

# STR-D790/D990

## SERVICE MANUAL

*US Model  
Canadian Model  
UK Model*  
STR-D790

*US Model  
Canadian Model*  
STR-D990

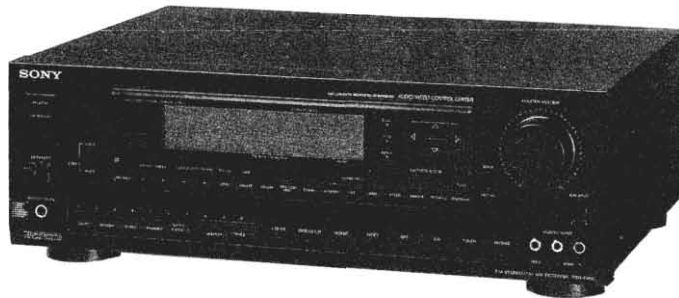


Photo: STR-D990

### SPECIFICATIONS

#### Audio Power Specifications

#### POWER OUTPUT AND TOTAL HARMONIC DISTORTION

##### Stereo mode

With 8-ohm load, both channels driven, from 20 - 20,000 Hz, rated 100 watts (STR-D990) or 80 watts (STR-D790) per channel minimum RMS power, with no more than 0.05% total harmonic distortion from 250 milliwatts to rated output.

##### Surround mode

	STR-D990	STR-D790
FRONT	65 W + 65 W	80 W + 80 W
CENTER	65 W	20 W
REAR	25 W	20 W

#### Other Specifications

Dynamic power output		STR-D990: 140 W + 140 W (8 ohms) 190 W + 190 W (4 ohms) STR-D790: 105 W + 105 W (8 ohms) 140 W + 140 W (4 ohms)
Harmonic distortion at rated output		Less than 0.05%
Intermodulation (IM) distortion at rated output		Less than 0.05%
Frequency response	PHONO	RIAA equalization curve $\pm 0.5$ dB
	CD, DAT, TAPE 1,2 VIDEO 1,2,3*	10 Hz — 70 kHz $\begin{matrix} +0 \\ -1 \end{matrix}$ dB
Residual noise		Less than 70 $\mu$ V
Damping factor (8 ohms, at 1kHz)		50
Input sensitivity/impedance	PHONO MM	2.5 mV, 50 kilohms
	DAT, CD, VIDEO 1,2,3* TAPE 1,2	150 mV 50 kilohms
S/N	PHONO MM	87 dB 79 dB** (A, 2.5mV)
	DAT, CD VIDEO 1,2,3* TAPE 1,2	105 dB 85 dB** (A, 150mV)

— Continued on next page —

FM STEREO/FM-AM RECEIVER  
**SONY**<sup>®</sup>



## Other Specifications

Output	DAT OUT, TAPE OUT 1,2 VIDEO 1	150 mV 10 kilohms
	SPEAKERS	Accepts speakers of 8-16 ohms
	HEADPHONES	Accepts headphones of high and low impedance
MUTING	-20dB	
DBFB	+ 10 dB at 70 Hz	
TONE	± 10 dB at 100 Hz and 10 kHz	

\* STR-D990 only  
\*\* 78IHF

## FM tuner section

Frequency range	87.5 — 108.0 MHz	
Antenna terminals	300 ohms, balanced 75 ohms, unbalanced	
Sensitivity at 50 dB	18.3 dBf, 4.5 μV (mono) 38.3 dBf, 45 μV (stereo)	
Usable sensitivity	11.2 dBf, 2 μV (IHF)	
S/N	Mono	80 dB
	Stereo	74 dB
Harmonic distortion at 1 kHz	Mono	0.3 %
	Stereo	0.5 %
IM distortion	Mono	0.3 %
	Stereo	0.5 %
Separation	45 dB at 1 kHz	
Frequency response	30 Hz — 15 kHz $^{+0}_{-2}$ dB	
Selectivity	60 dB at 400 kHz	
Capture ratio	1.2 dB	
AM suppression ratio	54 dB	
Image response ratio	70 dB	
IF response ratio	70 dB	
Spurious response ratio	80 dB	
RF intermodulation at 800 kHz	60 dB	
Auto tuning threshold	Low	30 dBf
	High	50 dBf

## AM tuner section

Frequency range	530 — 1710 kHz (with 10 kHz interval) 531 — 1710 kHz (with 9 kHz interval) 531 — 1602 kHz (only for STR-D790 U.K. model)
Antenna	Loop antenna
Usable sensitivity	50 dB/m (at 1,000 kHz or 999 kHz)
S/N	54 dB (at 50 mV/m)
Harmonic distortion	0.5% (50 mV/m, 400 Hz)
Selectivity	35 dB (9 kHz), 40 dB (10 kHz)
Auto tuning threshold	55 dB/m

## Video section

	STR-D990	STR-D790
Inputs	VIDEO 1,2,3: 1 Vp-p 75 ohms	VIDEO 1,2: 1 Vp-p 75 ohms
Outputs	VIDEO 1, MONITOR: 1 Vp-p 75 ohms	

## General

		STR-D990	STR-D790
System	Tuner section	PLL quartz-locked digital synthesizer system	
	Preamplifier section	Low-noise NF type equalizer	
	Power amplifier section	Pure-complimentary SEPP	
Power requirements	120 V AC, 60 Hz U.K. model: 240 VAC, 50/60 Hz		
Power consumption	USA model: 240 W Canada model: 320 VA	USA model: 200 W Canada model: 270 VA U.K. model: 230 W	
AC outlets	Two switched, total 120 watts		
Dimensions	430 x 147.5 x 350 mm (17 x 5 $\frac{7}{8}$ x 13 $\frac{3}{4}$ inches)		
Weight	10.5 kg (23 lb 2 oz)	10.3 kg (22 lb 11 oz)	

Supplied accessories FM ribbon antenna (1)  
AM loop antenna (1)  
Remote commander (1)  
Sony Batteries SUM-3(NS) (2)

Design and specifications are subject to change without notice.

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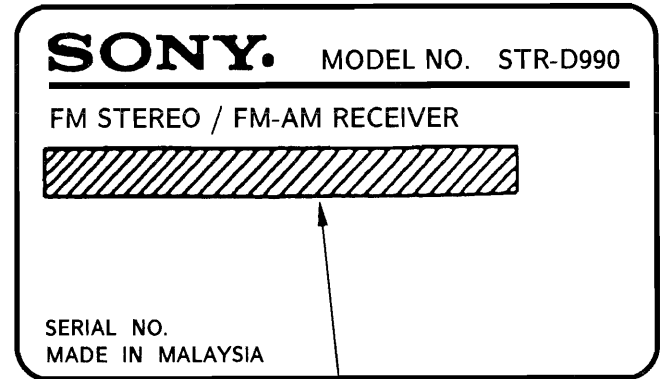
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**SAFETY-RELATED COMPONENT WARNING!!**

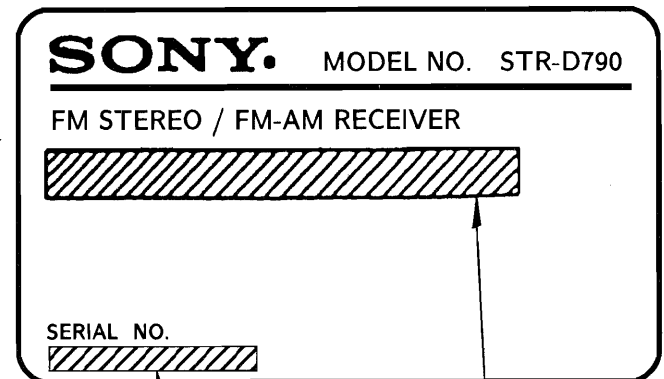
COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

**MODEL IDENTIFICATION**

- Specification Labels -



US Model : AC 120V 60Hz 240W  
 Canadian Model : AC 120V 60Hz 320VA



US, Canadian Model : MADE IN MALAYSIA  
 UK Model : ASSEMBLED IN MALAYSIA

US Model : AC 120V 60Hz 200W  
 Canadian Model : AC 120V 60Hz 270VA  
 UK Model : AC 240V~50/ 60Hz 230W

**ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!**

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  $\triangle$  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer :

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

## LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers.).

Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

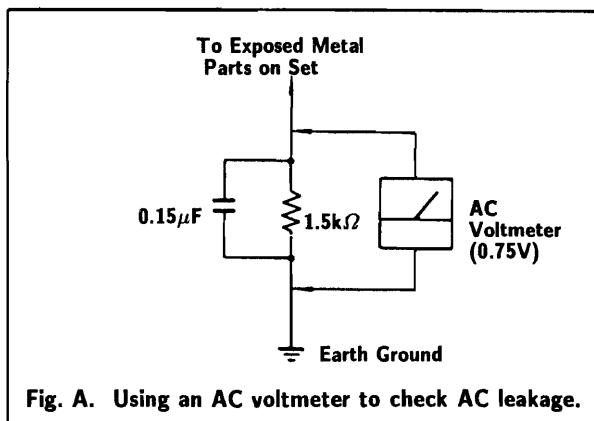
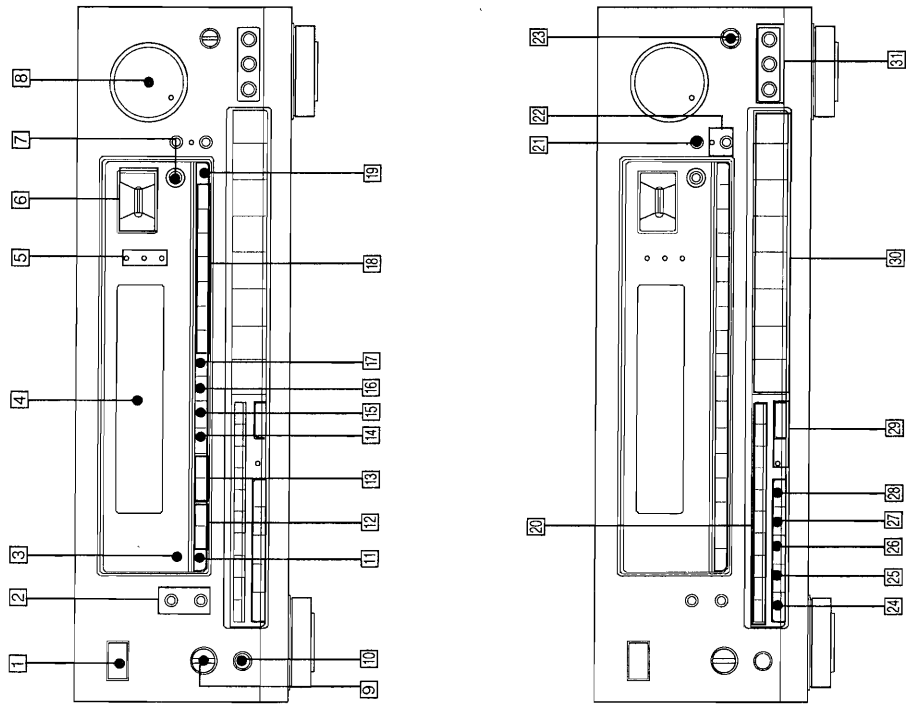


Fig. A. Using an AC voltmeter to check AC leakage.

## Parts Identification

### Front Panel



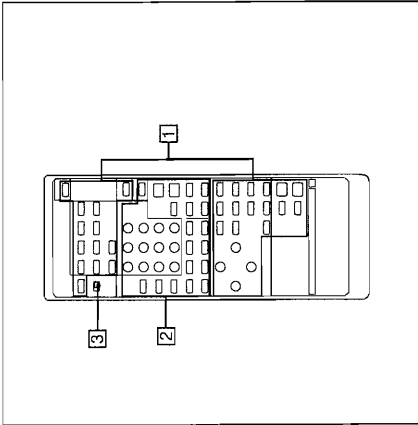
This section is extracted from instruction manual.

## SECTION 1 GENERAL

- 1 **POWER switch**  
(STANDBY indicator: STR-D790 for UK model only)
- 2 **EDIT VIDEO/AUDIO buttons** (See pages 24, 25, 26.)  
(EDIT VIDEO button: STR-D990 only)
- 3 **Remote sensor**
- 4 **Display window**
- 5 **CURSOR MODE indicators**
- 6 **CURSOR MODE operation buttons**  
(See page 16, 21, 28, 29, 31.)
- 7 **CURSOR MODE button** (See page 16, 21, 28, 29, 31.)
- 8 **MASTER VOLUME control** (See page 14.)
- 9 **SPEAKERS selector** (See page 14.)
- 10 **HEADPHONES jack**
- 11 **FREQ/INDEX button** (See pages 18, 22.)
- 12 **PRESET TUNING  $\rightarrow$ / $\leftarrow$  buttons**  
(See pages 20, 22.)
- 13 **INDEX SELECT/TUNING  $\rightarrow$ / $\leftarrow$  buttons**  
(See pages 18, 22.)
- 14 **TUNING LEVEL** (See page 18.)
- 15 **LINK ON/OFF button** (See page 32.)
- 16 **SOUND FIELD ON/OFF button** (See page 28, 29.)
- 17 **DOLBY PRO LOGIC MODE button**  
(See pages 12, 13.)
- 18 **SOUND FIELD buttons**  
(See pages 28, 29, 30, 31, 32.)
- 19 **TO NE ON/DEFEAT button** (See pages 31.)
- 20 **Numeric buttons** (See pages 17, 19, 20, 21, 22.)
- 21 **DBFB button** (See pages 14.)
- 22 **MUTING button and indicator** (See page 14.)
- 23 **BALANCE control** (See page 14.)
- 24 **SHIFT button** (See pages 19, 20, 21.)
- 25 **MEMORY button** (See page 16, 19, 21.)
- 26 **DIRECT button** (See page 17.)
- 27 **FM MODE button** (See page 17.)
- 28 **FM/AM button** (See page 17, 18.)
- 29 **TAPE 2 MONITOR button and indicator** (See page 23.)
- 30 **Function selectors**  
(VIDEO 3 button: STR-D990 only)
- 31 **VIDEO 3 INPUT jacks** (STR-D990 only)

## Parts Identification

### Remote Commander RM-U221 US, Canadian model



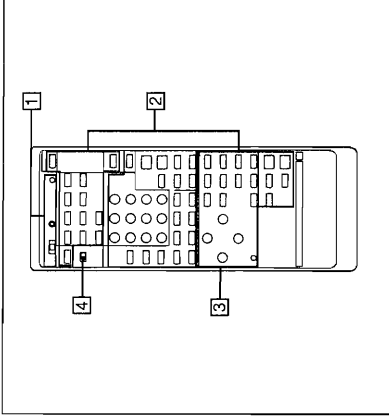
- 2 Other equipment control section**  
 Numeric buttons (1 to 0): Designate the number.  
 >10: Designate the number more than 10.  
 ENTER: Press after designating the TV/VCR channel.  
 SHIFT: Select the memory page (A, B or C).  
 TV/VIDEO selector: Selects the program to see : TV or VIDEO.  
 ANT TV/VTR button: Selects the output signal from the antenna terminal on the VCR, either a TV signal or VCR programs.  
 CH/PRESET +/- buttons: Select a preset channel.  
 INDEX: Set to the index tuning mode.  
 ◀◀▶▶: fast winding/Manual search  
 ●: Recording  
 ▶▶▶: Play  
 ■: Stop  
 ■: Pause  
 ◀◀▶▶: Locates a desired selection.  
 REV/FWD: Press ● and REV or FWD at the same time.  
 D (disc) SKIP: Disc skip (for a CD player equipped with a multi-disc changer)  
 SELECT: Changes the settings of the FUNCTION buttons.
- 3 SYSTEM/TV mode switch**  
**In TV mode (When setting the SYSTEM/TV selector to TV.)**  
 Only MUTING, MASTER VOL +/- and the operative buttons in TV section on the list described on the next page can be used.

### 1 Receiver control section

**FUNCTION:**  
 DAT, CD, TUNER, PHONO, VIDEO 1, VIDEO 2, VIDEO 3, TAPE, DIGITAL 1, 2: The each function is selected and the each unit enters its operating mode automatically.  
 SYSTEM OFF: Turns off the power of the whole system.  
 POWER: Turns on the power of the receiver.  
 SOUND FIELD buttons  
 U/P: This button does not function.  
 ON/OFF: Turns on/off the sound field mode.  
 BAND: This button does not function.  
 EQ: Turns on/off the setting of TONE controls.  
 T. (test) TONE: Generates a pink noise signal that is sent in succession to each speaker.  
 CURSOR MODE: Select CURSOR MODE.  
 CURSOR operating buttons  
 REAR LEVEL +/- buttons: Control the volume of rear speakers (surround level).  
 CENTER LEVEL +/- buttons : Control the volume of center speaker (surround level).  
 DBFB button: Turns on/off the DBFB (Dynamic Bass Feedback).  
 MUTING button: Mutes the sound.  
 MASTER VOL +/- buttons: Control the receiver volume.  
 SLEEP: Set to the SLEEP timer mode. In this mode, the unit is automatically turned off after the designated time. (page 15)

## Parts Identification

### Remote Commander RM-P221 UK model



- 1 Program control section**  
 Mode selector and indicator (page 24.)  
 SONY STD: To control Sony equipment.  
 USER STD: To control equipment whose remote control functions are stored  
 LEARN: To store functions of other remote commanders emitting infrared rays.  
 PROGRAM CLEAR: Clears the stored functions.
- 2 Receiver control section**  
**FUNCTION:**  
 DAT, CD, TUNER, PHONO, VIDEO 1, VIDEO 2, VIDEO 3, TAPE, DIGITAL 1, 2: The each function is selected and the each unit enters its operating mode automatically. (VIDEO 3, DIGITAL 1, 2 cannot be used.)  
 SYSTEM OFF: Turns off the power of the whole system.  
 POWER: Turns on the power of the receiver.  
 SOUND FIELD buttons  
 U/P: This button does not function.  
 MODE: Selects the surround mode.  
 ON/OFF: Turns on/off the surround system.  
 BAND: This button does not function.  
 EQ: This button does not function.  
 T. (test) TONE: Generates a pink noise signal that is sent in succession to each speaker.  
 CURSOR MODE: This button does not function.  
 CURSOR operating buttons: These buttons do not function.  
 REAR LEVEL +/- buttons: Control the volume of rear speakers (surround level).  
 CENTER LEVEL +/- buttons : Control the volume of center speaker (surround level).

### 4 SYSTEM/TV mode switch

**In TV mode (When setting the SYSTEM/TV selector to TV.)**  
 Only MUTING, MASTER VOL +/- and the operative buttons in TV section on the list described on the next page can be used.

- DBFB button: This button does not function.  
 MUTING button: Mutes the sound.  
 MASTER VOL +/- buttons: Control the receiver volume.  
 SLEEP: This button does not function.  
 RESET: Resets to the initial state.
- 3 Other equipment control section**  
 Numeric buttons (1 to 0): Designate the number.  
 >10: Designate the number more than 10.  
 ENTER: Press after designating the TV/VCR channel.  
 SHIFT: Select the memory page (A, B or C).  
 TV/VIDEO selector: Selects the program to see : TV or VIDEO.  
 ANT TV/VTR button: Selects the output signal from the antenna terminal on the VCR, either a TV signal or VCR programs.  
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 REV/FWD: Press ● and REV or FWD at the same time.  
 D (disc) SKIP: Disc skip (for a CD player equipped with a multi-disc changer)  
 SELECT: Changes the settings of the FUNCTION buttons.

### 4 SYSTEM/TV mode switch

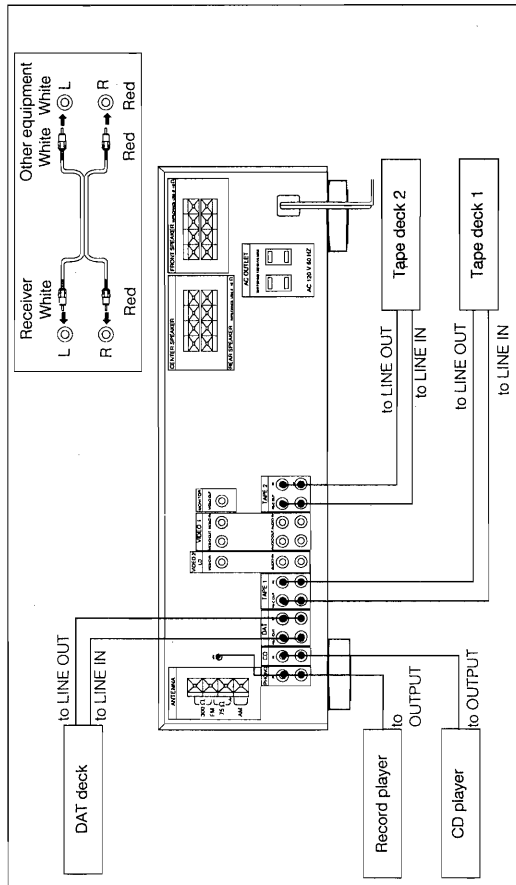
**In TV mode (When setting the SYSTEM/TV selector to TV.)**  
 Only MUTING, MASTER VOL +/- and the operative buttons in TV section on the list described on the next page can be used.

## Hooking Up the System

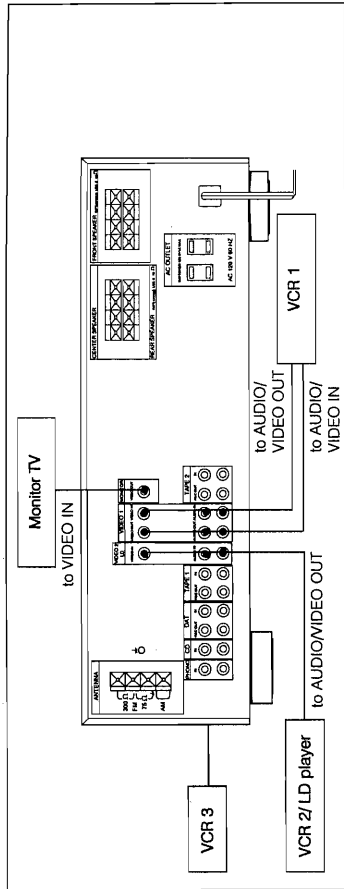
At first, this section describes about the connection with the other equipments, the antenna connection, speaker connection and then the AC power connection.

- Do not connect the power cord to an AC outlet nor press the POWER switch before accomplishing all other connections.
- The cable connectors should be fully inserted into the jacks. Loose connection may cause hum and noise.
- Jacks and plugs of the connecting cord are color-coded as follows:  
 Red jacks and plugs: For the right channel of audio signals  
 White jacks and plugs: For the left channel of audio signals  
 Yellow jacks and plugs: For video signals

### Connecting Audio Equipment

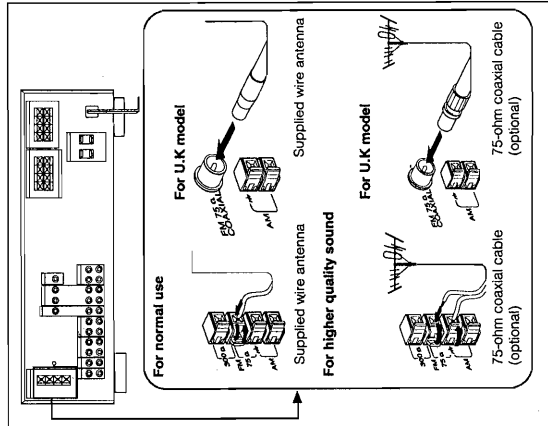


### Connecting Video Equipment



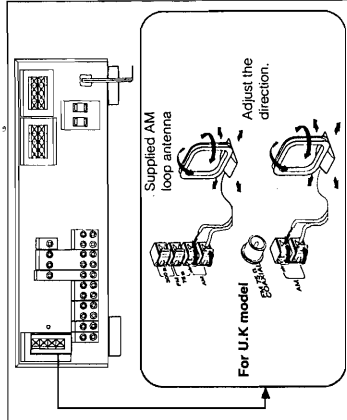
### Connecting an FM Antenna

Though the ribbon antenna is supplied with this unit, the higher quality sound will be obtained with the 75-ohm coaxial cable.



### Connecting an AM Antenna

The AM broadcast is enough received with the supplied AM loop antenna. However, the connection of insulated wire is also available for areas with difficult AM reception.



### For areas with difficult AM reception

In areas with troubled reception, connect a 6 to 15-meter (20 to 50-foot) insulated wire to the AM antenna terminal. Extend this out of doors if possible, keeping the greater portion horizontal. (There is no need to disconnect the supplied antenna.)

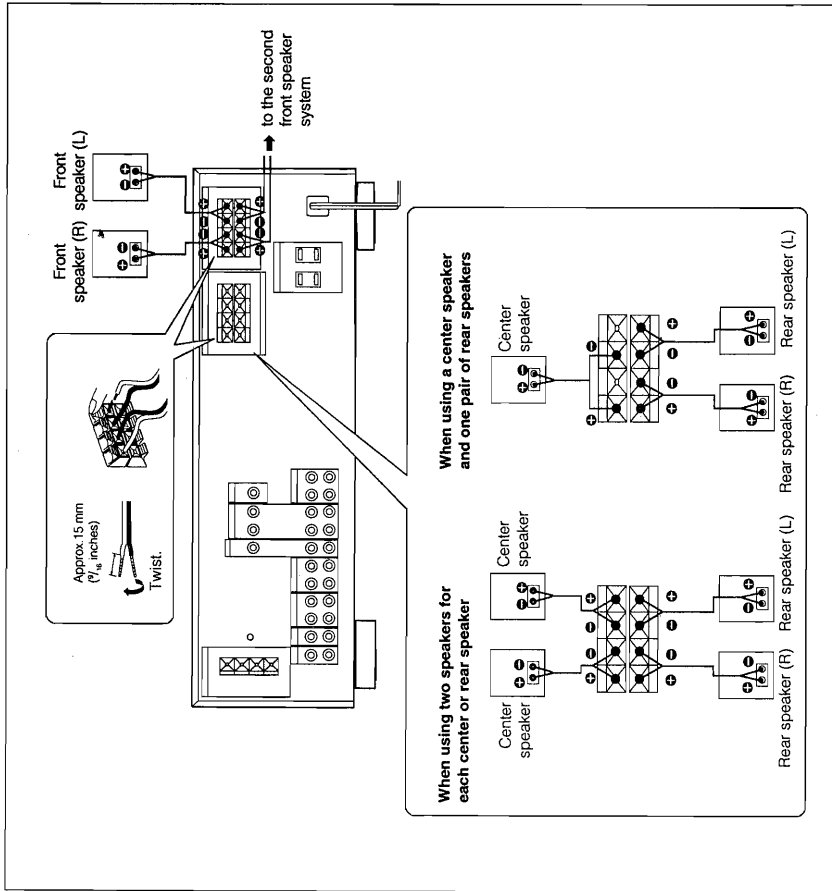
### Connecting the Antenna Ground

To prevent hum, connect the ground wire to ANTENNA ground terminal (A). When an outdoor antenna is installed, be sure to connect the ground wire for lightning protection.

# Hooking Up the System

## Connecting Speaker Systems

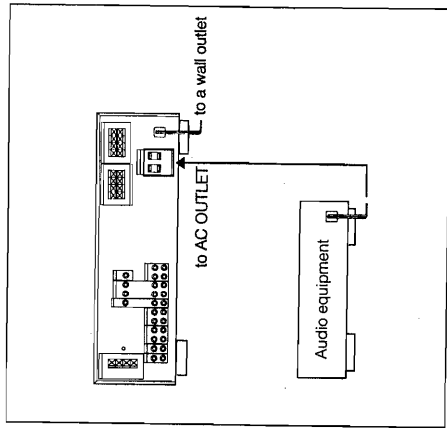
Front, rear and center speakers can be connected to this unit.



**Speaker impedance and power capability**  
 This receiver is designed to work best with speakers having nominal impedance from 8 to 16 ohms. Be sure to use a speaker system with adequate nominal impedance and power handling capabilities.  
 When using two center speakers, use the speakers having nominal impedance from 4 to 16 ohms.

**Note**  
 When connecting the speaker cord to the speaker terminal, make sure that the polarity (+ and -) of the speaker cord is correct. If the polarity is reversed at either speaker, the sound will be distorted and will lack bass.

Connect the AC power cord to the wall outlet last of all. By connecting the power cord of the other audio equipment to SWITCHED AC OUTLET, this unit can supply the power source to the other audio equipment.



**Caution**  
 Be careful that the total power consumption of each equipment connected to the outlets on the receiver does not exceed 120 watts.  
 Do not connect electrical home appliances such as an electric iron, fan, TV, or other high-wattage equipment to these outlets.

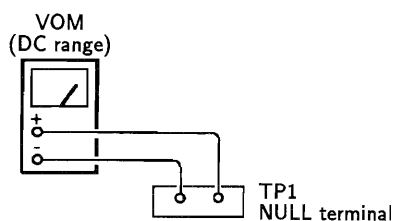
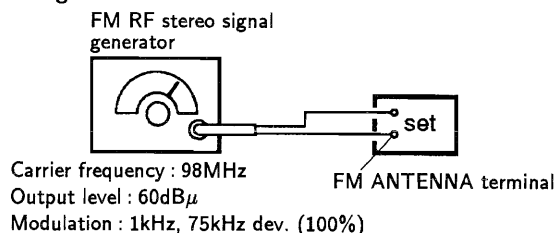


## SECTION 2 ELECTRICAL ADJUSTMENTS

### FM SECTION ADJUSTMENTS

#### • FM Discriminator (NULL) Adjustment

Setting :



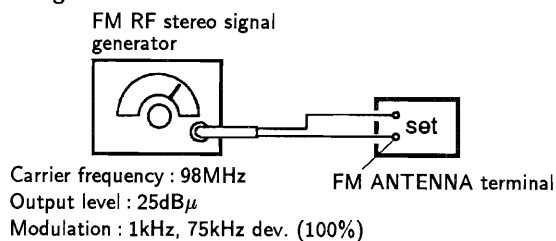
Procedure :

1. Tune the set to 98MHz.
2. Adjust T21 for 0V reading on the VOM.

Note : FM Tuning Level adjustment should be made after FM discriminator adjustment.

#### • FM Tuning Level Adjustment

Setting :

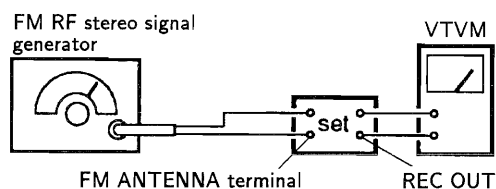


Procedure :

1. Tune the set to 98MHz.
2. Adjust RV24 so that the STEREO LED goes on.

#### • FM Stereo Separation Adjustment

Setting :



Carrier frequency : 98MHz  
Output level : 60dB $\mu$   
Modulation :

Audio (1kHz) : 33.75kHz dev. (45%)  
Pilot (19kHz) : 7.5kHz dev. (10%)  
Sub-channel (38kHz) : 33.75kHz dev. (45%)

Procedure :

Tune the set to 98MHz.

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV21 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV21 for minimum reading.

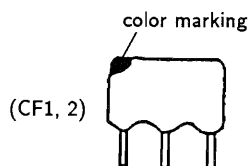
L-CH Stereo separation : Ⓐ - Ⓑ

R-CH Stereo separation : Ⓒ - Ⓓ

The separations of both channels should be equal.

#### Note on Ceramic Filter (CF1, 2) Replacement.

This set employs two ceramic filters (CF1, 2) which should have the same color marking to identify their center frequency. Therefore FM IF offset adjustment by (\*A, \*B) connection is necessary to match the center frequency of the ceramic filters used with FM intermediate frequency.

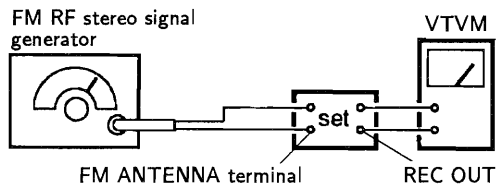


○ : connect  
× : not connect

Ceramic filter		Connection		FM intermediate frequency (MHz)
Color mark	Center frequency (MHz)	*A (D133)	*B (D134)	
White	10.750	○	×	10.750
Red	10.700	○	○	10.700
Black	10.650	×	○	10.650

**• Auto Stop Level Adjustment**

Setting :



Carrier frequency : 98MHz  
Output level : 45dB $\mu$

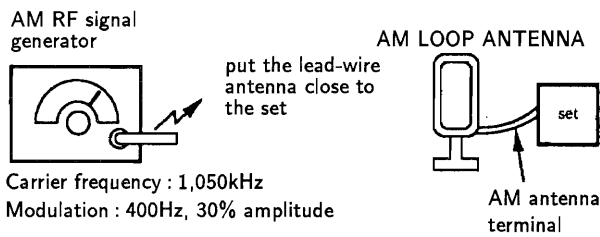
Procedure :

1. Tune the High/Low select switch to high.
2. Adjust RV25 so that the TUNED LED goes on.

**AM SECTION ADJUSTMENTS**

**• AM Stop Level Adjustment**

Setting :



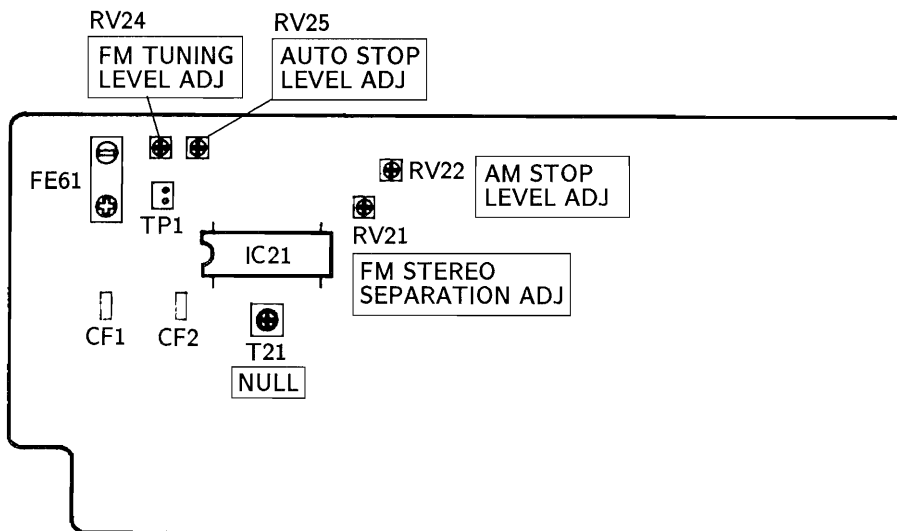
Carrier frequency : 1,050kHz  
Modulation : 400Hz, 30% amplitude

Procedure :

1. Tune the set to 1,050kHz.
2. Adjust RV22 so that the TUNED LED goes on.

Adjustment Location :

[SURRETUNER BOARD] — COMPONENT SIDE —



## SECTION 3 IC PIN DESCRIPTION

### EXPLANATION OF IC202 ( $\mu$ PD75517GF-110-3B9) SYSTEM CONTROL

PIN NO.	SIGNAL NAME	DESCRIPTION	I/O	ACTIVE
1	POWER IN	MAIN/DRLC POWER	I	—
2	A/D VREF	A/D REFERENCE POWER SUPPLY	—	—
3	VDD	+5V POWER SUPPLY	—	—
4	VDD	+5V POWER SUPPLY	—	—
5	T.LEVEL	TUNING LEVEL SELECT	O	H
6	T.MUTE	TUNER MUTING	O	H
7	T.CE	TONE SERIAL DATA	O	L
8	LED TONE	CURSOL MODE LED OUTPUT (TONE)	O	L
9	DBFB	DBFB ON/OFF	O	L
10	K/O-C	KEY OUT CONTROL A2	O	H
11	K/O-B	KEY OUT CONTROL A1	O	H
12	K/O-A	KEY OUT CONTROL A0	O	H
13	TAPE2	TAPE2 MONITOR ON/OFF	O	H
14	K/I-C	KEY IN CONTROL A2	O	H
15	K/I-B	KEY IN CONTROL A1	O	H
16	K/I-A	KEY IN CONTROL A0	O	H
17	KEY-IN	KEY INPUT	I	H
18	FLS.DATA	FL DRIVER SERIAL DATA	O	H
19	FLS.CLOCK	FL DRIVER SERIAL CLOCK	O	H
20	LED SUR	CURSOL MODE LED OUTPUT (SURR)	O	H
21	VOL —	VOLUME DOWN	O	H
22	VOL +	VOLUME UP	O	H
23	FL.LS	FL DRIVER LATCH	O	H
24	FL.CL	FL DRIVER CLEAR	O	L
25	P.LI	PROLOGIC CONTROL	O	H
26	LED INDEX	CURSOL MODE LED OUTPUT (INDEX)	O	H
27	SURR.RY	SURROUND OUT RELAY	O	H
28	CENTER RY	CENTER OUT RELAY	O	H
29	SAME	NOT IN USED	O	H
30	SUB/SURR	NOT IN USED	O	H
31	SUB. MUTE	NOT IN USED	O	L
32	LED VOL	MASTER VOLUME LED OUTPUT	O	L
33	GND	GND	—	—
34	VIDEO A	VIDEO CONTROL A	O	H
35	VIDEO B	VIDEO CONTROL B	O	H
36	VIDEO C	VIDEO CONTROL C	O	H
37	SUB.RY	NOT IN USED	O	H
38	P.RY	POWER OUT RELAY	O	H
39	S.RY	SPEAKER RELAY	O	H
40	S.CLOCK	SERIAL CLOCK	O	H

PIN NO.	SIGNAL NAME	DESCRIPTION	I/O	ACTIVE
41	S.DATA	SERIAL DATA	O	H
42	S.CE	SERIAL LATCH	O	H
43	F.MUT	FUNCTION MUTING	O	L
44	-20dB MUT	-20dB MUTING	O	L
45	P.MUT	PROTECTOR MUTING	O	L
46	STEREO IN	TUNER STEREO SIGNAL INPUT	I	L
47	PROTE IN	PROTECTOR INPUT	I	L
48	RM-2	REMOCON SUB INPUT	I	L
49	RM-1	REMOCON MAIN INPUT	I	L
50	A.CE	AUTOMATIC GAUGE LATCH	I	L
51	T-A.S	TUNER AUTO STOP	I	L
52	IF-DIN	IF COUNT DATA INPUT	I	H
53	STOP	POWER OFF DET	I	L
54	GND	GND	-	-
55	XT-1	GND	-	-
56	XT-2	NOT IN USED	-	-
57	IC	NOT IN USED	-	-
58	OSC	4.19MHz CERAMIC	-	-
59	OSC	4.19MHz CERAMIC	-	-
60	RES	POWER ON RESET	I	L
61	D.CE	DIGITAL DELAY LATCH	O	L
62	SURR-A	SURROUND MODE SELECT A	O	H
63	SURR-B	SURROUND MODE SELECT B	O	H
64	SURR-C	SURROUND MODE SELECT C	O	H
65	SURR-D	SURROUND MODE SELECT D	O	H
66	P.L6	PROLOGIC CONTROL	O	H
67	P.L2	PROLOGIC CONTROL	O	H
68	P.L3	PROLOGIC CONTROL	O	H
69	P.L4	PROLOGIC CONTROL	O	H
70	P.L5	PROLOGIC CONTROL	O	H
71	LED DRLC	NOT IN USED	O	-
72	S.CONT	RM-2 CONTROL	O	H
73	AVSS	ANALOG GND	-	-
74	S-IN	SPEANA INPUT (R-CH)	I	-
75	A/D I ch6	GND	I	-
76	A/D I ch5	GND	I	-
77	A/D I ch4	GND	I	-
78	S-IN	SPEANA INPUT (L-CH)	I	-
79	A/D I ch2	GND	I	-
80	A/D I ch1	GND	I	-

**SECTION 4  
DIAGRAMS**

4-1. PRINTED WIRING BOARDS (MAIN SECTION) • See page 14 for note. • See page 19 for semiconductor location. • See page 42 for semiconductor lead layouts.

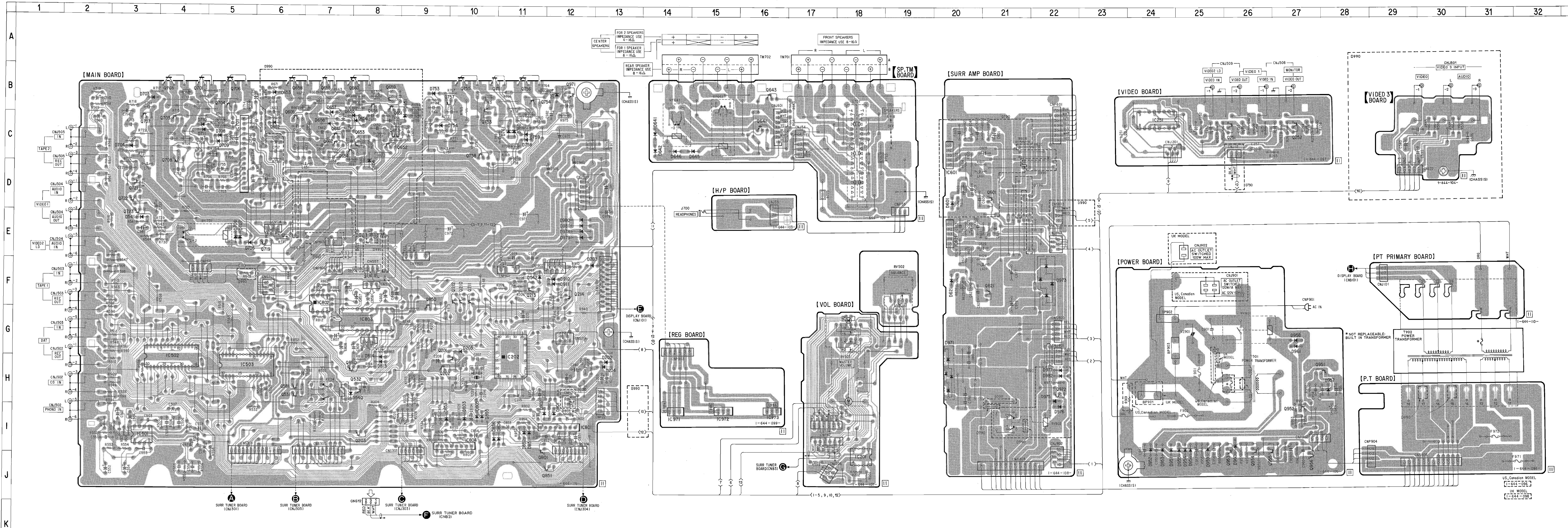
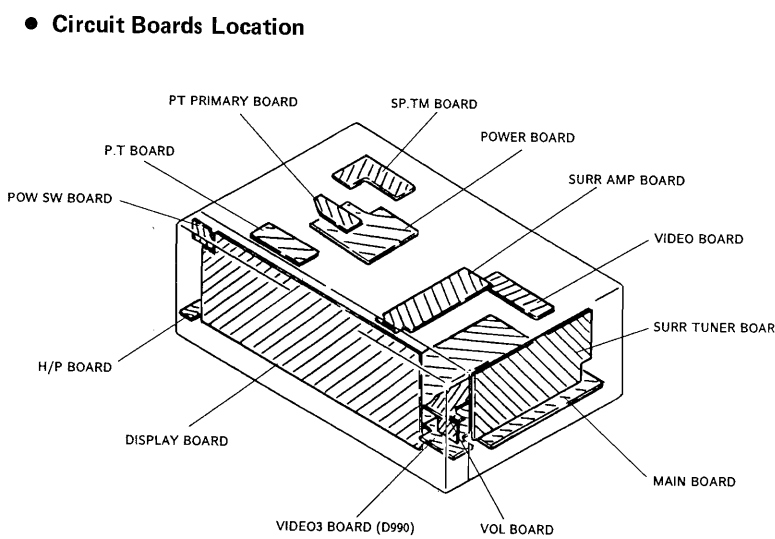
- Note on Printed Wiring Board:**
- : parts extracted from the component side.
  - : parts mounted on the conductor side.
  - ⊕ : indicates side identified with part number.
  - ▨ : Pattern on the side which is seen.

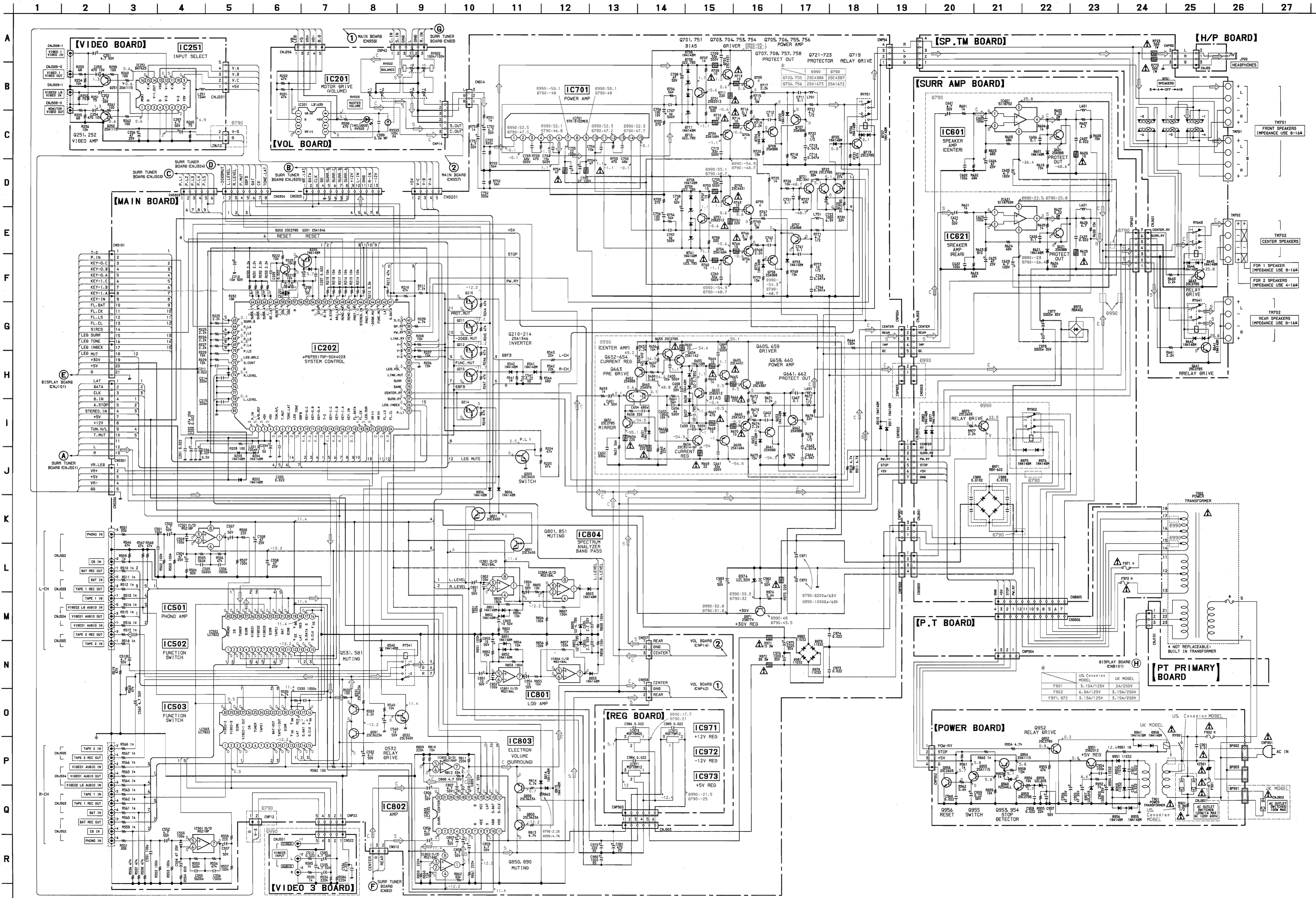
- Note on Schematic Diagram:**
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
  - △ : internal component.
  - ⊞ : nonflammable resistor.

**Note:** The components identified by mark  $\Delta$  or  $\oplus$  are critical for safety. Replace only with part number specified.

**Note:** Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

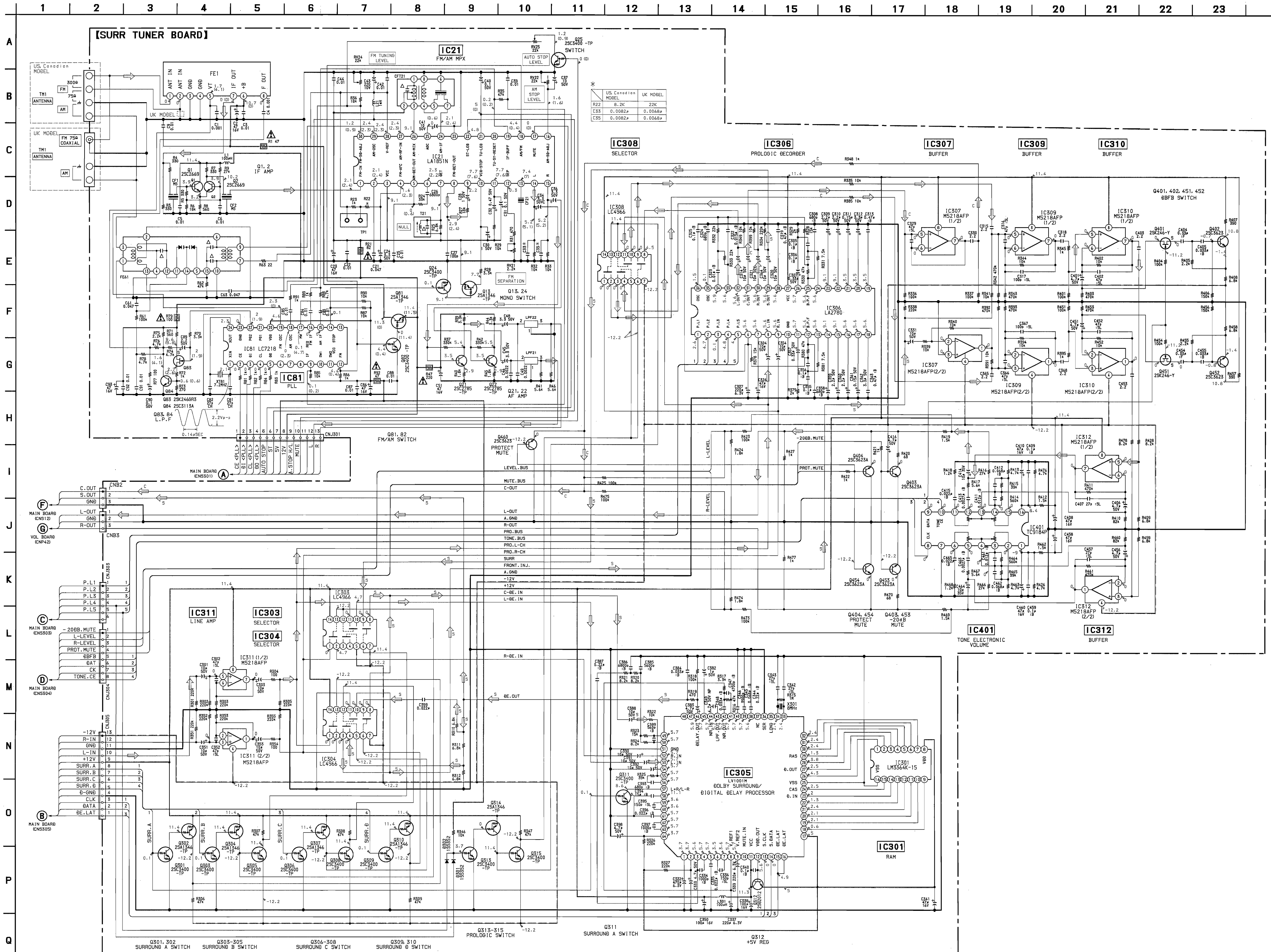
- : B+ line.
- : B- line.
- : adjustment for repair.
- AC voltage readings in the bias oscillator with a VTVM.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
- ( ): AM
- Voltages are taken with a VOM. (Input impedance 10M $\Omega$ )
- Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope.
- Voltage variations may be noted due to normal production tolerances.
- Signal path.
- FM
- SURROUND REAR
- SURROUND CENTER



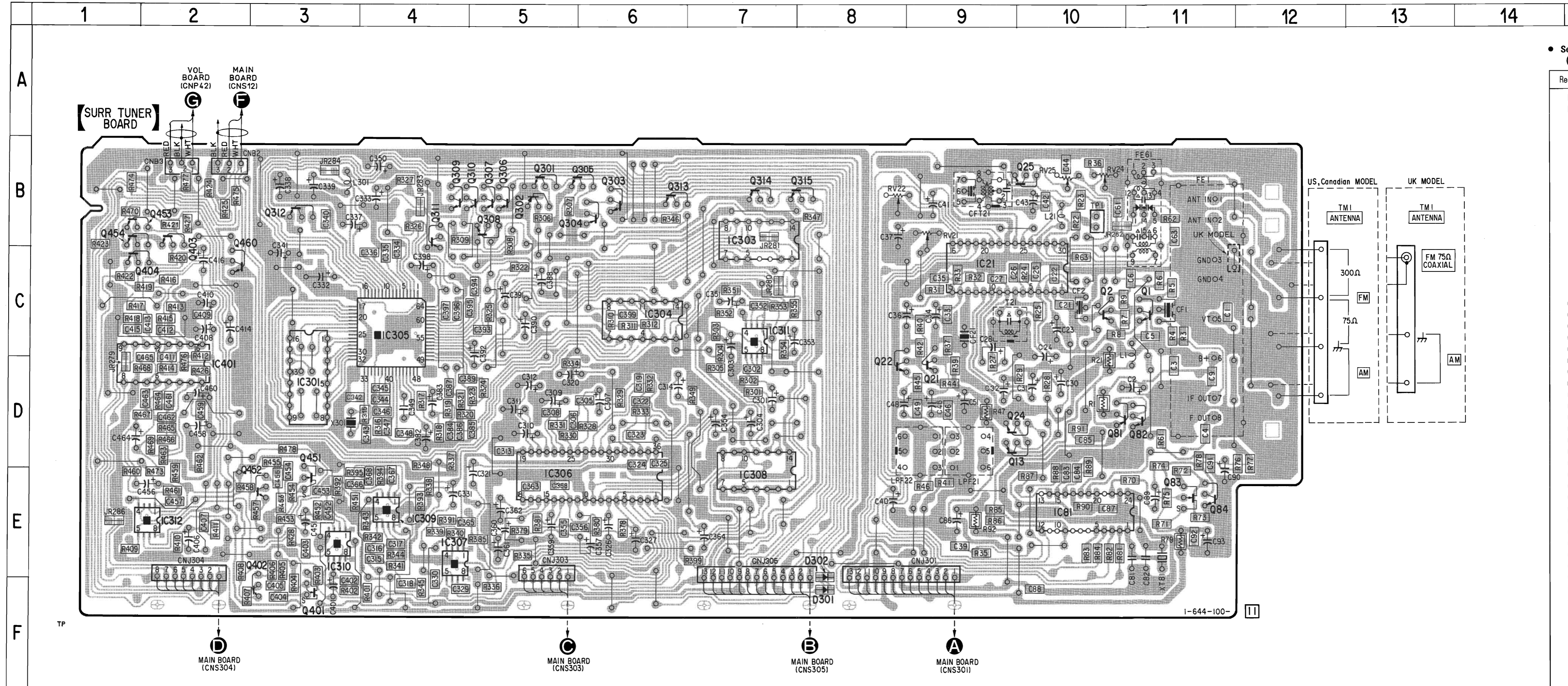


• Semiconductor Location (Main Section)

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
0202	H-13	0951	I-24	0532	H-8
0203	F-12	0952	I-24	0581	H-6
0204	H-13	0953	I-24	0601	C-21
0205	G-10	0954	I-25	0605	C-6
0540	H-7	0955	I-25	0621	F-21
0541	E-3	0956	I-25	0641	C-16
0542	F-11	0957	H-28	0643	C-16
0601	D-20	0958	G-27	0651	B-8
0602	F-20	0959	I-26	0652	C-8
0641	C-14	0961	G-27	0653	C-8
0642	C-14	0971	H-20	0654	C-7
0645	C-15	0973	F-22	0655	B-7
0646	C-14	0974	B-12	0656	B-8
0651	B-9	0975	H-22	0658	B-6
0652	C-6	0976	I-22	0659	B-8
0653	B-8	0977	H-22	0660	B-8
0654	C-8	0978	E-12	0661	C-7
0655	C-7	0979	E-12	0662	C-7
0656	C-6	0980	E-12	0663	C-8
0657	B-7	0981	E-12	0701	B-4
0658	C-7	0982	H-22	0703	C-4
0703	B-3			0704	B-5
0704	C-3	IC201	J-18	0705	B-4
0705	E-5	IC202	C-24	0706	B-5
0706	E-5	IC251	H-11	0707	C-4
0707	E-5	IC501	I-3	0708	C-4
0708	C-5	IC502	H-4	0719	E-6
0709	C-5	IC503	H-5	0721	D-3
0710	C-4	IC801	C-20	0722	D-3
0711	C-4	IC802	E-20	0723	E-3
0753	B-9	IC701	C-5	0751	B-10
0754	C-9	IC801	I-12	0753	B-10
0758	C-11	IC802	F-7	0754	B-11
0759	C-11	IC803	G-8	0755	B-10
0760	C-11	IC804	I-10	0756	B-11
0761	C-11	IC971	I-14	0757	B-10
0801	I-12	IC972	I-15	0758	C-10
0802	I-11	IC973	I-16	0801	I-11
0803	I-10			0850	F-9
0805	I-10	0201	H-10	0851	J-12
0806	I-11	0202	H-9	0850	H-8
0814	H-8	0203	I-8	0951	H-27
0815	H-8	0210	F-10	0952	I-27
0851	I-11	0211	F-10	0953	I-26
0852	I-11	0212	F-10	0954	I-26
0853	I-9	0213	F-11	0955	I-26
0855	I-10	0214	F-12	0956	J-27
0856	I-10	0251	C-26	0971	B-12
0910	F-12	0252	C-27	0972	H-22
0911	F-12	0531	H-6		



4-4. PRINTED WIRING BOARDS (SURR TUNER SECTION) • See page 14 for notes. • See page 42 for Semiconductor Lead Layouts.

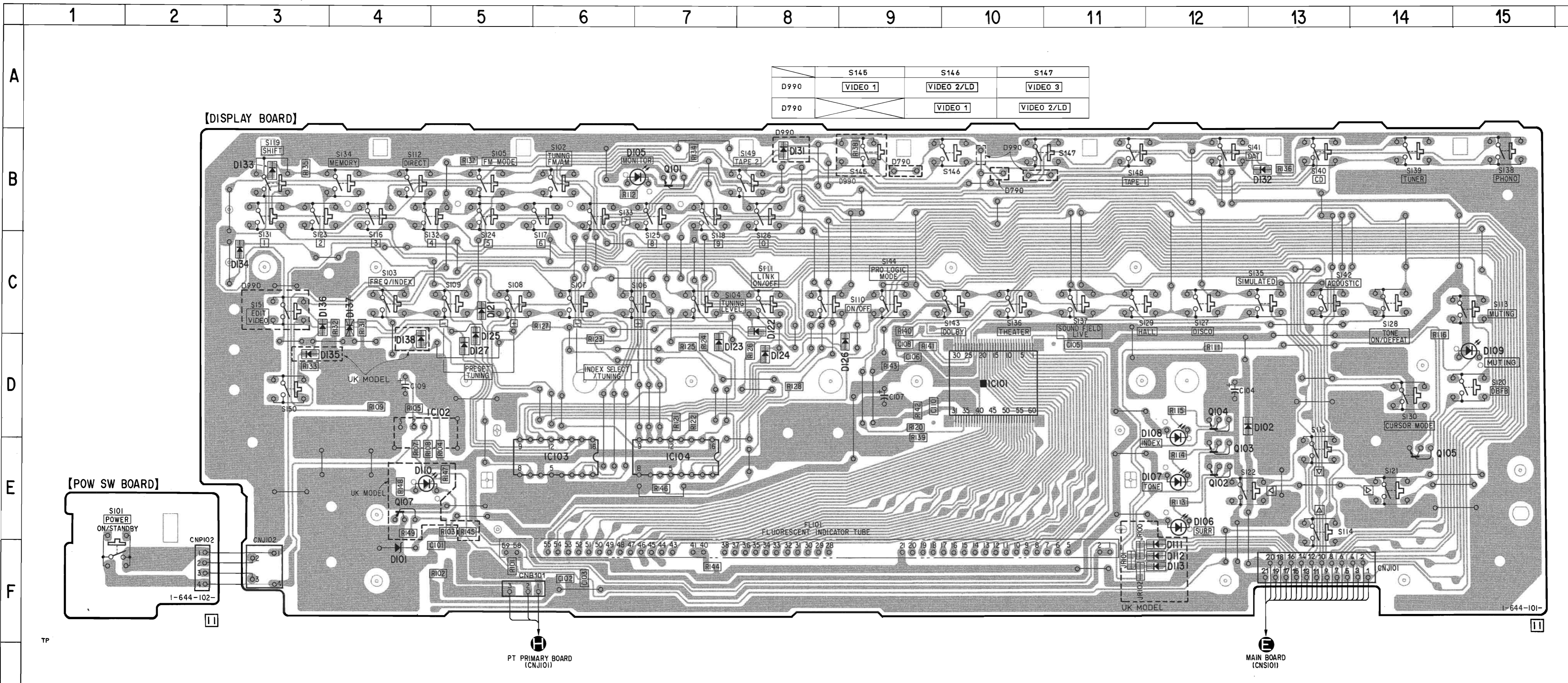


• Semiconductor Location (Surr Tuner Section)

Ref. No.	Location
D301	F-8
D302	E-8
IC21	C-9
IC81	E-10
IC301	D-3
IC303	B-7
IC304	C-6
IC305	C-4
IC306	E-5
IC307	E-4
IC308	E-7
IC309	E-4
IC310	E-3
IC311	C-7
IC312	E-2
IC401	D-2
Q1	C-11
Q2	C-10
Q13	D-9
Q21	D-9
Q22	D-8
Q24	D-9
Q25	B-10
Q81	D-10
Q82	D-11
Q83	E-11
Q84	E-11
Q301	B-5
Q302	B-5
Q303	B-6
Q304	B-6
Q305	B-6
Q306	B-5
Q307	B-5
Q308	B-5
Q309	B-4
Q310	B-4
Q311	B-4
Q312	B-3
Q313	B-6
Q314	B-7
Q315	B-8
Q401	F-3
Q402	F-3
Q403	B-2
Q404	C-1
Q451	E-3
Q452	E-3
Q453	B-1
Q454	B-1
Q460	C-2



4-5. PRINTED WIRING BOARDS (DISPLAY SECTION) • See page 14 for notes. • See page 42 for Semiconductor Lead Layouts.

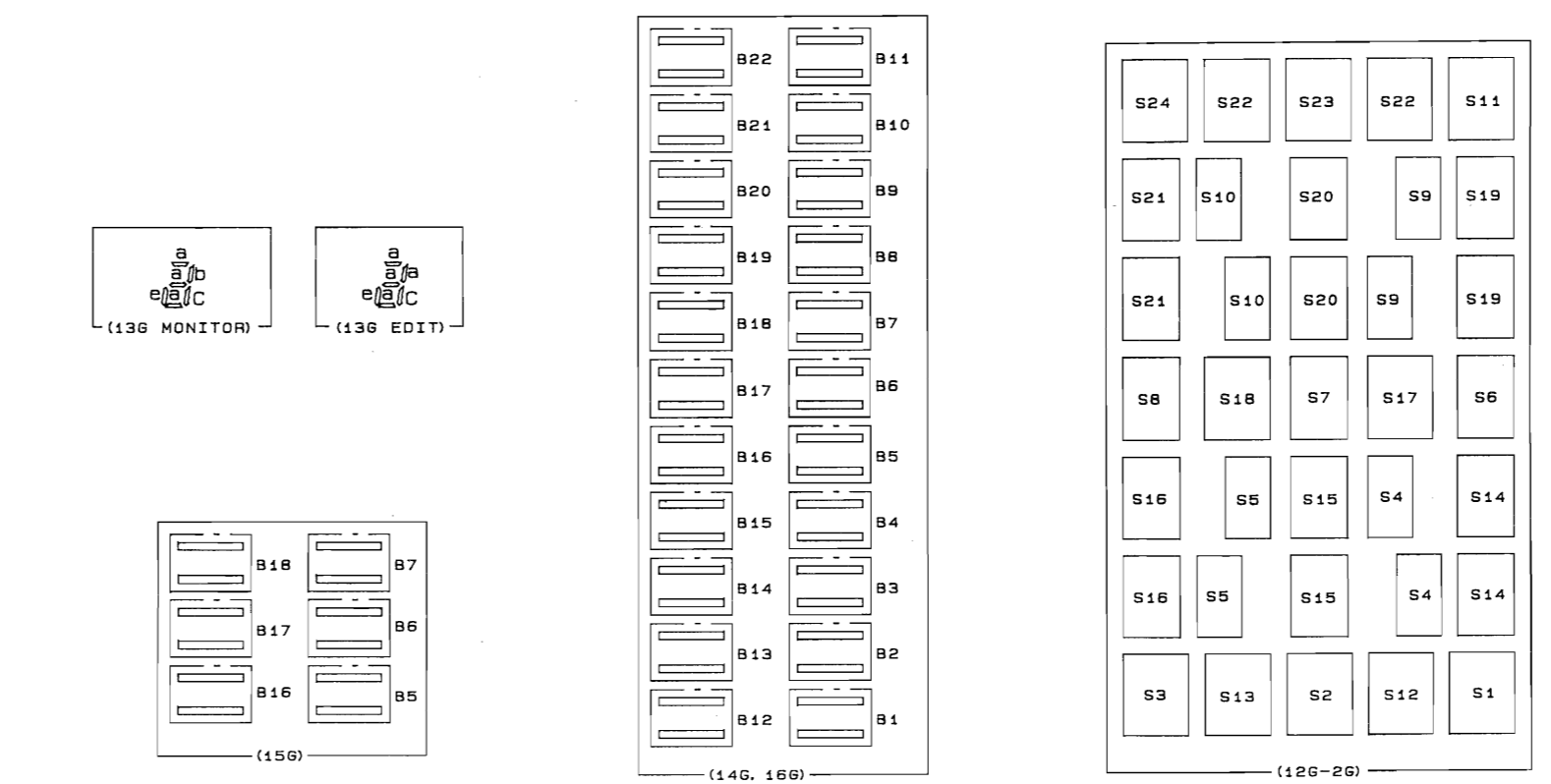
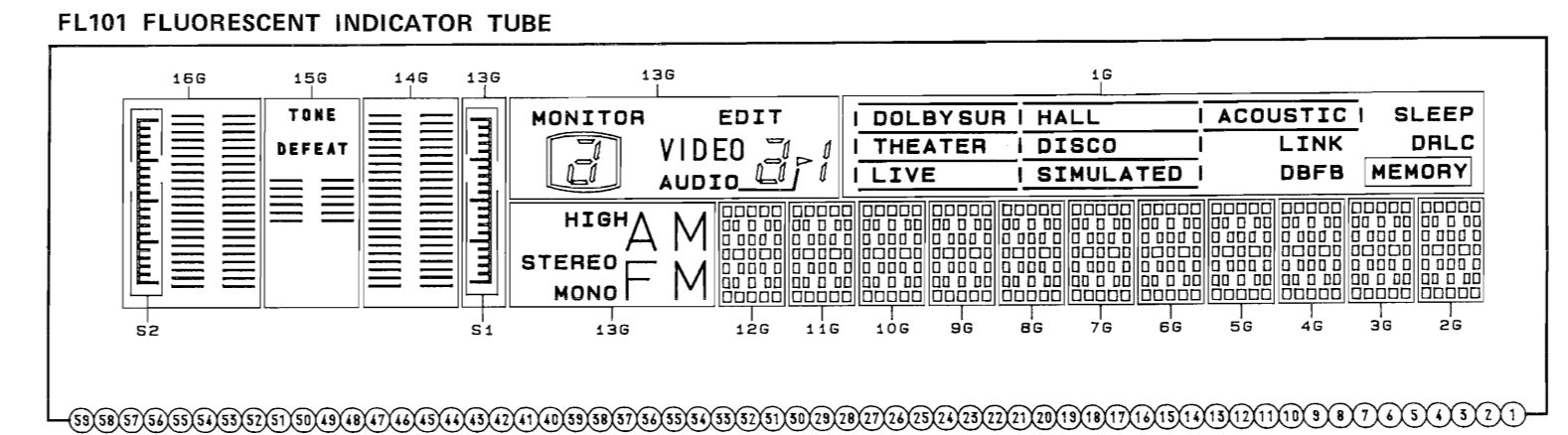
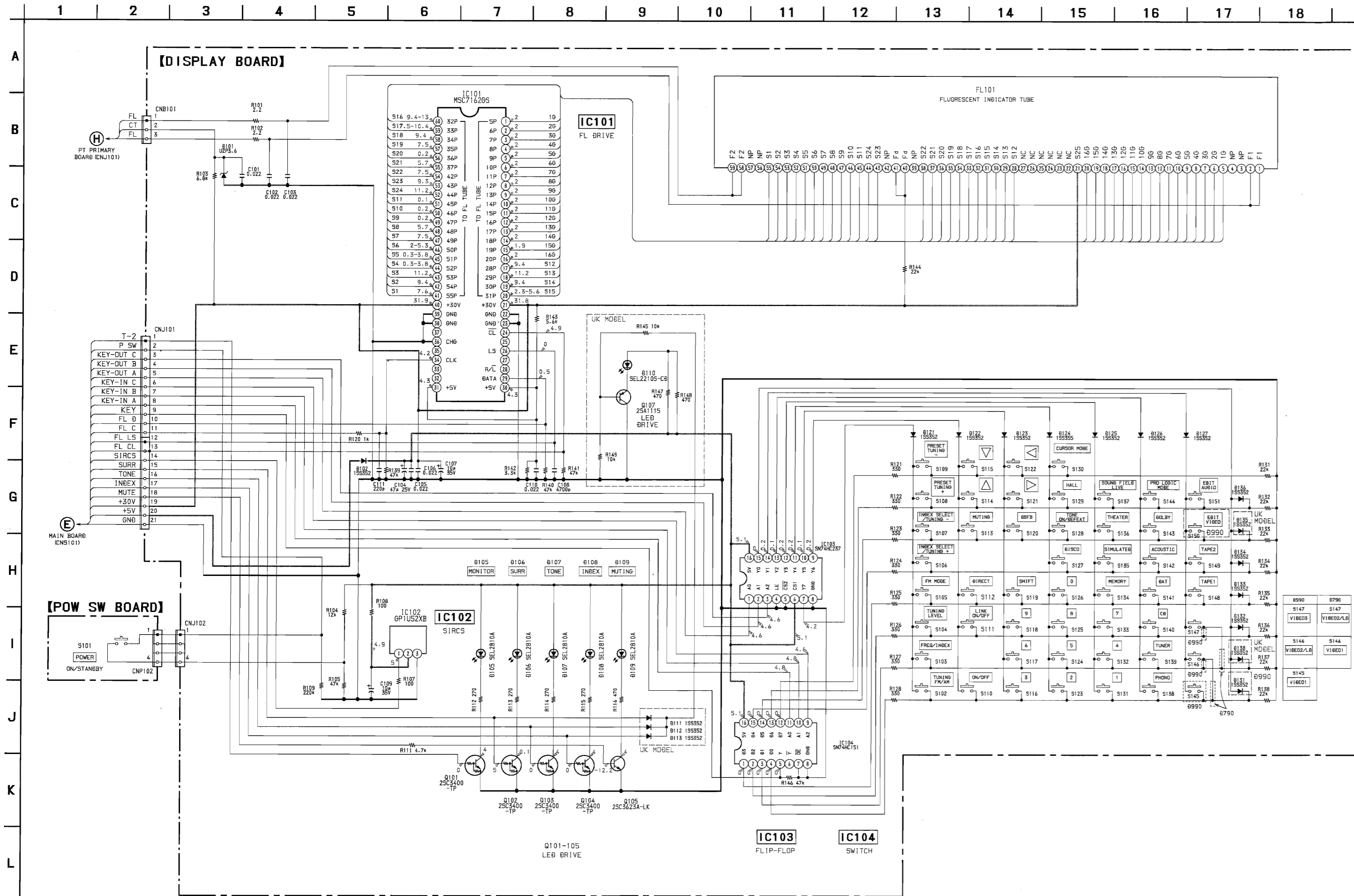


	S145	S146	S147
D990	VIDEO 1	VIDEO 2/LD	VIDEO 3
D790		VIDEO 1	VIDEO 2/LD

• Semiconductor Location (Display Section)

Ref. No.	Location
D101	F-4
D102	D-13
D105	B-7
D106	E-12
D107	E-12
D108	D-12
D109	D-15
D110	E-4
D111	F-12
D112	F-12
D121	C-5
D122	C-8
D123	D-7
D124	D-8
D125	D-5
D126	D-9
D127	D-5
D131	B-8
D132	B-13
D133	B-3
D134	C-3
D135	D-3
D136	C-3
D137	C-4
D138	D-4
IC101	D-10
IC102	D-4
IC103	E-6
IC104	E-7
Q101	B-7
Q102	E-12
Q103	E-12
Q104	D-12
Q105	E-14
Q107	E-4

4-6. SCHEMATIC DIAGRAM (DISPLAY SECTION) • See page 14 for notes. • See page 41 for IC Block Diagrams.

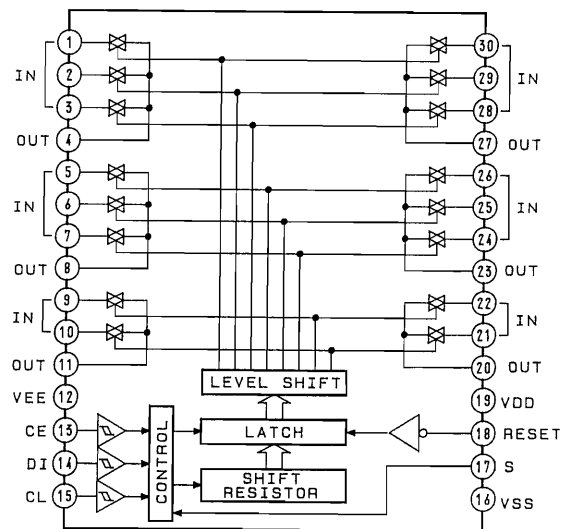


	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	B1	B1	B1	S1	S1	S1	S1	S1	S1	S1	S1	S1	S1	S1	S1	SLEEP
P2	B2	B2	B2	S2	S2	S2	S2	S2	S2	S2	S2	S2	S2	S2	S2	DRLC
P3	B3	B3	B3	S3	S3	S3	S3	S3	S3	S3	S3	S3	S3	S3	S3	MEMORY
P4	B4	B4	B4	S4	S4	S4	S4	S4	S4	S4	S4	S4	S4	S4	S4	(DISCO)
P5	B5	B5	B5	S5	S5	S5	S5	S5	S5	S5	S5	S5	S5	S5	S5	(DISCO)
P6	B6	B6	B6	S6	S6	S6	S6	S6	S6	S6	S6	S6	S6	S6	S6	(SIMULATED)
P7	B7	B7	B7	S7	S7	S7	S7	S7	S7	S7	S7	S7	S7	S7	S7	(LIVE)
P8	B8	B8	B8	S8	S8	S8	S8	S8	S8	S8	S8	S8	S8	S8	S8	(THEATER)
P9	B9	B9	B9	S9	S9	S9	S9	S9	S9	S9	S9	S9	S9	S9	S9	(HALL)
P10	B10	B10	B10	S10	S10	S10	S10	S10	S10	S10	S10	S10	S10	S10	S10	(ACOUSTIC)
P11	B11	B11	B11	S11	S11	S11	S11	S11	S11	S11	S11	S11	S11	S11	S11	-
P12	B12	B12	B12	c (EDIT)	S12	S12	S12	S12	S12	S12	S12	S12	S12	S12	S12	(HALL)
P13	B13	B13	B13	e (EDIT)	S13	S13	S13	S13	S13	S13	S13	S13	S13	S13	S13	LINK
P14	B14	B14	B14	AUDIO	S14	S14	S14	S14	S14	S14	S14	S14	S14	S14	S14	DBFB
P15	B15	B15	B15	a (MONITOR)	S15	S15	S15	S15	S15	S15	S15	S15	S15	S15	S15	(DISCO)
P16	B16	B16	B16	b (MONITOR)	S16	S16	S16	S16	S16	S16	S16	S16	S16	S16	S16	(THEATER)
P17	B17	B17	B17	c (MONITOR)	S17	S17	S17	S17	S17	S17	S17	S17	S17	S17	S17	(SIMULATED)
P18	B18	B18	B18	e (MONITOR)	S18	S18	S18	S18	S18	S18	S18	S18	S18	S18	S18	(THEATER)
P19	B19	B19	B19	MONO	S19	S19	S19	S19	S19	S19	S19	S19	S19	S19	S19	(DOLBY SUR)
P20	B20	B20	B20	STEREO	S20	S20	S20	S20	S20	S20	S20	S20	S20	S20	S20	(HALL)
P21	B21	B21	B21	HIGH	S21	S21	S21	S21	S21	S21	S21	S21	S21	S21	S21	(ACOUSTIC)
P22	B22	B22	B22	AM	S22	S22	S22	S22	S22	S22	S22	S22	S22	S22	S22	-
P23	B23	B23	B23	FM	S23	S23	S23	S23	S23	S23	S23	S23	S23	S23	S23	-
P24	S2	TONE DEFEAT	-	S1	S24	S24	S24	S24	S24	S24	S24	S24	S24	S24	S24	-
P25	-	-	-	MONITOR EDIT a VIDEO	-	-	-	-	-	-	-	-	-	-	-	DOLBY SUR HALL THEATER DISC LIVE SIMULATED ACOUSTIC

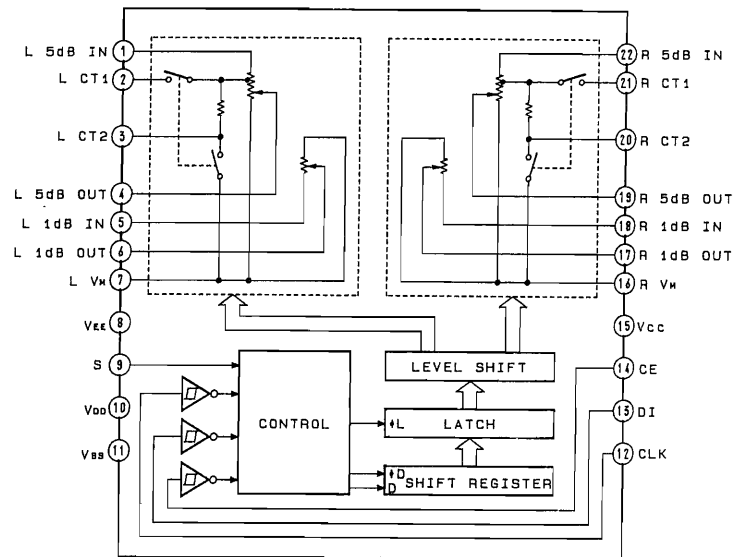
## 4-7. IC BLOCK DIAGRAMS

## ● Main Section IC Block Diagrams.

IC503 LC7822

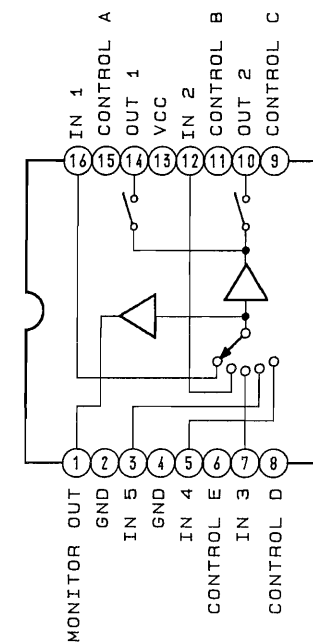


IC803 LC7535

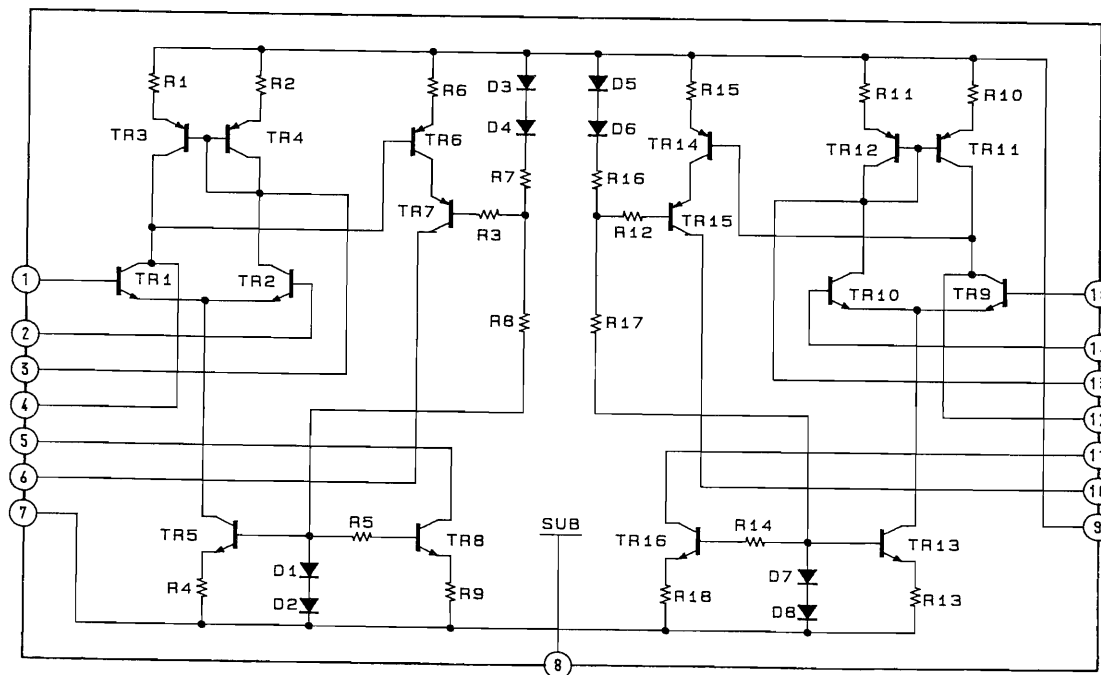


## ● Video Section IC Block Diagrams.

IC251 BA7625

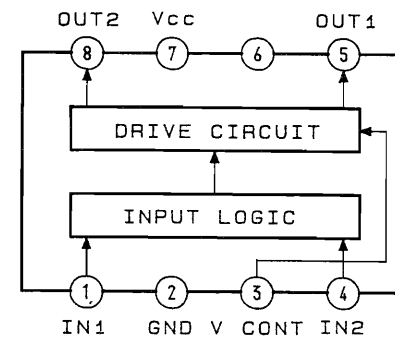


IC701 STK3102MK3



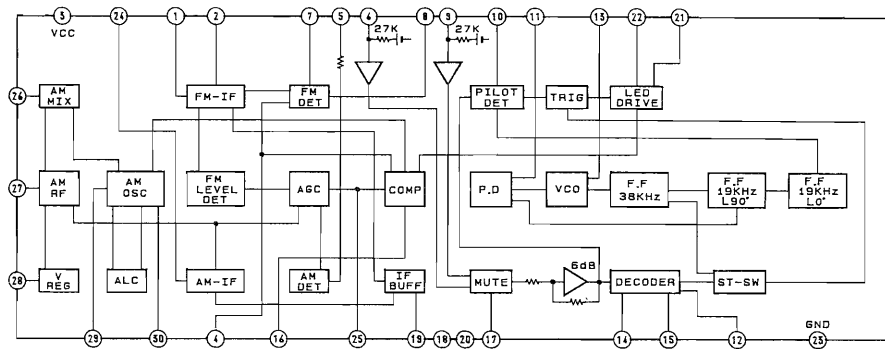
## ● Vol Section IC Block Diagrams.

IC201 LB1639

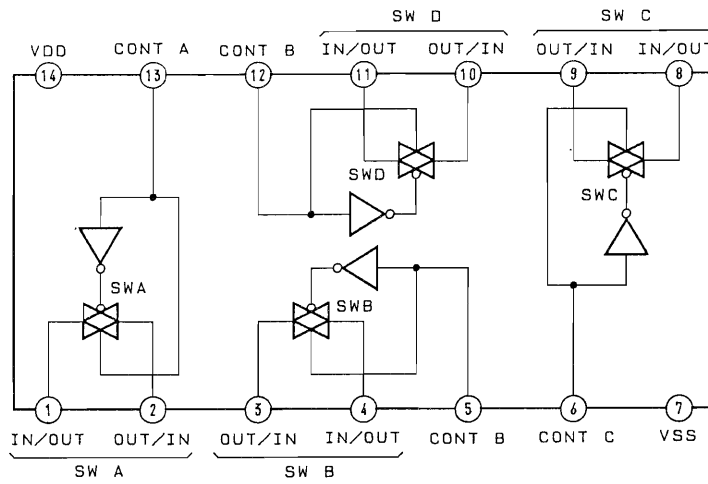


• Surr Tuner Section IC Block Diagrams.

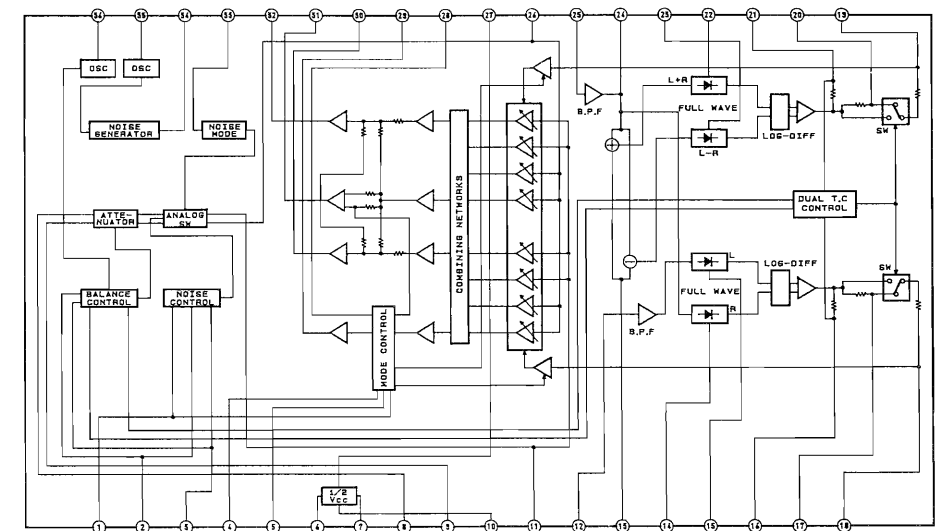
IC21 LA1851N



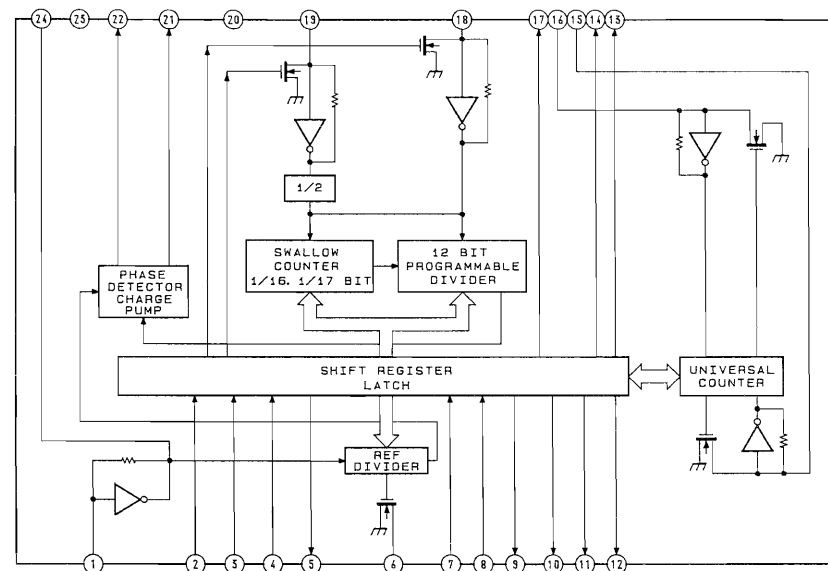
IC303, 304, 308 LC4966



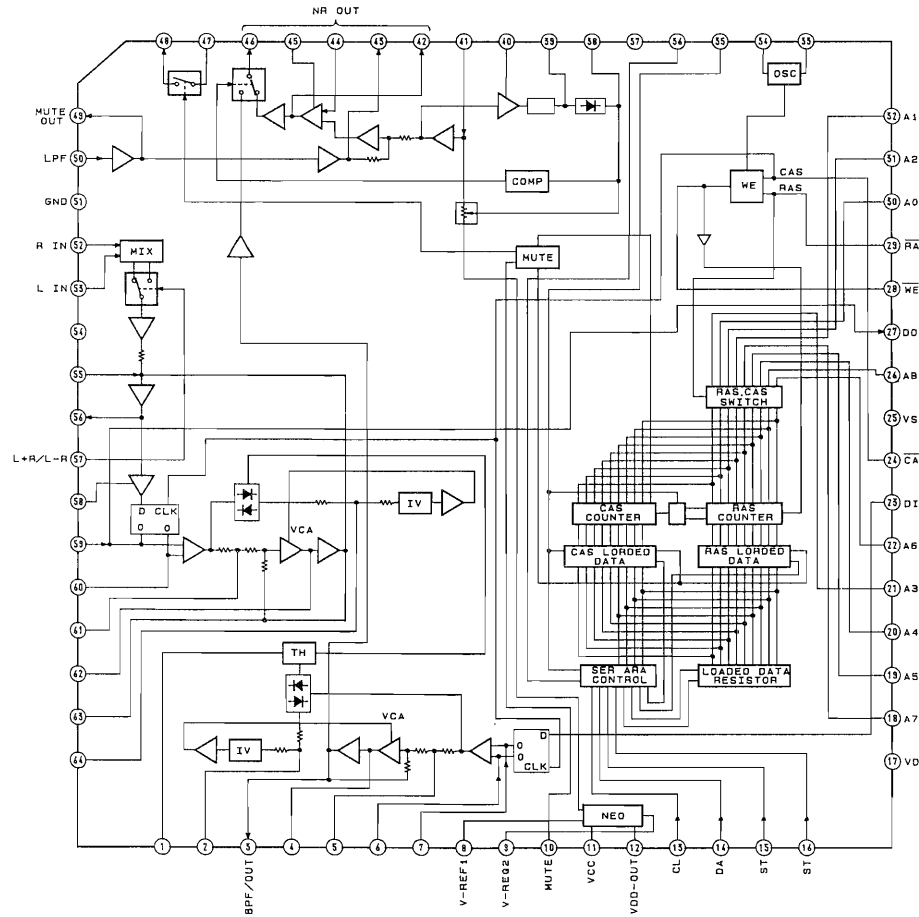
IC306 LA2780



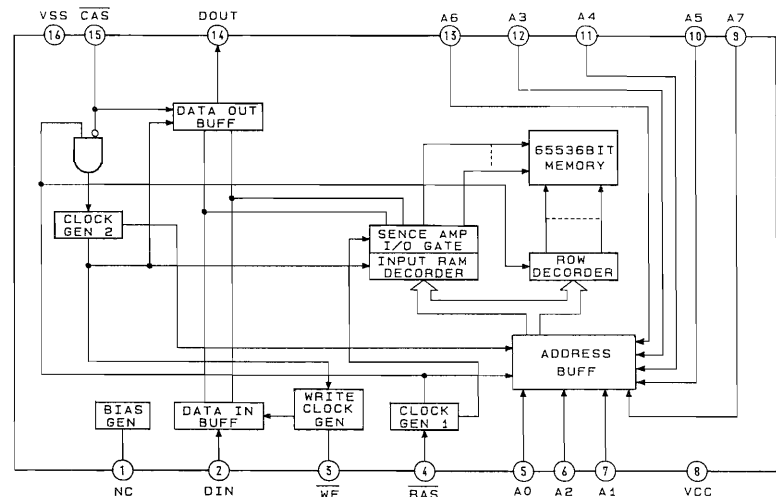
IC81 LC7218



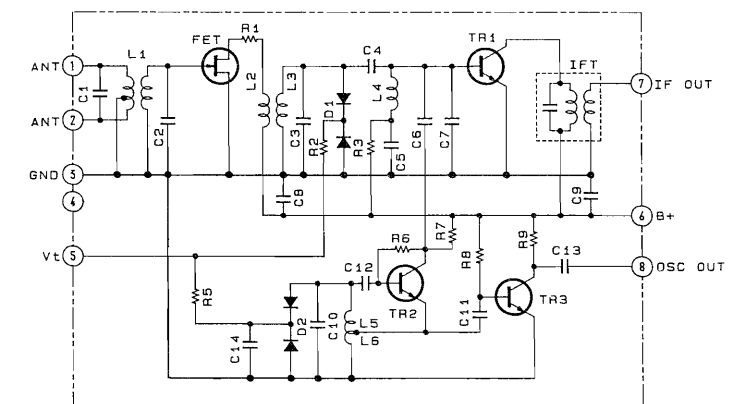
IC305 LV1001M



IC301 LM3364K-15

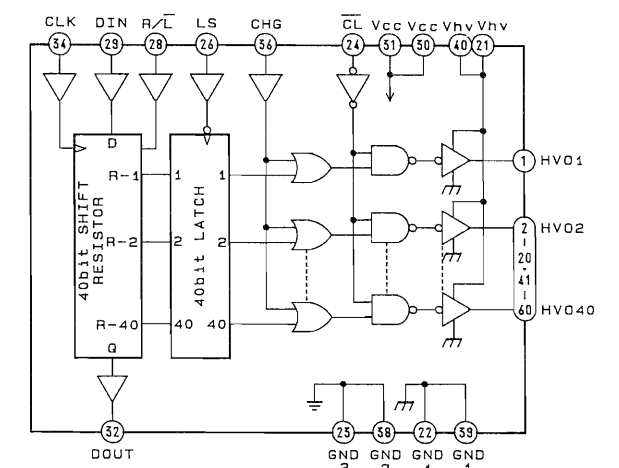


FE1 FRONT-END



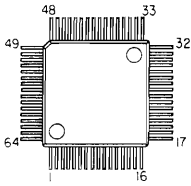
• Display Section IC Block Diagrams

IC101 MSC7162

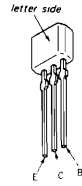


4-8. SEMICONDCUTOR LEAD LAYOUTS

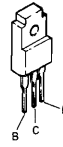
LV1001M



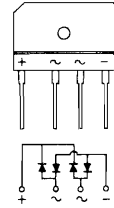
DTA124ES  
2SA1175-HFE  
2SC26690Y  
2SC2785-FEK  
2SC3113-AB  
2SC3623A-LK



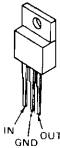
2SA1684-LK  
2SC4431-LK



RBA-402  
RBV-602-01



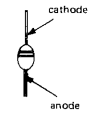
M5F78M05L  
M5F78M12L



2SC1845-EA



RD4.7ESB2



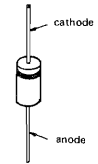
DTC124ES  
2SC2603-EF



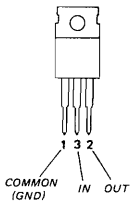
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2SD2012



1N4148M



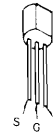
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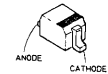
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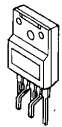
2SK246-GR3  
2SK246-Y



1SS355



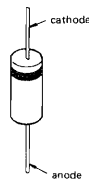
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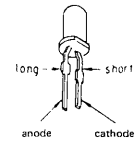
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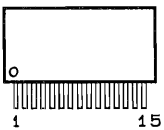
HZ4ALL  
UZP-3.6B



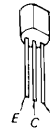
SEL2210S-CD



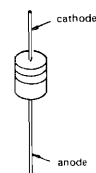
STK3102N-MK3



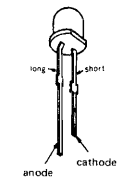
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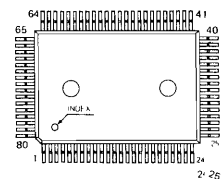
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HZS6C3L  
HZS30-3L  
RD2.7ESB2  
11ES2



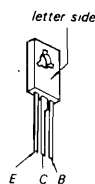
SEL2810A-C



μPD75517GF-110-3B9



2SA1407-D



## SECTION 5 EXPLODED VIEWS

## NOTE:

- -XX,-X mean standardized parts, so they may have some difference from the original one.

- Color indication of Appearance Parts.

Example:



KNOB,BALANCE (WHITE) . . . (RED)


↑                   ↑  
Parts           Cabinet's  
Color           Color

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The mechanical parts with no reference number in the exploded views are not supplied.

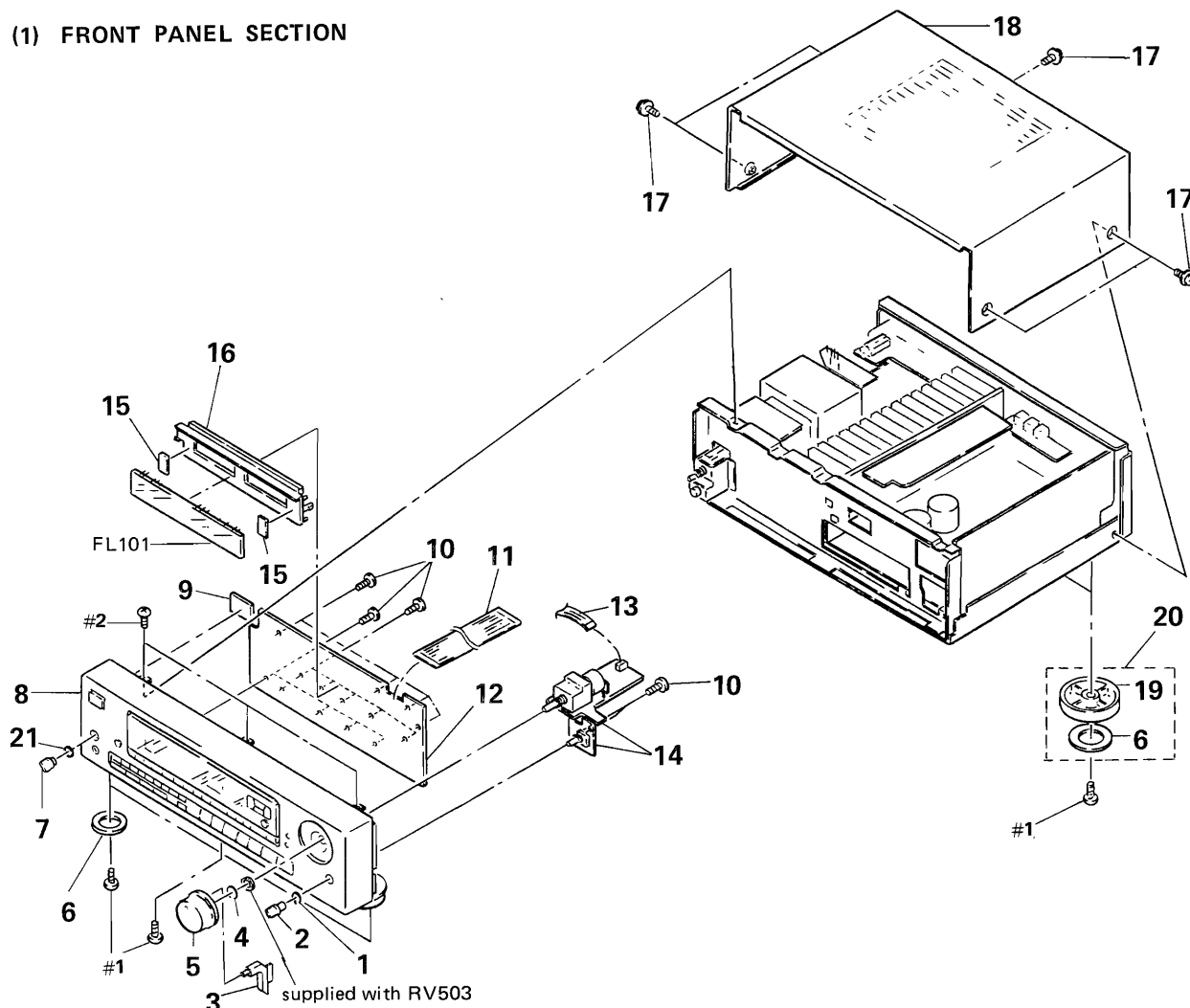
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

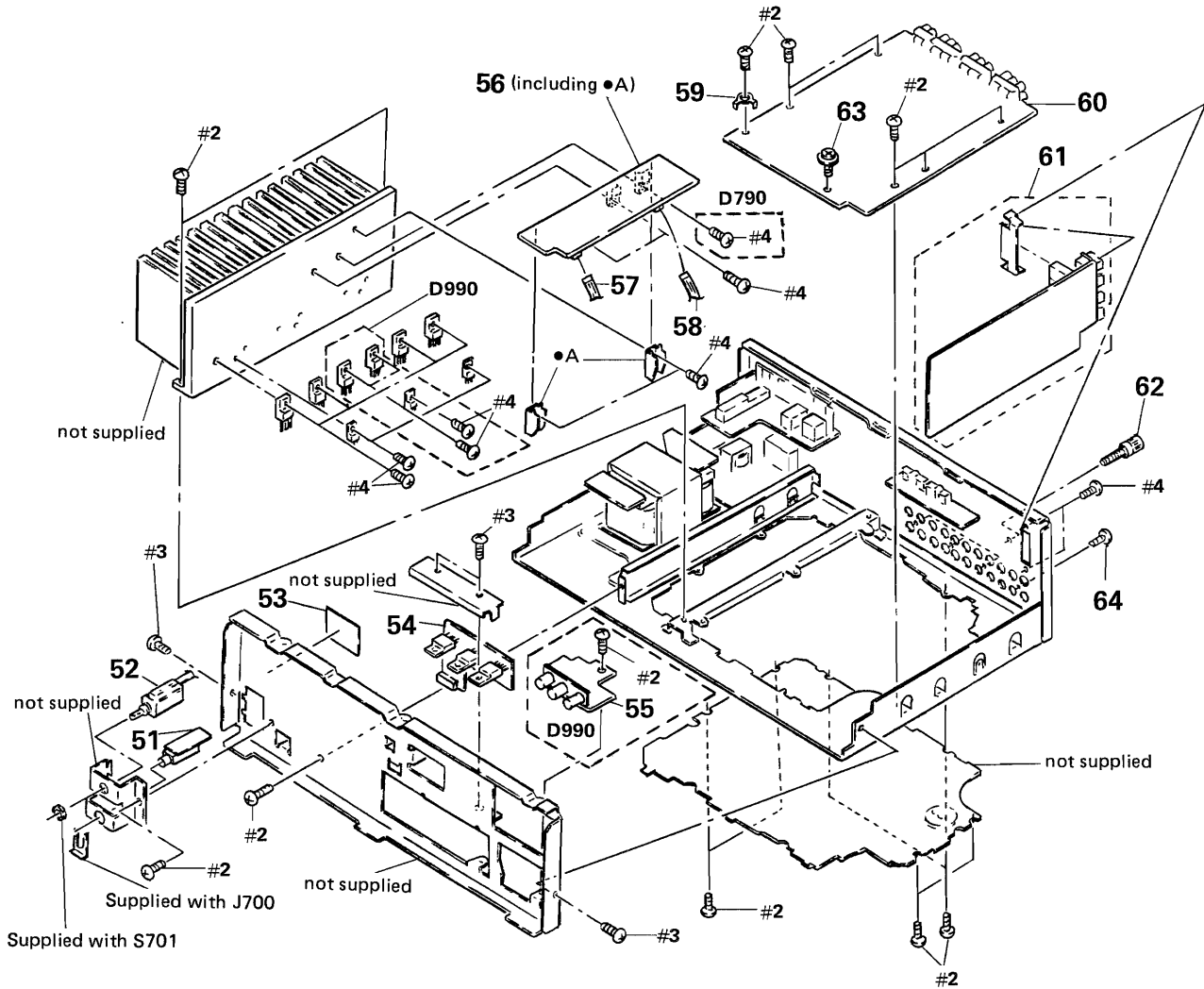
## (1) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	3-356-957-11	SPRING	
2	4-925-014-11	KNOB (DIA. 10)	
3	4-943-092-01	PLATE (VOL.), LIGHT GUIDE	
4	3-350-426-01	SPRING, RING	
5	4-943-091-01	KNOB (VOL)	
6	4-923-836-11	CUSHION	
7	4-908-097-21	KNOB	
8	A-4325-683-A	PANEL ASSY, FRONT (D790:US, Canadian)	
8	A-4325-684-A	PANEL ASSY, FRONT (UK)	
8	A-4325-690-A	PANEL ASSY, FRONT (D990)	
* 9	1-644-102-11	POW SW BOARD	
10	4-951-620-01	SCREW, +BVTP (2. 6X8)	
11	1-690-091-11	WIRE, FLAT TYPE (21 CORE)	

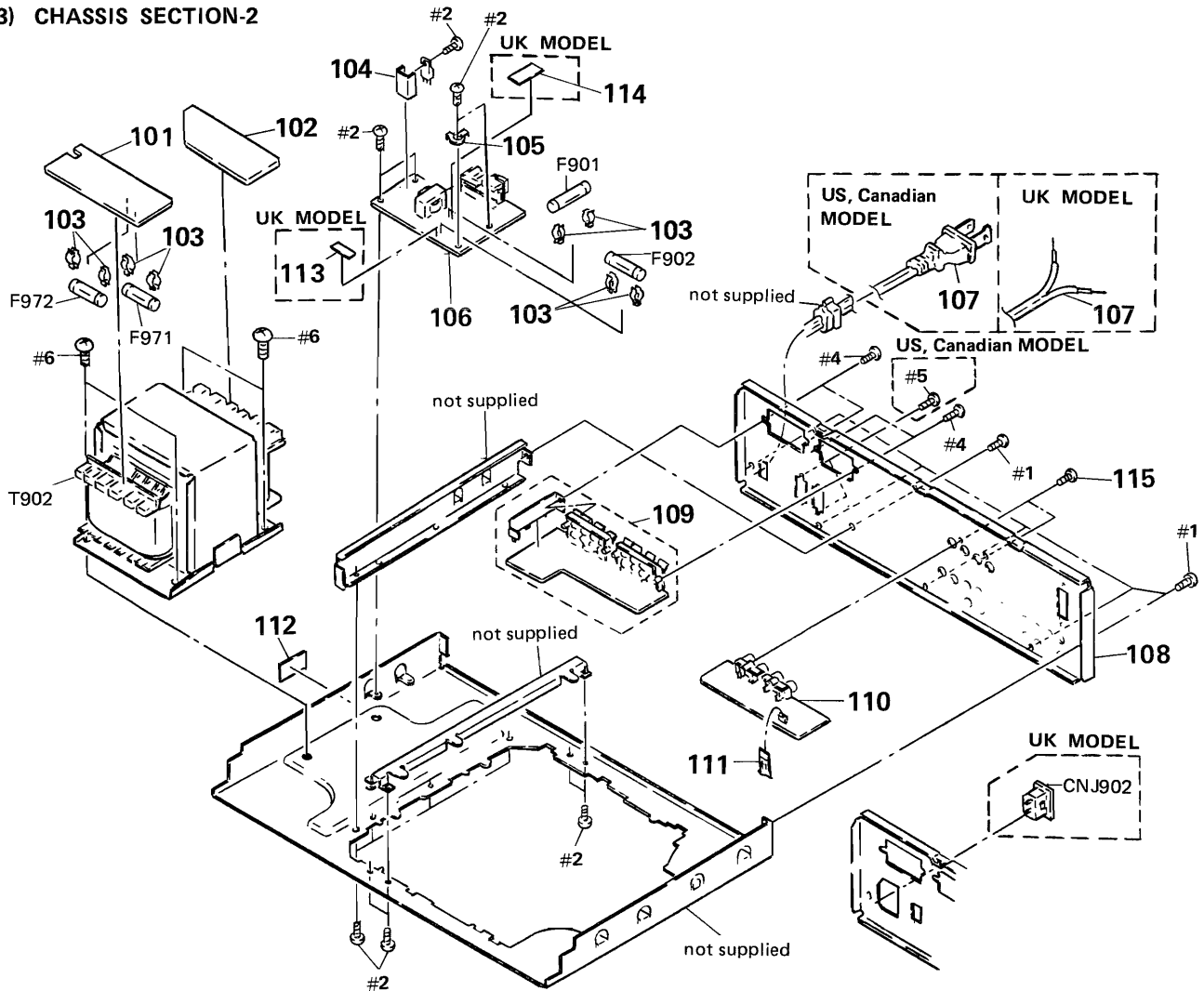
Ref. No.	Part No.	Description	Remark
* 12	A-4347-779-A	DISPLAY BOARD, COMPLETE (D790:US, Canadian)	
* 12	A-4347-780-A	DISPLAY BOARD, COMPLETE (UK)	
* 12	A-4347-806-A	DISPLAY BOARD, COMPLETE (D990)	
13	1-575-730-11	WIRE, FLAT TYPE (5 CORE)	
* 14	1-644-107-11	VOL BOARD	
* 15	4-921-941-01	CUSHION (FL)	
* 16	4-952-115-01	HOLDER (FL)	
17	3-704-366-01	SCREW (CASE) (M3X8)	
18	4-931-031-11	CASE	
19	3-318-688-51	FOOT (F58175S)	
20	X-4941-291-1	FOOT ASSY (F58175S)	
21	4-948-477-01	SPRING (8. 3), RING	
FL101	1-519-742-11	INDICATOR TUBE, FLUORESCENT	

## (2) CHASSIS SECTION-1



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 51	1-644-103-11	H/P BOARD		* 60	A-4347-764-A	MAIN BOARD, COMPLETE (D790)	
52	1-572-291-31	SWITCH, ROTARY SLIDE		* 60	A-4347-801-A	MAIN BOARD, COMPLETE (D990)	
* 53	3-703-044-26	LABEL, CAUTION		* 61	A-4347-767-A	SURR. BOARD, COMPLETE (UK)	
* 54	1-644-099-11	REG BOARD		* 61	A-4347-805-A	SURR. BOARD, COMPLETE (US, Canadian)	
* 55	1-644-104-11	VIDEO 3 BOARD (D990)					
* 56	A-4347-782-A	SURR. AMP BOARD, COMPLETE (D790)		62	4-947-010-01	SCREW, FEEDER FIXED	
* 56	A-4347-813-A	SURR. AMP BOARD, COMPLETE (D990)		63	2-383-566-00	SCREW (3X8)	
* 57	1-575-851-11	WIRE, FLAT TYPE (7 CORE)		64	4-909-982-01	SCREW, TAPPING	
58	1-575-730-11	WIRE, FLAT TYPE (5 CORE)					
* 59	4-942-204-01	PLATE, GROUND					

(3) CHASSIS SECTION-2



Ref. No.	Part No.	Description	Remark
* 101	1-644-096-11	P. T BOARD (US, Canadian)	
* 101	1-644-098-11	P. T BOARD (UK)	
* 102	1-644-110-11	PT PRIMARY BOARD	
103	1-533-217-31	HOLDER, FUSE	
* 104	3-309-144-21	HEAT SINK	
* 105	4-942-204-01	PLATE, GROUND	
* 106	A-4347-788-A	POWER BOARD, COMPLETE (UK)	
* 106	A-4347-811-A	POWER BOARD, COMPLETE (US, Canadian)	
△107	1-575-652-11	CORD, POWER (D790:UK)	
△107	1-690-609-11	CORD, POWER (US, Canadian)	
* 108	4-952-099-01	PANEL, BACK (D990:US)	
* 108	4-952-099-11	PANEL, BACK (D990:Canadian)	
* 108	4-952-099-21	PANEL, BACK (D790:US)	
* 108	4-952-099-31	PANEL, BACK (D790:Canadian)	
* 108	4-952-099-41	PANEL, BACK (D790:UK)	
* 109	1-644-109-11	SP. TM BOARD	
* 110	1-644-097-11	VIDEO BOARD	
111	1-575-730-11	WIRE, FLAT TYPE (5 CORE)	

Ref. No.	Part No.	Description	Remark
* 112	3-703-044-26	LABEL, CAUTION	
* 113	3-701-947-16	LABEL (3.15A), FUSE (UK)	
* 114	3-701-948-17	LABEL (T2A), FUSE (UK)	
115	4-909-982-01	SCREW, TAPPING	
△CNJ902	1-526-751-00	OUTLET, AC (UK)	
△F901	1-532-203-00	FUSE, TIME LAG 2A 250V (D790:UK)	
△F901	1-576-107-11	FUSE 3.15A 125V (US, Canadian)	
△F902	1-532-237-00	FUSE, TIME LAG 3.15A 250V (D790:UK)	
△F902	1-532-748-11	FUSE, GLASS TUBE 6.3A 125V (US, Canadian)	
△F971	1-532-237-00	FUSE, TIME LAG 3.15A 250V (D790:UK)	
△F971	1-576-107-11	FUSE (US, Canadian)	
△F972	1-532-237-00	FUSE, TIME LAG 3.15A 250V (D790:UK)	
△F972	1-576-107-11	FUSE (US, Canadian)	
△T902	1-450-884-11	TRANSFORMER, POWER (D790:UK)	
△T902	1-450-885-11	TRANSFORMER, POWER (D790:US, Canadian)	
△T902	1-450-886-11	TRANSFORMER, POWER (D990)	

<p>The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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**DISPLAY****POW SW**

## SECTION 6

### ELECTRICAL PARTS LIST

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA ..:  $\mu$ A.. uPA..:  $\mu$ PA..  
uPB..:  $\mu$ PB.. uPC..:  $\mu$ PC.. uPD..:  $\mu$ PD..
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4347-779-A	DISPLAY BOARD, COMPLETE (D790:US, Canadian)		D111	8-719-988-62	DIODE 1SS355 (UK)	
*	A-4347-780-A	DISPLAY BOARD, COMPLETE (UK)		D112	8-719-988-62	DIODE 1SS355 (UK)	
*	A-4347-806-A	DISPLAY BOARD, COMPLETE (D990)		D113	8-719-988-62	DIODE 1SS355 (UK)	
		*****		D121	8-719-988-62	DIODE 1SS355	
				D122	8-719-988-62	DIODE 1SS355	
*	1-644-102-11	POW SW BOARD *****		D123	8-719-988-62	DIODE 1SS355	
*	4-921-941-01	CUSHION (FL)		D124	8-719-988-62	DIODE 1SS355	
*	4-952-115-01	HOLDER (FL)		D125	8-719-988-62	DIODE 1SS355	
		< CAPACITOR >		D126	8-719-988-62	DIODE 1SS355	
C101	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V		D127	8-719-988-62	DIODE 1SS355	
C102	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V		D131	8-719-988-62	DIODE 1SS355 (D990)	
C103	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V		D133	8-719-988-62	DIODE 1SS355	
C104	1-124-910-11	ELECT 47uF 20% 50V		D134	8-719-988-62	DIODE 1SS355	
C105	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V		D135	8-719-988-62	DIODE 1SS355 (UK)	
C106	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V		D136	8-719-988-62	DIODE 1SS355	
C107	1-126-096-11	ELECT 10uF 20% 35V		D137	8-719-988-62	DIODE 1SS355	
C108	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V		D138	8-719-988-62	DIODE 1SS355 (UK)	
C109	1-126-096-11	ELECT 10uF 20% 35V				< INDICATOR TUBE >	
C110	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V		FL101	1-519-742-11	INDICATOR TUBE, FLUORESCENT	
C111	1-163-125-00	CERAMIC CHIP 22P 5% 50V				< IC >	
		< CONNECTOR >		IC101	8-759-512-46	IC MSC7162	
* CNJ101	1-568-864-11	SOCKET, CONNECTOR 21P		IC102	8-749-920-83	IC GP1U52XB	
* CNJ102	1-565-480-11	CONNECTOR, BOARD TO BOARD 4P		IC103	8-759-921-32	IC SN74HC237AN	
* CNP102	1-565-295-11	PLUG, CONNECTOR 4P		IC104	8-759-916-48	IC SN74HC151AN	
		< DIODE >				< JUMPER RESISTOR >	
D101	8-719-014-25	DIODE UZP-3.6B		JR100	1-216-295-00	METAL CHIP 0 5% 1/10W (UK)	
D102	8-719-988-62	DIODE 1SS355		JR101	1-216-295-00	METAL CHIP 0 5% 1/10W (UK)	
D105	8-719-301-52	LED SEL2810A-C(MONITOR)		JR102	1-216-295-00	METAL CHIP 0 5% 1/10W (UK)	
D106	8-719-301-52	LED SEL2810A-C(SURR)				< TRANSISTOR >	
D107	8-719-301-52	LED SEL2810A-C(TONE)		Q101	8-729-900-36	TRANSISTOR DTC124ES	
D108	8-719-301-52	LED SEL2810A-C(INDEX)		Q102	8-729-900-36	TRANSISTOR DTC124ES	
D109	8-719-301-52	LED SEL2810A-C(MUTING)		Q103	8-729-900-36	TRANSISTOR DTC124ES	
D110	8-719-301-37	LED SEL2210S-CD(UK)		Q104	8-729-900-36	TRANSISTOR DTC124ES	
				Q105	8-729-141-30	TRANSISTOR 2SC3623A-LK	
				Q107	8-729-119-76	TRANSISTOR 2SA1175-HFE (UK)	

# DISPLAY

# POW SW

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< RESISTOR >							
R101	1-216-298-00	METAL CHIP	2.2 5% 1/10W	S105	1-554-303-21	SWITCH, TACTILE (FM MODE)	
R102	1-216-298-00	METAL CHIP	2.2 5% 1/10W	S106	1-554-303-21	SWITCH, TACTILE (INDEX SELECT +)	
R103	1-216-069-00	METAL CHIP	6.8K 5% 1/10W	S107	1-554-303-21	SWITCH, TACTILE (INDEX SELECT -)	
R104	1-216-075-00	METAL CHIP	12K 5% 1/10W	S108	1-554-303-21	SWITCH, TACTILE (RESET TUNING +)	
R105	1-216-089-00	METAL CHIP	47K 5% 1/10W	S109	1-554-303-21	SWITCH, TACTILE (RESET TUNING -)	
R107	1-216-025-00	METAL CHIP	100 5% 1/10W	S110	1-554-303-21	SWITCH, TACTILE (ON/OFF)	
R108	1-216-025-00	METAL CHIP	100 5% 1/10W	S111	1-554-303-21	SWITCH, TACTILE (LINK ON/OFF)	
R109	1-216-105-00	METAL CHIP	220K 5% 1/10W	S112	1-554-303-21	SWITCH, TACTILE (DIRECT)	
R111	1-216-065-00	METAL CHIP	4.7K 5% 1/10W	S113	1-554-303-21	SWITCH, TACTILE (MUTING)	
R112	1-216-035-00	METAL CHIP	270 5% 1/10W	S114	1-554-303-21	SWITCH, TACTILE (△)	
R113	1-216-035-00	METAL CHIP	270 5% 1/10W	S115	1-554-303-21	SWITCH, TACTILE (▽)	
R114	1-216-035-00	METAL CHIP	270 5% 1/10W	S116	1-554-303-21	SWITCH, TACTILE (3)	
R115	1-216-035-00	METAL CHIP	270 5% 1/10W	S117	1-554-303-21	SWITCH, TACTILE (6)	
R116	1-216-041-00	METAL CHIP	470 5% 1/10W	S118	1-554-303-21	SWITCH, TACTILE (9)	
R120	1-216-049-00	METAL CHIP	1K 5% 1/10W	S119	1-554-303-21	SWITCH, TACTILE (SHIFT)	
R121	1-216-037-00	METAL CHIP	330 5% 1/10W	S120	1-554-303-21	SWITCH, TACTILE (DBFB)	
R122	1-216-037-00	METAL CHIP	330 5% 1/10W	S121	1-554-303-21	SWITCH, TACTILE (▷)	
R123	1-216-037-00	METAL CHIP	330 5% 1/10W	S122	1-554-303-21	SWITCH, TACTILE (◁)	
R124	1-216-037-00	METAL CHIP	330 5% 1/10W	S123	1-554-303-21	SWITCH, TACTILE (2)	
R125	1-216-037-00	METAL CHIP	330 5% 1/10W	S124	1-554-303-21	SWITCH, TACTILE (5)	
R126	1-216-037-00	METAL CHIP	330 5% 1/10W	S125	1-554-303-21	SWITCH, TACTILE (8)	
R127	1-216-037-00	METAL CHIP	330 5% 1/10W	S126	1-554-303-21	SWITCH, TACTILE (0)	
R128	1-216-037-00	METAL CHIP	330 5% 1/10W	S127	1-554-303-21	SWITCH, TACTILE (DISCO)	
R131	1-216-081-00	METAL CHIP	22K 5% 1/10W	S128	1-554-303-21	SWITCH, TACTILE (TONE ON/DEFEAT)	
R132	1-216-081-00	METAL CHIP	22K 5% 1/10W	S129	1-554-303-21	SWITCH, TACTILE (HALL)	
R133	1-216-081-00	METAL CHIP	22K 5% 1/10W	S130	1-554-303-21	SWITCH, TACTILE (CURSOR MODE)	
R134	1-216-081-00	METAL CHIP	22K 5% 1/10W	S131	1-554-303-21	SWITCH, TACTILE (1)	
R135	1-216-081-00	METAL CHIP	22K 5% 1/10W	S132	1-554-303-21	SWITCH, TACTILE (4)	
R136	1-216-081-00	METAL CHIP	22K 5% 1/10W	S133	1-554-303-21	SWITCH, TACTILE (7)	
R137	1-216-081-00	METAL CHIP	22K 5% 1/10W	S134	1-554-303-21	SWITCH, TACTILE (MEMORY)	
R138	1-216-081-00	METAL CHIP	22K 5% 1/10W	S135	1-554-303-21	SWITCH, TACTILE (SIMULATED)	
R139	1-216-089-00	METAL CHIP	47K 5% 1/10W	S136	1-554-303-21	SWITCH, TACTILE (THEATER)	
R140	1-216-089-00	METAL CHIP	47K 5% 1/10W	S137	1-554-303-21	SWITCH, TACTILE (SOUND FIELD LIVE)	
R141	1-216-089-00	METAL CHIP	47K 5% 1/10W	S138	1-554-303-21	SWITCH, TACTILE (PHONO)	
R142	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	S139	1-554-303-21	SWITCH, TACTILE (TUNER)	
R143	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	S140	1-554-303-21	SWITCH, TACTILE (CD)	
R144	1-216-081-00	METAL CHIP	22K 5% 1/10W	S141	1-554-303-21	SWITCH, TACTILE (DAT)	
R145	1-216-073-00	METAL CHIP	10K 5% 1/10W	S142	1-554-303-21	SWITCH, TACTILE (ACOUSTIC)	
R146	1-216-089-00	METAL CHIP	47K 5% 1/10W	S143	1-554-303-21	SWITCH, TACTILE (DOLBY)	
R147	1-216-041-00	METAL CHIP	470 5% 1/10W (UK)	S144	1-554-303-21	SWITCH, TACTILE (PRO LOGIC MODE)	
R148	1-216-041-00	METAL CHIP	470 5% 1/10W (UK)	S145	1-554-303-21	SWITCH, TACTILE (VIDEO 1:D990)	
R149	1-216-073-00	METAL CHIP	10K 5% 1/10W (UK)	S146	1-554-303-21	SWITCH, TACTILE (VIDEO 1:D790, VIDEO2/LD:D990)	
< SWITCH >							
S101	1-554-303-21	SWITCH, TACTILE (POWER)		S147	1-554-303-21	SWITCH, TACTILE (VIDEO2/LD:D790, VIDEO3:D990)	
S102	1-554-303-21	SWITCH, TACTILE (TUNING FM/AM)		S148	1-554-303-21	SWITCH, TACTILE (TAPE 1)	
S103	1-554-303-21	SWITCH, TACTILE (FREQ/INDEX)		S149	1-554-303-21	SWITCH, TACTILE (TAPE 2)	
S104	1-554-303-21	SWITCH, TACTILE (TUNING LEVEL)		S150	1-554-303-21	SWITCH, TACTILE (EDIT VIDEO) (D990)	
				S151	1-554-303-21	SWITCH, TACTILE (EDIT AUDIO)	

**H/P**      **MAIN**

Ref. No.	Part No.	Description	Remark
*	1-644-103-11	H/P BOARD ***** < CONNECTOR >	
* CNJ55	1-564-506-11	PLUG, CONNECTOR 3P < JACK >	
J700	1-568-515-21	JACK (LARGE TYPE) (HEADPHONES)	
*****			
*	A-4347-764-A	MAIN BOARD, COMPLETE (D790)	
*	A-4347-801-A	MAIN BOARD, COMPLETE (D990) *****	
*	4-942-204-01	PLATE, GROUND < CAPACITOR >	
C201	1-164-097-11	CERAMIC      0.022uF      50V	
C202	1-124-477-11	ELECT      47uF      20%      25V	
C203	1-164-097-11	CERAMIC      0.022uF      50V	
C204	1-124-903-11	ELECT      1uF      20%      50V	
C205	1-164-097-11	CERAMIC      0.022uF      50V	
C206	1-125-486-11	DOUBLE LAYERS      0.22F      5.5V	
C207	1-164-097-11	CERAMIC      0.022uF      50V	
C208	1-124-925-11	ELECT      2.2uF      20%      100V	
C209	1-164-097-11	CERAMIC      0.022uF      50V	
C210	1-124-907-11	ELECT      10uF      20%      50V	
C211	1-164-097-11	CERAMIC      0.022uF      50V	
C214	1-162-286-31	CERAMIC      220PF      10%      50V	
C215	1-162-286-31	CERAMIC      220PF      10%      50V	
C220	1-162-282-31	CERAMIC      100PF      10%      50V	
C501	1-162-282-31	CERAMIC      100PF      10%      50V	
C502	1-124-927-11	ELECT      4.7uF      20%      100V	
C503	1-162-282-31	CERAMIC      100PF      10%      50V	
C504	1-124-477-11	ELECT      47uF      20%      25V	
C505	1-130-480-00	MYLAR      0.0056uF      5%      50V	
C506	1-130-473-00	MYLAR      0.0015uF      5%      50V	
C507	1-124-903-11	ELECT      1uF      20%      50V	
C508	1-124-477-11	ELECT      47uF      20%      25V	
C510	1-124-927-11	ELECT      4.7uF      20%      100V	
C530	1-162-294-31	CERAMIC      0.001uF      10%      50V	
C532	1-124-927-11	ELECT      4.7uF      20%      100V	
C540	1-124-907-11	ELECT      10uF      20%      50V	
C541	1-124-464-11	ELECT      0.22uF      20%      50V	
C551	1-162-282-31	CERAMIC      100PF      10%      50V	
C552	1-124-927-11	ELECT      4.7uF      20%      100V	
C553	1-162-282-31	CERAMIC      100PF      10%      50V	

Ref. No.	Part No.	Description	Remark
C554	1-124-477-11	ELECT      47uF      20%      25V	
C555	1-130-480-00	MYLAR      0.0056uF      5%      50V	
C556	1-130-473-00	MYLAR      0.0015uF      5%      50V	
C557	1-124-903-11	ELECT      1uF      20%      50V	
C558	1-124-477-11	ELECT      47uF      20%      25V	
C560	1-124-927-11	ELECT      4.7uF      20%      100V	
C651	1-124-927-11	ELECT      4.7uF      20%      100V(D990)	
C652	1-162-288-31	CERAMIC      330PF      10%      50V (D990)	
C654	1-162-292-31	CERAMIC      680PF      10%      50V (D990)	
C655	1-161-959-00	CERAMIC      22PF      10%      500V(D990)	
C656	1-102-230-00	CERAMIC      4PF      0.25PF      500V(D990)	
C657	1-124-443-00	ELECT      100uF      20%      10V (D990)	
C658	1-124-910-11	ELECT      47uF      20%      50V (D990)	
C659	1-161-959-00	CERAMIC      22PF      10%      500V(D990)	
C660	1-102-233-00	CERAMIC      33PF      10%      500V(D990)	
C661	1-102-233-00	CERAMIC      33PF      10%      500V(D990)	
C662	1-136-165-00	FILM      0.1uF      5%      50V (D990)	
C663	1-130-491-00	MYLAR      0.047uF      5%      50V (D990)	
C664	1-130-491-00	MYLAR      0.047uF      5%      50V (D990)	
C667	1-136-165-00	FILM      0.1uF      5%      50V (D990)	
C701	1-124-927-11	ELECT      4.7uF      20%      100V	
C702	1-162-288-31	CERAMIC      330PF      10%      50V	
C703	1-102-989-00	CERAMIC      68PF      5%      500V	
C704	1-102-316-00	CERAMIC      15PF      5%      500V	
C705	1-124-929-11	ELECT      22uF      20%      100V	
C706	1-124-443-00	ELECT      100uF      20%      10V	
C707	1-102-230-00	CERAMIC      4PF      0.25PF      500V	
C708	1-124-910-11	ELECT      47uF      20%      50V	
C709	1-102-233-00	CERAMIC      33PF      10%      500V	
C710	1-102-233-00	CERAMIC      33PF      10%      500V	
C711	1-136-165-00	FILM      0.1uF      5%      50V	
C712	1-136-165-00	FILM      0.1uF      5%      50V	
C713	1-130-491-00	MYLAR      0.047uF      5%      50V	
C714	1-130-491-00	MYLAR      0.047uF      5%      50V	
C721	1-136-165-00	FILM      0.1uF      5%      50V	
C722	1-124-471-00	ELECT      1000uF      20%      6.3V	
C751	1-124-927-11	ELECT      4.7uF      20%      100V	
C752	1-162-288-31	CERAMIC      330PF      10%      50V	
C753	1-102-989-00	CERAMIC      68PF      5%      500V	
C754	1-102-316-00	CERAMIC      15PF      5%      500V	
C755	1-124-929-11	ELECT      22uF      20%      100V	
C756	1-124-443-00	ELECT      100uF      20%      10V	
C757	1-102-230-00	CERAMIC      4PF      0.25PF      500V	
C758	1-124-910-11	ELECT      47uF      20%      50V	
C759	1-102-233-00	CERAMIC      33PF      10%      500V	
C760	1-102-233-00	CERAMIC      33PF      10%      500V	
C761	1-136-165-00	FILM      0.1uF      5%      50V	
C762	1-136-165-00	FILM      0.1uF      5%      50V	
C763	1-130-491-00	MYLAR      0.047uF      5%      50V	

Ref. No.	Part No.	Description	Remark		
C764	1-130-491-00	MYLAR	0.047uF	5%	50V
C801	1-124-907-11	ELECT	10uF	20%	50V
C802	1-162-282-31	CERAMIC	100PF	10%	50V
C803	1-124-907-11	ELECT	10uF	20%	50V
C804	1-124-907-11	ELECT	10uF	20%	50V
C805	1-124-925-11	ELECT	2.2uF	20%	100V
C806	1-124-927-11	ELECT	4.7uF	20%	100V
C807	1-124-927-11	ELECT	4.7uF	20%	100V
C808	1-124-927-11	ELECT	4.7uF	20%	100V
C809	1-124-927-11	ELECT	4.7uF	20%	100V
C851	1-124-907-11	ELECT	10uF	20%	50V
C852	1-162-282-31	CERAMIC	100PF	10%	50V
C853	1-124-907-11	ELECT	10uF	20%	50V
C854	1-124-907-11	ELECT	10uF	20%	50V
C855	1-124-925-11	ELECT	2.2uF	20%	100V
C856	1-124-927-11	ELECT	4.7uF	20%	100V
C857	1-124-927-11	ELECT	4.7uF	20%	100V
C858	1-124-927-11	ELECT	4.7uF	20%	100V
C859	1-124-927-11	ELECT	4.7uF	20%	100V
C971	1-125-729-11	ELECT	10000uF	20%	63V (D990)
C971	1-125-743-11	ELECT	8200uF	20%	63V (D790)
C972	1-125-729-11	ELECT	10000uF	20%	63V (D990)
C972	1-125-743-11	ELECT	8200uF	20%	63V (D790)
C973	1-164-097-11	CERAMIC	0.022uF		50V
C974	1-164-097-11	CERAMIC	0.022uF		50V
C975	1-124-618-11	ELECT	2200uF	20%	35V
C976	1-126-105-11	ELECT	1000uF	20%	35V
C979	1-124-484-11	ELECT	220uF	20%	35V
C980	1-126-105-11	ELECT	1000uF	20%	35V
C981	1-124-480-11	ELECT	470uF	20%	25V
C982	1-124-907-11	ELECT	10uF	20%	50V
C983	1-124-907-11	ELECT	10uF	20%	50V
< VIBRATOR >					
CF201	1-577-101-11	VIBRATOR, CERAMIC			
< CONNECTOR >					
CNJ502	1-691-887-11	JACK, PIN 6P (PHONO, CD, DAT REC OUT)			
CNJ503	1-580-825-11	JACK, PIN 6P (DAT IN, TAPE1 IN/REC OUT)			
CNJ504	1-580-825-11	JACK, PIN 6P (VIDEO1 AUDIO IN/OUT, VIDEO2 LD AUDIO IN)			
* CNJ505	1-573-028-11	JACK, PIN 4P (TAPE2 IN/REC OUT)			
* CNJ903	1-573-495-11	PLUG, CONNECTOR 6P			

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
* CNP22	1-560-531-00	PIN, CONNECTOR 5P	
* CNP54	1-564-507-11	PLUG, CONNECTOR 4P	
* CNP802	1-568-826-11	SOCKET, CONNECTOR 7P	
* CNP803	1-564-505-11	PLUG, CONNECTOR 2P (D990)	
* CNP804	1-568-824-11	SOCKET, CONNECTOR 5P	
* CNS12	1-564-506-11	PLUG, CONNECTOR 3P	
* CNS14	1-564-506-11	PLUG, CONNECTOR 3P	
* CNS57	1-564-506-11	PLUG, CONNECTOR 3P	
* CNS58	1-564-506-11	PLUG, CONNECTOR 3P	
* CNS101	1-568-864-11	SOCKET, CONNECTOR 21P	
* CNS201	1-568-824-11	SOCKET, CONNECTOR 5P	
* CNS206	1-568-824-11	SOCKET, CONNECTOR 5P	
* CNS301	1-573-192-11	CONNECTOR, BOARD TO BOARD 13P	
* CNS303	1-569-755-11	CONNECTOR, BOARD TO BOARD 6P	
CNS304	1-569-667-11	CONNECTOR, BOARD TO BOARD 8P	
* CNS305	1-573-192-11	CONNECTOR, BOARD TO BOARD 13P	
< DIODE >			
D202	8-719-987-63	DIODE 1N4148M	
D203	8-719-987-63	DIODE 1N4148M	
D204	8-719-987-63	DIODE 1N4148M	
D205	8-719-987-63	DIODE 1N4148M	
D540	8-719-987-63	DIODE 1N4148M	
D541	8-719-987-63	DIODE 1N4148M	
D542	8-719-987-63	DIODE 1N4148M	
D651	8-719-987-63	DIODE 1N4148M (D990)	
D652	8-719-987-63	DIODE 1N4148M (D990)	
D653	8-719-987-63	DIODE 1N4148M (D990)	
D654	8-719-933-36	DIODE HZS6B1L (D990)	
D655	8-719-987-63	DIODE 1N4148M (D990)	
D656	8-719-109-60	DIODE RD2.7ESB2 (D990)	
D657	8-719-109-60	DIODE RD2.7ESB2 (D990)	
D658	8-719-987-63	DIODE 1N4148M (D990)	
D703	8-719-987-63	DIODE 1N4148M	
D704	8-719-987-63	DIODE 1N4148M	
D705	8-719-987-63	DIODE 1N4148M	
D706	8-719-987-63	DIODE 1N4148M	
D707	8-719-987-63	DIODE 1N4148M	
D708	8-719-987-63	DIODE 1N4148M	
D709	8-719-109-60	DIODE RD2.7ESB2	
D710	8-719-109-60	DIODE RD2.7ESB2	
D711	8-719-987-63	DIODE 1N4148M	
D753	8-719-987-63	DIODE 1N4148M	
D754	8-719-987-63	DIODE 1N4148M	
D758	8-719-987-63	DIODE 1N4148M	
D759	8-719-109-60	DIODE RD2.7ESB2	
D760	8-719-109-60	DIODE RD2.7ESB2	

## MAIN

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
< RESISTOR >											
R203	1-249-405-11	CARBON	100	5%	1/4W	R512	1-249-417-11	CARBON	1K	5%	1/4W
R204	1-249-437-11	CARBON	47K	5%	1/4W	R513	1-249-417-11	CARBON	1K	5%	1/4W
R205	1-249-437-11	CARBON	47K	5%	1/4W	R514	1-249-417-11	CARBON	1K	5%	1/4W
R206	1-249-429-11	CARBON	10K	5%	1/4W	R515	1-249-417-11	CARBON	1K	5%	1/4W
R207	1-249-429-11	CARBON	10K	5%	1/4W	R516	1-249-417-11	CARBON	1K	5%	1/4W
R208	1-249-429-11	CARBON	10K	5%	1/4W	R517	1-249-417-11	CARBON	1K	5%	1/4W
R209	1-249-425-11	CARBON	4.7K	5%	1/4W	R518	1-249-417-11	CARBON	1K	5%	1/4W
R210	1-249-437-11	CARBON	47K	5%	1/4W	R519	1-249-437-11	CARBON	47K	5%	1/4W
R211	1-249-421-11	CARBON	2.2K	5%	1/4W	R530	1-249-425-11	CARBON	4.7K	5%	1/4W
R212	1-249-437-11	CARBON	47K	5%	1/4W	R532	1-249-405-11	CARBON	100	5%	1/4W
R213	1-249-423-11	CARBON	3.3K	5%	1/4W	R533	1-249-421-11	CARBON	2.2K	5%	1/4W
R214	1-249-429-11	CARBON	10K	5%	1/4W	R540	1-249-429-11	CARBON	10K	5%	1/4W
R215	1-249-429-11	CARBON	10K	5%	1/4W	R541	1-247-903-00	CARBON	1M	5%	1/4W
R216	1-249-429-11	CARBON	10K	5%	1/4W	R542	1-249-433-11	CARBON	22K	5%	1/4W
R217	1-249-429-11	CARBON	10K	5%	1/4W	R543	1-249-433-11	CARBON	22K	5%	1/4W
R218	1-249-429-11	CARBON	10K	5%	1/4W	R544	1-249-415-11	CARBON	680	5%	1/4W
R219	1-249-429-11	CARBON	10K	5%	1/4W	R546	1-249-437-11	CARBON	47K	5%	1/4W
R220	1-249-429-11	CARBON	10K	5%	1/4W	R547	1-249-437-11	CARBON	47K	5%	1/4W
R221	1-249-429-11	CARBON	10K	5%	1/4W	R548	1-249-437-11	CARBON	47K	5%	1/4W
R222	1-249-429-11	CARBON	10K	5%	1/4W	R551	1-249-411-11	CARBON	330	5%	1/4W
R223	1-249-421-11	CARBON	2.2K	5%	1/4W	R552	1-249-441-11	CARBON	100K	5%	1/4W
R225	1-249-421-11	CARBON	2.2K	5%	1/4W	R553	1-249-441-11	CARBON	100K	5%	1/4W
R226	1-249-421-11	CARBON	2.2K	5%	1/4W	R554	1-249-416-11	CARBON	820	5%	1/4W
R227	1-249-421-11	CARBON	2.2K	5%	1/4W	R555	1-247-897-11	CARBON	560K	5%	1/4W
R228	1-249-429-11	CARBON	10K	5%	1/4W	R556	1-249-437-11	CARBON	47K	5%	1/4W
R229	1-249-429-11	CARBON	10K	5%	1/4W	R557	1-249-441-11	CARBON	100K	5%	1/4W
R230	1-249-421-11	CARBON	2.2K	5%	1/4W	R558	1-249-409-11	CARBON	220	5%	1/4W
R231	1-249-421-11	CARBON	2.2K	5%	1/4W	R559	1-249-417-11	CARBON	1K	5%	1/4W
R232	1-249-421-11	CARBON	2.2K	5%	1/4W	R560	1-249-417-11	CARBON	1K	5%	1/4W
R233	1-249-421-11	CARBON	2.2K	5%	1/4W	R561	1-249-417-11	CARBON	1K	5%	1/4W
R244	1-249-437-11	CARBON	47K	5%	1/4W	R562	1-249-417-11	CARBON	1K	5%	1/4W
R245	1-249-437-11	CARBON	47K	5%	1/4W	R563	1-249-417-11	CARBON	1K	5%	1/4W
R246	1-249-437-11	CARBON	47K	5%	1/4W	R564	1-249-417-11	CARBON	1K	5%	1/4W
R247	1-249-437-11	CARBON	47K	5%	1/4W	R565	1-249-417-11	CARBON	1K	5%	1/4W
R248	1-249-437-11	CARBON	47K	5%	1/4W	R566	1-249-417-11	CARBON	1K	5%	1/4W
R249	1-249-421-11	CARBON	2.2K	5%	1/4W	R567	1-249-417-11	CARBON	1K	5%	1/4W
R501	1-249-411-11	CARBON	330	5%	1/4W	R568	1-249-417-11	CARBON	1K	5%	1/4W
R502	1-249-441-11	CARBON	100K	5%	1/4W	R569	1-249-437-11	CARBON	47K	5%	1/4W
R503	1-249-441-11	CARBON	100K	5%	1/4W	R582	1-249-405-11	CARBON	100	5%	1/4W
R504	1-249-416-11	CARBON	820	5%	1/4W	R596	1-249-437-11	CARBON	47K	5%	1/4W
R505	1-247-897-11	CARBON	560K	5%	1/4W	R597	1-249-437-11	CARBON	47K	5%	1/4W
R506	1-249-437-11	CARBON	47K	5%	1/4W	R598	1-249-437-11	CARBON	47K	5%	1/4W
R507	1-249-441-11	CARBON	100K	5%	1/4W	R644	1-241-891-00	CARBON	330K	5%	1/4W
R508	1-249-409-11	CARBON	220	5%	1/4W	R651	1-249-438-11	CARBON	56K	5%	1/4W (D990)
R509	1-249-417-11	CARBON	1K	5%	1/4W	R652	1-249-421-11	CARBON	2.2K	5%	1/4W (D990)
R510	1-249-417-11	CARBON	1K	5%	1/4W	R653	1-249-417-11	CARBON	1K	5%	1/4W (D990)
R511	1-249-417-11	CARBON	1K	5%	1/4W	△R654	1-249-409-11	CARBON	220	5%	1/4W (D990)

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
D761	8-719-987-63	DIODE 1N4148M		Q581	8-729-141-30	TRANSISTOR 2SC3623A-LK	
D801	8-719-987-63	DIODE 1N4148M		Q605	8-729-141-46	TRANSISTOR 2SC4431-LK (D990)	
D802	8-719-987-63	DIODE 1N4148M		Q651	8-729-119-79	TRANSISTOR 2SC2785-FEK (D990)	
D803	8-719-987-63	DIODE 1N4148M		Q652	8-729-140-82	TRANSISTOR 2SA988-PAFAEA (D990)	
D805	8-719-109-81	DIODE RD4. 7ESB2		Q653	8-729-119-79	TRANSISTOR 2SC2785-FEK (D990)	
D806	8-719-987-63	DIODE 1N4148M		Q654	8-729-802-71	TRANSISTOR 2SA1407-D (D990)	
D814	8-719-987-63	DIODE 1N4148M		Q655	8-729-209-15	TRANSISTOR 2SD2012 (D990)	
D815	8-719-987-63	DIODE 1N4148M		Q656	8-729-104-18	TRANSISTOR 2SC3514-Q (D990)	
D851	8-719-987-63	DIODE 1N4148M		Q658	8-729-321-21	TRANSISTOR 2SC4387-OY	
D852	8-719-987-63	DIODE 1N4148M		Q659	8-729-141-37	TRANSISTOR 2SA1684-LK (D990)	
D853	8-719-987-63	DIODE 1N4148M		Q660	8-729-321-24	TRANSISTOR 2SA1672-OY	
D855	8-719-109-81	DIODE RD4. 7ESB2		Q661	8-729-140-82	TRANSISTOR 2SA988-PAFAEA (D990)	
D856	8-719-987-63	DIODE 1N4148M		Q662	8-729-140-82	TRANSISTOR 2SA988-PAFAEA (D990)	
D910	8-719-987-63	DIODE 1N4148M		Q663	8-729-620-18	TRANSISTOR 2SA979-FG (D990)	
D911	8-719-987-63	DIODE 1N4148M		Q701	8-729-209-15	TRANSISTOR 2SD2012	
D974	8-719-934-23	DIODE HZS30-3L		Q703	8-729-141-46	TRANSISTOR 2SC4431-LK	
D978	8-719-200-82	DIODE 11ES2		Q704	8-729-141-37	TRANSISTOR 2SA1684-LK	
D979	8-719-200-82	DIODE 11ES2		Q705	8-729-321-13	TRANSISTOR 2SC4388-0 (D990)	
D980	8-719-200-82	DIODE 11ES2		Q705	8-729-321-21	TRANSISTOR 2SC4387-OY (D790)	
D981	8-719-200-82	DIODE 11ES2		Q706	8-729-321-18	TRANSISTOR 2SA1673-OY (D990)	
		< IC >		Q706	8-729-321-24	TRANSISTOR 2SA1672-OY (D790)	
IC202	8-759-071-90	IC uPD75517GF-110-3B9		Q707	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
IC501	8-759-634-51	IC M5218AP		Q708	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
IC502	8-759-805-14	IC LC7822		Q719	8-729-119-79	TRANSISTOR 2SC2785-FEK	
IC503	8-759-805-14	IC LC7822		Q721	8-729-184-53	TRANSISTOR 2SC1845-EA	
IC701	8-749-921-87	IC STK3102N-MK3		Q722	8-729-119-79	TRANSISTOR 2SC2785-FEK	
IC801	8-759-634-50	IC M5218AL		Q723	8-729-119-79	TRANSISTOR 2SC2785-FEK	
IC802	8-759-634-51	IC M5218AP		Q751	8-729-209-15	TRANSISTOR 2SD2012	
IC803	8-759-820-11	IC LC7535		Q753	8-729-141-46	TRANSISTOR 2SC4431-LK	
IC804	8-759-634-50	IC M5218AL		Q754	8-729-141-37	TRANSISTOR 2SA1684-LK	
		< COIL >		Q755	8-729-321-13	TRANSISTOR 2SC4388-0 (D990)	
L201	1-410-521-11	INDUCTOR 100uH		Q755	8-729-321-21	TRANSISTOR 2SC4387-OY (D790)	
* L651	1-420-872-00	COIL, AIR CORE (D990)		Q756	8-729-321-18	TRANSISTOR 2SA1673-OY (D990)	
* L701	1-420-872-00	COIL, AIR CORE		Q756	8-729-321-24	TRANSISTOR 2SA1672-OY (D790)	
* L751	1-420-872-00	COIL, AIR CORE		Q757	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
		< TRANSISTOR >		Q758	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q201	8-729-900-63	TRANSISTOR DTA124ES		Q801	8-729-900-36	TRANSISTOR DTC124ES	
Q202	8-729-119-79	TRANSISTOR 2SC2785-FEK		Q850	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q203	8-729-900-36	TRANSISTOR DTC124ES		Q851	8-729-900-36	TRANSISTOR DTC124ES	
Q210	8-729-900-63	TRANSISTOR DTA124ES		Q890	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q211	8-729-900-63	TRANSISTOR DTA124ES		Q971	8-729-140-96	TRANSISTOR 2SD774-34	
Q212	8-729-900-63	TRANSISTOR DTA124ES					
Q213	8-729-900-63	TRANSISTOR DTA124ES					
Q214	8-729-900-63	TRANSISTOR DTA124ES					
Q531	8-729-141-30	TRANSISTOR 2SC3623A-LK					
Q532	8-729-900-36	TRANSISTOR DTC124ES					

**MAIN**

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R656	1-249-429-11	CARBON	10K	5%	1/4W (D990)	R726	1-249-429-11	CARBON	10K	5%	1/4W
R657	1-249-429-11	CARBON	10K	5%	1/4W (D990)	R727	1-249-437-11	CARBON	47K	5%	1/4W
R658	1-249-411-11	CARBON	330	5%	1/4W (D990)	R728	1-249-436-11	CARBON	39K	5%	1/4W
△R659	1-249-409-11	CARBON	220	5%	1/4W (D990)	R729	1-249-434-11	CARBON	27K	5%	1/4W
R660	1-249-433-11	CARBON	22K	5%	1/4W (D990)	R730	1-249-433-11	CARBON	22K	5%	1/4W
R661	1-249-438-11	CARBON	56K	5%	1/4W (D990)	R731	1-249-437-11	CARBON	47K	5%	1/4W
R662	1-249-414-11	CARBON	560	5%	1/4W (D990)	R751	1-249-417-11	CARBON	1K	5%	1/4W
R663	1-249-417-11	CARBON	1K	5%	1/4W (D990)	R752	1-249-438-11	CARBON	56K	5%	1/4W
△R664	1-249-393-11	CARBON	10	5%	1/4W (D990)	R753	1-249-413-11	CARBON	470	5%	1/4W
△R665	1-249-393-11	CARBON	10	5%	1/4W (D990)	R754	1-249-401-11	CARBON	47	5%	1/4W
△R666	1-249-409-11	CARBON	220	5%	1/4W (D990)	R755	1-249-410-11	CARBON	270	5%	1/4W
R667	1-249-413-11	CARBON	470	5%	1/4W (D990)	R756	1-249-438-11	CARBON	56K	5%	1/4W
△R668	1-249-393-11	CARBON	10	5%	1/4W (D990)	R757	1-249-417-11	CARBON	1K	5%	1/4W
△R669	1-249-397-11	CARBON	22	5%	1/4W (D990)	R758	1-249-411-11	CARBON	330	5%	1/4W
△R670	1-249-393-11	CARBON	10	5%	1/4W (D990)	△R759	1-249-393-11	CARBON	10	5%	1/4W
R671	1-249-421-11	CARBON	2. 2K	5%	1/4W (D990)	△R760	1-249-393-11	CARBON	10	5%	1/4W
R672	1-214-789-00	RES, METAL PLATE	0. 1		(D990)	△R761	1-249-409-11	CARBON	220	5%	1/4W
R673	1-214-789-00	RES, METAL PLATE	0. 1		(D990)	△R763	1-249-393-11	CARBON	10	5%	1/4W
R674	1-249-421-11	CARBON	2. 2K	5%	1/4W (D990)	△R764	1-249-393-11	CARBON	10	5%	1/4W
R675	1-249-431-11	CARBON	15K	5%	1/4W (D990)	R765	1-214-789-00	RES, METAL PLATE	0. 1		
R676	1-249-431-11	CARBON	15K	5%	1/4W (D990)	R766	1-214-789-00	RES, METAL PLATE	0. 1		
R677	1-260-072-11	CARBON	4. 7	5%	1/2W (D990)	R767	1-249-421-11	CARBON	2. 2K	5%	1/4W
R678	1-249-433-11	CARBON	22K	5%	1/4W (D990)	R768	1-249-431-11	CARBON	15K	5%	1/4W
R679	1-260-076-11	CARBON	10	5%	1/2W (D990)	R769	1-249-421-11	CARBON	2. 2K	5%	1/4W
R680	1-249-426-11	CARBON	5. 6K	5%	1/4W (D990)	R770	1-249-431-11	CARBON	15K	5%	1/4W
△R681	1-249-397-11	CARBON	22	5%	1/4W (D990)	R771	1-260-072-11	CARBON	4. 7	5%	1/2W
R701	1-249-417-11	CARBON	1K	5%	1/4W	R772	1-260-076-11	CARBON	10	5%	1/2W
R702	1-249-438-11	CARBON	56K	5%	1/4W	R801	1-249-441-11	CARBON	100K	5%	1/4W
R703	1-249-413-11	CARBON	470	5%	1/4W	R802	1-249-431-11	CARBON	15K	5%	1/4W
△R704	1-249-401-11	CARBON	47	5%	1/4W	R803	1-247-885-00	CARBON	180K	5%	1/4W
R705	1-249-410-11	CARBON	270	5%	1/4W	R804	1-249-429-11	CARBON	10K	5%	1/4W
R706	1-249-438-11	CARBON	56K	5%	1/4W	R805	1-249-429-11	CARBON	10K	5%	1/4W
R707	1-249-417-11	CARBON	1K	5%	1/4W	R806	1-249-441-11	CARBON	100K	5%	1/4W
R708	1-249-411-11	CARBON	330	5%	1/4W	R807	1-249-441-11	CARBON	100K	5%	1/4W
△R709	1-249-393-11	CARBON	10	5%	1/4W	R808	1-249-441-11	CARBON	100K	5%	1/4W
△R710	1-249-393-11	CARBON	10	5%	1/4W	R809	1-247-887-00	CARBON	220K	5%	1/4W
△R711	1-249-409-11	CARBON	220	5%	1/4W	R810	1-249-429-11	CARBON	10K	5%	1/4W
△R713	1-249-393-11	CARBON	10	5%	1/4W	R811	1-247-887-00	CARBON	220K	5%	1/4W
△R714	1-249-393-11	CARBON	10	5%	1/4W	R812	1-249-435-11	CARBON	33K	5%	1/4W
R715	1-214-789-00	RES, METAL PLATE	0. 1			R813	1-249-425-11	CARBON	4. 7K	5%	1/4W
R716	1-214-789-00	RES, METAL PLATE	0. 1			R814	1-249-425-11	CARBON	4. 7K	5%	1/4W
R717	1-249-421-11	CARBON	2. 2K	5%	1/4W	R851	1-249-441-11	CARBON	100K	5%	1/4W
R718	1-249-431-11	CARBON	15K	5%	1/4W	R852	1-249-431-11	CARBON	15K	5%	1/4W
R719	1-249-421-11	CARBON	2. 2K	5%	1/4W	R853	1-247-885-00	CARBON	180K	5%	1/4W
R720	1-249-431-11	CARBON	15K	5%	1/4W	R854	1-249-429-11	CARBON	10K	5%	1/4W
R721	1-260-072-11	CARBON	4. 7	5%	1/2W	R855	1-249-429-11	CARBON	10K	5%	1/4W
R722	1-260-076-11	CARBON	10	5%	1/2W	R856	1-249-441-11	CARBON	100K	5%	1/4W
R725	1-249-417-11	CARBON	1K	5%	1/4W						

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MAIN

POWER

Ref. No.	Part No.	Description	Remark		
R857	1-249-441-11	CARBON	100K	5%	1/4W
R858	1-249-441-11	CARBON	100K	5%	1/4W
R859	1-247-887-00	CARBON	220K	5%	1/4W
R860	1-249-429-11	CARBON	10K	5%	1/4W
R861	1-247-887-00	CARBON	220K	5%	1/4W
R862	1-249-435-11	CARBON	33K	5%	1/4W
R863	1-249-421-11	CARBON	2.2K	5%	1/4W(D790)
R863	1-249-425-11	CARBON	4.7K	5%	1/4W(D990)
R910	1-249-425-11	CARBON	4.7K	5%	1/4W
R911	1-249-425-11	CARBON	4.7K	5%	1/4W
△R971	1-215-906-11	METAL OXIDE	15	5%	3W F
△R972	1-216-472-00	METAL OXIDE	39	5%	3W F
△R975	1-249-409-11	CARBON	220	5%	1/4W
R976	1-249-426-11	CARBON	5.6K	5%	1/4W
< RELAY >					
RY541	1-515-726-11	RELAY			
RY701	1-515-765-11	RELAY			
*****					
*	A-4347-788-A	POWER BOARD, COMPLETE (UK)			
*	A-4347-811-A	POWER BOARD, COMPLETE (US,Canadian)			
*****					
	1-533-217-31	HOLDER, FUSE			
*	3-309-144-21	HEAT SINK			
*	4-942-204-01	PLATE, GROUND			
< PIN, CONNECTOR >					
* BP901	1-564-321-00	PIN, CONNECTOR 2P (UK)			
* BP902	1-564-321-00	PIN, CONNECTOR 2P			
* BP903	1-564-321-00	PIN, CONNECTOR 2P			
< CAPACITOR >					
△C901	1-161-744-00	CERAMIC	0.01uF		400V
C951	1-164-097-11	CERAMIC	0.022uF		50V
C952	1-164-097-11	CERAMIC	0.022uF		50V
C953	1-124-557-11	ELECT	1000uF	20%	25V
C954	1-162-282-31	CERAMIC	100PF	10%	50V
C955	1-124-477-11	ELECT	47uF	20%	25V
C956	1-124-477-11	ELECT	47uF	20%	25V
C957	1-124-903-11	ELECT	1uF	20%	50V
C958	1-164-097-11	CERAMIC	0.022uF		50V
C959	1-124-464-11	ELECT	0.22uF	20%	50V
C960	1-161-494-00	CERAMIC	0.022uF		25V
< CONNECTOR >					
* CNJ601	1-564-510-11	PLUG, CONNECTOR 7P			
△CNJ901	1-540-060-11	OUTLET, AC (POLAR) (US,Canadian)			

Ref. No.	Part No.	Description	Remark		
△CNJ902	1-526-751-00	OUTLET, AC (UK)			
CNP902	1-564-507-11	PLUG, CONNECTOR 4P			
< DIODE >					
D951	8-719-200-82	DIODE	11ES2		
D952	8-719-200-82	DIODE	11ES2		
D953	8-719-200-82	DIODE	11ES2		
D954	8-719-200-82	DIODE	11ES2		
D955	8-719-987-63	DIODE	1N4148M		
D956	8-719-987-63	DIODE	1N4148M		
D957	8-719-933-41	DIODE	HZS6C3L		
D958	8-719-912-20	DIODE	1SS120		
D959	8-719-933-41	DIODE	HZS6C3L		
D960	8-719-914-11	DIODE	HZ4ALL		
D961	8-719-987-63	DIODE	1N4148M		
< TRANSISTOR >					
Q951	8-729-209-15	TRANSISTOR	2SD2012		
Q952	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q953	8-729-119-78	TRANSISTOR	2SC2785-HFE		
Q954	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q955	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q956	8-729-620-05	TRANSISTOR	2SC2603-EF		
< RESISTOR >					
△R901	1-202-725-00	SOLID	3.3M	10%	1/2W(US,Canadian)
R951	1-249-396-11	CARBON	18	5%	1/6W
R952	1-249-417-11	CARBON	1K	5%	1/4W
R953	1-249-437-11	CARBON	47K	5%	1/4W
R954	1-249-425-11	CARBON	4.7K	5%	1/4W
R955	1-249-433-11	CARBON	22K	5%	1/4W
R956	1-249-429-11	CARBON	10K	5%	1/4W
R957	1-249-417-11	CARBON	1K	5%	1/4W
R958	1-249-429-11	CARBON	10K	5%	1/4W
R959	1-249-429-11	CARBON	10K	5%	1/4W
R960	1-249-417-11	CARBON	1K	5%	1/4W
R961	1-249-417-11	CARBON	1K	5%	1/4W
R962	1-249-426-11	CARBON	5.6K	5%	1/4W
< RELAY >					
△RY901	1-515-617-11	RELAY (UK)			
△RY901	1-515-701-11	RELAY (US,Canadian)			
< TRANSFORMER >					
△T901	1-450-358-11	TRANSFORMER, POWER (UK)			
△T901	1-450-361-11	TRANSFORMER, POWER (US,Canadian)			

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**POWER**

**P.T**

**PT PRIMARY**

**REG**

**SP. TM**

**SURR TUNER**

Ref. No.	Part No.	Description	Remark
		< VARISTOR >	
△VZ901	1-807-180-31	VARISTOR SNR-14A471U (UK)	
△VZ901	1-807-293-31	VARISTOR SNR-14A221U (US, Canadian)	
*****			
*	1-644-096-11	P.T BOARD (US, Canadian)	
*	1-644-098-11	P.T BOARD (UK)	
		*****	
	1-533-217-31	HOLDER, FUSE	
		< CONNECTOR >	
*	CNP904	1-564-519-11 PLUG, CONNECTOR 4P	
*	CNS806	1-564-515-11 PLUG, CONNECTOR 12P	
*****			
*	1-644-110-11	PT PRIMARY BOARD	
		*****	
		< CONNECTOR >	
*	CNJ101	1-564-518-11 PLUG, CONNECTOR 3P	
*****			
*	1-644-099-11	REG BOARD	
		*****	
		< CAPACITOR >	
C984	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C985	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C986	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
		< CONNECTOR >	
*	CNP903	1-565-482-11 CONNECTOR, BOARD TO BOARD 6P	
		< IC >	
IC971	8-759-604-39	IC M5F78M12L	
IC972	8-759-604-45	IC M5F79M12L	
IC973	8-759-604-35	IC M5F78M05L	
*****			
*	1-644-109-11	SP. TM BOARD	
		*****	
		< CONNECTOR >	
*	CNJ54	1-564-508-11 PLUG, CONNECTOR 5P	
*	CNP55	1-564-506-11 PLUG, CONNECTOR 3P	

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D641	8-719-987-63	DIODE 1N4148M	
D642	8-719-987-63	DIODE 1N4148M	
D645	8-719-987-63	DIODE 1N4148M	
D646	8-719-987-63	DIODE 1N4148M	
		< TRANSISTOR >	
Q641	8-729-119-79	TRANSISTOR 2SC2785-FEK	
Q643	8-729-119-79	TRANSISTOR 2SC2785-FEK	
		< RESISTOR >	
R641	1-249-421-11	CARBON 2.2K 5% 1/4W	
R643	1-249-421-11	CARBON 2.2K 5% 1/4W	
△R723	1-216-431-11	METAL OXIDE 560 5% 1W F	
△R773	1-216-431-11	METAL OXIDE 560 5% 1W F	
		< RELAY >	
RY641	1-515-790-11	RELAY	
RY643	1-515-765-11	RELAY	
		< SWITCH >	
S701	1-572-322-11	SWITCH, SLIDE (SPEAKERS)	
		< TERMINAL >	
TM701	1-537-376-11	TERMINAL BOARD (SP) (FRONT)	
TM702	1-537-376-11	TERMINAL BOARD (SP) (CENTER, REAR)	
*****			
*	A-4347-767-A	SURR. BOARD, COMPLETE (UK)	
*	A-4347-805-A	SURR. BOARD, COMPLETE (US, Canadian)	
		*****	
		< CAPACITOR >	
C1	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C2	1-126-022-11	ELECT 47uF 20% 16V	
C3	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C4	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C5	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C6	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C9	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C21	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C22	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C23	1-126-022-11	ELECT 47uF 20% 16V	

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## SURR TUNER

Ref. No.	Part No.	Description	Remark		
C24	1-126-162-11	ELECT	3.3uF	20%	50V
C25	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C26	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C27	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C28	1-126-301-11	ELECT	1uF	20%	50V
C30	1-126-301-11	ELECT	1uF	20%	50V
C31	1-124-463-00	ELECT	0.1uF	20%	50V
C32	1-126-300-11	ELECT	0.47uF	20%	50V
C33	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V(UK)
C33	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V (US, Canadian)
C34	1-126-162-11	ELECT	3.3uF	20%	50V
C35	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V(UK)
C35	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V (US, Canadian)
C36	1-126-162-11	ELECT	3.3uF	20%	50V
C37	1-126-059-11	ELECT	10uF	20%	50V
C39	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C40	1-124-463-00	ELECT	0.1uF	20%	50V
C41	1-126-059-11	ELECT	10uF	20%	50V
C42	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C43	1-126-101-11	ELECT	100uF	20%	16V
C44	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C45	1-126-162-11	ELECT	3.3uF	20%	50V
C46	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C48	1-126-162-11	ELECT	3.3uF	20%	50V
C49	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C51	1-126-022-11	ELECT	47uF	20%	16V
C61	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C63	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C81	1-102-961-00	CERAMIC	27PF	5%	50V
C82	1-102-961-00	CERAMIC	27PF	5%	50V
C83	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C84	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C85	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C86	1-126-022-11	ELECT	47uF	20%	16V
C87	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C88	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C89	1-126-161-11	ELECT	2.2uF	20%	50V
C90	1-124-463-00	ELECT	0.1uF	20%	50V
C91	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C92	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C93	1-126-022-11	ELECT	47uF	20%	16V
C301	1-126-059-11	ELECT	10uF	20%	50V
C302	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C303	1-126-059-11	ELECT	10uF	20%	50V
C304	1-126-059-11	ELECT	10uF	20%	50V

Ref. No.	Part No.	Description	Remark		
C305	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C306	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C307	1-124-252-00	ELECT	0.33uF	20%	50V
C308	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C309	1-126-161-11	ELECT	2.2uF	20%	50V
C310	1-126-161-11	ELECT	2.2uF	20%	50V
C311	1-124-250-00	ELECT	0.15uF	20%	50V
C312	1-126-162-11	ELECT	3.3uF	20%	50V
C313	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C314	1-126-059-11	ELECT	10uF	20%	50V
C315	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C316	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C317	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C318	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C319	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C320	1-126-059-11	ELECT	10uF	20%	50V
C321	1-126-059-11	ELECT	10uF	20%	50V
C322	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C323	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C324	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C325	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C326	1-126-022-11	ELECT	47uF	20%	16V
C327	1-124-587-11	ELECT	220uF	20%	6.3V
C329	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C330	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C331	1-126-059-11	ELECT	10uF	20%	50V
C332	1-124-472-11	ELECT	470uF	20%	10V
C333	1-126-163-11	ELECT	4.7uF	20%	50V
C334	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C335	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C336	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C337	1-124-587-11	ELECT	220uF	20%	6.3V
C338	1-126-023-11	ELECT	100uF	20%	16V
C339	1-124-587-11	ELECT	220uF	20%	6.3V
C340	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C341	1-126-022-11	ELECT	47uF	20%	16V
C342	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C343	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C344	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C345	1-163-833-00	CERAMIC CHIP	0.068uF		25V
C346	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C347	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C348	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C349	1-124-768-11	ELECT	4.7uF	20%	50V
C350	1-126-023-11	ELECT	100uF	20%	16V
C351	1-126-059-11	ELECT	10uF	20%	50V
C352	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C353	1-126-059-11	ELECT	10uF	20%	50V
C354	1-126-059-11	ELECT	10uF	20%	50V

## SURR TUNER

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C355	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V	C452	1-163-109-00	CERAMIC CHIP	47PF 5% 50V
C356	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V	C453	1-164-505-11	CERAMIC CHIP	2.2uF 16V
C357	1-124-252-00	ELECT	0.33uF 20% 50V	C454	1-164-336-11	CERAMIC CHIP	0.33uF 25V
C358	1-163-007-11	CERAMIC CHIP	680PF 10% 50V	C455	1-163-989-11	CERAMIC CHIP	0.033uF 10% 25V
C359	1-126-161-11	ELECT	2.2uF 20% 50V	C456	1-126-163-11	ELECT	4.7uF 20% 50V
C360	1-126-161-11	ELECT	2.2uF 20% 50V	C457	1-163-103-00	CERAMIC CHIP	27PF 5% 50V
C361	1-124-250-00	ELECT	0.15uF 20% 50V	C458	1-126-022-11	ELECT	47uF 20% 16V
C362	1-126-162-11	ELECT	3.3uF 20% 50V	C459	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C363	1-164-005-11	CERAMIC CHIP	0.47uF 25V	C460	1-126-022-11	ELECT	47uF 20% 16V
C364	1-126-059-11	ELECT	10uF 20% 50V	C461	1-163-022-00	CERAMIC CHIP	0.012uF 10% 50V
C365	1-164-505-11	CERAMIC CHIP	2.2uF 16V	C462	1-163-833-00	CERAMIC CHIP	0.068uF 25V
C366	1-163-109-00	CERAMIC CHIP	47PF 5% 50V	C463	1-163-014-00	CERAMIC CHIP	0.0027uF 10% 50V
C367	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	C464	1-126-096-11	ELECT	10uF 20% 35V
C368	1-164-505-11	CERAMIC CHIP	2.2uF 16V	C465	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C382	1-126-301-11	ELECT	1uF 20% 50V	< FILTER >			
C383	1-126-163-11	ELECT	4.7uF 20% 50V	CF1	1-577-070-81	FILTER, CERAMIC	
C384	1-163-989-11	CERAMIC CHIP	0.033uF 10% 25V	CF2	1-577-070-81	FILTER, CERAMIC	
C385	1-163-018-00	CERAMIC CHIP	0.0056uF 5% 50V	CF21	1-577-075-11	OSCILLATOR, CERAMIC	
C386	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V	< COMPOSITION CIRCUIT BLOCK >			
C387	1-164-489-11	CERAMIC CHIP	0.22uF 10% 16V	CFT21	1-404-853-11	TRANSFORMER, IF (CERAMIC FILTER)	
C388	1-126-059-11	ELECT	10uF 20% 50V	< CONNECTOR >			
C389	1-163-006-11	CERAMIC CHIP	560PF 10% 50V	* CNB2	1-564-506-11	PLUG, CONNECTOR 3P	
C390	1-126-059-11	ELECT	10uF 20% 50V	* CNB3	1-564-506-11	PLUG, CONNECTOR 3P	
C391	1-126-059-11	ELECT	10uF 20% 50V	< CONNECTOR >			
C392	1-126-059-11	ELECT	10uF 20% 50V	* CNJ301	1-573-193-11	CONNECTOR, BOARD TO BOARD 13P	
C393	1-163-007-11	CERAMIC CHIP	680PF 10% 50V	* CNJ303	1-569-753-11	CONNECTOR, BOARD TO BOARD 6P	
C394	1-164-492-11	CERAMIC CHIP	0.15uF 10% 16V	CNJ304	1-569-670-11	CONNECTOR, BOARD TO BOARD 8P	
C395	1-163-121-00	CERAMIC CHIP	150PF 5% 50V	* CNJ305	1-573-193-11	CONNECTOR, BOARD TO BOARD 13P	
C396	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V	< DIODE >			
C397	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	D301	8-719-016-74	DIODE 1SS352	
C398	1-126-163-11	ELECT	4.7uF 20% 50V	D302	8-719-016-74	DIODE 1SS352	
C399	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V	< FRONTEND >			
C401	1-126-163-11	ELECT	4.7uF 20% 50V	FE1	1-465-006-11	FRONT END (FM) (2 GANG)	
C402	1-163-109-00	CERAMIC CHIP	47PF 5% 50V	FE61	1-236-461-11	ENCAPSULATED COMPONENT	
C403	1-164-505-11	CERAMIC CHIP	2.2uF 16V	< IC >			
C404	1-164-336-11	CERAMIC CHIP	0.33uF 25V	IC21	8-759-821-45	IC LA1851N	
C405	1-163-989-11	CERAMIC CHIP	0.033uF 10% 25V	IC81	8-759-820-91	IC LC7218	
C406	1-126-163-11	ELECT	4.7uF 20% 50V	IC301	8-759-821-13	IC LM3364K-15	
C407	1-163-103-00	CERAMIC CHIP	27PF 5% 50V	IC303	8-759-801-01	IC LC4966	
C408	1-126-022-11	ELECT	47uF 20% 16V	IC304	8-759-801-01	IC LC4966	
C409	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V				
C410	1-126-022-11	ELECT	47uF 20% 16V				
C411	1-163-022-00	CERAMIC CHIP	0.012uF 10% 50V				
C412	1-163-833-00	CERAMIC CHIP	0.068uF 25V				
C413	1-163-014-00	CERAMIC CHIP	0.0027uF 10% 50V				
C414	1-126-096-11	ELECT	10uF 20% 35V				
C415	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V				
C416	1-126-163-11	ELECT	4.7uF 20% 50V				
C451	1-126-163-11	ELECT	4.7uF 20% 50V				

## SURR TUNER

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
IC305	8-759-823-63	IC LV1001M		Q312	8-729-209-15	TRANSISTOR 2SD2012	
IC306	8-759-047-15	IC LA2780		Q313	8-729-900-36	TRANSISTOR DTC124ES	
IC307	8-759-636-55	IC M5218AFP		Q314	8-729-900-63	TRANSISTOR DTA124ES	
IC308	8-759-801-01	IC LC4966		Q315	8-729-900-36	TRANSISTOR DTC124ES	
IC309	8-759-636-55	IC M5218AFP		Q401	8-729-224-61	TRANSISTOR 2SK246-Y	
IC310	8-759-636-55	IC M5218AFP		Q402	8-729-141-30	TRANSISTOR 2SC3623A-LK	
IC311	8-759-636-55	IC M5218AFP		Q403	8-729-141-30	TRANSISTOR 2SC3623A-LK	
IC312	8-759-636-55	IC M5218AFP		Q404	8-729-141-30	TRANSISTOR 2SC3623A-LK	
IC401	8-759-072-32	IC TC9184P		Q451	8-729-224-61	TRANSISTOR 2SK246-Y	
< JUMPER RESISTOR >				Q452	8-729-141-30	TRANSISTOR 2SC3623A-UK	
JR279	1-216-295-00	METAL CHIP	0 5% 1/10W	Q453	8-729-141-30	TRANSISTOR 2SC3623A-LK	
JR280	1-216-295-00	METAL CHIP	0 5% 1/10W	Q454	8-729-141-30	TRANSISTOR 2SC3623A-LK	
JR281	1-216-295-00	METAL CHIP	0 5% 1/10W	Q460	8-729-141-30	TRANSISTOR 2SC3623A-LK	
JR282	1-216-295-00	METAL CHIP	0 5% 1/10W	< RESISTOR >			
JR283	1-216-295-00	METAL CHIP	0 5% 1/10W	△R1	1-249-401-11	CARBON 47 5% 1/4W	
JR284	1-216-295-00	METAL CHIP	0 5% 1/10W	R3	1-216-037-00	METAL CHIP 330 5% 1/10W	
JR286	1-216-295-00	METAL CHIP	0 5% 1/10W	R4	1-216-037-00	METAL CHIP 330 5% 1/10W	
< COIL >				R5	1-216-037-00	METAL CHIP 330 5% 1/10W	
L1	1-408-421-00	INDUCTOR	100uH	R6	1-216-079-00	METAL CHIP 18K 5% 1/10W	
L21	1-410-494-11	INDUCTOR	1MMH	R7	1-216-037-00	METAL CHIP 330 5% 1/10W	
L301	1-408-421-00	INDUCTOR	100uH	R8	1-216-043-00	METAL CHIP 560 5% 1/10W	
< FILTER >				R9	1-216-083-00	METAL CHIP 27K 5% 1/10W	
LPF21	1-235-164-00	FILTER, LOW PASS		△R21	1-249-404-00	CARBON 82 5% 1/4W	
LPF22	1-235-164-00	FILTER, LOW PASS		R22	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	(US, Canadian)
< TRANSISTOR >				R22	1-216-081-00	METAL CHIP 22K 5% 1/10W (UK)	
Q1	8-729-230-99	TRANSISTOR	2SC2669-OY	R23	1-216-049-00	METAL CHIP 1K 5% 1/10W	
Q2	8-729-230-99	TRANSISTOR	2SC2669-OY	R24	1-216-085-00	METAL CHIP 33K 5% 1/10W	
Q13	8-729-900-63	TRANSISTOR	DTA124ES	R25	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
Q21	8-729-119-79	TRANSISTOR	2SC2785-FEK	R27	1-216-079-00	METAL CHIP 18K 5% 1/10W	
Q22	8-729-119-79	TRANSISTOR	2SC2785-FEK	R28	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
Q24	8-729-900-36	TRANSISTOR	DTC124ES	R29	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q25	8-729-900-36	TRANSISTOR	DTC124ES	R31	1-216-041-00	METAL CHIP 470 5% 1/10W	
Q81	8-729-900-63	TRANSISTOR	DTA124ES	R32	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q82	8-729-900-36	TRANSISTOR	DTC124ES	R33	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q83	8-729-202-67	TRANSISTOR	2SK246-GR3	R35	1-216-089-00	METAL CHIP 47K 5% 1/10W	
Q84	8-729-230-93	TRANSISTOR	2SC3113-AB	R36	1-216-079-00	METAL CHIP 18K 5% 1/10W	
Q301	8-729-900-36	TRANSISTOR	DTC124ES	R37	1-216-109-00	METAL CHIP 330K 5% 1/10W	
Q302	8-729-900-63	TRANSISTOR	DTA124ES	R39	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
Q303	8-729-900-36	TRANSISTOR	DTC124ES	R40	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
Q304	8-729-900-63	TRANSISTOR	DTA124ES	R41	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
Q305	8-729-900-36	TRANSISTOR	DTC124ES	R42	1-216-109-00	METAL CHIP 330K 5% 1/10W	
Q306	8-729-900-36	TRANSISTOR	DTC124ES	R44	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
Q307	8-729-900-63	TRANSISTOR	DTA124ES	R45	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
Q308	8-729-900-36	TRANSISTOR	DTC124ES	R46	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
Q309	8-729-900-36	TRANSISTOR	DTC124ES	△R47	1-249-409-11	CARBON 220 5% 1/4W	
Q310	8-729-900-63	TRANSISTOR	DTA124ES	<p>The components identified by mark △ or dotted line with mark. △ are critical for safety. Replace only with part number specified.</p> <p>Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>			
Q311	8-729-900-36	TRANSISTOR	DTC124ES				

## SURR TUNER

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R61	1-216-097-00	METAL CHIP	100K	5%	1/10W	R329	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R62	1-216-089-00	METAL CHIP	47K	5%	1/10W	R330	1-216-089-00	METAL CHIP	47K	5%	1/10W
R63	1-216-009-00	METAL CHIP	22	5%	1/10W	R331	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R70	1-216-061-00	METAL CHIP	3.3K	5%	1/10W						
R71	1-216-043-00	METAL CHIP	560	5%	1/10W	R332	1-216-081-00	METAL CHIP	22K	5%	1/10W
						R333	1-216-081-00	METAL CHIP	22K	5%	1/10W
R72	1-216-049-00	METAL CHIP	1K	5%	1/10W	R334	1-216-105-00	METAL CHIP	220K	5%	1/10W
R73	1-216-035-00	METAL CHIP	270	5%	1/10W	R335	1-216-073-00	METAL CHIP	10K	5%	1/10W
R74	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	R336	1-216-097-00	METAL CHIP	100K	5%	1/10W
R75	1-216-057-00	METAL CHIP	2.2K	5%	1/10W						
R76	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	R337	1-216-097-00	METAL CHIP	100K	5%	1/10W
						R338	1-216-105-00	METAL CHIP	220K	5%	1/10W
R77	1-216-025-00	METAL CHIP	100	5%	1/10W	R339	1-216-073-00	METAL CHIP	10K	5%	1/10W
R78	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	R340	1-216-073-00	METAL CHIP	10K	5%	1/10W
△R79	1-249-405-11	CARBON	100	5%	1/4W	R341	1-216-073-00	METAL CHIP	10K	5%	1/10W
R81	1-216-049-00	METAL CHIP	1K	5%	1/10W						
R82	1-216-049-00	METAL CHIP	1K	5%	1/10W	R342	1-216-113-00	METAL CHIP	470K	5%	1/10W
						R343	1-216-113-00	METAL CHIP	470K	5%	1/10W
R83	1-216-049-00	METAL CHIP	1K	5%	1/10W	R344	1-216-073-00	METAL CHIP	10K	5%	1/10W
R84	1-216-049-00	METAL CHIP	1K	5%	1/10W	R345	1-216-049-00	METAL CHIP	1K	5%	1/10W
R85	1-216-073-00	METAL CHIP	10K	5%	1/10W	R346	1-216-073-00	METAL CHIP	10K	5%	1/10W
R86	1-216-049-00	METAL CHIP	1K	5%	1/10W						
R87	1-216-073-00	METAL CHIP	10K	5%	1/10W	R347	1-216-089-00	METAL CHIP	47K	5%	1/10W
						R348	1-216-049-00	METAL CHIP	1K	5%	1/10W
R88	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	R349	1-216-073-00	METAL CHIP	10K	5%	1/10W
R89	1-216-049-00	METAL CHIP	1K	5%	1/10W	R351	1-216-105-00	METAL CHIP	220K	5%	1/10W
R90	1-216-073-00	METAL CHIP	10K	5%	1/10W	R352	1-216-105-00	METAL CHIP	220K	5%	1/10W
R91	1-216-049-00	METAL CHIP	1K	5%	1/10W						
△R92	1-249-401-11	CARBON	47	5%	1/4W	R353	1-216-105-00	METAL CHIP	220K	5%	1/10W
						R354	1-216-025-00	METAL CHIP	100	5%	1/10W
R301	1-216-105-00	METAL CHIP	220K	5%	1/10W	R355	1-216-105-00	METAL CHIP	220K	5%	1/10W
R302	1-216-105-00	METAL CHIP	220K	5%	1/10W	R378	1-216-077-00	METAL CHIP	15K	5%	1/10W
R303	1-216-105-00	METAL CHIP	220K	5%	1/10W	R379	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R304	1-216-025-00	METAL CHIP	100	5%	1/10W						
R305	1-216-105-00	METAL CHIP	220K	5%	1/10W	R380	1-216-089-00	METAL CHIP	47K	5%	1/10W
						R381	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R306	1-216-089-00	METAL CHIP	47K	5%	1/10W	R385	1-216-073-00	METAL CHIP	10K	5%	1/10W
R307	1-216-089-00	METAL CHIP	47K	5%	1/10W	R391	1-216-073-00	METAL CHIP	10K	5%	1/10W
R308	1-216-089-00	METAL CHIP	47K	5%	1/10W	R392	1-216-113-00	METAL CHIP	470K	5%	1/10W
R309	1-216-089-00	METAL CHIP	47K	5%	1/10W						
R310	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	R393	1-216-113-00	METAL CHIP	470K	5%	1/10W
						R394	1-216-073-00	METAL CHIP	10K	5%	1/10W
R311	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	R395	1-216-049-00	METAL CHIP	1K	5%	1/10W
R312	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	R399	1-216-073-00	METAL CHIP	10K	5%	1/10W
R315	1-216-121-00	METAL CHIP	1M	5%	1/10W	R401	1-216-097-00	METAL CHIP	100K	5%	1/10W
R316	1-216-089-00	METAL CHIP	47K	5%	1/10W						
R317	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	R402	1-216-073-00	METAL CHIP	10K	5%	1/10W
						R403	1-216-113-00	METAL CHIP	470K	5%	1/10W
R318	1-216-097-00	METAL CHIP	100K	5%	1/10W	R404	1-216-097-00	METAL CHIP	100K	5%	1/10W
R319	1-216-041-00	METAL CHIP	470	5%	1/10W	R405	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R320	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	R406	1-216-101-00	METAL CHIP	150K	5%	1/10W
R321	1-216-071-00	METAL CHIP	8.2K	5%	1/10W						
R322	1-216-073-00	METAL CHIP	10K	5%	1/10W	R407	1-216-039-00	METAL CHIP	390	5%	1/10W
						R408	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R323	1-216-077-00	METAL CHIP	15K	5%	1/10W	R409	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R324	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	R410	1-216-095-00	METAL CHIP	82K	5%	1/10W
R325	1-216-689-11	METAL CHIP	39K	0.5%	1/10W						
R326	1-216-105-00	METAL CHIP	220K	5%	1/10W						
R327	1-216-105-00	METAL CHIP	220K	5%	1/10W						
R328	1-216-077-00	METAL CHIP	15K	5%	1/10W						

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

## SURR TUNER

## SURR AMP

Ref. No.	Part No.	Description	Remark
R411	1-216-113-00	METAL CHIP	470K 5% 1/10W
R412	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R413	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R414	1-216-115-00	METAL CHIP	560K 5% 1/10W
R415	1-216-689-11	METAL CHIP	39K 0.5% 1/10W
R416	1-216-083-00	METAL CHIP	27K 5% 1/10W
R417	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R418	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
R419	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R420	1-216-021-00	METAL CHIP	68 5% 1/10W
R421	1-216-049-00	METAL CHIP	1K 5% 1/10W
R422	1-216-049-00	METAL CHIP	1K 5% 1/10W
R423	1-216-097-00	METAL CHIP	100K 5% 1/10W
R424	1-216-055-00	METAL CHIP	1.8K 5% 1/10W
R425	1-216-097-00	METAL CHIP	100K 5% 1/10W
R426	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R427	1-216-049-00	METAL CHIP	1K 5% 1/10W
R428	1-216-071-00	METAL CHIP	8.2K 5% 1/10W
R451	1-216-097-00	METAL CHIP	100K 5% 1/10W
R452	1-216-073-00	METAL CHIP	10K 5% 1/10W
R453	1-216-113-00	METAL CHIP	470K 5% 1/10W
R454	1-216-097-00	METAL CHIP	100K 5% 1/10W
R455	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R456	1-216-101-00	METAL CHIP	150K 5% 1/10W
R457	1-216-039-00	METAL CHIP	390 5% 1/10W
R458	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R459	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R460	1-216-095-00	METAL CHIP	82K 5% 1/10W
R461	1-216-113-00	METAL CHIP	470K 5% 1/10W
R462	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R463	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R464	1-216-115-00	METAL CHIP	560K 5% 1/10W
R465	1-216-689-11	METAL CHIP	39K 0.5% 1/10W
R466	1-216-083-00	METAL CHIP	27K 5% 1/10W
R467	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R468	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
R469	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R470	1-216-021-00	METAL CHIP	68 5% 1/10W
R473	1-216-097-00	METAL CHIP	100K 5% 1/10W
R474	1-216-055-00	METAL CHIP	1.8K 5% 1/10W
R475	1-216-097-00	METAL CHIP	100K 5% 1/10W
R476	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R477	1-216-049-00	METAL CHIP	1K 5% 1/10W
R478	1-216-071-00	METAL CHIP	8.2K 5% 1/10W

Ref. No.	Part No.	Description	Remark
< VARIABLE RESISTOR >			
RV21	1-241-628-11	RES, ADJ, CARBON 2.2K (FM SEPARATION)	
RV22	1-241-631-11	RES, ADJ, CARBON 22K (AM STOP LEVEL)	
RV24	1-241-631-11	RES, ADJ, CARBON 22K (FM TUNING LEVEL)	
RV25	1-241-631-11	RES, ADJ, CARBON 22K (AUTO STOP LEVEL)	
< TRANSFORMER >			
T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR (NULL)	
< TERMINAL >			
* TM1	1-537-264-11	TERMINAL BOARD (ANTENNA) (US, Canadian)	
* TM1	1-537-288-11	TERMINAL BOARD, ANTENNA (PAL) (UK)	
< TEST PIN >			
* TP1	1-560-060-00	PIN, CONNECTOR 2P	
< VIBRATOR >			
X301	1-567-132-00	OSCILLATOR, CERAMIC 8.00MHz	
< VIBRATOR >			
XT81	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)	
*****			
*	A-4347-782-A	SURR. AMP BOARD, COMPLETE (D790)	
*	A-4347-813-A	SURR. AMP BOARD, COMPLETE (D990)	
*****			
< CAPACITOR >			
C601	1-124-927-11	ELECT	4.7uF 20% 100V(D790)
C602	1-162-282-31	CERAMIC	100PF 10% 50V (D790)
C603	1-162-282-31	CERAMIC	100PF 10% 50V (D790)
C604	1-124-477-11	ELECT	47uF 20% 25V (D790)
C605	1-124-927-11	ELECT	4.7uF 20% 100V(D790)
C606	1-164-159-11	CERAMIC	0.1uF 50V (D790)
C607	1-130-487-00	MYLAR	0.022uF 5% 50V (D790)
C621	1-124-927-11	ELECT	4.7uF 20% 100V
C622	1-162-282-31	CERAMIC	100PF 10% 50V
C623	1-162-282-31	CERAMIC	100PF 10% 50V
C625	1-124-477-11	ELECT	47uF 20% 25V
C626	1-164-159-11	CERAMIC	0.1uF 50V
C627	1-130-487-00	MYLAR	0.022uF 5% 50V
C629	1-124-927-11	ELECT	4.7uF 20% 100V
C977	1-126-954-11	ELECT	3300uF 20% 35V
C978	1-126-954-11	ELECT	3300uF 20% 35V
C988	1-102-394-11	CERAMIC	0.01uF 250V
C989	1-102-394-11	CERAMIC	0.01uF 250V

**SURR AMP****VIDEO**

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
* CNJ801	1-564-518-11	PLUG, CONNECTOR 3P	
* CNJ802	1-568-850-11	SOCKET, CONNECTOR 7P	
* CNJ803	1-568-848-11	SOCKET, CONNECTOR 5P	
* CNP601	1-564-522-11	PLUG, CONNECTOR 7P	
* CNS800	1-564-519-11	PLUG, CONNECTOR 4P	
* CNS803	1-564-518-11	PLUG, CONNECTOR 3P (D990)	
< DIODE >			
D601	8-719-987-63	DIODE 1N4148M (D790)	
D621	8-719-987-63	DIODE 1N4148M	
D971	8-719-302-38	DIODE RBV-602-01	
D973	8-719-312-09	DIODE RBA-402	
D975	8-719-987-63	DIODE 1N4148M (D990)	
D976	8-719-987-63	DIODE 1N4148M (D990)	
D977	8-719-987-63	DIODE 1N4148M (D990)	
D982	8-719-987-63	DIODE 1N4148M (D990)	
< IC >			
IC601	8-759-502-32	IC SI-18752N (D790)	
IC621	8-759-502-32	IC SI-18752N	
< COIL >			
* L601	1-420-872-00	COIL, AIR CORE (D790)	
* L621	1-420-872-00	COIL, AIR CORE	
< TRANSISTOR >			
Q601	8-729-101-18	TRANSISTOR 2SB798-DM (D790)	
Q621	8-729-101-18	TRANSISTOR 2SB798-DM	
Q972	8-729-620-05	TRANSISTOR 2SC2603-EF (D990)	
< RESISTOR >			
R601	1-249-417-11	CARBON 1K 5% 1/4W(D790)	
R602	1-249-439-11	CARBON 68K 5% 1/4W(D790)	
R603	1-249-439-11	CARBON 68K 5% 1/4W(D790)	
R604	1-249-417-11	CARBON 1K 5% 1/4W(D790)	
R605	1-217-151-00	RES, METAL PLATE 0.22 (D790)	
R607	1-249-389-11	CARBON 4.7 5% 1/4W(D790)	
R608	1-249-431-11	CARBON 15K 5% 1/4W(D790)	
R609	1-249-393-11	CARBON 10 5% 1/4W(D790)	
R610	1-249-431-11	CARBON 15K 5% 1/4W(D790)	
R621	1-249-417-11	CARBON 1K 5% 1/4W	
R622	1-249-439-11	CARBON 68K 5% 1/4W	
R623	1-247-830-11	CARBON 910 5% 1/4W	
R624	1-249-439-11	CARBON 68K 5% 1/4W	
R625	1-249-417-11	CARBON 1K 5% 1/4W	
R626	1-249-431-11	CARBON 15K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R627	1-217-151-00	RES, METAL PLATE 0.22	
R628	1-249-389-11	CARBON 4.7 5% 1/4W	
R629	1-249-393-11	CARBON 10 5% 1/4W	
R630	1-249-431-11	CARBON 15K 5% 1/4W	
R823	1-249-415-11	CARBON 680 5% 1/4W(D790)	
R977	1-249-421-11	CARBON 2.2K 5% 1/4W(D990)	
< RELAY >			
RY902	1-515-894-11	RELAY (D990)	
*****			
* 1-644-097-11	VIDEO BOARD		
*****			
< CAPACITOR >			
C251	1-124-927-11	ELECT 4.7uF 20% 100V	
C252	1-124-906-11	ELECT 4.7uF 20% 50V	
C253	1-124-472-11	ELECT 470uF 20% 10V	
C254	1-124-472-11	ELECT 470uF 20% 10V	
C256	1-124-477-11	ELECT 47uF 20% 25V	
C257	1-124-927-11	ELECT 4.7uF 20% 100V	
< CONNECTOR >			
* CNJ12	1-564-505-11	PLUG, CONNECTOR 2P	
* CNJ201	1-568-824-11	SOCKET, CONNECTOR 5P	
* CNJ508	1-573-029-11	JACK, PIN 2P (VIDE01, MONITOR)	
* CNJ509	1-573-029-11	JACK, PIN 2P (VIDE01, VIDE02 LD)	
< IC >			
IC251	8-759-991-77	IC BA7625	
< COIL >			
L251	1-410-509-11	INDUCTOR 10uH	
< TRANSISTOR >			
Q251	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q252	8-729-119-76	TRANSISTOR 2SA1175-HFE	
< RESISTOR >			
R251	1-247-804-11	CARBON 75 5% 1/4W	
R252	1-247-804-11	CARBON 75 5% 1/4W	
R253	1-249-403-11	CARBON 68 5% 1/4W	
R254	1-249-429-11	CARBON 10K 5% 1/4W	
R255	1-249-403-11	CARBON 68 5% 1/4W	
R256	1-249-429-11	CARBON 10K 5% 1/4W	
R259	1-249-405-11	CARBON 100 5% 1/4W	
R260	1-249-405-11	CARBON 100 5% 1/4W	
R261	1-249-405-11	CARBON 100 5% 1/4W	
R262	1-249-405-11	CARBON 100 5% 1/4W	
R265	1-247-804-11	CARBON 75 5% 1/4W	

**VIDEO 3**

**VOL**

Ref. No.	Part No.	Description	Remark		
*	1-644-104-11	VIDEO 3 BOARD (D990) *****			
		< CAPACITOR >			
C512	1-164-097-11	CERAMIC	0.022uF		50V (D990)
C535	1-124-927-11	ELECT	4.7uF	20%	100V(D990)
C536	1-164-097-11	CERAMIC	0.022uF		50V (D990)
C585	1-124-927-11	ELECT	4.7uF	20%	100V(D990)
		< CONNECTOR >			
CNJ501	1-580-174-31	JACK, PIN(3P FRONT)(VIDEO3 INPUT)(D990)			
		< RESISTOR >			
R535	1-249-417-11	CARBON	1K	5%	1/4W(D990)
R536	1-247-887-00	CARBON	220K	5%	1/4W(D990)
R585	1-249-417-11	CARBON	1K	5%	1/4W(D990)
R586	1-247-887-00	CARBON	220K	5%	1/4W(D990)
*****					
*	1-644-107-11	VOL BOARD *****			
		< CAPACITOR >			
C599	1-124-273-00	ELECT	3.3uF	20%	50V
		< CONNECTOR >			
* CNJ206	1-568-824-11	SOCKET, CONNECTOR 5P			
* CNP14	1-564-509-11	PLUG, CONNECTOR 6P			
* CNP42	1-564-509-11	PLUG, CONNECTOR 6P			
		< IC >			
IC201	8-759-820-62	IC LB1639			
		< RESISTOR >			
R201	1-249-437-11	CARBON	47K	5%	1/4W
R202	1-249-437-11	CARBON	47K	5%	1/4W
R599	1-249-413-11	CARBON	470	5%	1/4W
		< VARIABLE RESISTOR >			
RV502	1-238-965-11	RES. VAR. CARBON 100K/100K (BALANCE)			
RV503	1-241-816-21	RES. VAR. CARBON 100KX4 (MASTER VOLUME)			
*****					

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS *****	
11	1-690-091-11	WIRE, FLAT TYPE (21 CORE)	
13	1-575-730-11	WIRE, FLAT TYPE (5 CORE)	
52	1-572-291-31	SWITCH, ROTARY SLIDE	
* 57	1-590-035-11	WIRE, FLAT TYPE (7 CORE)	
58	1-575-730-11	WIRE, FLAT TYPE (5 CORE)	
△107	1-575-652-11	CORD, POWER (D790:UK)	
△107	1-690-609-11	CORD, POWER (US, Canadian)	
111	1-575-730-11	WIRE, FLAT TYPE (5 CORE)	
△F901	1-532-203-00	FUSE, TIME LAG 2A 250V (D790:UK)	
△F901	1-576-107-11	FUSE 3.15A 125V (US, Canadian)	
△F902	1-532-237-00	FUSE, TIME LAG 3.15A 250V (D790:UK)	
△F902	1-532-748-11	FUSE, GLASS TUBE 6.3A 125V(US, Canadian)	
△F971	1-532-237-00	FUSE, TIME LAG 3.15A 250V (D790:UK)	
△F971	1-576-107-11	FUSE (US, Canadian)	
△F972	1-532-237-00	FUSE, TIME LAG 3.15A 250V (D790:UK)	
△F972	1-576-107-11	FUSE (US, Canadian)	
△T902	1-450-884-11	TRANSFORMER, POWER (D790:UK)	
△T902	1-450-885-11	TRANSFORMER, POWER (D790:US, Canadian)	
△T902	1-450-886-11	TRANSFORMER, POWER (D990)	
*****			
		ACCESSORIES & PACKING MATERIALS *****	
	1-501-369-11	ANTENNA (UK)	
	1-501-374-11	ANTENNA, LOOP	
	1-693-098-11	COMMANDER, STANDARD (RM-P321) (UK)	
	1-693-099-11	COMMANDER, STANDARD (RM-U221) (US, Canadian)	
	3-755-128-21	MANUAL, INSTRUCTION (ENGLISH)	
	3-755-128-31	MANUAL, INSTRUCTION (FRENCH)(Canadian)	
	4-925-079-01	COVER (6), BATTERY (RM-P321, RM-U221)	
*	4-952-676-01	CUSHION	
*	4-952-684-01	INDIVIDUAL CARTON (D790:US, Canadian)	
*	4-952-685-01	INDIVIDUAL CARTON (D790:UK)	
*	4-952-686-01	INDIVIDUAL CARTON (D990)	
	9-910-999-33	INSTRUCTION (Canadian)	
*****			

The components identified by mark △ or dotted line with mark. △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
		***** HARDWARE LIST *****	
#1	7-682-548-09	SCREW +BVTT 3X8 (S)	
#2	7-682-548-04	SCREW +BVTT 3X8 (S)	
#3	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
#4	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#5	7-685-646-79	SCREW +BTP 3X8 TYPE2 N-S	
#6	7-682-561-04	SCREW +BVTT 4X8 (S)	

# STR-D790/D990

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## SONY® SERVICE MANUAL

*US Model*  
*Canadian Model*  
*UK Model*  
*STR-D790*

*US Model*  
*Canadian Model*  
*STR-D990*

## SUPPLEMENT-1

File this Supplement with the Service Manual.

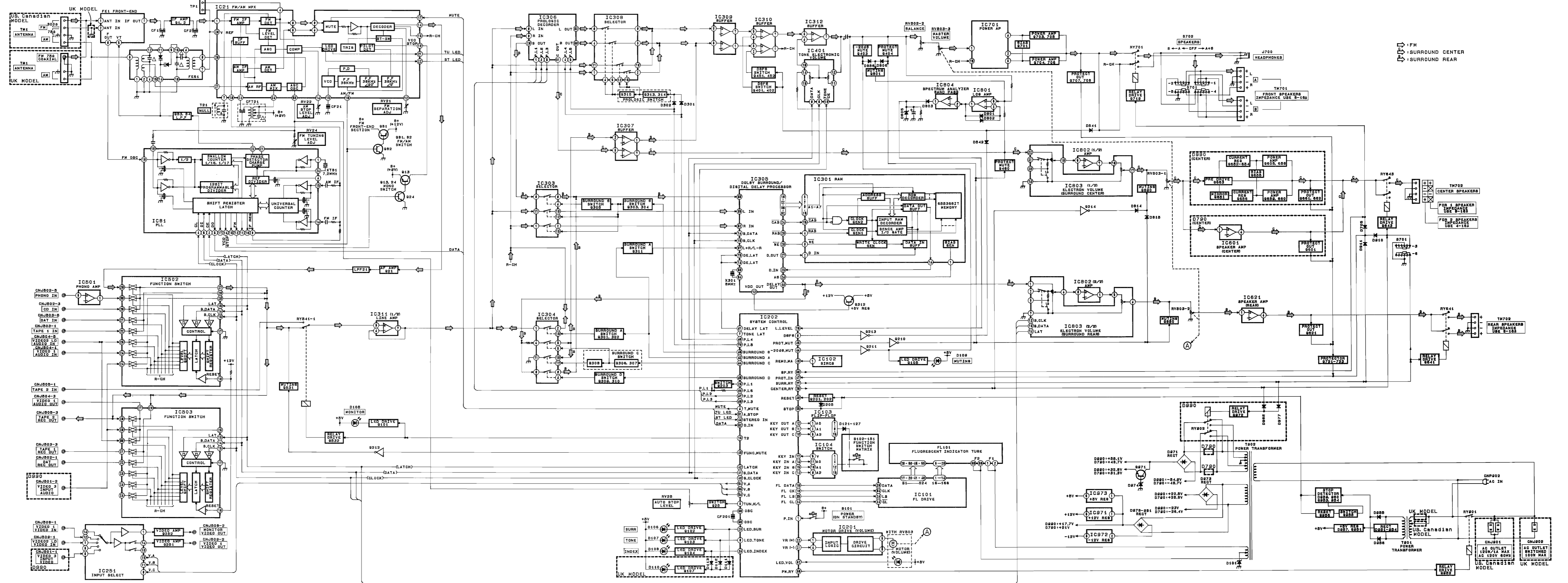
Block Diagram







BLOCK DIAGRAM



: FM  
 : SURROUND CENTER  
 : SURROUND REAR

R-CH: SAME AS L-CH.

# STR- D790/D990

## SONY® SERVICE MANUAL

*US Model*  
*Canadian Model*  
*UK Model*  
*STR-D790*

*US Model*  
*Canadian Model*  
*STR-D990*

## SUPPLEMENT-2

File this supplement with the service manual.

**Subject :** Circuit change  
(SURR TUNER BOARD)

Main Revised Point : Delete of IC 308 and IC 309.

### 1. DIAGRAMS

- 1-1. PRINTED WIRING BOARD
- 1-2. SCHEMATIC DIAGRAM

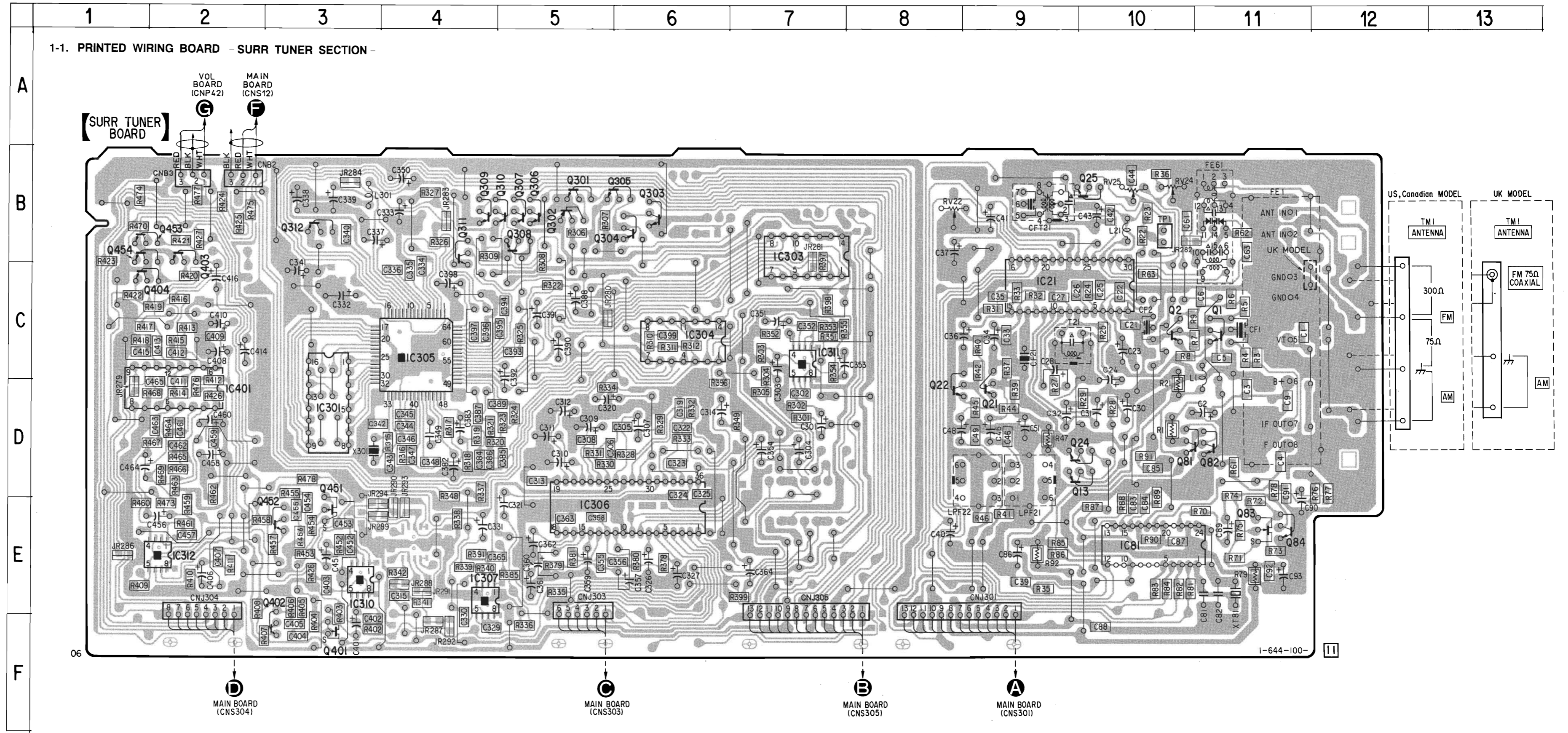
### 2. ELECTRICAL PARTS LIST

1. DIAGRAMS

• Semiconductor Location

Ref. No.	Location
IC21	C-9
IC81	E-10
IC301	D-3
IC303	B-7
IC304	C-6
IC305	C-4
IC306	E-5
IC307	E-4
IC310	E-3
IC311	C-7
IC312	E-2
IC401	D-2
Q1	C-10
Q2	C-10
Q13	D-9
Q21	D-9
Q22	D-8
Q24	D-9
Q25	B-10
Q81	D-10
Q82	D-11
Q83	E-11
Q84	E-11
Q301	B-5
Q302	B-5
Q303	B-6
Q304	B-6
Q305	B-5
Q306	B-5
Q307	B-5
Q308	B-5
Q309	B-4
Q310	B-5
Q311	B-4
Q312	B-3
Q401	F-3
Q402	F-3
Q403	B-2
Q404	C-2
Q451	D-3
Q452	F-3
Q453	B-2
Q454	B-1

1-1. PRINTED WIRING BOARD - SURR TUNER SECTION -

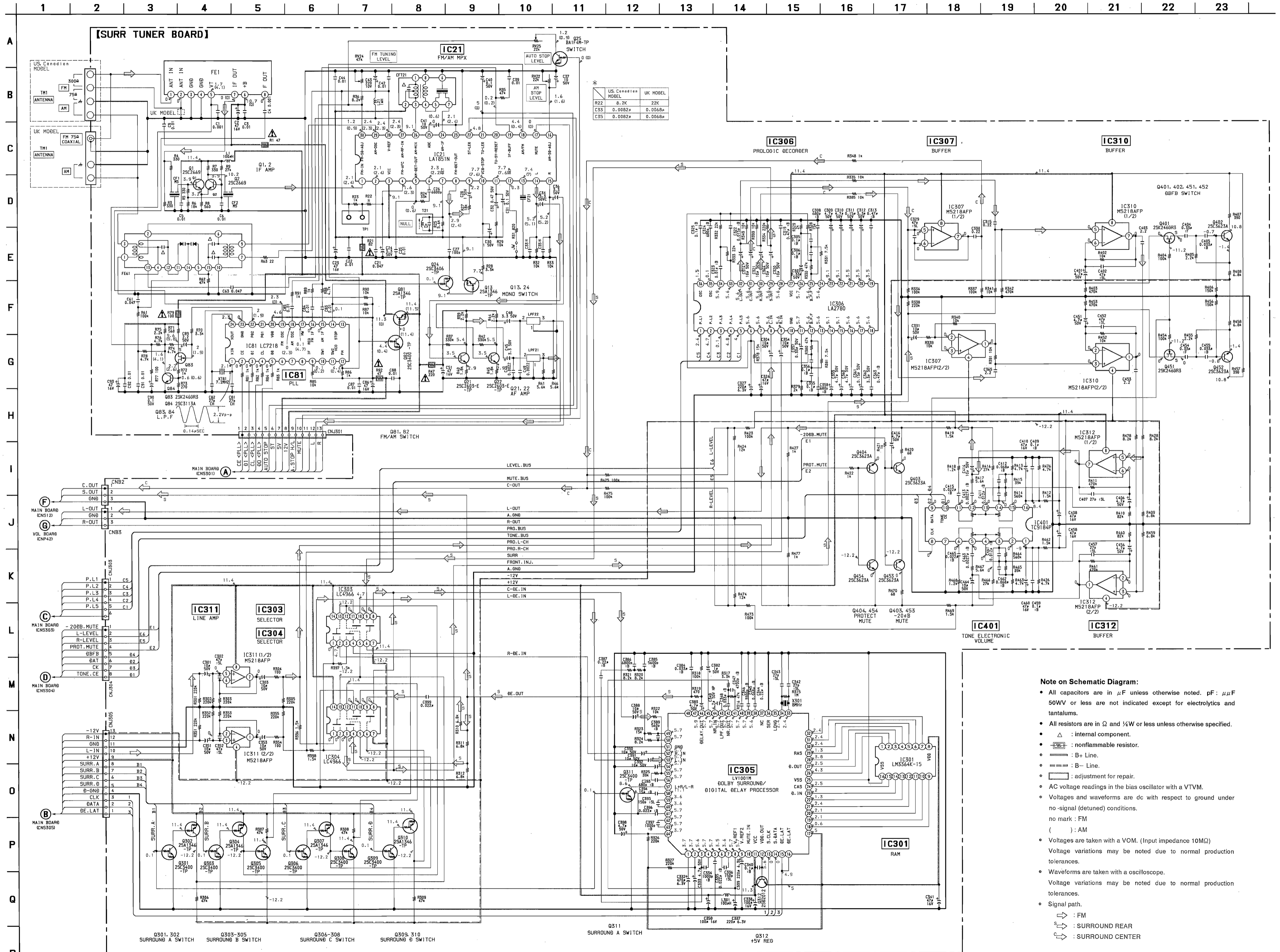


**Note on Mounting Diagram:**

- : Parts extracted from the component side.
- : Parts mounted on the conductor side.
- : Indicates side identified with part number.
- ▨ : Pattern on the side which is seen.



1-2. SCHEMATIC DIAGRAM - SURR TUNER SECTION - • Refer to page 3 for Note. • IC Block Diagram Information. Refer to page 38 in original service manual (9-957-245-11).



**Note:**  
The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.  
Les composants identifiés par une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

**Note on Schematic Diagram:**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF} = \mu\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{2}\text{W}$  or less unless otherwise specified.
- : internal component.
- : nonflammable resistor.
- : B+ Line.
- : B- Line.
- : adjustment for repair.
- AC voltage readings in the bias oscillator with a VTVM.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- ( ) : AM
- Voltages are taken with a VOM. (Input impedance 10M $\Omega$ ) Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
- : FM
- : SURROUND REAR
- : SURROUND CENTER

# SURR TUNER

## 2. ELECTRICAL PARTS LIST

### NOTE:

- Due to standardization, replacements in the parts list may be different from the part specified in the diagrams or the components used on the set.
- -XX,-X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms  
METAL : Metal-film resistor  
METAL OXIDE : Metal Oxide-film resistor  
F : nonflammable

- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u :  $\mu$ , for example :  
uA... :  $\mu$ A..., uPA... :  $\mu$ PA...,  
uPB... :  $\mu$ PB..., uPC... :  $\mu$ PC...,  
uPD... :  $\mu$ PD...
- CAPACITORS  
uF :  $\mu$ F
- COILS  
uH :  $\mu$ H

When indicating parts by reference number, please include the board name.

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4347-767-A	SURR TUNER BOARD, COMPLETE	(UK)	C40	1-124-463-00	ELECT	0.1uF 20% 50V
*	A-4347-805-A	SURR TUNER BOARD, COMPLETE	(US, Canadian)	C41	1-124-907-11	ELECT	10uF 20% 50V
		*****		C42	1-164-232-11	CERAMIC CHIP	0.01uF 50V
		< CAPACITOR >		C43	1-126-176-11	ELECT	220uF 20% 10V
C1	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	C44	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C2	1-124-910-11	ELECT	47uF 20% 50V	C45	1-123-382-00	ELECT	3.3uF 20% 100V
C3	1-164-232-11	CERAMIC CHIP	0.01uF 50V	C46	1-164-161-11	CERAMIC CHIP	0.0022uF 10% 100V
C4	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	C48	1-123-382-00	ELECT	3.3uF 20% 100V
C5	1-164-232-11	CERAMIC CHIP	0.01uF 50V	C49	1-164-161-11	CERAMIC CHIP	0.0022uF 10% 100V
C6	1-164-232-11	CERAMIC CHIP	0.01uF 50V	C51	1-124-910-11	ELECT	47uF 20% 50V
C9	1-164-232-11	CERAMIC CHIP	0.01uF 50V	C61	1-163-809-11	CERAMIC CHIP	0.047uF 10% 25V
C21	1-163-809-11	CERAMIC CHIP	0.047uF 10% 25V	C63	1-163-809-11	CERAMIC CHIP	0.047uF 10% 25V
C22	1-164-232-11	CERAMIC CHIP	0.01uF 50V	C81	1-102-961-00	CERAMIC	27PF 5% 50V
C23	1-124-910-11	ELECT	47uF 20% 50V	C82	1-102-961-00	CERAMIC	27PF 5% 50V
C24	1-123-382-00	ELECT	3.3uF 20% 100V	C83	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C25	1-164-232-11	CERAMIC CHIP	0.01uF 50V	C84	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C26	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V	C85	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C27	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	C86	1-124-910-11	ELECT	47uF 20% 50V
C28	1-124-903-11	ELECT	1uF 20% 50V	C87	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C30	1-124-903-11	ELECT	1uF 20% 50V	C88	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C31	1-124-463-00	ELECT	0.1uF 20% 50V	C89	1-124-925-11	ELECT	2.2uF 20% 100V
C32	1-124-902-00	ELECT	0.47uF 20% 50V	C90	1-124-463-00	ELECT	0.1uF 20% 50V
C33	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V	C91	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C33	1-163-020-00	CERAMIC CHIP	0.0082uF 10% 50V	C92	1-164-232-11	CERAMIC CHIP	0.01uF 50V
			(UK)	C93	1-124-910-11	ELECT	47uF 20% 50V
C34	1-123-382-00	ELECT	3.3uF 20% 100V	C301	1-124-907-11	ELECT	10uF 20% 50V
C35	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V	C302	1-163-109-00	CERAMIC CHIP	47PF 5% 50V
			(UK)	C303	1-124-907-11	ELECT	10uF 20% 50V
C35	1-163-020-00	CERAMIC CHIP	0.0082uF 10% 50V	C304	1-124-907-11	ELECT	10uF 20% 50V
			(US, Canadian)	C305	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C36	1-123-382-00	ELECT	3.3uF 20% 100V	C306	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C37	1-124-907-11	ELECT	10uF 20% 50V	C307	1-124-252-00	ELECT	0.33uF 20% 50V
C39	1-164-232-11	CERAMIC CHIP	0.01uF 50V	C308	1-163-007-11	CERAMIC CHIP	680PF 10% 50V
				C309	1-124-927-11	ELECT	4.7uF 20% 100V

# SURR TUNER

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C310	1-124-927-11	ELECT	4.7uF	20%	100V	C364	1-124-907-11	ELECT	10uF	20%	50V
C311	1-124-250-00	ELECT	0.15uF	20%	50V	C365	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C312	1-123-382-00	ELECT	3.3uF	20%	100V	C382	1-124-903-11	ELECT	1uF	20%	50V
C313	1-164-005-11	CERAMIC CHIP	0.47uF		25V	C383	1-124-927-11	ELECT	4.7uF	20%	100V
C314	1-124-907-11	ELECT	10uF	20%	50V	C384	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C315	1-164-505-11	CERAMIC CHIP	2.2uF		16V	C385	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C319	1-164-005-11	CERAMIC CHIP	0.47uF		25V	C386	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C320	1-124-907-11	ELECT	10uF	20%	50V	C387	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C321	1-124-907-11	ELECT	10uF	20%	50V	C388	1-124-907-11	ELECT	10uF	20%	50V
C322	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V	C389	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C323	1-164-232-11	CERAMIC CHIP	0.01uF		50V	C390	1-124-907-11	ELECT	10uF	20%	50V
C324	1-163-007-11	CERAMIC CHIP	680PF	10%	50V	C391	1-124-907-11	ELECT	10uF	20%	50V
C325	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C392	1-124-907-11	ELECT	10uF	20%	50V
C326	1-124-910-11	ELECT	47uF	20%	50V	C393	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C327	1-126-176-11	ELECT	220uF	20%	10V	C394	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C329	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	C395	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C330	1-164-505-11	CERAMIC CHIP	2.2uF		16V	C396	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C331	1-124-907-11	ELECT	10uF	20%	50V	C397	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C332	1-124-472-11	ELECT	470uF	20%	10V	C398	1-124-927-11	ELECT	4.7uF	20%	100V
C333	1-124-927-11	ELECT	4.7uF	20%	100V	C399	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C334	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	C401	1-126-163-11	ELECT	4.7uF	20%	50V
C335	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	C402	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C336	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	C403	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C337	1-126-176-11	ELECT	220uF	20%	10V	C404	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C338	1-126-101-11	ELECT	100uF	20%	16V	C405	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C339	1-126-176-11	ELECT	220uF	20%	10V	C406	1-124-927-11	ELECT	4.7uF	20%	100V
C340	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C407	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C341	1-124-910-11	ELECT	47uF	20%	50V	C408	1-124-910-11	ELECT	47uF	20%	50V
C342	1-163-103-00	CERAMIC CHIP	27PF	5%	50V	C409	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C343	1-163-103-00	CERAMIC CHIP	27PF	5%	50V	C410	1-124-910-11	ELECT	47uF	20%	50V
C344	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	C411	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
C345	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V	C412	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C346	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V	C413	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C347	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	C414	1-126-096-11	ELECT	10uF	20%	35V
C348	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	C415	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C349	1-124-768-11	ELECT	4.7uF	20%	50V	C416	1-124-927-11	ELECT	4.7uF	20%	100V
C350	1-126-101-11	ELECT	100uF	20%	16V	C451	1-124-927-11	ELECT	4.7uF	20%	100V
C351	1-124-907-11	ELECT	10uF	20%	50V	C452	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C352	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	C453	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C353	1-124-907-11	ELECT	10uF	20%	50V	C454	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C354	1-124-907-11	ELECT	10uF	20%	50V	C455	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C355	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C456	1-124-927-11	ELECT	4.7uF	20%	100V
C356	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C457	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C357	1-124-252-00	ELECT	0.33uF	20%	50V	C458	1-124-910-11	ELECT	47uF	20%	50V
C358	1-163-007-11	CERAMIC CHIP	680PF	10%	50V	C459	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C359	1-124-927-11	ELECT	4.7uF	20%	100V	C460	1-124-910-11	ELECT	47uF	20%	50V
C360	1-124-927-11	ELECT	4.7uF	20%	100V	C461	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
C361	1-124-250-00	ELECT	0.15uF	20%	50V	C462	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C362	1-123-382-00	ELECT	3.3uF	20%	100V	C463	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C363	1-164-005-11	CERAMIC CHIP	0.47uF		25V	C464	1-126-096-11	ELECT	10uF	20%	35V

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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C465	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V	JR290	1-216-295-91	METAL GLAZE 0 5%	1/10W
		< FILTER >		JR291	1-216-295-91	METAL GLAZE 0 5%	1/10W
CF1	1-577-070-81	FILTER, CERAMIC		JR292	1-216-295-91	METAL GLAZE 0 5%	1/10W
CF2	1-577-070-81	FILTER, CERAMIC		JR293	1-216-295-91	METAL GLAZE 0 5%	1/10W
CF21	1-577-075-11	OSCILLATOR, CERAMIC		JR294	1-216-295-91	METAL GLAZE 0 5%	1/10W
		< COMPOSITION CIRCUIT BLOCK >				< COIL >	
CFT21	1-404-853-11	TRANSFORMER, IF (CERAMIC FILTER)		L1	1-408-421-00	INDUCTOR 100uH	
		< CONNECTOR >		L21	1-410-494-11	INDUCTOR 1mH	
CNB2	1-564-506-11	PLUG, CONNECTOR 3P		L301	1-408-421-00	INDUCTOR 100uH	
* CNB3	1-564-506-11	PLUG, CONNECTOR 3P				< FILTER >	
		< JACK >		LPF21	1-235-164-00	FILTER, LOW PASS	
* CNJ301	1-573-193-11	CONNECTOR, BOARD TO BOARD 13P		LPF22	1-235-164-00	FILTER, LOW PASS	
* CNJ303	1-569-753-11	CONNECTOR, BOARD TO BOARD 6P				< TRANSISTOR >	
CNJ304	1-569-670-11	CONNECTOR, BOARD TO BOARD 8P		Q1	8-729-230-XX	TRANSISTOR 2SC26690Y-TPE4	
* CNJ305	1-573-193-11	CONNECTOR, BOARD TO BOARD 13P		Q2	8-729-230-XX	TRANSISTOR 2SC26690Y-TPE4	
		< FRONTEND >		Q13	8-729-900-63	TRANSISTOR DTA124ES	
FE1	1-465-283-11	FRONT END (FM) (2 GANG)		Q21	8-729-802-04	TRANSISTOR 2SC2603E-TP	
FE61	1-236-461-11	ENCAPSULATED COMPONENT		Q22	8-729-802-04	TRANSISTOR 2SC2603E-TP	
		< IC >		Q24	8-729-900-36	TRANSISTOR DTC124ES	
IC21	8-759-821-45	IC LA1851N		Q25	8-729-900-36	TRANSISTOR DTC124ES	
IC81	8-759-175-87	IC LC7218-ST		Q81	8-729-900-63	TRANSISTOR DTA124ES	
IC301	8-759-821-13	IC LM3364K-15		Q82	8-729-900-36	TRANSISTOR DTC124ES	
IC303	8-759-801-01	IC LC4966		Q83	8-729-202-67	TRANSISTOR 2SK246-GR3	
IC304	8-759-801-01	IC LC4966		Q84	8-729-230-93	TRANSISTOR 2SC3113-AB	
IC305	8-759-823-63	IC LV1001M		Q301	8-729-900-36	TRANSISTOR DTC124ES	
IC306	8-759-098-54	IC LA2780N		Q302	8-729-900-63	TRANSISTOR DTA124ES	
IC307	8-759-636-55	IC M5218AFP		Q303	8-729-900-36	TRANSISTOR DTC124ES	
IC310	8-759-636-55	IC M5218AFP		Q304	8-729-900-63	TRANSISTOR DTA124ES	
IC311	8-759-636-55	IC M5218AFP		Q305	8-729-900-36	TRANSISTOR DTC124ES	
IC312	8-759-636-55	IC M5218AFP		Q306	8-729-900-36	TRANSISTOR DTC124ES	
IC401	8-759-072-32	IC TC9184P		Q307	8-729-900-63	TRANSISTOR DTA124ES	
		< JUMPER RESISTOR >		Q308	8-729-900-36	TRANSISTOR DTC124ES	
JR279	1-216-295-91	METAL GLAZE 0 5%	1/10W	Q309	8-729-900-36	TRANSISTOR DTC124ES	
JR280	1-216-295-91	METAL GLAZE 0 5%	1/10W	Q310	8-729-900-63	TRANSISTOR DTA124ES	
JR281	1-216-295-91	METAL GLAZE 0 5%	1/10W	Q311	8-729-900-36	TRANSISTOR DTC124ES	
JR282	1-216-295-91	METAL GLAZE 0 5%	1/10W	Q312	8-729-209-15	TRANSISTOR 2SD2012	
JR283	1-216-295-91	METAL GLAZE 0 5%	1/10W	Q401	8-729-224-61	TRANSISTOR 2SK246-Y	
JR284	1-216-295-91	METAL GLAZE 0 5%	1/10W	Q402	8-729-141-30	TRANSISTOR 2SC3623A-LK	
JR286	1-216-295-91	METAL GLAZE 0 5%	1/10W	Q403	8-729-141-30	TRANSISTOR 2SC3623A-LK	
JR287	1-216-295-91	METAL GLAZE 0 5%	1/10W	Q404	8-729-141-30	TRANSISTOR 2SC3623A-LK	
JR288	1-216-295-91	METAL GLAZE 0 5%	1/10W	Q451	8-729-224-61	TRANSISTOR 2SK246-Y	
JR289	1-216-295-91	METAL GLAZE 0 5%	1/10W	Q452	8-729-141-30	TRANSISTOR 2SC3623A-LK	
				Q453	8-729-141-30	TRANSISTOR 2SC3623A-LK	
				Q454	8-729-141-30	TRANSISTOR 2SC3623A-LK	

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Ref.No.	Part No.	Description				Remark	Ref.No.	Part No.	Description				Remark
< RESISTOR >													
△R1	1-249-401-11	CARBON	47	5%	1/4W	F	R84	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R3	1-216-037-00	METAL CHIP	330	5%	1/10W		R85	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R4	1-216-037-00	METAL CHIP	330	5%	1/10W		R86	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R5	1-216-037-00	METAL CHIP	330	5%	1/10W		R87	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R6	1-216-079-00	METAL CHIP	18K	5%	1/10W		R88	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R7	1-216-037-00	METAL CHIP	330	5%	1/10W		R89	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R8	1-216-043-00	METAL CHIP	560	5%	1/10W		R90	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R9	1-216-083-00	METAL CHIP	27K	5%	1/10W		R91	1-216-049-00	METAL CHIP	1K	5%	1/10W	
△R21	1-249-404-00	CARBON	82	5%	1/4W	F	△R92	1-249-401-11	CARBON	47	5%	1/4W	F
R22	1-216-081-00	METAL CHIP	22K	5%	1/10W	(UK)	R301	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R22	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	(US, Canadian)	R302	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R23	1-216-049-00	METAL CHIP	1K	5%	1/10W		R303	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R24	1-216-085-00	METAL CHIP	33K	5%	1/10W		R304	1-216-025-00	METAL CHIP	100	5%	1/10W	
R25	1-216-067-00	METAL CHIP	5.6K	5%	1/10W		R305	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R27	1-216-079-00	METAL CHIP	18K	5%	1/10W		R306	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R28	1-216-061-00	METAL CHIP	3.3K	5%	1/10W		R307	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R29	1-216-073-00	METAL CHIP	10K	5%	1/10W		R308	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R31	1-216-047-00	METAL CHIP	820	5%	1/10W		R309	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R32	1-216-073-00	METAL CHIP	10K	5%	1/10W		R310	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R33	1-216-073-00	METAL CHIP	10K	5%	1/10W		R311	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R35	1-216-089-91	METAL GLAZE	47K	5%	1/10W		R312	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R36	1-216-071-00	METAL CHIP	8.2K	5%	1/10W		R315	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R37	1-216-109-00	METAL CHIP	330K	5%	1/10W		R316	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R39	1-216-057-00	METAL CHIP	2.2K	5%	1/10W		R317	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R40	1-216-055-00	METAL CHIP	1.8K	5%	1/10W		R318	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R41	1-216-067-00	METAL CHIP	5.6K	5%	1/10W		R319	1-216-041-00	METAL CHIP	470	5%	1/10W	
R42	1-216-109-00	METAL CHIP	330K	5%	1/10W		R320	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R44	1-216-057-00	METAL CHIP	2.2K	5%	1/10W		R321	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R45	1-216-055-00	METAL CHIP	1.8K	5%	1/10W		R322	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R46	1-216-067-00	METAL CHIP	5.6K	5%	1/10W		R323	1-216-077-00	METAL CHIP	15K	5%	1/10W	
△R47	1-249-409-11	CARBON	220	5%	1/4W	F	R324	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R61	1-216-097-00	METAL CHIP	100K	5%	1/10W		R325	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R62	1-216-089-91	METAL GLAZE	47K	5%	1/10W		R326	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R63	1-216-009-00	METAL CHIP	22	5%	1/10W		R327	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R70	1-216-061-00	METAL CHIP	3.3K	5%	1/10W		R328	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R71	1-216-043-00	METAL CHIP	560	5%	1/10W		R329	1-216-056-00	METAL GLAZE	2K	5%	1/10W	
R72	1-216-049-00	METAL CHIP	1K	5%	1/10W		R330	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R73	1-216-035-00	METAL CHIP	270	5%	1/10W		R331	1-216-070-00	METAL CHIP	7.5K	5%	1/10W	
R74	1-216-065-00	METAL CHIP	4.7K	5%	1/10W		R332	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R75	1-216-057-00	METAL CHIP	2.2K	5%	1/10W		R333	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R76	1-216-065-00	METAL CHIP	4.7K	5%	1/10W		R334	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R77	1-216-025-00	METAL CHIP	100	5%	1/10W		R335	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R78	1-216-065-00	METAL CHIP	4.7K	5%	1/10W		R336	1-216-097-00	METAL CHIP	100K	5%	1/10W	
△R79	1-247-807-31	CARBON	100	5%	1/4W	F							
R81	1-216-049-00	METAL CHIP	1K	5%	1/10W								
R82	1-216-049-00	METAL CHIP	1K	5%	1/10W								
R83	1-216-049-00	METAL CHIP	1K	5%	1/10W								

<p><b>Note:</b> The components identified by mark <b>△</b> or dotted line with mark <b>△</b> are critical for safety. Replace only with part number specified.</p>	<p><b>Note:</b> Les composants identifiés par une marque <b>△</b> sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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<b>SURR TUNER</b>
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R337	1-216-097-00	METAL CHIP	100K 5% 1/10W	R452	1-216-073-00	METAL CHIP	10K 5% 1/10W
R338	1-216-105-00	METAL CHIP	220K 5% 1/10W	R453	1-216-113-00	METAL CHIP	470K 5% 1/10W
R339	1-216-073-00	METAL CHIP	10K 5% 1/10W	R454	1-216-097-00	METAL CHIP	100K 5% 1/10W
R340	1-216-073-00	METAL CHIP	10K 5% 1/10W	R455	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R341	1-216-073-00	METAL CHIP	10K 5% 1/10W	R456	1-216-101-00	METAL CHIP	150K 5% 1/10W
R342	1-216-113-00	METAL CHIP	470K 5% 1/10W	R457	1-216-039-00	METAL CHIP	390 5% 1/10W
R348	1-216-049-00	METAL CHIP	1K 5% 1/10W	R458	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R349	1-216-073-00	METAL CHIP	10K 5% 1/10W	R459	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R351	1-216-105-00	METAL CHIP	220K 5% 1/10W	R460	1-216-095-00	METAL CHIP	82K 5% 1/10W
R352	1-216-105-00	METAL CHIP	220K 5% 1/10W	R461	1-216-113-00	METAL CHIP	470K 5% 1/10W
R353	1-216-105-00	METAL CHIP	220K 5% 1/10W	R462	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R354	1-216-025-00	METAL CHIP	100 5% 1/10W	R463	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R355	1-216-105-00	METAL CHIP	220K 5% 1/10W	R464	1-216-115-00	METAL CHIP	560K 5% 1/10W
R378	1-216-077-00	METAL CHIP	15K 5% 1/10W	R465	1-216-689-11	METAL CHIP	39K 0.5% 1/10W
R379	1-216-056-00	METAL GLAZE	2K 5% 1/10W	R466	1-216-083-00	METAL CHIP	27K 5% 1/10W
R380	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R467	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R381	1-216-070-00	METAL CHIP	7.5K 5% 1/10W	R468	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
R385	1-216-073-00	METAL CHIP	10K 5% 1/10W	R469	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R391	1-216-073-00	METAL CHIP	10K 5% 1/10W	R470	1-216-021-00	METAL CHIP	68 5% 1/10W
R396	1-216-053-00	METAL CHIP	1.5K 5% 1/10W	R473	1-216-097-00	METAL CHIP	100K 5% 1/10W
R397	1-216-053-00	METAL CHIP	1.5K 5% 1/10W	R474	1-216-075-00	METAL CHIP	12K 5% 1/10W
R398	1-216-053-00	METAL CHIP	1.5K 5% 1/10W	R475	1-216-097-00	METAL CHIP	100K 5% 1/10W
R399	1-216-073-00	METAL CHIP	10K 5% 1/10W	R476	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R402	1-216-073-00	METAL CHIP	10K 5% 1/10W	R477	1-216-049-00	METAL CHIP	1K 5% 1/10W
R403	1-216-113-00	METAL CHIP	470K 5% 1/10W	R478	1-216-071-00	METAL CHIP	8.2K 5% 1/10W
R404	1-216-097-00	METAL CHIP	100K 5% 1/10W			< VARIABLE RESISTOR >	
R405	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	RV22	1-241-631-11	RES, ADJ, CARBON 22K	
R406	1-216-101-00	METAL CHIP	150K 5% 1/10W	RV24	1-238-019-11	RES, ADJ, CARBON 47K	
R407	1-216-039-00	METAL CHIP	390 5% 1/10W	RV25	1-241-631-11	RES, ADJ, CARBON 22K	
R408	1-216-069-00	METAL CHIP	6.8K 5% 1/10W			< TRANSFORMER >	
R409	1-216-069-00	METAL CHIP	6.8K 5% 1/10W	T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR	
R410	1-216-095-00	METAL CHIP	82K 5% 1/10W			< TERMINAL >	
R411	1-216-113-00	METAL CHIP	470K 5% 1/10W	* TM1	1-537-288-11	TERMINAL BOARD, ANTENNA (PAL) (ANTENNA) (UK)	
R412	1-216-053-00	METAL CHIP	1.5K 5% 1/10W	TM1	1-537-264-11	TERMINAL BOARD, ANTENNA (ANTENNA) (US, Canadian)	
R413	1-216-065-00	METAL CHIP	4.7K 5% 1/10W			< TEST PIN >	
R414	1-216-115-00	METAL CHIP	560K 5% 1/10W	* TP1	1-560-060-00	PIN, CONNECTOR 2P	
R415	1-216-689-11	METAL CHIP	39K 0.5% 1/10W			< VIBRATOR >	
R416	1-216-083-00	METAL CHIP	27K 5% 1/10W	X301	1-567-132-00	OSCILLATOR, CERAMIC (8.00MHz)	
R417	1-216-067-00	METAL CHIP	5.6K 5% 1/10W			< VIBRATOR >	
R418	1-216-051-00	METAL CHIP	1.2K 5% 1/10W	XT81	1-577-126-21	VIBRATOR, CRYSTAL (7.2MHz)	
R419	1-216-053-00	METAL CHIP	1.5K 5% 1/10W			*****	
R420	1-216-021-00	METAL CHIP	68 5% 1/10W				
R421	1-216-049-00	METAL CHIP	1K 5% 1/10W				
R422	1-216-049-00	METAL CHIP	1K 5% 1/10W				
R423	1-216-097-00	METAL CHIP	100K 5% 1/10W				
R424	1-216-075-00	METAL CHIP	12K 5% 1/10W				
R425	1-216-097-00	METAL CHIP	100K 5% 1/10W				
R426	1-216-065-00	METAL CHIP	4.7K 5% 1/10W				
R427	1-216-049-00	METAL CHIP	1K 5% 1/10W				
R428	1-216-071-00	METAL CHIP	8.2K 5% 1/10W				

# STR-D790/D990

**SONY<sup>®</sup>**  
**SERVICE MANUAL**

*US Model*  
*Canadian Model*  
*UK Model*

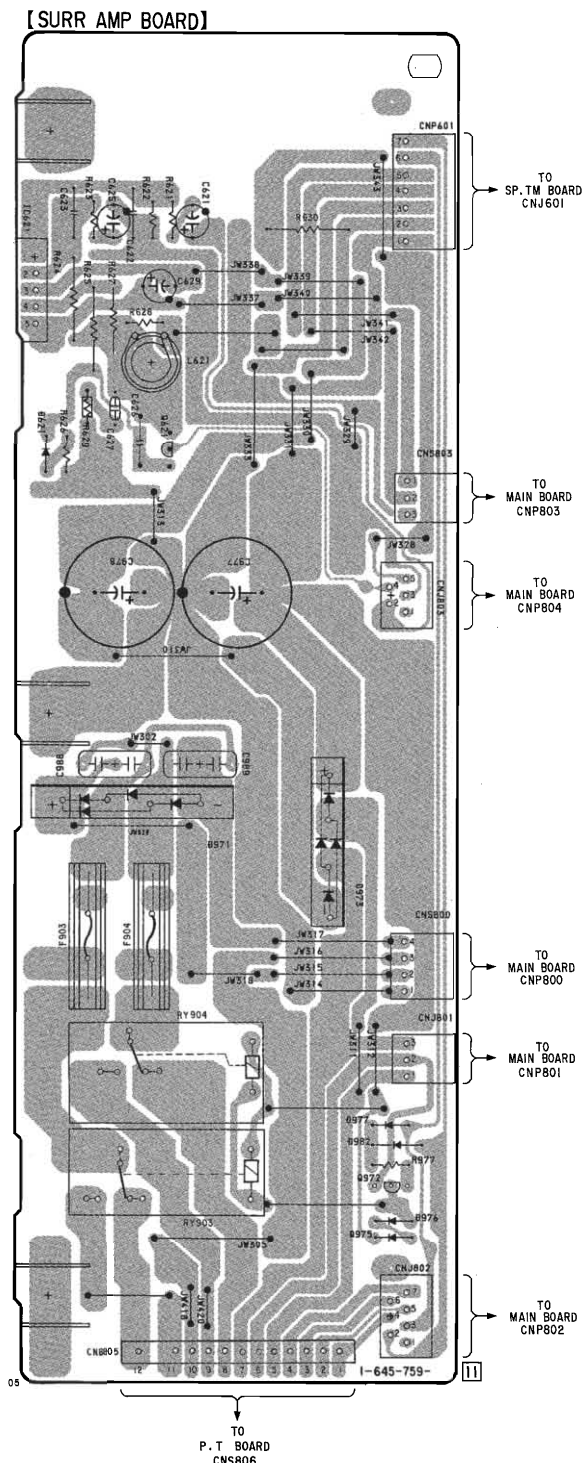
## SUPPLEMENT-3

File this supplement with the service manual.

The surr amp borad has been changed. (Only for STR-D990 canadian model.)  
SURR AMP BOARD : 1-644-108-11 → 1-645-759-11

# STR-D790/D990

## PRINTED WIRING BOARD



### Note on Schematic Diagram:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\mu\text{F}$  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}$  W or less unless otherwise specified.

#### Note:

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

#### Note:

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

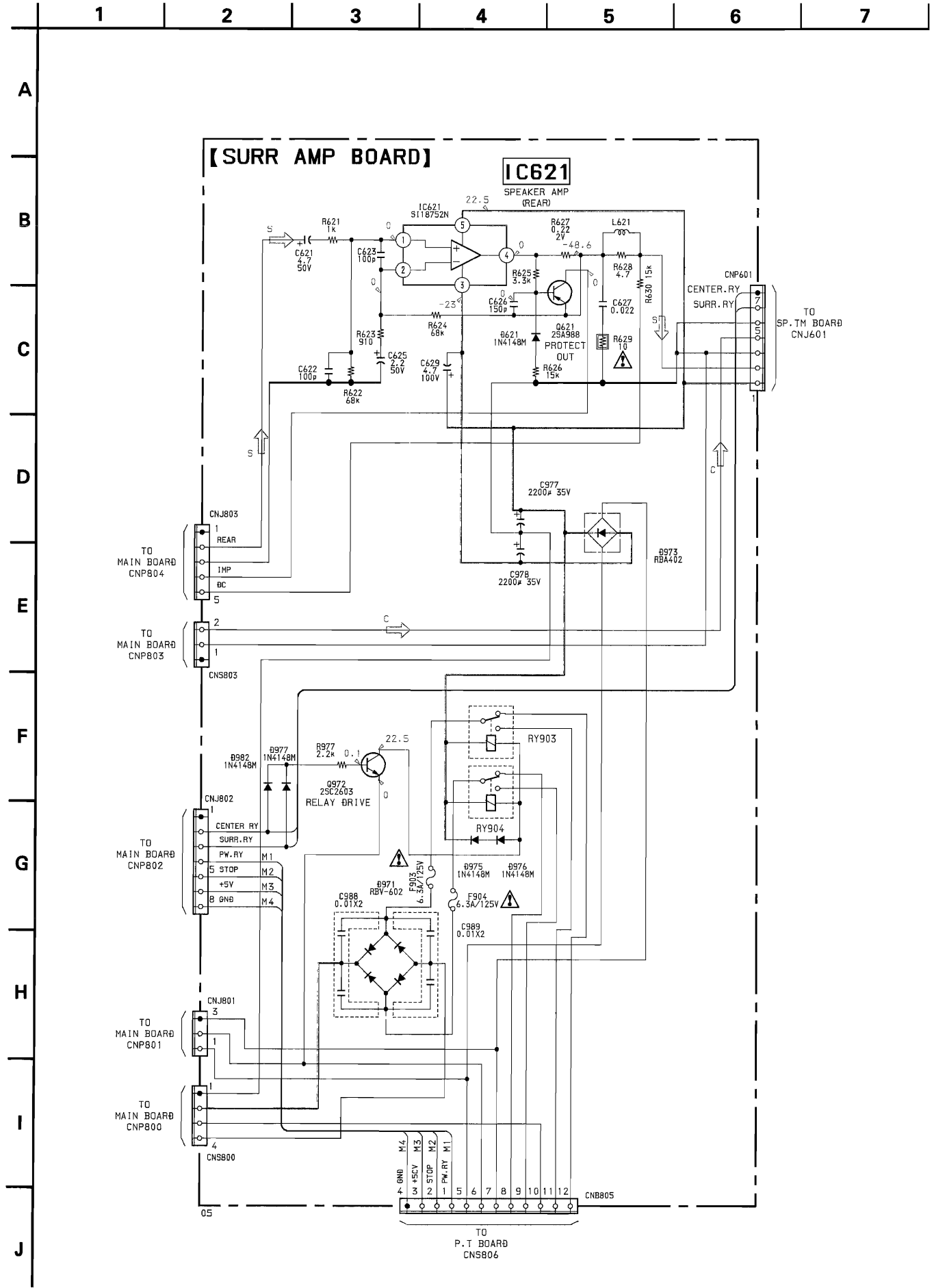
- : B + Line.
- : B - Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (10 M $\Omega$ /V). Voltage variations may be noted due to normal production tolerances.
- Signal path.  
 C : AUDIO (CENTER)  
 S : AUDIO (SURROUND)

### Note on Printed Wiring Board:

- : parts extracted from the component side.



SCHEMATIC DIAGRAM



**SURR AMP**

**ELECTRICAL PARTS LIST**

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F: nonflammable

- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$ A..., uPA...:  $\mu$ PA...,  
uPB...:  $\mu$ PB..., uPC...:  $\mu$ PC...,  
uPD...:  $\mu$ PD...
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

When including parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4356-478-A	SURR AMP BOARD, COMPLETE *****				< IC >	
	1-533-217-31	HOLDER, FUSE		IC621	8-759-502-33	IC SI-18752	
*	1-533-293-11	HOLDER, FUSE				< COIL >	
		< CAPACITOR >		L621	1-420-872-00	COIL, AIR CORE	
C602	1-124-927-11	ELECT 4. 7MF	20% 50V			< TRANSISTOR >	
C622	1-162-282-11	CERAMIC 100PF	10% 50V				
C623	1-162-282-11	CERAMIC 100PF	10% 50V	Q621	8-729-140-83	TRANSISTOR 2SA988TP-PAFAEF	
C625	1-124-925-11	ELECT 2. 2MF	20% 50V	Q972	8-729-620-05	TRANSISTOR 2SC2603-EF	
C626	1-162-284-11	CERAMIC 150PF	10% 50V			< RESISTOR >	
C627	1-130-487-91	MYLAR 0. 022MF	5% 50V	R621	1-249-417-11	CARBON 1K 5% 1/4W	
C629	1-124-927-91	ELECT 4. 7MF	20% 100V	R622	1-249-439-11	CARBON 68K 5% 1/4W	
C977	1-124-618-51	ELECT 2200MF	20% 35V	R623	1-247-830-11	CARBON 910 5% 1/4W	
C978	1-124-618-51	ELECT 2200MF	20% 35V	R624	1-249-439-11	CARBON 68K 5% 1/4W	
C988	1-102-394-11	CERAMIC 0. 01MF	250V	R625	1-249-423-11	CARBON 3. 3K 5% 1/4W	
C989	1-102-394-11	CERAMIC 0. 01MF	250V	R626	1-249-431-11	CARBON 15K 5% 1/4W	
		< CONNECTOR >		R627	1-208-602-11	METAL WIRE 0. 22 10% 2W F	
* CNJ801	1-564-518-21	PLUG, CONNECTOR 3P		R628	1-249-389-11	CARBON 4. 7 5% 1/4W	
* CNJ802	1-568-850-11	SOCKET, CONNECTOR 7P		R629	$\Delta$ 1-249-393-11	CARBON 10 5% 1/4W F	
* CNJ803	1-568-848-11	SOCKET, CONNECTOR 5P		R630	1-249-431-11	CARBON 15K 5% 1/4W	
* CNP601	1-564-522-11	PLUG, CONNECTOR 7P					
* CNS800	1-564-519-41	PLUG, CONNECTOR 4P		R977	1-249-421-11	CARBON 2. 2K 5% 1/4W	
* CNS803	1-564-518-31	PLUG, CONNECTOR 3P					
		< DIODE >					
D621	8-719-987-64	DIODE 1N4148M-TP					
D971	8-719-302-38	DIODE RBV-602-01					
D973	8-719-312-09	DIODE RBA-402					
D975	8-719-987-64	DIODE 1N4148M-TP					
D976	8-719-987-64	DIODE 1N4148M-TP					
D977	8-719-987-64	DIODE 1N4148M-TP					
D982	8-719-987-64	DIODE 1N4148M-TP					
		< FUSE >					
F903	$\Delta$ 1-532-748-11	FUSE, GLASS TUBU 6. 3A/125V					
F904	$\Delta$ 1-532-748-11	FUSE, GLASS TUBU 6. 3A/125V					