAM tapes, or record PAL and SECAM\* signals on this unit. Select the appropriate colour system.

\* SECAM signals will be recorded as MESECAM on this unit; MESECAM is the designation for tapes with SECAM signals that have been recorded on a MESECAM-compatible PAL video cassette recorder.

**PAL/NTSC:**

To record PAL signals, or play back a PAL or NTSC tape.

**MESECAM:**

To record SECAM signals, or play back a MESECAM tape.

**NOTES:**

- SECAM signals recorded on the HDD or DVD deck are played back as PAL signals. As such, when dubbing to VHS deck, make sure to set "COLOUR SYSTEM" to "PAL/NTSC".

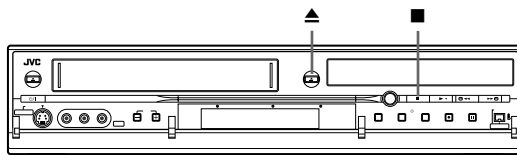
**About NTSC Playback**

- Some TVs shrink the picture vertically and place black bars at the top and bottom of the TV screen. This is not a malfunction on the part of either the unit or the TV.
- The picture may roll up and down. This can be corrected using the V-HOLD control found on some TVs. (This cannot be corrected if the TV does not have a V-HOLD control.)
- The counter and tape remaining time readings will be incorrect.
- During search, still, or frame-by-frame playback, the picture will be distorted, and there may be a loss of colour.
- Depending on the type of TV, the top and bottom portions of superimposed displays may be cut off during NTSC playback.

**Tray Lock (DVD Deck Only)**

You can lock the disc tray to prohibit the unwanted disc ejection by children.

- Turn off the unit.

**To lock tray**

While the unit is turned off, press and hold ■, then press ▲ on the unit. "LOCK" appears on the front display panel and the disc tray is locked.

**To unlock tray**

While the unit is turned off, press and hold ■, then press ▲ on the unit. "UNLOCK" appears on the front display panel.

# SHOWVIEW™ DELUXE System Setup

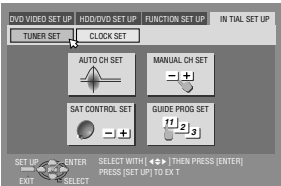
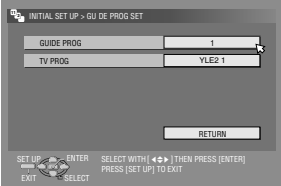
## IMPORTANT:

Normally, Auto Set Up (pg. 17), Preset Download (pg. 18) or Auto Channel Set (pg. 83) sets the Guide Programme numbers automatically. You need to set the Guide Programme numbers manually only in the following cases.

- When timer-programming with the **SHOWVIEW** system, the channel position, where the station you wish to record is received on your unit, is not selected, **OR** when you add a channel after Auto Set Up, Preset Download or Auto Channel Set has taken place,
  - Set the Guide Programme number for that station manually.
- When you wish to timer-record a satellite programme with the **SHOWVIEW** system,
  - Set the Guide Programme numbers for all satellite broadcasts received on your satellite receiver.

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.

## Guide Programme Number Set

- 1 Press **SET UP** to access the Main Menu screen.
- 2 Press  $\triangleleft \triangleright$  to select "INITIAL SET UP", then press  $\nabla$ .
- 3 Press  $\triangleleft \triangleright$  to select "TUNER SET", then press  $\nabla$ .
- 4 Press  $\triangle \nabla \triangleleft \triangleright$  to select "GUIDE PROG SET", then press **ENTER**.
 
- 5 Press  $\triangle \nabla$  to select "GUIDE PROG", then press **ENTER**.
- 6 Press  $\triangle \nabla$  to select the Guide Programme number for the desired station as shown in the TV listings. Then press **ENTER**.
 
- 7 Press  $\triangle \nabla$  to select "TV PROG", then press **ENTER**. Press  $\triangle \nabla$  to select the number of the unit's channel position on which the Guide Programme number's broadcast is received by the unit or the satellite receiver. Then press **ENTER**.
  - Pressing **AUX** changes "TV PROG" to "SAT".
  - To timer-record a satellite programme with the **SHOWVIEW** system, you need to install the provided Satellite Controller and perform the procedure described in "Satellite Receiver Control Setting (HDD & DVD Deck Only)" (pg. 22).
  - Repeat steps 5 – 7 as necessary.
- 8 Press **SET UP** to complete the setting.

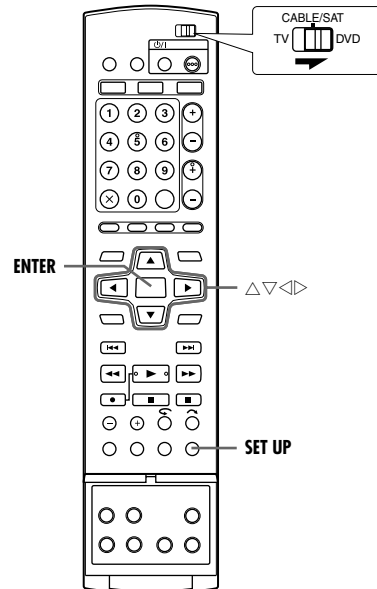
## Guide Programme Number

"Guide Programme (GUIDE PROG) number" refers to the assigned TV station numbers, according to broadcast area, for the **SHOWVIEW** timer recording. The Guide Programme Numbers can be found in most TV listings.

## Tuner Set

Your unit needs to memorise all necessary stations in channel positions in order to record TV programmes. Auto Channel Set automatically assigns all receivable stations in your area to call them up by using the **PR +/-** buttons without going through any vacant channels.

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.



## IMPORTANT:

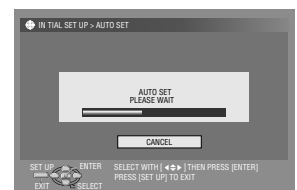
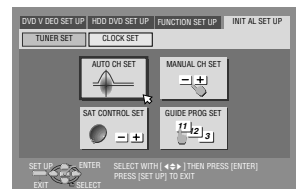
Perform the following steps only if —  
 — Auto Channel Set has not been set correctly by Auto Set Up or by Preset Download. (pg. 17, 18)  
 — you have moved to a different area or if a new station starts broadcasting in your area.

## Auto Channel Set

- 1 Press **SET UP** to access the Main Menu screen.
- 2 Press  $\triangleleft \triangleright$  to select "INITIAL SET UP", then press  $\nabla$ .
- 3 Press  $\triangleleft \triangleright$  to select "TUNER SET", then press  $\nabla$ .
- 4 Press  $\triangle \nabla \triangleleft \triangleright$  to select "AUTO CH SET", then press **ENTER**.
- 5 Press  $\triangle \nabla \triangleleft \triangleright$  to select your country's name, then press **ENTER**.
- 6 Press  $\triangle \nabla \triangleleft \triangleright$  to select the language of your choice.
- 7 Press **ENTER** twice.

- When you have connected the unit to a TV offering T-V Link via a fully-wired 21-pin SCART cable (pg. 16), the unit automatically performs the Preset Download and the T-V LINK screen will appear. (pg. 18)

- The Auto Set screen appears, and remains on screen while the unit searches for receivable stations.



- 8** View the Confirmation screen. "AUTO SET COMPLETED" or "SCAN COMPLETED" is displayed on the TV screen.
- After selecting "OK", "PLEASE WAIT..." appears on the screen while channel data is being transferred to the VHS deck. During this period (approximately 80 seconds), the VHS deck is not operable. It will exit the AUTO SET mode once "PLEASE WAIT..." disappears from the screen.
- 9** Press **SET UP** to complete the setting.
- Using the Confirmation screen, you can skip or add channel positions, enter station names and perform other operations. Refer to pages 84 – 85 for the procedures.
  - Depending on reception conditions, the stations may not be stored in order, and the station names may not be stored correctly.
  - For information on scrambled broadcasts, refer to "When Receiving A Scrambled Broadcast (HDD & DVD Deck Only)" (pg. 85).

**IMPORTANT:**

- In certain reception conditions, station names may not be stored correctly, and Auto Guide Programme Number Set may not work properly. When the Guide Programme numbers are not set properly, the programme that you do not intend to record will be timer-recorded by the **SHOWVIEW** system of the unit. When programming the timer using the **SHOWVIEW** system, be sure to check the desired channel is selected correctly. (pg. 49, 54)
- Your unit memorises all receivable stations even if reception of some of them is poor. You can delete those stations with an unacceptable picture from the list. (pg. 85, "Delete A Channel")

**NOTES:**

- Fine tuning is performed automatically during Auto Channel Set. If you want to perform tuning manually, refer to "Fine-Tuning Channels Already Stored" (pg. 85).
- If you perform Auto Channel Set when the aerial cable is not connected properly, "SCAN COMPLETED -NO SIGNAL-" appears on the TV screen in step 8. In such a case, make sure of the aerial connection and press **ENTER**; Auto Channel Set will start again.
- If no sound accompanies the picture or the audio sounds unnatural on some channels that have been stored by Auto Set Up, the TV system setting for those channels may be incorrect. Select the appropriate TV system for those channels. (pg. 85, "INFORMATION").

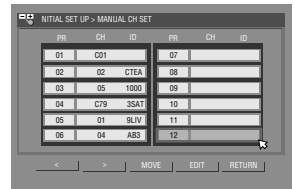
**Manual Channel Set**

Store channels that were not stored during Auto Set Up (pg. 17), Preset Download (pg. 18) or Auto Channel Set (pg. 83).

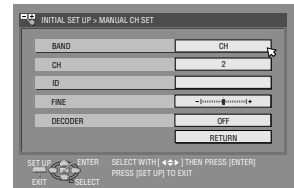
**ATTENTION:**

When closing the Confirmation screen, "PLEASE WAIT..." appears on the screen while channel data is being transferred to the VHS deck. During this period (approximately 80 seconds), the VHS deck is not operable. It will exit the current mode once "PLEASE WAIT..." disappears from the screen.

- Press **SET UP** to access the Main Menu screen.
- Press  $\triangleleft$  to select "INITIAL SET UP", then press  $\nabla$ .
- Press  $\triangleleft$  to select "TUNER SET", then press  $\nabla$ .
- Press  $\triangle\nabla\triangleleft$  to select "MANUAL CH SET", then press **ENTER**. The Manual Channel Set screen appears.
- Press  $\triangleleft$  to select "EDIT", then press **ENTER**.
- Press  $\triangle\nabla\triangleleft$  to select a blank position in which you want to store a channel, then press **ENTER**. The Confirmation screen appears.
- Press  $\triangle\nabla$  to select "BAND", then press **ENTER**.



The programme currently received on the selected channel position appears behind the confirmation screen.



- Press  $\triangle\nabla$  to change the band between CH (regular) and CC (cable), then press **ENTER**.
- Press  $\triangle\nabla$  to select "CH", then press **ENTER**.
- Press  $\triangle\nabla$  to input the channel number you want to store.
  - To enter the registered station name (pg. 98), press  $\triangle\nabla$  to select "ID", then press **ENTER**. Press  $\triangle\nabla$ .
  - For fine tuning adjustment, press  $\triangle\nabla$  to select "FINE", then press **ENTER**. Press  $\triangle\nabla$  to perform fine-tuning.
  - When storing a channel that sends scrambled broadcasts, press  $\triangle\nabla$  to select "DECODER", then press **ENTER**. Press  $\triangle\nabla$  to set "DECODER" to "ON" ("OFF" is the default setting).
  - When "L-2 SELECT" is set to "VIDEO", "S-VIDEO", "SAT VIDEO" or "SAT S-VIDEO", the "DECODER" setting cannot be changed. (pg. 72)
- Press **ENTER** to enter new channel information. The Confirmation screen appears.
- Press **SET UP** or **RETURN** to close the Confirmation screen.
  - To change positions, see "Change Station Channel Position" (pg. 85).
  - If you wish to set station names other than the ones registered in your unit, see "Set Stations (B)" (pg. 85).

**ATTENTION:**

Guide Programme numbers are not set when channels are stored manually. (pg. 83, "SHOWVIEW System Setup")

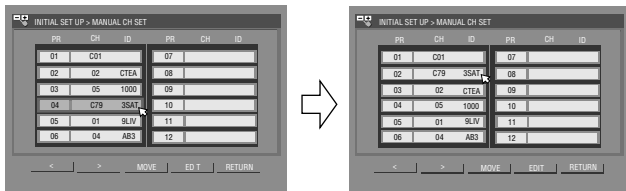
## Delete A Channel

- 1 Perform steps 1 – 5 of “Manual Channel Set” (pg. 84).
- 2 Press  $\Delta \nabla \triangleleft \triangleright$  to select the channel you want to delete.
- 3 Press **CANCEL**(X) to delete a channel. The channel next to the cancelled one moves up one line.
  - Repeat steps 2 – 3 as necessary.
- 4 Press **SET UP** or **RETURN** to close the Confirmation screen.

## Change Station Channel Position

- 1 Perform steps 1 – 4 of “Manual Channel Set” (pg. 84).
- 2 Press  $\triangleleft \triangleright$  to select “MOVE”, then press **ENTER**.
- 3 Press  $\Delta \nabla \triangleleft \triangleright$  to select the channel you want to move, then press **ENTER**.
- 4 Press  $\Delta \nabla \triangleleft \triangleright$  to select the new channel position, then press **ENTER**.

Example: If you moved the station in position 4 to position 2, the stations originally in positions 2 and 3 each move down one space.



- Repeat steps 3 – 4 as necessary.

- 5 Press **SET UP** or **RETURN** to close the Confirmation screen.

## When Receiving A Scrambled Broadcast (HDD & DVD Deck Only)

- 1 Set “L-2 SELECT” to “DECODER”. (pg. 72)
- 2 Perform steps 1 – 5 of “Manual Channel Set” (pg. 84).
- 3 Press  $\Delta \nabla \triangleleft \triangleright$  to select the channel position broadcasting scrambled programmes, then press **ENTER**. The Confirmation screen appears.
- 4 Press  $\Delta \nabla$  to select “DECODER”, then press **ENTER**.
- 5 Press  $\Delta \nabla$  to set “DECODER” to “ON”, then press **ENTER**.
- 6 Press **RETURN** to return to the Manual Channel Set screen.
  - Repeat steps 3 – 5 as necessary.
- 7 Press **SET UP** or **RETURN** to close the Confirmation screen.

### INFORMATION

If you live in Eastern Europe, “TV SYSTEM” setting appears instead of “DECODER” setting on the Manual Channel Set screen. When you can see the picture but can hear no audio, select appropriate TV system (D/K or B/G). Normally, TV programmes are broadcast as follows.

For Eastern Europe : D/K

For Western Europe : B/G

- 1 Select a country in Eastern Europe in step 5 of “Auto Channel Set” (pg. 83).
- 2 Press  $\Delta \nabla$  to select “TV SYSTEM” in step 7 of “Manual Channel Set” (pg. 84).
- 3 Press  $\Delta \nabla$  to select appropriate TV System (D/K or B/G).

## Set Stations (A)

Set station names that are registered in your unit.

- 1 Perform steps 1 – 5 of “Manual Channel Set” (pg. 84).
- 2 Press  $\Delta \nabla \triangleleft \triangleright$  to select the channel you want to modify, then press **ENTER**. The Confirmation screen appears.
- 3 Press  $\Delta \nabla$  to select “ID”, then press **ENTER**.
- 4 Move the arrow to the left ID selection column. Registered station names (ID) (pg. 98) appear as you press  $\Delta \nabla$ .
- 5 Press **ENTER** to select the desired ID, then press **ENTER** again to select “OK”.
- 6 Press **RETURN** to return to the Manual Channel Set screen.
  - Repeat steps 2 – 5 as necessary.
- 7 Press **SET UP** or **RETURN** to close the Confirmation screen.

## Set Stations (B)

Set station names other than the ones registered in your unit.

- 1 Perform steps 1 – 5 of “Manual Channel Set” (pg. 84).
- 2 Press  $\Delta \nabla \triangleleft \triangleright$  to select the channel you want to modify, then press **ENTER**. The Confirmation screen appears.
- 3 Press  $\Delta \nabla$  to select “ID”, then press **ENTER**.
- 4 Press  $\Delta \nabla \triangleleft \triangleright$  to select the desired characters (A–Z, 0–9, –, \*, +, \_ (space)), then press **ENTER**.
  - Enter the remaining characters the same way (maximum of 4).
- 5 After entering all characters, press  $\Delta \nabla \triangleleft \triangleright$  to select “OK”, then press **ENTER**.
- 6 Press **RETURN** to return to the Manual Channel Set screen.
  - Repeat steps 2 – 5 as necessary.
- 7 Press **SET UP** or **RETURN** to close the Confirmation screen.

### NOTE:

The characters available for the station name (ID) are A–Z, 0–9, –, \*, +, \_ (space) (maximum of 4).

## Fine-Tuning Channels Already Stored

- 1 Perform steps 1 – 5 of “Manual Channel Set” (pg. 84).
- 2 Press  $\Delta \nabla \triangleleft \triangleright$  to select the channel you want to fine-tune, then press **ENTER**. The Confirmation screen appears.
- 3 Press  $\Delta \nabla$  to select “FINE”, then press **ENTER**.
- 4 Press  $\Delta \nabla$  until the picture appears in its best quality, then press **ENTER**.
  - Repeat steps 2 – 4 as necessary.
- 5 Press **RETURN** to return to the Manual Channel Set screen.
- 6 Press **SET UP** or **RETURN** to close the Confirmation screen.

# Clock Set

## IMPORTANT:

If you performed Auto Set Up (pg. 17) or Preset Download (pg. 18), without ever having set the clock previously, the unit's built-in clock is also set automatically.

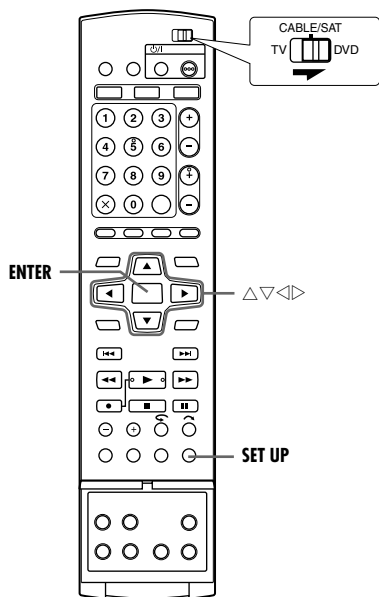
Perform the following steps only if —

— Auto Clock Set has not been performed correctly by Auto Set Up or Preset Download.

## OR

— you want to change Just Clock setting. (See "Just Clock" in the right column)

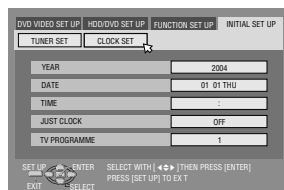
- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.



- 1 Press **SET UP** to access the Main Menu screen.
- 2 Press  $\triangleleft \triangleright$  to select "INITIAL SET UP", then press  $\nabla$ .
- 3 Press  $\triangleleft \triangleright$  to select "CLOCK SET", then press  $\nabla$ .

## NOTE:

When you have selected "MAGYARORSZÁG", "ČESKÁ REPUBLIKA", "POLSKA" or "OTHER EASTERN" for the country setting (pg. 17), you cannot use Just Clock function. Skip steps 5 and 6.



- 4 Press  $\triangle \nabla$  to select "YEAR", then press **ENTER**. Press  $\triangle \nabla$  to set the year, then press **ENTER**.
  - Repeat the same procedure to set the date and time.
  - When you set the date, press and hold  $\triangle \nabla$  to change the date by 15 days interval.
  - When you set the time, press and hold  $\triangle \nabla$  to change the time by 30 minutes interval.
- 5 Press  $\triangle \nabla$  to select "JUST CLOCK", then press **ENTER**. Press  $\triangle \nabla$  to set to the desired mode, then press **ENTER**.
  - The default setting is "OFF".
  - For the Just clock function, refer to "Just Clock" on the right column.
  - If you set to "OFF", you can disregard the next step as you won't be able to receive regular clock adjustments.

- 6 Press  $\triangle \nabla$  to select "TV PROGRAMME", then press **ENTER**. Press  $\triangle \nabla$  to set the channel position to the number representing the station transmitting clock setting data, then press **ENTER**.

- The unit is preset to receive clock setting and adjustment data from channel position 1.

- 7 Press **SET UP** to start the clock operation.

## NOTES:

- Just Clock (when set to "ON") adjusts the unit's built-in clock every hour, except for 23:00, 0:00, 1:00 and 2:00.
- Just Clock is not effective when:
  - the unit's power is on.
  - the unit is in the Timer mode.
  - a difference of more than 3 minutes exists between the built-in clock's time and the actual time.
  - the unit is in the Automatic Satellite Programme Recording mode. (pg. 53) (HDD deck only)
  - the unit is in the Power Save mode. (pg. 80)
  - "L-2 SELECT" is set to "SAT VIDEO" or "SAT S-VIDEO". (pg. 72)
- If Just Clock is set to "ON", the unit's clock is automatically adjusted at the start/end of Summer Time.
- Just Clock may not function properly depending on the reception condition.

## Just Clock

The Just Clock function provides accurate time keeping through automatic adjustments at regular intervals, by reading data from a PDC signal.

The Just Clock option can be set to "ON" or "OFF" at the Clock Set screen (the default setting is "OFF").

## IMPORTANT:

If you turn off Just Clock, the accuracy of your unit's built-in clock may be reduced, which could adversely effect timer recording. We recommend you to keep Just Clock on. In cases where the clock setting data from a PDC signal is incorrect, however, you are advised to keep Just Clock set to "OFF".



## Format A Disc (DVD Deck Only)

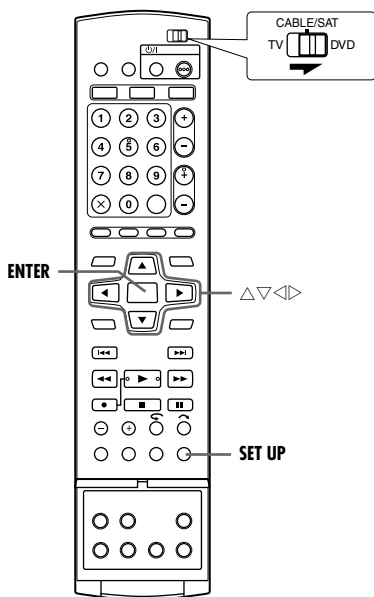


Some DVD-RAM/RW discs are unformatted. Format the disc when you use an unformatted disc or you want to delete all recordings and data on the disc.

### ATTENTION:

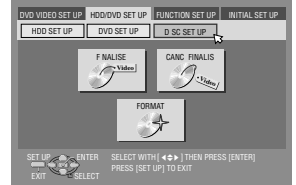
- When a disc is formatted, all recordings and data are erased. It is impossible to restore them.
- Never turn off the unit or disconnect the mains power cord while "NOW FORMATTING..." is displayed on the TV screen.

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Load a DVD-RAM/RW disc to format.



## Format A DVD-RAM Disc

- 1 Press **HDD** or **DVD** so that the HDD or DVD lamp lights up on the unit.
- 2 Press **SET UP** to access the Main Menu screen.
- 3 Press ◁▷ to select "HDD/DVD SET UP", then press ▽.
- 4 Press ◁▷ to select "DISC SET UP", then press ▽.
- 5 Press Δ▽◁▷ to select "FORMAT", then press **ENTER**. Press ◁▷ to select "OK", then press **ENTER**.
- 6 Press ◁▷ to select "EXECUTE", then press **ENTER**.



## Format A DVD-RW Disc

- 1 Perform steps 1 to 4 of "Format A DVD-RAM Disc" as above before continuing.
- 2 Press Δ▽◁▷ to select "FORMAT", then press **ENTER**. Press ◁▷ to choose "VR MODE" or "VIDEO MODE", then press **ENTER** when "DISC WILL BE FORMATTED" appears on the TV screen.
  - "VR MODE":  
To be chosen when you want to record, erase, or edit data on the disc repeatedly.
  - "VIDEO MODE":  
To be chosen when you want to erase all the data on the disc once played back to record new data, or play back the disc on other DVD players.
- 3 Press ◁▷ to select "EXECUTE", then press **ENTER**.

### NOTES:

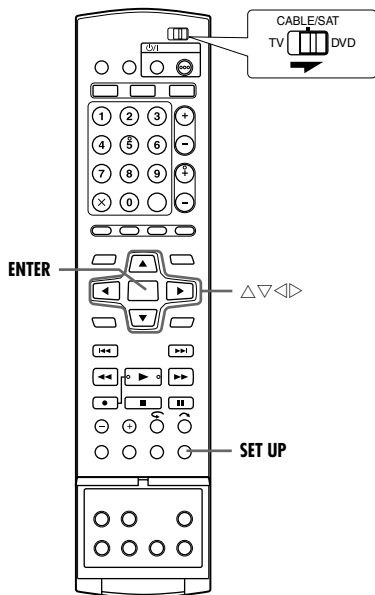
- It is impossible to format Version 1.0 DVD-RW discs in Video mode.
- It is impossible to format DVD-R discs.
- All the titles on a disc will be deleted once the disc is formatted even if they are protected titles. (pg. 59)

## Finalise A Disc (DVD Deck Only)



Finalising DVD-R/RW discs recorded on this unit makes it possible for the discs to be played back on other DVD players. DVD-RW discs are finalised in the mode that the discs were formatted, enabling playback on compatible DVD players. Title names input in the Library Database Navigation are registered as title names in the DVD menu. (☞ pg. 58)

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the **TV/CABLE/SAT/DVD** switch to **DVD**.
- Load a DVD-R/RW disc to finalise.



### Before finalising

- It is possible to record on a blank space.
- It is possible to enter title names. (☞ pg. 58)
- It is possible to delete titles. (☞ pg. 59)
- It is impossible to overwrite recorded areas of DVD-R discs.
- Available recording capacity does not increase even if a recorded title is deleted from a DVD-R disc.
- It is impossible to record or edit DVD-R/RW discs recorded on other devices even if they have not been finalised.

### After finalising (For DVD-R/RW (Video mode) discs)

- Video and audio that have been recorded by then are recorded in conformity to the DVD Video standard, enabling you to play back the discs as DVD VIDEO discs.
- Although DVD-R/RW discs finalised on this unit become playable on DVD players compatible with DVD-R/RW discs, some discs still may not play, for which JVC cannot take responsibility.
- Marked points marked before finalising will be deleted, and titles will be divided automatically into “chapters” approximately every 5 minutes. (☞ pg. 27)
- Depending on the DVD players and DVD-R/RW discs used, and on the conditions of recording, it may not be possible to play back the discs. In this case, play back the discs on this unit.
- Additional recordings become impossible.

## Finalise A DVD-R/RW Disc

- 1** Perform steps 1 to 4 of “Format A DVD-RAM Disc” (☞ pg. 87) before continuing.
- 2** Press  $\Delta \nabla \triangleleft \triangleright$  to select “FINALISE”, then press **ENTER**.
  - For DVD-R/RW (Video mode) discs, the background selection screen will appear. Press  $\Delta \nabla \triangleleft \triangleright$  to select the desired background from a selection of 18 backgrounds.
- 3** Press  $\triangleleft \triangleright$  to select “OK”, then press **ENTER**.
- 4** Press  $\triangleleft \triangleright$  to select “OK”, then press **ENTER**.
- 5** Press **SET UP** to return to the normal screen.
  - Menu screen is cleared.
  - Once a DVD-R/RW (Video mode) disc has been finalised, the displays for original and play list do not appear. Only display for library appears.
  - Once a DVD-RW (VR mode) disc has been finalised, it can be played on DVD players compatible with VR mode.

## Cancel The Finalisation Of A DVD-RW Disc

- 1** Load a DVD-RW disc to cancel the disc finalisation, and perform steps 1 to 4 of “Format A DVD-RAM Disc” (☞ pg. 87) before continuing.
- 2** Press  $\Delta \nabla \triangleleft \triangleright$  to select “CANC. FINALIS.”, then press **ENTER**.
- 3** Press  $\triangleleft \triangleright$  to select “EXECUTE”, then press **ENTER**.
- 4** Press **SET UP** to return to the normal screen.
  - When the disc finalisation is cancelled, the mode in which the disc was formatted is restored, making the disc recordable. (☞ pg. 7, 87)

## Scan Mode Set

If you connect the unit and TV with Component Video Connection (pg. 16), you can select the scan mode from two modes: Interlaced scan mode which is used in the conventional TV system, and Progressive scan mode which enables reproduction of higher-quality images.

### Interlaced scan

In the conventional video system, a picture is shown on the display monitor in two halves. The Interlaced scan system places lines of the second half of the picture in-between lines of the first half of the picture.

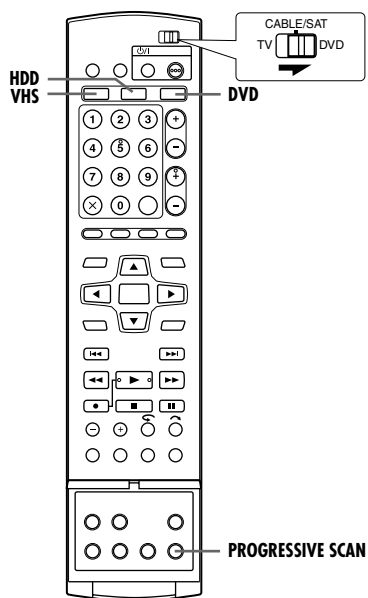
### Progressive scan

Progressive scan displays all the horizontal lines of a picture at one time, as a single frame. This system can convert the interlaced video from DVD into progressive format for connection to a progressive display. It dramatically increases the vertical resolution.

#### ATTENTION:

Your TV needs to be compatible with PAL Progressive.

- Turn on the unit.
- Turn on the TV and select the AV mode.
- Slide the TV/CABLE/SAT/DVD switch to DVD.



- 1 Press **HDD** or **DVD** so that the HDD or DVD lamp lights up on the unit.
- 2 Press **PROGRESSIVE SCAN** for 3 or more seconds.
  - Video output indicator (P) lights on the front display panel if Progressive scan mode has been established. (pg. 12)
  - Each press of **PROGRESSIVE SCAN** for 3 or more seconds switches the scan mode.

#### NOTES:

- When the progressive mode is set, be sure to set "L-1 OUTPUT" to "COMPONENT" (pg. 72). Progressive scan is output only from [COMPONENT VIDEO OUT] connector.
- Interlaced scan mode is the setting at your purchase.
- Interlaced scan mode might be suitable depending on video material.
- Scan mode cannot be set while menu screen is displayed.
- When the Progressive scan mode is engaged, no video signal is output from [L-1 IN/OUT] connector.

#### Watch the images on VHS deck in the Progressive scan mode via component video

- 1 Press **HDD** or **DVD** so that the HDD or DVD lamp lights up on the unit.
- 2 Set "L-1 OUTPUT" to "COMPONENT" (pg. 72), and the Progressive-compatible TV to its component input mode.
- 3 Press **PROGRESSIVE SCAN** for 3 or more seconds.
  - The video output indicator P lights up on the front display panel.
- 4 Press **VHS** so that the VHS lamp lights up on the unit, then press **PROGRESSIVE SCAN**.
  - "COMP OFF" is displayed on the front display panel. It will be displayed for 5 seconds.
- 5 Press **PROGRESSIVE SCAN** again within 5 seconds.
  - "COMP ON" is displayed on the front display panel and P lights up on the front display panel.
  - The VHS progressive scan image will then be outputted from the [COMPONENT VIDEO OUT (Y/P<sub>B</sub>/P<sub>R</sub>)] connectors.

#### NOTES:

- Be sure to engage the HDD or DVD deck in stop mode.
- It is possible to watch in interlace mode through the component video connection ("L-1 OUTPUT" set to "COMPONENT") simply by pressing **PROGRESSIVE SCAN** to switch to "COMP ON". However, P will not light up on the front display panel as the image outputted is not in progressive mode.

Before requesting service for a problem, use this chart and see if you can solve the trouble yourself. Small problems are often easily solved, and this can save you the trouble of sending your unit off for repair.

## Initialising (DVD Deck Only)

### Malfunction occurs on the unit.

- Press  $\odot/1$  to turn off the unit, press and hold  $\odot/1$ , then press  $\blacksquare$  for two seconds or more.

## General

### No power is supplied to the unit.

- The AC power plug is disconnected from the mains outlet.
- Connect the AC power plug to the mains outlet securely. (☞ pg. 16)

### The remote control does not work properly.

- Remove the batteries, wait for 5 minutes or more, then load the batteries again.
- The setting of the remote control code is inappropriate.
- Set the same remote control code (1, 2, 3, or 4) on both the unit and the remote control. (☞ pg. 74)
- The batteries are discharged.
- Replace the dead batteries with new ones.

### Dubbing from the external equipment is not possible.

- The source (another video recorder, camcorder) has not been properly connected.
- Confirm that the source is properly connected.
- All necessary power switches have not been turned on.
- Confirm that all units' power switches are turned on.
- The setting of the input channel position is inappropriate.
- Select the input channel position ("F-1", "L-1" or "L-2") that corresponds to the input terminal connected to the external equipment. (☞ pg. 71)

### The on-screen display superimposed on the programme played back/received on this unit is recorded when you dub the programme to an external recording equipment.

- Set "SUPERIMPOSE" or "O.S.D." to "OFF". (☞ pg. 80, 81)

### The unit does not operate.

- There are cases when the operation is prohibited on the disc.
- Lightning or static electricity may cause malfunction of the unit.
- Press  $\odot/1$  to turn the power off, then press the button again to turn the power on.

### The remote control of a JVC TV will not operate the unit.

- The setting of the remote control code is inappropriate.
- To operate the unit using a JVC TV remote control, set the remote control code of the unit to "1" (Default: "3"). (☞ pg. 74)

## Playback (DVD Deck)

### The DVD deck cannot be operated.

- The DVD deck is not selected.
- Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **DVD** on the remote so that the DVD lamp lights up on the unit.

### Images do not appear on the TV screen.

- The TV receiver's channel selector is not set to the AV mode.
- Set the TV to its AV mode.
- When interlace scanned programme is played back, progressive scan mode is selected.
- Press and hold **PROGRESSIVE SCAN** until  $\blacksquare$  disappears from the front display panel. (☞ pg. 89)

### Playback does not start or stop immediately after playback is started by pressing $\blacktriangleright$ .

#### On the front display panel, "NO DISC" appears.

- The disc is loaded upside down.
- Place the disc on the disc tray with the playback surface facing down. (☞ pg. 8)
- A disc not being compatible with the unit is loaded.
- Load a playable disc on the unit. (☞ pg. 5)
- A dirty disc is loaded.
- Clean the disc. (☞ pg. 9)
- Defective disc is loaded.
- Replace the warped or scratched disc with a normal one.

### Images are blurred or distorted when you start High-Speed Search.

- Images are blurred or distorted at the point where the playback speed changes and this is not a malfunction of the unit.

### Playback does not start.

- Playback does not start for approximately 30 seconds after recording is stopped and this is not a malfunction of the unit.

### Playback does not start when you select a title or a chapter.

- The Parental Lock is engaged and the disc is rated higher than the set level.
- Release the Parental Lock temporarily or change the set level. (☞ pg. 33)

## Playback (HDD Deck)

### The HDD deck cannot be operated.

- The HDD deck is not selected.
- Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **HDD** on the remote so that the HDD lamp lights up on the unit.

## Playback (VHS Deck)

### The VHS deck cannot be operated.

- The VHS deck is not selected.
- Press **VHS/HDD/DVD SELECT** on the unit repeatedly or **VHS** on the remote so that the VHS lamp lights up on the unit.

### The tape will not rewind or fast-forward.

- The tape is already fully rewound or fast-forwarded.
- Check the cassette.

### The playback picture does not appear while the tape is running.

- The TV is not set to the AV mode.
- Set the TV to the AV mode.

### Noise appears during visual search.

- This is normal.

### Noise appears during normal playback.

- The automatic tracking mode is engaged.
- Try manual tracking. (pg. 43)

### The playback picture is blurred or interrupted while TV broadcasts are clear or "USE CLEANING CASSETTE" message appears on the screen.

- The video heads may be dirty.
- Use a dry cleaning cassette TCL-2, or consult your JVC dealer.

### Breaks are noticeable in Hi-Fi soundtrack.

- The automatic tracking mode is engaged.
- Try manual tracking. (pg. 43)

## Recording (DVD Deck)

### The desired programme cannot be recorded.

- The channel position does not correspond to that in the receiving area.
- Set the correct channel position for the receiving broadcast. (pg. 83)

### Recording cannot be made.

- No disc or a disc not being compatible with the unit is loaded.
- Load a recordable disc on the unit. (pg. 5)
- The disc loaded is not formatted.
- Format the disc. (pg. 87)
- A finalised DVD-R disc is loaded.
- Recording cannot be made on finalised discs. Load a recordable disc on the unit.
- The disc is full or does not have enough space for the title to be recorded.
- Clear unnecessary titles on the disc or load a blank disc. (pg. 59)
- The DVD-RAM disc loaded has had its protect tab slid to the protect position.
- Release the protect tab. (pg. 8)

## Recording (HDD Deck)

### TV broadcasts cannot be recorded.

- "L-1", "L-2" or "F-1" has been selected as the input mode.
- Set to the desired channel.

### Camcorder recording is not possible.

- The camcorder has not been properly connected.
- Confirm that the camcorder is properly connected.
- The input mode is not correct.
- Set the input mode to "F-1". (pg. 70)

## Recording (VHS Deck)

### During recording, the tape does not run. The VHS recording lamp lights up on the unit.

- The unit is in the Record Pause mode.
- Press **▶** to resume recording.

### Recording cannot be done.

- There is no cassette loaded, or the cassette loaded has had its record safety tab removed.
- Insert a cassette, or using adhesive tape, cover the hole where the tab was removed.

### TV broadcasts cannot be recorded.

- "L-1", "L-2" or "F-1" has been selected as the input mode.
- Set to the desired channel.

### Camcorder recording is not possible.

- The camcorder has not been properly connected.
- Confirm that the camcorder is properly connected.
- The input mode is not correct.
- Set the input mode to "F-1".

### The tape is automatically rewound, then the unit is shut off.

- The end of the tape was reached during recording.
- The programme may not have been recorded in its entirety. Next time make sure you have enough time on the tape to record the entire programme.

## Timer Recording (HDD & DVD Deck)

### Timer programming cannot be made.

- Date and time is not correct.
- Set date and time correctly. (pg. 86)
- Timer recording is in progress.
- Timer programming can't be performed while a timer recording is in progress. Wait until it finishes.

### Timer programming recording does not start.

- Date and time is not correct.
- Set date and time correctly. (pg. 86)

### SHOWVIEW Timer Programming cannot be made.

- Date and time set on the unit is not correct.
- Set date and time correctly. (pg. 86)
- The channel position does not correspond to that in the receiving area.
- Set the correct channel position for the receiving broadcast. (pg. 83)

### The SHOWVIEW system does not timer-record properly.

- The unit's channel positions have been set incorrectly.
- Refer to "SHOWVIEW System Setup" (pg. 83) and reperform the procedure.

**Automatic Satellite Programme Recording does not start.**

- The satellite receiver is not connected properly to this unit.
- Connect the satellite receiver to the [L-2 IN/DECODER] connector properly. (☞ pg. 53)

**On the front display panel, “- -: -” appears.**

- Power failure occurred.
- Set date and time correctly. (☞ pg. 86)

**“PROGRAMME FULL” appears on the TV screen during timer programming.**

- 32 programmes have already been timer programmed.
- Clear unnecessary programmes on the unit, then try timer programming again. (☞ pg. 52)

**The disc space does not increase when recorded titles are cleared.**

- The PC's data recorded on a DVD-RAM drive cannot be cleared on this unit.
- Format the disc. (When the disc is soiled, wipe the disc with a soft dry cloth before formatting.) (☞ pg. 9, 87)

**Timer Recording (VHS Deck)****Timer programming cannot be made.**

- Date and time is not correct.
- Set date and time correctly. (☞ pg. 86)
- The timer is not engaged.
- Press **VHS** and confirm that the VHS timer indicator lights up on the front display panel.
- Timer recording is in progress.
- Timer programming can't be performed while a timer recording is in progress. Wait until it finishes.

**Timer programming recording does not start.**

- Date and time is not correct.
- Set date and time correctly. (☞ pg. 86)
- The timer is not engaged.
- Press **VHS** and confirm that the VHS timer indicator lights up on the front display panel.

**The VHS recording lamp on the unit won't stop blinking.**

- The timer is engaged but there's no cassette loaded.
- Load a cassette with the record safety tab intact.
- The loaded cassette has had its record safety tab removed.
- Remove the cassette and cover the hole with adhesive tape, or insert a cassette with the record safety tab intact.

**SHOWVIEW Timer Programming cannot be made.**

- Date and time set on the unit is not correct.
- Set date and time correctly. (☞ pg. 86)
- The channel position does not correspond to that in the receiving area.
- Set the correct channel position for the receiving broadcast. (☞ pg. 83)

**The SHOWVIEW system does not timer-record properly.**

- The unit's channel positions have been set incorrectly.
- Refer to “SHOWVIEW System Setup” (☞ pg. 83) and re-perform the procedure.

**Other Problems****The image of the TV broadcast appears distorted on the TV screen.****For basic connection**

- Press **PROGRESSIVE SCAN** for 3 or more seconds so that the Video output indicator (**P**) lights off on the front display panel.

**For component video connection**

- Press **PROGRESSIVE SCAN** for 3 or more seconds so that the Video output indicator (**P**) lights up on the front display panel.

**Whistling or howling is heard from the TV during camcorder recording.**

- The camcorder's microphone is too close to the TV.
- Position the camcorder so its microphone is away from the TV.
- The TV's volume is too high.
- Turn the TV's volume down.

**When scanning channels, some of them are skipped over.**

- Those channels have been designated to be skipped.
- If you need the skipped channels, restore them. (☞ pg. 84)

**The channel cannot be changed.**

- Recording or RetroActive recording\* is in progress.
- Press **II** to pause recording, change the channel, then press **▶** to resume recording.
- \* HDD deck only

**Channel settings that were made manually seem to have changed or disappeared.**

- After the manual settings were made, Auto Channel Set was performed.
- Perform “Clock Set” (☞ pg. 86).

**Malfunction occurs and the unit cannot be power off.**

- Reset the unit by disconnecting the AC power plug from the AC outlet and connect again.

## On-screen Message (HDD & DVD Deck Only)

### DISC NOT REGISTERED IN THE LIBRARY REGISTER DISC?

- A disc that is not registered in the library has been inserted. Register the disc as necessary. (☞ pg. 62)

### INSERT DISC XXXX

- Appears when a title that has been selected in the library is not contained in the loaded disc.

### CAN NOT RECORD OR MAKE PLAY LIST DELETE UNWANTED TITLES

- Recording and/or editing cannot be performed.
- The number of titles exceeds 99.
- The number of play lists exceeds 999.

### SET CLOCK BEFORE TIMER PROGRAMMING

- To set the timer programme, the clock must be set in advance. (☞ pg. 86)

### PROGRAMME FULL DELETE UNWANTED TIMER PROGRAMMES

- You can programme this unit to timer-record as many as 32 programmes. To programme more, you need to cancel a timer programme already set. (☞ pg. 52)

### DISC NOT LOADED

- Operation has been attempted when a disc is not loaded, or loaded upside down. (☞ pg. 8)

### DISC NOT RECORDABLE INSERT RECORDABLE DISC

- When a playback-only disc or a finalised disc is loaded, ● has been pressed. (☞ pg. 5)

### SHOWVIEW NO. ERROR CONFIRM SHOWVIEW NO. THEN RETRY

- An invalid **SHOWVIEW** number has been input. (☞ pg. 49)

### GUIDE PROGRAM IS NOT SET SET GUIDE PROGRAM THEN RETRY

- To set the timer programme using the **SHOWVIEW** system, the Guide Programme Number must be set in advance. (☞ pg. 83)

### CAN NOT SET SHOWVIEW TIMER PROGRAMMING DURING TIMER RECORDING OR INSTANT TIMER RECORDING

- Appears when you tried to input a **SHOWVIEW** number during timer recording or instant timer recording.

### REGION CODE ERROR CHECK DISC

- A disc loaded cannot be played back on this unit since the region number of the disc does not match that of the unit. (☞ pg. 6)

### UNREADABLE DISC CHECK DISC

- When an incompatible disc is loaded, ► has been pressed. (☞ pg. 6)

### COULD NOT FORMAT THE DISC CHECK THE DISC

- Formatting is not complete since the disc may be dirty or damaged. Take out the disc, clean it and retry. (☞ pg. 9, 87)

### CAN NOT FINALISE THIS DISC

- Finalising is not complete since the disc may be dirty or damaged. Take out the disc, clean it and retry. (☞ pg. 9, 88)

### CAN NOT CANCEL FINALISATION OF THIS DISC

- Cancelling disc finalisation is not complete since the disc may be dirty or damaged. Take out the disc, clean it and retry. (☞ pg. 9, 88)

### PRESS [STOP] AGAIN TO STOP RECORDING

- During Live Memory playback, ■ has been pressed. (☞ pg. 46)

### TIMER RECORDING COMPLETED

- Timer recording has finished during Live Memory playback.

### PLAYBACK WILL STOP THEN TIMER RECORDING WILL START

- Timer recording finished during Live Memory playback, then the next timer recording is about to begin while playback continues.

### COPY PROHIBITED CAN NOT RECORD

- An attempt has been made to record copy-protected contents.
- An attempt has been made to record copy-once contents on a disc that is not CPRM compatible, such as DVD-R.

### COPY PROHIBITED CAN NOT PLAY

- The unit has detected invalid contents at the start or in the middle of playback.

### THE i.LINK DEVICE THAT YOU HAVE CONNECTED IS NOT RECOGNIZED MAKE SURE THAT THE DEVICE IS CONNECTED PROPERLY AND POWERED ON

- An attempt has been made to start DV dubbing when a digital video camera is not properly connected to the unit.
- Check the connection. (☞ pg. 68)

**GENERAL****Power requirement**AC 220 V - 240 V  $\sim$ , 50 Hz/60 Hz**Power consumption**

Power on: 47 W

Power off: 16.6 W

**Temperature**

Operating: 5°C to 35°C

Storage: -20°C to 60°C

**Operating position**

Horizontal only

**Dimensions (WxHxD)**

435 mm x 96 mm x 383 mm

**Weight**

7.2 kg

**Input/Output**Video input: 0.5 – 2.0 Vp-p, 75  $\Omega$  (pin jack)

Audio input:

-8 dB, 50 k $\Omega$  (pin jack)

Corresponding to mono (left)

Audio output: -8 dB, 1 k $\Omega$  (pin jack)

21-pin SCART connectors:

IN/OUT x 1, IN/DECODER x 1

**Input/Output (HDD & DVD Deck Only)**

S-video input:

Y: 0.8 – 1.2 Vp-p, 75  $\Omega$ C: 0.2 – 0.4 Vp-p, 75  $\Omega$ 

i.Link: 4-pin for DV input

Component video output:

Y: 1.0 Vp-p, 75  $\Omega$ C<sub>B</sub>/C<sub>R</sub>, P<sub>B</sub>/P<sub>R</sub>: 0.7 Vp-p, 75  $\Omega$ 

Corresponding to copy protection

SAT Control:  $\varnothing$ 3.5 mm

Digital audio output:

Optical: -18 dBm, 660 nm

Coaxial: 0.7 Vp-p, 75  $\Omega$ 

Corresponding to Dolby Digital and DTS Digital Surround

Bit stream

Selectable in digital audio output setting menu

**VIDEO/AUDIO (DVD Deck)****Recording time**

Maximum 8 hours (with 4.7 GB disc)

(XP): Approx. 1 hour

(SP): Approx. 2 hours

(LP): Approx. 4 hours

(EP): Approx. 6 hours

(FR): Approx. 1 hour – 8 hours

**Audio recording system**

Dolby Digital (2 ch)

Linear PCM (XP mode only)

**Video recording compression system**

MPEG2 (CBR/VBR)

**VIDEO/AUDIO (HDD Deck)****Video recording compression system**

MPEG2 (VBR)

**Audio recording system**

Dolby Digital (2 ch)

Linear PCM (XP mode only)

**Recording time**

Maximum 300 hours (with 160 GB HDD)

(XP): Approx. 34 hours

(SP): Approx. 69 hours

(LP): Approx. 138 hours

(EP): Approx. 209 hours

(FR): Approx. 36 – 300 hours

**VIDEO/AUDIO (VHS Deck)****Signal system**

PAL colour signal and CCIR monochrome signal, 625 lines/50 fields

**Recording system**

DA4 (Double Azimuth) head helical scan system

**Format**

VHS PAL standard

**Maximum recording time**

(SP): 240 min. with E-240 video cassette

(LP): 480 min. with E-240 video cassette

**Signal-to-noise ratio**

45 dB

**Horizontal resolution**

230 lines

**Frequency range**

(Normal audio): 70 Hz to 10,000 Hz

(Hi-Fi audio): 20 Hz to 20,000 Hz

Specifications shown are for SP mode unless otherwise specified.

**TUNER/TIMER****Tuning system**

Frequency synthesised tuner

**Channel coverage**

VHF: 47 MHz – 89 MHz/

104 MHz – 300 MHz/

302 MHz – 470 MHz

UHF: 470 MHz – 862 MHz

**Memory backup time**

Approx. 60 minutes

**ACCESSORIES****Provided accessories**

RF cable,

21-pin SCART cable,

Satellite Controller,

Infrared remote control unit,

"R6" battery x 2

E. &amp; O.E. Design and specifications subject to change without notice.

**ATTENTION:**

This unit contains microcomputers. External electronic noise or interference could cause malfunctioning. In such cases, switch the unit off and unplug the mains power cord. Then plug it in again and turn the unit on. Take out the disc. After checking the disc, operate the unit as usual.



## Language Code List

AA	Afar	IK	Inupiak	RN	Kirundi
AB	Abkhazian	IN	Indonesian	RO	Rumanian
AF	Afrikaans	IS	Icelandic	RU	Russian
AM	Ameharic	IW	Hebrew	RW	Kinyarwanda
AR	Arabic	JI	Yiddish	SA	Sanskrit
AS	Assamese	JW	Javanese	SD	Sindhi
AY	Aymara	KA	Georgian	SG	Sangho
AZ	Azerbaijani	KK	Kazakh	SH	Serbo-Croatian
BA	Bashkir	KL	Greenlandic	SI	Singhalese
BE	Byelorussian	KM	Cambodian	SK	Slovak
BG	Bulgarian	KN	Kannada	SL	Slovenian
BH	Bihari	KO	Korean (KOR)	SM	Samoan
BI	Bislama	KS	Kashmiri	SN	Shona
BN	Bengali, Bangla	KU	Kurdish	SO	Somali
BO	Tibetan	KY	Kirghiz	SQ	Albanian
BR	Breton	LA	Latin	SR	Serbian
CA	Catalan	LN	Lingala	SS	Siswati
CO	Corsican	LO	Laothian	ST	Sesotho
CS	Czech	LT	Lithuanian	SU	Sundanese
CY	Welsh	LV	Latvian, Lettish	SW	Swahili
DZ	Bhutani	MG	Malagasy	TA	Tamil
EL	Greek	MI	Maori	TE	Telugu
EO	Esperanto	MK	Macedonian	TG	Tajik
ET	Estonian	ML	Malayalam	TH	Thai
EU	Basque	MN	Mongolian	TI	Tigrinya
FA	Persian	MO	Moldavian	TK	Turkmen
FJ	Fiji	MR	Marathi	TL	Tagalog
FO	Faroese	MS	Malay (MAY)	TN	Setswana
FY	Frisian	MT	Maltese	TO	Tonga
GA	Irish	MY	Burmese	TR	Turkish
GD	Scots Gaelic	NA	Nauru	TS	Tsonga
GL	Galician	NE	Nepali	TT	Tatar
GN	Guarani	OC	Occitan	TW	Twi
GU	Gujarati	OM	(Afan) Oromo	UK	Ukrainian
HA	Hausa	OR	Oriya	UR	Urdu
HI	Hindi	PA	Panjabi	UZ	Uzbek
HR	Croatian	PL	Polish	VI	Vietnamese
HU	Hungarian	PS	Pashto, Pushto	VO	Volapuk
HY	Armenian	PT	Portuguese	WO	Wolof
IA	Interlingua	QU	Quechua	XH	Xhosa
IE	Interlingue	RM	Rhaeto-Romance	YO	Yoruba
				ZU	Zulu

## Country/Area Code List for Parental Lock

AD	Andorra	CK	Cook Islands	GN	Guinea
AE	United Arab Emirates	CL	Chile	GP	Guadeloupe
AF	Afghanistan	CM	Cameroon	GQ	Equatorial Guinea
AG	Antigua and Barbuda	CN	China	GR	Greece
AI	Anguilla	CO	Colombia	GS	South Georgia and the South Sandwich Islands
AL	Albania	CR	Costa Rica	GT	Guatemala
AM	Armenia	CU	Cuba	GU	Guam
AN	Netherlands Antilles	CV	Cape Verde	GW	Guinea-Bissau
AO	Angola	CX	Christmas Island	GY	Guyana
AQ	Antarctica	CY	Cyprus	HK	Hong Kong
AR	Argentina	CZ	Czech Republic	HM	Heard Island and McDonald Islands
AS	American Samoa	DE	Germany	HN	Honduras
AT	Austria	DJ	Djibouti	HR	Croatia
AU	Australia	DK	Denmark	HT	Haiti
AW	Aruba	DM	Dominica	HU	Hungary
AZ	Azerbaijan	DO	Dominican Republic	ID	Indonesia
BA	Bosnia and Herzegovina	DZ	Algeria	IE	Ireland
BB	Barbados	EC	Ecuador	IL	Israel
BD	Bangladesh	EE	Estonia	IN	India
BE	Belgium	EG	Egypt	IO	British Indian Ocean Territory
BF	Burkina Faso	EH	Western Sahara	IQ	Iraq
BG	Bulgaria	ER	Eritrea	IR	Iran (Islamic Republic of)
BH	Bahrain	ES	Spain	IS	Iceland
BI	Burundi	ET	Ethiopia	IT	Italy
BJ	Benin	FI	Finland	JM	Jamaica
BM	Bermuda	FJ	Fiji	JO	Jordan
BN	Brunei Darussalam	FK	Falkland Islands (Malvinas)	JP	Japan
BO	Bolivia	FM	Micronesia (Federated States of)	KE	Kenya
BR	Brazil	FO	Faroe Islands	KG	Kyrgyzstan
BS	Bahamas	FR	France	KH	Cambodia
BT	Bhutan	FX	France, Metropolitan	KI	Kiribati
BV	Bouvet Island	GA	Gabon	KM	Comoros
BW	Botswana	GB	United Kingdom	KN	Saint Kitts and Nevis
BY	Belarus	GD	Grenada	KP	Korea, Democratic People's Republic of
BZ	Belize	GE	Georgia	KR	Korea, Republic of
CA	Canada	GF	French Guiana	KW	Kuwait
CC	Cocos (Keeling) Islands	GH	Ghana	KY	Cayman Islands
CF	Central African Republic	GI	Gibraltar	KZ	Kazakhstan
CG	Congo	GL	Greenland	LA	Lao People's Democratic Republic
CH	Switzerland	GM	Gambia	LB	Lebanon
CI	Côte d'Ivoire				

LC	Saint Lucia	NU	Niue	SZ	Swaziland
LI	Liechtenstein	NZ	New Zealand	TC	Turks and Caicos Islands
LK	Sri Lanka	OM	Oman	TD	Chad
LR	Liberia	PA	Panama	TF	French Southern Territories
LS	Lesotho	PE	Peru	TG	Togo
LT	Lithuania	PF	French Polynesia	TH	Thailand
LU	Luxembourg	PG	Papua New Guinea	TJ	Tajikistan
LV	Latvia	PH	Philippines	TK	Tokelau
LY	Libyan Arab Jamahiriya	PK	Pakistan	TM	Turkmenistan
MA	Morocco	PL	Poland	TN	Tunisia
MC	Monaco	PM	Saint Pierre and Miquelon	TO	Tonga
MD	Moldova, Republic of	PN	Pitcairn	TP	East Timor
MG	Madagascar	PR	Puerto Rico	TR	Turkey
MH	Marshall Islands	PT	Portugal	TT	Trinidad and Tobago
ML	Mali	PW	Palau	TV	Tuvalu
MM	Myanmar	PY	Paraguay	TW	Taiwan
MN	Mongolia	QA	Qatar	TZ	Tanzania, United Republic of
MO	Macau	RE	Réunion	UA	Ukraine
MP	Northern Mariana Islands	RO	Romania	UG	Uganda
MQ	Martinique	RU	Russian Federation	UM	United States Minor Outlying Islands
MR	Mauritania	RW	Rwanda	US	United States
MS	Montserrat	SA	Saudi Arabia	UY	Uruguay
MT	Malta	SB	Solomon Islands	UZ	Uzbekistan
MU	Mauritius	SC	Seychelles	VA	Vatican City State (Holy See)
MV	Maldives	SD	Sudan	VC	Saint Vincent and the Grenadines
MW	Malawi	SE	Sweden	VE	Venezuela
MX	Mexico	SG	Singapore	VG	Virgin Islands (British)
MY	Malaysia	SH	Saint Helena	VI	Virgin Islands (U.S.)
MZ	Mozambique	SI	Slovenia	VN	Viet Nam
NA	Namibia	SJ	Svalbard and Jan Mayen	VU	Vanuatu
NC	New Caledonia	SK	Slovakia	WF	Wallis and Futuna Islands
NE	Niger	SL	Sierra Leone	WS	Samoa
NF	Norfolk Island	SM	San Marino	YE	Yemen
NG	Nigeria	SN	Senegal	YT	Mayotte
NI	Nicaragua	SO	Somalia	YU	Yugoslavia
NL	Netherlands	SR	Suriname	ZA	South Africa
NO	Norway	ST	Sao Tome and Principe	ZM	Zambia
NP	Nepal	SV	El Salvador	ZR	Zaire
NR	Nauru	SY	Syrian Arab Republic	ZW	Zimbabwe

## TV Station And ID List

The "ID" abbreviation is what is shown on-screen in lieu of the station name. The "ID" abbreviation is listed in the Confirmation screen and is displayed on the TV screen when the unit is tuned to a different station.

ID	STATION NAME
1000	TV1000
3SAT	3SAT
9LIV	9LIVE
AB3	AB3
ADLT	ADULT
ANIM	ANIMAL PLANET
ANT3	ANTENA3
ARD	ARD
ARTE	ARTE
ATV	MAGYAR ATV
B1	BERLIN 1
BBC	BBC GROUP
BBC1	BBC1
BBC2	BBC2
BBCW	BBC WORLD
BIO+	TV BIO+
BLOO	BLOOMBERG
BR3	BAYERN3
C+	CANAL PLUS
C1	PORTUGUSES
C9	VALENCIA
CAN5	CANALE5
CANV	KETNET CANVAS
CANZ	KANAAL Z
CH4	CHANNEL4
CH5	CHANNEL5
CHLD	CHILD
CINE	CINEMA
CLUB	TELECLUB
CMT	CMT
CNN	CNN
CSUR	ANDALUCIA
CT1	CT 1
CT2	CT 2
DISC	DISCOVERY
DK1	DENMARK1
DK2	DENMARK2
DK4	DENMARK4
DR1	DR TV
DR2	DR2
DSF	DSF
DUNA	DUNA TV
ETB1	ETB1
ETB2	ETB2
ETV	ETV
EUNW	EURO NEWS
EURO	EURONEWS
EUSP	EUROSPORTS
FEMM	FEMMAN
FILM	FILM
FNET	FILMNET
FR2	France2
FR3	France3
FR5	France5
GALA	GALAVISION
HBO	HBO
HR3	HESSEN3
HSEU	H.S.EURO
INFO	INFO-KANAL
ITA1	ITALIA1
ITA7	ITALIA7
ITV1	ITV

ID	STATION NAME
JIM	JIM TV
JSTV	JSTV
KA2	KA2
KAB1	KABEL1
KAN2	KANAL2
KAN5	KANAL5
KBH	KBH.KANAL
KIKA	KINDER.KANAL
LA7	LA7
LIB	LIBERTY TV
LOCA	LOCAL
M6	M6
MBC	MBR
MCM	MCM
MDR	MDR
MOVE	MOVIE
MTV	MTV
MTV1	MTV1
MTV2	MTV2
MTV3	MTV3
NGEO	NATIONAL.G
N24	NEWS24
N3	NORD3
N-TV	N-TV
NBC	NBC SUPER
NDR	NDR
NED1	NED1
NED2	NED2
NED3	NED3
NET5	NETWORK5
NEWS	
NICK	NICKELODEON
NOVA	NOVA
NRK1	NRK
NRK2	NRK2
ODE	ODEON
ORF1	ORF1
ORF2	ORF2
PHOE	PHOENIX
POLS	POL SAT
PREM	PREMIERE
PRIM	PRIMA TV
PRO7	PRO7
RAI1	RAI1
RAI2	RAI2
RAI3	RAI3
RET4	RETE4
RTB1	TELE21
RTB2	RTBF1 / 2
RTL	RTL
RTL2	RTL2
RTL4	RTL4
RTL5	RTL5
RTL7	RTL7
RTLK	RTLK
RTP	RTP
RTV4	RTV4
SAT1	SAT1
SBS6	SBS
SERV	Service
SF1	SF1
SF2	SF2

ID	STATION NAME
SHOW	SHOW
SIC	SOCIEDADE
SKY	SKY CHANNEL
SKYN	SKY NEWS
SPEK	SPEKTRUM
SPRT	SPORT
SRTL	SUPER RTL
STAR	STAR-TV
SVT1	SVT1
SVT2	SVT2
SV24	NEWS
SWR	SUEDWEST3
TCC	TCC
TCM	TCM
TELE	TELE
TELE5	TELE5
TF1	TF1
TM	TV DE MADRID
TMC	TELEMONTECARLO
TMF	TMF
TNT	TNT INT
TRT	TRT INT
TSI1	TSI
TSI2	TSI2
TSR1	TSR
TSR2	TSR2
TV1	BRTN TV1
TV2	TV2
TV2Z	TV2 ZULU
TV3	TV3
TV3+	TV3 PLUS
TV4	TV4
TV5	TV5
TV6	TV6
TV8	TV8
TVE1	TVE1
TVE2	TVE2
TVG	TV GALICIA
TVI	TV INDEPENDENT
TVN	TV NORGE
TV24	TVN24
TVP1	TVP1
TVP2	TVP2
TV P	TV POLONIA
V8	V8
VCR	VIDEO
VH-1	VH-1
VIT	VITAYA
VIVA	VIVA
VIV2	VIVA2
VMTV	VIDEO MUSIC
VOX	VOX
VSAT	VIASAT3
VT4	VT4
VTM	VTM
WDR3	West3
WRLD	WORLD
YLE1	YLE1
YLE2	YLE2
YORN	YORIN
ZDF	ZDF
ZTV	ZTV

<b>A</b>	
A-B Repeat Playback .....	30
Accidental erasure prevention .....	45
Adjusting The Picture Quality .....	31
Angle Selection .....	27
Audio Channel Selection .....	28
Audio Language/Sound Selection .....	28
Auto Channel Set .....	83
<b>B</b>	
B.E.S.T. Picture System .....	45
<b>C</b>	
Cancel And Change Programmes .....	52, 56
Check Programmes .....	52, 56
Country/Area Code List for Parental Lock .....	96
<b>D</b>	
Disc menu .....	25
Disc Remaining Time .....	35, 38
Disc Resume .....	79
Discs For Playback Only .....	6
DVD menu .....	25
<b>E</b>	
Elapsed Recording Time Indication .....	35, 38, 44
<b>F</b>	
File Structure Of Discs .....	7
Free Rate Function .....	36
<b>G</b>	
Guide Programme Number .....	83
<b>I</b>	
Index Search .....	42
Instant Timer Recording (ITR) .....	35, 38, 45
Interlaced scan .....	89
<b>J</b>	
Jump Search .....	26, 40
Just Clock .....	86
<b>L</b>	
Language Code List .....	95
Letter Box .....	21
Live Memory .....	46
<b>M</b>	
Manual Channel Set .....	84
Manual Tracking .....	43
Marking Positions To Play Back Again Later .....	27
Menu/Audio/Subtitle Language Set .....	20
<b>N</b>	
Next Function Memory .....	43
<b>O</b>	
One Touch Replay .....	28, 40, 42, 48
On-screen Bar .....	29
On-screen Language Set .....	20

<b>P</b>	
Pan&Scan .....	21
Play List .....	60
Playback Control (PBC) .....	28
Programme Playback .....	32
Progressive scan .....	89
<b>R</b>	
Random Playback .....	32
Receiving Stereo And Bilingual Programmes ....	36, 38, 45
Recordable/Playable Discs .....	5
Recording Medium And Format .....	7
Recording Mode .....	34, 37
Region Number .....	6
Register Disc .....	62
Relief Recording .....	51
Repeat Playback .....	29, 43
Resume Function .....	26
Resuming Playback .....	48
RetroActive Recording .....	48
<b>S</b>	
Select The Switching Interval Of The Slide Show .....	32
Selection Of The Audio Channel To Be Recorded	
On A Disc .....	36
Setting The Progressive Mode .....	32
Simulated Surround Effect .....	31
Simultaneous Recording and Playback .....	48
Skip Search .....	26, 39, 42
Slow Motion .....	26, 39, 42
Soundtrack Selection .....	43
Still Picture/Frame-By-Frame Playback .....	26, 39, 42
Subtitle Selection .....	28
<b>T</b>	
Tape Position Indicator .....	15
Tape Remaining Time .....	45
Temporary Recording .....	48
Time Search .....	31
Top menu .....	25
TV Station And ID List .....	98
<b>U</b>	
Unplayable Discs .....	6
Usable cassettes .....	41
<b>V</b>	
Variable Speed Search .....	25, 39, 42
VHS Progressive Scan .....	43
VPS/PDC Recording .....	50, 55
<b>W</b>	
Weekly/Daily Recording .....	50
When Programmes Overlap Each Other .....	56



**EN**

**DR-MX1S**

---

**JVC**  
VICTOR COMPANY OF JAPAN, LIMITED

# PARTS LIST

[DR-MX1SEF,DR-MX1SEK,DR-MX1SEU,DR-MX1SEY,DR-MX1SEZ]

\* SAFETY PRECAUTION

Parts identified by the  $\triangle$  symbol are critical for safety. Replace only with specified part numbers.

\* BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.

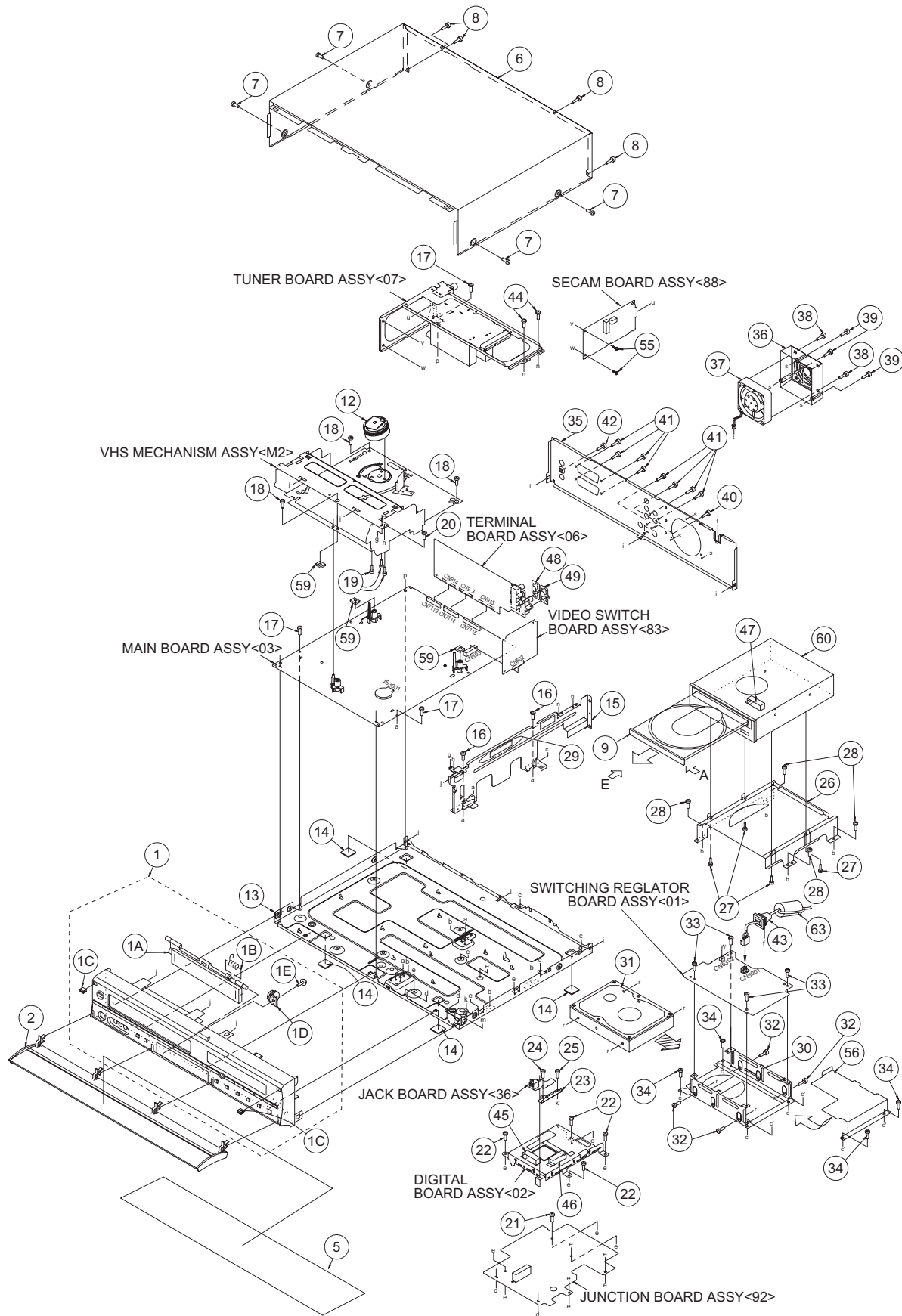
\* (x\_) in a description column shows the number of the used part.

- Contents -

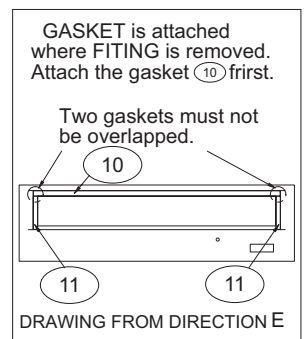
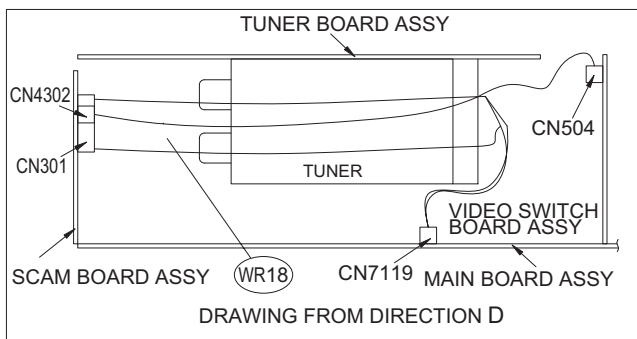
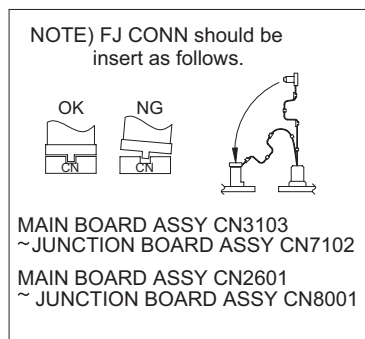
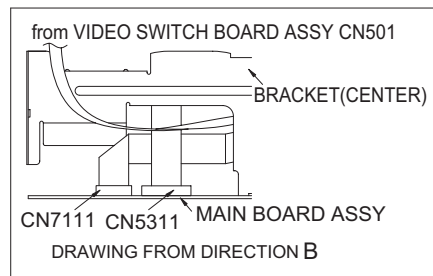
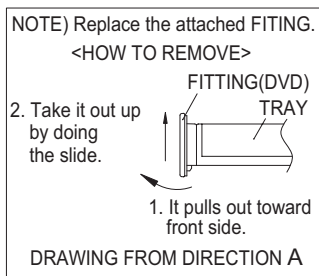
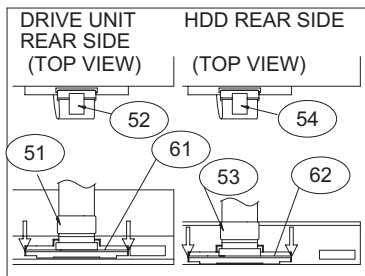
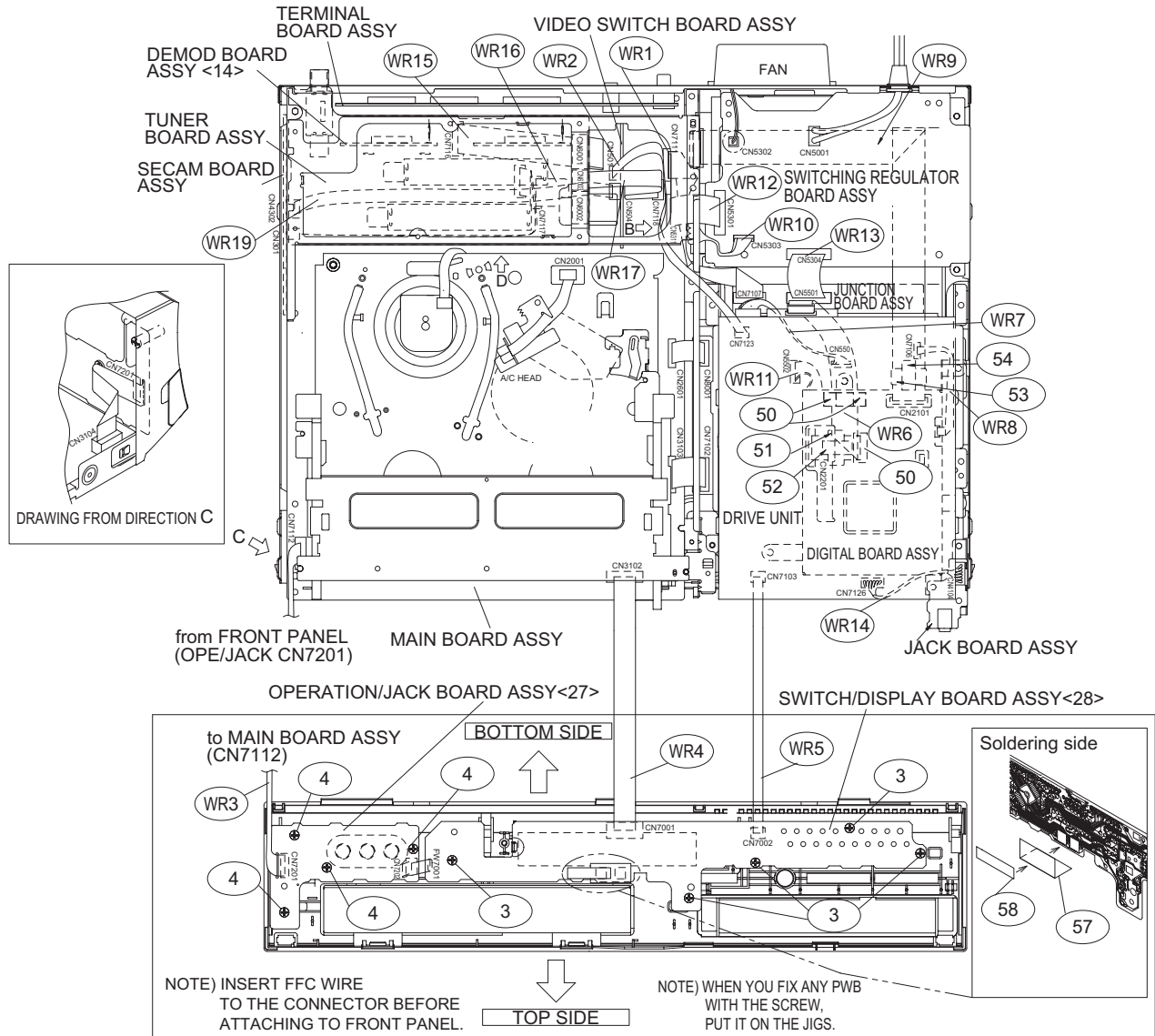
Exploded view of general assembly and parts list .....	3-2
VHS mechanism assembly and parts list .....	3-6
Electrical parts list .....	3-9
Packing materials and accessories parts list .....	3-27

# Exploded view of general assembly and parts list

Block No. M1MM







MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

## General assembly

Block No. [M][1][M][M]

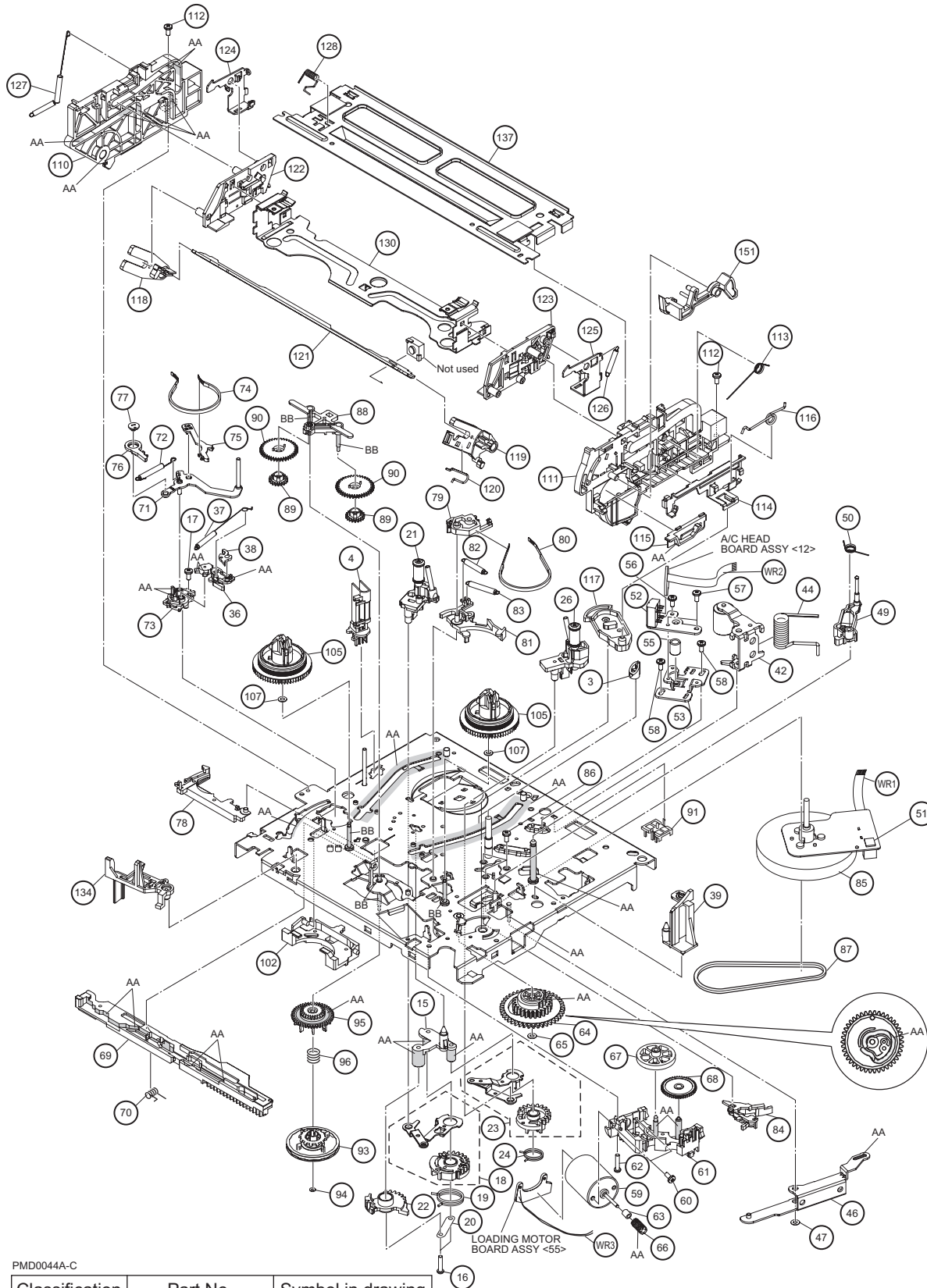
△ Symbol No.	Part No.	Part Name	Description	Local
△ 1	LP10555-004C	FRONT PANEL ASSY		
1A	LP21308-001A	CASSETTE DOOR		
1B	PQ46448	TORSION SPRING		
1C	QZW0063-001	MAGNET LATCH		(x2)
1D	QZW0055-005	DAMPER		
1E	LP31491-001A	ASSY SCREW		
2	LP10557-006C	DOOR ASSY		A
2	LP10557-005C	DOOR ASSY		B
2	LP10557-004C	DOOR ASSY		C,D,E
3	QYTDSF2608ZA	TAP SCREW	M2.6 x 8mm SWITCH/DISPLAY(x5)	
4	QYTDSF2608ZA	TAP SCREW	M2.6 x 8mm OPERATION/JACK(x4)	
5	QPH00704705	POLY SHEET	7cm x 47cm	
△ 6	LP10460-010A	TOP COVER		
7	QYSBSG3006NA	TAP SCREW	M3 x 6mm TOP SIDE(x4)	
8	QYSBSG3006NA	TAP SCREW	M3 x 6mm TOP REAR(x4)	
9	LP21348-002B	FITTING(DVD)		
10	LP41217-001A	GASKET		
11	LP41218-001A	GASKET		(x2)
12	PDV2541A	DRUM FINAL ASSY		A
12	PDV2539A	DRUM FINAL ASSY		B,C,D,E
△ 13	LP10525-002B	BOTTOM CHASSIS		
14	LP31348-001A	FOOT		(x4)
15	LP21294-001B	BRACKET(CENTER)		
16	LP31391-001A	SPECIAL SCREW	BRACKET(CENTER)(x2)	
17	LP31391-001A	SPECIAL SCREW	MAIN(x3)	
18	LP31391-002A	SPECIAL SCREW	MECHANISM(x3)	
19	QYSPSPD3008ZA	SCREW	M3 x 8mm DRUM(x3)	
20	LP31391-001A	SPECIAL SCREW	HOUSING	
21	LP31391-001A	SPECIAL SCREW	JUNCTION	
22	LP31391-001A	SPECIAL SCREW	DIGITAL(x4)	
23	LP31413-001B	BRACKET(JACK BOARD ASSY)		
24	LP31391-001A	SPECIAL SCREW	JACK	
25	LP31391-001A	SPECIAL SCREW	BRACKET(JACK BOARD ASSY)	
26	LP21299-001B	LOADER BRACKET		
27	QYTDST3006ZA	TAP SCREW	M3 x 6mm DRIVE UNIT(x4)	
28	LP31391-001A	SPECIAL SCREW	BRACKET(DVD)(x4)	
29	LP31390-001A	BARCODE LABEL		
30	LP21297-001B	BRACKET(HDD/SWITCHING REGULATOR)		
31	LP40267-018A	HDD	(SERVICE)	
32	LP40738-001B	SCREW	HDD(x4)	
33	LP31391-001A	SPECIAL SCREW	SWITCHING REGULATOR(x4)	
34	LP31391-001A	SPECIAL SCREW	BRACKET(HDD/SWITCHING REGULATOR)(x4)	
△ 35	LP21295-003A	REAR COVER		
36	LP21296-001A	COVER(FAN)		
37	QAR0326-001	FAN MOTOR		
38	QYTDSF3010MA	TAP SCREW	M3 x 10mm FAN(x2)	
39	QYSBSG3006MA	TAP SCREW	M3 x 6mm COVER(FAN)(x3)	
40	QYSBSG3006NA	TAP SCREW	M3 x 6mm REAR COVER	
41	QYTDSF3008MA	TAP SCREW	M3 x 8mm JACK COVER(x8)	
42	QYTDST3005MA	TAP SCREW	M3 x 5mm TUNER	
△ 43	QMP51K0-170-K	POWER CORD	1.7m BLACK	B
△ 43	QMP4A10-170-K	POWER CORD	1.7m BLACK	A,C,D,E
44	LP31391-001A	SPECIAL SCREW	TUNER BRACKET(x2)	
45	LP41171-001A	SHIELD TIGHT		
46	LP41171-001A	SHIELD TIGHT		
47	LP41171-001A	SHIELD TIGHT		
48	LP31345-001A	EARTH PLATE		
49	LP31345-001A	EARTH PLATE		
50	LP30002-0A9A	SPACER		(x3)
51	QQR1439-003	FERRITE CORE		(x2)
52	LP30002-0A9A	SPACER		(x2)
53	QQR1439-003	FERRITE CORE		(x2)
54	LP30002-0A9A	SPACER		(x2)
55	LP31391-001A	SPECIAL SCREW	SECAM(x2)	A
△ 56	LP31465-001A	SHEET(HDD)		
57	LP41206-001A	SHEET		
58	LP30002-0A9A	SPACER		
59	LP41140-001A	INSULATOR		(x3)
△ 60	QAL0651-001	DRIVE UNIT		
61	QGZ0020A1-40	CONNECTOR		(1-40)
62	QGZ0020A1-40	CONNECTOR		(1-40)
63	QQR0918-001	CORE FILTER		
WR 1	QUQ112-0918CG	FFC WIRE	JUNCTION CN7107-MAIN CN7111	
WR 2	QUQ212-0422CG	FFC WIRE	VIDEO SWITCH CN501-JUNCTION CN7123	
WR 3	QUQ112-0910CG	FFC WIRE	OPERATION/JACK CN7201-MAIN CN7112	
WR 4	QUQ112-1110CG	FFC WIRE	SWITCH/DISPLAY CN7001-MAIN CN3102	
WR 5	QUQ212-0410CG	FFC WIRE	JUNCTION CN7103-SWITCH/DISPLAY CN7002	
WR 6	QUQ105-4021AF	FFC WIRE	DRIVE UNIT-DIGITAL CN2201	
WR 7	QJJ032-041504	S N CR C-C WIRE	DRIVE UNIT-JUNCTION CN5504	

MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

△ Symbol No.	Part No.	Part Name	Description	Local
WR 8	QUQ210-0408CC	FFC WIRE	DIGITAL CN1405-JUNCTION CN7106	
WR 9	QUQ105-4040AF	FFC WIRE	HDD-DIGITAL CN2101	
WR10	QJJ032-041504	SIN CR C-C WIRE	HDD-SWITCHING REGLATOR CN5303	
WR11	QJJ015-060801	SIN CR C-C WIRE	DIGITAL CN1003-JUNCTION CN5502	
WR12	QUQ212-1512CG	FFC WIRE	SWITCHING REGULATOR CN5301-MA N CN5311	
WR13	QUQ212-1912CG	FFC WIRE	SWITCHING REGULATOR CN5304-JUNCTION CN5501	
WR14	WJN0085-003A	E-SH C WIRE C-C	JACK CN4104-JUNCTION CN7126	
WR15	QUQ112-1420CG	FFC WIRE	TUNER CN6001-MAIN CN 7116	
WR16	QUQ112-1315CG	FFC WIRE	TUNER CN6002-MA N CN7117	
WR17	QUQ112-0716CG	FFC WIRE	TUNER CN6003-MA N CN7118	
WR18	QUQ112-1524CG	FFC WIRE	SECAM CN301-MA N CN7119	A
WR19	QUQ112-0628CG	FFC WIRE	VIDEO SWITCH CN504-SECAM CN4302	A

# VHS mechanism assembly and parts list

Block No. M2MM



PMD0044A-C

Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	COSMO-HV56	BB

**NOTE:** The section marked in **AA** and **BB** indicate lubrication and greasing areas.

MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

# VHS mechanism

Block No. [M][2][M][M]

△ Symbol No.	Part No.	Part Name	Description	Local
3	LP40097-002E	GUIDE POLE CAP		
4	NAH0004-001	FULL ERASE HEAD		
15	LP30958-001B	LOADING GEAR BASE		
16	QYTPST2620ZA	TAP SCREW		M2.6 x 20mm(x2)
17	QYTDST2606ZA	TAP SCREW		M2.6 x 6mm
18	LP40798-002A	LOADING GEAR(SUPPLY) ASSY		
19	LP40837-001A	TORSION SPRING(SUPPLY)		
20	LP40903-004A	FIX NG PLATE		
21	LP40806-001D	POLE BASE ASSY(SUPPLY)		
22	LP30959-001B	LOADING GEAR		
23	LP40802-002A	LOADING GEAR(TAKE UP) ASSY		
24	LP40838-001A	TORSION SPRING(TAKE UP)		
26	LP40808-001E	POLE BASE ASSY(TAKE UP)		
36	LP21055-001G	TAKE UP LEVER		
37	LP40943-001A	TENSION SPR NG		
38	LP40859-001D	T-UP HEAD		
39	LP30961-001C	LID GUIDE		
42	LP40810-003A	PINCH ROLLER ARM ASSY		
44	LP40840-001E	TORSION SPRING		
46	LP30963-002A	PRESS LEVER		
47	PQM30017-24	SLIT WASHER		
49	LP40813-001D	GUIDE ARM ASSY		
50	LP40841-001A	TORSION SPRING		
51	LP30002-090A	SPACER		
52	NAH0003-001	AC HEAD		
53	LP30965-003A	HEAD BASE		
55	LP40842-001D	COMPRESSION SPRING		
56	QYTDST2006MA	TAP SCREW		M2 x 6mm
57	LP41036-002A	A/C ADJ.SCREW		(x2)
58	QYTDST2606ZA	TAP SCREW		M2.6 x 6mm(x2)
59	QAR0289-001	LOADING MOTOR		
60	QYTPSP3003ZA	SCREW		M3 x 3mm(x2)
61	LP21056-002J	MOTOR BRACKET		
62	QYTPST2620ZA	TAP SCREW		M2.6 x 20mm
63	LP40814-001B	WORM BEAR NG		
64	LP21044-001E	CONTROL CAM		
65	PQM30017-24	SLIT WASHER		
66	LP40815-001A	WORM GEAR		
67	LP40816-001B	HELICAL GEAR		
68	LP40817-001A	CONNECT GEAR		
69	LP10400-001N	CONTROL PLATE		
70	LP40843-001A	TORSION SPRING		
71	LP40818-002A	TENSION ARM ASSY		
72	LP40844-001F	TENSION SPR NG		
73	LP21045-001E	TENSION ARM BASE		
74	LP40821-001A	TENSION BAND ASSY		
75	LP30967-001B	BAND HOLDER-1		
76	LP30968-001C	BAND HOLDER-2		
77	LP40822-002B	ADJUST PIN		
78	LP31000-005E	TENSION ARM LEVER		
79	LP21046-001C	MAIN BRAKE(TAKE UP)		
80	LP40824-001A	BAND BRAKE ASSY		
81	LP30969-002B	BRAKE LEVER		
82	LP30003-033C	TENSION SPR NG		
83	LP30003-035C	TENSION SPR NG		
84	LP40825-001B	CAPSTAN BRAKE ASSY		
△ 85	QAR0267-003	CAPSTAN MOTOR		
86	QYTPSG2606ZA	TAP SCREW		M2.6 x 6mm(x3)
87	LP30005-010A	BELT		CAPSTAN MOTOR
88	LP30970-001B	DLER ARM		
89	LP40828-004A	DLER GEAR 1		(x2)
90	LP40829-002A	DLER GEAR 2		(x2)
91	LP31014-002A	W RE HOLDER		
93	LP40934-001B	CLUTCH UNIT		
94	PQM30017-47	SLIT WASHER		
95	LP30973-001A	DIRECT GEAR		
96	LP40939-001A	COMPRESSION SPRING		
102	LP30974-001C	CHANGE LEVER		
105	LP21049-001A	REEL DISK		(x2)
107	LP30017-004A	SPACER		REEL DISK(x2)
110	LP10401-001L	SIDE FRAME(L)		
111	LP10402-001M	SIDE FRAME(R)		
112	QYTDST2606ZA	TAP SCREW		M2.6 x 6mm(x2)
113	LP40917-001D	TORSION SPRING		
114	LP30976-002B	SIDE PLATE		
115	LP30977-002E	LIMIT PLATE		
116	LP40846-001C	LIMIT SPR NG		
117	LP31100-002A	DRIVE LEVER		
118	LP30978-001B	DRIVE ARM(L)		

MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

Symbol No.	Part No.	Part Name	Description	Local
119	LP30979-001S	DRIVE ARM(R)		
120	LP40847-001B	TORSION SPRING		
121	LP30980-002A	CONNECT PLATE		
122	LP10403-001C	S DE HOLDER(L)		
123	LP10404-001E	S DE HOLDER(R)		
124	LP30983-002A	LOCK LEVER(L)		
125	LP30984-002A	LOCK LEVER(R)		
126	LP40924-001D	TENSION SPRING		
127	LP40972-001A	EARTH SPR NG(1)		
128	LP40857-001B	EARTH SPR NG(2)		
130	LP30981-003B	CASSETTE HOLDER ASSY		
134	LP21051-002C	REC SAFETY LEVER		
137	LP21052-002A	TOP FRAME		
151	LP30985-002M	DOOR OPENER		
WR1	WJT0117-001A	E-CARD WIRE		DRUM
WR2	WJT0067-001B	E-CARD WIRE		A/C HEAD CN2001
WR3	WJS0022-001A	E-FL/RB WIRE		LOADING MOTOR



MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

# Electrical parts list

## Switching reglator board

Block No. [0][1]

△ Symbol No.	Part No.	Part Name	Description	Local
PW1	LPA10249-03B1	SWITCHING REGLATOR BOARD ASSY		
IC5101	STR-G6653-F9	IC		
IC5301	UTCTL431-T	IC		
IC5301	or MM1431AT-T	IC		
IC5301	or L5431-T	IC		
IC5301	or TL431A/A-T	IC		
Q5303	DTA114EKA-X	DIGI TRANSISTOR		
Q5303	or UN2111-X	TRANSISTOR		
Q5303	or RT1P141C-X	DIGI TRANSISTOR		
Q5304	DTC114EKA-X	DIGI TRANSISTOR		
Q5304	or UN2211-X	TRANSISTOR		
Q5304	or RT1N141C-X	DIGI TRANSISTOR		
Q5305	2SD2144S/UV-T	TRANSISTOR		
Q5305	or 2SC3576-JVC-T	TRANSISTOR		
Q5306	2SC5739/QP/	TRANSISTOR		
Q5307	2SA1585S/QR-T	TRANSISTOR		
Q5308	DTC114EKA-X	DIGI TRANSISTOR		
Q5308	or UN2211-X	TRANSISTOR		
Q5308	or RT1N141C-X	DIGI TRANSISTOR		
Q5313	2SA1585S/QR-T	TRANSISTOR		
Q5314	2SA1585S/QR-T	TRANSISTOR		
Q5315	DTC114EKA-X	DIGI TRANSISTOR		
Q5315	or UN2211-X	TRANSISTOR		
Q5315	or RT1N141C-X	DIGI TRANSISTOR		
D5001	GBJ4J	BR DGE DIODE		
D5001	or D3SBA60	DIODE		
D5101	SARS01-T2	SI DIODE		
D5103	1F4G-T2	FR DIODE		
D5103	or 10ERB20-T2	FR DIODE		
D5103	or ERA18-02-T2	FR DIODE		
D5103	or AU01Z-T2	FR DIODE		
D5103	or 1SR153-400-T2	FR DIODE		
D5104	1SS133-T2	SI DIODE		
D5104	or 1SS270A-T2	SI DIODE		
D5105	10ERB20-T2	FR DIODE		
D5105	or ERA18-02-T2	FR DIODE		
D5105	or AU01Z-T2	FR DIODE		
D5105	or 1SR153-400-T2	FR DIODE		
D5105	or 1F4G-T2	FR DIODE		
D5106	10ERB20-T2	FR DIODE		
D5106	or ERA18-02-T2	FR DIODE		
D5106	or AU01Z-T2	FR DIODE		
D5106	or 1SR153-400-T2	FR DIODE		
D5106	or 1F4G-T2	FR DIODE		
D5202	1SR156-400-X	SI DIODE		
D5203	RL2Z-LFB2	FR DIODE		
D5204	D1FS4A-X	SB DIODE		
D5205	RK34-LFB2	FUSEIODE		
D5207	D1FS4A-X	SB DIODE		
D5208	1S4-T2	SB DIODE		
D5208	or SBO40-T2	SB DIODE		
D5208	or AW04-T2	SB DIODE		
D5209	RK34-LFB2	FUSEIODE		
D5210	1F4G-T2	FR DIODE		
D5210	or PG104RS-T2	FR DIODE		
D5210	or 10ERB20-T2	FR DIODE		
D5210	or 1SR153-400-T2	FR DIODE		
D5210	or ERA18-02-T2	FR DIODE		
D5211	ERA18-02-T2	FR DIODE		
D5211	or 1SR153-400-T2	FR DIODE		
D5211	or 10ERB20-T2	FR DIODE		
D5211	or 1F4G-T2	FR DIODE		
D5212	D1FS4A-X	SB DIODE		
D5213	1F4G-T2	FR DIODE		
D5213	or 10ERB20-T2	FR DIODE		
D5213	or ERA18-02-T2	FR DIODE		
D5213	or AU01Z-T2	FR DIODE		
D5213	or 1SR153-400-T2	FR DIODE		
D5301	MTZJ15A-T2	Z DIODE		

△ Symbol No.	Part No.	Part Name	Description	Local
D5301	or RD15ES/B1/-T2	Z DIODE		
D5303	MTZJ12C-T2	Z DIODE		
D5303	or RD12ES/B3/-T2	Z DIODE		
D5304	MTZJ5.6C-T2	Z DIODE		
D5304	or RD5.6ES/B3/-T2	Z DIODE		
D5306	RK34-LFB2	FUSEIODE		
D5307	1SS355-X	SI DIODE		
△ PC5101	PC123Y22FZ	PHOTO COUPLER		
△ C5001	QFZ9073-683	MM CAPACITOR	0.068uF AC250V M	
△ C5002	QFZ9073-223	MM CAPACITOR	0.022uF AC250V M	
C5003	QEZO374-107	E CAPACITOR	100uF 400V M	
△ C5004	QCZ9079-222	C CAPACITOR	2200pF AC250V M	
C5101	QCZO339-101Z	C CAPACITOR	100pF 1kV K	
C5102	QCZO349-472Z	C CAPACITOR	4700pF 1kV K	
C5103	QEMU1VM-276Z	E CAPACITOR	27uF 35V M	
C5104	QCZO136-471Z	C CAPACITOR	470pF 1kV K	
C5105	QFLC1HJ-471Z	M CAPACITOR	470pF 50V J	
C5106	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C5107	NCB31HK-221X	C CAPACITOR	220pF 50V K	
C5202	QETN2AM-475Z	E CAPACITOR	4.7uF 100V M	
C5203	QEMT1CM-687	E CAPACITOR	680uF 16V M	
C5204	QEMT1CM-687	E CAPACITOR	680uF 16V M	
C5205	QEMT1AM-128	E CAPACITOR	1200uF 10V M	
C5206	QEMT1AM-128	E CAPACITOR	1200uF 10V M	
C5207	QEMT1CM-687	E CAPACITOR	680uF 16V M	
C5208	QEMT1AM-128	E CAPACITOR	1200uF 10V M	
C5209	QEMU1HM-186Z	E CAPACITOR	18uF 50V M	
C5210	QEMX0JM-227Z	E CAPACITOR	220uF 6.3V M	
C5301	QFV1HJ-154Z	MF CAPACITOR	0.15uF 50V J	
C5302	QFLC1HJ-333Z	M CAPACITOR	0.033uF 50V J	
C5303	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C5304	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C5305	QETN1AM-107Z	E CAPACITOR	100uF 10V M	
C5306	QETN1AM-107Z	E CAPACITOR	100uF 10V M	
C5307	QETN1AM-107Z	E CAPACITOR	100uF 10V M	
C5308	QETN1AM-107Z	E CAPACITOR	100uF 10V M	
C5310	QETN1HM-225Z	E CAPACITOR	2.2uF 50V M	
C5311	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C5312	QETN1AM-107Z	E CAPACITOR	100uF 10V M	
C5315	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
R5101	QRG02GJ-683	OMF RESISTOR	68kΩ 2W J	
R5102	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R5103	QRE141J-684Y	C RESISTOR	680kΩ 1/4W J	
R5104	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R5105	QRE141J-680Y	C RESISTOR	68Ω 1/4W J	
R5106	QRE141J-392Y	C RESISTOR	3.9kΩ 1/4W J	
R5107	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J	
R5108	QRT01DJ-R27X	MF RESISTOR	0.27Ω 1W J	
△ R5109	QRZ9051-470X	FUSI RESISTOR	47Ω 1/4W J	
R5301	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R5302	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R5303	NRVA63D-152X	CMF RESISTOR	1.5kΩ 1/16W D	
R5304	NRVA63D-682X	CMF RESISTOR	6.8kΩ 1/16W D	
R5305	NRVA63D-243X	CMF RESISTOR	24kΩ 1/16W D	
R5306	NRVA63D-392X	CMF RESISTOR	3.9kΩ 1/16W D	
R5308	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
R5309	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R5312	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R5313	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R5314	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R5315	QRE121J-101Y	C RESISTOR	100Ω 1/2W J	
R5316	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R5317	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R5325	QRE141J-150Y	C RESISTOR	15Ω 1/4W J	
△ R5326	QRZ9051-470X	FUSI RESISTOR	47Ω 1/4W J	
R5327	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R5328	NRSA02J-471X	MG RESISTOR	470Ω 1/10W J	
R5329	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R5330	QRE141J-471Y	C RESISTOR	470Ω 1/4W J	
L5201	QQR0934-001	CHOKE COIL		
L5202	QQR0934-001	CHOKE COIL		
L5204	QQR0934-001	CHOKE COIL		

MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

△ Symbol No.	Part No.	Part Name	Description	Local
L5205	QQR0934-001	CHOK COIL		
L5206	QQR0934-001	CHOK COIL		
L5207	QQR0934-001	CHOK COIL		
L5301	QQR0678-001Z	FERRITE BEADS		
L5302	QQR0678-001Z	FERRITE BEADS		
△ T5001	QQS0289-001	SW TRANSF		
B5305	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
B5307	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
△ CN5001	QGA7901C3-02	CONNECTOR	W-B (1-2)	
CN5301	QGF1208C1-15	CONNECTOR	FFC/FPC (1-15)	
CN5302	QGA2001C1-02	CONNECTOR	W-B (1-2)	
CN5303	QGA2501C1-04	CONNECTOR	W-B (1-4)	
CN5304	QGF1208C1-19	CONNECTOR	FFC/FPC (1-19)	
△ CP5301	QMFZ049-1R5Z-E	FUSE	1.5A 125V	
△ CP5302	QMFZ049-2R0Z-E	FUSE	2A 125V	
△ F5001	QMF51E2-2R0-J1	FUSE	2A AC250V	
FC5001	QNG0020-001Z	FUSE CLIP		
FC5002	QNG0020-001Z	FUSE CLIP		
HS1	PEME0889-01-01	HEAT SINK	IC5101	
△ LF5002	QQR1031-001	LINE FILTER		
OT1	QYTDST3008ZA	TAP SCREW	M3 x 8mm IC5101	
ST1	PU59391	STYLE P N		
W52	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	

△ Symbol No.	Part No.	Part Name	Description	Local
Q1010	or 2SC3928A/QRS/-X	TRANSISTOR		
Q1010	or 2SD601A/QRS/-X	TRANSISTOR		
Q1011	2SC2412K/QRS/-X	TRANSISTOR		
Q1011	or 2SC3928A/QRS/-X	TRANSISTOR		
Q1011	or 2SD601A/QRS/-X	TRANSISTOR		
D1001	1SS355-X	SI DIODE		
D1001	or MA111-X	SI DIODE		
D1002	1SS355-X	SI DIODE		
D1002	or MA111-X	SI DIODE		
D1401	1SS355-X	SI DIODE		
D1401	or MA111-X	SI DIODE		
D1402	1SS355-X	SI DIODE		
D1402	or MA111-X	SI DIODE		
D1403	1SS355-X	SI DIODE		
D1403	or MA111-X	SI DIODE		

C1001	NBE20JM-226X	TA E CAPACITOR	22uF 6.3V M	
C1002	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C1003	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1004	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1005	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1007	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1008	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1009	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1012	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1014	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1015	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1017	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1018	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1019	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C1020	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1026	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1030	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1032	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1033	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1034	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1035	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1036	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1038	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1039	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1041	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C1042	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1043	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1044	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1045	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1046	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1047	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1051	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C1052	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1053	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C1060	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1062	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C1065	NCB20JM-475X	C CAPACITOR	4.7uF 6.3V M	
C1077	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1080	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1081	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1082	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1083	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1090	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1091	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1092	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1093	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1094	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1095	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C1096	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1097	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1098	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1203	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1204	NEHMOJM-476X	E CAPACITOR	47uF 6.3V M	
C1206	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1207	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1401	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1402	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1404	NEHMOJM-476X	E CAPACITOR	47uF 6.3V M	
C1405	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1406	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1408	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	

## Digital board

Block No. [0][2]

△ Symbol No.	Part No.	Part Name	Description	Local
PW1	LPA10247-06D	DIGITAL BOARD ASSY		
IC1001	JCP8059	IC		
IC1002	HY57V161610ET-8	IC		
IC1002	or K4S161622H-UC60	IC		
IC1002	or M12L16161A-7TG	IC		
IC1002	or HY57V161610ETP7	IC		
IC1002	or MT48LC1M16TG-7S	IC		
IC1201	LPN0944-001A	IC(FLASH)	(SERVICE)	
IC1202	SN74LVC373APW-X	IC(DIGITAL)		
IC1203	SN74LVC373APW-X	IC(DIGITAL)		
IC1401	DMN8652-B0	IC(DIGITAL)		
IC1404	SN74HCT08APW-X	IC		
IC1405	SN74LV08APW-X	IC		
IC1601	HY5DU561622CT-J	IC		
IC1601	or HY5DU561622DT-J	IC		
IC1602	HY5DU561622CT-J	IC		
IC1602	or HY5DU561622DT-J	IC		
IC1603	HY5DU561622CT-J	IC		
IC1603	or HY5DU561622DT-J	IC		
IC1604	HY5DU561622CT-J	IC		
IC1604	or HY5DU561622DT-J	IC		
IC1701	PQ015YZ01Z-X	IC		
IC1801	TSB41AB2PAP	IC		
Q1002	2SA1037AK/QR/-X	TRANSISTOR		
Q1002	or 2SA1530A/QR/-X	TRANSISTOR		
Q1002	or 2SB709A/QR/-X	TRANSISTOR		
Q1003	2SA1037AK/QR/-X	TRANSISTOR		
Q1003	or 2SA1530A/QR/-X	TRANSISTOR		
Q1003	or 2SB709A/QR/-X	TRANSISTOR		
Q1004	2SA1037AK/QR/-X	TRANSISTOR		
Q1004	or 2SA1530A/QR/-X	TRANSISTOR		
Q1004	or 2SB709A/QR/-X	TRANSISTOR		
Q1005	2SA1037AK/QR/-X	TRANSISTOR		
Q1005	or 2SA1530A/QR/-X	TRANSISTOR		
Q1005	or 2SB709A/QR/-X	TRANSISTOR		
Q1008	UMZ1N-W	PA R TRANSISTOR		
Q1008	or BC847PN-X	PAIR TRANSISTOR		
Q1008	or BC846PN-X	PAIR TRANSISTOR		
Q1009	2SC2412K/QRS/-X	TRANSISTOR		
Q1009	or 2SC3928A/QRS/-X	TRANSISTOR		
Q1009	or 2SD601A/QRS/-X	TRANSISTOR		
Q1010	2SC2412K/QRS/-X	TRANSISTOR		



MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
C1409	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1632	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1411	NEHM0JM-107X	E CAPACITOR	100uF 6.3V M		C1633	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1412	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1634	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1413	NEHM0JM-476X	E CAPACITOR	47uF 6.3V M		C1635	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1414	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1636	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1416	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1642	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1417	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1644	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1418	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1646	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1420	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M		C1650	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1421	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1652	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1422	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1654	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1423	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1656	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1424	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1658	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1425	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1660	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1427	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M		C1662	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1428	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1701	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1429	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1702	NEHM0JM-107X	E CAPACITOR	100uF 6.3V M	
C1430	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1703	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1435	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M		C1704	NEHM0JM-107X	E CAPACITOR	100uF 6.3V M	
C1436	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1706	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1437	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1707	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1438	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1708	NBE20JM-476X	TA E CAPACITOR	47uF 6.3V M	
C1439	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1710	NBE20JM-476X	TA E CAPACITOR	47uF 6.3V M	
C1442	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1801	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C1444	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1802	NDC31HJ-271X	C CAPACITOR	270pF 50V J	
C1445	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1803	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C1446	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1804	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1447	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1805	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1448	NCB31EK-103X	C CAPACITOR	0.01uF 25V K		C1806	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C1450	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1807	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1452	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1808	NDC31HJ-120X	C CAPACITOR	12pF 50V J	
C1453	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1809	NDC31HJ-120X	C CAPACITOR	12pF 50V J	
C1455	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1811	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1457	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C1812	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C1458	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1001	NRSA63D-221X	MG RESISTOR	220Ω 1/16W D	
C1461	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1002	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C1463	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1003	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C1464	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1004	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C1465	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1005	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C1466	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1006	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C1467	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1007	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C1468	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1009	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C1469	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1012	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C1470	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1013	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
C1471	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1014	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
C1472	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1015	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
C1473	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1017	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C1474	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1018	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C1475	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1019	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C1601	NEZ0019-157X	OS E CAPACITOR	150uF 4V M		R1021	NRSA63D-332X	MG RESISTOR	3.3kΩ 1/16W D	
C1602	NEZ0019-157X	OS E CAPACITOR	150uF 4V M		R1022	NRSA63D-152X	MG RESISTOR	1.5kΩ 1/16W D	
C1605	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1024	NRSA63D-272X	MG RESISTOR	2.7kΩ 1/16W D	
C1606	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1027	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
C1607	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1028	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
C1608	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1029	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C1609	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1030	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C1610	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1031	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C1611	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1032	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C1612	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1033	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
C1613	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1035	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C1614	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1036	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
C1615	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1037	NRSA63D-101X	MG RESISTOR	100Ω 1/16W D	
C1616	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1038	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C1617	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1039	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
C1618	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1040	NRSA63D-101X	MG RESISTOR	100Ω 1/16W D	
C1619	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1041	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C1620	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1042	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
C1621	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1043	NRSA63D-151X	MG RESISTOR	150Ω 1/16W D	
C1622	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1044	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C1623	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1045	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
C1624	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1046	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
C1625	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1047	NRSA63D-201X	MG RESISTOR	200Ω 1/16W D	
C1626	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1050	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
C1627	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1054	NRSA63D-332X	MG RESISTOR	3.3kΩ 1/16W D	
C1628	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1055	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
C1629	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1057	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J	
C1630	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R1059	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
C1631	NCB31CK-104X	C CAPACITOR	0.1uF 16V K						



MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
R2107	NRSA63J-220X	MG RESISTOR	22Ω 1/16W J		RA2211	NRZ0040-330X	NET RESISTOR	33Ω 1/16W J x4	
R2108	NRSA63J-820X	MG RESISTOR	82Ω 1/16W J		L1004	NQL144K-100X	P COIL	10uH K	
R2109	NRSA63J-220X	MG RESISTOR	22Ω 1/16W J		L1801	NQL144K-100X	P COIL	10uH K	
R2110	NRSA63J-820X	MG RESISTOR	82Ω 1/16W J		T1801	NQR0444-001X	CHOKO COIL		
R2111	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J		B1001	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
R2112	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J		B1007	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
R2113	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J		B1008	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
R2114	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J		B1202	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2115	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J		B1405	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
R2201	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		B1802	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
R2202	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J		CN1001	QGB2027L5-28X	CONNECTOR	B-B (1-28)	
R2203	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		CN1002	QGB2027L5-20X	CONNECTOR	B-B (1-20)	
R2204	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J		CN1003	QGA2001F6-06X	CONNECTOR	W-B (1-6)	
R2205	NRSA63J-820X	MG RESISTOR	82Ω 1/16W J		CN1403	QGF1016C2-04W	CONNECTOR	FFC/FPC (1-4)	
R2206	NRSA63J-220X	MG RESISTOR	22Ω 1/16W J		CN1405	QGF1016F2-04W	CONNECTOR	FFC/FPC (1-4)	
R2207	NRSA63J-220X	MG RESISTOR	22Ω 1/16W J		CN1801	QGB2027L1-10X	CONNECTOR	B-B (1-10)	
R2208	NRSA63J-820X	MG RESISTOR	82Ω 1/16W J		CN2101	QGF0539C1-40W	CONNECTOR	FFC/FPC (1-40)	
R2209	NRSA63J-220X	MG RESISTOR	22Ω 1/16W J		CN2201	QGF0539C1-40W	CONNECTOR	FFC/FPC (1-40)	
R2210	NRSA63J-820X	MG RESISTOR	82Ω 1/16W J		K1001	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
R2211	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J		K1002	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2212	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J		K1003	NQR0129-002X	FERRITE BEADS		
R2213	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J		K1004	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2214	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J		K1005	NQR0129-002X	FERRITE BEADS		
R2215	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J		K1006	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
RA1001	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4		K1007	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
RA1002	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4		K1008	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
RA1003	NRZ0034-103W	NET RESISTOR	10kΩ 1/32W J x4		K1009	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
RA1004	NRZ0034-103W	NET RESISTOR	10kΩ 1/32W J x4		K1010	NQR0129-002X	FERRITE BEADS		
RA1005	NRZ0034-103W	NET RESISTOR	10kΩ 1/32W J x4		K1011	NQR0129-002X	FERRITE BEADS		
RA1006	NRZ0034-103W	NET RESISTOR	10kΩ 1/32W J x4		K1012	NQR0129-002X	FERRITE BEADS		
RA1201	NRZ0034-103W	NET RESISTOR	10kΩ 1/32W J x4		K1013	NQR0129-002X	FERRITE BEADS		
RA1202	NRZ0034-103W	NET RESISTOR	10kΩ 1/32W J x4		K1014	NQR0129-002X	FERRITE BEADS		
RA1203	NRZ0034-103W	NET RESISTOR	10kΩ 1/32W J x4		K1015	NQR0129-002X	FERRITE BEADS		
RA1204	NRZ0034-103W	NET RESISTOR	10kΩ 1/32W J x4		K1016	NQR0129-002X	FERRITE BEADS		
RA1401	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J x4		K1017	NQR0129-002X	FERRITE BEADS		
RA1402	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J x4		K1018	NQR0129-002X	FERRITE BEADS		
RA1403	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J x4		K1019	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
RA1404	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J x4		K1020	NQR0129-002X	FERRITE BEADS		
RA1405	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J x4		K1021	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
RA1406	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J x4		K1022	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
RA1407	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J x4		K1023	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
RA1408	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J x4		K1201	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
RA1409	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J x4		K1401	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
RA1410	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J x4		K1402	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
RA1411	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J x4		K1403	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
RA1609	NRZ0040-220X	NET RESISTOR	22Ω 1/16W J x4		K1404	NQR0339-001X	FERRITE BEADS		
RA1610	NRZ0040-220X	NET RESISTOR	22Ω 1/16W J x4		K1406	NQR0339-001X	FERRITE BEADS		
RA1611	NRZ0040-220X	NET RESISTOR	22Ω 1/16W J x4		K1407	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
RA1612	NRZ0040-220X	NET RESISTOR	22Ω 1/16W J x4		K1408	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
RA1613	NRZ0040-220X	NET RESISTOR	22Ω 1/16W J x4		K1701	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
RA1614	NRZ0040-220X	NET RESISTOR	22Ω 1/16W J x4		K1702	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
RA1615	NRZ0040-220X	NET RESISTOR	22Ω 1/16W J x4		K1801	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
RA1616	NRZ0040-220X	NET RESISTOR	22Ω 1/16W J x4		K2101	NQR0129-002X	FERRITE BEADS		
RA1617	NRZ0040-101X	NET RESISTOR	100Ω 1/16W J x4		K2102	NQR0129-002X	FERRITE BEADS		
RA1618	NRZ0040-101X	NET RESISTOR	100Ω 1/16W J x4		K2103	NQR0129-002X	FERRITE BEADS		
RA1619	NRZ0040-101X	NET RESISTOR	100Ω 1/16W J x4		K2104	NQR0129-002X	FERRITE BEADS		
RA1620	NRZ0040-101X	NET RESISTOR	100Ω 1/16W J x4		K2105	NQR0129-002X	FERRITE BEADS		
RA1621	NRZ0040-101X	NET RESISTOR	100Ω 1/16W J x4		K2106	NQR0129-002X	FERRITE BEADS		
RA1622	NRZ0040-101X	NET RESISTOR	100Ω 1/16W J x4		K2107	NQR0129-002X	FERRITE BEADS		
RA1623	NRZ0040-101X	NET RESISTOR	100Ω 1/16W J x4		K2108	NQR0129-002X	FERRITE BEADS		
RA1624	NRZ0040-101X	NET RESISTOR	100Ω 1/16W J x4		K2109	NQR0129-002X	FERRITE BEADS		
RA1625	NRZ0040-220X	NET RESISTOR	22Ω 1/16W J x4		K2110	NQR0129-002X	FERRITE BEADS		
RA1626	NRZ0040-220X	NET RESISTOR	22Ω 1/16W J x4		K2111	NQR0129-002X	FERRITE BEADS		
RA1627	NRZ0040-220X	NET RESISTOR	22Ω 1/16W J x4		K2112	NQR0129-002X	FERRITE BEADS		
RA1628	NRZ0040-220X	NET RESISTOR	22Ω 1/16W J x4		K2113	NQR0129-002X	FERRITE BEADS		
RA1629	NRZ0040-101X	NET RESISTOR	100Ω 1/16W J x4		K2114	NQR0129-002X	FERRITE BEADS		
RA1630	NRZ0040-101X	NET RESISTOR	100Ω 1/16W J x4		K2115	NQR0129-002X	FERRITE BEADS		
RA1631	NRZ0040-101X	NET RESISTOR	100Ω 1/16W J x4		K2116	NQR0129-002X	FERRITE BEADS		
RA1632	NRZ0040-101X	NET RESISTOR	100Ω 1/16W J x4		K2117	NQR0129-002X	FERRITE BEADS		
RA1801	NRZ0034-103W	NET RESISTOR	10kΩ 1/32W J x4		K2118	NQR0129-002X	FERRITE BEADS		
RA1802	NRZ0034-103W	NET RESISTOR	10kΩ 1/32W J x4		K2119	NQR0129-002X	FERRITE BEADS		
RA2101	NRZ0040-330X	NET RESISTOR	33Ω 1/16W J x4		K2120	NQR0129-002X	FERRITE BEADS		
RA2102	NRZ0040-330X	NET RESISTOR	33Ω 1/16W J x4		K2121	NQR0129-002X	FERRITE BEADS		
RA2103	NRZ0040-330X	NET RESISTOR	33Ω 1/16W J x4		K2201	NQR0129-002X	FERRITE BEADS		
RA2104	NRZ0040-330X	NET RESISTOR	33Ω 1/16W J x4		K2202	NQR0129-002X	FERRITE BEADS		
RA2208	NRZ0040-330X	NET RESISTOR	33Ω 1/16W J x4		K2203	NQR0129-002X	FERRITE BEADS		
RA2209	NRZ0040-330X	NET RESISTOR	33Ω 1/16W J x4						
RA2210	NRZ0040-330X	NET RESISTOR	33Ω 1/16W J x4						



MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

Symbol No.	Part No.	Part Name	Description	Local
K2204	NQR0129-002X	FERRITE BEADS		
K2205	NQR0129-002X	FERRITE BEADS		
K2206	NQR0129-002X	FERRITE BEADS		
K2207	NQR0129-002X	FERRITE BEADS		
K2208	NQR0129-002X	FERRITE BEADS		
K2209	NQR0129-002X	FERRITE BEADS		
K2210	NQR0129-002X	FERRITE BEADS		
K2211	NQR0129-002X	FERRITE BEADS		
K2212	NQR0129-002X	FERRITE BEADS		
K2213	NQR0129-002X	FERRITE BEADS		
K2214	NQR0129-002X	FERRITE BEADS		
K2215	NQR0129-002X	FERRITE BEADS		
K2216	NQR0129-002X	FERRITE BEADS		
K2217	NQR0129-002X	FERRITE BEADS		
K2218	NQR0129-002X	FERRITE BEADS		
K2219	NQR0129-002X	FERRITE BEADS		
K2220	NQR0129-002X	FERRITE BEADS		
K2221	NQR0129-002X	FERRITE BEADS		
LC1401	NQR0512-008X	EMI FILTER		
LC1402	NQR0512-008X	EMI FILTER		
LC1403	NQR0512-008X	EMI FILTER		
OT1	LC41656-001A	COOLING SHEET		
SD1	LP21298-001B	SHIELD FRAME(DIGITAL)		
X1401	NAX0580-001X	CXO	27.0000MHz	
X1801	NAX0551-001X	CRYSTAL	24 576MHz	

Symbol No.	Part No.	Part Name	Description	Local
Q10	2SC2412K/QRS/-X	TRANSISTOR		
Q10	or 2SD601A/QRS/-X	TRANSISTOR		
Q10	or 2SC3928A/QRS/-X	TRANSISTOR		
Q13	2SC2412K/QRS/-X	TRANSISTOR		A
Q13	or 2SD601A/QRS/-X	TRANSISTOR		A
Q13	or 2SC3928A/QRS/-X	TRANSISTOR		A
Q16	2SA1037AK/QR/-X	TRANSISTOR		
Q16	or 2SB709A/QR/-X	TRANSISTOR		
Q16	or 2SA1530A/QR/-X	TRANSISTOR		
Q207	2SA1037AK/QR/-X	TRANSISTOR		
Q207	or 2SB709A/QR/-X	TRANSISTOR		
Q207	or 2SA1530A/QR/-X	TRANSISTOR		
Q208	2SC2412K/QRS/-X	TRANSISTOR		
Q208	or 2SD601A/QRS/-X	TRANSISTOR		
Q208	or 2SC3928A/QRS/-X	TRANSISTOR		
Q2001	2SC2412K/QRS/-X	TRANSISTOR		
Q2001	or 2SD601A/QRS/-X	TRANSISTOR		
Q2001	or 2SC3928A/QRS/-X	TRANSISTOR		
Q2002	2SC2412K/QRS/-X	TRANSISTOR		
Q2002	or 2SD601A/QRS/-X	TRANSISTOR		
Q2002	or 2SC3928A/QRS/-X	TRANSISTOR		
Q2003	DTA144WKA-X	TRANSISTOR		
Q2003	or UN211E-X	DIGI TRANSISTOR		
Q2003	or RT1P44HC-X	DIGI TRANSISTOR		
Q2051	2SC2412K/QRS/-X	TRANSISTOR		
Q2051	or 2SD601A/QRS/-X	TRANSISTOR		
Q2051	or 2SC3928A/QRS/-X	TRANSISTOR		
Q2052	2SA1037AK/QR/-X	TRANSISTOR		
Q2052	or 2SB709A/QR/-X	TRANSISTOR		
Q2052	or 2SA1530A/QR/-X	TRANSISTOR		
Q2053	DTC144WKA-X	DIGI TRANSISTOR		
Q2053	or UN221E-X	TRANSISTOR		
Q2053	or RT1N44HC-X	DIGI TRANSISTOR		
Q2054	2SA1037AK/QR/-X	TRANSISTOR		
Q2054	or 2SB709A/QR/-X	TRANSISTOR		
Q2054	or 2SA1530A/QR/-X	TRANSISTOR		
Q2055	DTC144WKA-X	DIGI TRANSISTOR		
Q2055	or UN221E-X	TRANSISTOR		
Q2055	or RT1N44HC-X	DIGI TRANSISTOR		
Q2201	DTA144WKA-X	TRANSISTOR		
Q2201	or UN211E-X	DIGI TRANSISTOR		
Q2201	or RT1P44HC-X	DIGI TRANSISTOR		
Q2202	DTC144WKA-X	DIGI TRANSISTOR		
Q2202	or UN221E-X	TRANSISTOR		
Q2202	or RT1N44HC-X	DIGI TRANSISTOR		
Q2203	2SC2412K/QRS/-X	TRANSISTOR		
Q2203	or 2SD601A/QRS/-X	TRANSISTOR		
Q2203	or 2SC3928A/QRS/-X	TRANSISTOR		
Q2204	2SC2412K/QRS/-X	TRANSISTOR		
Q2204	or 2SD601A/QRS/-X	TRANSISTOR		
Q2204	or 2SC3928A/QRS/-X	TRANSISTOR		
Q2255	DTC114EKA-X	DIGI TRANSISTOR		
Q2255	or UN2211-X	TRANSISTOR		
Q2255	or RT1N141C-X	DIGI TRANSISTOR		
Q3004	2SC2412K/QRS/-X	TRANSISTOR		
Q3004	or 2SD601A/QRS/-X	TRANSISTOR		
Q3004	or 2SC3928A/QRS/-X	TRANSISTOR		
Q3007	UN221E-X	TRANSISTOR		
Q3007	or DTC144WKA-X	DIGI TRANSISTOR		
Q3007	or RT1N44HC-X	DIGI TRANSISTOR		
Q3015	DTC114GKA-X	DIGI TRANSISTOR		
Q3015	or DTC144GKA-X	DIGI TRANSISTOR		
Q3016	DTC114GKA-X	DIGI TRANSISTOR		
Q3016	or DTC144GKA-X	DIGI TRANSISTOR		
Q3017	DTC114GKA-X	DIGI TRANSISTOR		
Q3017	or DTC144GKA-X	DIGI TRANSISTOR		
Q3302	PTZ-NV16A	IC(PHOTO SENSOR)		
Q3303	PTZ-NV16A	IC(PHOTO SENSOR)		
Q3304	2SC2412K/QRS/-X	TRANSISTOR		
Q3304	or 2SD601A/QRS/-X	TRANSISTOR		
Q3304	or 2SC3928A/QRS/-X	TRANSISTOR		
Q3305	2SC2412K/QRS/-X	TRANSISTOR		
Q3305	or 2SD601A/QRS/-X	TRANSISTOR		
Q3305	or 2SC3928A/QRS/-X	TRANSISTOR		
Q3401	UN221E-X	TRANSISTOR		
Q3401	or DTC144WKA-X	DIGI TRANSISTOR		
Q3401	or RT1N44HC-X	DIGI TRANSISTOR		
Q3901	UN221E-X	TRANSISTOR		

## Main board

Block No. [0][3]

Symbol No.	Part No.	Part Name	Description	Local
PW1	LPA10245-07C	MAIN BOARD ASSY		A
PW1	LPA10245-06C	MAIN BOARD ASSY		B
PW1	LPA10245-04C	MAIN BOARD ASSY		C,D,E
IC1	JCP8060-MSA	IC		
IC201	LC74776-9791	IC		
△IC2201	AN3651FBP	IC		
IC2601	RC4558D-X	IC		
IC2602	BU4052BCF-X	IC		
IC2602	or CD4052BM-X	IC		
IC2603	RC4558D-X	IC		
IC2604	BU4052BCF-X	IC		
IC2604	or CD4052BM-X	IC		
IC2605	RC4558D-X	IC		
IC2606	LA7151	IC		
IC2607	LA7151	IC		
IC3001	HD6432194SAD92F	IC(MCU)	MASK	
IC3002	S-80827CNNB-G-W	IC		
IC3004	LPN0942-003B-73	IC(EEPROM)	*(REFER TO BELOW)	A
IC3004	LPN0942-002D-72	IC(EEPROM)	*(REFER TO BELOW)	B
IC3004	LPN0942-001D-71	IC(EEPROM)	*(REFER TO BELOW)	C,D,E
IC3301	HD6432194SAD93F	IC(MCU)	MASK	A
IC3301	HD6432194SAD91F	IC(MCU)	MASK	B,C,D,E
IC3302	S-80827CNNB-G-W	IC		
IC3303	LPN0943-003A-10	IC(EEPROM)	*(REFER TO BELOW)	A
IC3303	LPN0943-002B-02	IC(EEPROM)	*(REFER TO BELOW)	B
IC3303	LPN0943-001A-11	IC(EEPROM)	*(REFER TO BELOW)	C,D,E
IC7101	CD74HC4053PW-X	IC		
IC7501	SN74AHCT08NS-X	IC		
IC7501	or 74VHCT08ASJ-X	IC		
Q4	2SA1037AK/QR/-X	TRANSISTOR		A
Q4	or 2SB709A/QR/-X	TRANSISTOR		A
Q4	or 2SA1530A/QR/-X	TRANSISTOR		A
Q7	2SC2412K/QRS/-X	TRANSISTOR		
Q7	or 2SD601A/QRS/-X	TRANSISTOR		
Q7	or 2SC3928A/QRS/-X	TRANSISTOR		
Q8	2SC2412K/QRS/-X	TRANSISTOR		
Q8	or 2SD601A/QRS/-X	TRANSISTOR		
Q8	or 2SC3928A/QRS/-X	TRANSISTOR		
Q9	2SC2412K/QRS/-X	TRANSISTOR		
Q9	or 2SD601A/QRS/-X	TRANSISTOR		
Q9	or 2SC3928A/QRS/-X	TRANSISTOR		

\*The VCR goes to jig RCU mode after replacing the EEPROM and the VCR does not accept some RCU command.

3-14(No. YD048)

Therefore please set the VCR to the user RCU mode after replacing the EEPROM.

The method of setting the VCR to the user RCU mode is written on the service manual.

MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
Q3901	or DTC144WKA-X	DIGI TRANSISTOR			C50	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A
Q3901	or RT1N44HC-X	DIGI TRANSISTOR			C56	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
Q4001	UN2211-X	TRANSISTOR			C57	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
Q4001	or DTC114EKA-X	DIGI TRANSISTOR			C58	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
Q4001	or RT1N141C-X	DIGI TRANSISTOR			C59	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
Q7201	2SC1317/RS/-T	TRANSISTOR			C60	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
					C61	QEK0JM-476Z	E CAPACITOR	47uF 6.3V M	
D201	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J		C62	QCB11HK-103Y	C CAPACITOR	0.01uF 50V K	
D202	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J		C63	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
D203	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J		C64	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
D2001	1SS133-T2	SI DIODE			C66	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
D2001	or 1SS270A-T	SI DIODE			C71	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M	
D2251	1SS133-T2	SI DIODE			C75	NDC31HJ-390X	C CAPACITOR	39pF 50V J	A
D2251	or 1SS270A-T2	SI DIODE			C85	QCB11HK-103Y	C CAPACITOR	0.01uF 50V K	
D3002	1SS133-T2	SI DIODE			C201	QEKJ0JM-227Z	E CAPACITOR	220uF 6.3V M	
D3002	or 1SS270A-T2	SI DIODE			C204	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
D3003	RD39ES/B3/-T2	Z DIODE			C206	NDC31HJ-330X	C CAPACITOR	33pF 50V J	
D3003	or MTZJ39C-T2	Z DIODE			C207	NDC31HJ-330X	C CAPACITOR	33pF 50V J	
D3004	1A3G-T2	SI DIODE			C209	NCB31AK-474X	C CAPACITOR	0.47uF 10V K	
D3005	1A3G-T2	SI DIODE			C210	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
D3008	1SS133-T2	SI DIODE			C211	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
D3008	or 1SS270A-T2	SI DIODE			C212	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
D3301	LNB2301L01V1	LED			C213	QEKJ1EM-475Z	E CAPACITOR	4.7uF 25V M	
D3303	RD39ES/B3/-T2	Z DIODE			C214	NCB31AK-224X	C CAPACITOR	0.22uF 10V K	
D3303	or MTZJ39C-T2	Z DIODE			C215	NCB31AK-224X	C CAPACITOR	0.22uF 10V K	
D3304	1A3G-T2	SI DIODE			C217	NDC31HJ-560X	C CAPACITOR	56pF 50V J	
D3305	1A3G-T2	SI DIODE			C218	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M	
D4001	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		C222	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M	
D4002	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		C225	QEKJ0JM-227Z	E CAPACITOR	220uF 6.3V M	
D7301	1A3G-T2	SI DIODE			C2001	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M	
					C2002	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M	
PC3001	RPI-304J	IC(PHOTO SENSOR)			C2003	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M	
PC3002	RPI-304J	IC(PHOTO SENSOR)			C2005	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M	
					C2006	NCB31EK-682X	C CAPACITOR	6800pF 25V K	
C1	NDC31HJ-151X	C CAPACITOR	150pF 50V J		C2007	QEKJ1CM-226Z	E CAPACITOR	22uF 16V M	
C2	NDC31HJ-390X	C CAPACITOR	39pF 50V J	A	C2008	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M	
C2	NDC31HJ-470X	C CAPACITOR	47pF 50V J	B,C,D,E	C2009	NCB31HK-122X	C CAPACITOR	1200pF 50V K	
C3	NDC31HJ-7R0X	C CAPACITOR	7pF 50V J	A	C2010	NCB31HK-152X	C CAPACITOR	1500pF 50V K	
C4	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M		C2011	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M	
C5	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C2012	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M	
C6	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C2013	NDC31HJ-331X	C CAPACITOR	330pF 50V J	
C7	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C2051	NDC31HJ-331X	C CAPACITOR	330pF 50V J	
C8	NCF31AZ-105X	C CAPACITOR	1uF 10V Z		C2052	QFV61HJ-823Z	MF CAPACITOR	0.082uF 50V J	
C9	QEKJ1HM-225Z	E CAPACITOR	2.2uF 50V M		C2053	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C10	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M		C2054	NCB31EK-223X	C CAPACITOR	0.022uF 25V K	
C11	NCF31AZ-105X	C CAPACITOR	1uF 10V Z		C2055	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C12	NCF31AZ-105X	C CAPACITOR	1uF 10V Z		C2201	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C13	NCF31AZ-105X	C CAPACITOR	1uF 10V Z		C2202	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M	
C14	NCF31AZ-105X	C CAPACITOR	1uF 10V Z		C2203	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M	
C15	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C2204	QEKJ0JM-336Z	E CAPACITOR	33uF 6.3V M	
C17	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C2205	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C19	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C2206	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C20	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C2207	NCB31EK-153X	C CAPACITOR	0.015uF 25V K	
C22	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C2208	NCB31EK-153X	C CAPACITOR	0.015uF 25V K	
C24	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C2209	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C25	QEKJ1HM-335Z	E CAPACITOR	3.3uF 50V M		C2210	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C26	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M		C2211	QEKJ0JM-336Z	E CAPACITOR	33uF 6.3V M	
C27	NCB31EK-103X	C CAPACITOR	0.01uF 25V K		C2212	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M	
C29	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A	C2214	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C30	QCB11HK-331Y	C CAPACITOR	330pF 50V K		C2215	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C31	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M		C2216	QEKJ1CM-476Z	E CAPACITOR	47uF 16V M	
C32	NCB31EK-103X	C CAPACITOR	0.01uF 25V K		C2220	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C33	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M		C2221	NCB31EK-223X	C CAPACITOR	0.022uF 25V K	
C34	NCB31EK-103X	C CAPACITOR	0.01uF 25V K		C2222	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C35	QCB11HK-103Y	C CAPACITOR	0.01uF 50V K		C2223	NCB31CK-473X	C CAPACITOR	0.047uF 16V K	
C36	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M		C2224	NCB31CK-473X	C CAPACITOR	0.047uF 16V K	
C37	NDC31HJ-4R0X	C CAPACITOR	4pF 50V J		C2225	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C38	NCB31EK-103X	C CAPACITOR	0.01uF 25V K		C2226	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C39	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M		C2227	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C40	NCB31EK-103X	C CAPACITOR	0.01uF 25V K		C2251	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C41	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C2252	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C43	QEKJ1HM-335Z	E CAPACITOR	3.3uF 50V M		C2253	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C44	QEKJ1HM-225Z	E CAPACITOR	2.2uF 50V M		C2254	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M	
C45	NCB31EK-472X	C CAPACITOR	4700pF 25V K		C2255	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C46	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		C2256	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C47	QEKJ1HM-474Z	E CAPACITOR	0.47uF 50V M		C2257	QCB11HK-103Y	C CAPACITOR	0.01uF 50V K	
C48	NCB31EK-223X	C CAPACITOR	0.022uF 25V K		C2258	NDC31HJ-181X	C CAPACITOR	180pF 50V J	
C49	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M		C2259	QEKJ1HM-334Z	E CAPACITOR	0.33uF 50V M	

MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
C2261	NDC31HJ-101X	C CAPACITOR	100pF 50V J		C7117	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C2262	NDC31HJ-101X	C CAPACITOR	100pF 50V J		C7118	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C2601	NCB31HK-103X	C CAPACITOR	0.01uF 50V K		C7119	NDC31HJ-470X	C CAPACITOR	47pF 50V J	
C2602	NCB31HK-103X	C CAPACITOR	0.01uF 50V K		C7201	QEKJ0JM-227Z	E CAPACITOR	220uF 6.3V M	
C2603	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M		C7501	QEKJ0JM-107Z	E CAPACITOR	100uF 6.3V M	
C2604	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M		C7502	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C2605	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M		C7503	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M	
C2606	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M		C7504	NDC31HJ-151X	C CAPACITOR	150pF 50V J	
C2607	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M		C7505	NDC31HJ-151X	C CAPACITOR	150pF 50V J	
C2608	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M		C7506	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C2609	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M		C7507	QEKJ0JM-107Z	E CAPACITOR	100uF 6.3V M	
C2610	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M		C7508	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C2611	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M		C7509	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C2612	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M						
C2613	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M		R1	NRSA63J-622X	MG RESISTOR	6.2kΩ 1/16W J	
C2614	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M		R2	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
C2615	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M		R3	NRSA63J-822X	MG RESISTOR	8.2kΩ 1/16W J	A
C2616	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M		R3	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	B,C,D,E
C2617	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M		R5	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	A
C2618	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M		R11	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
C2651	QEKJ1CM-476Z	E CAPACITOR	47uF 16V M		R12	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
C2653	QEKJ1CM-476Z	E CAPACITOR	47uF 16V M		R13	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	A
C3007	NCB30JK-105X	C CAPACITOR	1uF 6.3V K		R17	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J	A
C3010	QE20244-10A	EDL CAPACITOR	0.1F 5.5V Z		R21	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
C3014	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M		R22	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
C3015	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R23	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
C3016	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R26	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
C3022	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R28	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	A
C3024	NDC31HJ-160X	C CAPACITOR	16pF 50V J		R35	NRSA63J-821X	MG RESISTOR	820Ω 1/16W J	A
C3025	QAT3725-300Z	TRIM CAPACITOR	30pF TIMER CLOCK		R36	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
C3027	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M		R37	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J	
C3030	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M		R38	NRSA63J-685X	MG RESISTOR	6.8kΩ 1/16W J	
C3031	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R41	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
C3032	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R42	QRE141J-471Y	C RESISTOR	470Ω 1/4W J	
C3033	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R43	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
C3036	NDC31HJ-180X	C CAPACITOR	18pF 50V J		R201	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C3037	NDC31HJ-120X	C CAPACITOR	12pF 50V J		R202	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C3038	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M		R208	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
C3039	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R209	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J	
C3042	QETN0JM-477Z	E CAPACITOR	470uF 6.3V M		R210	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	
C3050	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R211	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
C3054	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R212	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J	
C3304	NCB31EK-473X	C CAPACITOR	0.047uF 25V K		R213	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C3310	QE20244-229	EDL CAPACITOR	0.022F 5.5V Z		R216	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C3312	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M		R224	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
C3315	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R225	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
C3316	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R226	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
C3322	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R2003	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
C3324	NDC31HJ-120X	C CAPACITOR	12pF 50V J		R2005	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J	
C3327	QERF1CM-106Z	E CAPACITOR	10uF 16V M		R2007	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J	
C3330	QERF1CM-476Z	E CAPACITOR	47uF 16V M		R2008	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C3331	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R2010	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
C3332	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R2013	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
C3333	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R2014	NRSA63J-394X	MG RESISTOR	390kΩ 1/16W J	
C3336	NDC31HJ-180X	C CAPACITOR	18pF 50V J		R2015	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J	
C3337	NDC31HJ-120X	C CAPACITOR	12pF 50V J		R2016	NRSA63J-393X	MG RESISTOR	39kΩ 1/16W J	
C3341	NDC31HJ-180X	C CAPACITOR	18pF 50V J		R2017	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J	
C3342	QETJ0JM-477Z	E CAPACITOR	470uF 6.3V M		R2018	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
C3350	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R2019	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
C3354	NCB31CK-104X	C CAPACITOR	0.1uF 16V K		R2021	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
C3355	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R2022	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C3371	QEKJ1HM-336Z	E CAPACITOR	33uF 50V M		R2023	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C4002	NCB31HK-103X	C CAPACITOR	0.01uF 50V K		R2053	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J	
C4004	QERF1CM-226Z	E CAPACITOR	22uF 16V M		R2054	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
C4006	QERF0JM-476Z	E CAPACITOR	47uF 6.3V M		R2055	NRSA63J-3R3X	MG RESISTOR	3.3Ω 1/16W J	
C4008	NCB30JK-105X	C CAPACITOR	1uF 6.3V K		R2056	QRE141J-820Y	C RESISTOR	82Ω 1/4W J	
C4009	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R2057	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
C4010	NCB31EK-223X	C CAPACITOR	0.022uF 25V K		R2058	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J	
C4011	NCB31EK-104X	C CAPACITOR	0.1uF 25V K		R2059	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
C4012	NCB31CK-224X	C CAPACITOR	0.022uF 16V K		R2060	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J	
C4014	NDC31HJ-101X	C CAPACITOR	100pF 50V J		R2201	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
C4015	NDC31HJ-221X	C CAPACITOR	220pF 50V J		R2202	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J	
C4018	NCB31HK-102X	C CAPACITOR	1000pF 50V K		R2203	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
C4031	QEKJ1CM-336Z	E CAPACITOR	33uF 16V M		R2204	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J	
C7110	NCB31EK-103X	C CAPACITOR	0.01uF 25V K		R2205	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
C7111	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M		R2206	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J	
C7112	NCB31EK-103X	C CAPACITOR	0.01uF 25V K		R2207	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
C7116	NDC31HJ-470X	C CAPACITOR	47pF 50V J		R2208	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J	



MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
R2209	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J		R3025	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2210	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		R3029	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R2211	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J		R3031	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2212	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J		R3032	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2213	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		R3034	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2214	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J		R3035	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2215	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3036	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2218	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J		R3039	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2219	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J		R3040	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2220	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J		R3041	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R2222	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		R3042	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2223	NRSA63J-511X	MG RESISTOR	510Ω 1/16W J		R3044	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2224	NRSA63J-511X	MG RESISTOR	510Ω 1/16W J		R3046	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R2225	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		R3047	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R2226	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J		R3048	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R2227	NRSA63J-393X	MG RESISTOR	39kΩ 1/16W J		R3049	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2228	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J		R3050	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2229	NRSA63J-393X	MG RESISTOR	39kΩ 1/16W J		R3051	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2230	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J		R3052	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2231	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J		R3053	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2232	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J		R3054	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2233	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J		R3055	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2234	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J		R3059	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2239	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3060	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2240	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3061	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2241	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J		R3062	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R2242	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J		R3063	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2243	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J		R3066	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R2244	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J		R3069	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R2251	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		R3071	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R2252	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J		R3072	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2253	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J		R3073	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2255	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J		R3074	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	A
R2601	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J		R3075	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R2602	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J		R3076	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R2603	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J		R3077	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R2604	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J		R3078	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2605	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J		R3079	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R2606	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J		R3080	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R2607	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J		R3081	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R2608	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J		R3083	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2609	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J		R3086	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2610	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J		R3087	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2611	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J		R3088	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2612	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		R3089	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2613	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		R3090	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2614	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		R3091	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2615	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		R3092	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2631	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J		R3093	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2632	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J		R3094	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2633	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J		R3095	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2634	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		R3096	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2635	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		R3097	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R2652	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3098	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2653	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		R3107	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2654	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J		R3108	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2655	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J		R3213	NRSA63J-474X	MG RESISTOR	470kΩ 1/16W J	
R2656	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J		R3214	NRSA63J-334X	MG RESISTOR	330kΩ 1/16W J	
R2657	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J		R3218	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R2658	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		R3219	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R2659	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		R3220	QRE141J-104Y	C RESISTOR	100kΩ 1/4W J	
R2660	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		R3223	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R2661	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		R3224	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R3001	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3229	NRSA63J-105X	MG RESISTOR	1MΩ 1/16W J	
R3004	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3230	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R3008	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3231	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R3011	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3233	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R3012	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3234	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R3013	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3235	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R3014	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3236	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R3015	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3239	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R3016	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3240	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R3017	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J		R3242	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R3018	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3245	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	B,C,D,E
R3019	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3251	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R3020	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3256	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R3021	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R3257	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R3022	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J		R3258	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	

MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
R3311	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R4003	NRSA63J-561X	MG RESISTOR	560Ω 1/16W J	
R3312	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	A	R4004	NRSA63J-561X	MG RESISTOR	560Ω 1/16W J	
R3313	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R4005	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R3314	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R4007	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R3315	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R4008	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R3317	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R4009	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R3318	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J		R4010	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R3322	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R4012	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R3325	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		R4013	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R3326	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		R4015	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R3327	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		R4017	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R3330	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R7101	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R3334	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R7102	NRSA63J-822X	MG RESISTOR	8.2kΩ 1/16W J	
R3335	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R7201	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R3336	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		R7202	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R3337	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R7203	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R3338	NRSA63J-182X	MG RESISTOR	18kΩ 1/16W J		R7204	QRE121J-100Y	C RESISTOR	10Ω 1/2W J	
R3340	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R7501	NRSA63J-4R7X	MG RESISTOR	4.7Ω 1/16W J	
R3346	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J		R7502	NRSA63J-4R7X	MG RESISTOR	4.7Ω 1/16W J	
R3347	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J		R7503	NRSA63J-4R7X	MG RESISTOR	4.7Ω 1/16W J	
R3348	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J		R7504	NRSA63J-820X	MG RESISTOR	82Ω 1/16W J	
R3349	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R7505	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J	
R3350	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		R7506	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J	
R3351	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J		R7507	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R3352	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J		L2	QQL071J-221Y	COIL	220uH J	A
R3353	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J		L3	QQL29BJ-100Z	P COIL	10uH J	
R3354	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		L5	QQL29BJ-100Z	P COIL	10uH J	
R3355	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		L6	QQL29BJ-100Z	P COIL	10uH J	
R3356	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		L7	QQR0967-001	CHOCO CO L		
R3357	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		L10	QQL29BJ-100Z	P COIL	10uH J	
R3359	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		L14	QQL071J-101Y	COIL	100uH J	A
R3362	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		L201	QQL29BK-1R0Z	P COIL	1uH K	
R3363	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		L203	QQL37CJ-220Z	COIL	22uH J	
R3366	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		L204	QQL29BJ-100Z	P COIL	10uH J	
R3369	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J		L206	QQL071J-220Y	COIL	22uH J	
R3371	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		L2251	QQL29BJ-100Z	P COIL	10uH J	
R3372	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		L2252	QQL29BJ-151Z	P COIL	150uH J	
R3373	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		L3001	QQL231J-R22Y	COIL	0.22uH J	
R3374	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		L7101	QQL29BJ-100Z	P COIL	10uH J	
R3375	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J		L7201	QQL29BJ-100Z	P COIL	10uH J	
R3376	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J		L7501	QQL29BK-1R0Z	P COIL	1uH K	
R3377	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	A	L7502	QQL29BK-1R0Z	P COIL	1uH K	
R3379	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		T2051	QQR0002-001	BIAS COIL		
R3380	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		B1	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R3381	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		B2	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R3385	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		B4	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	B,C,D,E
R3386	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		B7	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R3388	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		B8	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
R3390	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		B9	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
R3403	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		B12	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
R3405	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		B203	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R3407	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A	B3461	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R3505	QRE141J-181Y	C RESISTOR	180Ω 1/4W J		B3462	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R3506	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J		B3466	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R3507	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J		B3502	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R3508	NRSA63J-121X	MG RESISTOR	120Ω 1/16W J		B3504	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R3509	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J		B3961	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R3510	NRSA63J-121X	MG RESISTOR	120Ω 1/16W J		B3962	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R3511	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J		B3966	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R3513	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J		CN1	QGF1201C2-09	CONNECTOR	FFC/FPC (1-9)	
R3514	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		CN2001	QGF1207C1-06	CONNECTOR	FFC/FPC (1-6)	
R3515	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		CN2002	QGB2532J1-02	CONNECTOR	B-B (1-2)	
R3516	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		CN2601	QGB1231L1-11	CONNECTOR	B-B (1-11)	
R3517	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		CN3001	QGB2032M4-12	CONNECTOR	B-B (1-12)	
R3518	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		CN3102	QGF1207C1-11	CONNECTOR	FFC/FPC (1-11)	
R3519	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		CN3103	QGB1231L1-15	CONNECTOR	B-B (1-15)	
R3520	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J		CN3401	QGF1207C1-06	CONNECTOR	FFC/FPC (1-6)	
R3522	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J		CN3901	QGF1207C1-06	CONNECTOR	FFC/FPC (1-6)	
R3523	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		CN5311	QGF1207C1-15	CONNECTOR	FFC/FPC (1-15)	
R3524	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		CN7111	QGF1207C1-09	CONNECTOR	FFC/FPC (1-9)	
R3529	NRSA63J-105X	MG RESISTOR	1MΩ 1/16W J		CN7112	QGF1207C1-09	CONNECTOR	FFC/FPC (1-9)	
R3530	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J		CN7113	QGB2024K1-14S	CONNECTOR	B-B (1-14)	
R3531	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J		CN7114	QGB2024K1-14S	CONNECTOR	B-B (1-14)	
R3535	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J		CN7115	QGB2024K1-17S	CONNECTOR	B-B (1-17)	
R3536	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J		CN7116	QGF1207C1-14	CONNECTOR	FFC/FPC (1-14)	
R3541	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J		CN7117	QGF1207C1-13	CONNECTOR	FFC/FPC (1-13)	
R3553	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J						
R3564	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J						



MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

△ Symbol No.	Part No.	Part Name	Description	Local
CN7118	QGF1207C1-07	CONNECTOR	FFC/FPC (1-7)	
CN7119	QGF1207C1-15	CONNECTOR	FFC/FPC (1-15)	A
△ CP3002	QMFZ050-1R25X-E	FUSE	1 25A 125V	
△ CP4002	QMFZ050-1R25X-E	FUSE	1 25A 125V	
J7009	QNN0096-001	PIN JACK	COAXIAL OUT	
J7010	GP1FA313TZ	OPT TRANSMITTER	OPTICAL OUT	
J7201	QNS0100-001	3.5 JACK	SAT CONTROL	
JS3001	NSW0238-001	ROTARY ENCODER		
K2001	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K2002	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K2003	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K2004	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K2251	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K2252	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K3001	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K3002	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K3003	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K3004	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K3005	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K3006	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K3007	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K3008	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K3009	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K3010	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K3011	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K7501	NQR0147-004X	FERRITE BEADS		
K7502	NQR0147-004X	FERRITE BEADS		
K7503	NQR0147-004X	FERRITE BEADS		
OT1	LP31378-001A	BOSS(MECHA)3		
OT2	LP31379-001A	BOSS(MECHA)4	(x2)	
S3001	QSW0602-004	PUSH SWITCH	REC. SAFETY	
SD1	LP31179-001A	SH LD PLATE(PRE/REC)		
W1	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W2	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W3	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W4	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W5	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W6	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W7	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W8	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W10	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W11	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W12	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W13	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W14	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W15	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W16	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W17	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W18	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W19	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W20	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W21	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W22	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W23	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W24	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W25	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W26	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W27	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W29	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W30	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W31	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W32	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W33	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W34	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W35	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W36	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W37	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W40	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W41	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W42	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W43	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W45	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W46	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
WR2	QUB321-06ZAZA	SIN TWIST WIRE		
WR3	QUB321-04ZAZA	SIN TWIST WIRE		
WR4	QUB321-06ZAZA	SIN TWIST WIRE		
X1	QAX0740-001	CRYSTAL	4.433619MHz	
X3001	QAX0445-001	CRYSTAL	32.768kHz	

△ Symbol No.	Part No.	Part Name	Description	Local
X3002	QAX0527-001	CRYSTAL	10.000000MHz	
X3301	QAX0444-001	CRYSTAL	32.768kHz	
X3302	QAX0527-001	CRYSTAL	10.000000MHz	

## Terminal board

Block No. [0][6]

△ Symbol No.	Part No.	Part Name	Description	Local
PW1	LPA10264-02A3	TERMINAL BOARD ASSY		A
PW1	LPA10264-01A3	TERMINAL BOARD ASSY		B,C,D,E
IC801	LA7151	IC		
IC901	HA118226F	IC		
IC902	BA7623F-X	SOP IC		
Q901	2SC2412K/QRS/-X	TRANSISTOR		
Q902	2SC2412K/QRS/-X	TRANSISTOR		
Q903	DTC144WKA-X	DIGI TRANSISTOR		
Q904	DTC144WKA-X	DIGI TRANSISTOR		
Q907	2SA1037AK/QR/-X	TRANSISTOR		
Q908	2SA1037AK/QR/-X	TRANSISTOR		
Q912	2SA1037AK/QR/-X	TRANSISTOR		
Q913	2SA1037AK/QR/-X	TRANSISTOR		
Q917	2SC2412K/QRS/-X	TRANSISTOR		
Q917	or 2SD601A/QRS/-X	TRANSISTOR		
Q917	or 2SC3928A/QRS/-X	TRANSISTOR		
Q918	2SC2412K/QRS/-X	TRANSISTOR		
Q918	or 2SD601A/QRS/-X	TRANSISTOR		
Q918	or 2SC3928A/QRS/-X	TRANSISTOR		
Q919	DTA144WKA-X	TRANSISTOR		
Q919	or UN211E-X	DIGI TRANSISTOR		
Q919	or RT1P44HC-X	DIGI TRANSISTOR		
Q932	2SA1576A/QR/-X	TRANSISTOR		
Q932	or 2PA1576R/-X	TRANSISTOR		
Q932	or 2SB1218A/QR/-X	TRANSISTOR		
Q933	2SA1576A/QR/-X	TRANSISTOR		
Q933	or 2PA1576R/-X	TRANSISTOR		
Q933	or 2SB1218A/QR/-X	TRANSISTOR		
Q936	2SA1576A/QR/-X	TRANSISTOR		
Q936	or 2PA1576R/-X	TRANSISTOR		
Q936	or 2SB1218A/QR/-X	TRANSISTOR		
Q941	2SA1037AK/QR/-X	TRANSISTOR		
Q942	DTC114TKA-X	TRANSISTOR		
Q943	DTC144WKA-X	DIGI TRANSISTOR		
Q944	DTC114EKA-X	DIGI TRANSISTOR		
D902	QRE141J-181Y	C RESISTOR	180Ω 1/4W J	
D904	MTZJ9.1B-T2	Z DIODE		
D904	or RD9.1ES/B2/-T2	Z DIODE		
D905	1SS133-T2	SI DIODE		
D905	or 1SS270A-T2	SI DIODE		
C801	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M	
C802	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M	
C803	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M	
C804	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M	
C805	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M	
C806	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M	
C807	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C901	QEKJ0JM-227Z	E CAPACITOR	220uF 6.3V M	
C902	NDC31HJ-331X	C CAPACITOR	330pF 50V J	
C903	NDC31HJ-331X	C CAPACITOR	330pF 50V J	
C904	NDC31HJ-331X	C CAPACITOR	330pF 50V J	
C905	NDC31HJ-331X	C CAPACITOR	330pF 50V J	
C906	NCB31HK-471X	C CAPACITOR	470pF 50V K	
C907	NCB31HK-471X	C CAPACITOR	470pF 50V K	
C908	NCB31HK-471X	C CAPACITOR	470pF 50V K	
C909	NCB31HK-471X	C CAPACITOR	470pF 50V K	
C914	QEKJ0JM-227Z	E CAPACITOR	220uF 6.3V M	
C915	QEKJ0JM-337Z	E CAPACITOR	330uF 6.3V M	
C916	QEKJ0JM-337Z	E CAPACITOR	330uF 6.3V M	
C917	QEKJ0JM-337Z	E CAPACITOR	330uF 6.3V M	
C918	NDC31HJ-331X	C CAPACITOR	330pF 50V J	

MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

△ Symbol No.	Part No.	Part Name	Description	Local
C919	NDC31HJ-331X	C CAPACITOR	330pF 50V J	
C920	NDC31HJ-331X	C CAPACITOR	330pF 50V J	
C921	NDC31HJ-331X	C CAPACITOR	330pF 50V J	
C922	NCB31HK-471X	C CAPACITOR	470pF 50V K	
C923	NCB31HK-471X	C CAPACITOR	470pF 50V K	
C924	NCB31HK-471X	C CAPACITOR	470pF 50V K	
C925	NCB31HK-471X	C CAPACITOR	470pF 50V K	
C930	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C932	NCF31EZ-104X	C CAPACITOR	0.1uF 25V Z	
C934	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C935	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C937	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C939	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C940	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C941	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C942	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M	
C944	QEKJ1CM-476Z	E CAPACITOR	47uF 16V M	
C950	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C951	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C952	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C953	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C954	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C955	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C956	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M	
C957	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C960	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C961	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M	
C962	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C963	QEKJ1CM-476Z	E CAPACITOR	47uF 16V M	
C964	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C965	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C968	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C971	QEKJ1CM-476Z	E CAPACITOR	47uF 16V M	
C973	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C981	QEKJ0JM-227Z	E CAPACITOR	220uF 6.3V M	
C982	QEKJ0JM-337Z	E CAPACITOR	330uF 6.3V M	
C983	QEKJ0JM-337Z	E CAPACITOR	330uF 6.3V M	
C986	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C988	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C991	QEKJ0JM-227Z	E CAPACITOR	220uF 6.3V M	
C992	QEKJ0JM-227Z	E CAPACITOR	220uF 6.3V M	
C994	QEKJ0JM-227Z	E CAPACITOR	220uF 6.3V M	
C996	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C997	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C6114	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	C
R901	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R902	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R903	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J	
R904	NRSA63J-474X	MG RESISTOR	470kΩ 1/16W J	
R909	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R910	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R911	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R912	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R913	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R914	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R915	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R918	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R919	QRE141J-131Y	C RESISTOR	130Ω 1/4W J	
R920	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R921	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R922	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R923	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R924	NRSA63D-680X	MG RESISTOR	68Ω 1/16W D	
R925	NRSA63D-750X	MG RESISTOR	75Ω 1/16W D	
R926	NRSA63D-750X	MG RESISTOR	75Ω 1/16W D	
R927	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R928	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R937	QRE141J-101Y	C RESISTOR	100Ω 1/4W J	
R939	QRE141J-101Y	C RESISTOR	100Ω 1/4W J	
R940	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R943	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R944	QRE121J-331Y	C RESISTOR	330Ω 1/2W J	
R945	QRE121J-331Y	C RESISTOR	330Ω 1/2W J	
R949	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R950	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R951	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R952	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	

△ Symbol No.	Part No.	Part Name	Description	Local
R953	QRE141J-102Y	C RESISTOR	1kΩ 1/4W J	
R954	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R960	QRE141J-471Y	C RESISTOR	470Ω 1/4W J	
R961	QRE141J-471Y	C RESISTOR	470Ω 1/4W J	
R965	QRE121J-331Y	C RESISTOR	330Ω 1/2W J	
R966	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R967	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R968	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R969	QRE141J-101Y	C RESISTOR	100Ω 1/4W J	
R976	QRE141J-102Y	C RESISTOR	1kΩ 1/4W J	
R977	QRE141J-473Y	C RESISTOR	47kΩ 1/4W J	
R978	NRSA63J-393X	MG RESISTOR	39kΩ 1/16W J	
R985	NRSA63D-750X	MG RESISTOR	75Ω 1/16W D	
R986	NRSA63D-750X	MG RESISTOR	75Ω 1/16W D	
R987	NRSA63D-750X	MG RESISTOR	75Ω 1/16W D	
R988	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R989	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R990	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
R991	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	
R992	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R993	NRSA63J-393X	MG RESISTOR	39kΩ 1/16W J	
R994	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R6132	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	C
L901	QQL071J-100Y	COIL	10uH J	
L902	QQL071J-100Y	COIL	10uH J	
L903	QQL071J-1R0Y	COIL	1uH J	
L904	QQL071J-4R7Y	COIL	4.7uH J	
L905	QQL071J-4R7Y	COIL	4.7uH J	
L906	QQL071J-100Y	COIL	10uH J	
L907	QQL071J-100Y	COIL	10uH J	
L908	QQL231J-R22Y	COIL	0.22uH J	
L909	QQL071J-4R7Y	COIL	4.7uH J	
L910	QQL071J-4R7Y	COIL	4.7uH J	
L914	QQL071J-1R0Y	COIL	1uH J	
L917	QQL29BJ-100Z	P COIL	10uH J	
L918	QQL29BJ-100Z	P COIL	10uH J	
L919	QQL29BJ-100Z	P COIL	10uH J	
L931	QQL071J-100Y	COIL	10uH J	
L932	QQL071J-100Y	COIL	10uH J	
L933	QQL071J-100Y	COIL	10uH J	
L934	QQL071J-100Y	COIL	10uH J	
CN913	QGB2024J1-14S	CONNECTOR	B-B (1-14)	
CN914	QGB2024J1-14S	CONNECTOR	B-B (1-14)	
CN915	QGB2024J1-17S	CONNECTOR	B-B (1-17)	
ET1	QNZ0431-001Z	EARTH TERMINAL		
J901	QNZ0627-001	21P CONNECTOR	L-1 N/OUT	
J902	QNZ0627-001	21P CONNECTOR	L-2 IN/DECODER	
J905	QNN0599-002	PIN JACK	COMPONENT VIDEO OUT	
J907	QNN0295-002	PIN JACK	AUDIO OUT	
OT3	LP40229-002A	PLATE		A
W101	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W102	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W103	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W104	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W105	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W106	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W107	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	

## Tuner board

Block No. [0][7]

△ Symbol No.	Part No.	Part Name	Description	Local
PW1	LPA10264-02A1	TUNER BOARD ASSY		A
PW1	LPA10264-01A1	TUNER BOARD ASSY		B,C,D,E
Q6001	2SD2144S/UV/-T	TRANSISTOR		
Q6030	2SA1037AK/QR/-X	TRANSISTOR		
Q6030	or 2SA1530A/QR/-X	TRANSISTOR		
Q6031	DTC114EKA-X	DIGI TRANSISTOR		
Q6031	or RT1N141C-X	DIGI TRANSISTOR		
Q6130	2SA1037AK/QR/-X	TRANSISTOR		

MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

△ Symbol No.	Part No.	Part Name	Description	Local
Q6130	or 2SA1530A/QR-X	TRANSISTOR		
Q6131	DTC114EKA-X	DIGI TRANSISTOR		
Q6131	or RT1N141C-X	DIGI TRANSISTOR		
D6002	HZ30-2L-T2	Z DIODE		
C6001	QEKJ0JM-107Z	E CAPACITOR	100uF 6.3V M	
C6002	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C6037	QEKJ1CM-106Z	E CAPACITOR	10uF 16V M	A
C6114	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	B,D,E
C6137	QEKJ1CM-106Z	E CAPACITOR	10uF 16V M	
C6501	QEKJ0JM-337Z	E CAPACITOR	330uF 6.3V M	
C6502	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C6503	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C6603	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
R6001	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
R6002	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R6020	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	A
R6021	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	A
R6030	QRE141J-102Y	C RESISTOR	1kΩ 1/4W J	
R6031	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R6032	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J	A
R6033	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J	A
R6080	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R6120	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R6121	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R6130	QRE141J-332Y	C RESISTOR	3.3kΩ 1/4W J	
R6131	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R6132	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	A
R6132	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	B,D,E
R6133	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	A
L6001	QQL29BK-1R0Z	P COIL	1uH K	
L6002	QQL29BK-1R0Z	P COIL	1uH K	
L6005	QQL29BK-1R0Z	P COIL	1uH K	
L6101	QQL29BK-1R0Z	P COIL	1uH K	
L6102	QQL29BK-1R0Z	P COIL	1uH K	
L6501	QQL29BJ-3R3Z	P COIL	3.3uH J	
L6601	QQL29BJ-3R3Z	P COIL	3.3uH J	
BK1	LP21286-001A	BRACKET(TUNER)		
CD1	QAM0641-001	RF CABLE		
CD2	QAM0641-001	RF CABLE		
CD3	QAM0641-001	RF CABLE		
CN6001	QGF1207F1-14	CONNECTOR	FFC/FPC (1-14)	
CN6002	QGF1207F1-13	CONNECTOR	FFC/FPC (1-13)	
CN6003	QGF1207F1-07	CONNECTOR	FFC/FPC (1-7)	
OT1	LP31391-001A	SPECIAL SCREW	TUNER(x6)	
OT2	LP40229-002A	PLATE		
OT3	LP40229-002A	PLATE		B,C,D,E
TU6001	QAU0299-001	TUNER		A
TU6001	QAU0323-001	TUNER		B,C,D,E
TU6002	QAU0299-001	TUNER		A
TU6002	QAU0323-001	TUNER		B,C,D,E
TU6003	QNZ0681-001	RF CONNECTOR		

## A/C head board

Block No. [1][2]

△ Symbol No.	Part No.	Part Name	Description	Local
PW1	LPA10158-01A1	A/C HEAD BOARD ASSY		

## Demod board

Block No. [1][4]

△ Symbol No.	Part No.	Part Name	Description	Local
PW1	LPA10094-16A	DEMOD BOARD ASSY		A
PW1	LPA10094-15A	DEMOD BOARD ASSY		B,C,D,E
IC6701	MSP3417G-X	IC		A
IC6701	or MSP3417GQGB8V3X	IC		A
IC6701	MSP3417GQGB8V3X	IC		B,C,D,E
IC6701	or MSP3417G-X	IC		B,C,D,E
Q6701	2SC3936/BC/-X	TRANSISTOR		
D6701	1SS133-T2	SI DIODE		
D6701	or 1SS270A-T2	SI DIODE		
C6701	NCB21HK-103X	C CAPACITOR	0.01uF 50V K	
C6704	NCB21HK-103X	C CAPACITOR	0.01uF 50V K	
C6707	NDC21HJ-470X	C CAPACITOR	47pF 50V J	
C6708	NDC21HJ-8R0X	C CAPACITOR	8pF 50V J	
C6709	NDC21HJ-150X	C CAPACITOR	15pF 50V J	
C6713	NCF21CZ-224X	C CAPACITOR	0.22uF 16V Z	
C6714	NCB21HK-222X	C CAPACITOR	2200pF 50V K	
C6715	QEKJ1HM-225Z	E CAPACITOR	2.2uF 50V M	
C6716	NCB21HK-222X	C CAPACITOR	2200pF 50V K	
C6717	QEKJ1HM-225Z	E CAPACITOR	2.2uF 50V M	
C6719	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C6720	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C6721	NCB21HK-103X	C CAPACITOR	0.01uF 50V K	
C6723	NCB21HK-103X	C CAPACITOR	0.01uF 50V K	
C6724	QEKJ1HM-225Z	E CAPACITOR	2.2uF 50V M	A
R6701	NRSA02J-392X	MG RESISTOR	3.9kΩ 1/10W J	
R6702	NRSA02J-682X	MG RESISTOR	6.8kΩ 1/10W J	
R6703	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
R6704	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R6705	NRSA02J-271X	MG RESISTOR	270Ω 1/10W J	
R6707	NRSA02J-330X	MG RESISTOR	33Ω 1/10W J	
R6708	NQR0200-003X	FERRITE BEADS		A
R6708	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W J	B,C,D,E
R6709	NQR0200-003X	FERRITE BEADS		A
R6709	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	B,C,D,E
R6710	NRSA02J-120X	MG RESISTOR	12Ω 1/10W J	A
R6710	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	B,C,D,E
R6711	NRSA02J-104X	MG RESISTOR	100kΩ 1/10W J	
R6712	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R6713	NRSA02J-123X	MG RESISTOR	12kΩ 1/10W J	
R6714	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	
R6715	NRSA02J-123X	MG RESISTOR	12kΩ 1/10W J	
R6716	NRSA02J-470X	MG RESISTOR	47Ω 1/10W J	
R6719	QRE141J-103Y	C RESISTOR	10kΩ 1/4W J	
R6720	NRSA02J-562X	MG RESISTOR	5.6kΩ 1/10W J	
R6721	NRSA02J-562X	MG RESISTOR	5.6kΩ 1/10W J	
BK1	LP40425-001A	BRACKET(PWB)		
CN6701	QGG2502K1-10	CONNECTOR	(1-10)	
K6701	NQR0200-003X	FERRITE BEADS		
K6702	NQR0200-003X	FERRITE BEADS		
K6703	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	A
K6703	NQR0200-003X	FERRITE BEADS		B,C,D,E
K6704	NRSA02J-102X	MG RESISTOR	1kΩ 1/10W J	A
K6704	NQR0200-003X	FERRITE BEADS		B,C,D,E
K6705	NQR0200-003X	FERRITE BEADS		
K6706	NQR0200-003X	FERRITE BEADS		
K6707	NQR0200-003X	FERRITE BEADS		A
W6701	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
X6701	QAX0773-001Z	CRYSTAL	18.432000MHz	

MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

## Operation/jack board

Block No. [2][7]

△ Symbol No.	Part No.	Part Name	Description	Local
PW1	LPA10249-03B5	OPERATION/JACK BOARD ASSY		
C7201	NDC31HJ-102X	C CAPACITOR	1000pF 50V J	
C7202	NDC31HJ-102X	C CAPACITOR	1000pF 50V J	
C7204	NDC31HJ-102X	C CAPACITOR	1000pF 50V J	
C7206	NCB31HK-103X	C CAPACITOR	0 01uF 50V K	
R7202	QRE141J-750Y	C RESISTOR	75Ω 1/4W J	
R7206	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R7207	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
L7202	QRE141J-101Y	C RESISTOR	100Ω 1/4W J	
L7203	QRE141J-101Y	C RESISTOR	100Ω 1/4W J	
CN7201	QGF1208C1-09	CONNECTOR	FFC/FPC (1-9)	
CN7202	QGD2503C1-03	CONNECTOR	(1-3)	
J1	QUB221-07A2A4-E	S N TWIST WIRE		
J7201	QNN0591-001	PIN JACK	FRONT AV N	
J7204	QND0084-001	S JACK	FRONT S-V DEO IN	
S7216	QSW0381-001Z	TACT SWITCH	VHS EJECT	
S7218	QSW0381-001Z	TACT SWITCH	STANDBY/ON	

## Switch/display board

Block No. [2][8]

△ Symbol No.	Part No.	Part Name	Description	Local
PW1	LPA10249-03B4	SWITCH/DISPLAY BOARD ASSY		
IC7001	PT6315	IC		
IC7002	GP1UM281XKVF	IR DETECT UNIT		
IC7002	or PNA4652M00XB	IR DETECT UNIT		
Q7001	UN221L-X	DIGI TRANSISTOR		
Q7001	or DTC143EKA-X	DIGI TRANSISTOR		
Q7001	or RT1N431C-X	TRANSISTOR		
Q7002	UN221L-X	DIGI TRANSISTOR		
Q7002	or DTC143EKA-X	DIGI TRANSISTOR		
Q7002	or RT1N431C-X	TRANSISTOR		
Q7003	UN221L-X	DIGI TRANSISTOR		
Q7003	or DTC143EKA-X	DIGI TRANSISTOR		
Q7003	or RT1N431C-X	TRANSISTOR		
D7001	1SS133-T2	SI DIODE		
D7001	or 1SS270A-T2	SI DIODE		
D7002	1SS133-T2	SI DIODE		
D7002	or 1SS270A-T2	SI DIODE		
D7003	1SS133-T2	SI DIODE		
D7003	or 1SS270A-T2	SI DIODE		
D7004	1SS133-T2	SI DIODE		
D7004	or 1SS270A-T2	SI DIODE		
D7005	1SS133-T2	SI DIODE		
D7005	or 1SS270A-T2	SI DIODE		
D7012	1SS133-T2	SI DIODE		
D7012	or 1SS270A-T2	SI DIODE		
D7013	1SS133-T2	SI DIODE		
D7013	or 1SS270A-T2	SI DIODE		
D7014	1SS133-T2	SI DIODE		
D7014	or 1SS270A-T2	SI DIODE		
D7021	RD9.1ES/B2/-T2	Z DIODE		
D7021	or MTZJ9.1B-T2	Z DIODE		
D7041	SLR343WBCT3	LED	VHS	
D7042	SLR-343VC-T	LED	VHS REC	
D7043	SLR-343VC-T	LED	HDD REC	
D7044	SLR-343VC-T	LED	DVD REC	
D7045	SDPB50A0/DEGH/LED	LED	ILLUM	
D7045	or SLA-580BCT3F	LED		
D7045	or SLA-580BC3T3F	LED		
D7046	SLR343WBCT3	LED	HDD	
D7047	SLR343WBCT3	LED	DVD	

△ Symbol No.	Part No.	Part Name	Description	Local
D7048	SDPB50A0/DEGH/LED		ILLUM	
D7048	or SLA-580BCT3F	LED		
D7048	or SLA-580BC3T3F	LED		
C7001	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C7002	QCFB1HZ-104Y	C CAPACITOR	0.1uF 50V Z	
C7003	QEKJ1HM-106Z	E CAPACITOR	10uF 50V M	
C7006	QEKJ0JM-227Z	E CAPACITOR	220uF 6.3V M	
C7008	QERF1AM-227Z	E CAPACITOR	220uF 10V M	
C7010	NCF31HZ-473X	C CAPACITOR	0 047uF 50V Z	
C7011	NCF31HZ-473X	C CAPACITOR	0 047uF 50V Z	
R7001	QRE141J-103Y	C RESISTOR	10kΩ 1/4W J	
R7002	QRE141J-103Y	C RESISTOR	10kΩ 1/4W J	
R7003	QRE141J-823Y	C RESISTOR	82kΩ 1/4W J	
R7005	QRE141J-472Y	C RESISTOR	4.7kΩ 1/4W J	
R7006	QRE141J-472Y	C RESISTOR	4.7kΩ 1/4W J	
R7007	QRE141J-102Y	C RESISTOR	1kΩ 1/4W J	
R7009	QRE141J-103Y	C RESISTOR	10kΩ 1/4W J	
R7010	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R7013	QRE141J-333Y	C RESISTOR	33kΩ 1/4W J	
R7014	QRE141J-333Y	C RESISTOR	33kΩ 1/4W J	
R7015	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R7022	QRE141J-102Y	C RESISTOR	1kΩ 1/4W J	
R7041	QRE141J-331Y	C RESISTOR	330Ω 1/4W J	
R7042	QRE141J-181Y	C RESISTOR	180Ω 1/4W J	
R7043	QRE141J-181Y	C RESISTOR	180Ω 1/4W J	
R7044	NRSA63J-181X	MG RESISTOR	180Ω 1/16W J	
R7045	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R7046	QRE141J-331Y	C RESISTOR	330Ω 1/4W J	
R7047	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J	
R7048	QRE141J-101Y	C RESISTOR	100Ω 1/4W J	
R7049	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
CN7001	QGF1209F2-11	CONNECTOR	FFC/FPC (1-11)	
CN7002	QGF1207C1-04	CONNECTOR	FFC/FPC (1-4)	
DI7001	QLF0143-001	FL TUBE		
FW7001	QUM023-07A4BF	PARA RIBON WIRE		
HD1	PQ34949-1-1	FL HOLDER(L)		
HD2	PQ34950-1-1	FDP HOLDER(R)		
S7002	QSW0381-001Z	TACT SWITCH	PR+	
S7004	QSW0381-001Z	TACT SWITCH	DISPLAY	
S7012	QSW0381-001Z	TACT SWITCH	VHS/HDD/DVD	
S7013	QSW0381-001Z	TACT SWITCH	FF	
S7014	QSW0381-001Z	TACT SWITCH	PAUSE	
S7015	QSW0381-001Z	TACT SWITCH	STOP	
S7022	QSW0381-001Z	TACT SWITCH	PR-	
S7023	QSW0381-001Z	TACT SWITCH	REC MODE	
S7024	QSW0381-001Z	TACT SWITCH	VHS TIMER	
S7032	QSW0381-001Z	TACT SWITCH	OPEN/CLOSE	
S7033	QSW0381-001Z	TACT SWITCH	REW	
S7034	QSW0381-001Z	TACT SWITCH	REC	
S7035	QSW0381-001Z	TACT SWITCH	PLAY	
W41	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W42	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W43	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W44	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	

## Jack board

Block No. [3][6]

△ Symbol No.	Part No.	Part Name	Description	Local
PW1	LPA10249-01C3	JACK BOARD ASSY		
CN4104	QGA2001C1-06	CONNECTOR	W-B (1-6)	
J4112	QNZ0675-001	D CONNECTOR	FRONT DV IN	
K4101	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K4102	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K4103	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K4104	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K4105	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K4106	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W31	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	



MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

△ Symbol No.	Part No.	Part Name	Description	Local
W32	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W33	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W34	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W35	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W36	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	

## Loading motor board

Block No. [5][5]

△ Symbol No.	Part No.	Part Name	Description	Local
PW1	LPA10158-01A2	LOADING MOTOR BOARD ASSY		

## Video switch board

Block No. [8][3]

△ Symbol No.	Part No.	Part Name	Description	Local
PW1	LPA10264-02A2	VIDEO SWITCH BOARD ASSY		A
PW1	LPA10264-01A2	VIDEO SWITCH BOARD ASSY		B,C,D,E

IC501	JCP8038-I	IC		
IC501	or JCP8038	IC		
IC502	LC74793	IC		

Q503	2SD601A/QRS/-X	TRANSISTOR		
Q503	or 2SC2412K/QRS/-X	TRANSISTOR		
Q503	or 2SC3928A/QRS/-X	TRANSISTOR		
Q504	2SB709A/QR/-X	TRANSISTOR		
Q504	or 2SA1037AK/QR/-X	TRANSISTOR		
Q504	or 2SA1530A/QR/-X	TRANSISTOR		
Q505	2SB709A/QR/-X	TRANSISTOR		
Q505	or 2SA1037AK/QR/-X	TRANSISTOR		
Q505	or 2SA1530A/QR/-X	TRANSISTOR		
Q506	2SB709A/QR/-X	TRANSISTOR		
Q506	or 2SA1037AK/QR/-X	TRANSISTOR		
Q506	or 2SA1530A/QR/-X	TRANSISTOR		

D501	DA204U-X	SI DIODE		
D502	DA204U-X	SI DIODE		

C501	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M	
C502	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C503	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C505	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C506	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C508	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C510	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C512	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C513	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C515	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C516	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C518	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C519	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C521	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C522	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C523	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C524	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C525	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C526	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C527	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C528	QEKJ1EM-106Z	E CAPACITOR	10uF 25V M	
C529	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M	
C530	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C533	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C534	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M	
C535	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C536	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C537	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C539	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	

△ Symbol No.	Part No.	Part Name	Description	Local
C540	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C541	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C543	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C545	QEKJ1HM-225Z	E CAPACITOR	2.2uF 50V M	
C546	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C547	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C549	NDC31HJ-100X	C CAPACITOR	10pF 50V J	
C550	NDC31HJ-820X	C CAPACITOR	82pF 50V J	
C556	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C557	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M	
C558	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	
C559	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C571	QEKJ0JM-227Z	E CAPACITOR	220uF 6.3V M	
C572	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C573	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C574	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C577	NCB31CK-563X	C CAPACITOR	0.056uF 16V K	
C578	QEKJ1HM-475Z	E CAPACITOR	4.7uF 50V M	
C579	NCB31AK-224X	C CAPACITOR	0.22uF 10V K	
C580	QEKJ0JM-227Z	E CAPACITOR	220uF 6.3V M	
C581	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	

R501	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R503	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R504	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R505	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R507	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R509	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R510	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R511	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R512	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R518	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	
R521	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J	
R526	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R527	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R528	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R529	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R533	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R534	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R535	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R542	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R545	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R546	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R547	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R548	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R571	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R573	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R574	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R575	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R577	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R578	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
R579	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R580	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R581	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	

L501	QQL29BJ-100Z	P COIL	10uH J	
L502	QQL29BJ-100Z	P COIL	10uH J	
L504	QQL231J-330Y	COIL	33uH J	
L508	QQL29BJ-100Z	P COIL	10uH J	

B501	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
BK1	LP40425-001A	BRACKET(PWB)		
CN501	QGF1208F1-04	CONNECTOR	FFC/FPC (1-4)	
CN502	QGG2503K2-20	CONNECTOR	(1-20)	
CN504	QGF1208F1-06	CONNECTOR	FFC/FPC (1-6)	A
W51	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W52	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W53	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W54	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W55	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W56	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W57	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	

MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

## Secam board

Block No. [8][8]

△ Symbol No.	Part No.	Part Name	Description	Local
PW1	LPA20037-01B	SECAM BOARD ASSY		A
IC301	LA7358	IC		A
IC4301	LA7357M-W	IC		A
IC4304	74HC4538D-X	IC		A
Q301	2SA1037AK/QR/-X	TRANSISTOR		A
Q301	or 2SB709A/QR/-X	TRANSISTOR		A
Q301	or 2SA1530A/QR/-X	TRANSISTOR		A
Q302	DTA144WKA-X	TRANSISTOR		A
Q302	or UN211E-X	DIGI TRANSISTOR		A
Q302	or RT1P44HC-X	DIGI TRANSISTOR		A
Q4301	2SD601A/QRS/-X	TRANSISTOR		A
Q4301	or 2SC2412K/QRS/-X	TRANSISTOR		A
Q4301	or 2SC3928A/QRS/-X	TRANSISTOR		A
Q4302	2SB709A/QR/-X	TRANSISTOR		A
Q4302	or 2SA1037AK/QR/-X	TRANSISTOR		A
Q4302	or 2SA1530A/QR/-X	TRANSISTOR		A
Q4303	2SB709A/QR/-X	TRANSISTOR		A
Q4303	or 2SA1037AK/QR/-X	TRANSISTOR		A
Q4303	or 2SA1530A/QR/-X	TRANSISTOR		A
D4301	1SS133-T2	SI DIODE		A
C301	NDC31HJ-151X	C CAPACITOR	150pF 50V J	A
C302	QEKJ1HM-225Z	E CAPACITOR	2.2uF 50V M	A
C303	NCB31EK-682X	C CAPACITOR	6800pF 25V K	A
C304	NCB31EK-682X	C CAPACITOR	6800pF 25V K	A
C305	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A
C307	NDC31HJ-151X	C CAPACITOR	150pF 50V J	A
C308	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A
C309	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	A
C310	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A
C311	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A
C312	NCB31HK-102X	C CAPACITOR	1000pF 50V K	A
C313	QEKJ1HM-474Z	E CAPACITOR	0.47uF 50V M	A
C315	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M	A
C316	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A
C317	NCB31HK-681X	C CAPACITOR	680pF 50V K	A
C318	NCB31EK-223X	C CAPACITOR	0.022uF 25V K	A
C319	QEKJ1HM-105Z	E CAPACITOR	1uF 50V M	A
C320	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A
C321	NDC31HG-301X	C CAPACITOR	300pF 50V G	A
C322	NCB31AK-474X	C CAPACITOR	0.47uF 10V K	A
C323	QEKJ0JM-476Z	E CAPACITOR	47uF 6.3V M	A
C4301	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A
C4302	QEKJ1CM-476Z	E CAPACITOR	47uF 16V M	A
C4304	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A
C4305	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A
C4306	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A
C4307	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A
C4308	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A
C4309	NCB31EK-103X	C CAPACITOR	0.01uF 25V K	A
C4310	NDC31HJ-471X	C CAPACITOR	470pF 50V J	A
C4318	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	A
C4319	NDC31HJ-471X	C CAPACITOR	470pF 50V J	A
R301	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	A
R302	NRSA63J-124X	MG RESISTOR	120kΩ 1/16W J	A
R303	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	A
R304	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J	A
R305	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	A
R306	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	A
R307	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	A
R308	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	A
R309	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
R310	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	A
R311	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	A
R312	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	A
R313	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	A
R314	NRSA63D-243X	MG RESISTOR	24kΩ 1/16W D	A
R315	NRSA63J-564X	MG RESISTOR	560kΩ 1/16W J	A
R316	NRSA63J-124X	MG RESISTOR	120kΩ 1/16W J	A
R329	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A

△ Symbol No.	Part No.	Part Name	Description	Local
R4301	NRSA63J-561X	MG RESISTOR	560Ω 1/16W J	A
R4302	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
R4304	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	A
R4305	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	A
R4306	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	A
R4307	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	A
R4308	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	A
R4309	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	A
R4310	NRSA63J-822X	MG RESISTOR	8.2kΩ 1/16W J	A
R4311	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	A
R4312	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
R4317	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	A
R4318	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	A
R4319	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	A
R4320	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
L301	QQL29BJ-100Z	P COIL	10uH J	A
L302	QQL231J-6R8Y	COIL	6.8uH J	A
L303	QQL231J-270Y	COIL	27uH J	A
L4301	QQL29BJ-100Z	P COIL	10uH J	A
CN301	QGF1207C1-15	CONNECTOR	FFC/FPC (1-15)	A
CN4302	QGF1207C1-06	CONNECTOR	FFC/FPC (1-6)	A
W1	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
W2	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
W3	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
W4	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A
W5	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	A

## Junction board

Block No. [9][2]

△ Symbol No.	Part No.	Part Name	Description	Local
PW1	LPA10249-03B2	JUNCTION BOARD ASSY		
IC5502	MM1565AF-X	IC		
IC5505	MM1563DF-X	IC		
IC5506	MPD4S010	IC(HYBRID)		
IC8001	BA15218F-XE	IC		
IC8001	or RC4558D-X	IC		
IC8002	AK5381VTP-X	IC		
IC8002	or AK5357VT-X	IC		
IC8201	BA15218F-XE	IC		
IC8201	or RC4558D-X	IC		
IC8202	AK4381VT-X	IC		
IC8202	or AK4385VT-X	IC		
Q5501	2SD601A/QRS/-X	TRANSISTOR		
Q5501	or 2SC2412K/QRS/-X	TRANSISTOR		
Q5501	or 2SC3928A/QRS/-X	TRANSISTOR		
Q5502	UN2111-X	TRANSISTOR		
Q5502	or DTA114EKA-X	DIGI TRANSISTOR		
Q5502	or RT1P141C-X	DIGI TRANSISTOR		
Q5503	2SD2144S/UV/-T	TRANSISTOR		
Q5503	or 2SC3576-JVC-T	TRANSISTOR		
Q5504	UN2211-X	TRANSISTOR		
Q5504	or DTC114EKA-X	DIGI TRANSISTOR		
Q5504	or RT1N141C-X	DIGI TRANSISTOR		
Q5505	UN2111-X	TRANSISTOR		
Q5505	or DTA114EKA-X	DIGI TRANSISTOR		
Q5505	or RT1P141C-X	DIGI TRANSISTOR		
Q5506	UN2211-X	TRANSISTOR		
Q5506	or DTC114EKA-X	DIGI TRANSISTOR		
Q5506	or RT1N141C-X	DIGI TRANSISTOR		
Q5507	2SD1858/QR/-T	TRANSISTOR		
Q5508	2SA1585S/QR/-T	TRANSISTOR		
Q5509	2SA1585S/QR/-T	TRANSISTOR		
Q5510	UN2211-X	TRANSISTOR		
Q5510	or DTC114EKA-X	DIGI TRANSISTOR		
Q5510	or RT1N141C-X	DIGI TRANSISTOR		
Q7101	2SB709A/QR/-X	TRANSISTOR		
Q7101	or 2SA1037AK/QR/-X	TRANSISTOR		
Q7101	or 2SA1530A/QR/-X	TRANSISTOR		

MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
Q8001	2SC2412K/QRS/-X	TRANSISTOR			C8210	QEKC0JM-337Z	E CAPACITOR	330uF 6.3V M	
Q8001	or 2SD601A/QRS/-X	TRANSISTOR			C8231	QEKC0JM-107Z	E CAPACITOR	100uF 6.3V M	
Q8001	or 2SC3928A/QRS/-X	TRANSISTOR			C8232	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
Q8002	2SC2412K/QRS/-X	TRANSISTOR							
Q8002	or 2SD601A/QRS/-X	TRANSISTOR			R5501	QRE121J-561Y	C RESISTOR	560Ω 1/2W J	
Q8002	or 2SC3928A/QRS/-X	TRANSISTOR			R5502	QRE121J-561Y	C RESISTOR	560Ω 1/2W J	
Q8003	DTC144WKA-X	DIGI TRANSISTOR			R5503	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
Q8003	or UN221E-X	TRANSTSTOR			R5504	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
Q8003	or RT1N44HC-X	DIGI TRANSISTOR			R5505	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
Q8004	DTC144WKA-X	DIGI TRANSISTOR			R5506	QRE141J-471Y	C RESISTOR	470Ω 1/4W J	
Q8004	or UN221E-X	TRANSTSTOR			R5507	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
Q8004	or RT1N44HC-X	DIGI TRANSISTOR			R5508	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
Q8005	DTA144WKA-X	TRANSISTOR			R5509	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
Q8005	or UN221E-X	DIGI TRANSISTOR			R5510	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
Q8005	or RT1P44HC-X	DIGI TRANSISTOR			R5511	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
					R5512	NRSA02J-471X	MG RESISTOR	470Ω 1/10W J	
D5501	1A3G-T2	SI DIODE			R5513	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
D5501	or 10EDB20-T2	SI DIODE			R5514	QRE141J-271Y	C RESISTOR	270Ω 1/4W J	
D5501	or ERA15-02-T2	SI DIODE			R7101	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J	
D5502	1SS133-T2	SI DIODE			R7102	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
D5502	or 1SS270A-T2	SI DIODE			R7147	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
D5503	MTZJ27C-T2	Z DIODE			R7148	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
D5503	or RD27ES/B3-T2	Z DIODE			R7149	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
D5504	MTZJ5.6C-T2	Z DIODE			R7150	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
D5504	or RD5.6ES/B3-T2	Z DIODE			R7152	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
D5508	1SS133-T2	SI DIODE			R7153	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
					R8001	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C5504	NCB21AK-105X	C CAPACITOR	1uF 10V K		R8002	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C5505	QETN1AM-107Z	E CAPACITOR	100uF 50V M		R8003	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C5506	NCB31HK-471X	C CAPACITOR	470pF 50V K		R8004	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C5513	NCB21AK-105X	C CAPACITOR	1uF 10V K		R8005	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C5514	QETN0JM-107Z	E CAPACITOR	100uF 6.3V M		R8006	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C5515	NCB31HK-471X	C CAPACITOR	470pF 50V K		R8007	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C5516	QETN1AM-107Z	E CAPACITOR	100uF 10V M		R8008	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C5518	QECs1CM-477	E CAPACITOR	470uF 16V M		R8009	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
C5519	QECs1CM-477	E CAPACITOR	470uF 16V M		R8010	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
C5521	QECs1CM-477	E CAPACITOR	470uF 16V M		R8011	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
C5523	NCB10JK-106X	C CAPACITOR	10uF 6.3V K		R8012	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
C5524	NCB10JK-106X	C CAPACITOR	10uF 6.3V K		R8013	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
C5526	NCB10JK-106X	C CAPACITOR	10uF 6.3V K		R8014	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
C5530	QECs1CM-477	E CAPACITOR	470uF 16V M		R8015	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
C5531	NCB10JK-106X	C CAPACITOR	10uF 6.3V K		R8016	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
C5532	NCB10JK-106X	C CAPACITOR	10uF 6.3V K		R8017	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C5533	NCB10JK-106X	C CAPACITOR	10uF 6.3V K		R8018	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
C5534	NCB10JK-106X	C CAPACITOR	10uF 6.3V K		R8019	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
C5535	QETN1CM-108Z	E CAPACITOR	1000uF 16V M		R8051	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
C7123	NDC31HJ-120X	C CAPACITOR	12pF 50V J		R8052	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
C7124	NDC31HJ-6R0X	C CAPACITOR	6pF 50V J		R8201	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
C7141	NDC31HJ-390X	C CAPACITOR	39pF 50V J		R8202	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
C7143	NDC31HJ-100X	C CAPACITOR	10pF 50V J		R8203	NRSA63J-512X	MG RESISTOR	5.1kΩ 1/16W J	
C8001	NDC31HJ-101X	C CAPACITOR	100pF 50V J		R8204	NRSA63J-121X	MG RESISTOR	120Ω 1/16W J	
C8003	NDC31HJ-101X	C CAPACITOR	100pF 50V J		R8205	NRSA63J-121X	MG RESISTOR	120Ω 1/16W J	
C8005	NDC31HJ-101X	C CAPACITOR	100pF 50V J		R8206	NRSA63J-512X	MG RESISTOR	5.1kΩ 1/16W J	
C8007	NDC31HJ-101X	C CAPACITOR	100pF 50V J		R8207	NRSA63J-512X	MG RESISTOR	5.1kΩ 1/16W J	
C8009	QEKC1EM-106Z	E CAPACITOR	10uF 25V M		R8208	NRSA63J-121X	MG RESISTOR	120Ω 1/16W J	
C8010	QEKC1EM-106Z	E CAPACITOR	10uF 25V M		R8209	NRSA63J-121X	MG RESISTOR	120Ω 1/16W J	
C8011	QEKC1HM-475Z	E CAPACITOR	4.7uF 50V M		R8210	NRSA63J-512X	MG RESISTOR	5.1kΩ 1/16W J	
C8012	NCB31HK-104X	C CAPACITOR	0.1uF 50V K		R8211	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J	
C8013	QEKC0JM-107Z	E CAPACITOR	100uF 6.3V M		R8212	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
C8014	NCB31HK-104X	C CAPACITOR	0.1uF 50V K		R8213	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
C8015	QEKC0JM-107Z	E CAPACITOR	100uF 6.3V M		R8214	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
C8016	NCB31HK-104X	C CAPACITOR	0.1uF 50V K		R8215	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
C8051	QEKC0JM-337Z	E CAPACITOR	330uF 6.3V M		R8216	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
C8052	QEKC1CM-107Z	E CAPACITOR	100uF 16V M		R8217	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
C8053	NCB31HK-104X	C CAPACITOR	0.1uF 50V K		R8219	NRSA63J-432X	MG RESISTOR	4.3kΩ 1/16W J	
C8054	QEKC0JM-337Z	E CAPACITOR	330uF 6.3V M		R8220	NRSA63J-432X	MG RESISTOR	4.3kΩ 1/16W J	
C8055	NCB31HK-104X	C CAPACITOR	0.1uF 50V K		R8221	NRSA63J-432X	MG RESISTOR	4.3kΩ 1/16W J	
C8056	QEKC1CM-107Z	E CAPACITOR	100uF 16V M		R8222	NRSA63J-432X	MG RESISTOR	4.3kΩ 1/16W J	
C8057	QEKC1CM-107Z	E CAPACITOR	100uF 16V M		R8231	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
C8201	QEKC1CM-476Z	E CAPACITOR	47uF 16V M		R8232	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
C8202	NCB31HK-471X	C CAPACITOR	470pF 50V K		R8233	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
C8203	NCB31HK-471X	C CAPACITOR	470pF 50V K						
C8204	NCB31HK-472X	C CAPACITOR	4700pF 50V K		L5502	QQR0934-001	CHOKE COIL		
C8205	NCB31HK-471X	C CAPACITOR	470pF 50V K		L7101	QQL29BJ-100Z	P COIL	10uH J	
C8206	NCB31HK-472X	C CAPACITOR	4700pF 50V K		L7102	QQL071J-6R8Y	COIL	6.8uH J	
C8207	NCB31HK-471X	C CAPACITOR	470pF 50V K		L8001	QQL29BJ-220Z	P COIL	22uH J	
C8208	QEKC1CM-476Z	E CAPACITOR	47uF 16V M		L8002	QQL29BJ-220Z	P COIL	22uH J	
C8209	NCB31HK-104X	C CAPACITOR	0.1uF 50V K						

MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

△ Symbol No. Part No. Part Name Description Local

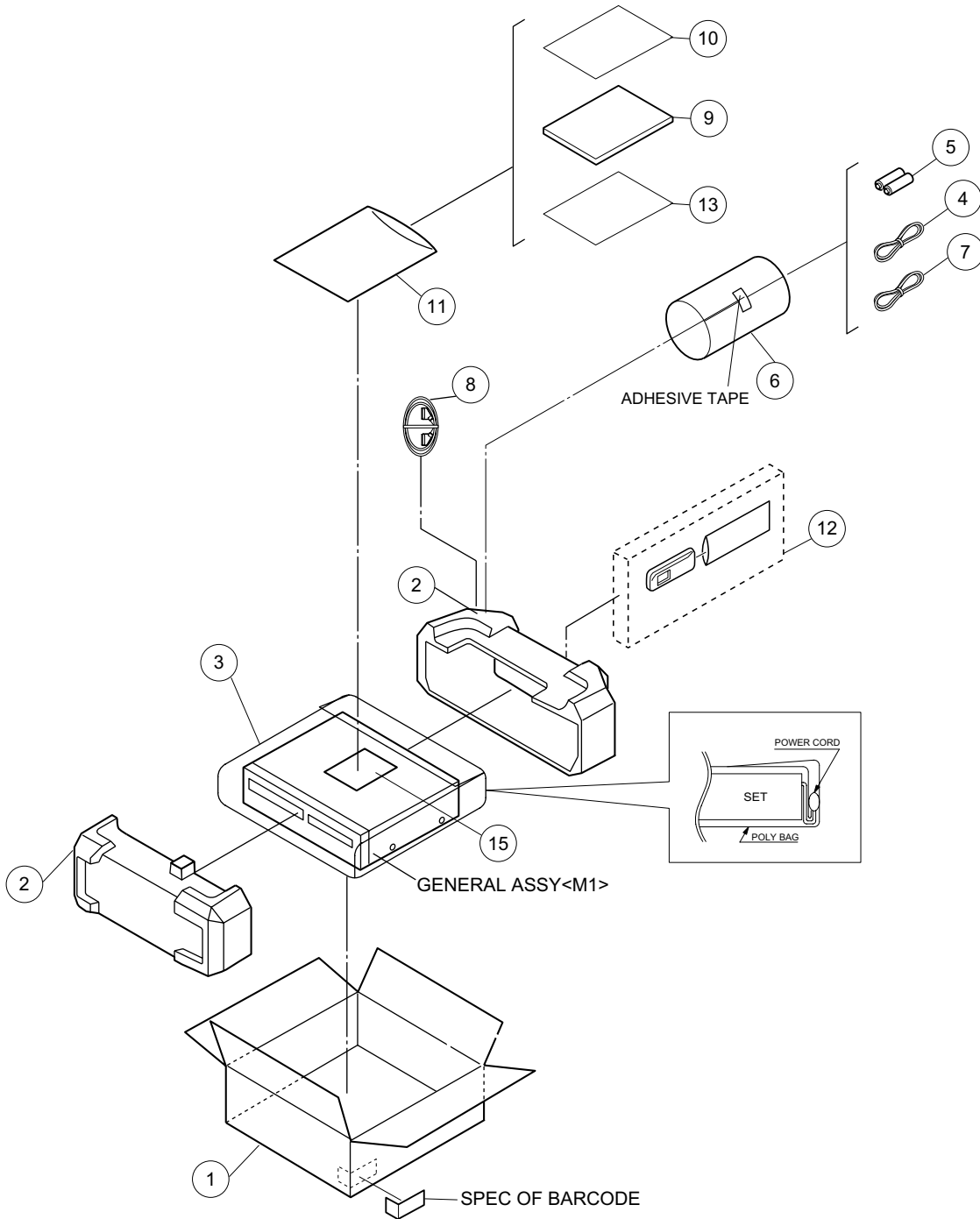
B7101	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
B7107	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
B7112	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
B7118	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
CN5501	QGF1208C1-19	CONNECTOR	FFC/FPC (1-19)	
CN5502	QGA2001C1-06	CONNECTOR	W-B (1-6)	
CN5504	QGA2501C1-04	CONNECTOR	W-B (1-4)	
CN7102	QGB1231M1-15	CONNECTOR	B-B (1-15)	
CN7103	QGF1207C1-04	CONNECTOR	FFC/FPC (1-4)	
CN7106	QGF1016C3-04	CONNECTOR	FFC/FPC (1-4)	
CN7107	QGF1207C1-09	CONNECTOR	FFC/FPC (1-9)	
CN7108	QGB2027M3-28S	CONNECTOR	B-B (1-28)	
CN7109	QGB2027M4-20S	CONNECTOR	B-B (1-20)	
CN7121	QGB2027M9-10	CONNECTOR	B-B (1-10)	
CN7123	QGF1207C1-04	CONNECTOR	FFC/FPC (1-4)	
CN7124	QGF1207C1-04	CONNECTOR	FFC/FPC (1-4)	
CN7126	QGA2001C1-06	CONNECTOR	W-B (1-6)	
CN8001	QGB1231M1-11	CONNECTOR	B-B (1-11)	
K4111	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K4112	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K4113	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K4114	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K7101	NQR0129-002X	FERRITE BEADS		
K7102	NQR0129-002X	FERRITE BEADS		
K7103	NQR0129-002X	FERRITE BEADS		
K7104	NQR0129-002X	FERRITE BEADS		
K8001	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K8002	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K8201	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K8202	NRSA63J-4R7X	MG RESISTOR	4.7Ω 1/16W J	
W1	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W2	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W6	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W7	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W8	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W10	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W11	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W12	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W13	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W14	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W15	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W16	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W17	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W18	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W19	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W20	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W22	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
W23	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	



# Packing materials and accessories parts list

The instruction manual to be provided with this product will differ according to the destination.

Block No. M3MM



MODEL	MARK	MODEL	MARK	MODEL	MARK
DR MX1SEF	A	DR MX1SEU	C	DR MX1SEZ	E
DR MX1SEK	B	DR MX1SEY	D		

## Packing and accessories

Block No. [M][3][M][M]

△ Symbol No.	Part No.	Part Name	Description	Local
1	LP31452-001A	PACKING CASE		
2	LP31454-001A	CUSHION ASSY		
3	PQM30021-105	POLY BAG		
4	QAM0002-001	RF CABLE		
5	-----	BATTERY	R6 TYPE(x2)	
6	QPC02202230P	POLY BAG	22cm x 22cm	
7	QAL0517-005	LED CABLE ASSY		
8	QAM0502-002	PERI CABLE		
△ 9	LPT0982-001A	INST.BOOK	(FRENCH)	A
△ 9	LPT0981-001A	INST.BOOK	(ENGLISH)	B
△ 9	LPT0976-001A	INST.BOOK	(ENGLISH)	C
△ 9	LPT0976-002A	INST.BOOK	(GERMANY)	C
△ 9	LPT0976-003A	INST.BOOK	(FRENCH)	C
△ 9	LPT0976-004A	INST.BOOK	(DUCH)	C
△ 9	LPT0976-005A	INST.BOOK	(SPANISH)	C
△ 9	LPT0976-006A	INST.BOOK	(ITALIAN)	C
△ 9	LPT0976-007A	INST.BOOK	(DANISH)	D
△ 9	LPT0976-008A	INST.BOOK	(FINNISH)	D
△ 9	LPT0976-009A	INST.BOOK	(SWEDISH)	D
△ 9	LPT0976-010A	INST.BOOK	(NORWEGIAN)	D
△ 9	LPT0976-011A	INST.BOOK	(CZECH)	E
△ 9	LPT0976-012A	INST.BOOK	(POLISH)	E
△ 9	LPT0976-013A	INST.BOOK	(HUNGARIAN)	E
10	-----	WARRANTY CARD	BT-54026-1	
11	QPC02503530P	POLY BAG	25cm x 35cm	
12	RM-SDR017E	REMOCON		
13	LYT0194-001B	Q.CARD		B
15	LPT1012-001A	SHEET(LOADING)		

# JVC

## SCHEMATIC DIAGRAMS

DVD / HDD VIDEO RECORDER & VIDEO CASSETTE RECORDER

### DR-MX1SEF, DR-MX1SEK, DR-MX1SEU, DR-MX1SEY, DR-MX1SEZ

CD-ROM No.SML200501



DR MX1SEF, DR MX1SEK, DR MX1SEU, DR MX1SEY, DR MX1SEZ [D4VC21]

For disassembling and assembling of MECHANISM ASSEMBLY, refer to the SERVICE MANUAL No.86700(MECHANISM ASSEMBLY).






# CHARTS AND DIAGRAMS

## NOTES OF SCHEMATIC DIAGRAM

### Safety precautions

The Components identified by the symbol  are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

### 1. Units of components on the schematic diagram

Unless otherwise specified.

- 1) All resistance values are in ohm. 1/6 W, 1/8 W (refer to parts list).  
Chip resistors are 1/16 W.  
K: KΩ(1000Ω), M: MΩ (1000KΩ)
- 2) All capacitance values are in μF, (P: PF).
- 3) All inductance values are in μH, (m: mH).
- 4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

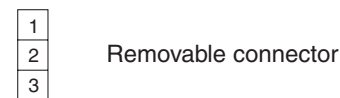
**Note: The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.**

### 2. Indications of control voltage

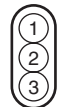
AUX : Active at high.

$\overline{\text{AUX}}$  or AUX(L) : Active at low.

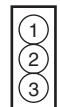
### 3. Interpreting Connector indications



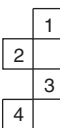
Removable connector



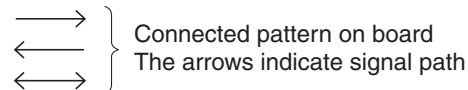
Wire soldered directly on board



Non-removable Board connector



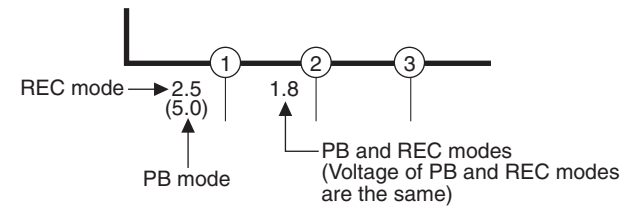
Board to Board



**Note: For the destination of each signal and further line connections that are cut off from the diagram, refer to "BOARD INTERCONNECTIONS"**

### 4. Voltage measurement

- 1) Regulator (DC/DC CONV) circuits  
REC : Colour bar signal.  
PB : Alignment tape (Colour bar).  
— : Unmeasurable or unnecessary to measure.
- 2) Indication on schematic diagram  
Voltage indications for REC and PB mode on the schematic diagram are as shown below.

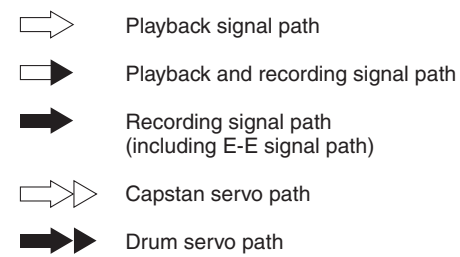


**Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.**

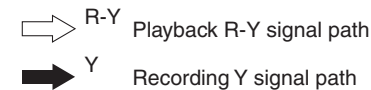
### 5. Signal path Symbols

The arrows indicate the signal path as follows.

**NOTE : The arrow is DVC unique object.**



(Example)



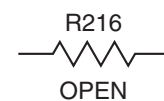
### 6. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



### 7. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.



## CIRCUIT BOARD NOTES

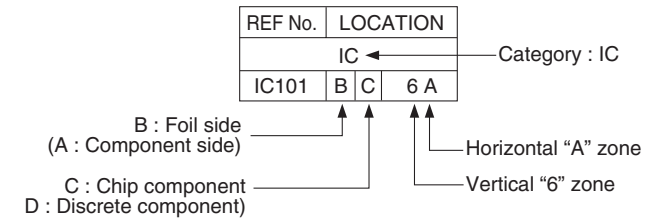
### 1. Foil and Component sides

- 1) Foil side (B side) :  
Parts on the foil side seen from foil face (pattern face) are indicated.
- 2) Component side (A side) :  
Parts on the component side seen from component face (parts face) indicated.

Parts location are indicated by guide scale on the circuit board.

### 2. Parts location guides

Parts location are indicated by guide scale on the circuit board.



**Note: For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).**

# BOARD INTERCONNECTIONS

5

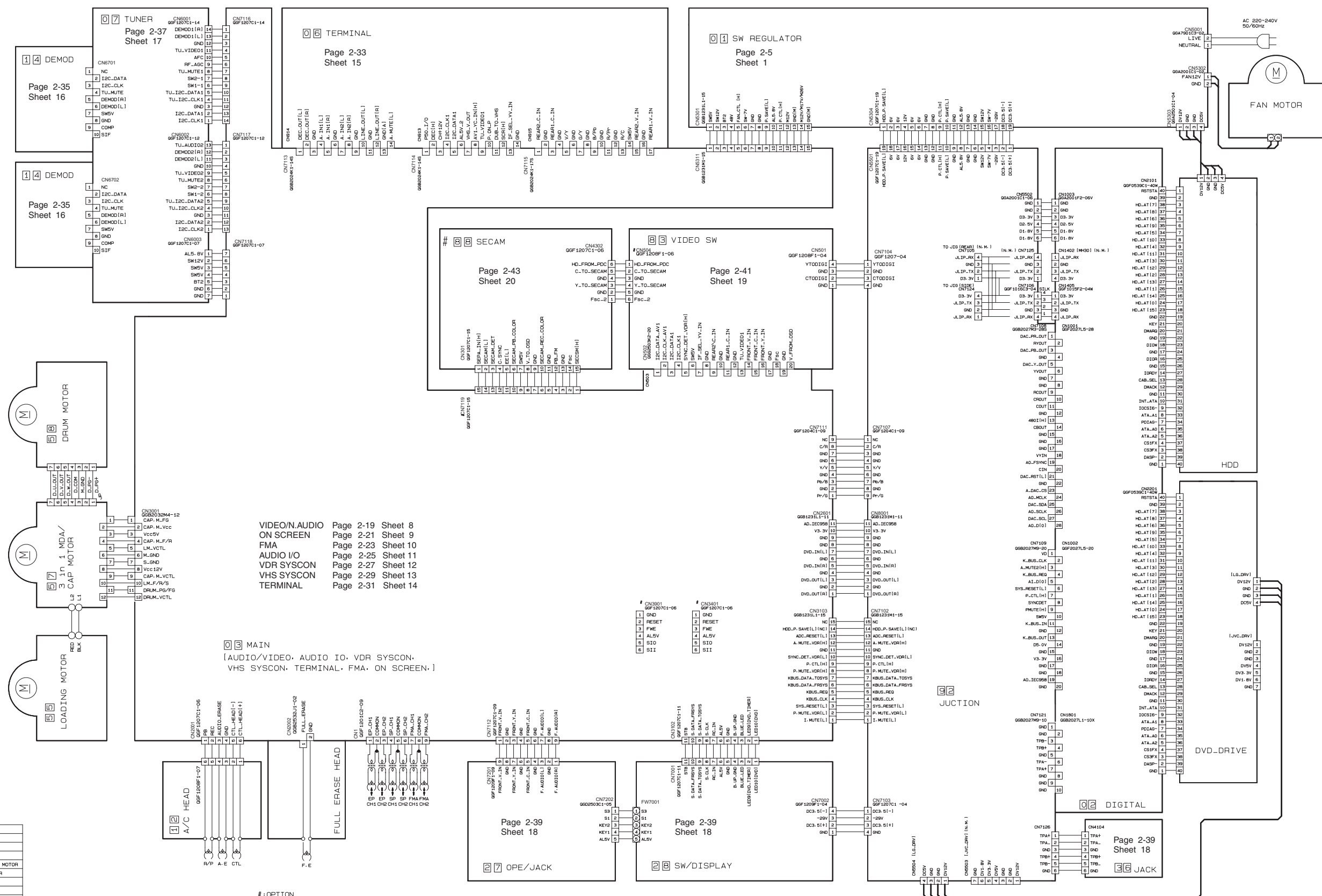
4

3

2

1

9 2	JUNCTION
8 8	SECAM
8 3	VIDEO SW
5 8	DRUM MOTOR
5 7	3in1 MDA/CAP MOTOR
5 5	LOADING MOTOR
3 6	JACK
2 8	SW/DISPLAY
2 7	OPE/JACK
1 4	DEMODO
1 2	A/C HEAD
0 7	TUNER
0 6	TERMINAL
0 3	MAIN
0 2	DIGITAL
0 1	SW REGULATOR
NO	NAME



VIDEO/AUDIO ON SCREEN Page 2-19 Sheet 8  
 FMA Page 2-21 Sheet 9  
 AUDIO I/O Page 2-23 Sheet 11  
 VDR SYSCON Page 2-25 Sheet 11  
 VHS SYSCON Page 2-27 Sheet 12  
 TERMINAL Page 2-29 Sheet 13

# : OPTION

0 8 SECAM	X
0 3 CN7119	X
0 3 CN504	O
EU	X
EK	X
EF	O

# : CN3401 and CN3901 are used only for FLASH CPU.

REG Page 2-6 Sheet 1  
 VIDEO Page 2-45 Sheet 21  
 AUDIO AD/DA Page 2-47 Sheet 22

VIDEO IF Page 2-7 Sheet 2  
 FLASH Page 2-9 Sheet 3  
 MEDIA PROCESSOR Page 2-11 Sheet 4  
 DDR SDRAM Page 2-13 Sheet 5  
 1394PHY Page 2-15 Sheet 6  
 ATAPIIF Page 2-17 Sheet 7

2-3 D

2-4 E

F

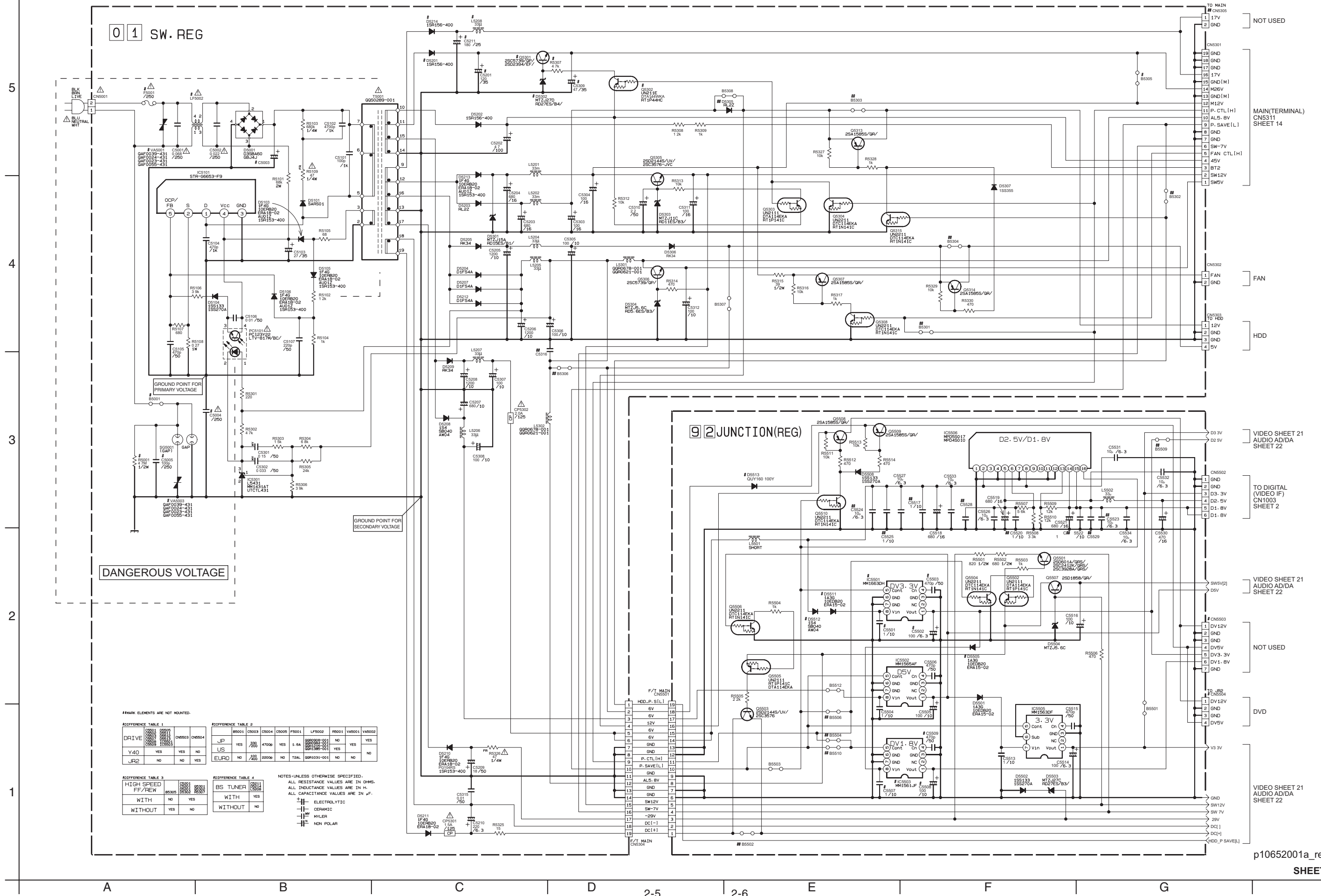
G

A

B

C

# SW.REG AND JUNCTION SCHEMATIC DIAGRAM



01 SW.REG

92 JUNCTION(REG)

#MARK ELEMENTS ARE NOT HOUTED.

DIFFERENCE TABLE 1		DIFFERENCE TABLE 2	
DRIVE	CHG503	CHG503	CHG504
Y40	YES	YES	NO
JR2	NO	NO	YES

DIFFERENCE TABLE 3		DIFFERENCE TABLE 4	
HIGH SPEED FF/REW	BS TUNER	WITH	WITHOUT
WITH	NO	YES	NO
WITHOUT	YES	NO	NO

NOTES-UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN pF.  
 [Symbol] ELECTROLYTIC  
 [Symbol] CERAMIC  
 [Symbol] MYLAR  
 [Symbol] NON POLAR

- TO MAIN CN5305
- 1 17V
- 2 GND
- 3 GND
- 4 GND
- 5 17V
- 6 GND
- 7 GND
- 8 GND
- 9 P. CTL(H)
- 10 AL5. 8V
- 11 P. SAVE(L)
- 12 GND
- 13 GND
- 14 7V
- 15 GND
- 16 12V
- 17 GND
- 18 GND
- 19 GND
- 20 GND
- 21 GND
- 22 GND
- 23 GND
- 24 GND
- 25 GND
- 26 GND
- 27 GND
- 28 GND
- 29 GND
- 30 GND
- 31 GND
- 32 GND
- 33 GND
- 34 GND
- 35 GND
- 36 GND
- 37 GND
- 38 GND
- 39 GND
- 40 GND
- 41 GND
- 42 GND
- 43 GND
- 44 GND
- 45 GND
- 46 GND
- 47 GND
- 48 GND
- 49 GND
- 50 GND
- 51 GND
- 52 GND
- 53 GND
- 54 GND
- 55 GND
- 56 GND
- 57 GND
- 58 GND
- 59 GND
- 60 GND
- 61 GND
- 62 GND
- 63 GND
- 64 GND
- 65 GND
- 66 GND
- 67 GND
- 68 GND
- 69 GND
- 70 GND
- 71 GND
- 72 GND
- 73 GND
- 74 GND
- 75 GND
- 76 GND
- 77 GND
- 78 GND
- 79 GND
- 80 GND
- 81 GND
- 82 GND
- 83 GND
- 84 GND
- 85 GND
- 86 GND
- 87 GND
- 88 GND
- 89 GND
- 90 GND
- 91 GND
- 92 GND
- 93 GND
- 94 GND
- 95 GND
- 96 GND
- 97 GND
- 98 GND
- 99 GND
- 100 GND

**DIGITAL(VIDEO/IF) SCHEMATIC DIAGRAM**

5  
4  
3  
2  
1

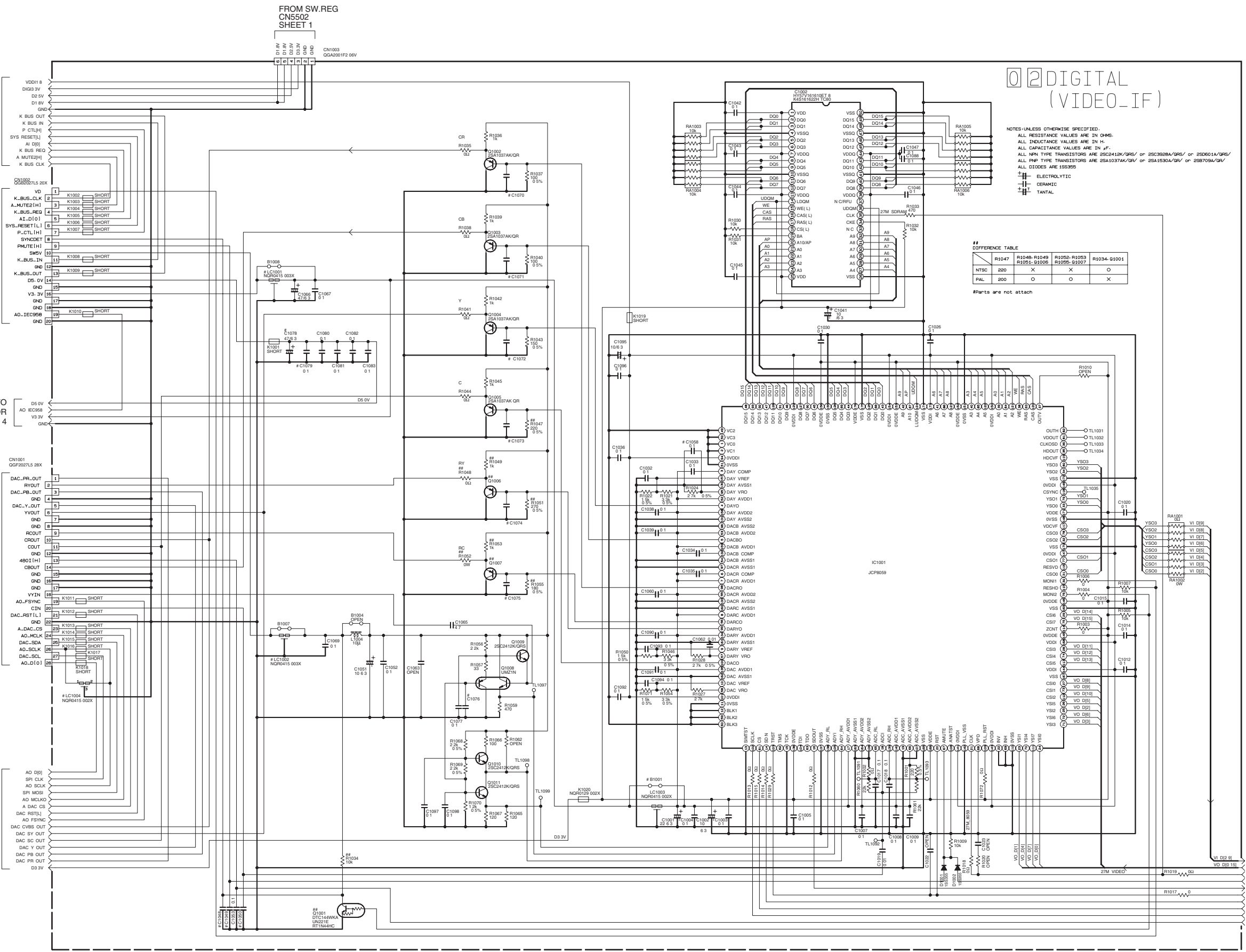
TO MEDIA PROCESSOR SHEET 4 ATAPI IF SHEET 7

TO VIDEO (JUNCTION) CN7109 SHEET 21

TO MEDIA PROCESSOR SHEET 4

TO VIDEO (JUNCTION) CN7108 SHEET 21

TO MEDIA PROCESSOR SHEET 4



**DIGITAL (VIDEO-IF)**

NOTES-UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN pF.  
 ALL NPN TYPE TRANSISTORS ARE 2SC2412K/GRS/ or 2SC3928A/GRS/ or 2SD601A/GRS/  
 ALL PNP TYPE TRANSISTORS ARE 2SA1037AK/GR/ or 2SA1530A/GR/ or 2SB709A/GR/  
 ALL DIODES ARE 1SS395

ELECTROLYTIC  
 CERAMIC  
 TANTALUM

**DIFFERENCE TABLE**

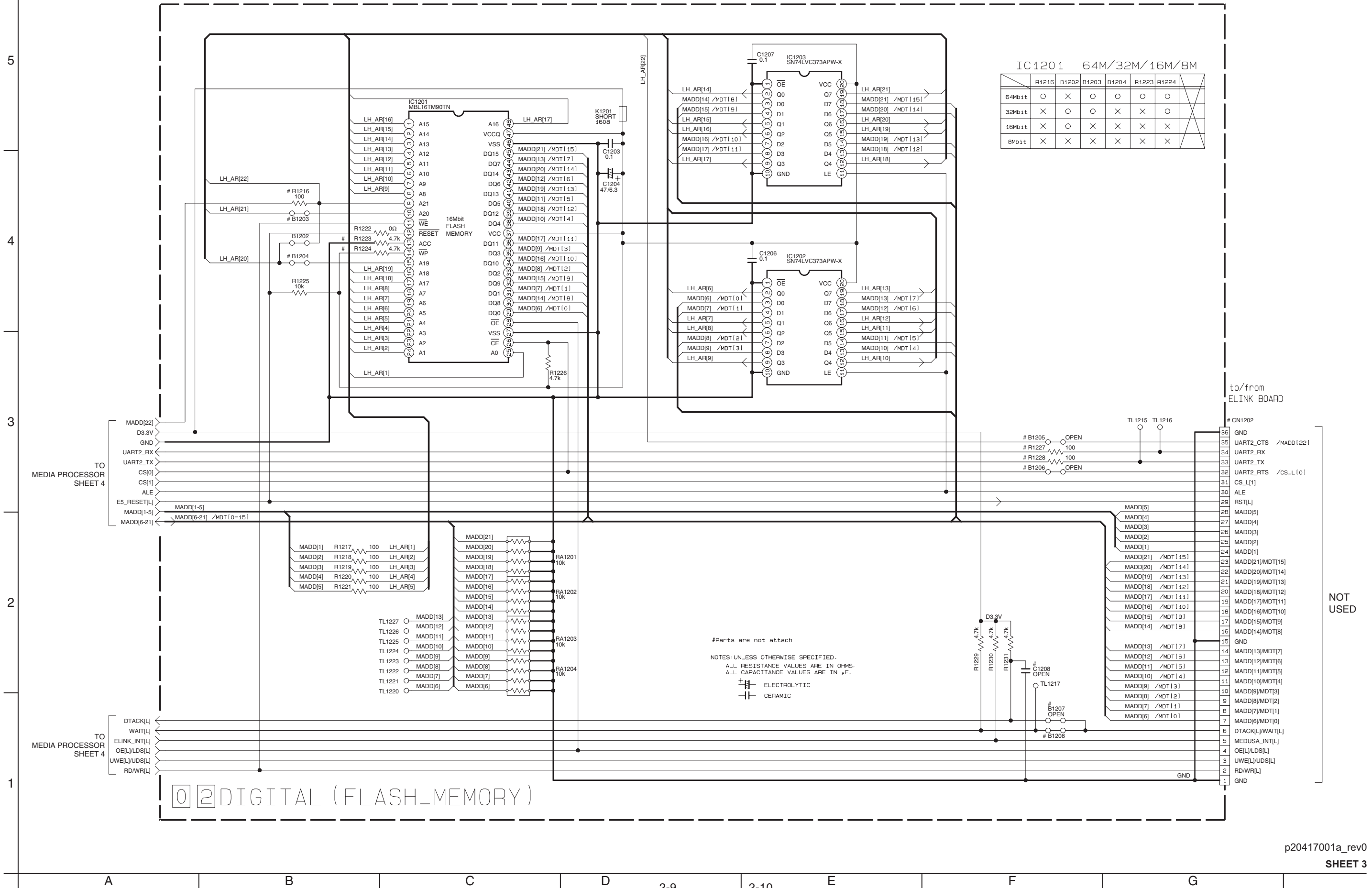
	R1047	R1048-R1049 R1051-R1005	R1052-R1053 R1055-R1007	R1034-Q1001
NTIC	200	X	X	O
PAL	200	O	O	X

#Parts are not attach

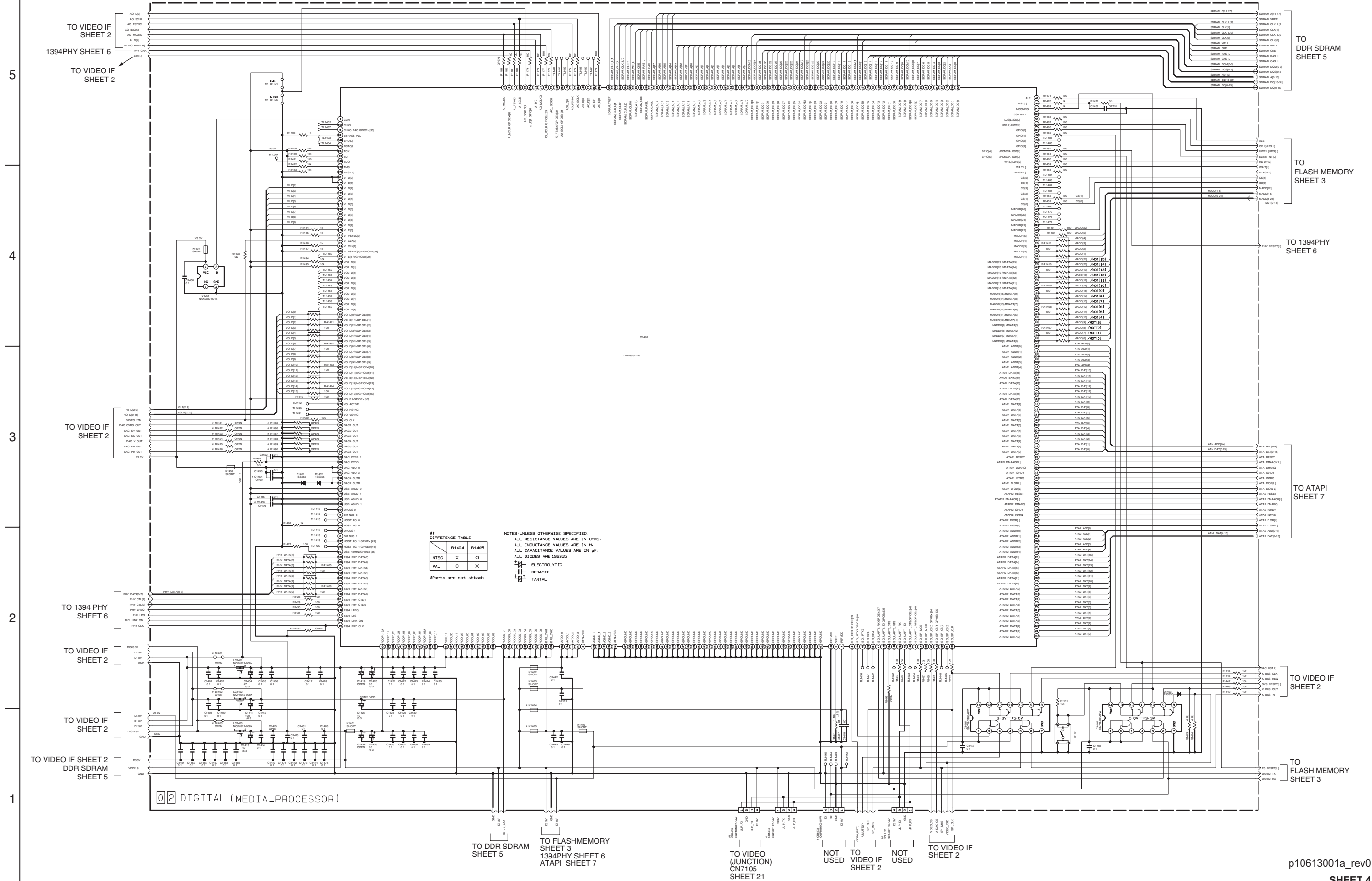
TO MEDIA PROCESSOR SHEET 4



# DIGITAL(FLASH MEMORY) SCHEMATIC DIAGRAM



# DIGITAL(MEDIA PROCESSOR) SCHEMATIC DIAGRAM



## DIFFERENCE TABLE

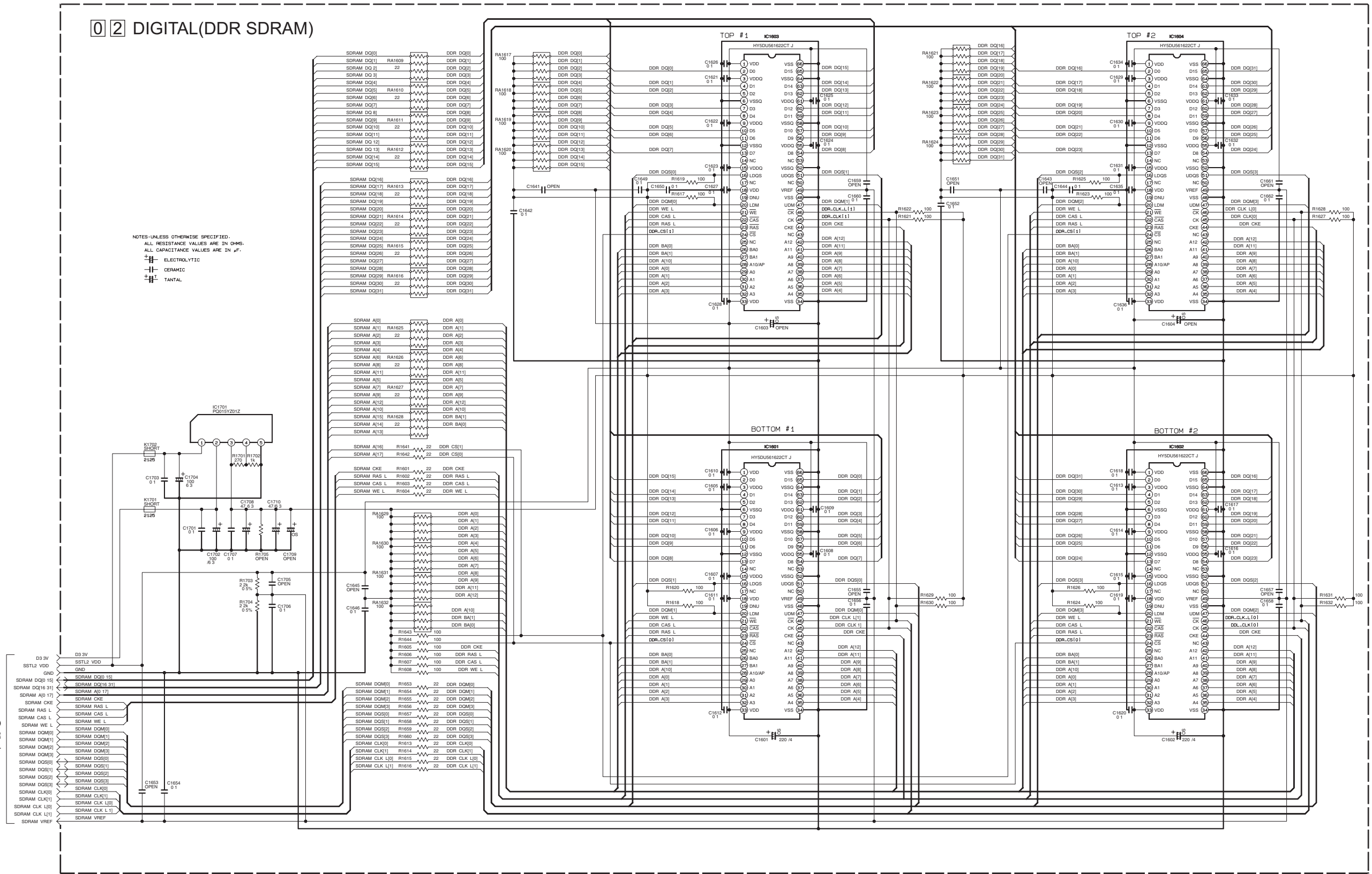
	B1404	B1405
NTSC	X	O
PAL	O	X

#Parts are not attach

NOTES UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN pF.  
 ALL DIODES ARE 1S5395  
 ELECTROLYTIC  
 CERAMIC  
 TANTALUM

**DIGITAL(DDR SDRAM) SCHEMATIC DIAGRAM**

**02 DIGITAL(DDR SDRAM)**



NOTES-UNLESS OTHERWISE SPECIFIED:  
ALL RESISTANCE VALUES ARE IN OHMS.  
ALL CAPACITANCE VALUES ARE IN  $\mu$ F.  
ELECTROLYTIC  
CERAMIC  
TANTAL

TO  
MEDIA PROCESSOR  
SHEET 4

5

4

3

2

1

A

B

C

D

2-13

E

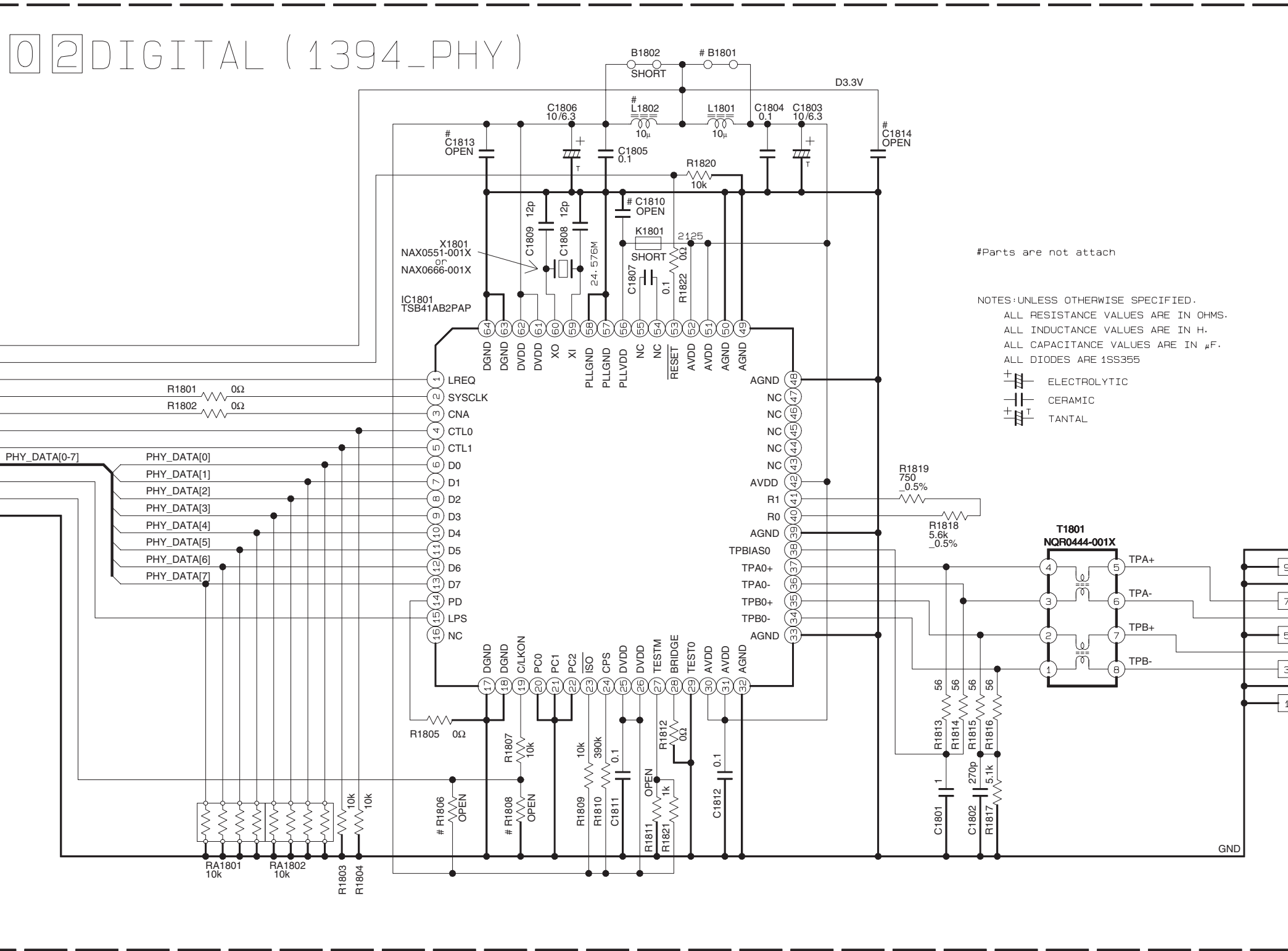
2-14

F

G

■ DIGITAL(1394 PHY) SCHEMATIC DIAGRAM

5  
4  
3  
2  
1



#Parts are not attach

NOTES: UNLESS OTHERWISE SPECIFIED.  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN μF.  
 ALL DIODES ARE 1SS355

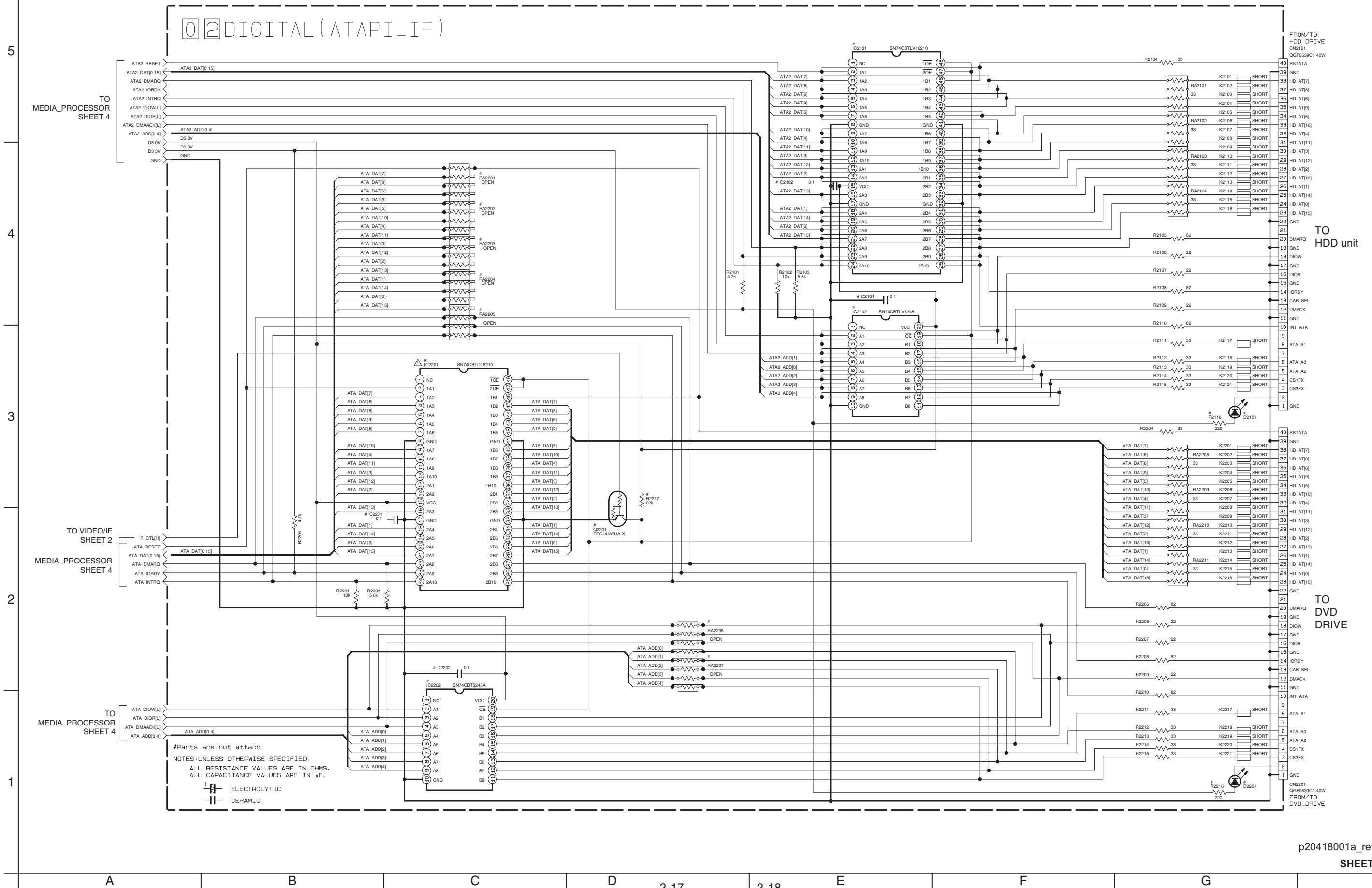
ELECTROLYTIC  
 CERAMIC  
 TANTALUM

TO  
MEDIA PROCESSOR  
SHEET 4

TO VIDEO  
(JUNCTION)  
CN7121  
SHEET 21

A B C D 2-15 E F G

# DIGITAL(ATAPI IF) SCHEMATIC DIAGRAM





# MAIN(VIDEO/N.AUDIO) SCHEMATIC DIAGRAM

03 MAIN(VIDEO/N. AUDIO)

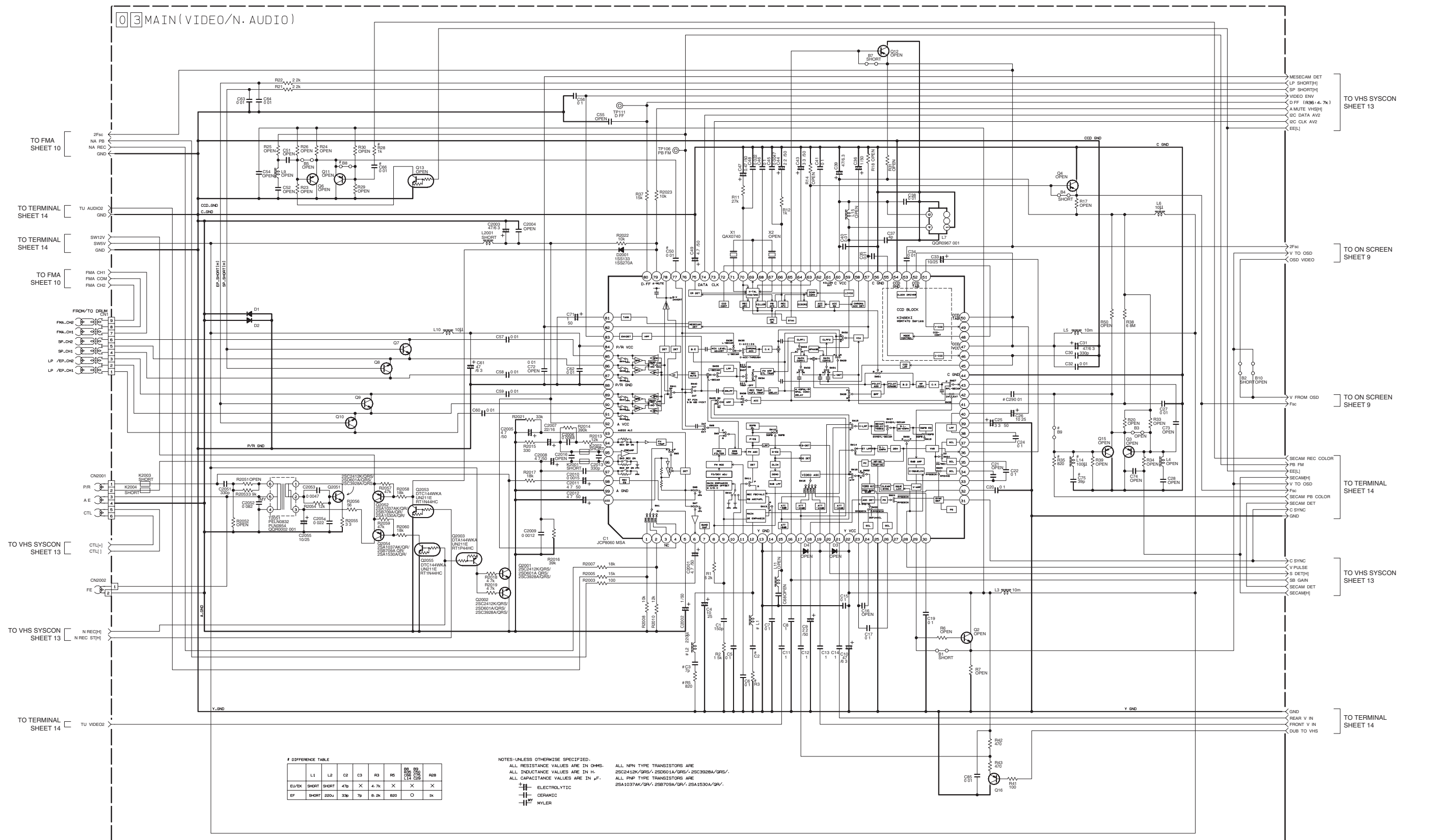
5

4

3

2

1



# DIFFERENCE TABLE

	L1	L2	C2	C3	R3	R5	R8	R9	R20
EU/EX	SHORT	SHORT	47n	X	4.7k	X	X	X	X
EF	SHORT	220u	33p	7p	8.2k	820	O	O	1k

NOTES: UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN pF.  
 ALL NPN TYPE TRANSISTORS ARE 2SC2412K/QR/ 2SC2610A/QR/ 2SC3928B/QR/  
 ALL PNP TYPE TRANSISTORS ARE 2SA1037AK/QR/ 2SB709A/QR/ 2SA1530A/QR.  
 — ELECTROLYTIC  
 — CERAMIC  
 — NYLON

TO VHS SYSCON SHEET 13  
 MESECAM DET  
 LP SHORT  
 SP SHORT  
 VIDEO ENV  
 D FF (R36: 4.7k)  
 A MUTE VHSR  
 SEC DATA AV2  
 SEC CLK AV2  
 EEL

TO ON SCREEN SHEET 9  
 2Fsc  
 V TO OSD  
 OSD VIDEO

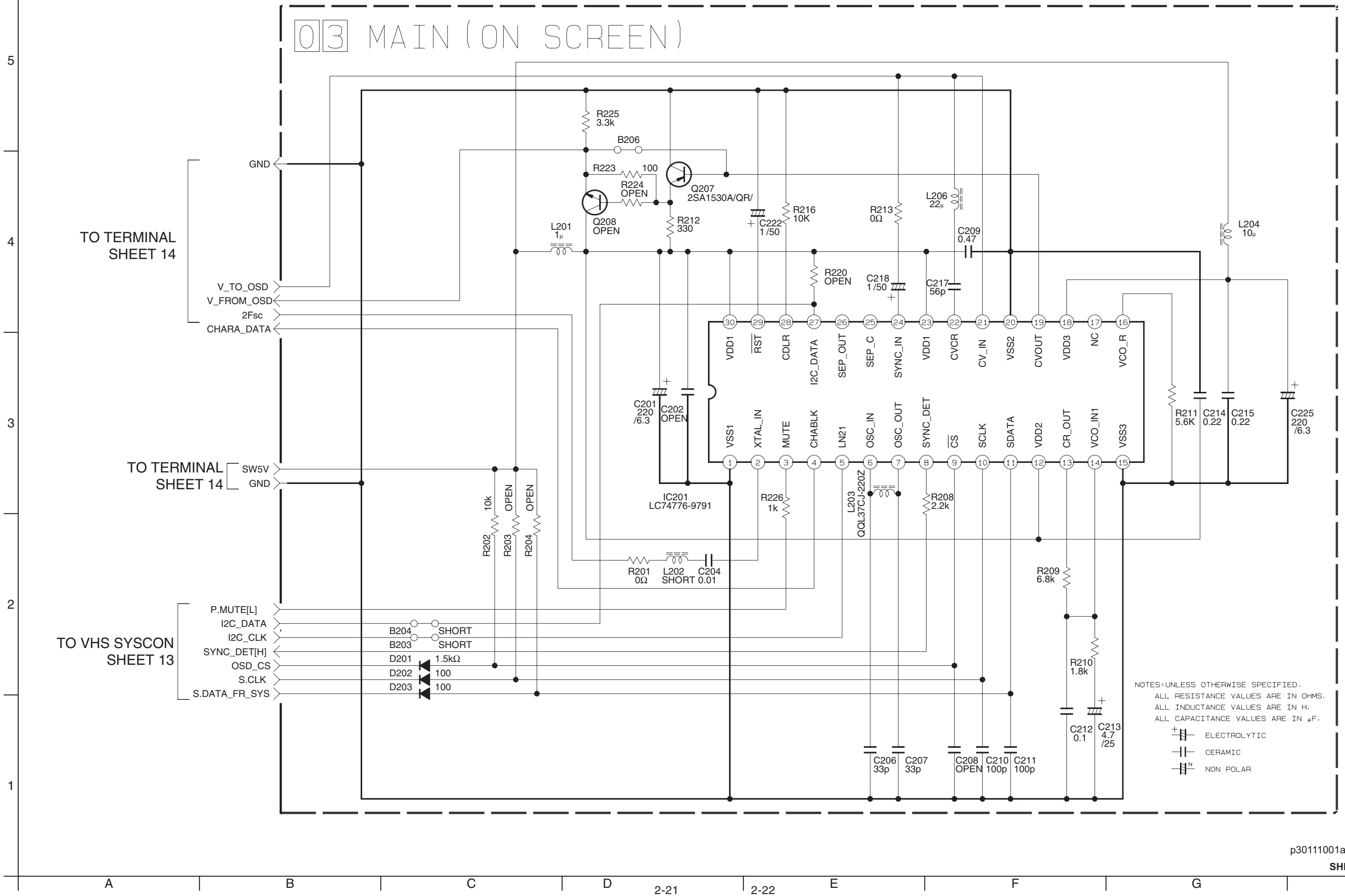
TO ON SCREEN SHEET 9  
 V FROM OSD  
 Fsc

TO TERMINAL SHEET 14  
 SECAM REC COLOR  
 PB FM  
 EEL  
 V TO OSD  
 SECAM PB COLOR  
 SECAM DET  
 C SYNC  
 GND

TO VHS SYSCON SHEET 13  
 C SYNC  
 V PULSE  
 S DETH  
 SS GAIN  
 SECAM DET  
 SECAMH

TO TERMINAL SHEET 14  
 GND  
 REAR V IN  
 FRONT V IN  
 DUB TO VHS

■ MAIN(ON SCREEN) SCHEMATIC DIAGRAM



MAIN(FMA) SCHEMATIC DIAGRAM

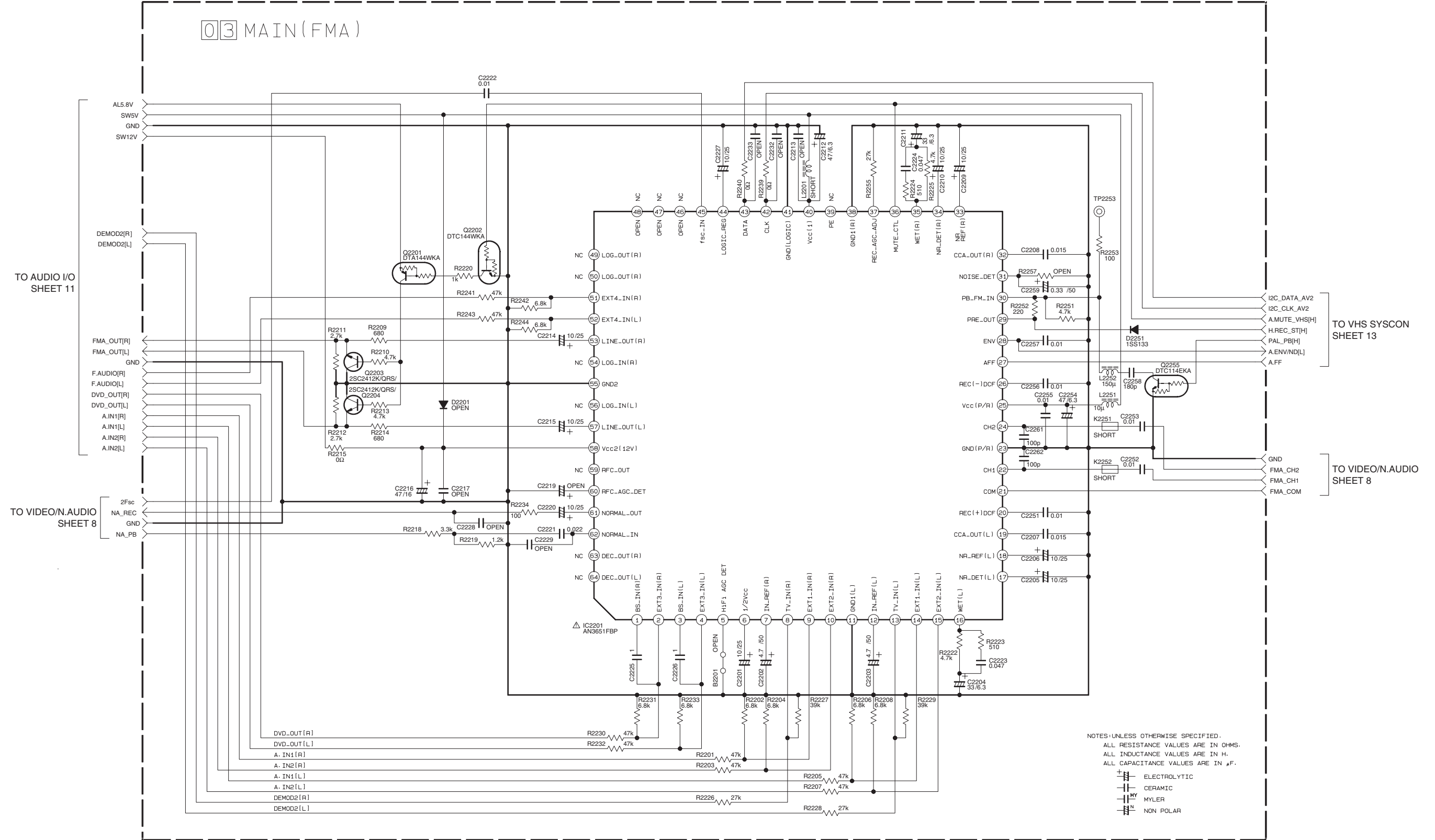
5

4

3

2

1



NOTES: UNLESS OTHERWISE SPECIFIED,  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN  $\mu$ F.

ELECTROLYTIC  
 CERAMIC  
 MYLER  
 NON POLAR

TO AUDIO I/O SHEET 11

TO VIDEO/N.AUDIO SHEET 8

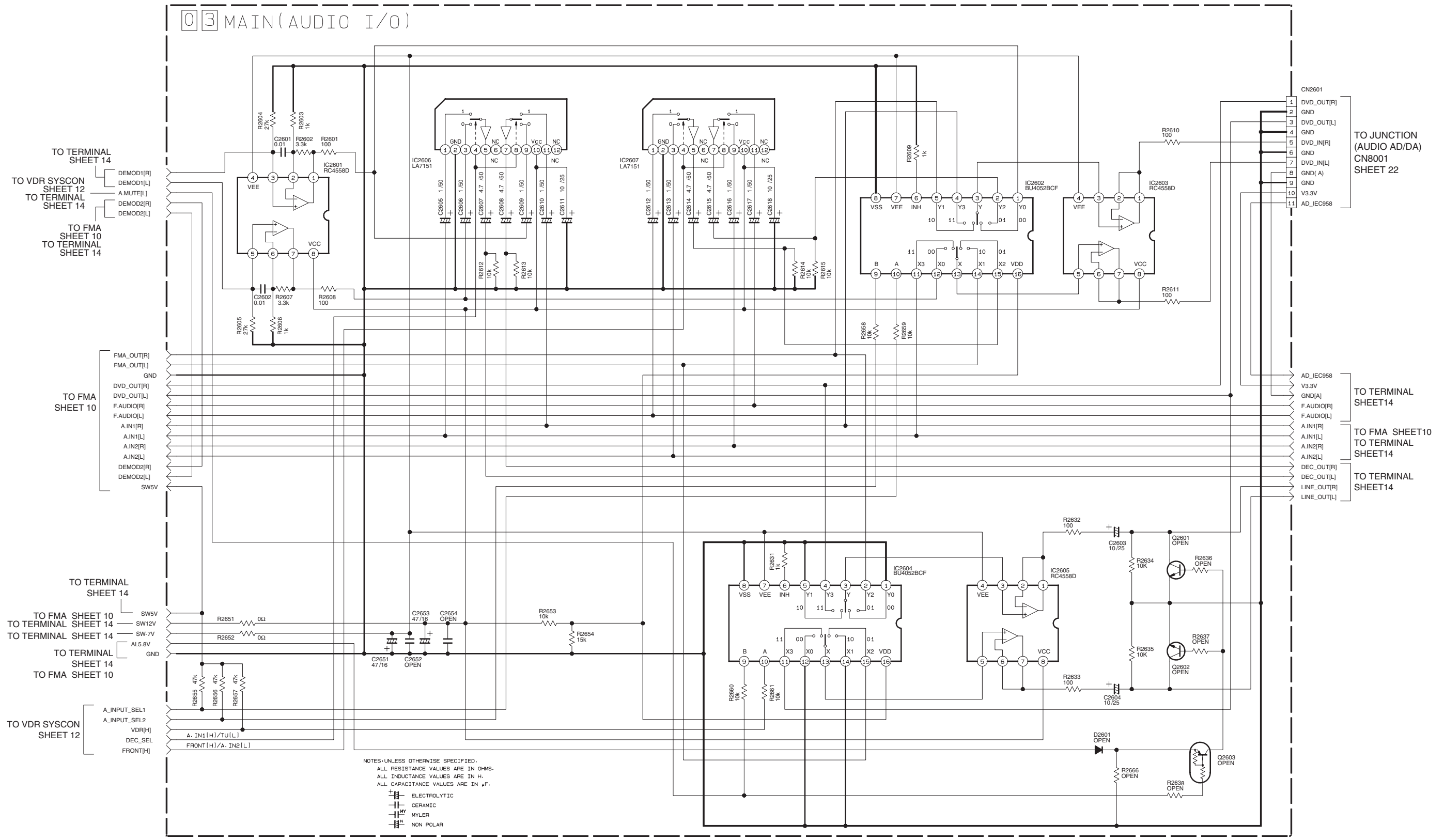
TO VHS SYSCON SHEET 13

TO VIDEO/N.AUDIO SHEET 8



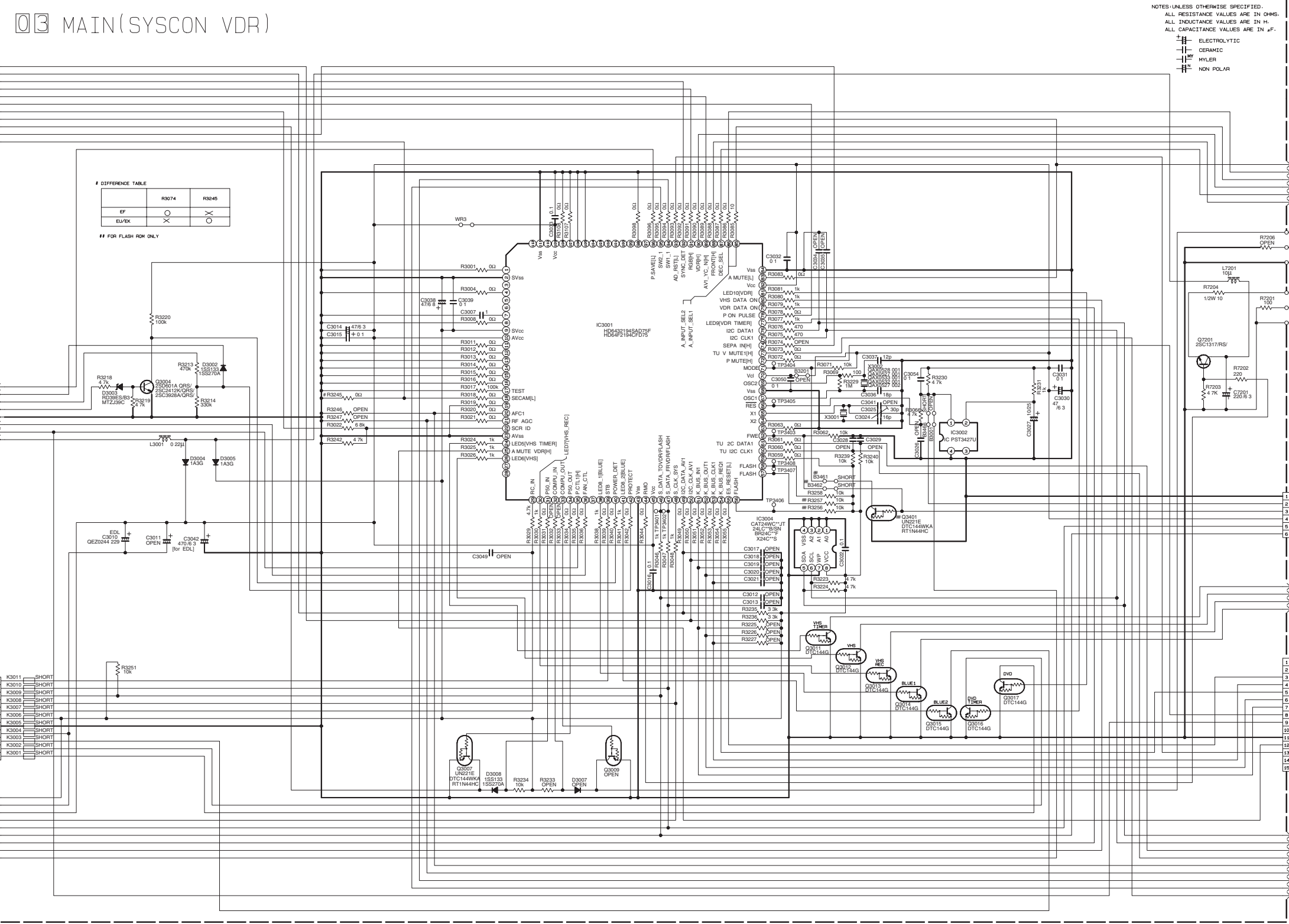
MAIN(AUDIO I/O) SCHEMATIC DIAGRAM

5  
4  
3  
2  
1



# MAIN(VDR SYSCON) SCHEMATIC DIAGRAM

5  
4  
3  
2  
1



NOTES: UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN μF.  
 ⚡ ELECTROLYTIC  
 ⚡ CERAMIC  
 ⚡ MYLAR  
 ⚡ NON POLAR

# DIFFERENCE TABLE

EF	R3074	R3245
EL/VEK	X	X

## FOR FLASH ROM ONLY

TO TERMINAL SHEET 14  
 I2C CLK AV1  
 I2C DATA AV1  
 SYNC DET VDR[H]  
 RGB[RH]  
 AV1 YC IN[H]  
 P ON P  
 SCR[H]  
 A MUTE[L]  
 P2 IO C  
 SEPA IN[H]  
 SECAM[L]

TO TERMINAL SHEET 14  
 P SAVE[L]  
 SW12  
 SW12V  
 48V  
 GND  
 FAN CTL[H]  
 P CTL[H]  
 ALS 5V

TO DISPLAY/SW CN7001 SHEET 18  
 CN3102  
 STB  
 S DATA FRSYS  
 S DATA TOSYS  
 S CLK  
 RC IN  
 ALSV  
 GND  
 B UP GND  
 BLUE LED  
 [DVO.TIMER] LED9  
 [DVO] LED10

TO VHS SYSCON SHEET 13  
 ALSV  
 B UP GND  
 B UP 5V  
 S CLK SYS  
 S DATA FRVDR  
 S DATA TOVDR  
 VDR DATA ON  
 VHS DATA ON  
 SYSCON RESET

TO AUDIO I/O SHEET 11  
 A MUTE[L]  
 A INPUT SEL2  
 A INPUT SEL1  
 VDR[H]  
 DEC SEL  
 FRONT[H]  
 AV.COMPULL[IN]

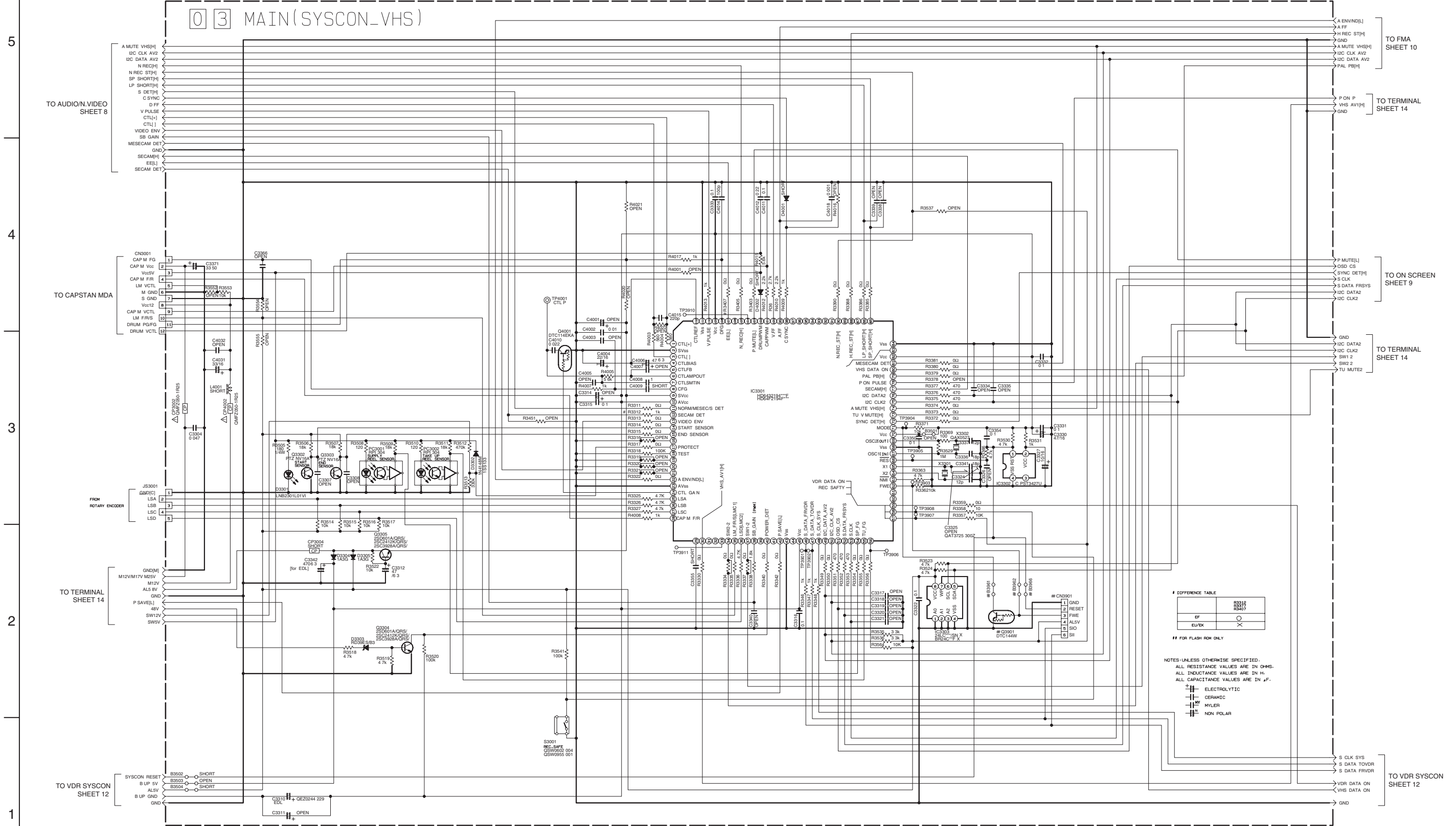
TO TERMINAL SHEET 14  
 LED5  
 LED6  
 LED7  
 LED8  
 LED9

TO JUNCTION(VIDEO) CN7102 SHEET 21  
 CN3103  
 1 [MUTE] [NC]  
 2 P MUTE VDR[L] [NC]  
 3 SYS RESET[L]  
 4 KBUS CLK  
 5 KBUS REQ  
 6 KBUS DATA FRSYS[KBUS\_DATA\_OUT]  
 7 KBUS DATA TOSYS[KBUS\_DATA\_IN]  
 8 P MUTE VDR[H]  
 9 P CTL[H]  
 10 SYNC DET VDR[L] [NC]  
 11 GND  
 12 A MUTE VDR[H]  
 13 AGC RESET[L]  
 14 V0  
 15 NC

TO TERMINAL SHEET 14  
 I2C DATA1  
 I2C CLK1  
 TU I2C DATA1  
 TU I2C CLK1  
 RF AGC  
 SW1  
 SW2  
 TU MUTE1

A B C D E F G

MAIN(VHS SYSCON) SCHEMATIC DIAGRAM



# DIFFERENCE TABLE

EF	R3310	
EU/TK	R3307	X

## FOR FLASH ROM ONLY

NOTES-UNLESS OTHERWISE SPECIFIED.  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN µF.

⊕ ELECTROLYTIC  
 □ CERAMIC  
 ▭ MYLER  
 ▭ NON POLAR

# MAIN(TERMINAL) SCHEMATIC DIAGRAM

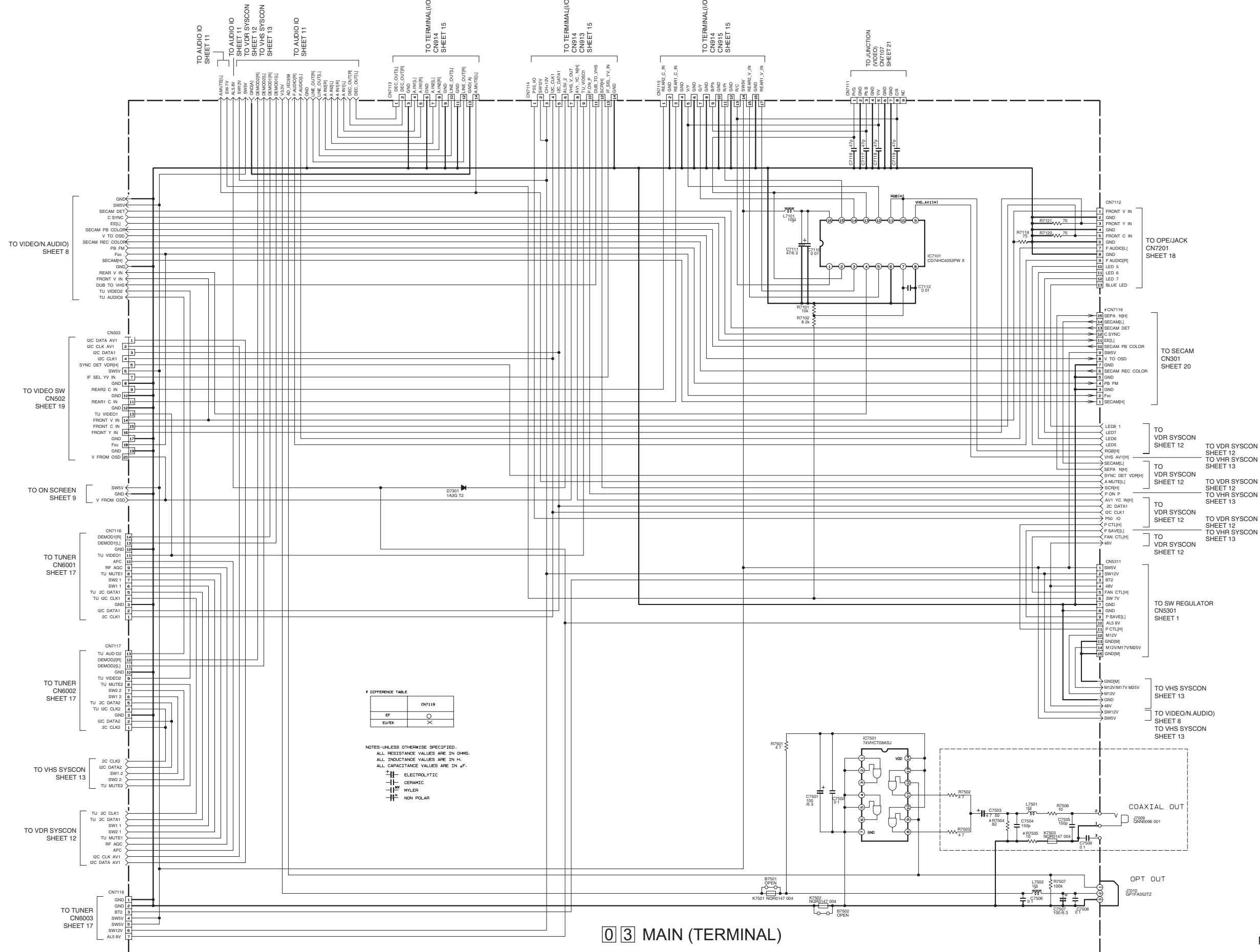
5

4

3

2

1



0 3 MAIN (TERMINAL)

p10626001a\_rev0

SHEET 14

A B C D E F G

2-31 D 2-32 E

# TERMINAL(I/O) SCHEMATIC DIAGRAM

06 TERMINAL (I/O)

NOTES-UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN μF.  
 ELECTROLYTIC  
 CERAMIC  
 NON POLAR

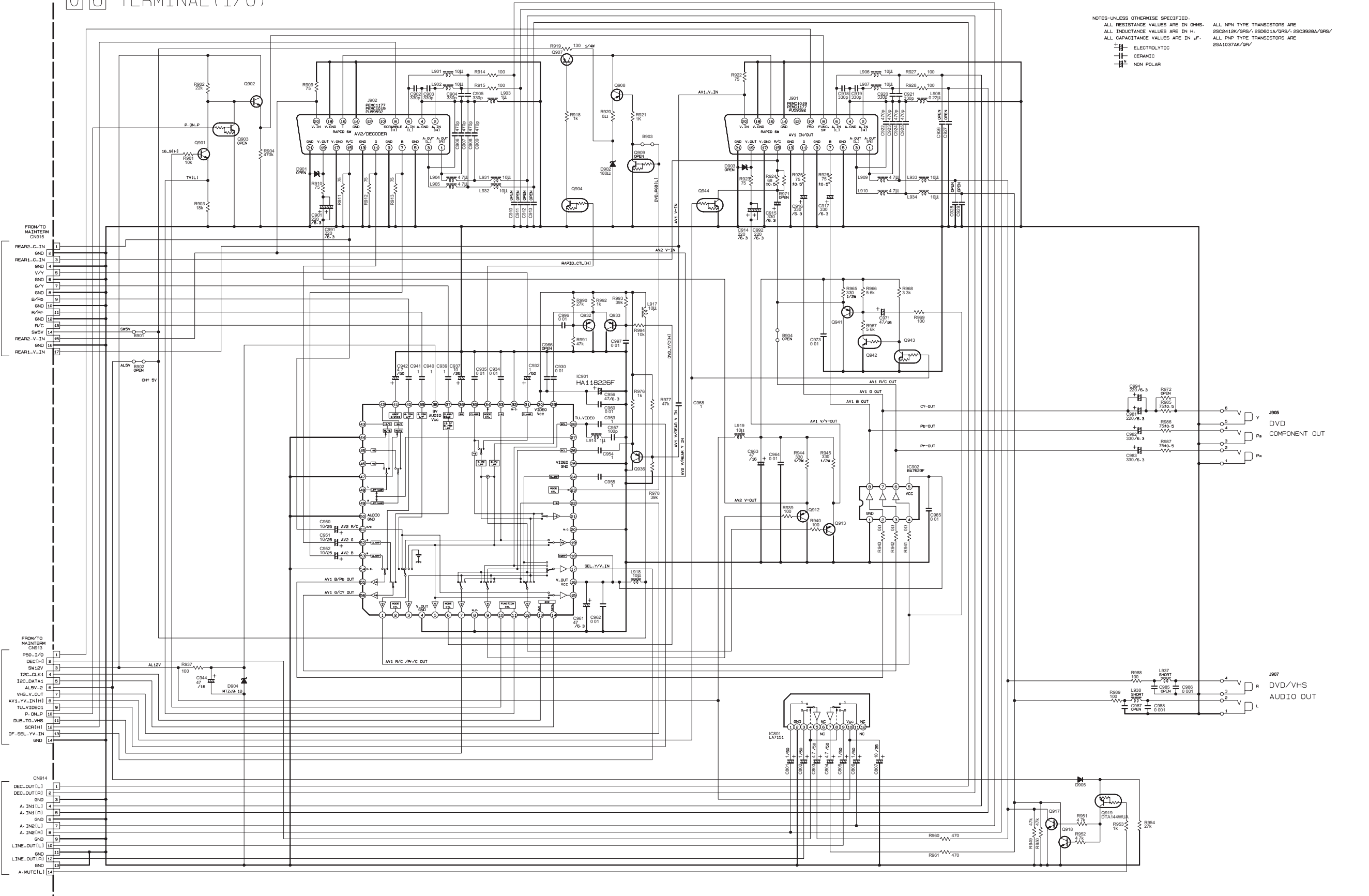
ALL NPN TYPE TRANSISTORS ARE  
 2SC241K/GRS/2SD61A/GRS/2SC3928A/GRS/  
 ALL PNP TYPE TRANSISTORS ARE  
 2SA1037AK/GRV

5  
4  
3  
2  
1

TO TERMINAL  
CN7115  
SHEET 14

TO TERMINAL  
CN7114  
SHEET 14

TO TERMINAL  
CN7113  
SHEET 14



# DEMOD SCHEMATIC DIAGRAM

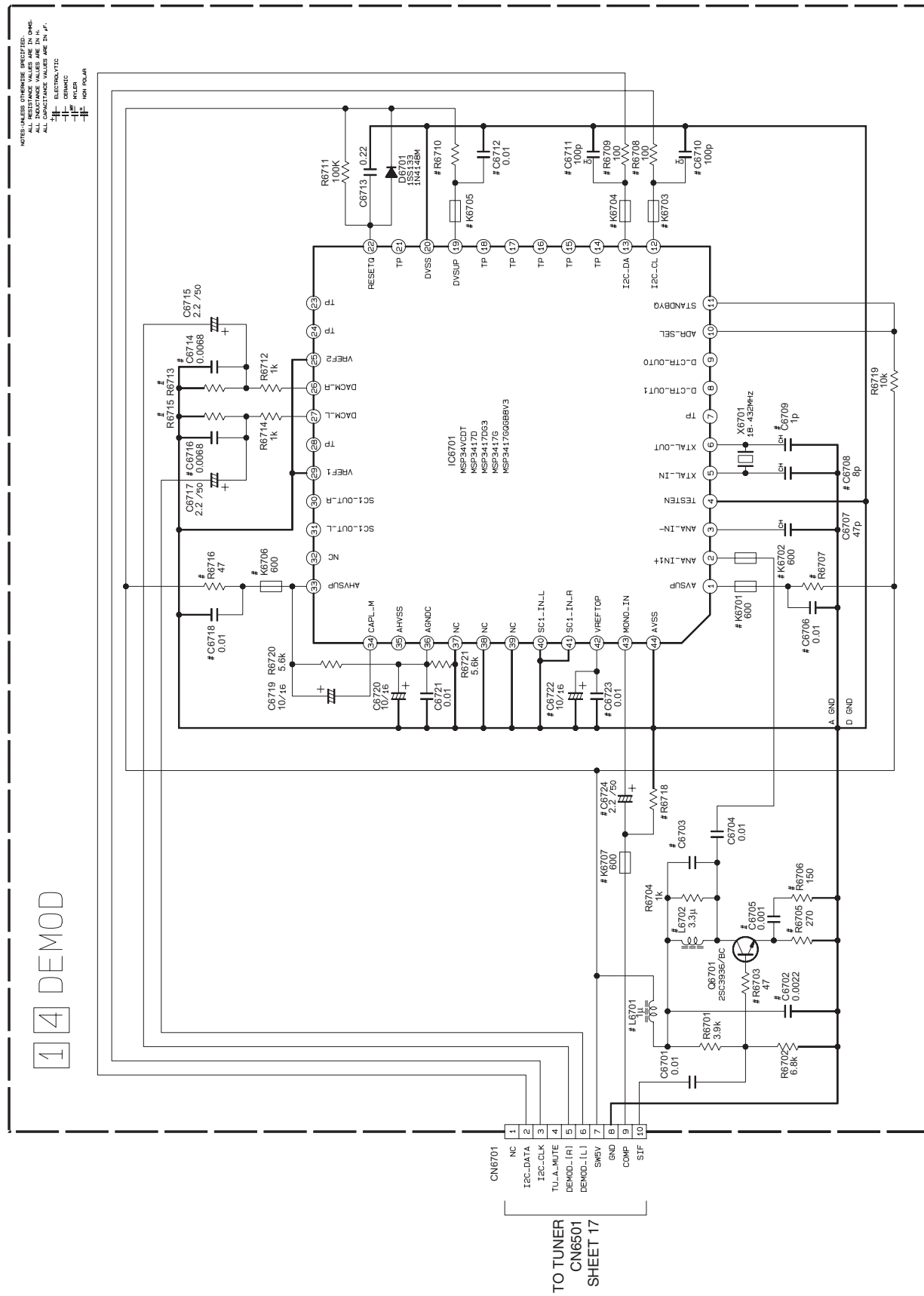
5

4

3

2

1

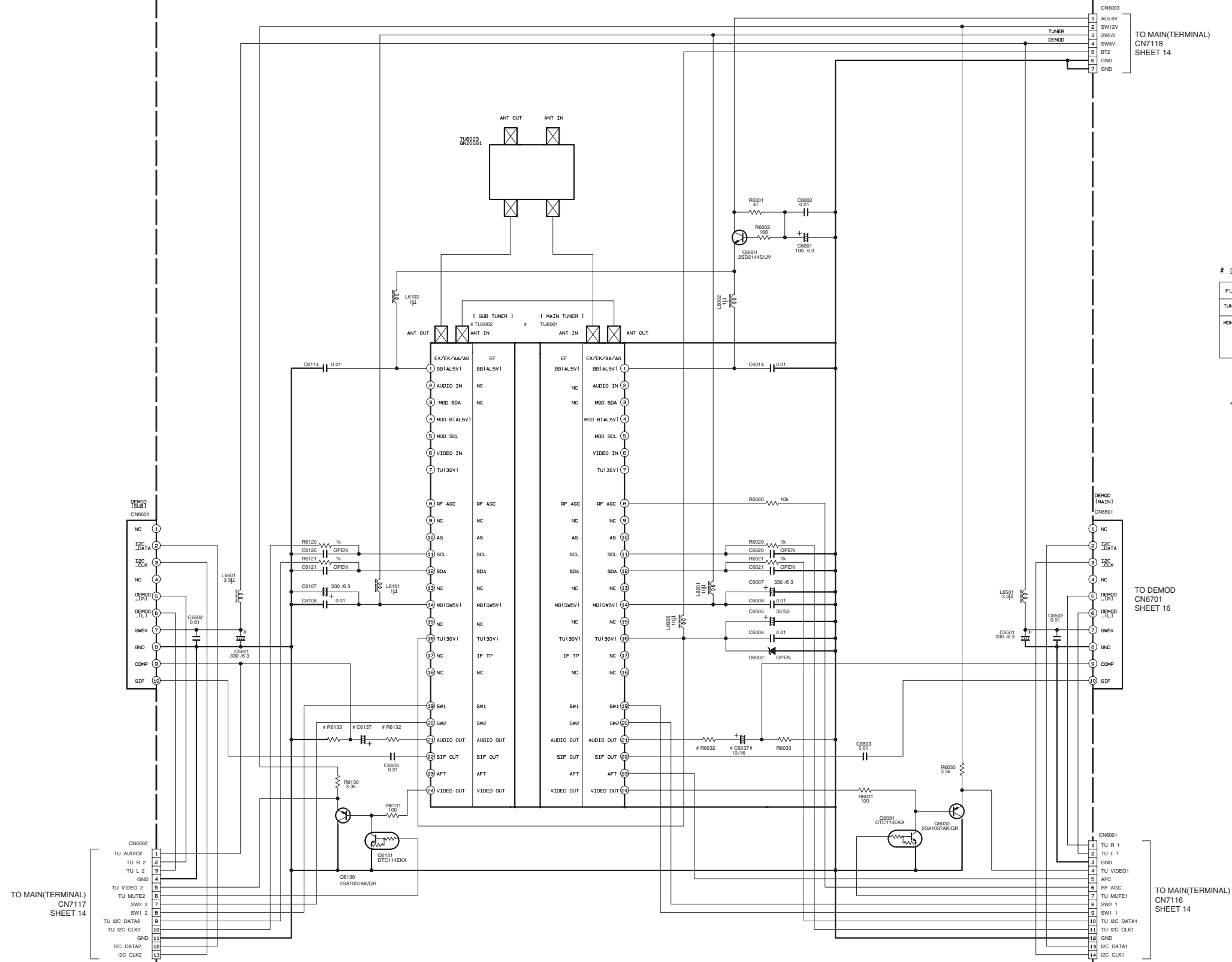


# DIFFERENCE TABLE

		V13			V14				V15-V16		V14DV53		D2		
		FRANCE MS	EU/EK	ARC	EU/EK	FRANCE MS	KOREA	ARC 4SYSTEM	ARC 3SYSTEM	EU/EX/EK	MS/EF	KR	MS	EX/EK	AA/AG
DEMOP PMB ASSY		LPA10094 -01*	LPA10094 -02*	LPA10094 -03*	LPA10094 -04*	LPA10094 -05*	LPA10094 -06*	LPA10094 -07*	LPA10094 -08*	LPA10094 -09*	LPA10094 -10*	LPA10094 -11*	LPA10094 -12*	LPA10094 -13*	LPA10094 -14*
PRE AMP	R6703	47	47	47	0	0	47	0	0	0	0	47	0	0	0
	R6705	270	270	100	270	270	270	270	270	270	270	270	270	270	270
	R6706	150	150	X	X	X	100	X	X	X	X	100	X	X	X
	C6702	0.0022	0.0022	0.0022	X	X	X	X	X	X	X	X	X	X	X
	C6703	X	X	220p	X	X	X	220p	180p	X	X	X	X	X	180p
	C6705	0.001	0.001	X	X	X	0.001	X	X	X	X	0.001	X	X	X
	L6701	1µ	1µ	1µ	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT
L6702	3.3µ	3.3µ	3.3µ	X	X	3.3µ	3.3µ	3.3µ	X	X	3.3µ	X	X	3.3µ	
MONO IN	K6707	FE 600	X	X	X	FE 600	X	X	X	FE 600	X	FE 600	X	X	
	C6724	0.22/50	X	X	X	0.22/50	X	X	X	0.22/50	X	0.22/50	X	X	
	R6718	X	X	X	X	X	X	X	X	X	X	X	X	X	
I2C-BUS	R6708	100	100	100	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	10K	10K
	R6709	100	100	100	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	1K	1K
	K6703	FE 600	FE 600	FE 600	1K	1K	1K	1K	1K	10K	0	1K	1K	FE 600	FE 600
	K6704	FE 600	FE 600	FE 600	1K	1K	1K	1K	1K	0	0	1K	1K	FE 600	FE 600
	C6710-C6711	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANALOG Vcc	R6707	22	47	47	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	39	0	0
	K6701	FE 600	FE 600	FE 600	33	33	33	33	33	33	33	39	FE 600	FE 600	FE 600
	C6706	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DIGITAL Vcc	R6710	10	12	12	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	12	0	0
	K6705	FE 600	FE 600	FE 600	10	10	10	10	10	0	10	12	FE 600	FE 600	FE 600
	C6712	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DAC Vcc	R6715	47	47	47	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	FE 600	47	47	47
	K6706	FE 600	FE 600	FE 600	47	47	47	47	47	47	47	47	FE 600	FE 600	FE 600
	C6718	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X' TAL	C6708	8p	8p	8p	7p	7p	7p	7p	7p	7p	7p	7p	8p	7p	7p
	C6709	1p	1p	1p	3p	3p	3p	3p	3p	3p	3p	3p	2p	3p	3p
DAC OUT	R6713-R6715	X	X	X	X	X	X	X	X	12K	12K	X	X	O	O
	C6714-C6715	0.0068	0.0068	0.0068	0.0022	0.0068	0.0022	0.0022	0.0022	0.0022	0.0068	0.0022	0.0068	0.0022	0.0022
VREF	C6722	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	C6723	0.01	0.01	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	0.01	0.01

# TUNER SCHEMATIC DIAGRAM

24 TUNER



# DIFFERENCE TABLE

FUNCTION	SYMBOL	EU/EX	EF
TUNER	TU6001- TU6002	ALPS GAU0261	L5 GAU0299
MOD IN	R6030-R6033- C6037	X	O
	R6130-R6133- C6137	X	O

NOTES-UNLESS OTHERWISE SPECIFIED.  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN μF.  
 + ELECTROLYTIC  
 - CERAMIC  
 MY MYLAR  
 NON POLAR

TO MAIN(TERMINAL)  
CN7117  
SHEET 14

TO MAIN(TERMINAL)  
CN7118  
SHEET 14

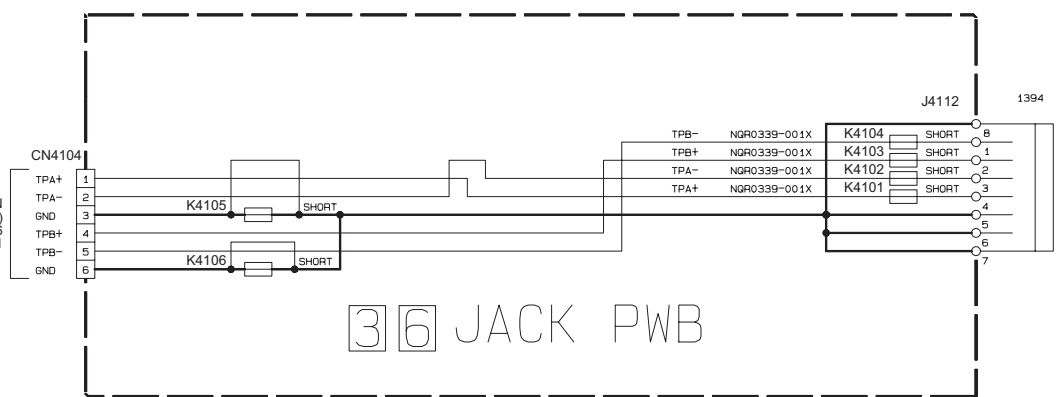
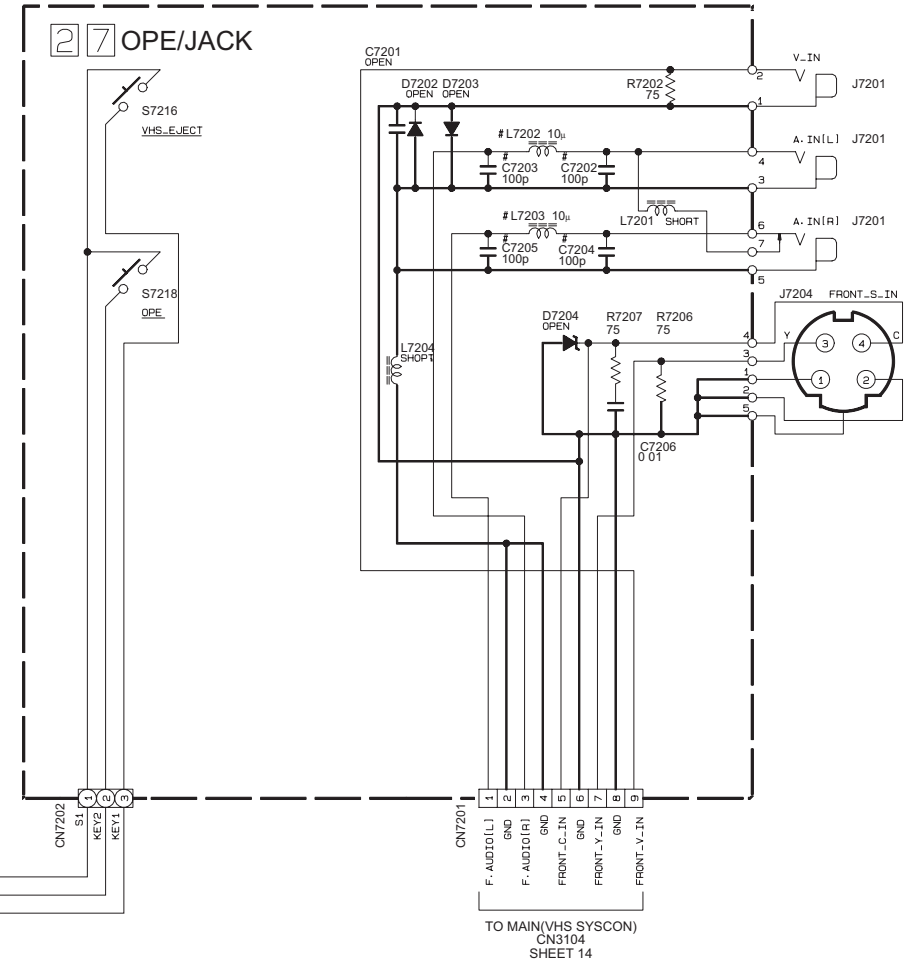
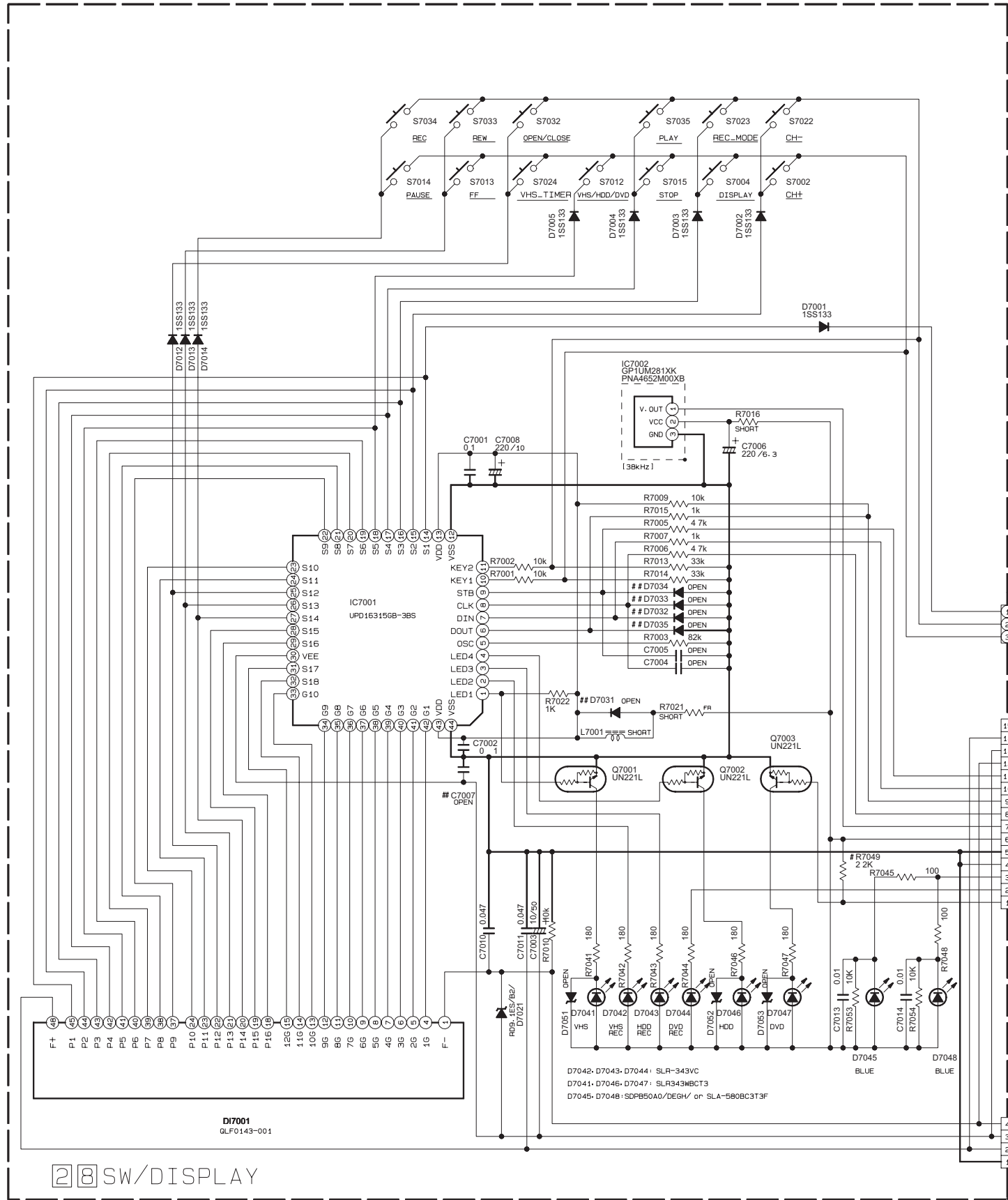
TO DEMOD  
CN6701  
SHEET 16

TO MAIN(TERMINAL)  
CN7116  
SHEET 14



# OPERATION JACK, SWITCH DISPLAY AND JACK SCHEMATIC DIAGRAMS

5  
4  
3  
2  
1



TO MAIN(VDR SYSCON)  
CN3102  
SHEET 12

TO JUNCTION (VIDEO)  
CN7126  
SHEET 21

TO JUNCTION (VIDEO)  
CN7103  
SHEET 21

TO MAIN(VHS SYSCON)  
CN3104  
SHEET 14



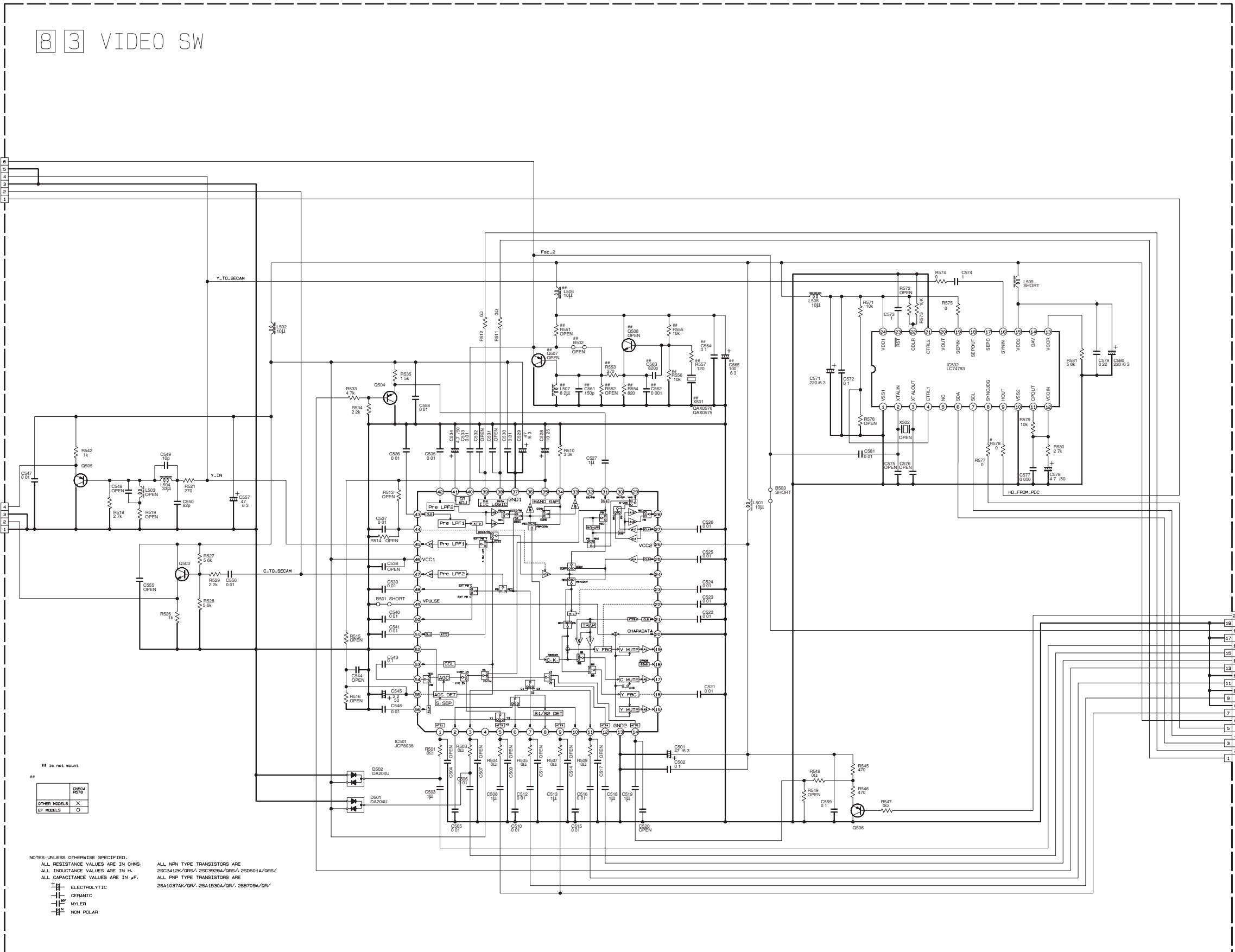
VIDEO SW SCHEMATIC DIAGRAM

8 3 VIDEO SW

5  
4  
3  
2  
1

# CN504  
FAC 2  
6  
5  
4  
3  
2  
1  
TO SECAN  
CN4302  
SHEET 20  
Y TO SECAM  
GND  
C TO SECAM  
HD FROM PDC

# CN501  
4  
3  
2  
1  
TO JUNCTION VIDEO  
CN7104  
SHEET 21  
YTODIGI  
GND  
CTODIGI  
GND



# 18 not mount

#	Q504	
OTHER MODELS	X	
EP MODELS	O	

NOTES: UNLESS OTHERWISE SPECIFIED.  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN  $\mu$ F.  
 ELECTROLYTIC  
 CERAMIC  
 MYLER  
 NON POLAR





ALL NPN TYPE TRANSISTORS ARE  
 2SC2412N/GRS/ 2SC3928A/GRS/ 2SD601A/GRS/  
 ALL PNP TYPE TRANSISTORS ARE  
 2SA1037AK/QR/ 2SA1530A/QR/ 2SB709A/QR/

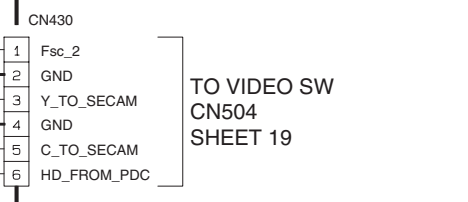
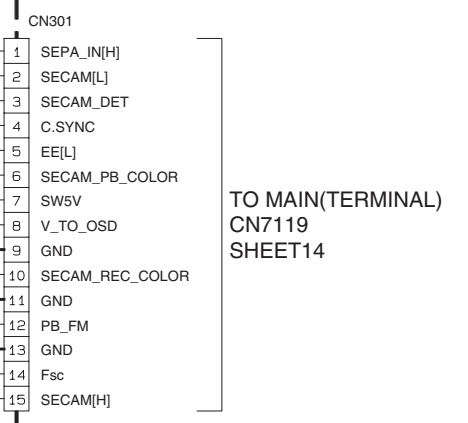
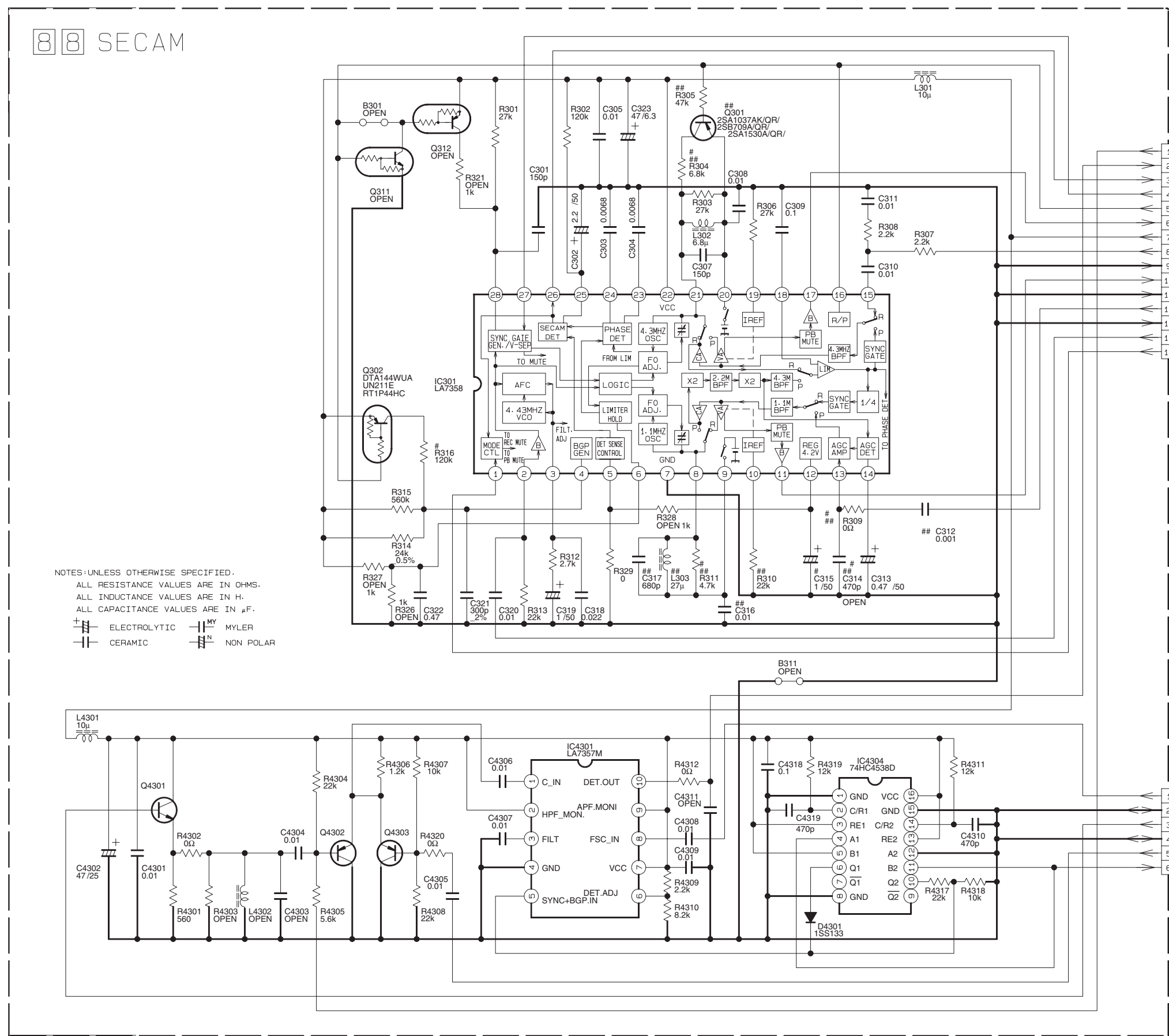
# CN502  
20 V FROM OSD  
19 GND  
18 Fsc  
17 GND  
16 FRONT Y IN  
15 FRONT C IN  
14 FRONT V IN  
13 TU VIDEO1  
12 GND  
11 REAR1 C IN  
10 REAR2 C IN  
9 GND  
8 IF SEL YV IN  
7 SWIV  
6 SYNC DET VDRPH  
5 I2C CLK1  
4 I2C DATA1  
3 I2C CLK AV1  
2 I2C DATA AV1  
1

TO MAIN(TERMINAL)  
CN503  
SHEET 14

SECAM SCHEMATIC DIAGRAM [DR-MX1SEF ONLY]

8 8 SECAM

NOTES: UNLESS OTHERWISE SPECIFIED.  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN  $\mu$ F.  
 ELECTROLYTIC  MYLER  
 CERAMIC  NON POLAR



# JUNCTION(VIDEO) SCHEMATIC DIAGRAM

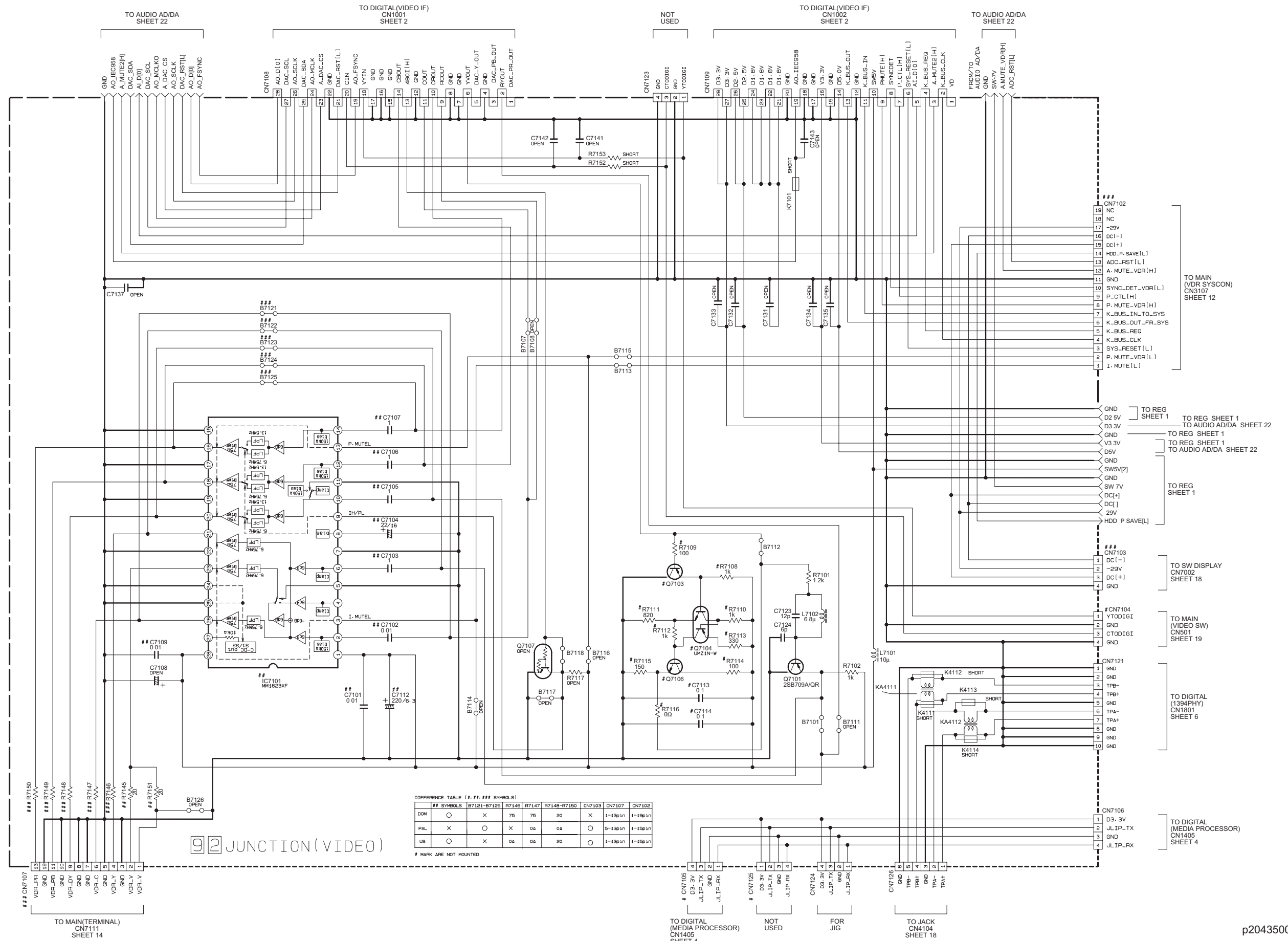
5

4

3

2

1



DIFFERENCE TABLE (### SYMBOLS)

### SYMBOLS	B7121-B7125	R7146	R7147	R7148-R7150	CN7103	CN7107	CN7102
DOM	○	X	75	75	20	X	1-130ln 1-150ln
PAL	X	○	X	0a	0a	○	5-130ln 1-150ln
US	○	X	0a	0a	20	○	1-130ln 1-150ln

# MARK ARE NOT MOUNTED

92 JUNCTION(VIDEO)

A

B

C

2-45

2-46

E

F

G

■ JUNCTION(AUDIO AD/DA) SCHEMATIC DIAGRAM

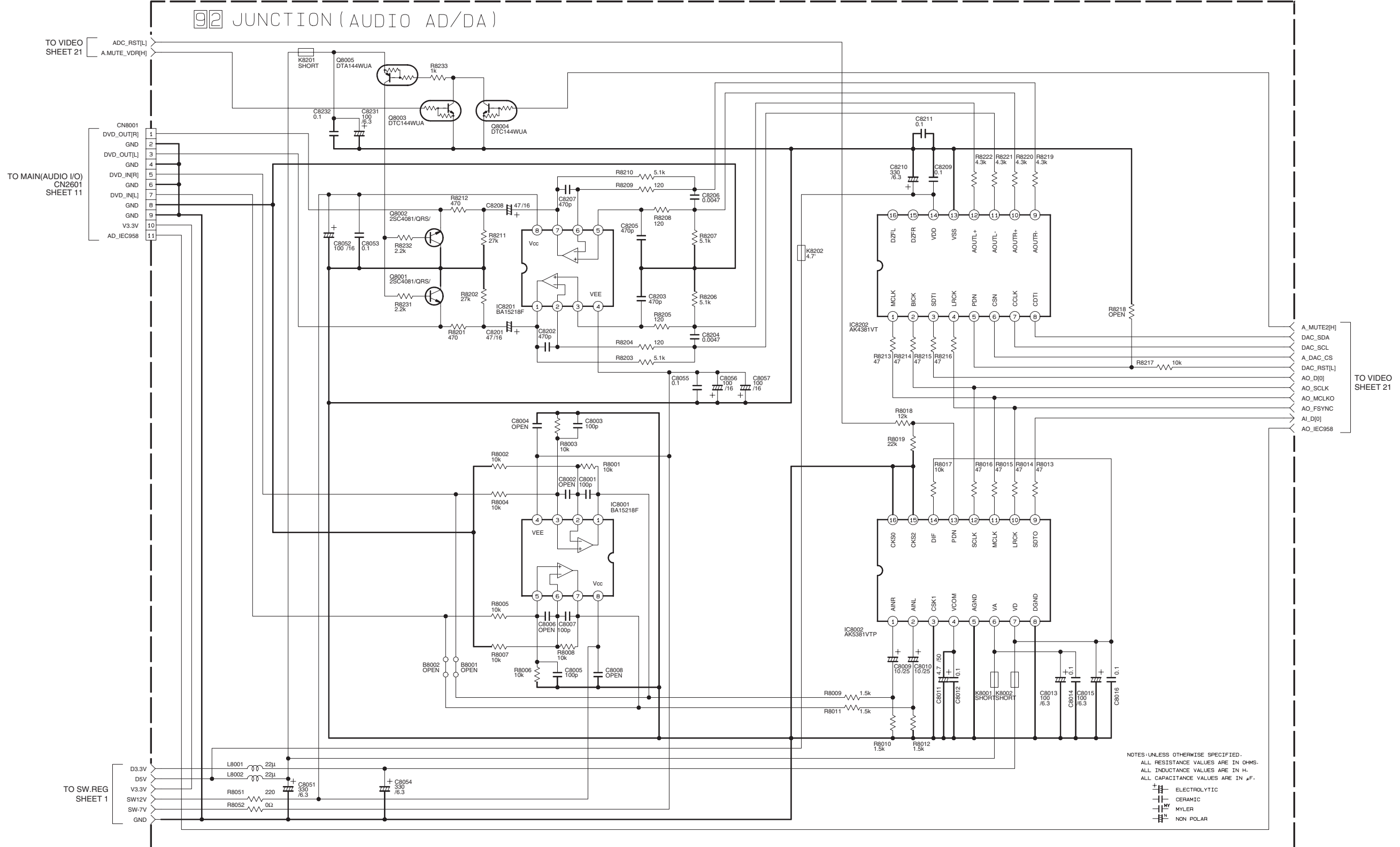
5

4

3

2

1



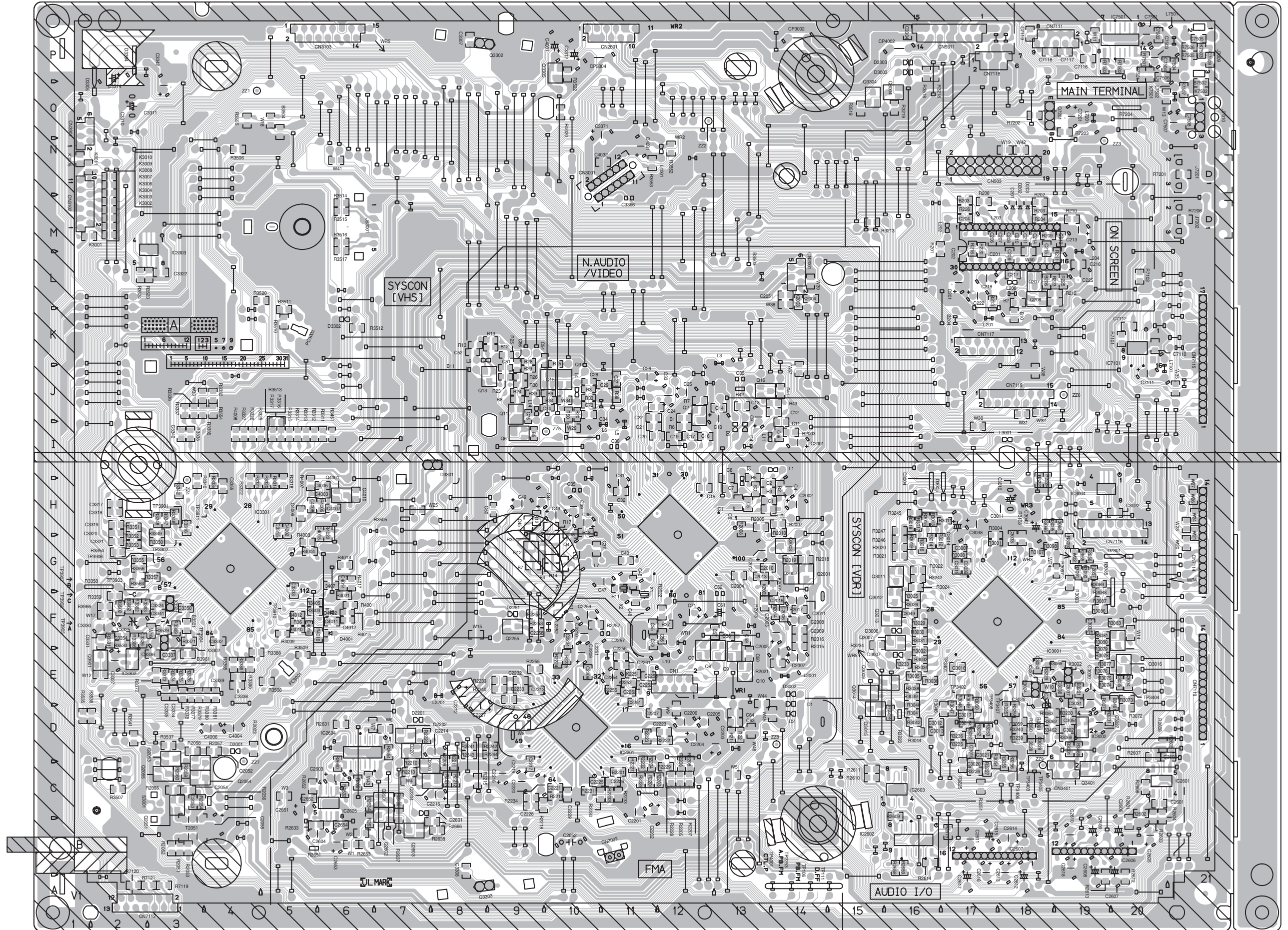
NOTES UNLESS OTHERWISE SPECIFIED:  
 ALL RESISTANCE VALUES ARE IN OHMS.  
 ALL INDUCTANCE VALUES ARE IN H.  
 ALL CAPACITANCE VALUES ARE IN µF.  
 + - - ELECTROLYTIC  
 - - - CERAMIC  
 - - - MYLER  
 - - - NON POLAR





■ MAIN CIRCUIT BOARD

<03>MAIN  
LPB10245-001D

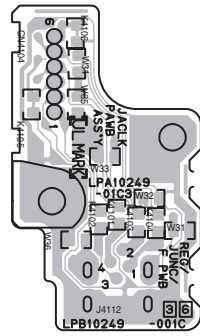




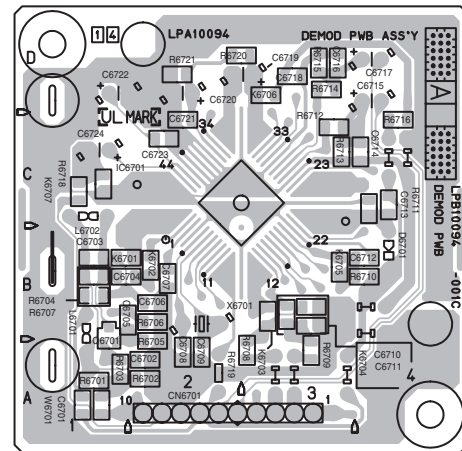


■ JACK, DEMOD, SWITCH/DISPLAY, AND SECAM CIRCUIT BOARDS

<36> JACK  
LPB10249-001C



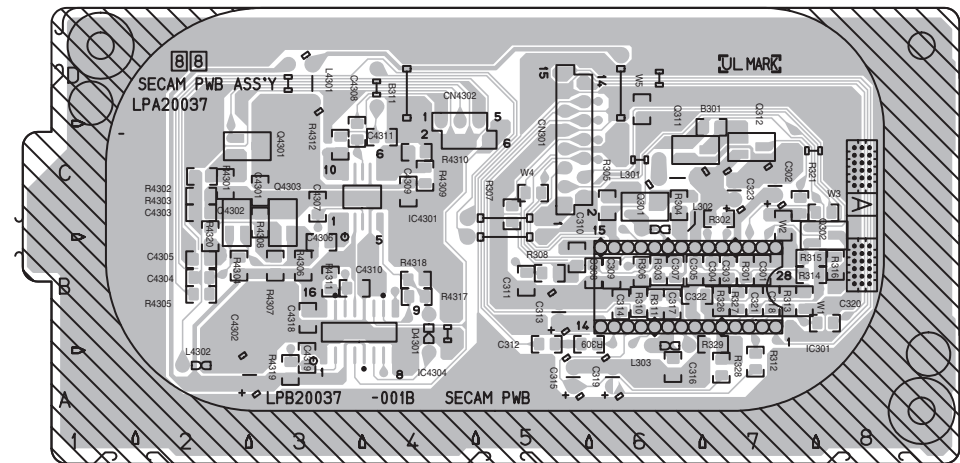
<14> DEMOD  
LPB10094-001C



COMPONENT PARTS LOCATION GUIDE <DEMOD> LPB10094-001C

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
<b>CAPACITOR</b>											
C6701	B C 1A	C6714	B C 4C	<b>DIODE</b>		<b>RESISTOR</b>		R6714	B C 3D	K6706	B C 3D
C6702	B C 2A	C6715	A D 4D	D6701	A D 4B	R6701	B C 1A	R6715	B C 3D	K6707	B C 1C
C6703	B C 1B	C6716	B C 3D	<b>IC</b>		R6702	B C 2A	R6716	B C 4C	X6701	A D 2B
C6704	B C 1B	C6717	A D 4D	IC6701	B C 3C	R6703	B C 1A	R6717	B C 1C		
C6705	B C 2B	C6718	B C 3D	<b>COIL</b>		R6704	B C 1B	R6718	A D 2A		
C6706	B C 2B	C6719	A D 3D	L6701	A D 1A	R6705	B C 2A	R6719	B C 3D		
C6707	B C 2B	C6720	A D 2D	L6702	A D 1C	R6706	B C 2B	R6720	B C 3D		
C6708	B C 2A	C6721	B C 2C	<b>TRANSISTOR</b>		R6707	B C 1B	R6721	B C 2D		
C6709	B C 2A	C6722	A D 1D	Q6701	B C 1B	R6708	B C 3A	<b>OTHER</b>			
C6710	B C 2A	C6723	B C 2C			R6709	B C 3A	K6701	B C 1B		
C6711	B C 3B	C6724	A D 1C			R6710	B C 4B	K6702	B C 2B		
C6712	B C 4B	<b>CONNECTOR</b>				R6711	B C 4C	K6703	B C 3B		
C6713	B C 4C	CN6701	A D 3A			R6712	B C 3C	K6704	B C 3B		
						R6713	B C 3C	K6705	B C 3B		

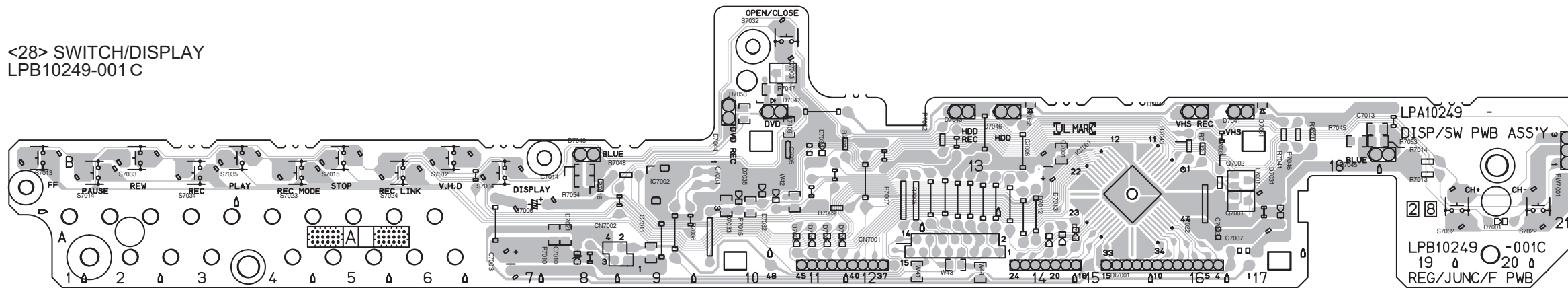
<88> SECAM  
LPB20037-001B



COMPONENT PARTS LOCATION GUIDE <SECAM> LPB20037-001B

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
<b>CAPACITOR</b>											
C301	B C 7B	C317	B C 6B	C4310	B C 3B	<b>COIL</b>		R315	B C 7B	R4310	B C 4C
C302	A D 7C	C318	B C 7B	C4311	B C 4C	L301	A D 6C	R316	B C 8B	R4311	B C 3B
C303	A D 7C	C319	A D 6A	C4318	B C 3B	L302	A D 6C	R317	B C 7C	R4312	B C 3C
C304	B C 7B	C320	B C 8B	C4319	B C 3A	L303	A D 6B	R318	B C 7B	R4313	B C 4B
C305	B C 6B	C321	B C 7B	<b>CONNECTOR</b>		L4301	A D 3D	R319	B C 7B	R4314	B C 3A
C307	B C 6B	C322	B C 6B	CN301	A D 5C	L4302	A D 2A	R320	B C 6C	R4315	B C 2C
C308	B C 6B	C323	A D 7C	CN4302	A D 4D	<b>TRANSISTOR</b>		R321	B C 6B	R4316	B C 2C
C309	B C 6B	C324	A D 3A			Q301	B C 6C	R322	B C 5B	R4317	B C 2C
C310	B C 5B	C325	B C 2C	<b>DIODE</b>		Q302	B C 8C	R323	B C 5B	R4318	B C 2B
C311	B C 5B	C326	B C 2B	D4301	A D 4B	Q311	B C 6C	R324	B C 5B	R4319	B C 2B
C312	B C 5B	C327	B C 2B	<b>IC</b>		Q312	B C 7C	R325	B C 6B	R4320	B C 3B
C313	A D 5B	C328	B C 3B	IC301	A D 7B	Q4301	B C 2C	R326	B C 7A	R4321	B C 3B
C314	A D 6B	C329	B C 3C	IC4301	B C 3C	Q4302	B C 2C	R327	B C 7A	R4322	B C 3C
C315	A D 5A	C330	B C 4C	IC4304	B C 3B	Q4303	B C 3C	R328	B C 7B	R4323	B C 3C
C316	B C 6A	C4309	B C 4C					R329	B C 7B	R4324	B C 4C

<28> SWITCH/DISPLAY  
LPB10249-001C



COMPONENT PARTS LOCATION GUIDE <SWITCH/DISPLAY> LPB10249-001C

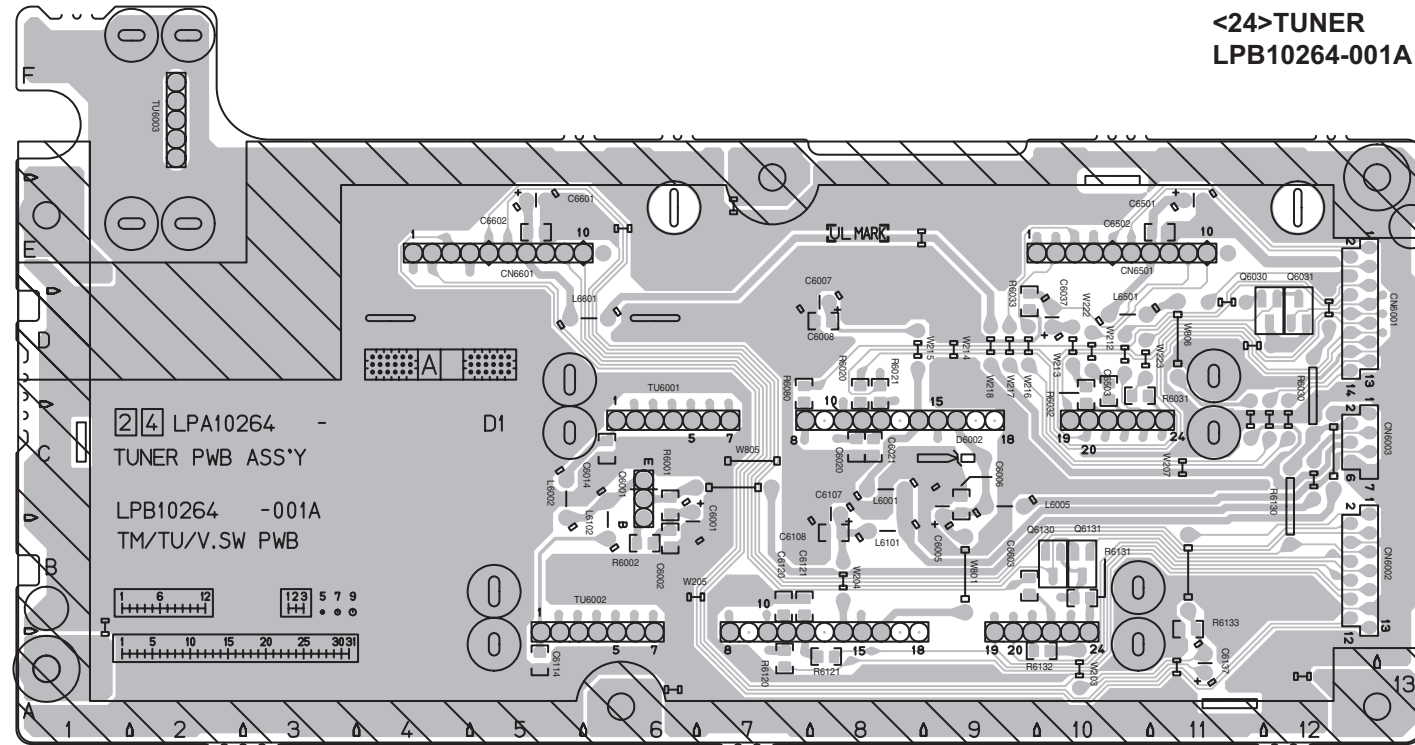
REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
<b>CAPACITOR</b>											
C7001	B C 14B	CN7002	A D 9A	D7035	A D 10B	IC7002	A D 9B	R7013	A D 19B	R7409	B C 11C
C7002	A D 16A	<b>DIODE</b>		D7041	A D 17C	R7014	A D 19B	S7033	A D 2B	S7034	A D 3B
C7003	A D 7A	D7001	A D 20A	D7042	A D 16C	<b>TRANSISTOR</b>		S7035	A D 4B		
C7004	B C 10B	D7002	A D 11A	D7043	A D 13C	Q7001	B C 17B	R7015	B C 10B	<b>OTHER</b>	
C7005	A D 11B	D7003	A D 11A	D7044	A D 10C	Q7002	B C 17B	R7016	A D 8B	CM2	B C 21P
C7006	A D 8B	D7004	A D 11A	D7045	A D 19B	Q7003	B C 11C	R7017	A D 18B	FW7001	A D 21B
C7007	A D 17A	D7005	A D 11A	D7046	A D 14C	<b>RESISTOR</b>		R7018	A D 16B	L7001	A D 17A
C7008	A D 14B	D7012	A D 14A	D7047	A D 11C	R7001	A D 12C	R7019	A D 17B	S7002	A D 20B
C7010	B C 8A	D7013	A D 14A	D7048	A D 8B	R7002	A D 13C	R7020	A D 16B	S7004	A D 7B
C7011	B C 9A	D7014	A D 15A	D7049	A D 14A	R7003	A D 14C	R7021	A D 16B	S7012	A D 6B
C7013	B C 19C	D7021	A D 8A	D7051	B C 17C	R7004	A D 16B	R7022	A D 17B	S7013	A D 1B
C7014	B C 8B	D7031	A D 17B	D7052	B C 14C	R7005	A D 12B	R7023	A D 17B	S7014	A D 2B
<b>CONNECTOR</b>											
CN7001	A D 14A	D7032	A D 11B	D7053	B C 11C	R7006	A D 10B	R7024	A D 17B	S7015	A D 5B
		D7033	A D 10B	D7054	A D 14B	R7007	A D 12B	R7025	A D 11C	S7022	A D 21B
		D7034	A D 11B	IC7001	B C 15B	R7008	A D 12B	R7026	A D 9B	S7023	A D 4B
						R7009	A D 11B	R7027	B C 19B	S7024	A D 6B
						R7010	B C 8A	R7028	B C 8B	S7032	A D 11D



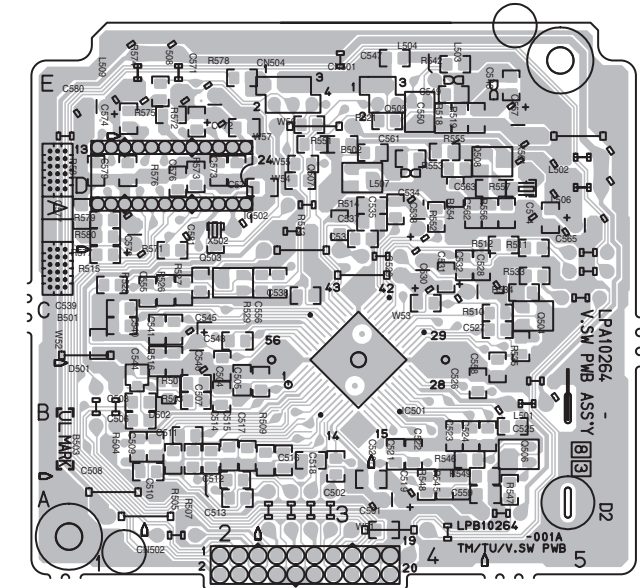


VIDEO SW,TUNER AND TERMINAL CIRCUIT BOARDS

<24>TUNER  
LPB10264-001A



<83>VIDEO SW  
LPB10264-001A



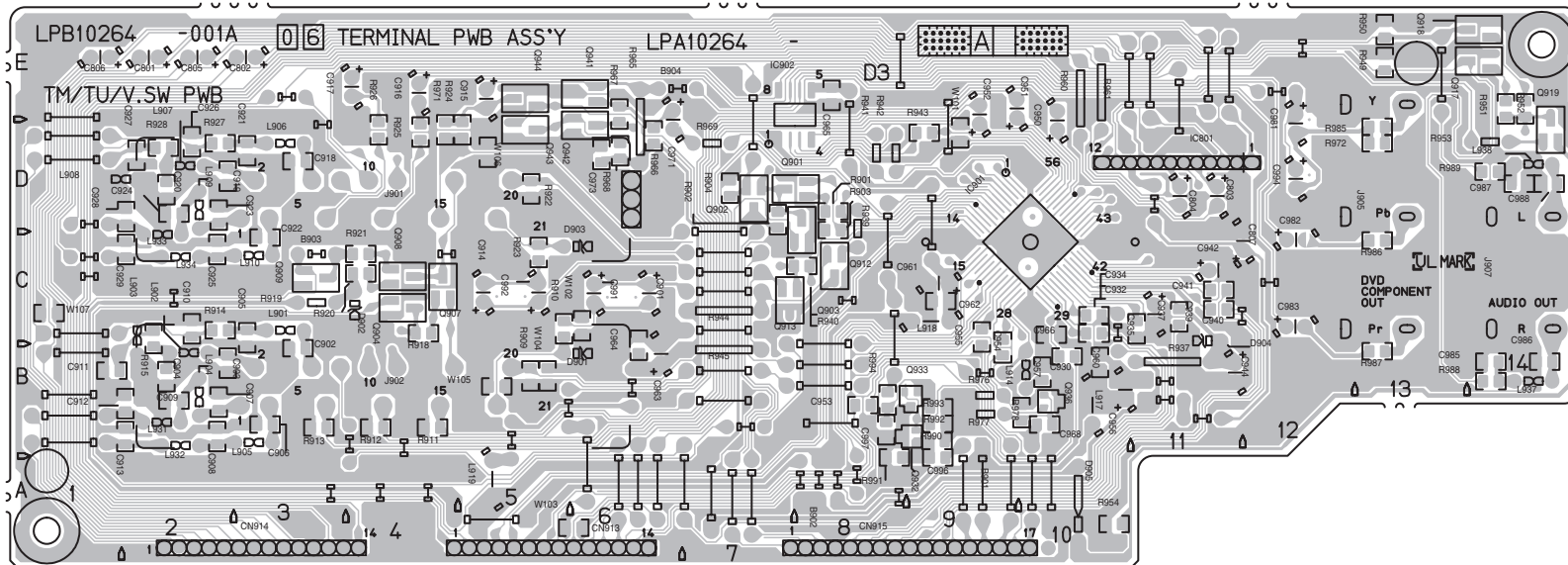
COMPONENT PARTS LOCATION GUIDE <TUNER> LPB10264-001A

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
<b>CAPACITOR</b>											
C6001	A D 6C	C6114	B C 5A	CN6002	A D 12C	L6102	A D 6B	R6002	B C 6B	R6133	B C 11B
C6002	B C 6B	C6120	B C 7B	CN6003	A D 12C	L6501	A D 10D	R6020	B C 8D	<b>OTHER</b>	
C6005	A D 9C	C6137	B C 7B	CN6501	A D 10E	L6601	A D 5D	R6021	B C 8D	TU6001	A D 5D
C6006	B C 8C	C6501	A D 11A	CN6601	A D 4E	<b>TRANSISTOR</b>		R6030	A D 12C	TU6002	A D 5B
C6007	A D 8D	C6502	B C 11E	<b>DIODE</b>		Q6001	A D 6C	R6032	B C 10D		
C6008	B C 8D	C6503	B C 10D	D6002	A D 8C	Q6030	B C 12D	R6033	B C 9D		
C6014	B C 6C	C6601	A D 5E	<b>COIL</b>		Q6031	B C 12D	R6080	B C 7D		
C6020	B C 8C	C6602	B C 5E	L6001	A D 8C	Q6130	B C 10B	R6120	B C 7A		
C6021	B C 8C	C6603	B C 9B	L6002	A D 5C	Q6131	B C 10B	R6121	B C 8A		
C6037	A D 10D	<b>CONNECTOR</b>		L6005	A D 9C	R6131	A D 12C	R6130	A D 12C		
C6107	A D 8C	CN6001	A D 12E	L6101	A D 8B	R6001	B C 6C	R6131	B C 10B		
C6108	B C 8B					R6001	B C 6C	R6132	B C 10A		

COMPONENT PARTS LOCATION GUIDE <VIDEO SW> LPB10264-001A

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	
<b>CAPACITOR</b>																				
C501	A D 4A	C518	B C 3B	C536	B C 3D	C559	B C 5A	CN501	A D 3E	L506	A D 6D	R507	B C 2B	R535	B C 5C	R575	B C 2E			
C502	B C 4A	C519	B C 4A	C537	B C 4D	C561	B C 4D	CN502	A D 2A	L507	A D 4D	R509	B C 3B	R542	B C 4E	R576	B C 2D			
C503	B C 1B	C521	B C 4B	C538	B C 3C	C562	B C 5D	CN504	A D 3E	L508	A D 2E	R510	B C 5C	R545	B C 4A	R577	B C 1C			
C504	B C 2B	C522	B C 4B	C539	B C 1C	C563	B C 5D			L509	A D 1E	R511	B C 5C	R546	B C 4B	R578	B C 2E			
C505	B C 3B	C523	B C 4B	C540	B C 2C	C564	B C 5D					R512	B C 5C	R547	B C 5A	R579	B C 1D			
C506	B C 1B	C524	B C 5B	C543	B C 2C	C571	A D 2E					R513	B C 3D	R548	B C 4A	R580	B C 1D			
C507	B C 2B	C525	B C 5B	C544	B C 2B	C572	B C 2D					R514	B C 4D	R549	B C 5A	R581	B C 1D			
C508	B C 2B	C526	B C 5B	C545	A D 2C	C573	B C 2D					R515	B C 1C	R551	B C 3D					
C509	B C 2B	C527	B C 5C	C546	B C 2B	C574	B C 1E					R516	B C 2B	R552	B C 4D					
C510	B C 2B	C528	A D 4C	C547	B C 4E	C575	B C 3D					R517	B C 4E	R553	B C 4D					
C511	B C 2B	C529	A D 4C	C548	B C 5E	C576	B C 2D					R518	B C 4E	R554	B C 4D					
C512	B C 2A	C530	B C 4C	C549	B C 4E	C577	B C 1D					R519	B C 4E	R555	B C 4D					
C513	B C 2A	C531	B C 4C	C550	B C 4E	C578	A D 1C					R520	B C 2C	R556	B C 5D					
C514	B C 2B	C532	B C 4C	C555	B C 4E	C579	B C 1D					R521	B C 2C	R557	B C 5D					
C515	B C 2B	C533	B C 4C	C556	B C 3C	C580	A D 1E					R522	B C 2C	R557	B C 5D					
C516	B C 3B	C534	A D 4D	C557	A D 5E	C581	B C 2D					R523	B C 2C	R571	B C 2C					
C517	B C 3B	C535	B C 4D	C558	B C 5B							R524	B C 2C	R572	B C 2E					
<b>CONNECTOR</b>																				
CN501	A D 3E	CN502	A D 2A	CN504	A D 3E	L506	A D 6D	R507	B C 2B	R535	B C 5C	R575	B C 2E							
<b>DIODE</b>																				
D501	B C 1B	D502	B C 2B	Q503	A C 2C	Q504	B C 5C	Q505	B C 4E	Q506	B C 5B	Q507	B C 3D	Q508	B C 5D					
<b>IC</b>																				
IC501	B C 3B	IC502	A D 2D																	
<b>COIL</b>																				
L501	A D 5B	L502	A D 6D	L503	A D 5E	L504	A D 4E													
<b>RESISTOR</b>																				
R501	B C 2B	R503	B C 2B	R504	B C 1B	R505	B C 2B	R534	B C 5C	R574	B C 2E									
<b>OTHER</b>																				
X501	A D 5D	X502	A D 2D																	

<06>TERMINAL  
LPB10264-001A

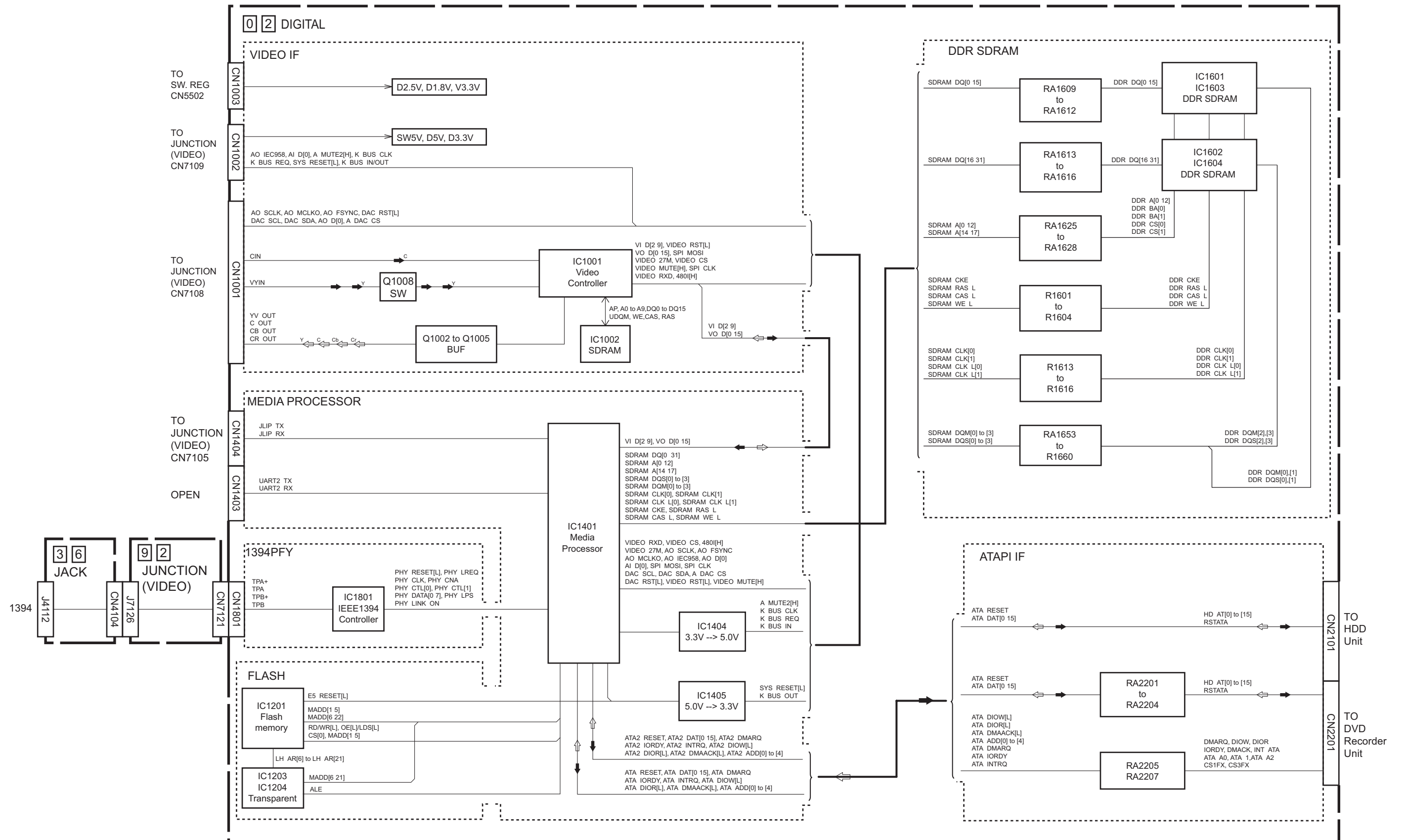


COMPONENT PARTS LOCATION GUIDE <TERMINAL> LPB10264-001A

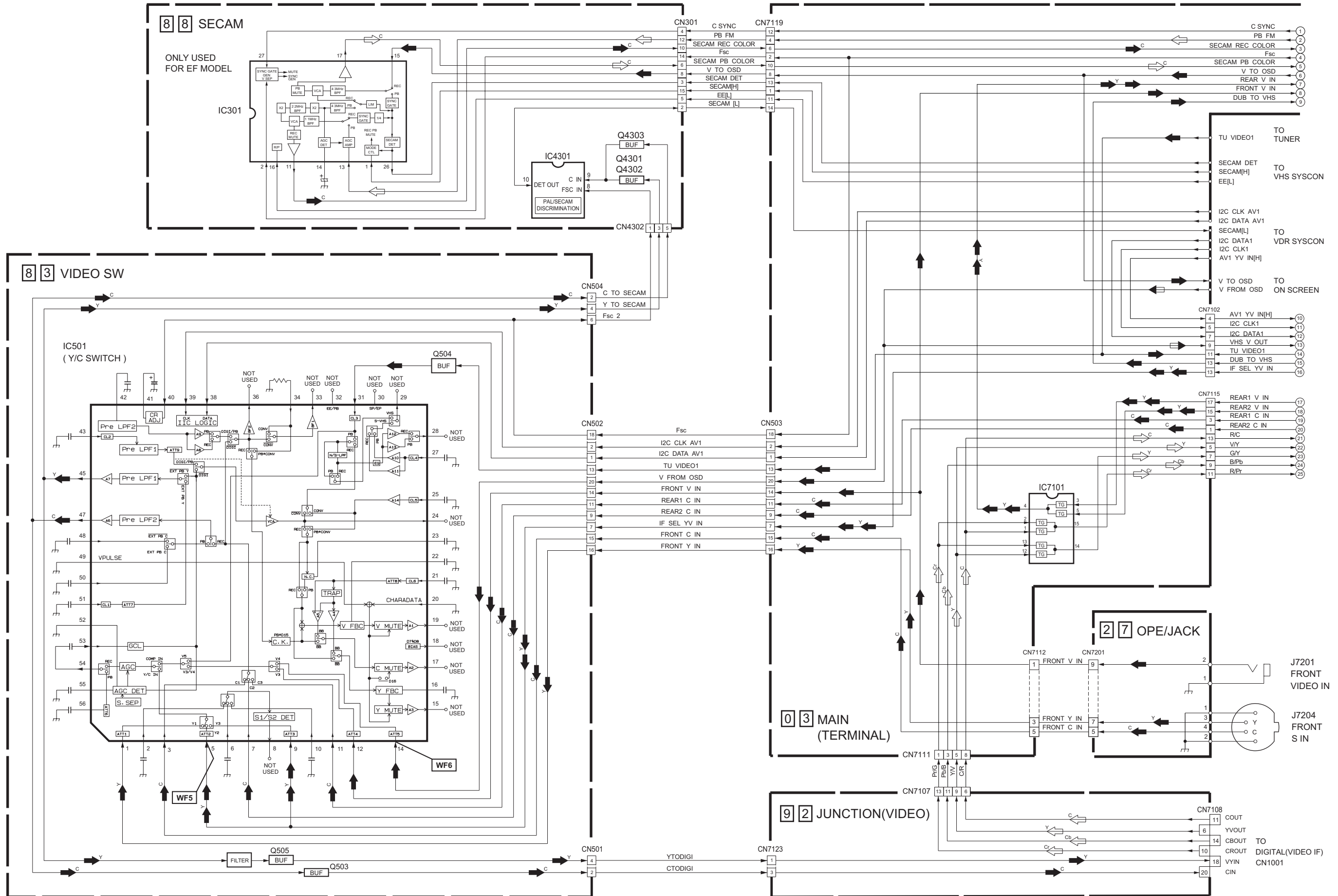
REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
<b>CAPACITOR</b>																			
C801	A D 2E	C923	B C 2D	C965	B C 8E	IC	Q903	B C 8D	R918	B C 4C	R968	B C 6D							
C802	A D 3E	C924	B C 2D	C966	B C 10C	IC801	A D 12D	Q904	B C 4C	R919	A D 3C	R969	A D 7D						
C803	A D 11D	C925	B C 2D	C968	B C 10B	IC901	B C 10C	Q907	B C 4C	R920	B C 4C	R971	B C 4D						
C804	A D 11D	C926	B C 2D	C971	A D 6E	IC902	B C 8E	Q908	B C 4C	R921	B C 4C	R972	B C 4D						
C805	A D 2E	C927	B C 2D	C973	B C 6D			Q909	B C 3C	R922	B C 5D	R976	A D 9E						
C806	A D 1E	C928	B C 2D	C981	A D 12E			Q912	B C 8C	R923	B C 5C	R977	A D 9E						
C807	A D 12C	C929	B C 2C	C982	A D 12C	L901	A D 3C	Q913	B C 7C	R924	B C 5D	R978	B C 10B						
C901	A D 6C	C930	B C 10B	C983	A D 12C	L902	A D 2B	Q917	B C 14E	R925	B C 4D	R985	B C 13D						
C902	B C 3B	C932	B C 10C	C985	B C 14B	L903	A D 2B	Q918	B C 14E	R926	B C 4D	R986	B C 13C						
C903	B C 2B	C934	B C 10C	C986	B C 14B	L904	A D 2B	Q919	B C 14D	R927	B C 2D	R987	B C 13B						
C904	B C 2B	C935	B C 11C	C987	B C 14D	L905	A D 3B	Q932	B C 9B	R928	B C 2D	R988	B C 14B						
C905	B C 2B	C937	A D 11C	C988	B C 14D	L906	A D 3D	Q933	B C 9B	R937	A D 11B	R989	B C 14D						
C906	B C 3C	C939	B C 11C	C991	A D 6C	L907	A D 2D	Q936	B C 10B	R939	A D 8D	R990	B C 9B						
C907	B C 3B	C940	B C 11C	C992	A D 5C	L908	A D 2D	Q941	B C 6E	R940	B C 8C	R991	B C 8A						
C908	B C 2B	C941	B C 11C	C994	A D 12D	L909	A D 2D	Q942	B C 6D	R941	A D 8D	R992	B C 9B						
C909	B C 2B	C942	A D 11C	C996	B C 9A	L910	A D 3C	Q943	B C 5D	R942	A D 8D	R993	B C 8B						
C910	B C 2C	C944	A D 11B	C997	B C 8B	L911	A D 10B	Q944	B C 5E	R943	B C 9D	R994	B C 9B						
C911	B C 2C	C950	A D 10D	L917	A D 10B	L918	A D 10B												
C912	B C 2B	C951	A D 9E	L918	A D 9C	L919	A D 5A												
C913	B C 2B	C952	A D 8D	CN913	A D 4A	L921	A D 2B	R901	B C 8D	R950	B C 13E	J901	A D 4D						
C914	A D 5C	C953	B C 8B	CN914	A D 2A	L931	A D 2B	R902	B C 7D	R949	B C 13E	J902	A D 4B						
C915	A D 5E	C954	B C 9B	CN915	A D 7A	L932	A D 2B	R903	B C 8D	R951	B C 14E	J905	A D 13D						
C916	A D 4E	C955	B C 9C			L933	A D 2C	R904	B C 7D	R952	B C 14E	J907	A D 14C						
C917	A D 4E	C956	A D 10B			L934	A D 2C	R909	B C 5B	R953	A D 14D								
C918	B C 3D	C957	B C 10B	D901	A D 6B	L937	A D 14B	R910	B C 5C	R954	B C 10A								
C919	B C 2D	C961	A D 9C	D902	A D 4C	L938	A D 14D	R911	B C 4B	R960	A D 10D								
C920	B C 2D	C962	B C 9C	D903	A D 6C			R912	B C 4B	R961	A D 10D								
C921	B C 3D	C963	A D 6B	D904	A D 11C			R913	B C 3B	R965	A D 6D								
C922	B C 3C	C964	B C 6B	D905	A D 10A			R914	B C 2C	R966	B C 6D								
<b>TRANSISTOR</b>																			
Q901	B C 8D	Q902	B C 7D	R915	B C 2C	R967	B C 6E												



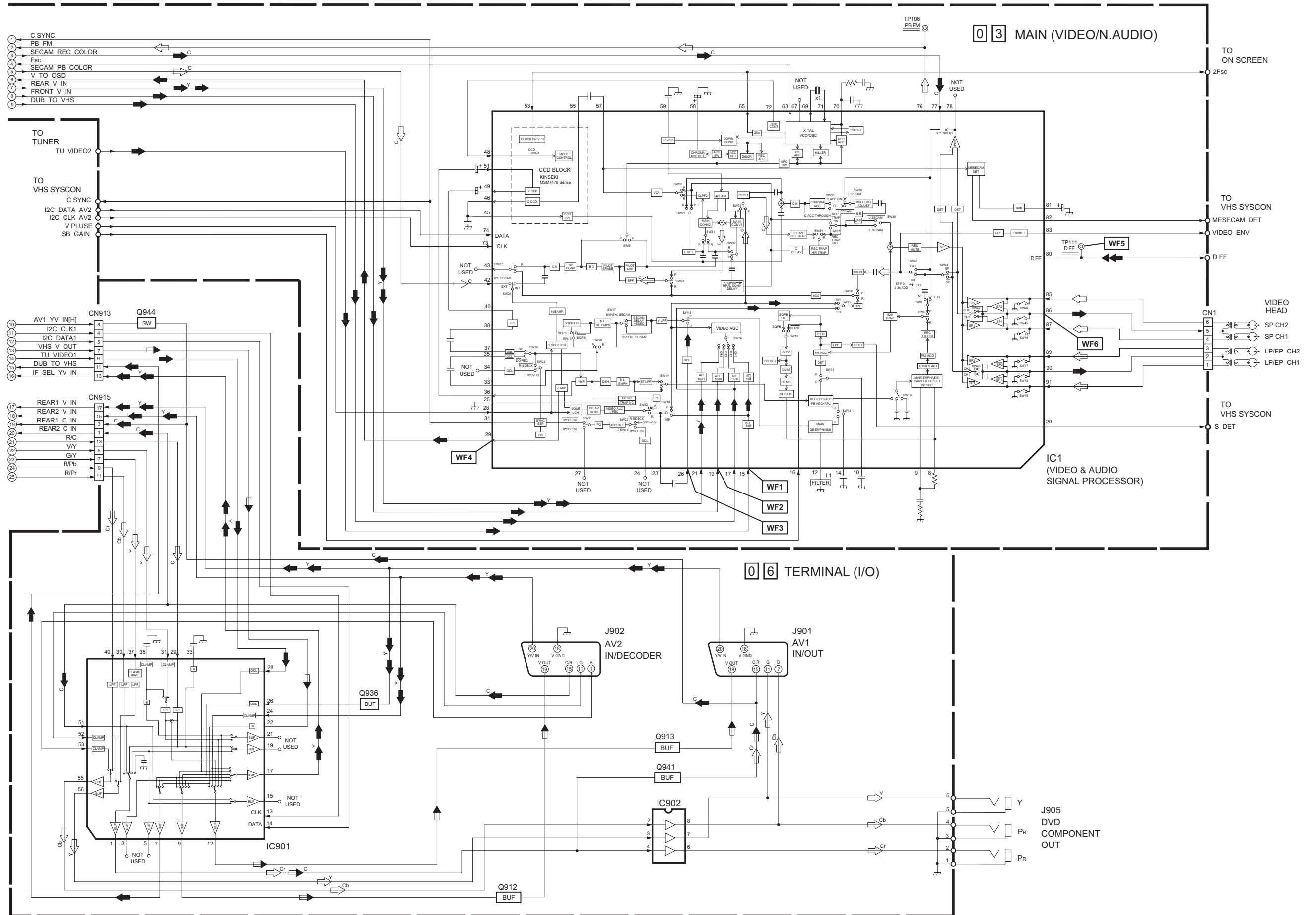
■ DIGITAL BLOCK DIAGRAM



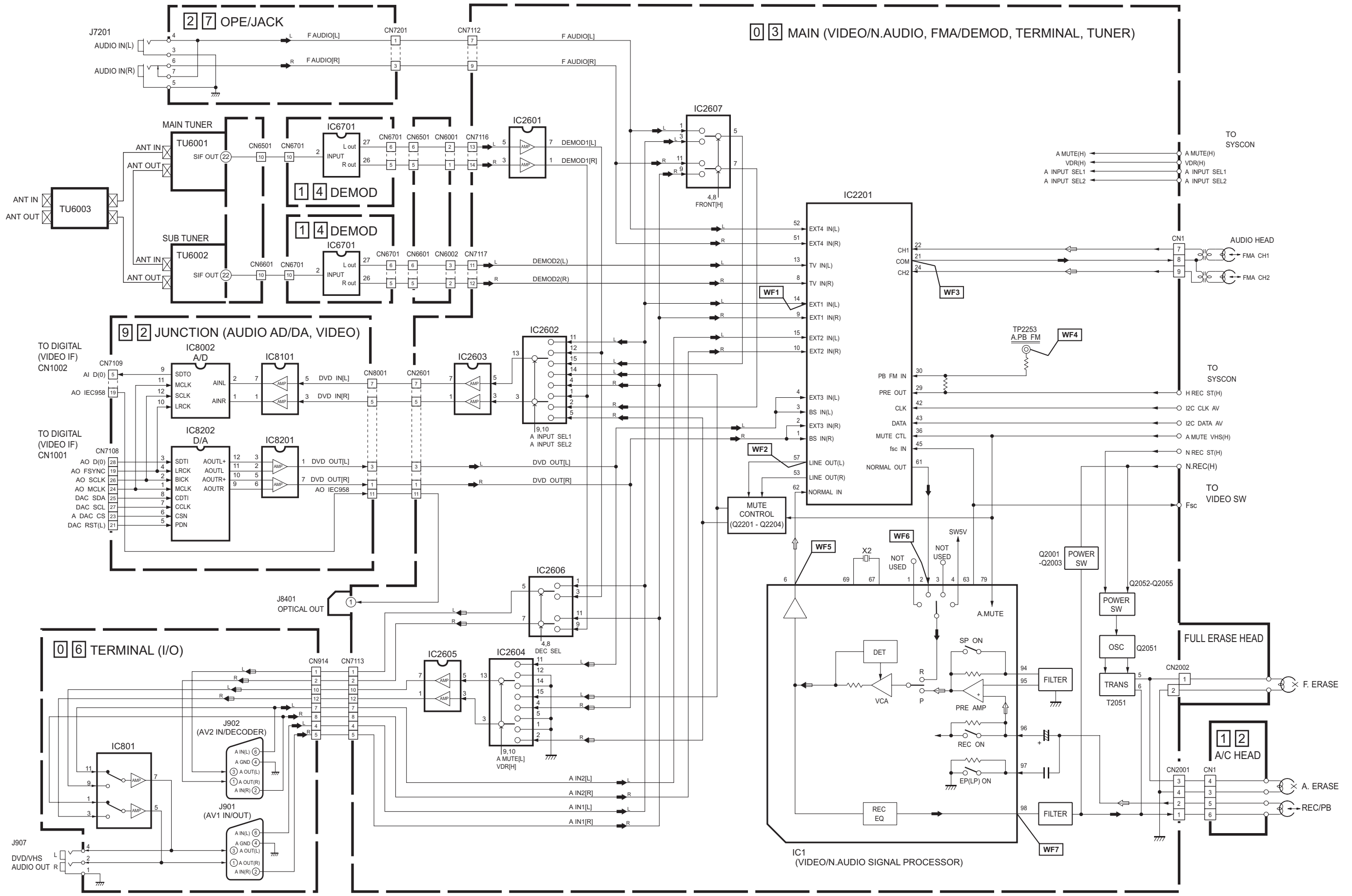
VIDEO BLOCK DIAGRAM (1)



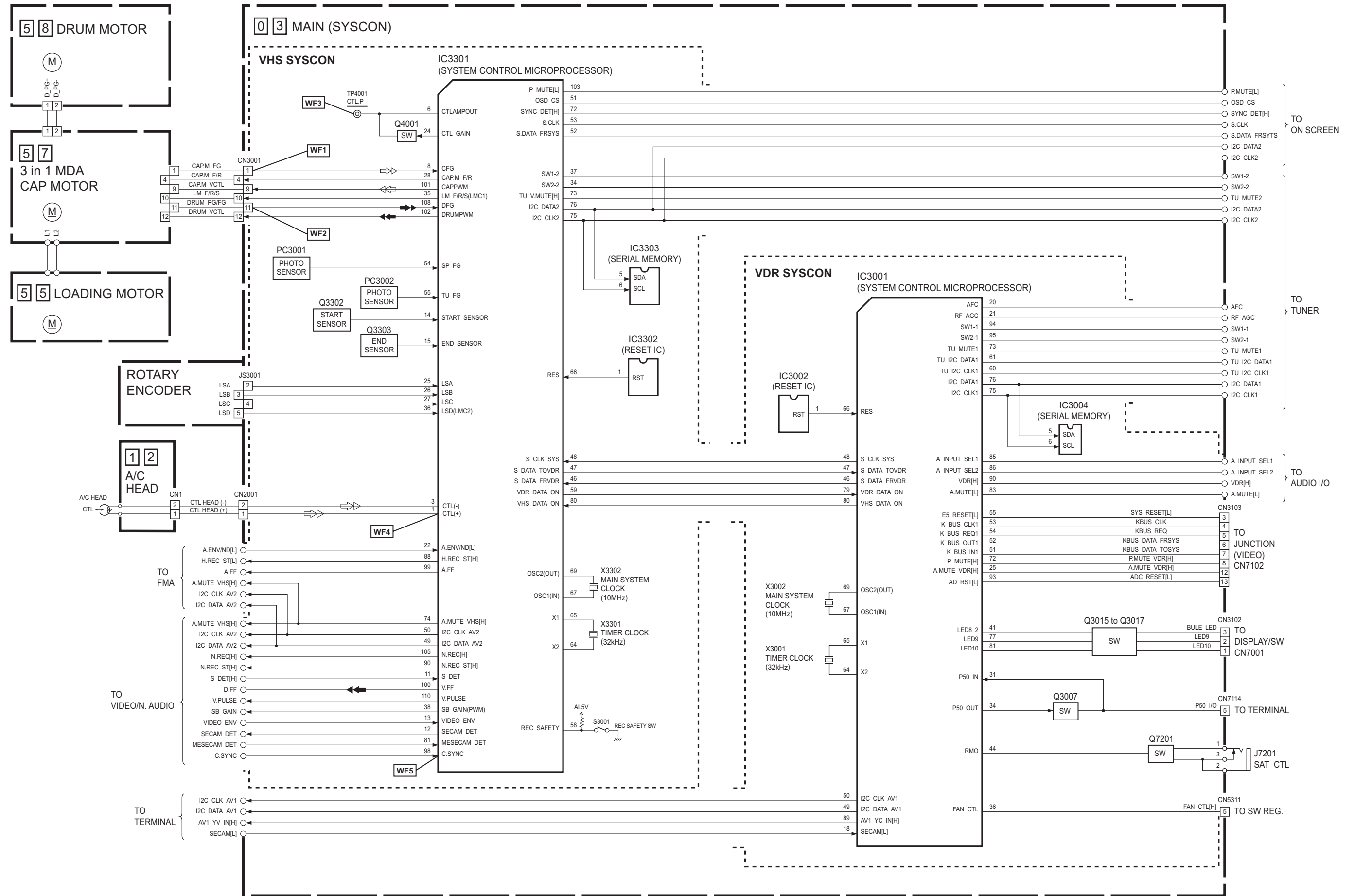
# VIDEO BLOCK DIAGRAM (2)



# AUDIO BLOCK DIAGRAM



# SYSTEM CONTROL BLOCK DIAGRAM



## ■ CPU PIN FUNCTION

### <VHS SYSCON IC3301>

PIN NO.	LABEL	IN/OUT	FUNCTION
1	CTL[+]	IN/OUT	CTL(+) SIGNAL
2	SVss	-	GND
3	CTL[-]	IN/OUT	CTL(-) SIGNAL
4	CTLBIAS	-	CTL BIAS VOLTAGE
5	CTLFB	IN	CTL PULSE FEEDBACK
6	CTLAMP/OUT	OUT	CTL PULSE OUTPUT
7	CTLSMTIN	IN	CTL PULSE OUTPUT
8	CFG	IN	CAPSTAN FG PULSE INPUT
9	SVcc	-	SYSTEM POWER
10	Avcc	-	SYSTEM POWER
11	NORM/MESEC/S_DET	IN	SQPB:H/MESECAM:M/NORMAL:L
12	SECAN_DET	IN	SECAN MODE DETECT
13	VIDEO_ENV	IN	AUTO TRACKING DETECT/INPUT THE AVERAG OF PLAYBACK VIDEO SIGNAL
14	START_SENSOR	IN	START SENSOR
15	END_SENSOR	IN	END SENSOR
16	NC	-	NOT USED
17	PROTECT	IN	DETECTION SIGNAL FOR SWITCHING POWERSUPPLY
18	TEST	-	NOT USED
19	NC	-	NOT USED
20	NC	-	NOT USED
21	NC	-	NOT USED
22	A.ENV/ND[L]	IN	AUDIO PB FM ENV.INPUT/NON HIFI MODE:L
23	Avss	-	GND
24	CTL_GAIN/TEST	OUT	CONTROL AMP OUT FREQUENCY RESPONSE SWITCHIN
25	LSA	IN	MECHANISM MODE DETECT (A)
26	LSB	IN	MECHANISM MODE DETECT (B)
27	LSC	IN	MECHANISM MODE DETECT(C)
28	CAP.M_F/R	OUT	CAPSTAN MOTOR REVERSE CONTROL (FWD:L/REV:H)
29	NC	-	NOT USED
30	VHS_AV1[H]	OUT	VHS_AV1 MODE : H
31	NC	-	NOT USED
32	NC	-	NOT USED
33	NC	-	NOT USED
34	SW2-2	OUT	TV RF SYSTEM SELECT
35	LM_F/R/S[LMC1]	OUT	LOADING MOTOR DRIVE
36	LSD[LMC2]	IN	MECHANISM MODE DETECT (D)
37	SW1-2	OUT	TV RF SYSTEM SELECT
38	SB_GAIN[PWM]	OUT	VOLTAGE CONTROL SIGNAL FOR VIDEO FREQUENCY RESPONSE
39	NC	-	NOT USED
40	POWER_DET	IN	DETECTION SIGNAL FOR POWER DOWN OF AC POWER SUPPLY
41	NC	-	NOT USED
42	P.SAVE[L]	OUT	POWER SAVE MODE : L
43	Vss	-	GND
44	NC	-	NOT USED
45	Vcc	-	SYSTEM POWER
46	S_DATA_FRVDR	OUT	SERIAL DATA TRANSFER OUTPUT FROM THE THE VDR SYSCON CPU
47	S_DATA_TOVDR	IN	SERIAL DATA TRANSFER OUTPUT TO THE VDR SYSCON CPU
48	S_CLK_SYS	OUT	SERIAL DATA TRANSFER CLOCK FOR VDR SYSCON CPU
49	12C_DATA_AV2	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR AV IC
50	12C_CLK_AV2	OUT	SERIAL DATA TRANSFER CLOCK FOR AV IC
51	OSD_CS	OUT	ON-SCREEN IC CHIP SELECT
52	S.DATA_FRSYS	OUT	SERIAL DATA TRANSFER OUTPUT FROM THE FDP DRIVER TO THE ON-SCREEN
53	S.CLK	OUT	SERIAL DATA TRANSFERMER CLOCKFOR ONSCREEN IC
54	SP_FG	IN	DETECTION SIGNAL FOR SUPPLY REEL ROTATION/TAPE REMAIN
55	TU_FG	IN	DETECTION SIGNAL TAKE-UP REEL ROTATION/TAPE REMAIN
56	NC	-	NOT USED

## ■ CPU PIN FUNCTION

### <VDR SYSCON IC3001>

PIN NO.	LABEL	IN/OUT	FUNCTION
1	NC	-	NOT USED
2	SVss	-	GND
3	NC	-	NOT USED
4	NC	-	NOT USED
5	NC	-	NOT USED
6	NC	-	NOT USED
7	NC	-	NOT USED
8	NC	-	NOT USED
9	SVcc	-	SYSTEM POWER
10	Avcc	-	SYSTEM POWER
11	NC	-	NOT USED
12	NC	-	NOT USED
13	NC	-	NOT USED
14	NC	-	NOT USED
15	NC	-	NOT USED
16	NC	-	NOT USED
17	TEST	-	NOT USED
18	SECAM[L]	IN	SECAM MODE : L
19	NC	-	NOT USED
20	AFC1	OUT	TUNING CHECK
21	RF_AGC	IN	CHANGES IN ATS+IC OUTPUT AS CAUSED BY CHANGES IN RECEIVER SENSITIVITY WHEN RHE SAME CHANNEL IS RECEIVED MORE ARE INPUT.
22	SCR_ID	IN	SCRAMBLE CONTROL INPUT (SCRAMBLE : H)
23	Avss	-	GND
24	LED5[VHS_TIMER]	OUT	VHS TIMER SAND-BY LED ON/OFF CONTROL
25	A.MUTE_VDR[H]	OUT	AUDIO MUTE CONTROL FOR VDR (MUTE ON : H)
26	LED6[VHS]	OUT	VHS LED ON/OFF CONTROL
27	NC	-	NOT USED
28	NC	-	NOT USED
29	RC_IN	IN	REMOTE CONTROL DATA INPUT
30	LED7[VHS_REC]	OUT	VHS REC LED ON/OFF CONTROL
31	P50_IN	IN	CONTROL SIGNAL FOR TV LINK
32	COMPU_IN	IN	AV COMPULINK INPUT
33	COMPU_OUT	OUT	AV COMPULINK OUTPUT
34	P50_OUT	OUT	CONTROL SIGNAL FOR TV LINK
35	P.CTL1[H]	OUT	CONTROL SIGNAL FOR SWITCHING POWER SUPPLY
36	FAN_CTL	OUT	FAN MOTOR ON/OFF CONTROL
37	NC	-	NOT USED
38	LED8_1[BLUE]	OUT	ILLUMINATION LED CONTROL
39	STB	OUT	STROBE SIGNAL
40	POWER_DET	IN	DETECTION SIGNAL FOR POWER DOWN OF AC POWER SUPPLY
41	LED8_2[BLUE]	OUT	ILLUMINATION LED CONTROL
42	PROTECT	IN	DETECTION SIGNAL FOR SWITCHING POWER SUPPLY
43	Vss	-	GND
44	RMO	OUT	REMOTE CONTROL SIGNAL OUTPUT FOR OTHER UNIT
45	Vcc	-	SYSTEM POWER
46	S_DATA_TOVDR/FLASH	IN	SERIAL DATA TRANSFER OUTPUT TO VDR SYSCON CPU
47	S_DATA_FRVDR/FLASH	OUT	SERIAL DATA TRANSFER OUTPUT FROM VDR SYSCON CPU
48	S_CLK_SYS	OUT	SERIAL DATA TRANSFER CLOCK FOR V,g,r SCON CPU
49	12C_DATA_AV1	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR MEMORY IC
50	12C_CLK_AV1	OUT	SERIAL DATA TRANSFER CLOCK FOR MEMORY IC
51	K_BUS_IN1	IN	SERIAL DATA TRANSFER INPUT FROM DVD CPU
52	K_BUS_OUT1	OUT	SERIAL DATA TRANSFER OUTPUT TO DVD CPU
53	K_BUS_CLK1	OUT	SERIAL DATA TRANSFERMER CLOCK FOR DVD CPU
54	K_BUS_REQ1	OUT	SERIAL DATA TRANSFER REQUEST TO DVD CPU
55	E5_RESET[L]	OUT	RESET OUTPUT TO IC1401
56	FLASH	-	FOR REWRITTING PROGRAM

PIN NO.	LABEL	IN/OUT	FUNCTION
57	FLASH	-	FOR REWRITTING PROGRAM
58	FLASH	-	FOR REWRITTING PROGRAM
59	NC	-	NOT USED
60	TU_12C_CLK1	OUT	CLOCK OUTPUT TO TUNER
61	TU_12_DATA1	OUT	DATA OUT PUT TO TUNER
62	FWE	-	FLASH WRITE ENABLE
63	NC	-	NOT USED
64	X2	-	TIMER CLOCK(32kHz)
65	X1	-	TIMER CLOCK(32kHz)
66	RES	-	RESET TERMINAL(RESET ON:L)
67	OSC1	IN	MAIN SYSTEM CLOCK(10MHz)
68	Vss	-	GND
69	OSC2	IN	MAIN SYSTEM CLOCK(10MHz)
70	Vcl	-	NOT USED
71	MODE	-	NOT USED
72	P.MUTE[H]	OUT	PICTURE MUTE CONTROL (MUTE : H)
73	TU_V.MUTE1[H]		TUNER VIDEO MUTE CONTROL (MUTE:H)
74	SEPA_IN	OUT	Y/C SEPARATE INPUT MODE
75	12C_CLK1	OUT	SERIAL DATA TRANSFER CLOCK FOR MEMORY IC
76	12C_DATA1	-	SERIAL DATA TRANSFER OUTPUT FOR MEMORY IC
77	LED9[VDR_TIMER]	OUT	VDR TIMER STAND-BY LED ON/OFF CONTROL
78	P_ON_PULSE	OUT	POWER ON/OFF PULSE OUTPUT
79	VDR_DATA_ON	IN	SERIAL DATA TRANSFER REQUEST TO VDR SYSCON CPU
80	VHS_DATA_ON	OUT	SERIAL DATA TRANSFER REQUEST TO VHS SYSCON CPU
81	LES10[VDR]	OUT	VDR LED ON/OFF CONTROL
82	Vcc	-	SYSTEM POWER
83	A.MUTE[L]	OUT	AUDIO MUTE CONTROL (MUTE ON : L)
84	Vss	-	GND
85	A_INPUT_SEL1	OUT	AUDIO SIGNAL INPUT SELECT-1
86	A_INPUT_SEL2	OUT	AUDIO SIGNAL INPUT SELECT-2
87	DEC_SEL	OUT	DECODER SELECT
88	FRONT[H]	OUT	FRONT INPUT MODE : H
89	AV1_YC_IN[H]	OUT	Y/C SEPARATE INPUT MODE OF AV1 : H
90	VDR[H]	OUT	VDR MODE : H
91	RGB[H]	OUT	RGB MODE : H
92	SYNC_DET	IN	DETECTION OF VDR VIDEO SIGNAL
93	AD_RST[L]	OUT	A/D CONVERTER RESET PULSE OUTPUT
94	SW1_1	OUT	TV RF SYSTEM SELECT-1
95	SW2_1	OUT	TV RF SYSTEM SELECT-2
96	P.SAVE[L]	OUT	POWER SAVE MODE:H
97	NC	-	NOT USED
98	NC	-	NOT USED
99	NC	-	NOT USED
100	NC	-	NOT USED
101	NC	-	NOT USED
102	NC	-	NOT USED
103	NC	-	NOT USED
104	NC	-	NOT USED
105	NC	-	NOT USED
106	NC	-	NOT USED
107	NC	-	NOT USED
108	NC	-	NOT USED
109	Vcc	-	SYSTEM POWER
110	NC	-	NOT USED
111	Vss	-	GND
112	NC	-	NOT USED

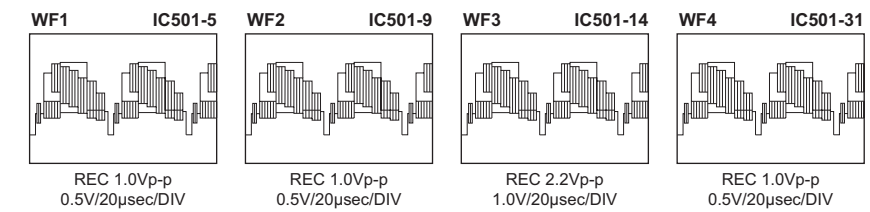




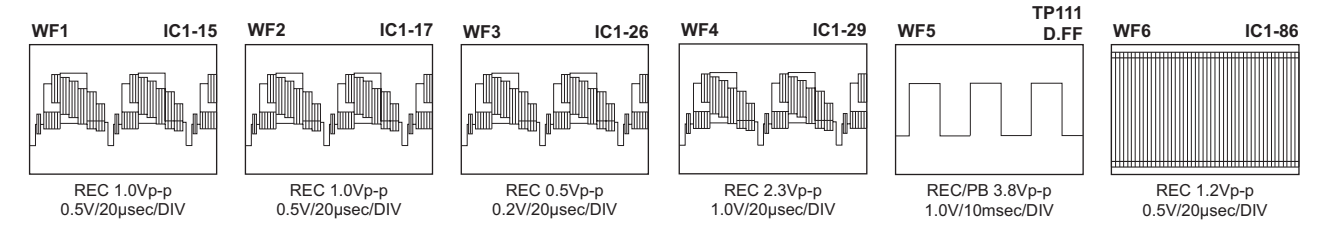
# VOLTAGE CHARTS

<b>&lt;TERMINAL&gt;</b>			<b>&lt;TUNER&gt;</b>			<b>&lt;VIDEO SW&gt;</b>		
MODE PIN NO.	REC	PLAY	MODE PIN NO.	REC	PLAY	MODE PIN NO.	REC	PLAY
IC801			Q6001			IC501		
1	7.3	7.5	C	0	0	1	2.8	2.8
2	0	0	B	0.2	0	2	0.2	0.2
3	7.2	7.5	Q908			3	2.1	2.0
4	0	0	E	2.9	2.9	4	4.9	4.9
5	6.6	6.8	C	0	0	5	2.7	2.7
6	0	0	B	4.1	4.1	6	0.2	0.2
7	6.6	6.8	Q912			7	2.1	2.1
8	0	0	E	2.1	2.2	8	0.1	0.1
9	7.3	7.5	C	0	0	9	2.8	2.8
10	11.1	11.3	B	1.5	1.5	10	0.2	0.2
11	7.3	7.5	Q913			11	2.1	2.0
12	0	0	E	3.1	3.1	12	2.8	2.2
IC901			C	0	0	13	0	0
1	2.4	2.4	B	2.5	2.5	14	2.8	2.8
2	0	0	Q917			15	1.5	1.5
3	2.1	2.1	E	0	0	16	2.7	2.7
4	0	0	C	0	0	17	2.4	2.4
5	2.4	2.4	B	-0.4	-0.1	18	0	0
6	0.8	0.8	Q918			19	1.5	1.5
7	2.1	2.1	E	0	0	20	0	0
8	0	0	C	0	0	21	2.6	2.7
9	1.4	1.5	B	-0.4	-0.1	22	2.7	2.7
10	0	0	Q919			23	2.9	3.0
11	0	0	E	4.7	4.7	24	2.7	2.7
12	2.5	2.4	C	-0.4	-0.1	25	2.8	2.8
13	4.3	3.6	B	5.0	5.0	26	5.0	5.0
14	3.6	4.0	Q932			27	2.8	2.5
15	2.2	2.2	E	0	0	28	2.2	2.2
16	5.0	5.0	C	0	0	29	2.3	2.3
17	1.8	1.8	B	3.1	3.1	30	0	0
18	5.0	5.0	Q933			31	2.7	2.7
19	2.4	2.4	E	2.3	2.4	32	0	0
20	0	0	C	0	0	33	2.9	2.8
21	2.1	2.1	B	1.7	1.7	34	0.4	0.3
22	2.4	2.4	Q936			35	2.8	2.8
23	4.1	4.2	E	3.1	3.0	36	3.1	3.1
24	0	1.8	C	0	0	37	0	0
25	0	0	B	2.4	2.4	38	4.9	5.0
26	1.7	1.7	Q941			39	4.9	4.9
27	0	0	E	6.3	6.4	40	2.8	2.7
28	1.7	1.7	C	0	0	41	2.7	2.7
29	2.2	2.2	B	5.6	5.8	42	2.8	2.8
30	5.0	5.0	Q942			43	3.0	3.0
31	2.0	2.0	E	0	0	44	1.6	1.6
32	0	0	C	0	0	45	1.3	1.3
33	2.2	2.3	B	8.4	8.7	46	4.9	4.9
34	0	0	Q943			47	2.47	2.4
35	1.8	1.6	E	0	0	48	2.8	2.8
36	2.9	2.9	C	8.4	8.6	49	0	0
37	2.3	2.2	B	0	0	50	2.8	2.8
38	6.4	9.0	Q944			51	2.8	2.9
39	2.2	2.2	E	0	0	52	0	0
40	4.0	2.2	C	6.2	6.3	53	2.9	2.9
41	4.4	4.5	B	0	0	54	2.2	2.2
42	4.5	4.5	CN913			55	1.1	1.1
43	4.5	4.5	1	4.9	4.9	56	2.5	2.5
44	0	0	2	10.7	10.7	IC502		
45	4.5	4.5	3	10.7	10.8	1	0	0
46	4.5	4.5	4	4.6	4.6	2	2.6	2.5
47	0	0	5	4.6	4.6	3	4.9	5.0
48	4.4	4.4	6	5.3	5.3	4	5.0	5.0
49	4.4	4.4	7	2.4	2.4	5	0	0
50	0	0	8	0	0.1	6	4.0	3.9
51	2.2	2.1	9	0	4.4	7	4.2	0
52	1.8	1.9	10	0	0	8	0	0
53	1.9	1.9	11	2.4	2.4	9	4.6	4.6
54	0	0	12	0	0	10	0	0
55	1.6	1.6	13	2.2	2.2	11	2.1	2.1
56	1.6	1.6	14	0	0	12	2.0	2.1
IC902			15	0	0	13	0.8	0.9
1	0	0	16	4.7	4.2	14	0	0
2	1.6	1.6	2	4.5	4.2	15	5.0	5.0
3	1.6	1.4	3	0	0	16	2.5	2.5
4	2.4	2.4	4	0	0	17	2.5	2.5
5	5.0	5.0	5	0	0	18	4.9	5.0
6	2.4	2.3	6	4.9	5.0	19	5.0	4.9
7	0	1.5	7	0	0	20	4.9	4.7
8	1.5	1.5	8	0	0	21	0	0
Q901			9	0	0	22	3.6	3.6
E	0	0	10	0	0	23	4.9	4.9
C	10.9	11.3	11	5.1	5.1	24	4.9	5.0
B	0	0	12	0	0	Q503		
Q902			13	0	0	E	1.8	1.7
E	10.6	10.8	14	5.0	5.1	C	5.0	5.0
C	11.0	11.3	15	0	0	B	2.5	2.5
B	11.0	11.3	16	0	0	Q504		
Q903			17	0	0	E	0.9	0.9
E	0	0	TU6001			C	0	0
C	11.0	11.3	1	0	0	B	0.2	0.3
B	0	0	2	0	0	Q505		
Q904			3	0	0	E	1.8	1.8
E	0	0	4	0	0	C	0	0
C	0.2	0	5	0	0	B	1.1	1.1
B	0	0	6	2.2	2.2	Q506		
Q907			7	0	0	E	3.1	3.0
E	0	0	8	0	0	C	0	0
			9	0	0			
			10	0	0			
			11	0.6	0.6			
			12	0	0			

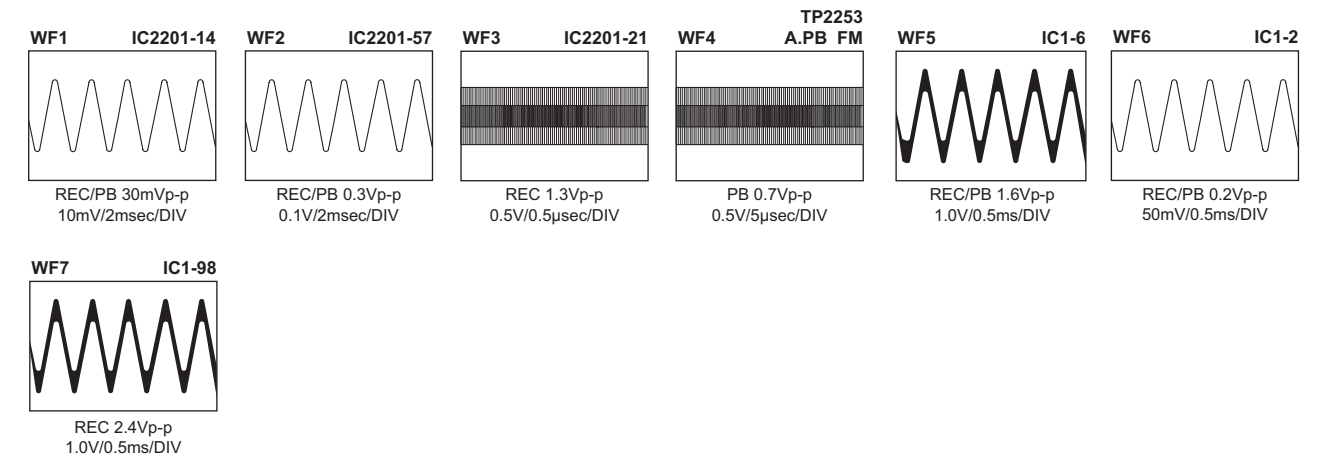
## <VIDEO BLOCK DIAGRAM(1)>



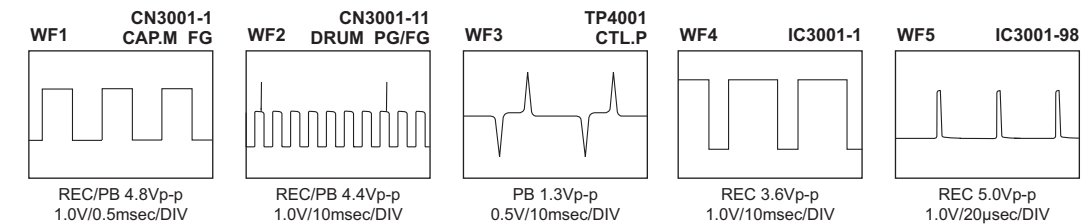
## <VIDEO BLOCK DIAGRAM (2)>



## <AUDIO BLOCK DIAGRAM>



## <SYSTEM CONTROL BLOCK DIAGRAM>







**JVC**

Victor Company of Japan, Limited

AV & MULTIMEDIA COMPANY DIGITAL VIDEO STORAGE CATEGORY 12, 3-chome, Moriya-cho, kanagawa-ku, Yokohama, kanagawa-prefecture, 221-8528, Japan

(No.YD048)



Printed in Japan  
VPT