STEREO RECEIVER

RX-497

SERVICE MANUAL

IMPORTANT NOTICE

This manual has been provided for the use of authorized YAMAHA Retailers and their service personnel.
It has been assumed that basic service procedures inherent to the industry, and more specifically YAMAHA Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components, and failure of the product to perform as specified. For these reasons, we advise all YAMAHA product owners that any service required should be performed by an authorized YAMAHA Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of YAMAHA are continually striving to improve YAMAHA products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and part replacement. Recheck all work before you apply power to the unit.

RX-497

■ CONTENTS

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This Service Manual uses recycled paper.

100977

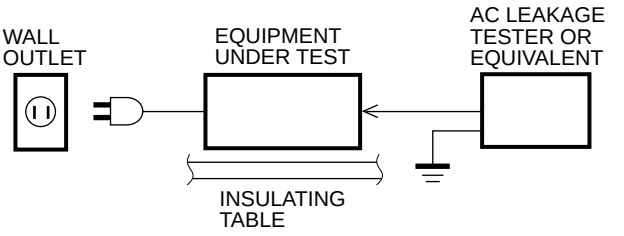
YAMAHA

YAMAHA CORPORATION
P.O.Box 1, Hamamatsu, Japan
'05.11

■ TO SERVICE PERSONNEL

1. Critical Components Information
   Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
2. Leakage Current Measurement (For 120V Models Only)
   When service has been completed, it is imperative to verify that all exposed conductive surfaces are properly insulated from supply circuits.

- Meter impedance should be equivalent to 1500 ohms shunted by 0.15μF.



- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.

"CAUTION"
"F251, F252 : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 8A, 125V FUSE."

CAUTION
F251, F252 : REPLACE WITH SAME TYPE 8A, 125V FUSE.

ATTENTION
F251, F252 : UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE DE 8A, 125V.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHATSOEVER!

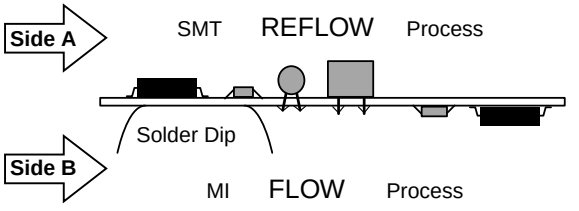
Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

About Lead Free Solder

The P.C.B.s installed in this unit are soldered using the following solder.

	SIDE A	SIDE B
FUNCTION P.C.B.	—	**Lead Free Solder**
OPERATION P.C.B.	—	**Lead Free Solder**
MAIN P.C.B.	—	**Lead Free Solder**
XM P.C.B.	**Lead Free Solder**	**Lead Free Solder**



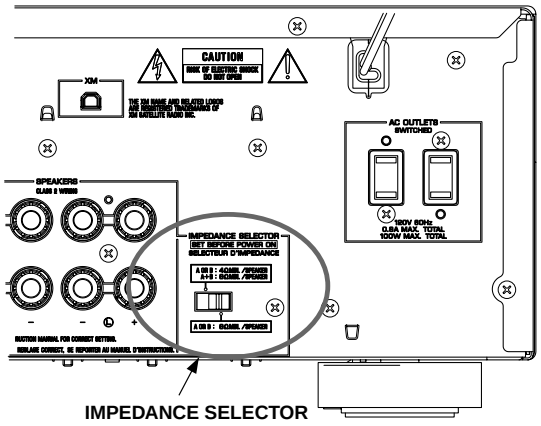
Among some types of lead free solder currently available, it is recommended to use one of the following types for the repair work.

- Sn + Ag + Cu (tin + silver + copper)
- Sn + Cu (tin + copper)
- Sn + Zn + Bi (tin + zinc + bismuth)

Caution:

1. As the melting point temperature of the lead free solder is about 30°C to 40°C (50°F to 70°F) higher than that of the lead solder, be sure to use a soldering iron suitable to each solder.
2. If lead solder must be used, be sure to remove lead free solder from each terminal section of the parts to be replaced and from the area around it completely before soldering, or make sure that the lead free solder and lead solder melt together fully.

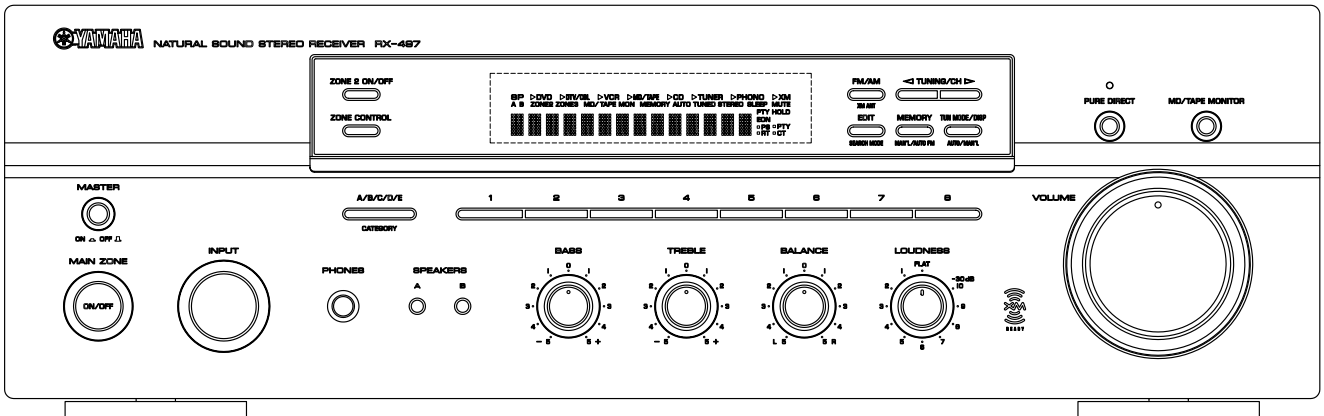
■ IMPEDANCE SELECTOR



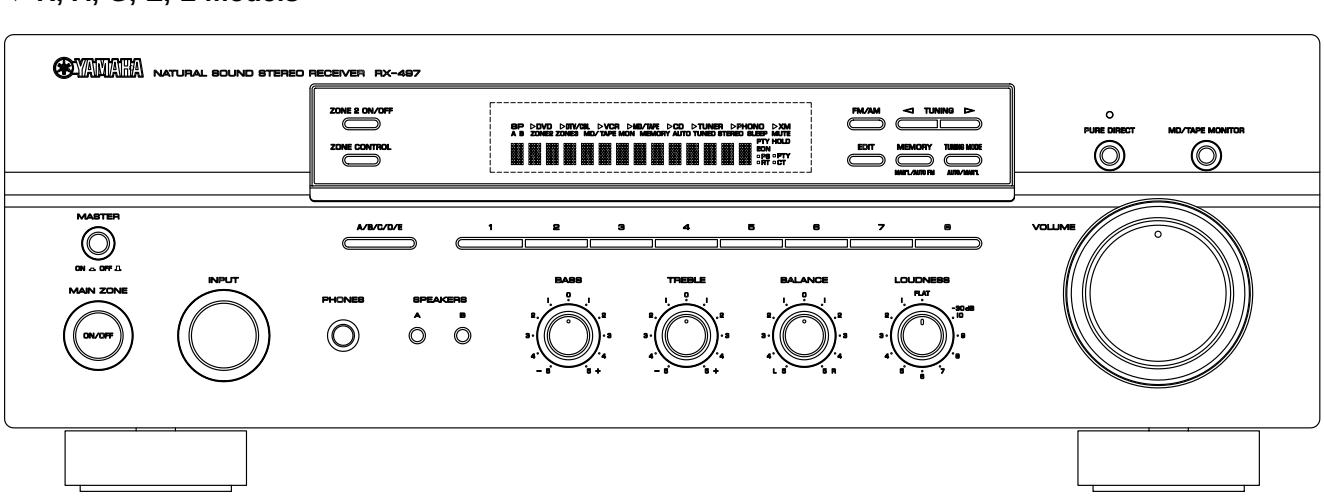
WARNING:
Do not change the setting of the IMPEDANCE SELECTOR switch when the unit power is switched on, as doing so may damage the unit.

■ FRONT PANELS

▼ U, C models

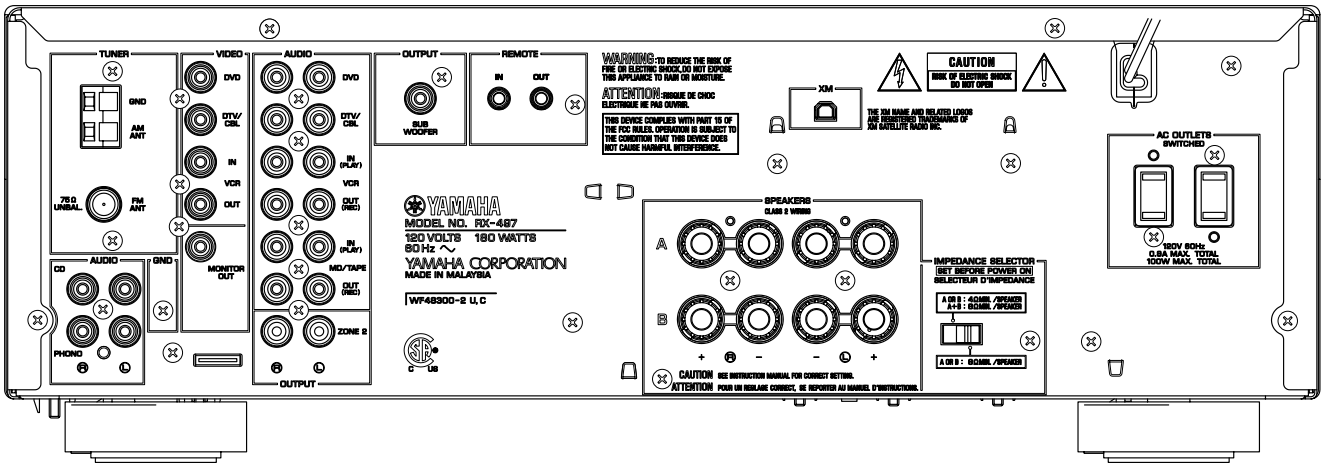


▼ R, A, G, E, L models

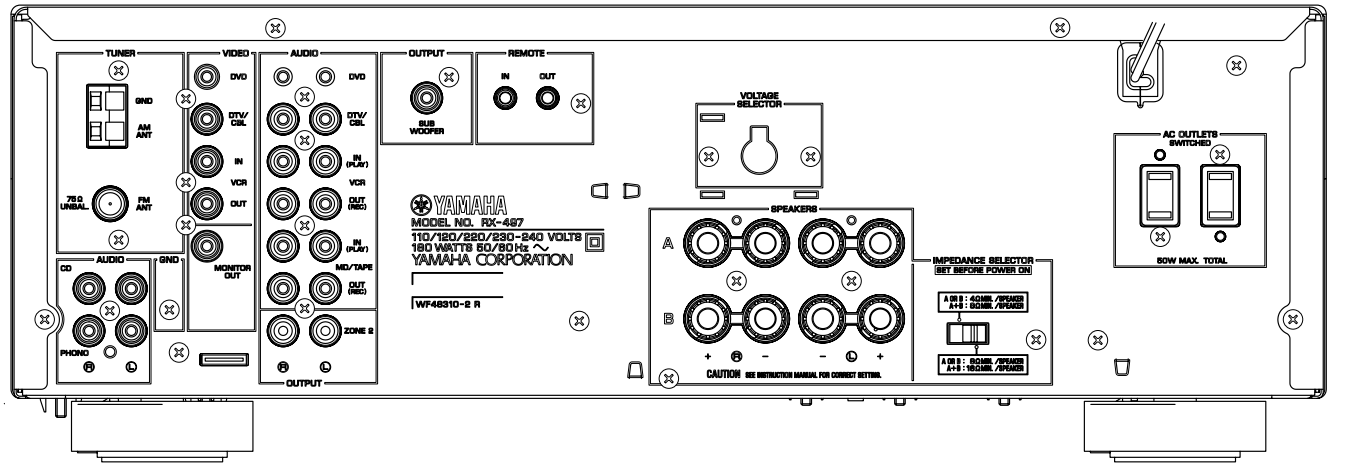


■ REAR PANELS

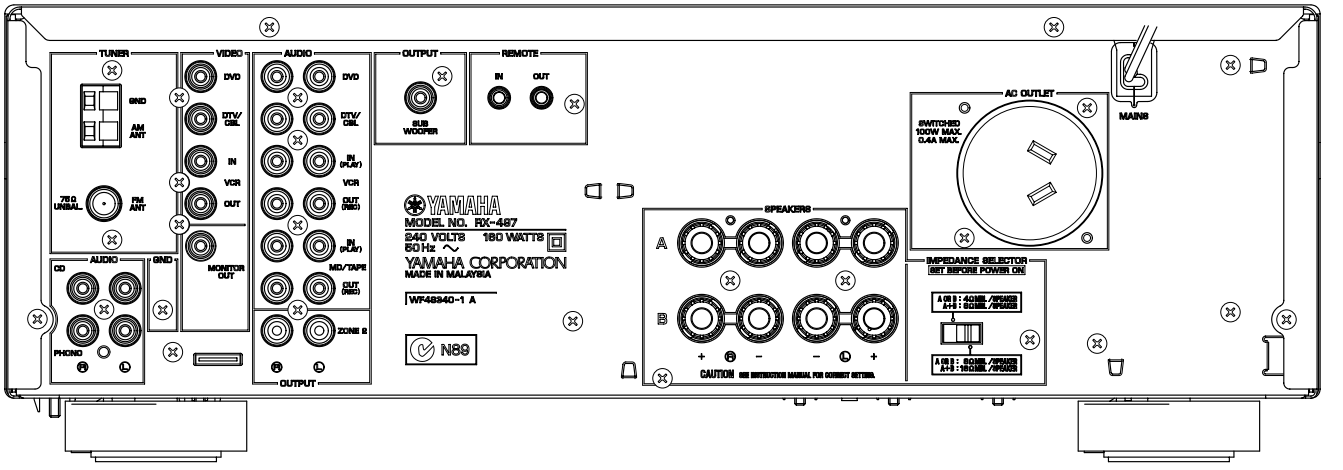
▼ U, C models



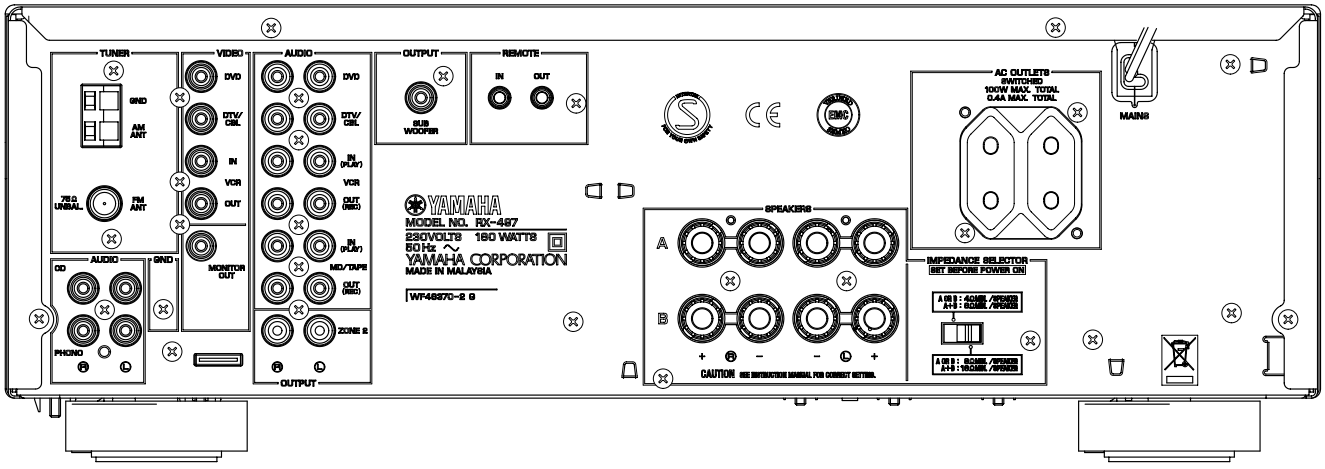
▼ R model



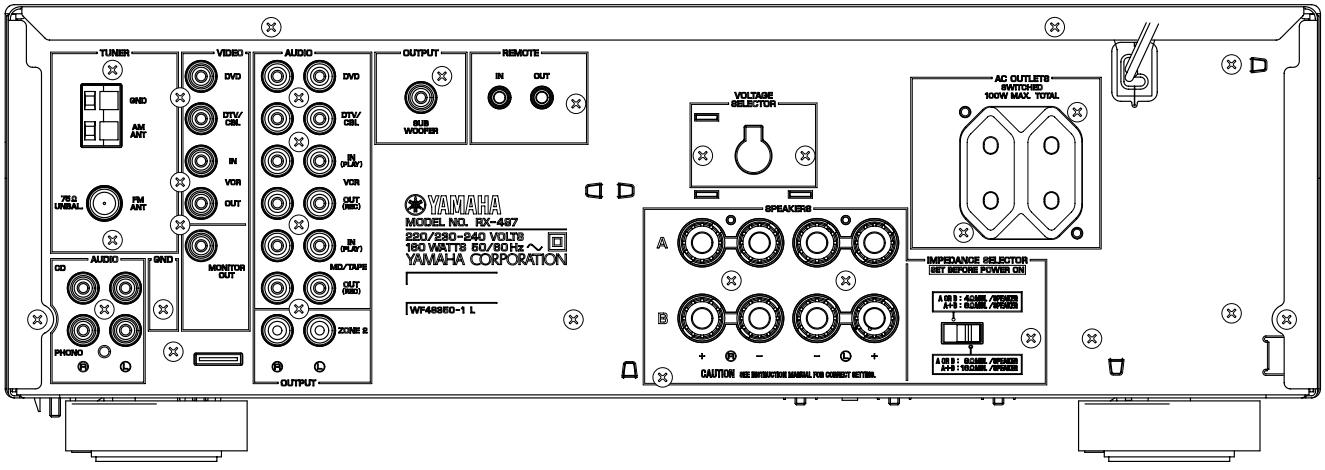
▼ A model



▼ G, E models

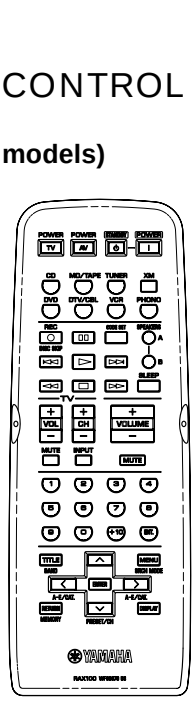


▼ L model

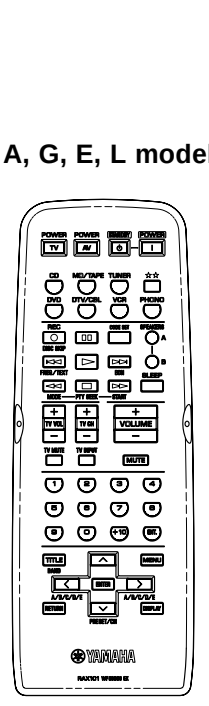


■ REMOTE CONTROL PANELS

▼ RAX100 (U, C models)



▼ RAX101 (R, A, G, E, L models)



■ SPECIFICATIONS

AUDIO SECTION

Minimum RMS Output Power (Power Amp. Section)
L/R, 20 Hz to 20 kHz, 0.04% THD, 8 ohms ..... 75 W + 75 W

Dynamic Power Per Channel (IHF)
8/6/4/2 ohms ..... 105/125/150/178 W

Maximum Power Per Channel (G, E models)
1 kHz, 0.7 % THD, 4 ohms ..... 105 W

IEC Power (G, E models)
1 kHz, 0.04% THD, 8 ohms ..... 84 W

Maximum Power (EIAJ) (R, L models)
1 kHz, 10% THD, 8 ohms ..... 115 W

Power Band Width
L/R, 0.08% THD, 35 W, 8 ohms ..... 10 Hz to 50 kHz

Damping Factor
20 Hz to 20 kHz, SPEAKER-A, 8 ohms ..... 150 or more

Input Sensitivity/Input Impedance
PHONO MM ..... 3.0 mV/47 k-ohms
CD, etc. ..... 185 mV/47 k-ohms

Maximum Input Signal
PHONO MM, 1kHz, 0.04 % THD ..... 70 mV
CD, etc., 1kHz, 0.04 % THD ..... 2.2 V

Output Level/Output Impedance
SUBWOOFER ..... 4 V/1.2 k-ohms
ZONE2 OUT ..... 185 mV/1.2 k-ohms
REC OUT ..... 185 mV/1.2 k-ohms

Headphone Jack Rated Output/Output Impedance
CD, etc. 1 kHz, 185 mV, 8 ohms, 0.04% THD ..... 0.47 V/390 ohms

Frequency Response
CD, etc. 20 Hz to 20 kHz ..... 0 ± 0.5 dB
CD, etc. PURE DIRECT ON, 10 Hz to 100 kHz ..... 0 ± 1.0 dB

RIAA Equalization Deviation
PHONO MM ..... 0 ± 0.5 dB

Total Harmonic Distortion (20 Hz to 20 kHz)
PHONO MM to REC OUT (3 V) ..... 0.02 % or less
CD, etc. to SP OUT (35 W/8 ohms) ..... 0.02 % or less

Signal to Noise Ratio (IHF-A Network)
PHONO MM (Input shorted, 5 mV) ..... 82 dB or more
CD, etc. (Input shorted, 185mV) ..... 108 dB or more

Residual Noise (IHF-A Network)
PURE DIRECT ON ..... 100 µV

Channel Separation
CD, etc. (Input 5.1 k-ohms shorted)
1 kHz ..... 65 dB or more
10 kHz ..... 50 dB or more

Tone Control Characteristics

BASS	Boost/Cut (50 Hz)	+10 dB/-10 dB
	Turnover Frequency	350 Hz
TREBLE	Boost/Cut (20 kHz)	+10 dB/-10 dB
	Turnover Frequency	3.5 kHz

Continuous Loudness Control
Attenuation (1 kHz) ..... -30 dB

Gain Tracking Error
0 to -60 dB ..... 2 dB or less

VIDEO SECTION

Video Signal Type
U, C, R models ..... NTSC
A, G, E, L models ..... PAL

Video Signal Level ..... 1 Vp-p/75 ohms

Video Maximum Input Level ..... 1.5 Vp-p or more

Video Signal to Noise Ratio ..... 50 dB or more

Monitor Out Frequency Response .... 5 Hz to 10 MHz, -3 dB

FM SECTION

Tuning Range
U, C models ..... 87.5 to 107.9 MHz
R, L models ..... 87.5 to 108.0/87.50 to 108.00 MHz
A, G, E models ..... 87.50 to 108.00 MHz

50 dB Quieting Sensitivity (IHF)
1 kHz 100% MOD.
Mono ..... 2.0 µV (17.3 dBf)
Stereo ..... 25 µV (39.2 dBf)

Usable Sensitivity (IHF)
Mono ..... 1.0 µV (11.2 dBf)

Selectivity
at 400 kHz ..... 70 dB

Signal to Noise Ratio (IHF)
Mono ..... 76 dB
Stereo ..... 70 dB

Harmonic Distortion (1 kHz)
Mono ..... 0.2 %
Stereo ..... 0.3 %

Stereo Separation (1 kHz) ..... 45 dB

Frequency Response
20 Hz to 15 kHz ..... +0.5/-2.0 dB

Antenna Input ..... 75 ohms unbalanced

AM SECTION

Tuning Range
U, C models ..... 530 to 1710 kHz
R, L models ..... 530 to 1710/531 to 1611 kHz
A, G, E models ..... 531 to 1611 kHz

Usable Sensitivity ..... 300 µV/m

Antenna ..... Loop antenna

GENERAL

Power Supply
U, C models ..... AC 120 V, 60 Hz
R model ..... AC 110/120/220/230-240 V, 50/60 Hz
A model ..... AC 240 V, 50 Hz
G, E models ..... AC 230 V, 50 Hz
L model ..... AC 220/230-240 V, 50/60 Hz

Power Consumption ..... 180 W

Standby Power Consumption (reference) ..... 0.1 W

Maximum Power Consumption (R moel)
1 kHz, 8 ohms, 10% THD ..... 400 W

AC Outlet
2 Switched Outlet
R model ..... 50 W Max. total
U, C, G, E, L models ..... 100 W Max. total
1 Switched Outlet
A models ..... 100 W Max.

Dimensions (W x H x D) ..... 435 x 151 x 308 mm
(17-1/8" x 5-15/16" x 12-1/8")

Weight ..... 8.7 kg (19 lbs 3 oz)

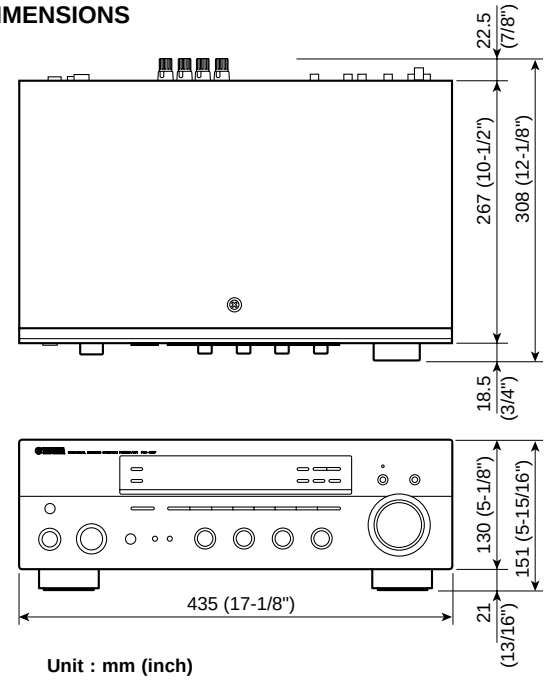
Finish ..... Black Color (U, C, R, A, G, E, L models)
Titanium Color (R, G, E, L models)
Gold Color (L model)

Accessories ..... Remote Control x 1
Battery (AA, R6, UM-3) x 2
Indoor FM Antenna x 1
AM Loop Antenna x 1

* Specifications subject to change without notice.

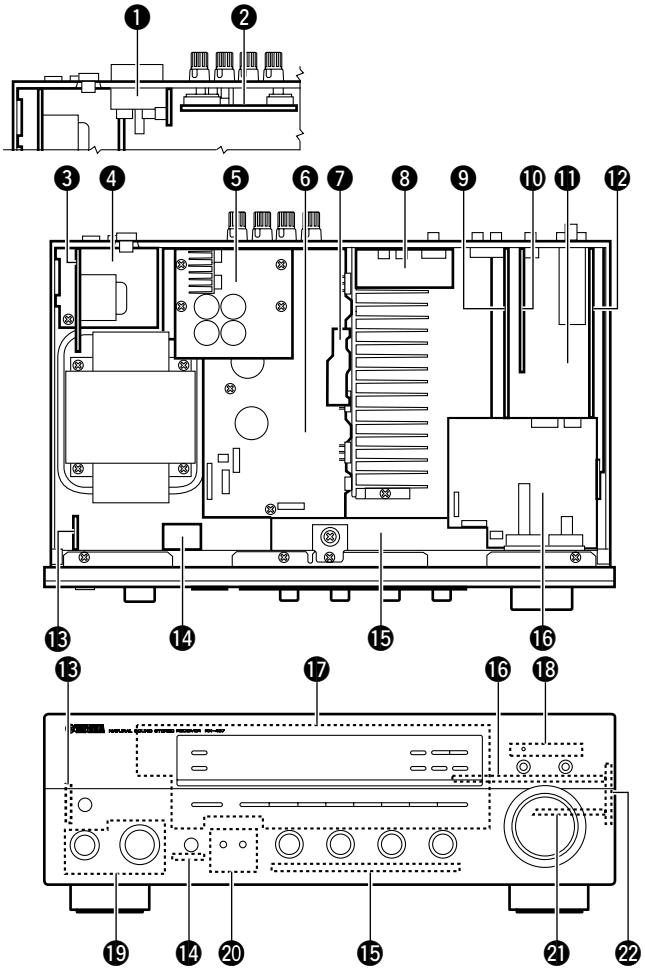
U ..... USA model
C ..... Canadian model
R ..... General model
A ..... Australian model
G ..... European model
E ..... South European model
L ..... Singapore model

DIMENSIONS



Unit : mm (inch)

■ INTERNAL VIEW



❶ OPERATION (12) P.C.B. (A, G, E, L models)
❷ MAIN (4) P.C.B. (R, L models)
❸ MAIN (2) P.C.B.
❹ MAIN (3) P.C.B.
❺ XM P.C.B. (U, C models)
❻ MAIN (1) P.C.B.
❼ MAIN (5) P.C.B.
❽ FUNCTION (4) P.C.B.
❾ FUNCTION (1) P.C.B.
❿ FUNCTION (3) P.C.B.
⓫ FUNCTION (2) P.C.B.
⓬ OPERATION (13) P.C.B.
⓭ OPERATION (6) P.C.B.
⓮ OPERATION (10) P.C.B.
⓯ OPERATION (3) P.C.B.
⓰ OPERATION (2) P.C.B.
⓱ OPERATION (1) P.C.B.
⓲ OPERATION (8) P.C.B.
⓳ OPERATION (5) P.C.B.
⓴ OPERATION (7) P.C.B.
㉑ OPERATION (4) P.C.B.
㉒ OPERATION (9) P.C.B.

■ DISASSEMBLY PROCEDURES

- ***Remove parts in disassembly order as numbered.***
- ***Disconnect the power cable from the AC outlet.***

1. Removal of Top Cover

a. Remove 4 screws (①), 1 screw (②) and 4 screws (③). (Fig. 1)

b. Slide the Top Cover rearward to remove it. (Fig. 1)

2. Removal of Front Panel Unit

a. Remove 5 knobs (INPUT, BASS, TREBLE, BALANCE and LOUDNESS).

b. Remove 1 screw (④) and then remove the Support Top. (Fig. 1)

c. Remove 7 screws (⑤) and then remove the Front Panel Unit. (Fig. 1)

3. Removal of Plate Side

Remove 2 push rivets (⑥) and then remove the Plate Side L/R. (Fig. 1)

4. Removal of Sub Chassis Unit

a. Remove 2 screws (⑦) and then slide the Sub Chassis Unit forward. (Fig. 1)

b. Loosen the harness fixture fixing the cable.

c. Remove connectors CB103, CB401, CB404, CB506, CB606 and CB611 and then remove the Sub Chassis Unit. (Fig. 1)

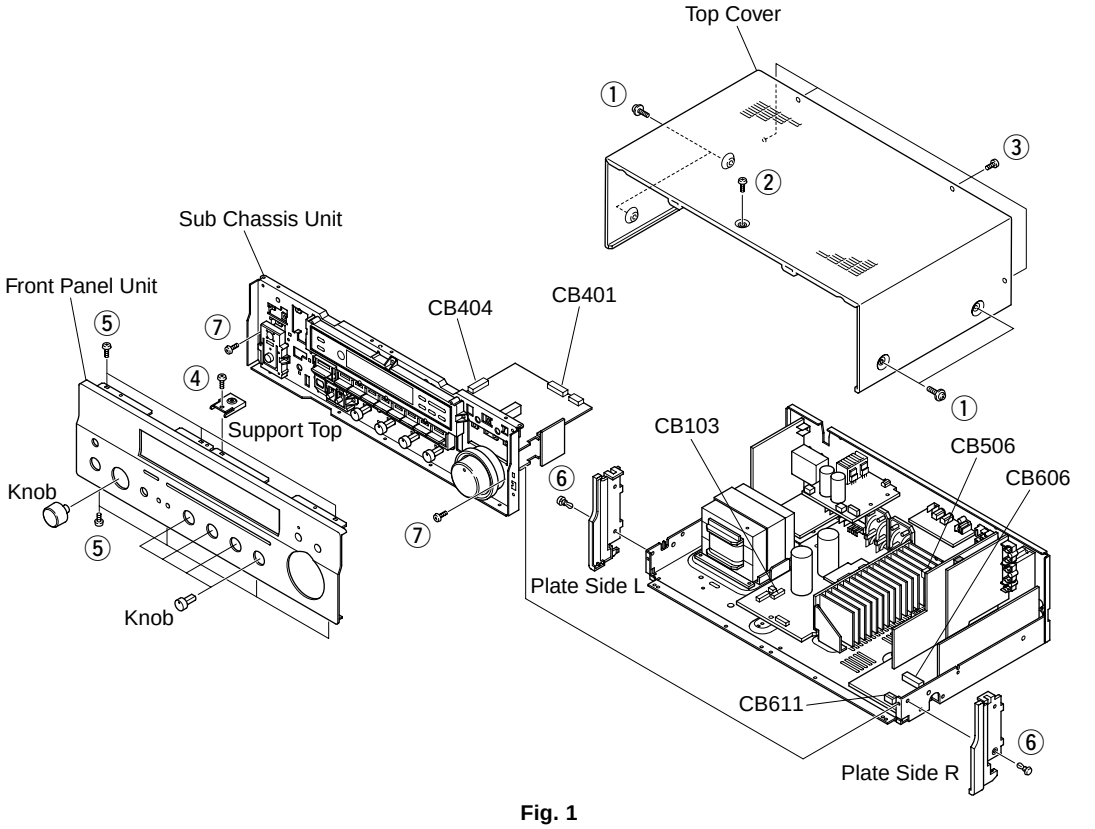


Fig. 1

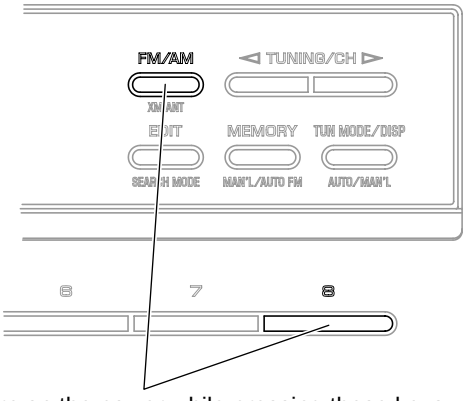
■ SELF DIAGNOSIS FUNCTION

This product has a built-in self diagnosis function (DIAG) to facilitate inspection, measurement and determination of a faulty item, if any. There are 8 DIAG menu items, each having sub-menu items.

No.	DIAG menu	Sub-menu
1	DISPLAY CHECK	1. VFD CHECK (Initial display)
		2. VFD DISP OFF (All segments OFF)
		3. VFD DISP ALL (All segments ON 100%)
		4. VFD DIMMER (All segments ON 50%)
		5. CHECKED PATTERN (ON in lattice)
2	FACTORY PRESET	1. PRESET INHI (memory initialization inhibited)
		2. PRESET RSRV (memory initialized)
3	AD DATA CHECK	1. DC/PS (protection)
		2. THM L, R
		3. REC-OUT (No applied to this model)
		4. K0 / K1 (panel key)
4	XM STATUS	1. XMS1
		2. XMS2
5	PROTECTION SETTING	1. PS_Lo :
		2. PS_Hi :
		3. DC_Lo :
		4. DC_Hi :
		5. TEMP :
6	PROTECTION HISTORY	1. history 1
		2. history 2
		3. history 3
		4. history 4
7	SOFT SWITCH	1. SW MODE : PCB (/MODEL/FNC)
		2. MODEL SETTING : RX497 (/RX797/RX397)
		3. DESTINATION : UC (/RL/A/BG)
		4. TUNER DESTINATION : (/RL/ABG)
		5. TUNER TYPE : NRM (/RDS/XM)
		6. ZONE2 : EXIST (/NOT)
8	MICROPROCESSOR INFORMATION	1. VERSION
		2. CHECK SUM
		3. OPE / XM
		4. PORT
		5. EE SUM

● Starting DIAG

Press the “MASTER” key of the main unit while simultaneously pressing the “FM/AM” key and the “8” key to activate the DIAG function.



Turn on the power while pressing these keys.

● Starting DIAG in the protection cancel mode

If the protection function works and causing hindrance to trouble diagnosis, cancel the protection function as described below and it will be possible to enter the DIAG mode. (The protection functions other than the excess current detect function will be disabled.)

Press the “MASTER” key while simultaneously pressing those two keys indicated in the figure above. At this time, keep pressing those two keys for 3 seconds or longer.

In this mode, the “SLEEP” segment of the FL display of the main unit flashes to indicate that the mode is DIAG mode with the protection functions disabled.

CAUTION!

Using this product with the protection function disabled may cause damage to itself. Use special care for this point when using this mode.

● Canceling DIAG

1 Before canceling DIAG, execute setting for PRESET of DIAG menu No.2 (Memory initialization inhibited or Memory initialized).

* ***In order to keep the user memory stored, be sure to select PRESET INHIBITED (Memory initialization inhibited). Protection history will remain in memory.***

2 Turn off the power by pressing the “MASTER” key of the main unit.

● Display provided when DIAG started

On the FL display of the main unit, an opening message (including the version and the protection history) appears for a few seconds followed by the diagnostic menu display (1. VFD CHECK).

When there is no history of protection function:

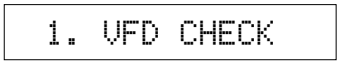
Opening message

When there is no protection history.

Version (1 alphabet)

After a few seconds.

DIAG menu display

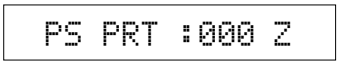


When there is a history of protection function:

The FL display appears as shown below depending on the type of the protection function.

The protection function worked due to excessive current through the amplifier. The protection function activates immediately to turn off the power, with no history display at turn-on, if the amplifier is defective.

The protection function worked due to a defect or overload in the power supply. The abnormal voltage is displayed in % based on 5V as 100%. If the power is turned on with the abnormality unsolved, the protection function works in about 1 second to turn off the power.



The protection function worked due to a DC voltage appearing at the speaker terminal.
A cause could be a defect in the amplifier. If the power is turned on with the abnormality unsolved, the protection function works in about 3 seconds to turn off the power.

```
DC PRT :000 Z
```

The protection function worked due to the temperature limit being exceeded. Causes could be poor ventillation or a defect related to the thermal sensor. The abnormal voltage is displayed in % based on 5V as 500%. If the power is turned on with the abnormality unsolved, the protection function works in about 1 second to turn off the power.

```
TMR PRT:000 Z
```

For detection of each protection function (except I-PROTECT) , refer to DIAG MENU No.3 AD DATA CHECK (p.13).

● History of protection function
When the protection function has worked, its history is stored in memory with a backup. Even if no abnormality is noted while servicing the unit, an abnormality which has occurred previously can be defined as long as the backup data has been stored.
The history of the protection function is cleared when DIAG is cancelled by selecting PRESET RESERVED (Memory initialized) of DIAG menu No.2 or when the backup data is erased.

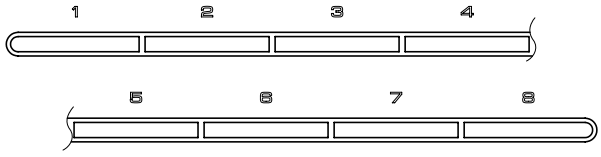
● Display during menu operation

During the DIAG operation, the function at work is indicated on the FL indicator. The contents displayed during the function operation are described later in the “Details of DIAG menu” section.

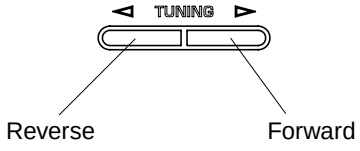
● Operation procedure of DIAG MENU and SUB-MENU

There are 8 MENU items, each of which has some SUB-MENU items.

DIAG menu selection
Select the menu using PRESET NO keys.



SUB-MENU selection
Select the sub-menu using ▷ (Forward) and ◁ (Reverse) keys of TUNING.



● Functions in DIAG mode

In addition to the DIAG menu items, functions as listed below are available.

- Input selection
- Muting
- Power on/off
- Master volume

* Functions related to the tuner is not available.

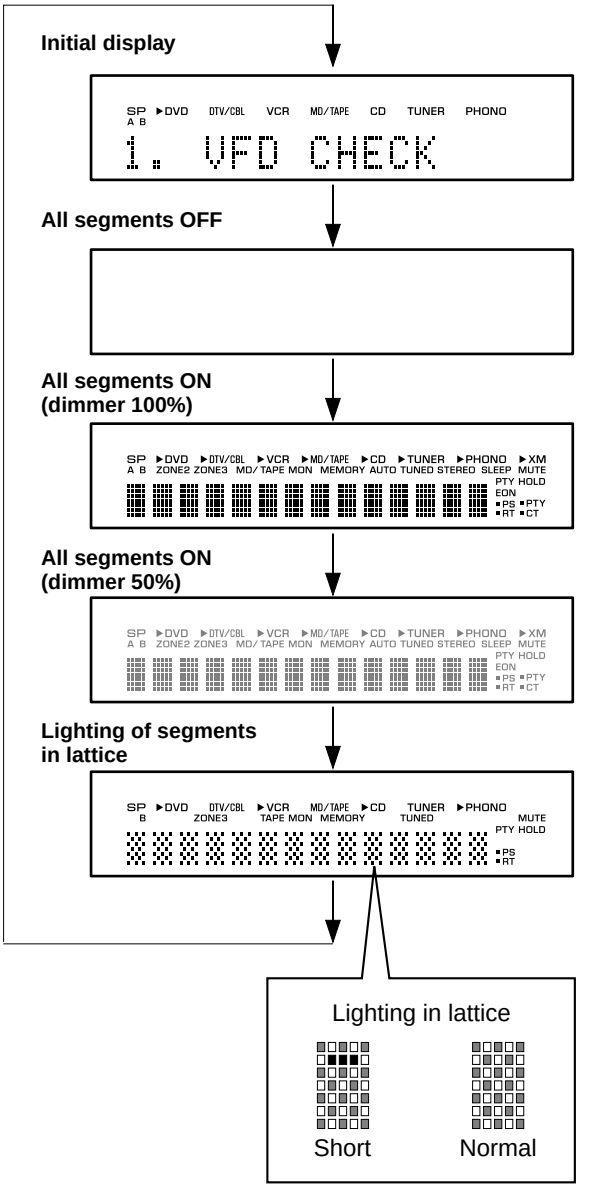
● Initial settings used to start DIAG

The following initial settings are used when starting DIAG. When DIAG is canceled, these settings are restored to those before starting DIAG.

- Input: DVD
- Audio mute: OFF
- DIAG menu: DISPLAY CHECK (1. VFD CHECK)

1. DISPLAY CHECK

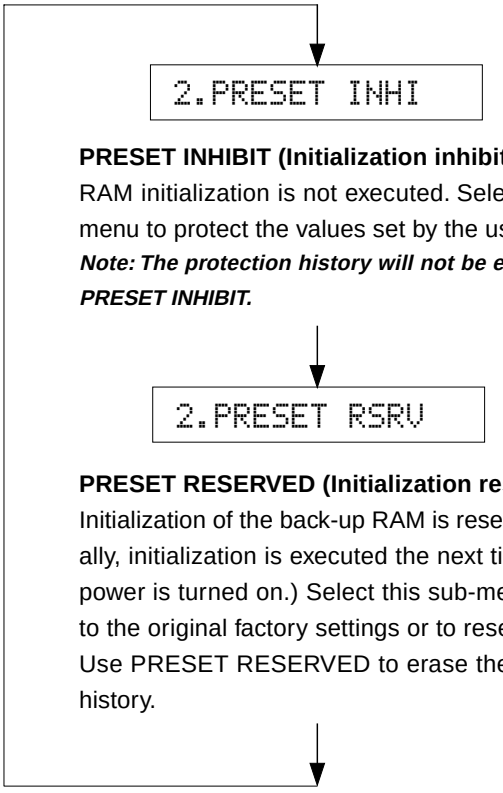
This program is used to check the FL display section. The display condition varies as shown below according to the sub-menu operation.



Segment conditions of the FL driver and the FL tube are checked by turning ON and OFF all segments. Next, the operation of the FL driver is checked by using the dimmer control. Then a short between segments next to each other is checked by turning ON and OFF all segments alternately (in lattice). (In the above example, the segments in the second row from the top are shorted.)

2. FACTORY PRESET

This menu is used to reserve/inhibit initialization of the back-up RAM.



CAUTION: Before setting to the PRESET RESERVED, write down the existing preset memory content of the Tuner in a table as shown below. (This is because setting to the PRESET RESERVED will cause ALL user memory contents to be erased.)

Preset group	P1	P2	P3	P4
A				
B				
C				
D				
E				

Preset group	P5	P6	P7	P8
A				
B				
C				
D				
E				

● **PRESET STATIONS**

STATION		FM FACTORY PRESET DATA (MHz)	
PAGE	NO.	U, C	R, A, G, E, L
A/C/E	1	87.5	87.50
	2	90.1	90.10
	3	95.1	95.10
	4	98.1	98.10
	5	107.9	108.00
	6	88.1	88.10
	7	106.1	106.10
	8	107.9	108.00

STATION		AM FACTORY PRESET DATA (kHz)	
PAGE	NO.	U, C, R	A, G, E, L
B/D	1	630	630
	2	1080	1080
	3	1440	1440
	4	530	531
	5	1710	1611
	6	900	900
	7	1350	1350
	8	1400	1404

3. AD DATA CHECK

With this sub-menu used, the key scanning, A/D value of the voltage at the abnormality detect (protection) port, etc. are displayed. The A/D conversion value is displayed in %. The state before audio signal processing is kept.

When K0/K1 menu is selected, keys become nonoperable due to detection of the values of all keys.

However, it is possible to advance to the next sub-menu by turning the INPUT of the main unit. When using this function, note that turning the INPUT more than 2 clicks will cause the volume value to change.

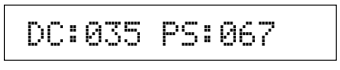
**** The numeric value in the diagram is for reference.***

DC/PS (protection detection)

DC: DC detect protection value
Normal value: 19 to 51 (Reference: 5V = 100%)

PS: Power supply voltageprotection value
Normal value: 54 to 84 (Reference: 5V = 100%)

When the value is outside of the normal range, the protection function works to turn off the power.

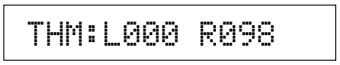


THM (temperature detection)

When the value is outside of the normal range, the protection function works to turn off the power.

500% display of the voltage based on the temperature detected value. Reference voltage: 5V

**** For RX-497, only R ch is effective.***

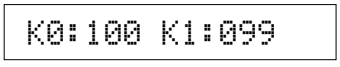


REC-OUT

Not applied to this model.

K0/K1

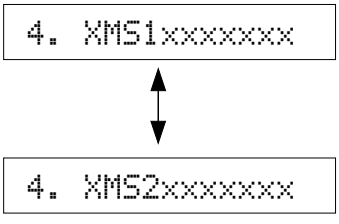
This is the A/D value of the panel key input ports KEY0 and KEY1 (microprocessor). The table below shows the A/D value obtained when each key is pressed. When the value is not within the standard value range, no correct operation is provided. Referring to the table below, check the value of each voltage dividing resistor of each key, solder condition, etc.



	%	Key0	Key1
1	0 – 4	FM/AM	P8
2	4 – 12	TUNING DOWN	P7
3	12 – 21	TUNING UP	P6
4	21 – 30	TUNING MODE	P5
5	31 – 41	MEMORY	P4
6	42 – 52	EDIT	P3
7	52 – 61	ZONE CTRL	P2
8	61 – 68	SPEAKER B	P1
9	68 – 74	SPEAKER A	A/B/C/D/E
10	75 – 81		
11	81 – 89		

4. XM STATUS

XM Radio data is displayed.



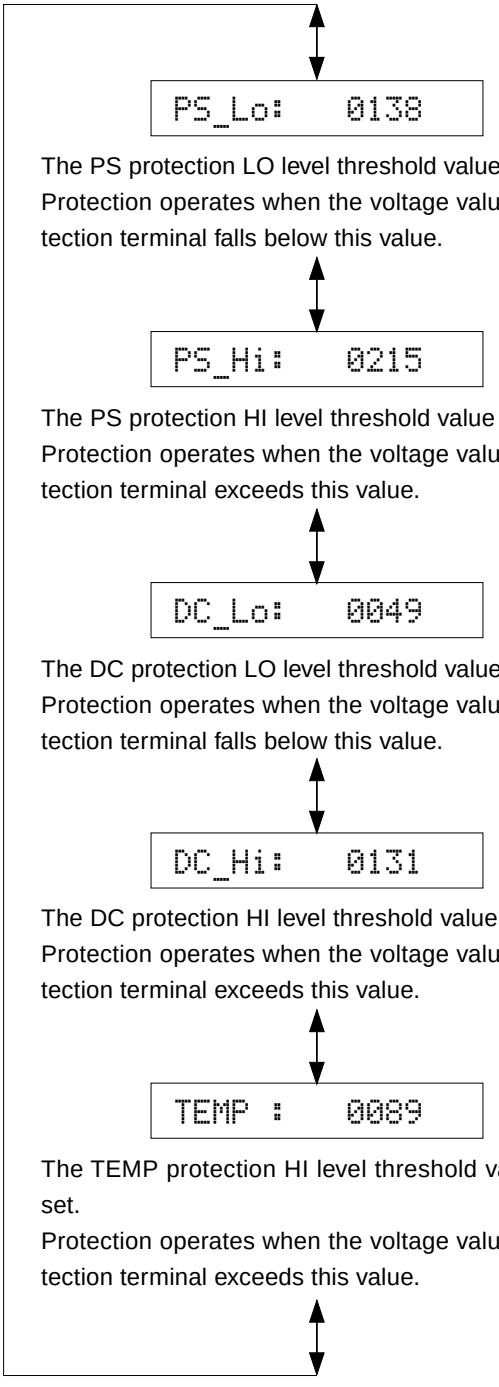
5. PROTECTION SETTING

This menu is used to change the protection setting value. The change is effective in this menu only. A set value can be specified between 0 – 255 (0V – 5V).

Operation:

Change the digit with the “EDIT” key.

UP / DOWN with the TUNING MODE / MEMORY key.



The PS protection LO level threshold value can be set. Protection operates when the voltage value of the detection terminal falls below this value.

The PS protection HI level threshold value can be set. Protection operates when the voltage value of the detection terminal exceeds this value.

The DC protection LO level threshold value can be set. Protection operates when the voltage value of the detection terminal falls below this value.

The DC protection HI level threshold value can be set. Protection operates when the voltage value of the detection terminal exceeds this value.

The TEMP protection HI level threshold value can be set.

Protection operates when the voltage value of the detection terminal exceeds this value.

6. PROTECTION HISTORY

Four protection histories are display.

The history is cleared by the initialization reservation of DIAG menu No. 2.

When there is no history of protection function:

There is no history of protection function.

When there is a history of protection function:

There is a history of protection function due to excess current.

There is a history of protection function due to abnormal voltage in the power supply section.

The abnormal voltage is displayed in % based on 5V as 100%.

There is a history of protection function due to abnormal DC output.

The abnormal voltage is displayed in % based on 5V as 100%.

There is a history of protection function excessive heatsink temperature. (R ch)

The abnormal voltage is displayed in % based on 5V as 500%.

There is a history of protection function excessive heatsink temperature. (L ch)

Not applied to this model.

The numeric value in the diagram is for reference.

7. SOFT SWITCH

Note) Changing the function setting may hinder the proper operation.

This menu is used to switch the function settings on P.C.B. through the software so as to activate the product.
The operation mode can be changed by selecting the sub-menu and then using the EDIT key.
The protection function follows the P.C.B. settings.
When connected to AC, the unit is initialized to the P.C.B. setting. Display of each function after initialization varies depending on settings on P.C.B.

SW MODE: PCB, MODEL or FNC can be selected.

```
7.SW    :PCB
```

MODEL SETTING: RX797, RX497 or RX397 can be selected. (SW MODE: Selectable when MODEL has been selected.)

```
7.MODEL :RX497
```

DESTINATION: UC / RL / A or BGE can be selected. (SW MODE: Selectable when MODEL has been selected.)

```
7.DEST  :UC
```

TUNER DEST INATION: UC, RL or ABGE can be selected. (SW MODE: Selectable when FNC has been selected.)

```
7.TuDst :UC
```

TUNER TYPE: NRM, RDS or XM can be selected. (SW MODE: Selectable when FNC has been selected.)

```
7.TuTyp :XM
```

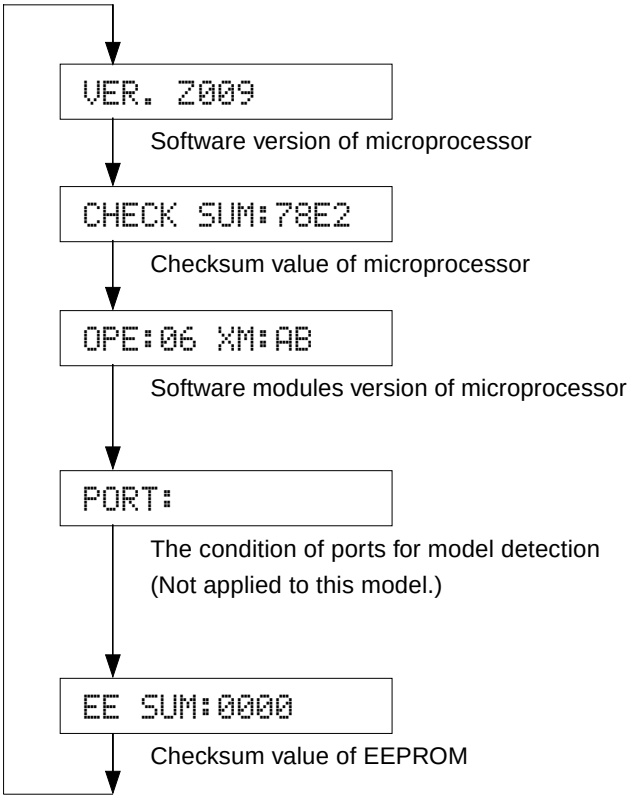
ZONE2: NOT or EXIST can be selected. (SW MODE: Selectable when FNC has been selected.)

```
7.ZONE2 :EXIST
```

8. MICROPROCESSOR INFORMATION

The version, checksum and the port specified by the microprocessor are displayed. The checksum is obtained by adding the data at every 16 bits for each program area and expressing the result as a 4-figure hexadecimal data.

****The numeric value in the diagram is for reference.***

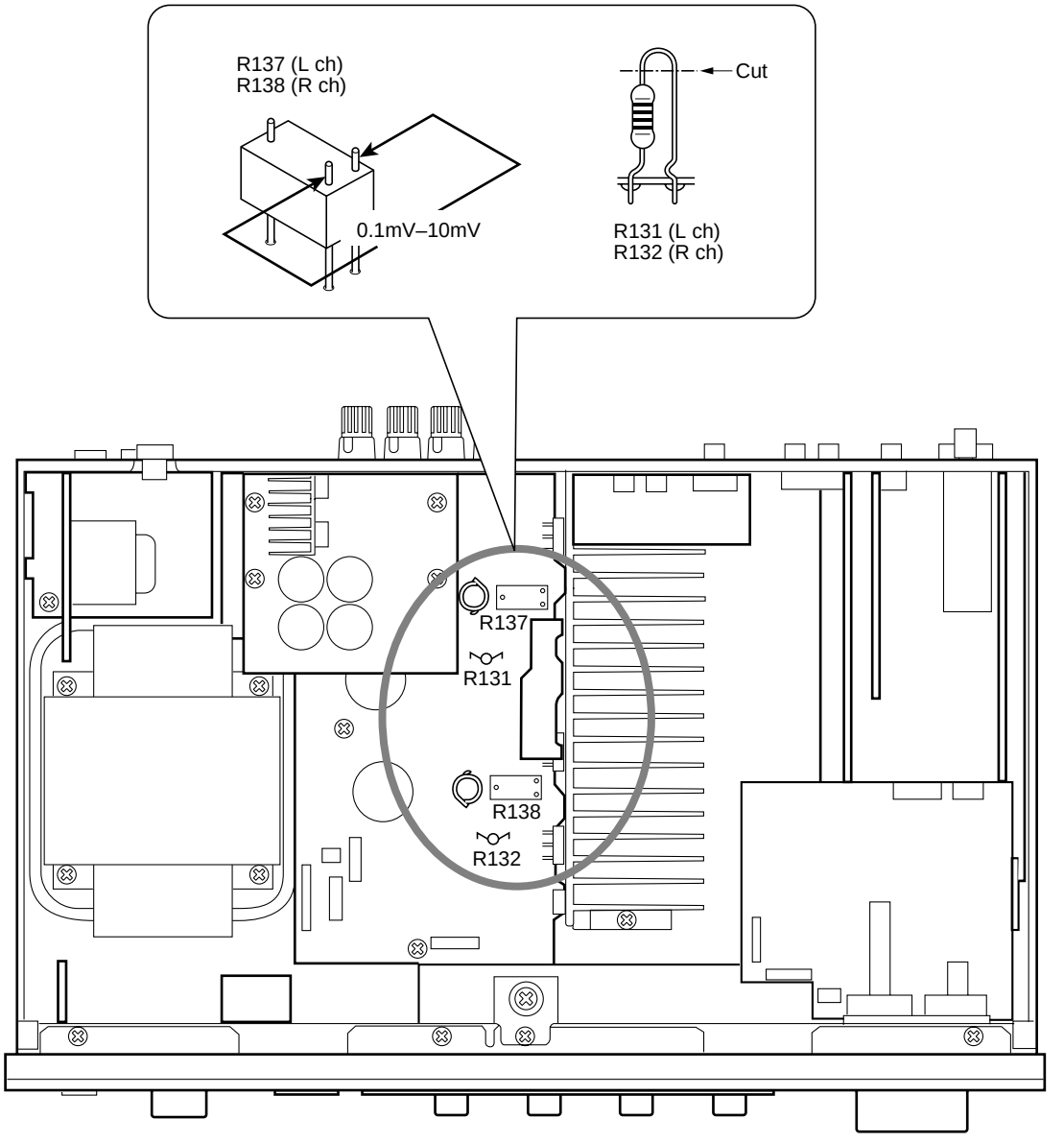


Tuner Dest	Frequency Range		Comment
	FM	AM	
UC	87.5–107.9MHz/200kHz	530–1710kHz/10kHz	
RL	87.5–108.0MHz/50kHz	531–1611kHz/9kHz	The frequency range is selected with Advanced Set Up
	87.5–108.0MHz/100kHz	530–1710kHz/10kHz	
ABG	87.5–108.0MHz/50kHz	531–1611kHz/9kHz	

■ AMP ADJUSTMENT

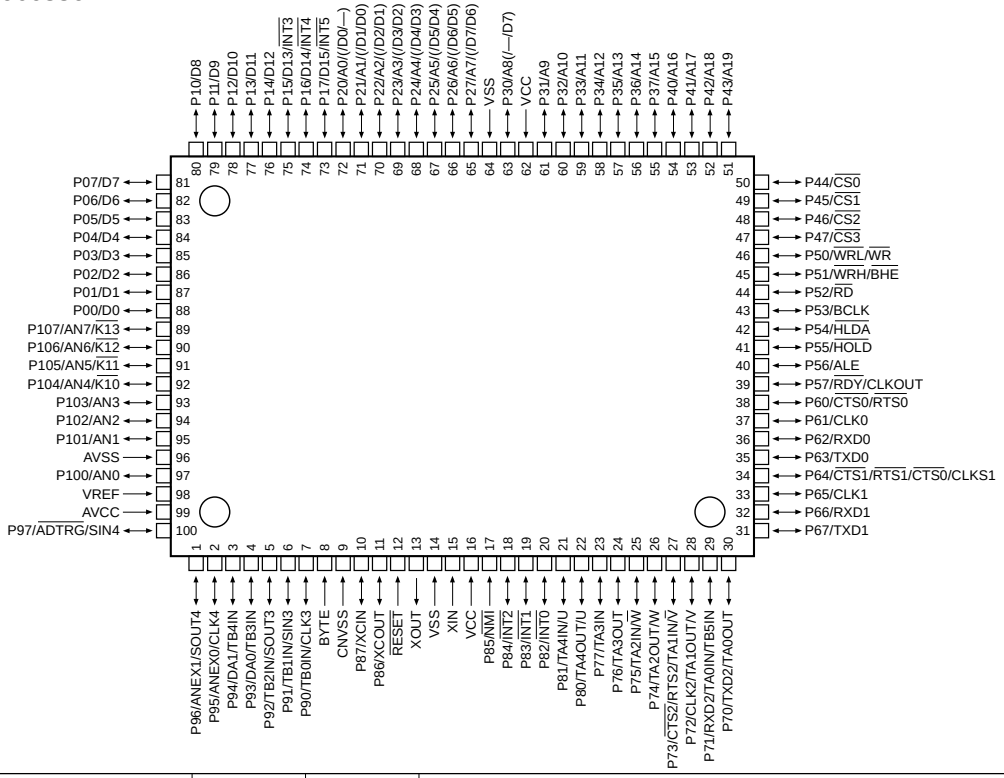
● CONFIRMATION OF IDLING CURRENT

1. Right after the power is turned on, confirm that the voltage across the terminals of R137 (L ch) and R138 (R ch) are between 0.1mV to 10.0mV.
2. If the measured voltage exceeds 10.0mV, open (cut off) R131 (L ch), R132 (R ch) and reconfirm the voltage.
3. Confirm that the voltage is between 0.20mV and 15.0mV after 60 minutes.



■ IC DATA

IC602 : M30626FHPFP (FUNCTION (2) P.C.B.)
16-bit Microprocessor



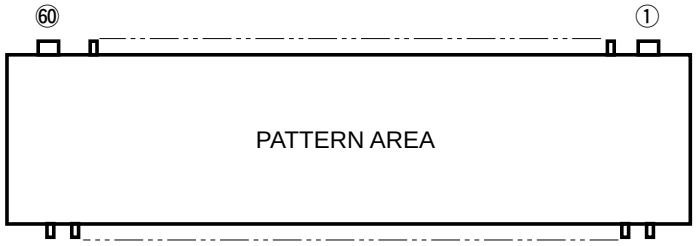
No.	Port	Name	I/O	Function	
1	P96/ANEX1	DTFD	O	FL Driver Tx DATA	
2	P95/ANEX0	CKFD	O	FL Driver CLOCK	
3	P94		O		
4	P93	DEST1	I	Model Distinction 1	
5	P92/TB2in	DEST0	I	Model Distinction 0	
6	P91/TB1in	MOD1	I	Destination Distinction 1 (Reserve)	
7	P90/TB0in	MOD0	I	Destination Distinction 0 (Reserve)	
8	BYTE	BYTE	MCU	Vss: when single chip mode is used	(Gnd)
9	CNVss	CNVss	MCU	Vss: when single chip mode is used, Vcc: when flash writing is used	(PullDown)
10	P87/Xcin	/CEEEP	O	EEPROM CE	
11	P86/Xcout	N.C.	O		
12	/RESET	/RESET	MCU	Reset	
13	Xout	Xout	MCU	Oscillator Out	
14	Vss	Vss	MCU	Ground	(Gnd)
15	Xin	Xin	MCU	Oscillator In	
16	Vcc1	Vcc	MCU	Power Supply, +5V	(Vcc)
17	P85/NMI	NMI	I	Connect to Vcc because it is unused	(PullUp)
18	P84/INT2	MPSW	IRQ	MAIN Power SW INT	
19	P83/INT1	ZPSW	IRQ	Zone2 Power SW INT	
20	P82/INT0	PDET	IRQ	Power Down Detect INT	
21	P81	N.C.	O	(LevelConv)	
22	P80	N.C.	O	(LevelConv)	
23	P77	TRIG	O	Triger OUT	(Unconnected)
24	P76	/POMT	O	Pre Out Mute	(Unconnected)
25	P75/TA2in	/Z2MT	O	Zone2 Mute	
26	P74/TA2out	N.C.	O		
27	P73/CTS2/RTS2/TA1in	XMPWR	O	XM/DT BUS POWER CONTROL	
28	P72/CLK2/TA1out	/ICXM	O	DABIC IC Reset	
29	P71/RXD2/SCL2/TA0in	DRXM	SI	DABIC IC RxD	(LevelConv)
30	P70/TXD2/SDA2/TA0out	DTXM	SO	DABIC IC TxD	(LevelConv)
31	P67/TXD1/SDA1	DTEV	SO	Zone2Volume Tx DATA(YAC526)	(Unconnected)
		TXDF	SO	Data Transmit Terminal for AF220	
32	P66/RXD1/SCL1	CEEV	O	Zone2Volume CE(YAC526)	(Unconnected)
		RXDF	SO	Flash ROM RxD	
33	P65/CLK1	CKEV	SO	Zone2Volume CLOCK(YAC526)	(Unconnected)
		CLKF	SO	Clock Transmit Terminal for AF220	

IC602 : M30626FHPFP (FUNCTION (2) P.C.B.)
16-bit Microprocessor

No.	Port	Name	I/O	Function	
34	P64/CTS1/RTS1/CTS0/CLKS1	BSY	O	AF220 BUSY Signal Output	
35	P63/TXD0/SDA0	DTIS	SO	Input Selector Tx DATA	
36	P62/RXD0/SCL0	CEIS	O	Input Selector CE	
37	P61/CLK0	CKIS	SO	Input Selector CLOCK	
38	P60/CTS0/RTS0	DTRZ	O	Rec/Zone2 selecter DATA	
39	P57/RDY/CLKout	CKRZ	O	Rec/Zone2 selecter CLOCK	
40	P56	N.C.	O		
41	P55	/EMP	I	For Flash Writing (LO)	(PullDown)
42	P54	CER	O	RDS CE	
43	P53	SCKR	O	RDS CLOCK	
44	P52	SDRR	I	RDS Rx DATA	
45	P51	SDTR	O	RDS Tx DATA	
46	P50	/CE	I	For Flash Writing (HI)	(PullUp)
47	P47	CEP	O	TUNER CE	
48	P46	SCKP	O	TUNER CLOCK	
49	P45	SDTP	O	TUNER Tx DATA	
50	P44	/TMU	O	TUNER MUTE	
51	P43	SDRP	I+	TUNER Rx DATA	
52	P42	TUNED	I+	TUNER TUNED	
53	P41	/ST	I+	TUNER /ST	
54	P40	N.C.	O		
55	P37	VIA	O	Video Input SelectorA	(PullDown)
56	P36	VIB	O	Video Input SelectorB	(PullDown)
57	P35	/VR	O	Video Rec Mute	(PullDown)
58	P34	VRB	O	Video Rec SelectorB	(Unconnected)
59	P33	VZA	O	VIDEO Zone2 SelectorA	(Unconnected)
60	P32	VZB	O	VIDEO Zone2 SelectorB	(Unconnected)
61	P31	/SWMT	O	Sub Woofer Mute	
62	Vcc2	Vcc	MCU	Power Supply, +5V	(Vcc)
63	P30	/CDMT	O	CD Direct Mute	(Unconnected)
64	Vss	Vss	MCU	Ground (Gnd)	
65	P27	/MIMT	O	Main IN Mute	
66	P26	PDon	I+	Pure Direct ON Detect	
67	P25	CDon	I+	Tape Monitor Key	
68	P24	PLED	O	Pure Direct LED	
69	P23	CLED	O	CD Direct/TapeMonitor LED	
70	P22	PRY	O	Power Relay	
71	P21	N.C.	O		
72	P20	HPRY	O	Head Phone Pelay	
73	P17	PDET	IRQ	Power Down Detect INT	
74	P16	SPSW	IRQ	SYSTEM Power SW INT(MasterPower)	
75	P15	REM	IRQ	Remote Controler INT	
76	P14	FBRY	O	Front B Speaker Relay	
77	P13	FARY	O	Front A Speaker Relay	
78	P12	VRup	O	Volume Up	
79	P11	VRdn	O	Volume Down	
80	P10	PRI	I	I Protection	
81	P07	/PSV	O	Power save mode	
82	P06	N.C.	O		
83	P05	/BLK	O	FL Driver /BLK	
84	P04	ISA	I	Input Selector A	(PullUp)
85	P03	ISB	I	Input Selector B	(PullUp)
86	P02	LSBY	O	StandBy LED	(Unconnected)
87	P01	N.C.	O		
88	P00	N.C.	O		
89	P107/AN7/KI3	REC	AD	Rec/Zone2 selecter	(Unconnected)
90	P106/AN6/KI2	PRV	AD	PS Protection	(PullUp)
91	P105/AN5/KI1	PRD	AD	DC Protection	(PullUp)
92	P104/AN4/KI0	THML	AD	THM L Protection	(Unconnected)
93	P103/AN3	THMR	AD	THM R Protection	(PullUp)
94	P102/AN2	KEY0	AD	AD Key 0	
95	P101/AN1	KEY1	AD	AD Key 1	
96	Avss	Avss	MCU	AD Ground	(Gnd)
97	P100/AN0	DEST	AD	Destination Detect	
98	Vref	Vref	MCU	AD Reference	(Vcc)
99	Avcc	Avcc	MCU	AD Power Supply	(Vcc)
100	P97/Adtrg	CEFD	O	FL Driver CE	

■ DISPLAY DATA

V801 : 15-BT-105GNK (WF519900)



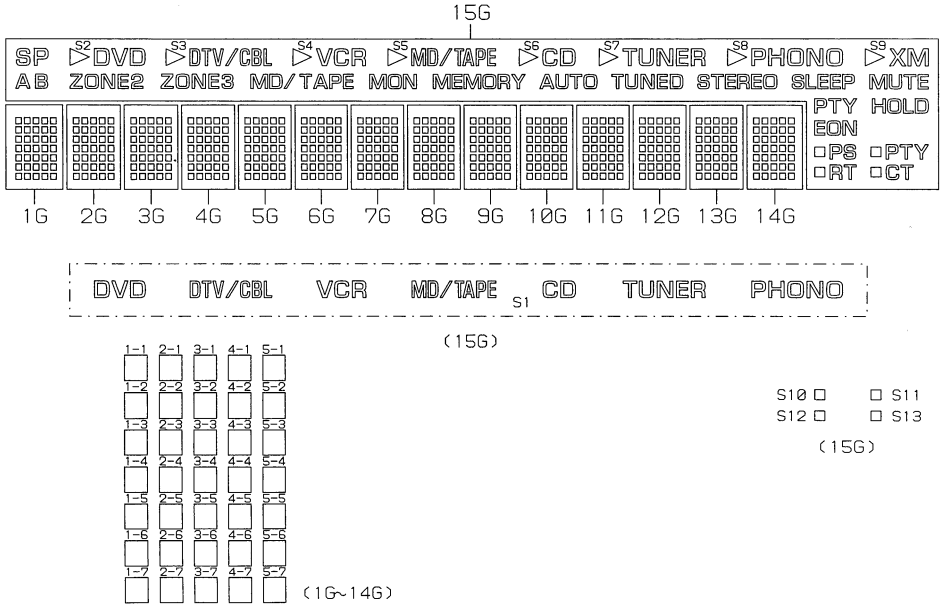
● PIN CONNECTION

PIN NO.	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	P78	P79	P80	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25	P26	P27	P28	P29	P30	P31	P32	P33	P34	P35	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	14G	15G	NC	NC	S4	S3	S2	S1	FX1

PIN NO.	60	59	58	57	56	55	54	53	52	51
CONNECTION	F2	NX	NP	NP	P1	P2	P3	P4	P5	P6

Note 1) F1, F2 ..... Filament
2) NP ..... No Pin
3) NX ..... No Extend Pin
4) P1~P35 ..... Datum Line
5) 1G~15G ..... Grid

● GRID ASSIGNMENT



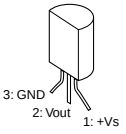
● ANODE CONNECTION

	1G~14G	15G
P1	1-1	SP
P2	2-1	A
P3	3-1	B
P4	4-1	ZONE2
P5	5-1	ZONE3
P6	1-2	MD/
P7	2-2	TAPE MON
P8	3-2	AUTO
P9	4-2	TUNED
P10	5-2	STEREO
P11	1-3	MEMORY
P12	2-3	SLEEP
P13	3-3	PTY HOLD
P14	4-3	EON
P15	5-3	S10
P16	1-4	S11
P17	2-4	S12
P18	3-4	S13
P19	4-4	PS
P20	5-4	PTY
P21	1-5	RT
P22	2-5	CT
P23	3-5	S2
P24	4-5	S3
P25	5-5	S4
P26	1-6	S5
P27	2-6	S6
P28	3-6	S7
P29	4-6	S8
P30	5-6	S9
P31	1-7	S1
P32	2-7	XM
P33	3-7	MUTE
P34	4-7	-
P35	5-7	-

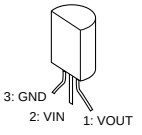
■ PIN CONNECTION DIAGRAM

● ICs

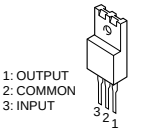
LM61CIZ



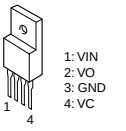
NJU7201L55



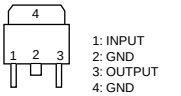
NJM7805FA



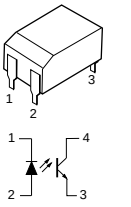
PQ05RD11



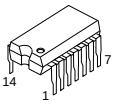
µPC29M33T-E1



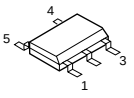
TLP421



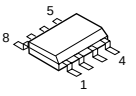
TC4013BP



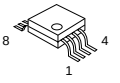
SN74AHC1G32DCK



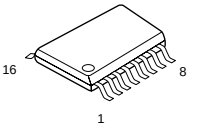
NE5532DR



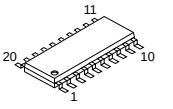
NJM2068MD



AK4384ET



SN74LV245APWR



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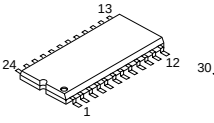

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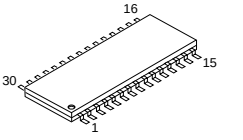
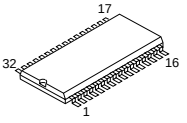
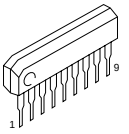


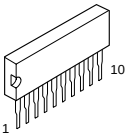
BD3841FS



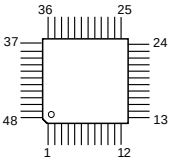
LA7956



LB1641



F2602E-01



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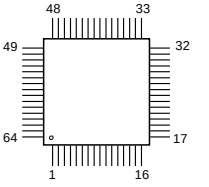

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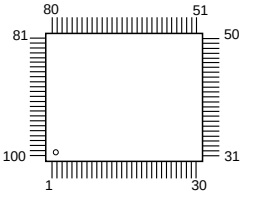
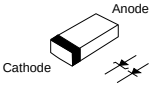
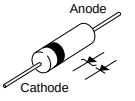


● Diodes

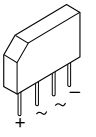
1SS355
1SS380
MA8056-M
MA8075-H
MA8051-M
MA8120-H
UDZ5.1B
UDZS3.0BTE-17
AVRL161A1R1NTB
RB500V-40
UDZS22BTE-17



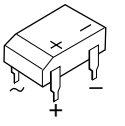
1SS133
1SS270A
1SR139
1T2
MTZJ16A
MTZJ6.8B
MTZJ10B
MTZJ9.1B
MTZJ6.2B
MTZJ3.0A
MTZJ27B



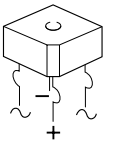
KBP103G



S1NB20
S1NB60



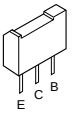
S4VB20



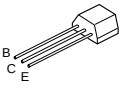
● Transistors

2SC2412K (Q, R, S)
2SD1938F (S, T)
DTC144EKA
2SA1037K (Q, R, S)

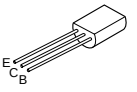
2SA1708 (S, T)
2SC4488 (S, T)



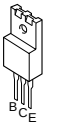
2SC1740S (Q, R, S)
DTC144ESA-TP



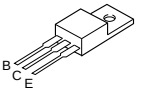
2SA1015 (Y)
2SC1815 (Y)
2N5401C-AT
2N5551C-AT
2SC2229 (O, Y)
2SA970 (GR, BL)
2SB647 (C, D)



2SD2375 (Q, P)

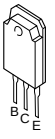


2SC4495



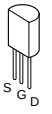
● Transistors

2SA1695 (O, P, Y)
2SC4468 (O, P, Y)
2SA2151 (O, P, Y)
2SC6011 (O, P, Y)



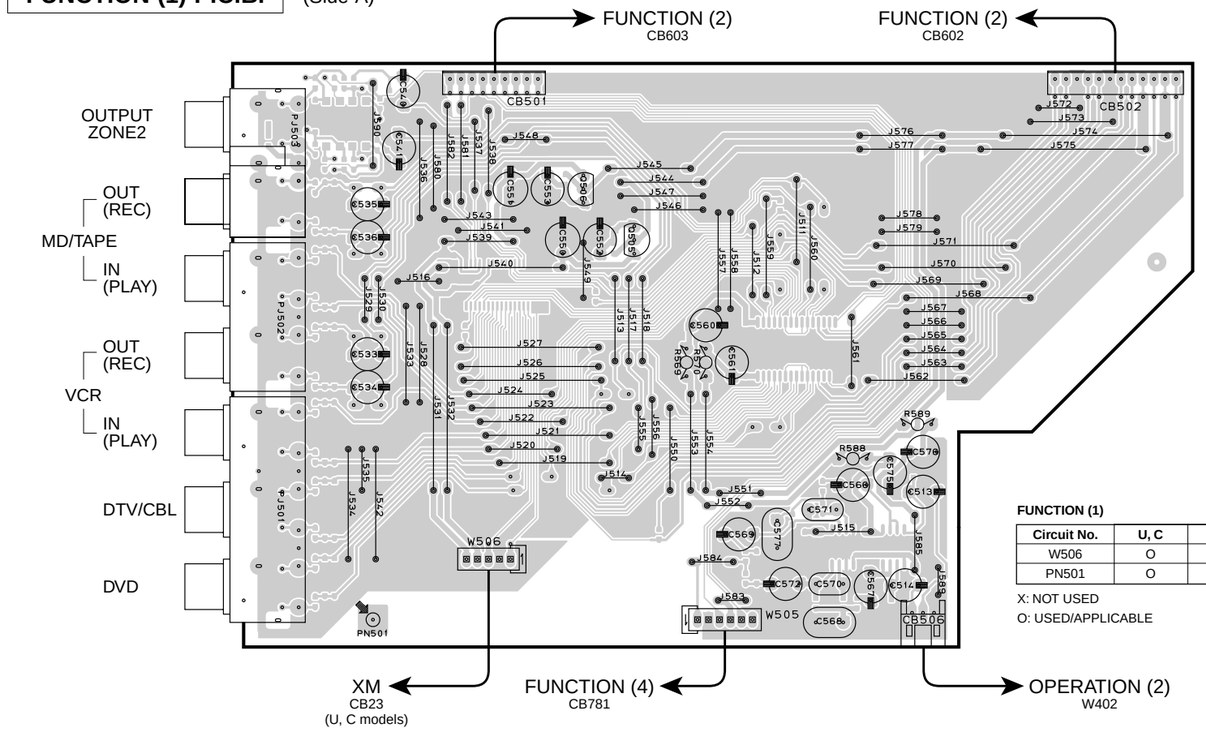
● FETs

2SK30ATM
2SK3850



■ PRINTED CIRCUIT BOARD

FUNCTION (1) P.C.B. (Side A)

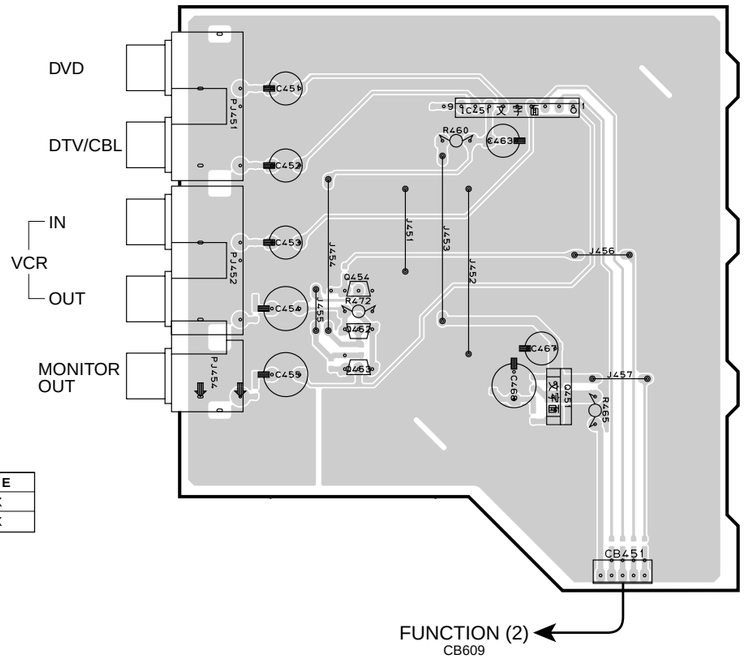


FUNCTION (1)

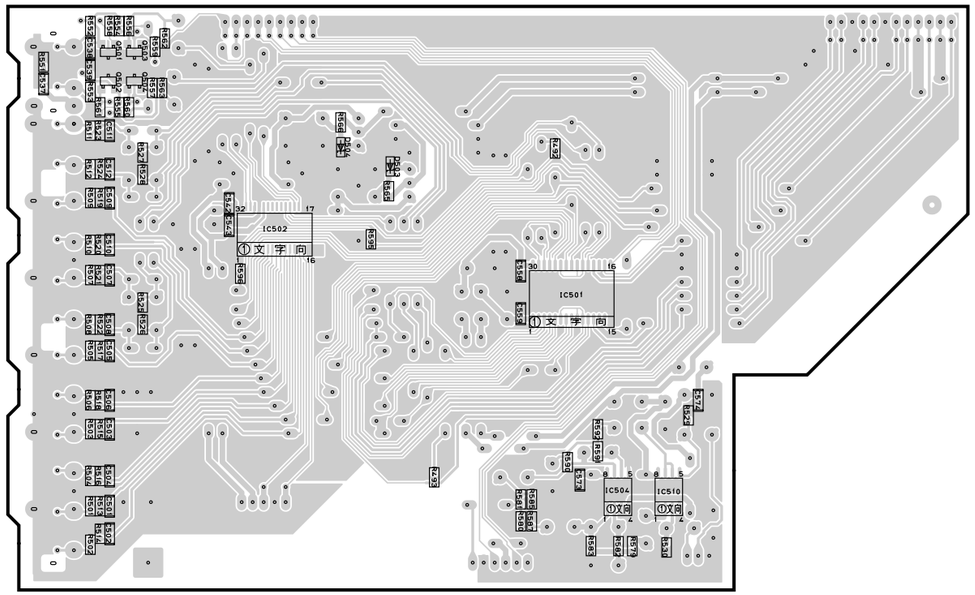
Circuit No.	U, C	R, L	A	G, E
W506	O	X	X	X
PN501	O	X	X	X

X: NOT USED
O: USED/APPLICABLE

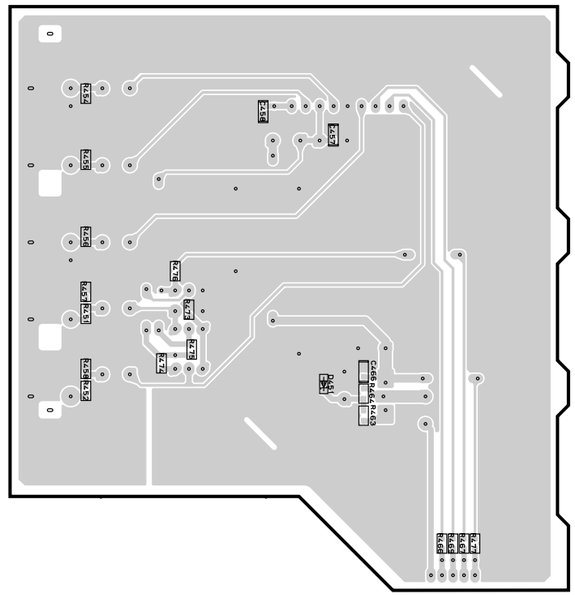
FUNCTION (3) P.C.B. (Side A)



FUNCTION (1) P.C.B. (Side B) Lead Free Solder Used

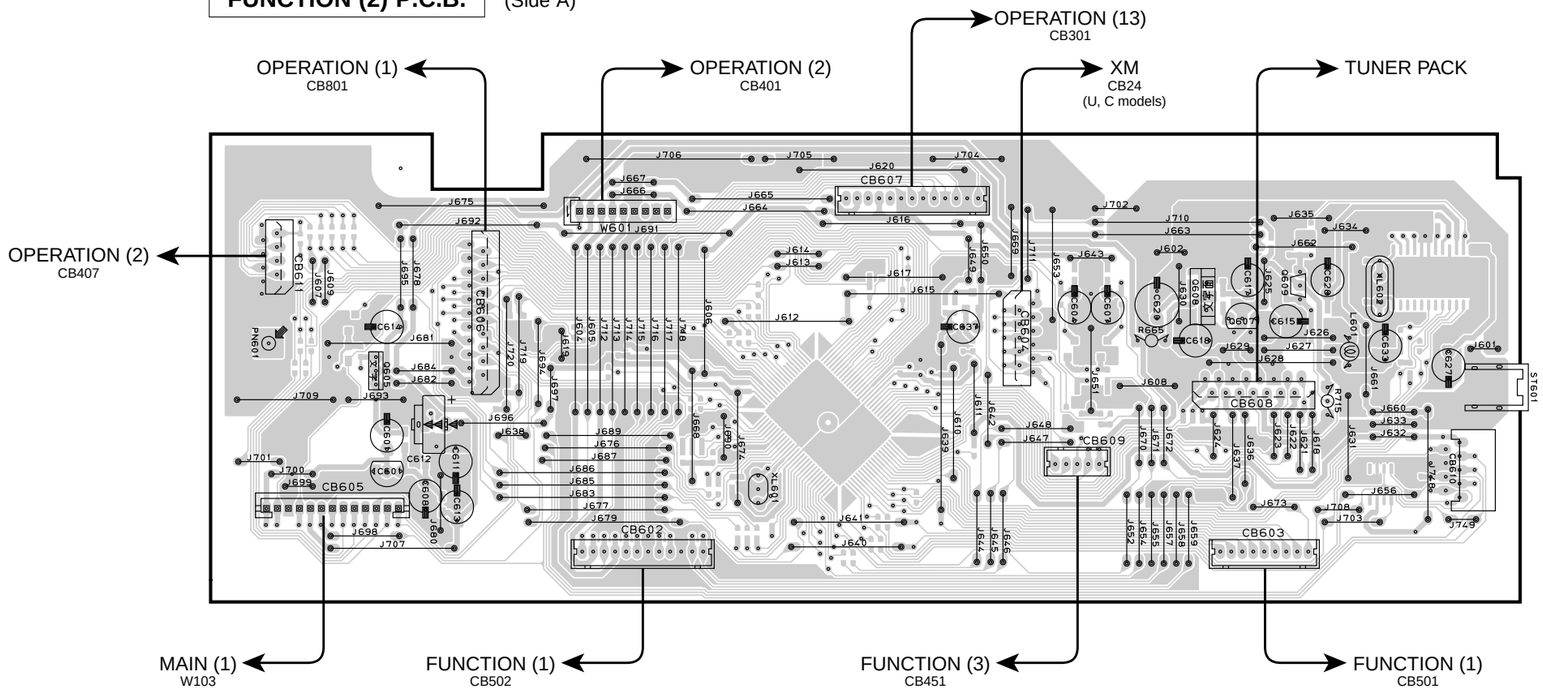


FUNCTION (3) P.C.B. (Side B) Lead Free Solder Used



■ PRINTED CIRCUIT BOARD

FUNCTION (2) P.C.B. (Side A)

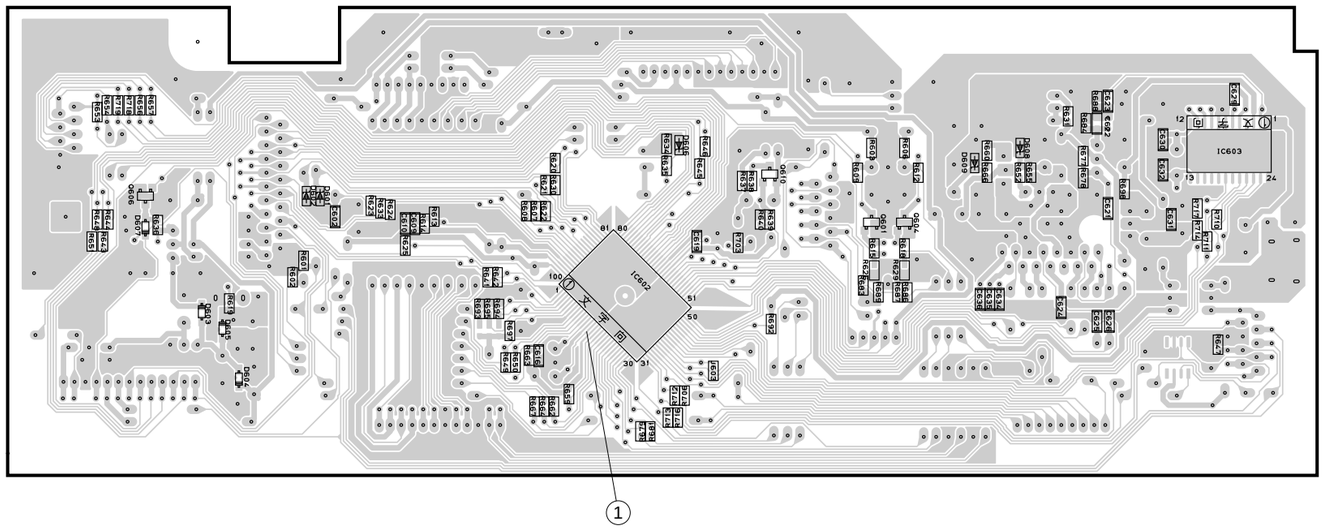


FUNCTION (2)

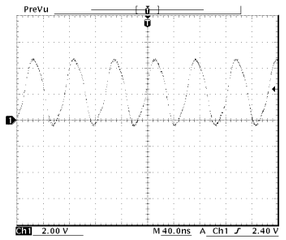
Circuit No.	U, C	R, L	A	G, E
CB604	O	X	X	X
R679, 681, 683, 686	O	X	X	X
R687, 688	O	X	X	X
R601	X	O	O	O
IC603	X	X	X	O
XL602	X	X	X	O
C630, 632	X	X	X	O
C622, 623	X	X	X	O
C629	X	X	X	O
C621, 631	X	X	X	O
C627, 628, 633	X	X	X	O
R698	X	X	X	O
R710, 711	X	X	X	O
R684	X	X	X	O
R714, 717	X	X	X	O
R688	X	X	X	O
R678	X	X	X	O
R677	X	X	X	O
L601	X	X	X	O
Q609	X	X	X	O

X: NOT USED
O: USED/APPLICABLE

FUNCTION (2) P.C.B. (Side B) Lead Free Solder Used



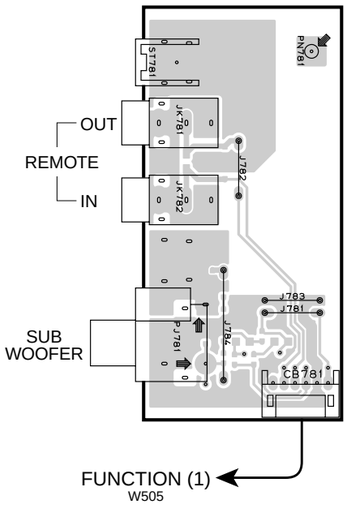
Point ① (Pin 13 of IC602)



■ PRINTED CIRCUIT BOARD

FUNCTION (4) P.C.B.

(Side A)



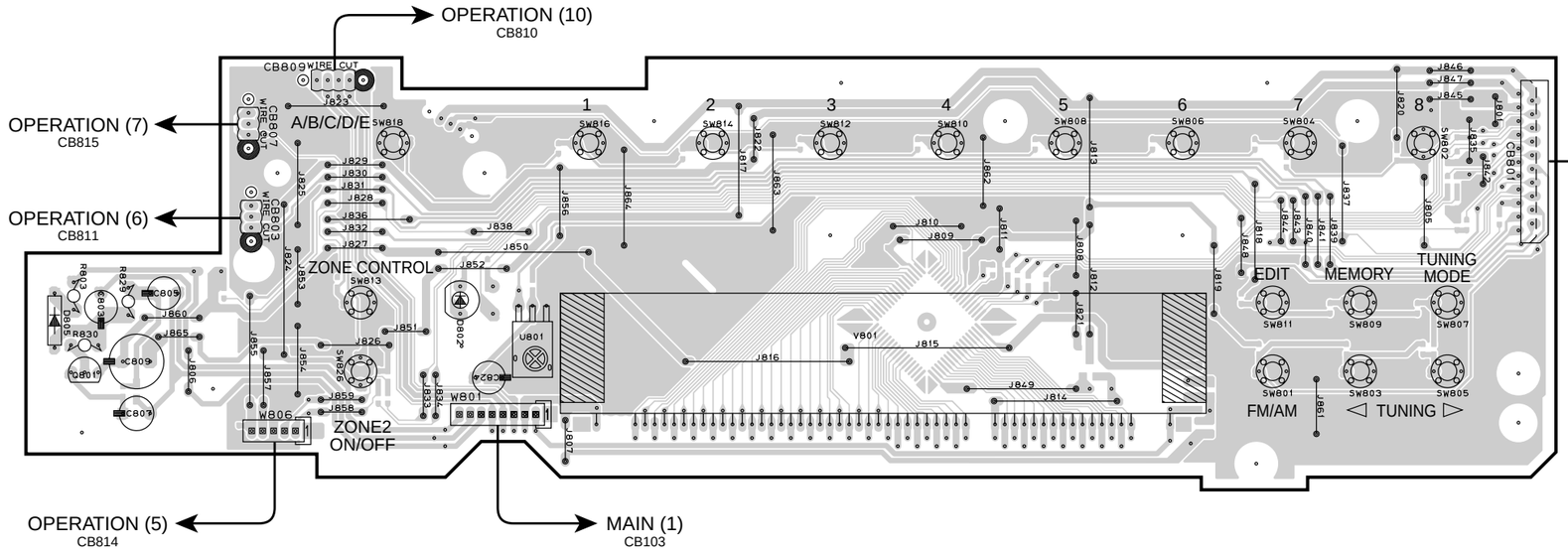
FUNCTION (4)

Circuit No.	U, C	R, L	A	G, E
PN781	O	X	X	X

X: NOT USED
O: USED/APPLICABLE

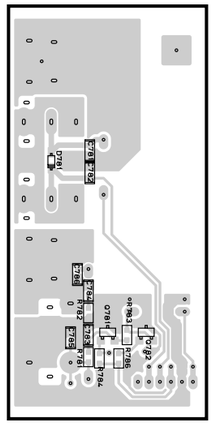
OPERATION (1) P.C.B.

(Side A)



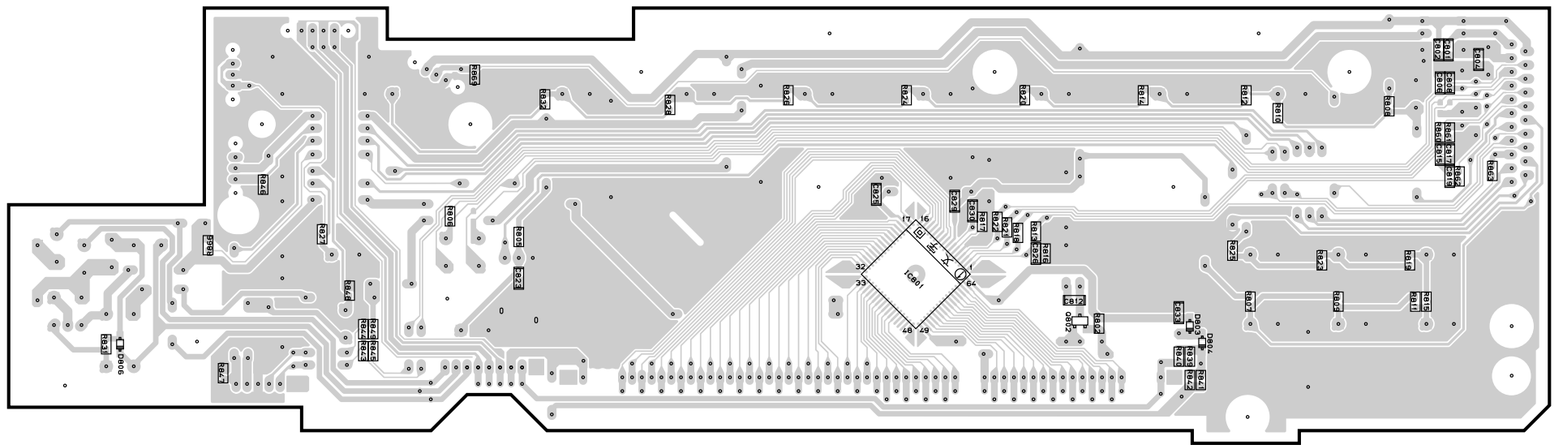
FUNCTION (4) P.C.B.

(Side B) Lead Free Solder Used



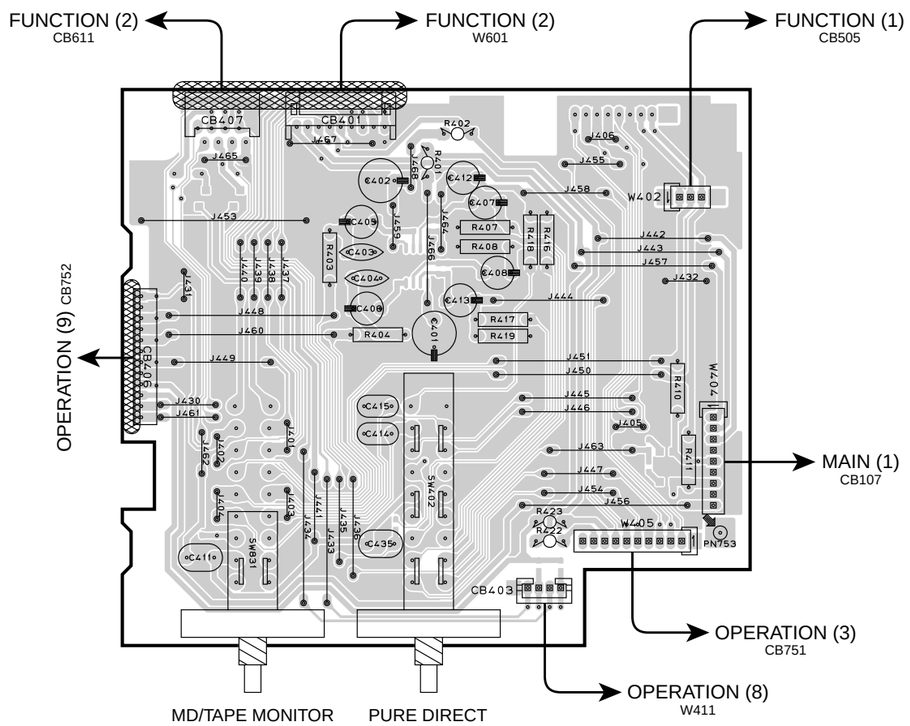
OPERATION (1) P.C.B.

(Side B) Lead Free Solder Used

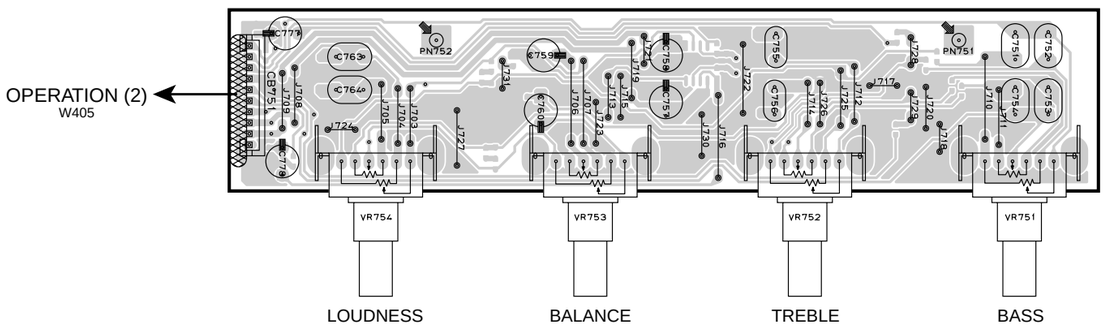


■ PRINTED CIRCUIT BOARD

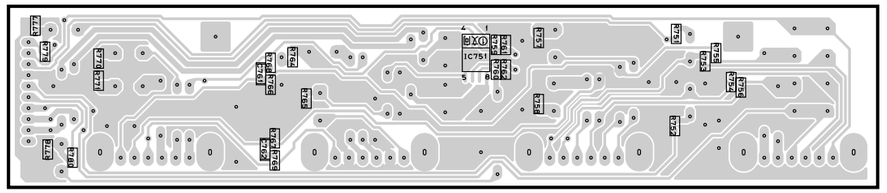
OPERATION (2) P.C.B. (Side A)



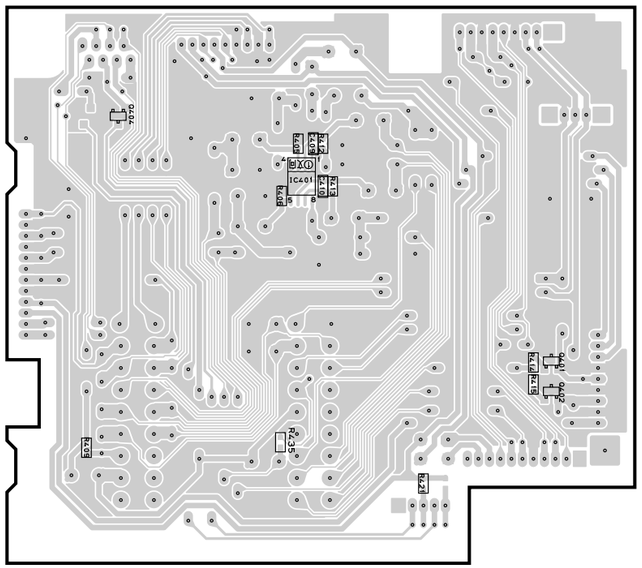
OPERATION (3) P.C.B. (Side A)



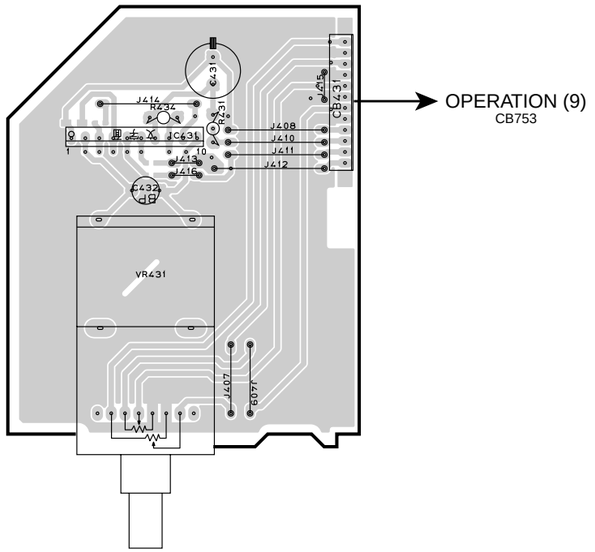
OPERATION (3) P.C.B. (Side B) Lead Free Solder Used



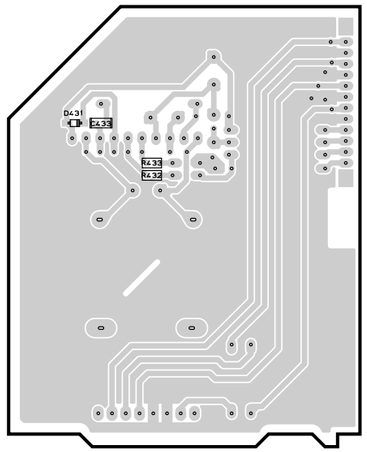
OPERATION (2) P.C.B. (Side B) Lead Free Solder Used



OPERATION (4) P.C.B. (Side A)



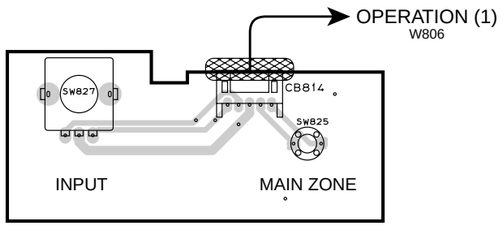
OPERATION (4) P.C.B. (Side B) Lead Free Solder Used



■ PRINTED CIRCUIT BOARD

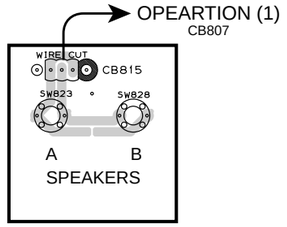
OPERATION (5) P.C.B.

(Side A)



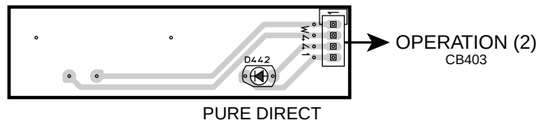
OPERATION (7) P.C.B.

(Side A)



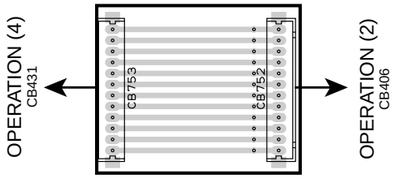
OPERATION (8) P.C.B.

(Side A)



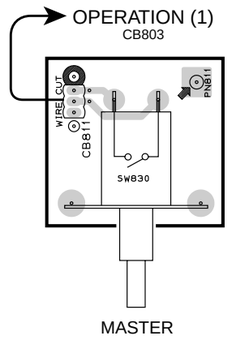
OPERATION (9) P.C.B.

(Side A)



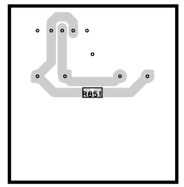
OPERATION (6) P.C.B.

(Side A)



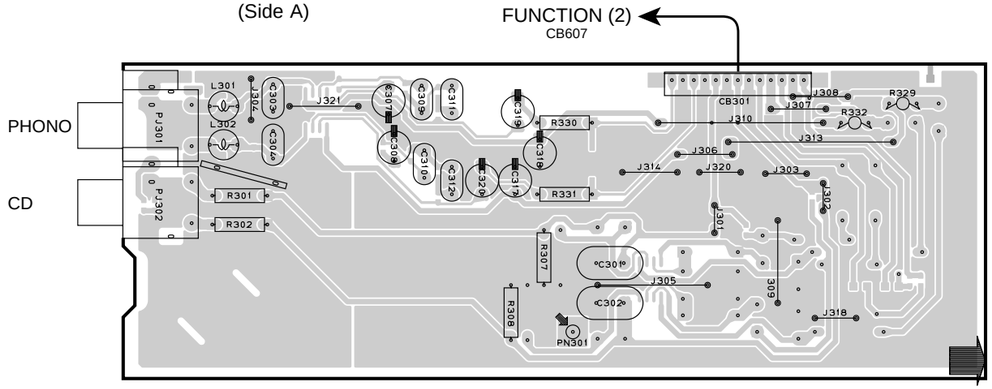
OPERATION (7) P.C.B.

(Side B) Lead Free Solder Used



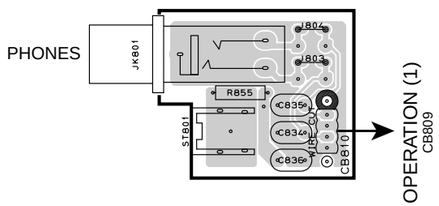
OPERATION (13) P.C.B.

(Side A)



OPERATION (10) P.C.B.

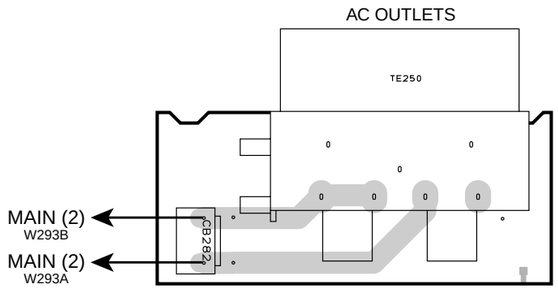
(Side A)



OPERATION (12) P.C.B.

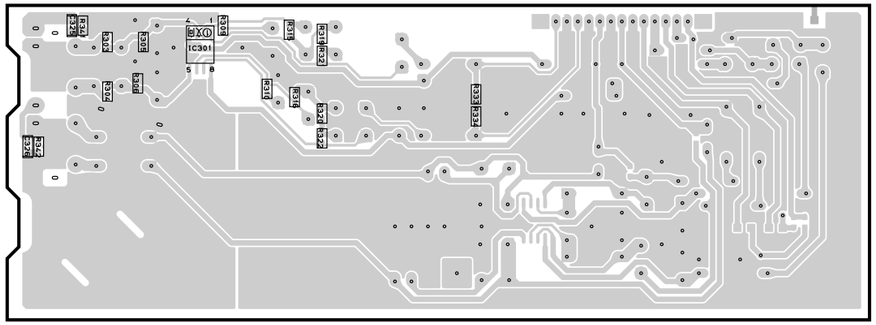
(Side A)

A, G, E, L models



OPERATION (13) P.C.B.

(Side B) Lead Free Solder Used



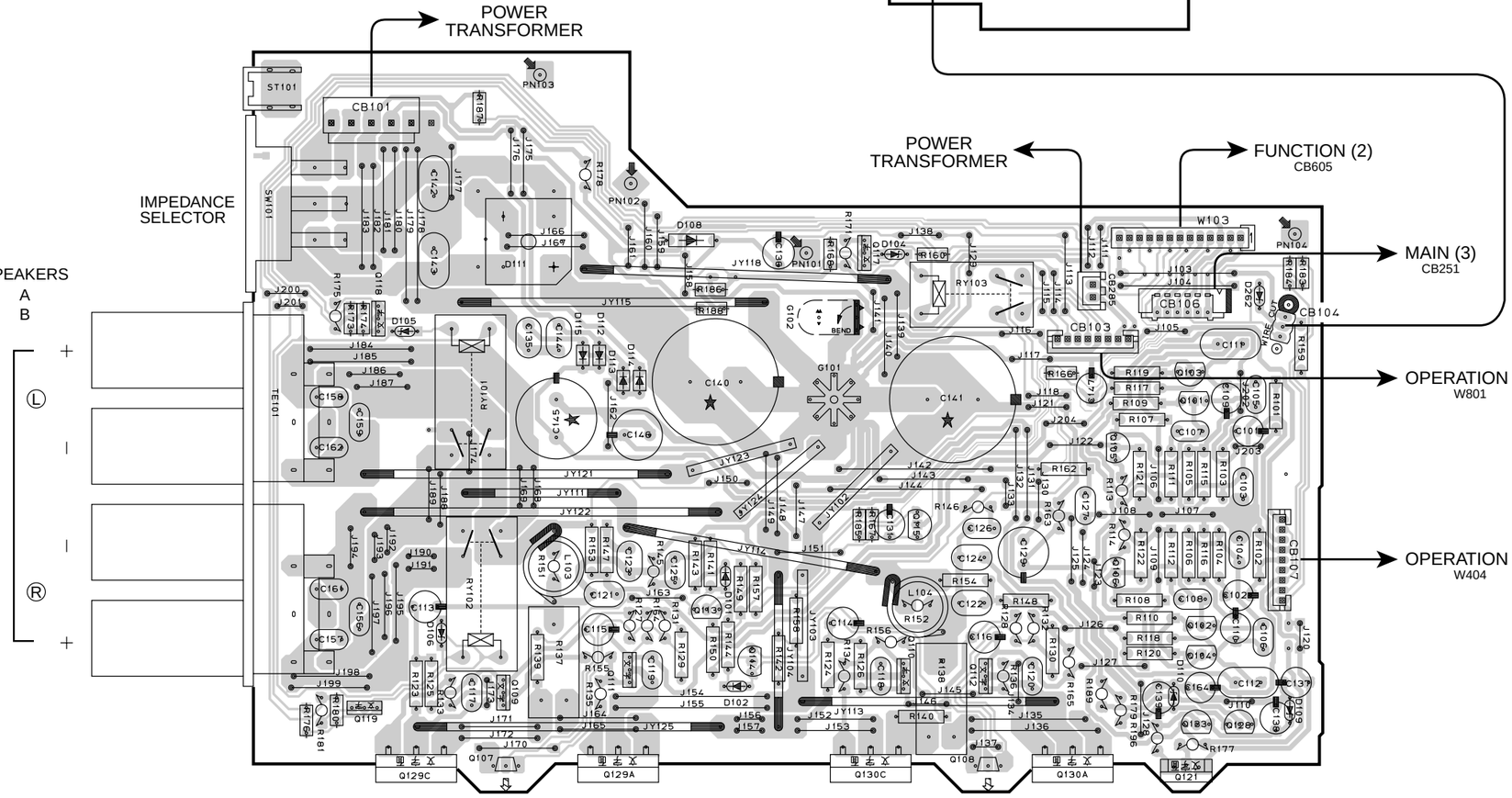
■ PRINTED CIRCUIT BOARD Lead Free Solder Used

MAIN (1) P.C.B.
(Side A)

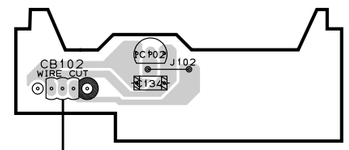
MAIN (1)

Circuit No.	A, G, E, L	U, C, R
C156–159, 161, 162	O	X

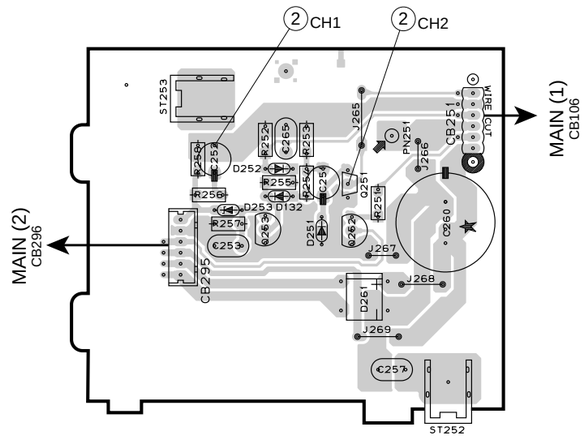
X: NOT USED
O: USED/APPLICABLE



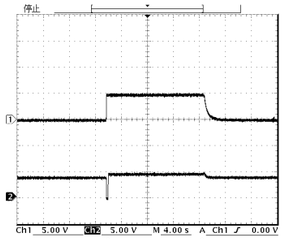
MAIN (5) P.C.B.
(Side A)



MAIN (3) P.C.B.
(Side A)

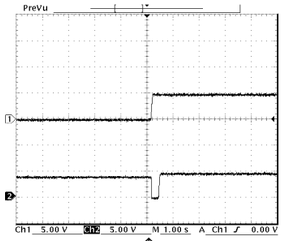


Point ②
CH 1 : (+) of C252
CH 2 : Collector of Q251



AC POWER ON
(Connect the power cable)

AC POWER OFF
(Disconnect the power cable)

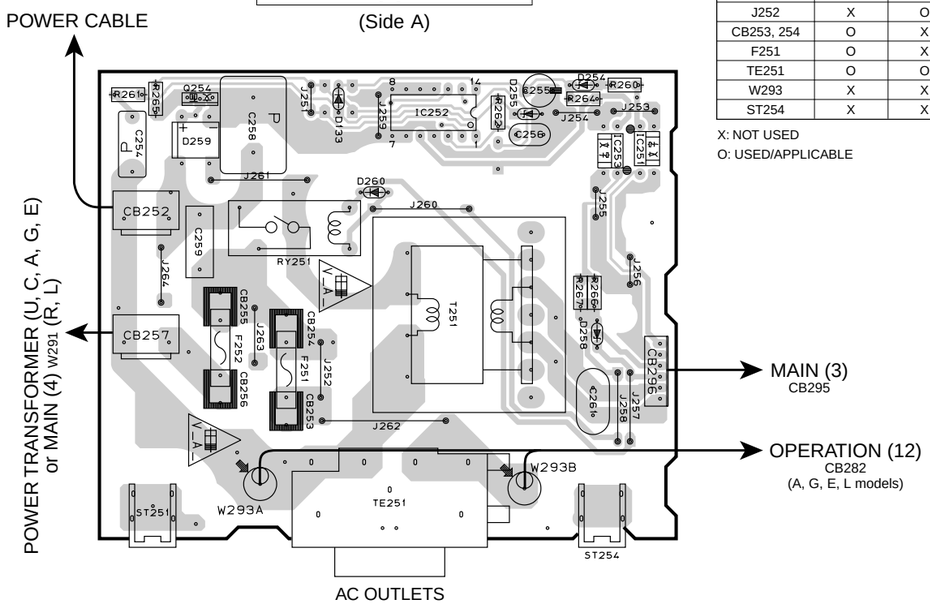


AC POWER ON
(Connect the power cable)

■ PRINTED CIRCUIT BOARD Lead Free Solder Used

MAIN (2) P.C.B.

(Side A)



MAIN (2)

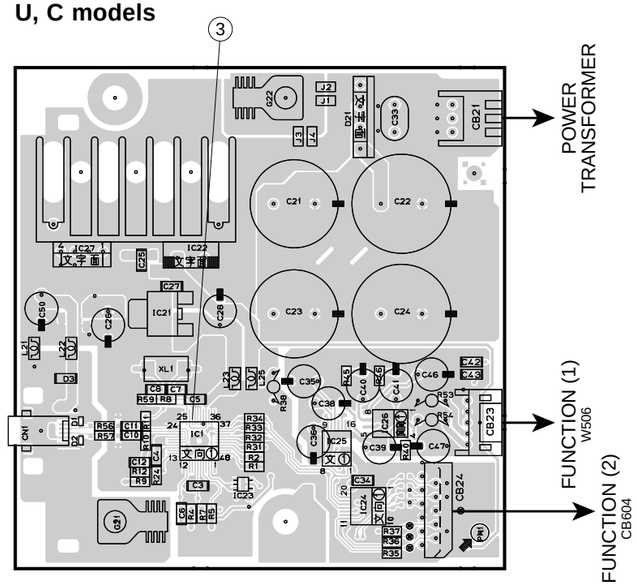
Circuit No.	U, C	R	A	G, E	L
J252	X	O	O	X	O
CB253, 254	O	X	X	O	X
F251	O	X	X	O	X
TE251	O	O	X	X	X
W293	X	X	O	O	O
ST254	X	X	O	O	O

X: NOT USED
O: USED/APPLICABLE

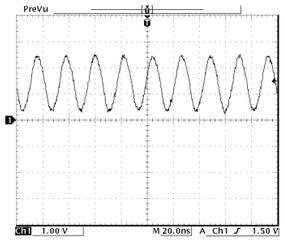
XM P.C.B.

(Side A) Lead Free Solder Used

U, C models



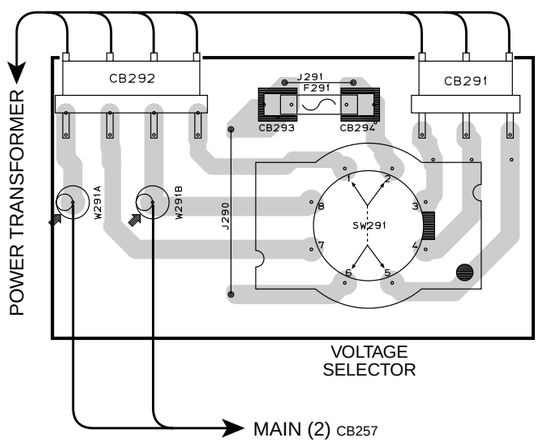
Point ③ (Pin 28 of IC1)



MAIN (4) P.C.B.

(Side A)

R, L models



MAIN (4)

Circuit No.	R	L
CB293, 294	O	X
F291	O	X
J291	X	O

X: NOT USED
O: USED/APPLICABLE

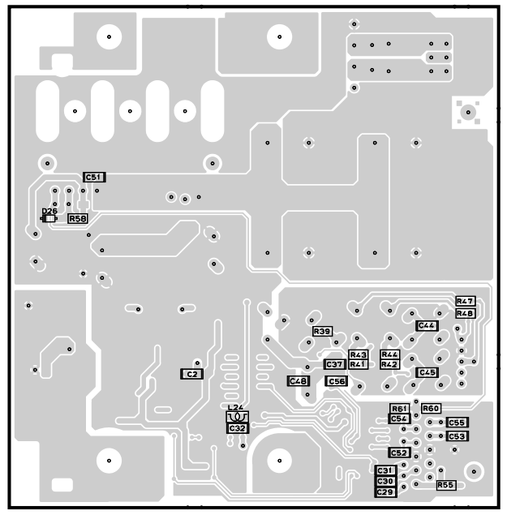
VOLTAGE SELECTOR
SW291

240V	1–2/5–6
220V	2–3/6–7
110V	3–4/7–8
120V	4–5/8–1

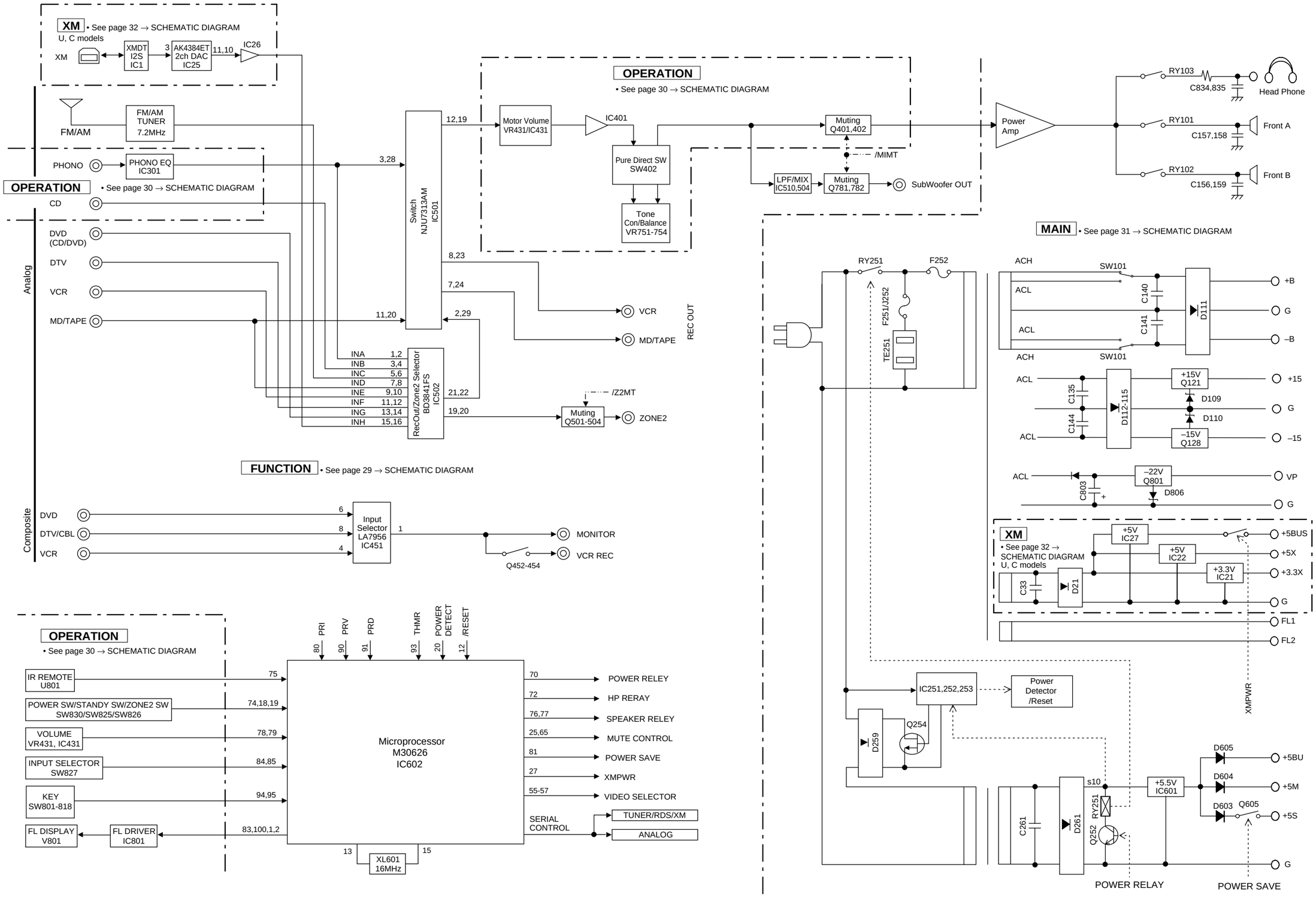
XM P.C.B.

(Side B) Lead Free Solder Used

U, C models



■ BLOCK DIAGRAM



■ SCHEMATIC DIAGRAM (FUNCTION)

Destinatin Part List					
$XX	LCC	UC	RL	A	GE
s1	R613	RD35647 4.7K	RD35682 8.2K	RD35712 12K	RD35722 22K
s11	W506	WF40525	X	X	X
s12	CB604	VM05050 52045	X	X	X
s13	R586 R681 R679 R683	RD35510 100	X	X	X
s14	R689 R687	RD35615 1.5K	X	X	X
s15	R601	X	RD35715 15K	RD35715 15K	RD35715 15K
s16	PN781 PN501	V983750 –	X	X	X
s21	IC603	X	X	X	XC08Z40 LC72722PM-TLM-E
s22	XL602	X	X	X	V993090 4.332MHZ
s23	C630 C632	X	X	X	US06127 27PCH
s24	C623 C622	X	X	X	US06233 330P
s25	C629	X	X	X	US06256 560P
s26	C621 C631	X	X	X	US13510 0.1/16
s27	C628 C633 C627	X	X	X	UR83747 47/16
s28	R698	X	X	X	RD35510 100
s29	R710 R711	X	X	X	RD35547 470
s30	R684	X	X	X	RD35633 3.3K
s31	R717 R714	X	X	X	RD35710 10K
s32	R688	X	X	X	RD35722 22K
s33	R678	X	X	X	RD35733 33K
s34	R677	X	X	X	RD35810 100K
s35	L601	X	X	X	VU88950 220UH
s36	Q609	X	X	X	IC17402 C1740S1R(S1)

Interchangeable Parts at Manufacture-Stage			
Mark	Reference Parts Number	Parts Name	
k1	D781	1S3355 MA111 KDS160-RTK/P	
k2	Q601-604-610	2SA1037AK(Q/R/S) 2SA1235A(E/F)	
k3	Q452-454-609	2SC1740S(R/S) 2SC2603(E/F) 2SC3311A(Q/R/S)	
k4	Q506	2SA1015(Y) KTA1266	
k5	Q505-607	2SC1815(Y) KTC3198	
k6	Q606	DTC144EKA KRC104S-RTK/P	
k7			
k8			
k9			
k10			
k11			
k12			
k13			
k14			

NOTICE (model)
(J)····· JAPAN
(U)····· U.S.A
(C)····· CANADA
(A)····· GENERAL
(T)····· CHINA
(K)····· KOREA
(A)····· AUSTRALIA
(B)····· BRITISH
(G)····· EUROPE
(L)····· SINGAPORE
(E)····· SOUTH EUROPE
(V)····· TAIWAN

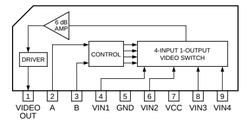
RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
	CARBON FILM RESISTOR (P=10)
	METAL OXIDE FILM RESISTOR
	METAL FILM RESISTOR
	METAL PLATE RESISTOR
	FIRE PROOF CARBON FILM RESISTOR
	CEMENT MOLDED RESISTOR
	SEMI VARIABLE RESISTOR
	CHIP RESISTOR

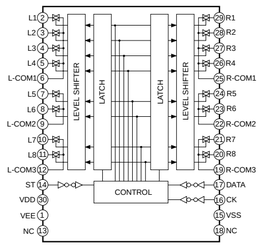
CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	ELECTRONIC
	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	NON-POLAR
	CERAMIC TUBULAR CAPACITOR	
	POLYESTER FILM CAPACITOR	
	POLYSTYRENE FILM CAPACITOR	
	MICA CAPACITOR	
	POLYPROPYLENE FILM CAPACITOR	
	SEMICONDUCTIVE CERAMIC CAPACITOR	

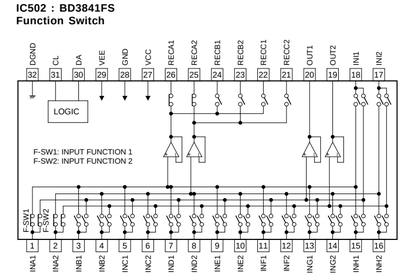
IC451: LA7956
Video Switch



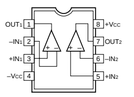
IC501: NJU7313AM
Analog Function Switch



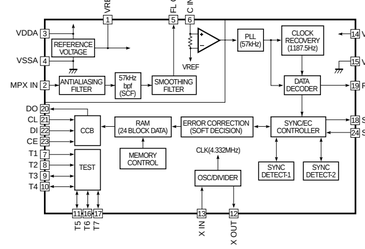
IC502 : BD3841FS
Function Switch



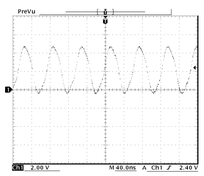
IC504, 510: NJM2068MD-TE
Dual OP-Amp



IC603 : LC72722PM
RDS Decoder

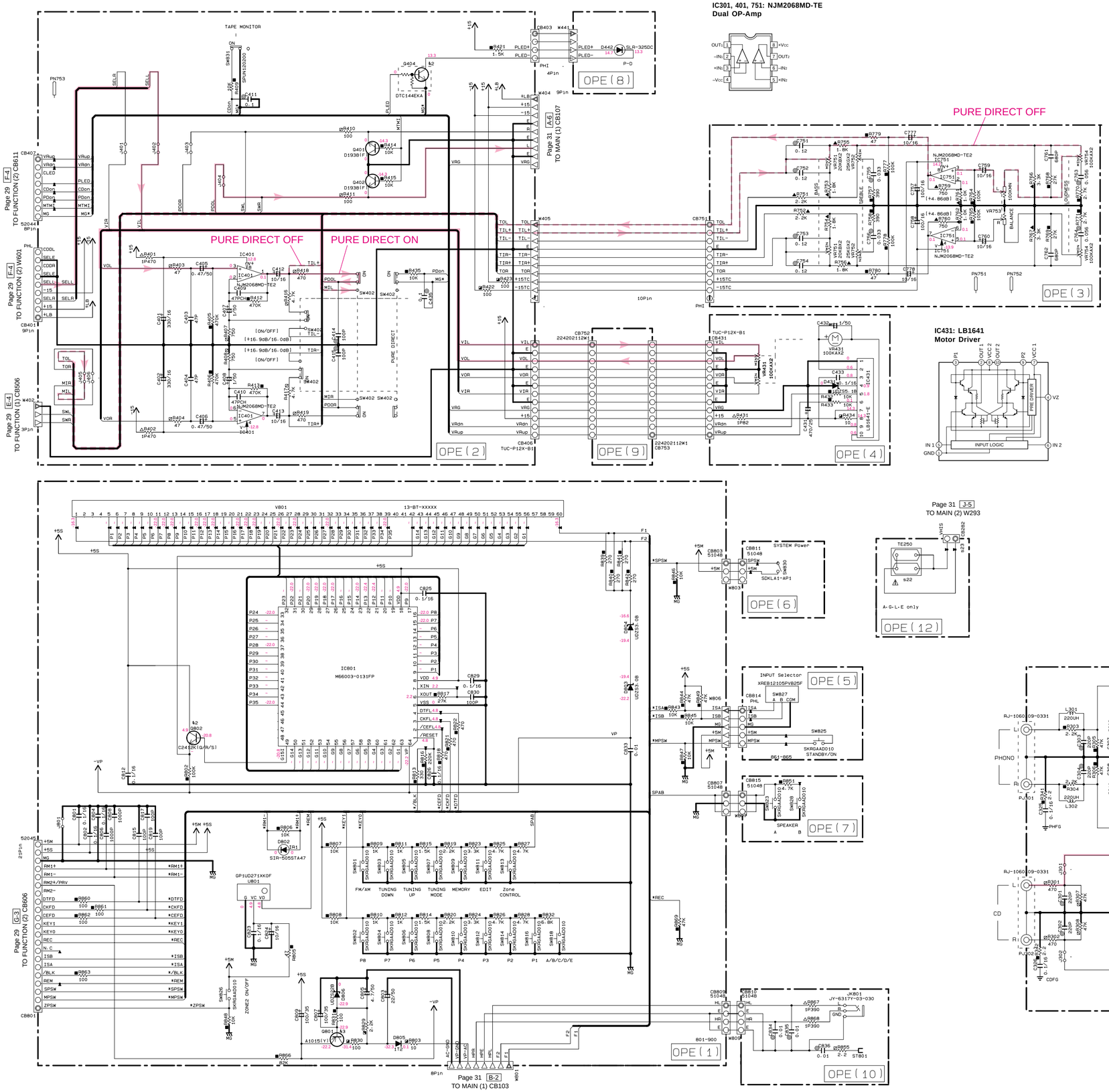


Point ① (Pin 13 of IC602)



** All voltages are measured with a 10MΩ/V DC electronic volt meter.*
** Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.*
** Schematic diagram is subject to change without notice.*

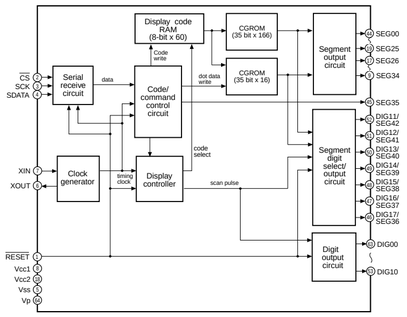
■ SCHEMATIC DIAGRAM (OPERATION)



IC301, 401, 751: NJM2068MD-TE
Dual OP-Amp

IC431: LB1641
Motor Driver

IC801: M66003-0131FP
Display Driver



RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
⊿	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
⚠	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
▨	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

CAPACITOR

REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊗	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
◉	CERAMIC TUBULAR CAPACITOR
◎	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
Ⓘ	MICA CAPACITOR
Ⓟ	POLYPROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR

NOTICE (model)

(J)····· JAPAN
(U)····· U.S.A
(C)····· CANADA
(R)····· GENERAL
(T)····· CHINA
(K)····· KOREA
(A)····· AUSTRALIA
(B)····· BRITISH
(G)····· EUROPE
(L)····· SINGAPORE
(E)····· SOUTH EUROPE
(V)····· TAIWAN

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
&1	Q802	2SC2412K(Q/R/S) 2SD0601ARL/ASL (Q/R/S)
&2	Q404	DTC144EKA KRC1045-RTK/P
&3	Q801	2SA1015(Y) KTA1266Y

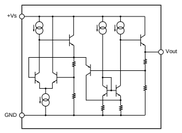
Destinatin Part List

sXX	LOC	UCR	A	GLE
s22	TE250	X	VT91500 S2-773T-210	VU54340 S2-762T-214
s23	CB282	X	V087990 VHIS	V087990 VHIS

* All voltages are measured with a 10MΩ/V DC electronic volt meter.
* Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

■ SCHEMATIC DIAGRAM (MAIN)

IC102 : LM61CIZ
Temperature Sensor



NOTICE (model)
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(B)····· BRITISH
(G)····· EUROPE
(L)····· SINGAPORE
(E)····· SOUTH EUROPE
(V)····· TAIWAN

RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
☑	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
☒	METAL PLATE RESISTOR
◪	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

CAPACITOR

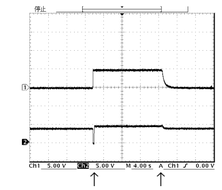
REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	‖
⊗	TANTALUM CAPACITOR	‖
NO MARK	CERAMIC CAPACITOR	‖
⊛	CERAMIC TUBULAR CAPACITOR	‖
ⓜ	POLYESTER FILM CAPACITOR	‖
○	POLYSTYRENE FILM CAPACITOR	‖
Ⓘ	MICA CAPACITOR	‖
Ⓟ	POLYPROPYLENE FILM CAPACITOR	‖
◉	SEMICONDUCTIVE CERAMIC CAPACITOR	‖

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
&1	RY103	DS24D2-OS(M) ALA2F24 G5PA-28
&2	D132, 133, 251, 252, 260	HSS104 1SS133 1SS176
&3	Q254	2SK3850 2SK3491-E
&4	Q252, 253	2SC1815(Y) KTC3198
&5	D262	MTZJ6.2B HZS6C2TD-E

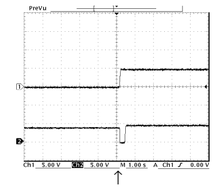
	Reference No	U-C	R	A	B	G-E	L
s1	C156-159 161-162	X	X	0.01 UA65410	0.01 UA65410	0.01 UA65410	0.01 UA65410
s2	C258	WB69630	WD25760 WF08150	WD25760 WF08150	WD25760 WF08150	WD25760 WF08150	WD25760 WF08150
s6	J252	X	0	0	X	X	0
s7	CB253-254	WC05070 EYF52BCY	X	X	WC05070 EYF52BCY	WC05070 EYF52BCY	X
s8	F251	WG41070 8A125V	X	X	VT94290 2.5A/250V	VT94290 2.5A/250V	X
s9	TE251	VU54310	VB86740	X	VU54310	X	X
s10	F252	WG41070 8A125V	WG41070 8A125V	KB00079 T4AL250V	KB00066 T1.6AL250V	KB00079 T4AL250V	KB00079 T4AL250V
s12	C260	URO3933 3300/16	URO6933 3300/50	URO3933 3300/16	URO3933 3300/25	URO3933 3300/16	URO3933 3300/16
s13	J291	X	X	X	0	X	0
s14	SW291	X	WB49370 RB140246	X	X	X	WD07370 RB140254
s15	CB291	X	V937780 B3P55-VH	X	X	X	V937780 B3P55-VH
s16	CB292	X	V937790 B4P75-VH	X	X	X	V937790 B4P75-VH
s17	CB293-294	X	WC05070 EYF52BCY	X	X	X	X
s18	W291	X	WA76540 VH-52987	X	X	X	WA76540 VH-52987
s19	F291	X	KB00079 T4AL250V	X	X	X	X
s20	C254	WD05420	WC04160	WC04160	WC04160	WC04160	WC04160
s21	TE101	VC31370	VC31370	VC31370	V481140	V481140	V481140
s24	W293	X	X	V941190	X	V941190	V941190
s25	T251	XW606	X6351	XW608		XW608	XW608
s37	G129-G130	A1695/C4468 VR35590	A1695/C4468 VR35590	A1695/C4468 VR35590		A1695/C4468 VR35590	A2151/C6011 WD28120
s38	ST254	X	X	0		0	0

Point ②
CH 1 : (+) of C252
CH 2 : Collector of Q251



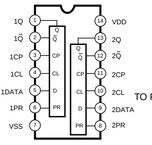
AC POWER ON
(Connect the power cable)

AC POWER OFF
(Disconnect the power cable)



AC POWER ON
(Connect the power cable)

IC252 : TC4013BP
Dual D Flip Flop



Page 31 K-5 TO MAIN (2) CB257

Page 30 G-5 TO OPERATION (12) CB282

TO POWER CABLE

TO POWER TRANSFORMER or Page 31 G-5 TO MAIN (4) W291

TO POWER TRANSFORMER

Page 30 E-2 TO OPERATION (2) W404

Page 30 D-8 TO OPERATION (1) W801

Page 29 F-3 TO FUNCTION (2) CB605

TO POWER TRANSFORMER

TO POWER TRANSFORMER

SPEAKERS

** All voltages are measured with a 10MΩ/V DC electronic volt meter.*
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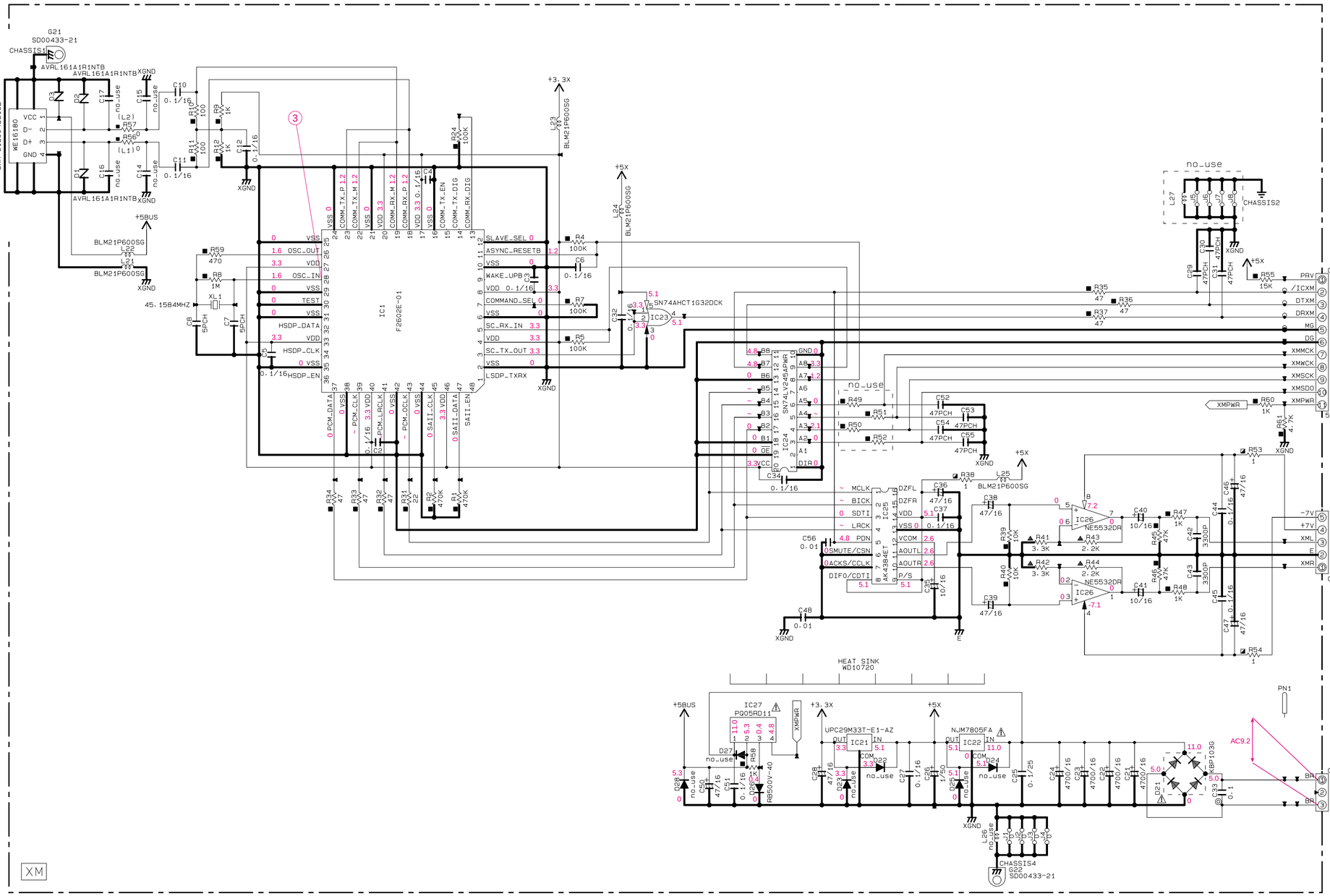
** Schematic diagram is subject to change without notice.*

■ SCHEMATIC DIAGRAM (XM)



CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⫼
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	⫼
◉	CERAMIC TUBULAR CAPACITOR	
◎	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
Ⓘ	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
◍	SEMICONDUCTIVE CERAMIC CAPACITOR	
Ⓢ	POLYPHENYLENE SULFIDE FILM CAPACITOR	

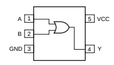
RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
◰	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
◬	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
▨	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
▩	CHIP RESISTOR

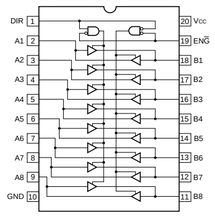
NOTICE (model)

(J)····· JAPAN
(U)····· U.S.A
(C)····· CANADA
(A)····· GENERAL
(T)····· CHINA
(K)····· KOREA
(A)····· AUSTRALIA
(B)····· BRITISH
(G)····· EUROPE
(L)····· SINGAPORE
(E)····· SOUTH EUROPE
(V)····· TAIWAN

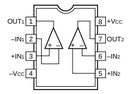
IC23 : SN74AHCT1G32DCKR
Single 2 Input OR



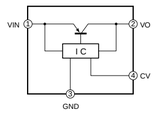
IC24 : SN74LV245APWR
Octal 3-State Bus Transceivers



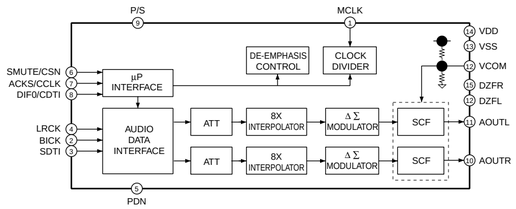
IC26 : NE5532DR
Dual OP-Amp



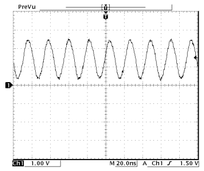
IC27 : PQ05RD11
Rgulator



IC25 : AK4384ET
D/A Convertter



Point ③ (Pin 28 of IC1)



** All voltages are measured with a 10MΩ/V DC electronic volt meter.*
** Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.*
** Schematic diagram is subject to change without notice.*

PARTS LIST

■ ELECTRICAL PARTS

■ **WARNING**

Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS :

C.A.EL.CHP	:	CHIP ALUMI. ELECTROLYTIC CAP
C.CE	:	CERAMIC CAP
C.CE.ARRAY	:	CERAMIC CAP ARRAY
C.CE.CHP	:	CHIP CERAMIC CAP
C.CE.ML	:	MULTILAYER CERAMIC CAP
C.CE.M.CHP	:	CHIP MULTILAYER CERAMIC CAP
C.CE.SAFTY	:	RECOGNIZED CERAMIC CAP
C.CE.TUBLR	:	CERAMIC TUBULAR CAP
C.CE.SMI	:	SEMI CONDUCTIVE CERAMIC CAP
C.EL	:	ELECTROLYTIC CAP
C.MICA	:	MICA CAP
C.ML.FLM	:	MULTILAYER FILM CAP
C.MP	:	METALLIZED PAPER CAP
C.MYLAR	:	MYLAR FILM CAP
C.MYLAR.ML	:	MULTILAYER MYLAR FILM CAP
C.PAPER	:	PAPER CAPACITOR
C.PLS	:	POLYSTYRENE FILM CAP
C.POL	:	POLYESTER FILM CAP
C.POLY	:	POLYETHYLENE FILM CAP
C.PP	:	POLYPROPYLENE FILM CAP
C.TNTL	:	TANTALUM CAP
C.TNTL.CHP	:	CHIP TANTALUM CAP
C.TRIM	:	TRIMMER CAP
CN	:	CONNECTOR
CN.BS.PIN	:	CONNECTOR, BASE PIN
CN.CANNON	:	CONNECTOR, CANNON
CN.DIN	:	CONNECTOR, DIN
CN.FLAT	:	CONNECTOR, FLAT CABLE
CN.POST	:	CONNECTOR, BASE POST
COIL.MX.AM	:	COIL, AM MIX
COIL.AT.FM	:	COIL, FM ANTENNA
COIL.DT.FM	:	COIL, FM DETECT
COIL.MX.FM	:	COIL, FM MIX
COIL.OUTPT	:	OUTPUT COIL
DIOD.ARRAY	:	DIODE ARRAY
DIODE.BRG	:	DIODE BRIDGE
DIODE.CHP	:	CHIP DIODE
DIODE.SHOT	:	SCHOTTKY BARRIER DIODE
DIODE.VAR	:	VARACTOR DIODE
DIOD.Z.CHP	:	CHIP ZENER DIODE
DIODE.ZENR	:	ZENER DIODE
DSCR.CE	:	CERAMIC DISCRIMINATOR
FER.BEAD	:	FERRITE BEADS
FER.CORE	:	FERRITE CORE
FET.CHP	:	CHIP FET
FL.DSPLY	:	FLUORESCENT DISPLAY
FLTR.CE	:	CERAMIC FILTER
FLTR.COMB	:	COMB FILTER MODULE
FLTR.LC.RF	:	LC FILTER ,EMI
GND.MTL	:	GROUND PLATE
GND.TERM	:	GROUND TERMINAL
HOLDER.FUS	:	FUSE HOLDER
IC.PRTCT	:	IC PROTECTOR
JUMPER.CN	:	JUMPER CONNECTOR
JUMPER.TST	:	JUMPER, TEST POINT
L.DTCT	:	LIGHT DETECTING MODULE
L.EMIT	:	LIGHT EMITTING MODULE
LED.DSPLY	:	LED DISPLAY
LED.INFRD	:	LED, INFRARED
MODUL.RF	:	MODULATOR, RF
PHOT.CPL	:	PHOTO COUPLER
PHOT.INTR	:	PHOTO INTERRUPTER
PHOT.RFLCT	:	PHOTO REFLECTOR
PIN.TEST	:	PIN, TEST POINT
PLST.RIVET	:	PLASTIC RIVET
R.ARRAY	:	RESISTOR ARRAY
R.CAR	:	CARBON RESISTOR
R.CAR.CHP	:	CHIP RESISTOR
R.CAR.FP	:	FLAME PROOF CARBON RESISTOR
R.CEMENT	:	CEMENT RESISTOR
R.FUS	:	FUSABLE RESISTOR
R.MTL.CHP	:	CHIP METAL FILM RESISTOR
R.MTL.FLM	:	METAL FILM RESISTOR
R.MTL.OXD	:	METAL OXIDE FILM RESISTOR
R.MTL.PLAT	:	METAL PLATE RESISTOR
RSNR.CE	:	CERAMIC RESONATOR
RSNR.CRYS	:	CRYSTAL RESONATOR
R.TW.CEM	:	TWIN CEMENT FIXED RESISTOR
SCR.BND.HD	:	BIND HEAD B-TITE SCREW
SCR.BW.HD	:	BW HEAD TAPPING SCREW
SCR.CUP	:	CUP TITE SCREW
SCR.TERM	:	SCREW TERMINAL
SCR.TR	:	SCREW, TRANSISTOR
SUPRT.PCB	:	SUPPORT, P.C.B.
SURG.PRTCT	:	SURGE PROTECTOR
SW.TACT	:	TACT SWITCH
SW.LEAF	:	LEAF SWITCH
SW.LEVER	:	LEVER SWITCH
SW.MICRO	:	MICRO SWITCH
SW.PUSH	:	PUSH SWITCH
SW.RT.ENC	:	ROTARY ENCODER
SW.RT.MTR	:	ROTARY SWITCH WITH MOTOR
SW.RT	:	ROTARY SWITCH
SW.SLIDE	:	SLIDE SWITCH
TERM.SP	:	SPEAKER TERMINAL
TERM.WRAP	:	WRAPPING TERMINAL
THRMST.CHP	:	CHIP THERMISTOR
TR.CHP	:	CHIP TRANSISTOR
TR.DGT	:	DIGITAL TRANSISTOR
TR.DGT.CHP	:	CHIP DIGITAL TRANSISTOR
TRANS	:	TRANSFORMER
TRANS.PULS	:	PULSE TRANSFORMER
TRANS.PWR	:	POWER TRANSFORMER ASS'y
TUNER.AM	:	TUNER PACK, AM
TUNER.FM	:	TUNER PACK, FM
TUNER.PK	:	FRONT-END TUNER PACK
VR	:	ROTARY POTENTIOMETER
VR.MTR	:	POTENTIOMETER WITH MOTOR
VR.SW	:	POTENTIOMETER WITH ROTARY SW
VR.SLIDE	:	SLIDE POTENTIOMETER
VR.TRIM	:	TRIMMER POTENTIOMETER

Note) Those parts marked with "#" are not included in the P.C.B. ass'y.

P.C.B. FUNCTION

	Ref No.	Part No.	Description			Market
*		WG053700	P.C.B.	FUNNCTION		UC
*		WG053800	P.C.B.	FUNNCTION		RL
*		WG053900	P.C.B.	FUNNCTION		A
*		WG054000	P.C.B.	FUNNCTION		GE
	CB451	V7827200	SOCKET	5P TE TUC SERIES		
	CB501	V7827600	SOCKET	9P SE TUC SERIES		
	CB502	V7827900	SOCKET	12P TE TUC SERIES		
	CB506	VB858200	CN.BS.PIN	3P		
	CB602	V7826200	CN	12P TE TUC SERIES		
	CB603	V7825900	CN	9P TE TUC SERIES		
	CB604	VM859500	CN.BS.PIN	11P		UC
	CB605	VF283100	CN.BS.PIN	13P		
	CB606	VQ047600	CN.BS.PIN	21P		
	CB607	V7826300	CN	13P TE TUC SERIES		
	CB608	VM859600	CN.BS.PIN	15P		
	CB609	V7825500	CN	5P TE TUC SERIES		
	CB610	VQ044400	CN.BS.PIN	9P		
	CB611	VP682200	CN.BS.PIN	8P		
	CB781	VB858500	CN.BS.PIN	6P		
	C451-453	UR837100	C.EL	10uF	16V	
	C454-455	UR819100	C.EL	1000uF	6.3V	
	C457-458	US135100	C.CE.CHP	0.1uF	16V	
	C463	UR837470	C.EL	47uF	16V	
	C466	US061470	C.CE.CHP	47pF	50V B	
	C467	UR837100	C.EL	10uF	16V	
	C468	UR838330	C.EL	330uF	16V	
	C501-506	US062220	C.CE.CHP	220pF	50V B	
	C507-508	US062100	C.CE.CHP	100pF	50V B	
	C509-510	US062220	C.CE.CHP	220pF	50V B	
	C511-512	US062100	C.CE.CHP	100pF	50V B	
	C513-514	UR837100	C.EL	10uF	16V	
	C533-536	UR837100	C.EL	10uF	16V	
	C537	US064100	C.CE.CHP	0.01uF	50V B	
	C538-539	US062100	C.CE.CHP	100pF	50V B	
	C540-541	UR837100	C.EL	10uF	16V	
	C542-543	US135100	C.CE.CHP	0.1uF	16V	
	C550-551	UR867470	C.EL	47uF	50V	
	C552-553	UR837100	C.EL	10uF	16V	
	C558-559	US064100	C.CE.CHP	0.01uF	50V B	
	C560-561	UR838100	C.EL	100uF	16V	
	C566-567	UR837100	C.EL	10uF	16V	
	C568	UA655180	C.MYLAR	0.18uF	50V J	
	C569	UR837100	C.EL	10uF	16V	
	C570-571	UA654220	C.MYLAR	0.022uF	50V J	
	C572	UR837100	C.EL	10uF	16V	
	C573-574	US064100	C.CE.CHP	0.01uF	50V B	
	C575-576	UR837470	C.EL	47uF	16V	
	C577	UA655180	C.MYLAR	0.18uF	50V J	
	C601	UR877100	C.EL	10uF	63V	
	C602	US135100	C.CE.CHP	0.1uF	16V	
	C604	UR866220	C.EL	2.2uF	50V	
	C607	UR866220	C.EL	2.2uF	50V	
	C608	UR837100	C.EL	10uF	16V	

＊New Parts

	Ref No.	Part No.	Description			Market
	C609-610	US135100	C.CE.CHP	0.1uF	16V	
	C611	UR818220	C.EL	220uF	6.3V	
	C612	WB165500	C.EL	0.33F	5.5V	
	C613	UR818220	C.EL	220uF	6.3V	
	C614	UR818100	C.EL	100uF	6.3V	
	C615	UR837470	C.EL	47uF	16V	
	C616	US135100	C.CE.CHP	0.1uF	16V	
	C617	UR837470	C.EL	47uF	16V	
	C618	UR837100	C.EL	10uF	16V	
	C619	US135100	C.CE.CHP	0.1uF	16V	
	C620	UR838330	C.EL	330uF	16V	
	C621	US135100	C.CE.CHP	0.1uF	16V	GE
	C622-623	US062330	C.CE.CHP	330pF	50V B	GE
	C624	US064100	C.CE.CHP	0.01uF	50V B	
	C625	US063100	C.CE.CHP	1000pF	50V B	
	C626	US062100	C.CE.CHP	100pF	50V B	
	C627-628	UR837470	C.EL	47uF	16V	GE
	C629	US062560	C.CE.CHP	560pF	50V B	GE
	C630	US061270	C.CE.CHP	27pF	50V B	GE
	C631	US135100	C.CE.CHP	0.1uF	16V	GE
	C632	US061270	C.CE.CHP	27pF	50V B	GE
	C633	UR837470	C.EL	47uF	16V	GE
	C634-636	US062100	C.CE.CHP	100pF	50V B	
	C637	UR866220	C.EL	2.2uF	50V	
	C781-782	US063100	C.CE.CHP	1000pF	50V B	
	C783	US062220	C.CE.CHP	220pF	50V B	
	C784-786	US064100	C.CE.CHP	0.01uF	50V B	
	D451	VU996300	DIODE.ZENR	MA8120-H	12.3V	
	D503-504	VU994300	DIODE.ZENR	MA8075-H	7.7V	
	D601-602	VU992600	DIODE.ZENR	MA8051-M	5.1V	
	D603-604	VT332900	DIODE	1SS355		
	D605	VV833200	DIODE	1SS380		
	D606	VU992600	DIODE.ZENR	MA8051-M	5.1V	
	D607	VT332900	DIODE	1SS355		
	D608	VU993000	DIODE.ZENR	MA8056-M	5.6V	
	D609	VU996300	DIODE.ZENR	MA8120-H	12.3V	
	D781	VT332900	DIODE	1SS355		
	IC451	XH436A00	IC	LA7956		
	IC501	X5043A00	IC	NJU7313AM		
	IC502	X3547A00	IC	BD3841FS		
	IC504	X3505A00	IC	NJM2068MD-TE2		
	IC510	X3505A00	IC	NJM2068MD-TE2		
	IC601	X5041A00	IC	NJU7201L55 5.5V		
*	IC602	X7092A00	IC.CPU	CPU MASK ROM		
	IC603	X0082A00	IC	LC72722PM		GE
	JK781-782	VJ726800	JACK.MNI	LGY6501-0600C		
	PJ451-452	WD195500	JACK.PIN	RJ-1078_04-0351A		
*	PJ454	WD195700	JACK.PIN	1P		
*	PJ501	WD195400	JACK.PIN	6P		
	PJ502-503	WD195200	JACK.PIN	4P		
*	PJ781	WD195600	JACK.PIN	1P		
	PN501	V9637500	PIN	L=70 #18		UC
	PN601	V9637500	PIN	L=70 #18		

＊New Parts

P.C.B. FUNCTION & OPERATION

Ref No.	Part No.	Description			Market
PN781	V9637500	PIN	L=70 #18		UC
Q451	VS826900	TR	2SD2375 Q,P		
Q452-454	iC174020	TR	2SC1740S QRS		
Q501-504	VZ725900	TR	2SD1938F S,T		
Q505	iC1815I0	TR	2SC1815 Y		
Q506	iA1015I0	TR	2SA1015 Y		
Q601	VV556500	TR	2SA1037K Q,R,S		
Q604	VV556500	TR	2SA1037K Q,R,S		
Q605	VP872600	TR	2SA1708 S,T		
Q606	VV655700	TR.DGT	DTC144EKA		
Q607	iC1815I0	TR	2SC1815 Y		
Q608	VS826900	TR	2SD2375 Q,P		
Q609	iC174020	TR	2SC1740S QRS		GE
Q610	VV556500	TR	2SA1037K Q,R,S		
Q781-782	VZ725900	TR	2SD1938F S,T		
R460	HV753220	R.CAR.FP	2.2Ω	1/4W	
R465	VY893200	R.MTL.OXD	12Ω	1W	
R472	HV755270	R.CAR.FP	270Ω	1/4W	
R569-570	VP940400	R.MTL.OXD	100Ω	1W	
R588-589	HV755100	R.CAR.FP	100Ω	1/4W	
R601		R.CHP	15KΩ	1/16W J	RLAGE
R613		R.CHP	4.7KΩ	1/16W J	UC
R613		R.CHP	8.2KΩ	1/16W J	RL
R613		R.CHP	12KΩ	1/16W J	A
R613		R.CHP	22KΩ	1/16W J	GE
R665	VY893200	R.MTL.OXD	12Ω	1W	
R677		R.CHP	100KΩ	1/16W J	GE
R678		R.CHP	33KΩ	1/16W J	GE
R679		R.CHP	100Ω	1/16W J	UC
R681		R.CHP	100Ω	1/16W J	UC
R683		R.CHP	100Ω	1/16W J	UC
R684		R.CHP	3.3KΩ	1/16W J	GE
R686		R.CHP	100Ω	1/16W J	UC
R687		R.CHP	1.5KΩ	1/16W J	UC
R688		R.CHP	22KΩ	1/16W J	GE
R689		R.CHP	1.5KΩ	1/16W J	UC
R698		R.CHP	100Ω	1/16W J	GE
R710-711		R.CHP	470Ω	1/16W J	GE
R714		R.CHP	10KΩ	1/16W J	GE
R715	HV753220	R.CAR.FP	2.2Ω	1/4W	
R717		R.CHP	10KΩ	1/16W J	GE
ST601	V4040500	SCR.TERM	M3		
ST781	V4040500	SCR.TERM	M3		
XL601	WA674700	RSNR.CE	16MHz CSTLS16M0X51		
XL602	V3930900	RSNR.CRYS	4.332MHz		GE
*	WG054600	P.C.B.	OPERATION		UCR
*	WG054700	P.C.B.	OPERATION		A
*	WG054800	P.C.B.	OPERATION		GEL
CB282	VG879900	CN.BS.PIN	2P		AGEL
CB282	VG879900	CN.BS.PIN	2P		

＊New Parts

Ref No.	Part No.	Description			Market
CB301	V7828000	SOCKET	13P SE TUC SERIES		
CB401	VB858800	CN.BS.PIN	9P		
CB403	VB390000	CN.BS.PIN	4P		
CB406	V7827900	SOCKET	12P TE TUC SERIES		
CB407	VP682300	CN.BS.PIN	8P		
CB431	V7827900	SOCKET	12P TE TUC SERIES		
CB751	VB390600	CN.BS.PIN	10P		
CB752-753	V7826200	CN	12P TE TUC SERIES		
CB801	VQ047600	CN.BS.PIN	21P		
CB814	VB858400	CN.BS.PIN	5P		
C301-304	UA652220	C.MYLAR	220pF	50V J	
C307-308	UU318220	C.EL	220uF	6.3V	
C309-310	UA654330	C.MYLAR	0.033uF	50V J	
C311-312	UA653910	C.MYLAR	9100pF	50V J	
C317-318	UU338100	C.EL	100uF	16V	
C319-320	UU337100	C.EL	10uF	16V	
C325-326	US135100	C.CE.CHP	0.1uF	16V	
C401-402	UU338330	C.EL	330uF	16V	
C403-404	FG651470	C.CE	47pF	50V	
C405-406	UU365470	C.EL	0.47uF	50V	
* C407-408	UU366100	C.EL	1uF	50V	
C409-410	US061470	C.CE.CHP	47pF	50V B	
C411	UA655100	C.MYLAR	0.1uF	50V J	
C412-413	UU337100	C.EL	10uF	16V	
C414-415	UA652100	C.MYLAR	100pF	50V J	
C431	UR848470	C.EL	470uF	25V	
C432	UN866100	C.EL	1uF	50V	
C433	US135100	C.CE.CHP	0.1uF	16V	
C435	UA655100	C.MYLAR	0.1uF	50V J	
C751-754	UA655120	C.MYLAR	0.12uF	50V J	
C755-756	UA654330	C.MYLAR	0.033uF	50V J	
C757-758	UU338100	C.EL	100uF	16V	
C759-760	UU337100	C.EL	10uF	16V	
C761-762	US062680	C.CE.CHP	680pF	50V B	
C763-764	UA654560	C.MYLAR	0.056uF	50V J	
C777-778	UU337100	C.EL	10uF	16V	
C801-802	US135100	C.CE.CHP	0.1uF	16V	
C803	UR867220	C.EL	22uF	50V	
C804	US135100	C.CE.CHP	0.1uF	16V	
C805	UR066470	C.EL	4.7uF	50V	
C806	US063100	C.CE.CHP	1000pF	50V B	
C807	UR058100	C.EL	100uF	35V	
C808	US063100	C.CE.CHP	1000pF	50V B	
C809	UR858100	C.EL	100uF	35V	
C812	US135100	C.CE.CHP	0.1uF	16V	
C815	US062100	C.CE.CHP	100pF	50V B	
C817	US062100	C.CE.CHP	100pF	50V B	
C819	US062100	C.CE.CHP	100pF	50V B	
C823	US135100	C.CE.CHP	0.1uF	16V	
C824	UM397100	C.EL	10uF	16V	
C825-826	US135100	C.CE.CHP	0.1uF	16V	
C829	US135100	C.CE.CHP	0.1uF	16V	
C830	US062100	C.CE.CHP	100pF	50V B	

＊New Parts

P.C.B. OPERATION & MAIN

	Ref No.	Part No.	Description		Market
	C833	US064100	C.CE.CHP	0.01uF 50V B	
	C834-836	UA654100	C.MYLAR	0.01uF 50V J	
	D431	VU171900	DIODE.ZENR	UDZ5.1B 5.1V	
	D442	VR711500	LED(or)	SLR-325DC	
	D802	V2598200	LED	SIR-505ST	
*	D803-804	VU171300	DIODE.ZENR	UDZS3.0BTE-17 3.0V	
	D805	VS997800	DIODE	1T2	
*	D806	VU173400	DIODE.ZENR	UDZS22B TE-17 22V	
	IC301	X3505A00	IC	NJM2068MD-TE2	
	IC401	X3505A00	IC	NJM2068MD-TE2	
	IC431	XF494A00	IC	LB1641	
	IC751	X3505A00	IC	NJM2068MD-TE2	
	IC801	X6386A00	IC	M66003-0131FP	
	JK801	V4478300	JACK.PHONE	JY-6317Y-03-030	
*	PJ301-302	WD195100	JACK.PIN	2P	
	PN301	V9637500	PIN	L=70 #18	
	PN751-753	V9637500	PIN	L=70 #18	
	Q401-402	VZ725900	TR	2SD1938F S,T	
	Q404	VV655700	TR.DGT	DTC144EKA	
	Q801	iA1015I0	TR	2SA1015 Y	
	Q802	VV556400	TR	2SC2412K Q,R,S	
	R329	VP940800	R.MTL.OXD	470Ω 1W	
*	R330-331	HC653220	R.CAR	2.2 1/4 J AX TP	
	R332	VP940800	R.MTL.OXD	470Ω 1W	
	R401-402	VP940800	R.MTL.OXD	470Ω 1W	
	R422-423	HV755100	R.CAR.FP	100Ω 1/4W	
	R431	VS267200	R.MTL.OXD	82Ω 1W	
	R434	HV754100	R.CAR.FP	10Ω 1/4W	
	R803	HV754100	R.CAR.FP	10Ω 1/4W	
	R829	HV756220	R.CAR.FP	2.2KΩ 1/4W	
	R830	HV755100	R.CAR.FP	100Ω 1/4W	
	R867-868	VP944500	R.MTL.OXD	390Ω 1W	
	ST801	V4040500	SCR.TERM	M3	
	SW402	VV399800	SW.PUSH	SPUN12	
	SW801-814	WD483100	SW.TACT	SKRGAAD010	
	SW816	WD483100	SW.TACT	SKRGAAD010	
	SW818	WD483100	SW.TACT	SKRGAAD010	
	SW823	WD483100	SW.TACT	SKRGAAD010	
	SW825-826	WD483100	SW.TACT	SKRGAAD010	
	SW827	V9266400	SW.RT.ENC	XREB12105PVB25F	
	SW828	WD483100	SW.TACT	SKRGAAD010	
	SW830	V4466400	SW.PUSH	SDKLA1-AP1 TV-5	
	SW831	V3573100	SW.PUSH	SPUN120200	
⚠	TE250	VT915000	OUTLET.AC	1P	A
⚠	TE250	VU543400	OUTLET.AC	2P	GEL
	U801	V8210200	L.DTCT	GP1UD271XK	
*	V801	WF519900	FL.DSPLY		
	VR431	VR710500	VR.MTR	A100KΩ	
	VR751	VP741800	VR	B20KΩ	
	VR752	VP741900	VR	G25KΩ	
	VR753	VP742000	VR	MN100KΩ	
	VR754	WF774500	VR	A100KΩ	
*		WG083700	SHEET		

＊New Parts

	Ref No.	Part No.	Description		Market
		VR380100	SPACER	FL-T6	
*		WG052200	P.C.B.	MAIN	UC
*		WG052300	P.C.B.	MAIN	R
*		WG052400	P.C.B.	MAIN	A
*		WG052500	P.C.B.	MAIN	GE
*		WG052600	P.C.B.	MAIN	L
	CB101	LB932050	CN.BS.PIN	5P	
	CB103	VB390400	CN.BS.PIN	8P	
	CB106	VF728300	CN	6P	
	CB107	VB390500	CN.BS.PIN	9P	
⚠	CB252	VG879900	CN.BS.PIN	2P	
	CB253-254	WC050700	CLIP.FUSE	EYF-52BCY	UCGE
	CB255-256	WC050700	CLIP.FUSE	EYF-52BCY	
⚠	CB257	VG879900	CN.BS.PIN	2P	
	CB285	LB918020	CN.BS.PIN	2P	
*	CB291	V9377800	CN.BS.PIN	3P SE VHSERIES	RL
*	CB292	V9377900	CN.BS.PIN	4P SE VHSERIES	RL
	CB293-294	WC050700	CLIP.FUSE	EYF-52BCY	R
	CB295	V7825600	CN	6P TE TUC SERIES	
	CB296	V7827300	SOCKET	6P TE TUC SERIES	
	C101-102	UR866470	C.EL	4.7uF 50V	
	C103-106	UA652100	C.MYLAR	100pF 50V J	
	C107-108	UA653100	C.MYLAR	1000pF 50V J	
	C109-110	UR837470	C.EL	47uF 16V	
	C111-112	WE100100	C.PP	15pF 630V	
	C113-114	UR867470	C.EL	47uF 50V	
	C115-116	UU367470	C.EL	47uF 50V	
	C117-120	VR325000	C.MYLAR	100pF 100V	
	C121-122	UA654820	C.MYLAR	0.082uF 50V J	
	C123-124	UA655100	C.MYLAR	0.1uF 50V J	
	C125-126	UA654220	C.MYLAR	0.022uF 50V J	
	C127	UA652100	C.MYLAR	100pF 50V J	
	C129	UR778330	C.EL	330uF 63V	
	C131	UR866470	C.EL	4.7uF 50V	
	C134	VJ599100	C.CE.TUBLR	0.1uF 50V	
	C135	UA655100	C.MYLAR	0.1uF 50V J	
⚠	C136	UR867470	C.EL	47uF 50V	
	C137	UR866470	C.EL	4.7uF 50V	
	C138-139	UR867470	C.EL	47uF 50V	
⚠*	C140-141	WG399600	C.EL	6800uF 63V	
⚠	C142-143	VR324900	C.MYLAR	0.1uF 100V	
	C144	UA655100	C.MYLAR	0.1uF 50V J	
	C145	UR769220	C.EL	2200uF 50V	
	C146	UR868330	C.EL	330uF 50V	
	C147	UR818100	C.EL	100uF 6.3V	
	C156-159	UA654100	C.MYLAR	0.01uF 50V J	AGEL
	C161-162	UA654100	C.MYLAR	0.01uF 50V J	AGEL
	C164	UR866470	C.EL	4.7uF 50V	
	C251-252	UR866220	C.EL	2.2uF 50V	
	C253	UA654100	C.MYLAR	0.01uF 50V J	

＊New Parts

P.C.B. MAIN

	Ref No.	Part No.	Description		Market
*	C254	WD054200	C.POL.MTL	0.047uF 630V	UC
	C254	WC041600	C.PP	0.022uF 630V	RAGEL
	C255	UM416100	C.EL	1uF 50V	
	C256	UA653470	C.MYLAR	4700pF 50V J	
	C257	UA653100	C.MYLAR	1000pF 50V J	
	C258	WB696300	C.POL.MTL	0.1uF 400V	UC
	C258	WF081500	C.PP	0.047uF 630V J	RAGEL
	C258	WF081500	C.PP	0.047uF 630V J	
⚠	C259	V6185300	C.CE.SAFTY	0.01uF 275V	
	C260	UR039330	C.EL	3300uF 16V	UCRAGEL
	C261	WE102900	C.PP	0.01uF 100V	
	C265	UA654100	C.MYLAR	0.01uF 50V J	
	D101-102	VN008700	DIODE	1SS270A	
	D104-106	VG442900	DIODE.ZENR	MTZJ27B 27V	
	D108	VS997800	DIODE	1T2	
	D109-110	VG441000	DIODE.ZENR	MTZJ16A 16V	
⚠	D111	iH001090	DIODE.BRG	S4VB20 2.6A 200V	
⚠	D112-115	VU264100	DIODE	1SR139,400	
	D132-133	VD631600	DIODE	1SS133,176	
	D251-252	VD631600	DIODE	1SS133,176	
	D253	VG435800	DIODE.ZENR	MTZJ3.0A 3.0V	
	D254	VG438300	DIODE.ZENR	MTZJ6.8B 6.8V	
	D255	VG439500	DIODE.ZENR	MTZJ10B 10V	
	D258	VG439200	DIODE.ZENR	MTZJ9.1B 9.1V	
⚠	D259	V4756800	DIODE	S1NB60 1.0A 600V	
	D260	VD631600	DIODE	1SS133,176	
	D261	VR253700	DIODE.BRG	S1NB20 1A 200V	
	D262	VG438000	DIODE.ZENR	MTZJ6.2B 6.2V	
⚠	F251	WG410700	FUSE	8A 125V	UC
⚠	F251	VT942900	FUSE	T2.5A 250V	GE
⚠	F252	WG410700	FUSE	8A 125V	UCR
⚠	F252	KB000790	FUSE	T4A 250V	AGEL
⚠	F291	KB000790	FUSE	T4A 250V	RL
	G101	V5995800	PLATE.GND		
	IC102	X0515A00	IC	LM61CIZ THERMAL	
⚠	IC251	V8100500	PHOT.CPL	TLP421 GR	
⚠	IC252	iG001180	IC	TC4013BP FF	
⚠	IC253	V8100500	PHOT.CPL	TLP421 GR	
	PN101-104	V9637500	PIN	L=70 #18	
	PN251	V9637500	PIN	L=70 #18	
⚠	Q101-104	iA097030	TR	2SA970 GR,BL	
⚠	Q105-106	VR325600	TR	2SC2229 O,Y	
⚠	Q107-108	iC174020	TR	2SC1740S QRS	
⚠	Q109-110	VP872700	TR	2SC4488 S,T	
⚠	Q111-112	VP872600	TR	2SA1708 S,T	
	Q113-114	WC398400	TR	2SC2N5551C-AT	
	Q115	WC397700	TR	2SA2N5401C-AT	
	Q117-119	VP872700	TR	2SC4488 S,T	
⚠	Q121	VN996900	TR	2SC4495	
⚠	Q128	VR402300	TR	2SB647 C,D	
⚠	Q129A	iX630850	TR	2SA1695 O,P,Y	UCRAGE
⚠	Q129C	iX630860	TR	2SC4468 O,P,Y	UCRAGE
⚠	Q129A	WD281000	TR	2SA2151 O,P,Y	L

＊New Parts

	Ref No.	Part No.	Description		Market
⚠	Q129C	WD281100	TR	2SC6011 O,P,Y	L
⚠	Q130A	iX630850	TR	2SA1695 O,P,Y	UCRAGE
⚠	Q130C	iX630860	TR	2SC4468 O,P,Y	UCRAGE
⚠	Q130A	WD281000	TR	2SA2151 O,P,Y	L
⚠	Q130C	WD281100	TR	2SC6011 O,P,Y	L
*	Q133	WF730900	FET	2SK30ATM GR TP	
	Q251	VV912300	TR.DGT	DTC144ESA-TP	
	Q252-253	iC1815I0	TR	2SC1815 Y	
⚠	Q254	WC741200	FET	2SK3850	
⚠	R113-114	HV754470	R.CAR.FP	47Ω 1/4W	
	R127-128	HV756270	R.CAR.FP	2.7KΩ 1/4W	
	R131-132	HV756100	R.CAR.FP	1KΩ 1/4W	
	R133-136	HV753470	R.CAR.FP	4.7Ω 1/4W	
⚠	R137-138	V3873200	R.CEMENT	0.22Ω 3W	
⚠	R145-146	VP939800	R.MTL.OXD	10Ω 1W	
	R151-152	HV754100	R.CAR.FP	10Ω 1/4W	
⚠	R155-156	HV755330	R.CAR.FP	330Ω 1/4W	
⚠	R163	VP940200	R.MTL.OXD	47Ω 1W	
	R164-165	HL006100	R.MTL.OXD	1KΩ 1/2W	
	R171	HV755180	R.CAR.FP	180Ω 1/4W	
	R175	HV755180	R.CAR.FP	180Ω 1/4W	
⚠	R177	HV753100	R.CAR.FP	1Ω 1/4W	
⚠	R178	HV754100	R.CAR.FP	10Ω 1/4W	
	R179	HV757100	R.CAR.FP	10KΩ 1/4W	
	R181	HV755180	R.CAR.FP	180Ω 1/4W	
	R189	VP944500	R.MTL.OXD	390Ω 1W	
	R196	HV755100	R.CAR.FP	100Ω 1/4W	
⚠	RY101-102	V6322600	RELAY	DC DH24D2-OT(M)-SL	
	RY103	V5966300	RELAY	DS24D2-OS(M)	
⚠	RY251	WE513800	RELAY	DC HRM3H-DC12V	
	ST101	V4040500	SCR.TERM	M3	
	ST251-253	V4040500	SCR.TERM	M3	
	ST254	V4040500	SCR.TERM	M3	AGEL
	SW101	V4104200	SW.SLIDE	SL13B-022-AMCS	
⚠*	SW291	WB493700	VOLT.SELCT	R8140246	R
⚠	SW291	WD073700	VOLT.SELCT	R8140254	L
⚠*	T251	XW606A00	TRANS.PWR		UC
⚠	T251	X6351A00	TRANS.PWR		R
⚠*	T251	XW608A00	TRANS.PWR		AGEL
⚠	TE101	VC313700	TERM.SP	8P	UCRA
⚠	TE101	V4811400	TERM.SP	8P	GEL
⚠	TE251	VU543100	OUTLET.AC	2P	UC
⚠	TE251	V5867400	OUTLET.AC	2P AC-182-GB-11V	R
*		WE998100	SCR.BND.HD	3x12 MFZN2B3	

＊New Parts

P.C.B. XM & CHIP RESISTORS

	Ref No.	Part No.	Description			Market
*		WG055200	P.C.B.	XM		UC
	CB21	LB919030	CN.BS.PIN	3P		
	CB23	VB858400	CN.BS.PIN	5P		
	CB24	VM859500	CN.BS.PIN	11P		
	C2-6	US035100	C.CE.CHP	0.1uF	16V B	
	C7-8	US060500	C.CE.CHP	5pF	50V B	
	C10-12	US035100	C.CE.CHP	0.1uF	16V B	
	C21-24	UR739470	C.EL	4700uF	16V	
	C25	US145100	C.CE.CHP	0.1uF	25V	
	C26	UR866100	C.EL	1uF	50V	
	C27	US035100	C.CE.CHP	0.1uF	16V B	
	C28	UR837470	C.EL	47uF	16V	
	C29-31	US061470	C.CE.CHP	47pF	50V B	
	C32	US035100	C.CE.CHP	0.1uF	16V B	
	C33	VE326000	C.MYLAR	0.1uF	50V	
	C34	US035100	C.CE.CHP	0.1uF	16V B	
	C35	UR837100	C.EL	10uF	16V	
	C36	UR837470	C.EL	47uF	16V	
	C37	US135100	C.CE.CHP	0.1uF	16V	
	C38-39	UR837470	C.EL	47uF	16V	
	C40-41	UR837100	C.EL	10uF	16V	
	C42-43	US063330	C.CE.CHP	3300pF	50V B	
	C44-45	US135100	C.CE.CHP	0.1uF	16V	
	C46-47	UR837470	C.EL	47uF	16V	
	C48	US064100	C.CE.CHP	0.01uF	50V B	
	C50	UR837470	C.EL	47uF	16V	
	C51	US035100	C.CE.CHP	0.1uF	16V B	
	C52-55	US061470	C.CE.CHP	47pF	50V B	
	C56	US064100	C.CE.CHP	0.01uF	50V B	
*	CN1	WE161800	CN	CAM-C16 4P SE		
	D1-3	WE674800	DIODE	AVRL161A1R1NTB		
⚠	D21	WA653100	DIODE.BRG	KBP103G 1.0A 200V		
	D26	V2376600	DIODE.SHOT	RB500V-40		
	G21-22	WB438000	TERM.GND	M4 SD00433-21		
*	IC1	X6227B00	IC	F2602E-01		
	IC21	X6051A00	IC	UPC29M33T-E1-AZ		
⚠	IC22	XJ607A00	IC	NJM7805FA 5V		
	IC23	X2080A00	IC	SN74AHCT1G32DCKR		
	IC24	X3693A00	IC	SN74LV245APWR TRAN		
*	IC25	X6231A00	IC	AK4384ET		
	IC26	X5482A00	IC	NE5532DR OP AMP		
⚠	IC27	XU814A00	IC	PQ05RD11 +5V 1.0A		
	PN1	V9637500	PIN	L=70 #18		
	R38	HV753100	R.CAR.FP	1Ω	1/4W	
	R53-54	HV753100	R.CAR.FP	1Ω	1/4W	
*	XL1	WE436500	RSNR.CRYS	45.1584M DSX840GA		
		WE774200	SCR.BND.HD	3x10	MFZN2W3	

＊New Parts

	Ref No.	Part No.	Description			Market
			R.CHP	0Ω	1/16W J	
			R.CHP	2.2Ω	1/16W J	
			R.CHP	22Ω	1/16W J	
			R.CHP	47Ω	1/16W J	
			R.CHP	75Ω	1/16W J	
			R.CHP	82Ω	1/16W J	
			R.CHP	100Ω	1/16W J	
			R.CHP	220Ω	1/16W J	
			R.CHP	270Ω	1/16W J	
			R.CHP	330Ω	1/16W J	
			R.CHP	390Ω	1/16W J	
			R.CHP	470Ω	1/16W J	
			R.CHP	820Ω	1/16W J	
			R.CHP	1KΩ	1/16W J	
			R.CHP	1.5KΩ	1/16W J	
			R.CHP	2.2KΩ	1/16W J	
			R.CHP	2.7KΩ	1/16W J	
			R.CHP	3.3KΩ	1/16W J	
			R.CHP	4.7KΩ	1/16W J	
			R.CHP	6.8KΩ	1/16W J	
			R.CHP	8.2KΩ	1/16W J	
			R.CHP	10KΩ	1/16W J	
			R.CHP	12KΩ	1/16W J	
			R.CHP	15KΩ	1/16W J	
			R.CHP	22KΩ	1/16W J	
			R.CHP	27KΩ	1/16W J	
			R.CHP	33KΩ	1/16W J	
			R.CHP	39KΩ	1/16W J	
			R.CHP	47KΩ	1/16W J	
			R.CHP	82KΩ	1/16W J	
			R.CHP	100KΩ	1/16W J	
			R.CHP	220KΩ	1/16W J	
			R.CHP	470KΩ	1/16W J	
			R.CHP	1MΩ	1/16W J	
			R.MTL.CHP	82Ω	1/16W D	
			R.MTL.CHP	180Ω	1/16W D	
*			R.MTL.CHP	750Ω	1/16W D	
			R.MTL.CHP	1.0KΩ	1/16W D	
			R.MTL.CHP	1.8KΩ	1/16W D	
			R.MTL.CHP	2.2KΩ	1/16W D	
			R.MTL.CHP	3.3KΩ	1/16W D	
			R.MTL.CHP	8.2KΩ	1/16W D	
			R.MTL.CHP	15KΩ	1/16W D	
			R.MTL.CHP	56KΩ	1/16W D	
			R.MTL.CHP	100KΩ	1/16W D	

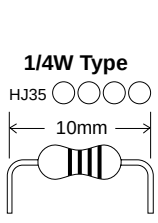
■ **NOTE**

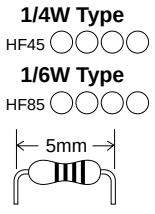
- The chip resistor is not supplied as a replacement part.
- When a chip resistor is necessary, use the following part.
  AAX60720: CHIP RESISTOR SAMPLE BOOK

＊New Parts

Parts List for Carbon Resistors

Value	**1/4W** Type Part No.	**1/6W** Type Part No.	Value	**1/4W** Type Part No.	**1/6W** Type Part No.
1.0 Ω	HJ35 3100	HF85 3100	10 kΩ	HF45 7100	HF45 7100
1.8 Ω	HJ35 3180	❊	11 kΩ	HF45 7110	HF45 7110
2.2 Ω	HJ35 3220	HF85 3220	12 kΩ	HJ35 7120	HF85 7120
3.3 Ω	HJ35 3330	HF85 3330	13 kΩ	HF45 7130	HF45 7130
4.7 Ω	HJ35 3470	HF85 3470	15 kΩ	HF45 7150	HF45 7150
5.6 Ω	HJ35 3560	HF85 3560	18 kΩ	HF45 7180	HF45 7180
10 Ω	HF45 4100	HF45 4100	22 kΩ	HF45 7220	HF45 7220
15 Ω	HJ35 4150	HF85 4150	24 kΩ	HF45 7240	HF45 7240
22 Ω	HF45 4220	HF45 4220	27 kΩ	HJ35 7270	HF85 7270
27 Ω	HJ35 4270	HF85 4270	30 kΩ	HF45 7300	HF45 7300
33 Ω	HF45 4330	HF45 4330	33 kΩ	HF45 7330	HF45 7330
39 Ω	HJ35 4470	HF85 4390	36 kΩ	HF45 7360	HF45 7360
47 Ω	HF45 4470	HF45 4470	39 kΩ	HF45 7390	HF45 7390
56 Ω	HF45 4560	HF45 4560	47 kΩ	HF45 7470	HF45 7470
68 Ω	HF45 4680	HF45 4680	51 kΩ	HF45 7510	HF45 7510
75 Ω	HF45 4750	HF45 4750	56 kΩ	HF45 7560	HF45 7560
82 Ω	HF45 4820	HF45 4820	62 kΩ	HF45 7620	HF45 7620
91 Ω	HF45 4910	HF45 4910	68 kΩ	HF45 7680	HF45 7680
100 Ω	HF45 5100	HF45 5100	82 kΩ	HF45 7820	HF45 7820
110 Ω	HJ35 5110	HF85 5110	91 kΩ	HF45 7910	HF45 7910
120 Ω	HF45 5120	HF45 5120	100 kΩ	HF45 8100	HF45 8100
150 Ω	HF45 5150	HF45 5150	110 kΩ	HF45 8110	HF45 8110
160 Ω	HJ35 5160	❊	120 kΩ	HF45 8120	HF45 8120
180 Ω	HF45 5180	HF45 5180	150 kΩ	HF45 8150	HF45 8150
200 Ω	HF45 5200	HF45 5200	180 kΩ	HF45 8180	HF45 8180
220 Ω	HF45 5220	HF45 5220	220 kΩ	HJ35 8220	HF85 8220
270 Ω	HF45 5270	HF45 5270	270 kΩ	HF45 8270	HF45 8270
330 Ω	HF45 5330	HF45 5330	300 kΩ	HF45 8300	HF45 8300
390 Ω	HF45 5390	HF45 5390	330 kΩ	HF45 8330	HF45 8330
430 Ω	HF45 5430	HF45 5430	390 kΩ	HJ35 8390	HF85 8390
470 Ω	HF45 5470	HF45 5470	470 kΩ	HF45 8470	HF45 8470
510 Ω	HF45 5510	HF45 5510	560 kΩ	HJ35 8560	HF85 8560
560 Ω	HF45 5560	HF45 5560	680 kΩ	HJ35 8680	HF85 8680
680 Ω	HF45 5680	HF45 5680	820 kΩ	HJ35 8820	HF85 8820
820 Ω	HF45 5820	HF45 5820	1.0 MΩ	HF45 9100	HF45 9100
910 Ω	HF45 5910	HF45 5910	1.2 MΩ	HJ35 9120	❊
1.0 kΩ	HF45 6100	HF45 6100	1.5 MΩ	HJ35 9150	HF85 9150
1.2 kΩ	HF45 6120	HF45 6120	1.8 MΩ	HJ35 9180	HF85 9180
1.5 kΩ	HF45 6150	HF45 6150	2.2 MΩ	HJ35 9220	HF85 9220
1.8 kΩ	HF45 6180	HF45 6180	3.3 MΩ	HJ35 9330	HF85 9330
2.0 kΩ	HJ35 6200	HF85 6200	3.9 MΩ	HJ35 9390	❊
2.2 kΩ	HF45 6220	HF45 6220	4.7 MΩ	HJ35 9470	HF85 9470
2.4 kΩ	HJ35 6240	HF85 6240			
2.7 kΩ	HF45 6270	HF45 6270			
3.0 kΩ	HF45 6300	HF45 6300			
3.3 kΩ	HF45 6330	HF45 6330			
3.6 kΩ	HJ35 6360	HF85 6360			
3.9 kΩ	HF45 6390	HF45 6390			
4.7 kΩ	HF45 6470	HF45 6470			
5.1 kΩ	HF45 6510	HF45 6510			
5.6 kΩ	HF45 6560	HF45 6560			
6.8 kΩ	HF45 6680	HF45 6680			
8.2 kΩ	HF45 6820	HF45 6820			
9.1 kΩ	HF45 6910	HF45 6910			





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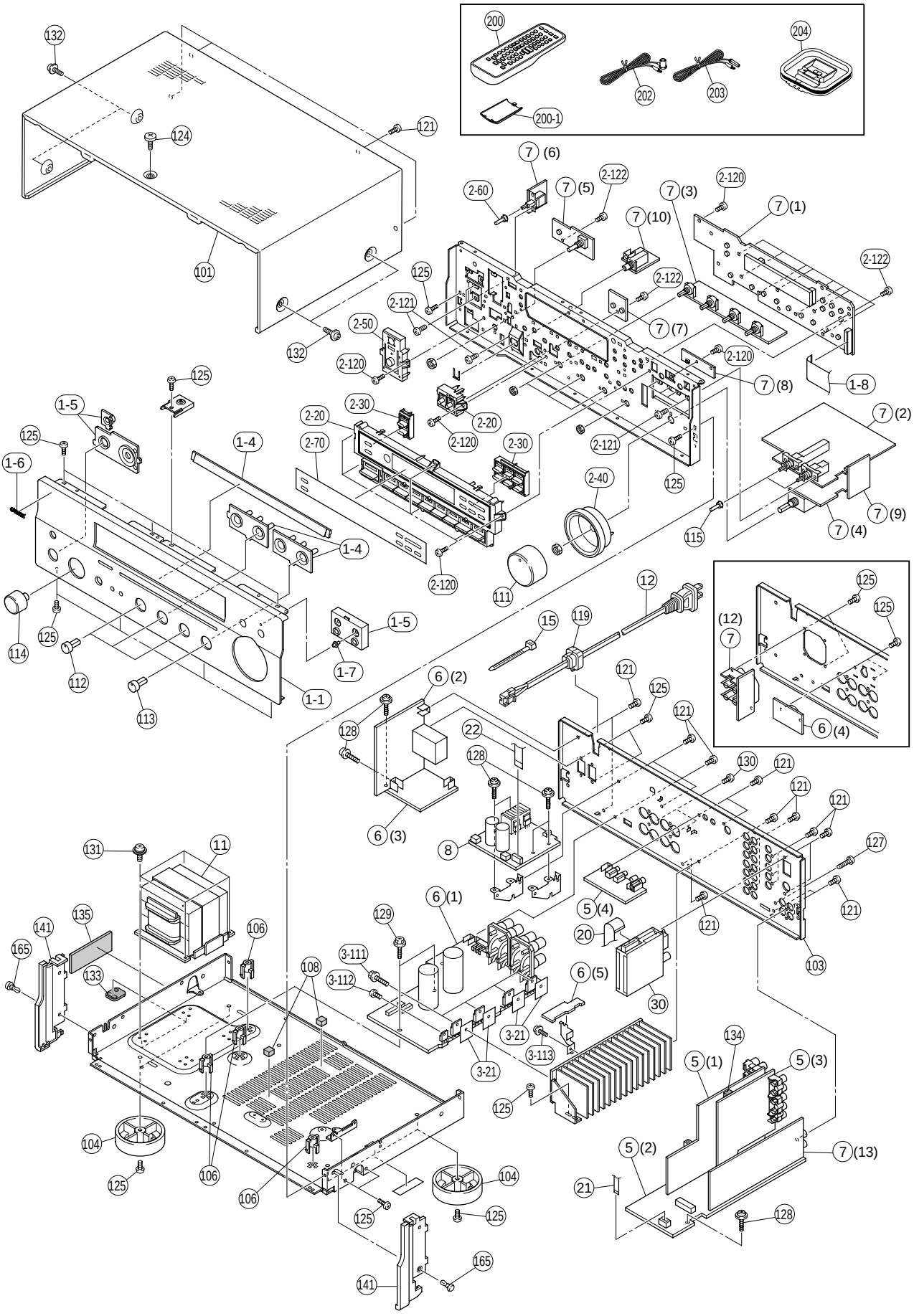
■ EXPLODED VIEW



■ MECHANICAL PARTS

	Ref. No.	Part No.	Description	Remarks	Markets
*	1-1	WF478800	FRONT PANEL	GD	
*	1-1	WF784200	FRONT PANEL	BL	UC
*	1-1	WF478700	FRONT PANEL	BL	RAGEL
*	1-1	WF478900	FRONT PANEL	TI	
*	1-4	WF486900	ESCUTCHEON R	GD	
*	1-4	WF486800	ESCUTCHEON R	BL	
*	1-4	WF487000	ESCUTCHEON R	TI	
	1-5	WF629000	ESCUTCHEON	GD	
	1-5	WF628900	ESCUTCHEON	BL	
	1-5	WF629100	ESCUTCHEON	TI	
	1-6	V6034200	EMBLEM	GD	
	1-6	V6034100	EMBLEM	BL,TI	
	1-7	V4598900	LENS, 1P		
*	1-8	MF121250	FLEXIBLE FLAT CABLE	21P 250mm P=1.25	
*	2-20	WF484200	BUTTON CASE	GD	
*	2-20	WF484100	BUTTON CASE	BL	
*	2-20	WF484300	BUTTON CASE	TI	
*	2-30	WF485000	BUTTON TUNER		
	2-40	WF486600	ESCUTCHEON VOL	GD	
	2-40	WF486500	ESCUTCHEON VOL	BL	
	2-40	WF486700	ESCUTCHEON VOL	TI	
*	2-50	WF588200	BUTTON MAIN	GD	
*	2-50	WF588000	BUTTON MAIN	BL	
*	2-50	WF588300	BUTTON MAIN	TI	
	2-60	V6876200	BUTTON/D5	GD	
	2-60	V6876100	BUTTON/D5	BL	
	2-60	V8540300	BUTTON/D5	TI	
*	2-70	WF488100	SHEET WINDOW R		UC
*	2-70	WF488000	SHEET WINDOW R		RAGEL
	2-120	WE774300	BIND HEAD B-TIGHT SCREW	3x8 MFZN2W3	
	2-121	WE774000	BIND HEAD SCREW	3x6 MFZN2W3	
	2-122	WE774800	BIND HEAD P-TIGHT SCREW	3x8 MFZN2W3	
	3-21	VV849300	RADIATION SHEET	19x24	
	3-111	VK173200	SCREW, TRANSISTOR	3x15 SP MFC2	
	3-112	WE774300	BIND HEAD B-TIGHT SCREW	3x8 MFZN2W3	
	3-113	VT669300	PW HEAD B-TIGHT SCREW	3x8-8 MFC2	
*	5	WG053700	P.C.B. ASS'Y	FUNNCTION	UC
*	5	WG053800	P.C.B. ASS'Y	FUNNCTION	RL
*	5	WG053900	P.C.B. ASS'Y	FUNNCTION	A
*	5	WG054000	P.C.B. ASS'Y	FUNNCTION	GE
*	6	WG052200	P.C.B. ASS'Y	MAIN	UC
*	6	WG052300	P.C.B. ASS'Y	MAIN	R
*	6	WG052400	P.C.B. ASS'Y	MAIN	A
*	6	WG052500	P.C.B. ASS'Y	MAIN	GE
*	6	WG052600	P.C.B. ASS'Y	MAIN	L
*	7	WG054600	P.C.B. ASS'Y	OPERATION	UCR
*	7	WG054700	P.C.B. ASS'Y	OPERATION	A
*	7	WG054800	P.C.B. ASS'Y	OPERATION	GEL
*	8	WG055200	P.C.B. ASS'Y	XM	UC
⚠*	11	X7065A00	POWER TRANSFORMER		UC
⚠*	11	X7066A00	POWER TRANSFORMER		RL
⚠*	11	X7067A00	POWER TRANSFORMER		A
⚠*	11	X7068A00	POWER TRANSFORMER		GE

＊New Parts

	Ref. No.	Part No.	Description		Remarks	Markets
⚠*	12	V2727500	POWER CABLE	2m		UC
⚠*	12	VN363600	POWER CABLE	2m		GEL
⚠*	12	WC743700	POWER CABLE	2m		A
⚠*	12	WC992700	POWER CABLE	2m		R
	15	VU590000	BINDING TIE	CBTD001B		
	20	MF115140	FLEXIBLE FLAT CABLE	15P 140mm P=1.25		
*	21	MF108160	FLEXIBLE FLAT CABLE	8P 160mm P=1.25		
	22	MF111400	FLEXIBLE FLAT CABLE	11P 400mm P=1.25		UC
	30	V6782300	AM/FM TUNER	TFCE1U115A		UCRL
*	30	V6782400	AM/FM TUNER	TFCE1E317A		AGE
*	101	WF480600	TOP COVER		GD	
*	101	WF480500	TOP COVER		BL	
*	101	WF480700	TOP COVER		TI	
*	103	WF483000	REAR PANEL			UC
*	103	WF483100	REAR PANEL			R
*	103	WF483400	REAR PANEL			A
*	103	WF483500	REAR PANEL			L
*	103	WF483700	REAR PANEL			GE
	104	V0042500	LEG	D60xH21	GD	
	104	VS025000	LEG	D60xH21	BL,TI	
	106	VR264400	SPACER	H8		
	108	VQ366100	DAMPER, PCB			
	111	WF817500	KNOB D48		GD	
	111	WF817400	KNOB D48		BL	
	111	WF817600	KNOB D48		TI	
*	112	WF485700	KNOB		GD	
*	112	WF485600	KNOB		BL	
*	112	WF485800	KNOB		TI	
*	113	WF486000	KNOB D14L		GD	
*	113	WF485900	KNOB D14L		BL	
*	113	WF486100	KNOB D14L		TI	
	114	WC560600	KNOB D23		GD	
	114	WC560500	KNOB D23		BL	
	114	WC560700	KNOB D23		TI	
	115	V6876200	BUTTON/D5		GD	
	115	V6876100	BUTTON/D5		BL	
	115	V8540300	BUTTON/D5		TI	
	119	V2438700	CORD STOPPER	10P1		
	121	WE774100	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2B3		
	124	WE200400	DISH HEAD B-TIGHT SCREW	3x6 MFNI33	GD,TI	
	124	WE200500	DISH HEAD B-TIGHT SCREW	3x6 MFNI3BL	BL	
	125	WE774300	BIND HEAD B-TIGHT SCREW	3x8 MFZN2W3		
	127	VS997700	BIND HEAD S-TIGHT SCREW	3x10 MFNI33		
	128	VT669300	PW HEAD B-TIGHT SCREW	3x8-8 MFC2		
	129	WE774600	SCREW IC	3x18 MFZN2W3		
	130	VY731200	BONDING HEAD TAPPING SCREW	3x10 MFNI33		
	131	WE774700	BIND HEAD S-TIGHT SCREW	4x10 MFZN2W3		
	132	VD069600	PW HEAD S-TIGHT SCREW	4x8-10 MFNI33	GD,TI	
	132	VH313200	PW HEAD S-TIGHT SCREW	4x8-10 MFNI3BL	BL	
	133	VY731400	DAMPER	HOLE		
	134	VZ679700	DAMPER	T8/PCB		
	135	V4780900	DAMPER	4x30x50		RAGEL
	141	WF487700	PLATE SIDE		GD	

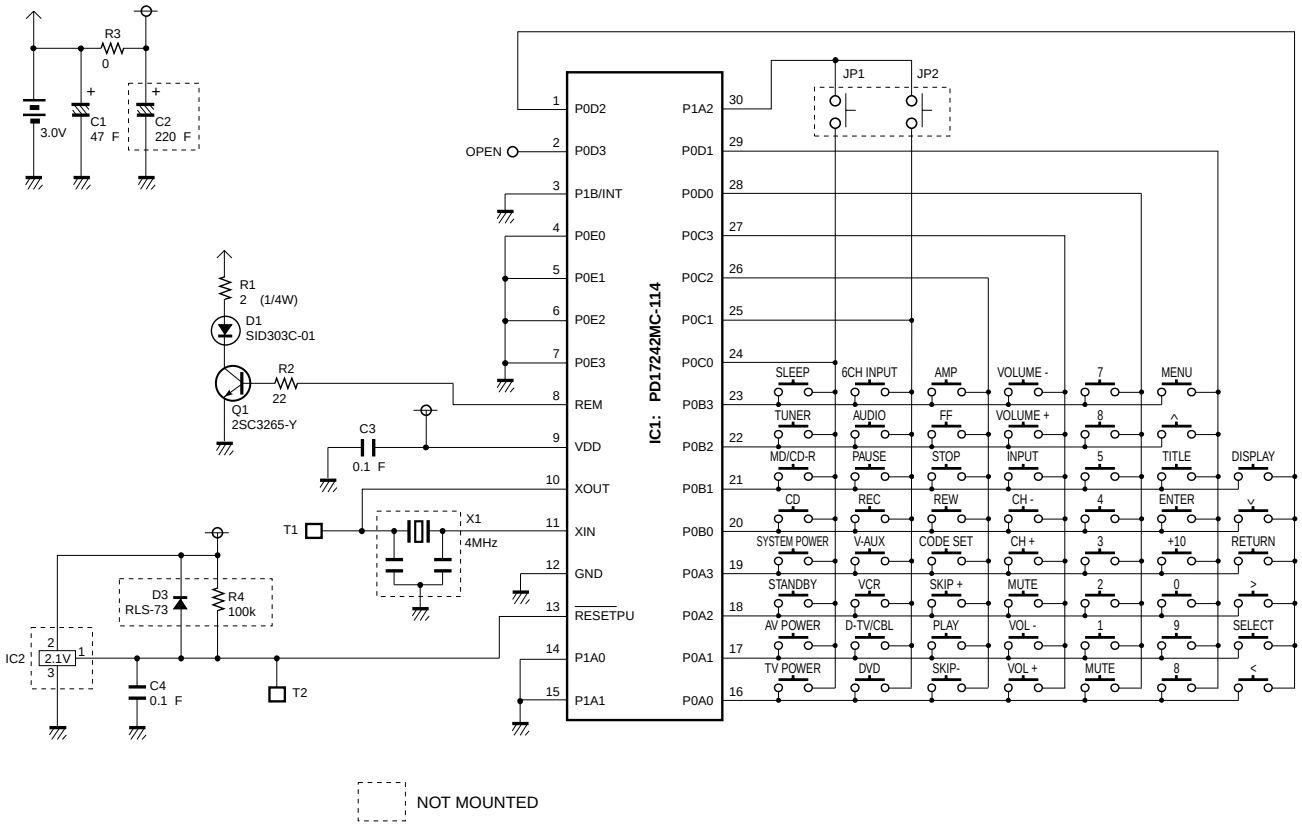
*New Parts

	Ref. No.	Part No.	Description		Remarks	Markets
	141	WF487600	PLATE SIDE		BL	
	141	WF487800	PLATE SIDE		TI	
	165	VQ368600	PUSH RIVET	P3555-B		
			ACCESSORIES			
*	200	WF688700	REMOTE CONTROL	RAX100		UC
*	200	WF688800	REMOTE CONTROL	RAX101		RAGEL
	200-1	AAX46580	BATTERY COVER		103RRC-244-01G	
	202	V6267000	INDOOR FM ANTENNA	1.4m 1pc		UCRL
	203	VQ147100	INDOOR FM ANTENNA	1.4m 1pc		AGE
	204	VQ307400	AM LOOP ANTENNA	81-653-645-110		
			BATTERY, MANGANESE DRY	SUM-3M 2pcs		

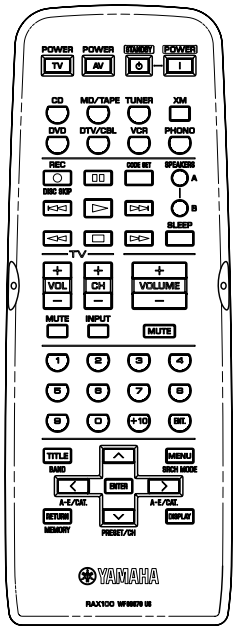
*New Parts

REMOTE CONTROL TRANSMITTER (RAX100/RAX101)

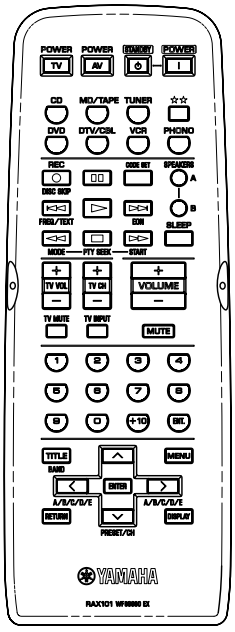
■ SCHEMATIC DIAGRAM



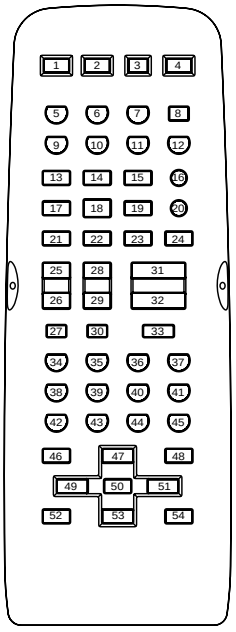
▼ RAX100 (U, C models)



▼ RAX101 (R, A, G, E, L models)



KEY NO. LAYOUT



DATA CODE LIST

Key No.	Function	CODE							
		COMMON	CD	TAPE	MD	CD-R	DVD	TUNER	XM
1	TV POWER	-	-	-	-	-	-	-	-
2	AV POWER	-	-	-	-	7F-80	7C-80	-	-
3	STANDBY	7E-7F	-	-	-	-	-	-	-
4	SYSTEM POWER	7E-7E	-	-	-	-	-	-	-
5	CD	7A-15	-	-	-	-	-	-	-
6	MD/TAPE	7A-18	-	-	-	-	-	-	-
7	TUNER	7A-16	-	-	-	-	-	-	-
8	XM ☆☆	7A-B4	-	-	-	-	-	-	-
9	DVD	7A-C1	-	-	-	-	-	-	-
10	DTV/CBL	7A-54	-	-	-	-	-	-	-
11	VCR	7A-0F	-	-	-	-	-	-	-
12	PHONO	7A-14	-	-	-	-	-	-	-
13	REC/DISC SKIP	-	7A-4F	7A-04	79-AF	-	7C-8B	-	-
14	PAUSE	-	7A-09	7A-06	79-A9	7F-83	7C-83	-	-
15	CODE SET	-	-	-	-	-	-	-	-
16	SPEAKERS A	7A-9A	-	-	-	-	-	-	-
17	SKIP -	-	7A-0B	7A-07	A9-AB	7F-86	7C-B9	7A-A4	-
18	PLAY	-	7A-08	7A-00	79-A8	7F-82	7C-82	-	-
19	SKIP +	-	7A-0A	7A-40	79-AE	7F-87	7C-BA	7A-A5	-
20	SPEAKERS B	7A-9B	-	-	-	-	-	-	-
21	REW	-	7A-OD	7A-01	79-AC	7F-88	7C-86	7A-A6	-
22	STOP	-	7A-09	7A-03	79-AA	7F-84	7C-85	-	-
23	FF	-	7A-0C	7A-02	79-AD	7F-89	7C-87	7A-A7	-
24	SLEEP	7A-57	-	-	-	-	-	-	-
25	TV VOL +	-	-	-	-	-	-	-	-
26	TV VOL -	-	-	-	-	-	-	-	-
27	TV MUTE	-	-	-	-	-	-	-	-
28	TV VH +	-	-	-	-	-	-	-	-
29	TV CH -	-	-	-	-	-	-	-	-
30	TV INPUT	-	-	-	-	-	-	-	-
31	VOL up	7A-1A	-	-	-	-	-	-	-
32	VOL down	7A-1B	-	-	-	-	-	-	-
33	MUTE	7A-1C	-	-	-	-	-	-	-
34	1	-	79-11	-	79-85	7F-91	7C-94	7A-E5	7A-61
35	2	-	79-12	-	79-86	7F-92	7C-95	7A-E6	7A-62
36	3	-	79-13	-	79-87	7F-93	7C-96	7A-E7	7A-63
37	4	-	79-14	-	79-88	7F-94	7C-97	7A-E8	7A-64
38	5	-	79-15	-	79-89	7F-95	7C-98	7A-E9	7A-65
39	6	-	79-16	-	79-8A	7F-96	7C-99	7A-EA	7A-66
40	7	-	79-17	-	79-8B	7F-97	7C-9A	7A-EB	7A-67
41	8	-	79-18	-	79-8C	7F-98	7C-9B	7A-EC	7A-68
42	9	-	79-19	-	79-8D	7F-99	7C-9C	7A-B1	7A-69
43	0	-	79-10	-	79-8E	7F-90	7C-93	7A-B2	7A-60
44	+10	-	9-1A	-	79-8F	7F-9A	7C-9D	-	-
45	ENT	-	79-0B	-	-	7F-8A	7C-9E	7A-B3	7A-8F
46	TITLE	-	-	-	-	-	7C-B1	7A-AE	7A-70
47	UP	-	-	-	-	-	7C-B4	7A-10	7A-6A
48	MENU	-	-	-	-	-	7C-B2	7A-AB	7A-6D
49	LEFT	-	-	-	-	-	7C-B5	7A-AC	7A-6E
50	SELECT	-	-	-	-	-	7C-B8	7A-AD	7A-6F
51	RIGHT	-	-	-	-	-	7C-B6	7A-12	7A-6C
52	RETURN	-	-	-	-	-	7C-B7	7A-AF	7A-71
53	DOWN	-	-	-	-	-	7C-B3	7A-11	7A-6B
54	DISPLAY	-	79-0A	-	79-A5	7F-9E	7C-A6	7A-B0	7A-72

RX-497

YAMAHA