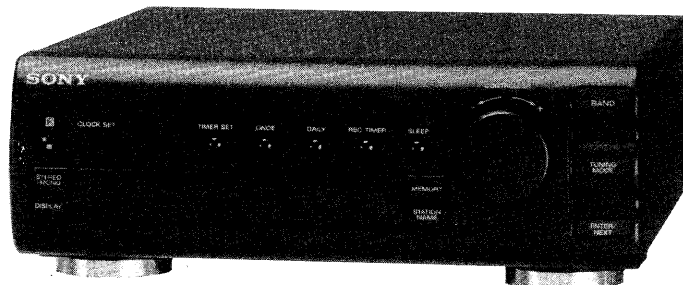


# ST-H7900

## SERVICE MANUAL



*US Model  
Canadian Model  
AEP Model  
UK Model  
E Model  
Australian Model  
Tourist Model*

This set is the tuner section  
in MHC-7900/P100X

### SPECIFICATIONS

#### **Tuner**

US and Canadian models  
FM stereo, FM/AM superheterodyne tuner  
UK and European models  
FM stereo, FM/MW/LW superheterodyne tuner  
Other countries model  
FM stereo, FM/MW/SW superheterodyne tuner

#### **FM tuner section**

Tuning range 87.5 – 108.0 MHz  
Antenna terminals 75 ohm unbalanced  
Intermediate frequency  
10.7 MHz

#### **AM tuner section**

US and Canadian models  
Tuning range 530–1,710 kHz  
(with the AM tuning  
interval set at 10 kHz)  
531–1,602 kHz  
(with the AM tuning  
interval set at 9 kHz)

UK and European models (except  
Germany and Italy):

MW: 531 – 1,602 kHz  
LW: 153 – 279 kHz

German model:

AM: 531 – 1,602 kHz

Italian model:

AM: 522 – 1,611 kHz

Other countries model :

MW: 531 – 1,602 kHz  
(with the MW tuning  
interval set at 9 kHz)  
SW: 5.95 – 17.90 MHz

Aerial (Antenna) AM loop aerial (antenna)  
External aerial (antenna) terminals

Intermediate frequency  
450 kHz

Dimensions  
Approx. 225 x 85 x 240 mm (w/h/d)  
(8 7/8 x 3 3/8 x 9 1/2 inches)

Mass  
Approx. 1.4 kg  
(3 lb 1 oz)

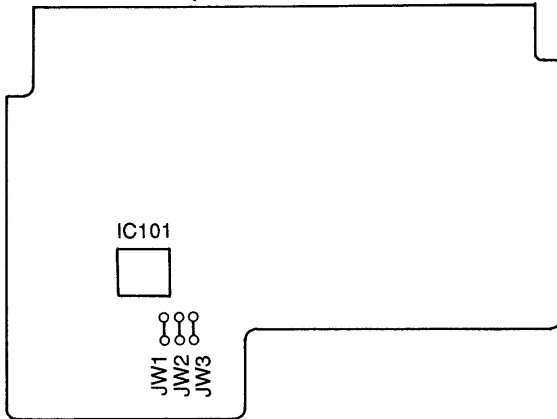
Design and specifications are subject to change without notice.

**TUNER**  
**SONY®**

## MODEL IDENTIFICATION

— MAIN BOARD —

### MAIN BOARD (SOLDERING SIDE)



	JW1	JW2	JW3
US,CND	MOUNTED	NONE	NONE
AEP, UK	MOUNTED	NONE	MOUNTED
E, AUS, EA JE, SP	MOUNTED	MOUNTED	NONE
G	NONE	NONE	MOUNTED
IT	NONE	MOUNTED	MOUNTED
MY	MOUNTED	MOUNTED	NONE

CND : Canadian model  
 AUS : Australian model  
 EA : Saudi Arabia model  
 JE : Tourist model  
 SP : Singapore model  
 G : German model  
 IT : Italian model  
 MY : Malaysia model

### Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

### SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK  $\Delta$  OR DOTTED LINE WITH MARK  $\Delta$  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.

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	(AEP,UK,G,IT model)	
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	(US, CND, E, AUS, EA, JE, SP, MY model)	
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	(US, CND, E, AUS, EA, JE, SP, MY model)	
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### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  $\Delta$  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.

## SECTION 1 SERVICING NOTE

### SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks 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

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 microamperes). 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 0.75 V, 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)

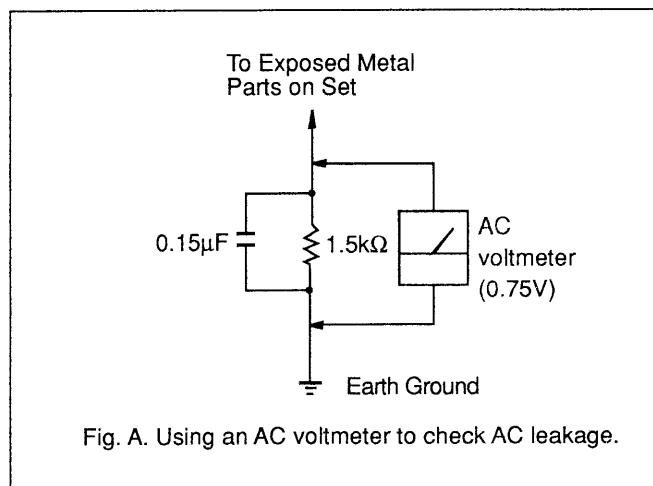


Fig. A. Using an AC voltmeter to check AC leakage.

#### • Power Supply Used In Servicing

This unit does not have its own power supply. As it works on the power supplied from the amplifier (TA-H7900E) used for this series, connect this amplifier when servicing the unit (conduction repair, etc.).

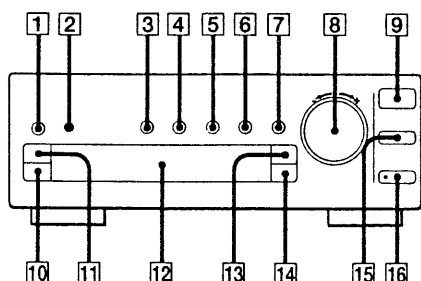
Power can also be supplied by connecting the "CDF/TC" connector of the conduction tool (PFJ-1). The following three items are required for this connection.

- J-2501-063-A
- 1-696-741-11 CORD, (WITH CONNECTOR)
- 1-751-541-11 CORD, (WITH CONNECTOR)

## SECTION 2 GENERAL

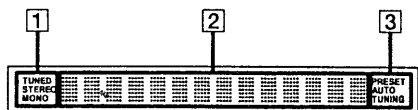
This section is extracted from instruction manual.

### Front Panel



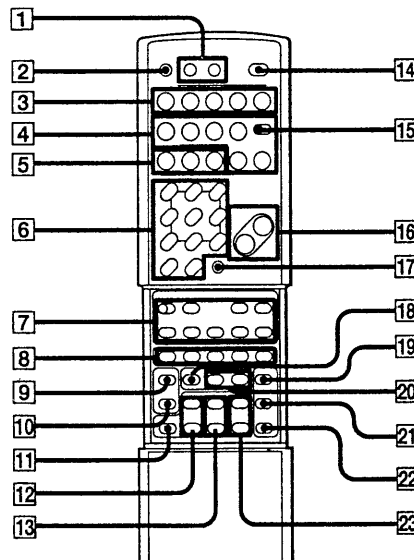
- 1 Remote sensor
- 2 CLOCK SET button (6)
- 3 TIMER SET button (25)
- 4 ONCE button\* (25)
- 5 DAILY button\* (25)
- 6 REC TIMER button\* (26)
- 7 SLEEP button\* (25)
- 8 CONTROLLER control\* (6, 10, 25)
- 9 BAND button (10, 16)
- 10 DISPLAY button (6, 11)
- 11 STEREO/MONO button (10)
- 12 Display window (6, 10)
- 13 MEMORY button (11)
- 14 STATION NAME button (11)
- 15 TUNING MODE button (10)
- 16 ENTER/NEXT button\* (6, 11, 25)

### Display Window



- 1 Receiving status indication (10)
- 2 Frequency/station name/time indication (10, 25)
- 3 Tuning mode indication (10)

### Remote commander



- 1 TAPE DECK A/B buttons (12)
- 2 SLEEP button (25)
- 3 CD/MD operating buttons (7, 16)
- 4 Cassette deck operating buttons (12)
- 5 Tuner operating buttons (11)
- 6 CD/Tuner/LPC numeric buttons (8, 11, 22)
- 7 VCR operating buttons (28)
- 8 TV operating buttons (28)
- 9 AUDIO FUNCTION button (28)
- 10 VIDEO FUNCTION button (28)
- 11 TEST TONE button (23)
- 12 REAR LEVEL +/- buttons (23)
- 13 CENTER LEVEL +/- buttons (23)
- 14 SYSTEM POWER switch (7)
- 15 CD/MD switch (7)
- 16 VOLUME +/- buttons (7)
- 17 LPC (Listening point control) button (22)
- 18 DIRECT button (18)
- 19 CHECK button (8)
- 20 MENU +/- button (18)
- 21 CLEAR button (8)
- 22 REPEAT button (9)
- 23 DELAY TIME +/- button (23)

## SECTION 3 ELECTRICAL ADJUSTMENTS

### Precautions in Repairing

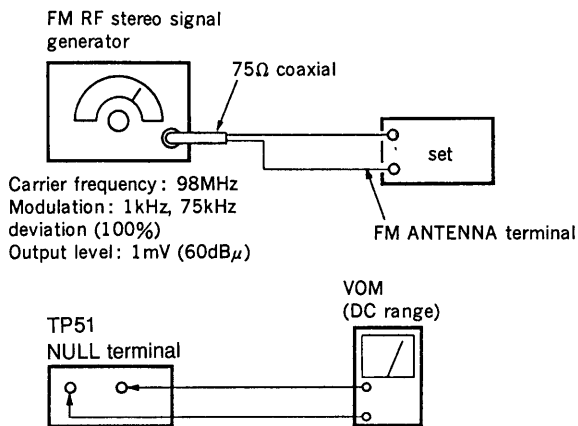
If the front end unit fails, it is difficult to repair the inner circuits, so replace the entire front end unit.

### FM SECTION

#### FM Discriminator Adjustment (NULL Adjustment)

##### Setting :

BAND : FM



##### Procedure :

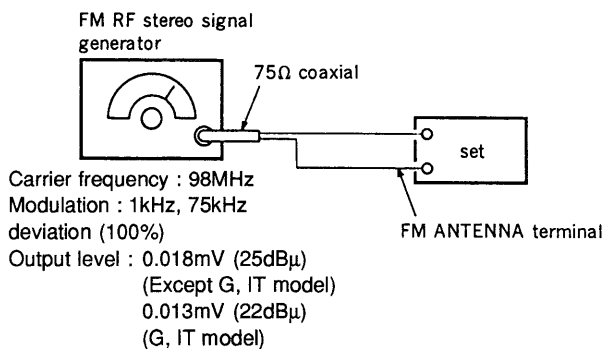
1. Tune the set to 98MHz.
2. Adjust IFT51 for 0Vdc reading on the VOM.

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

#### FM Tuned Indication Lighting Level

##### Setting :

BAND : FM



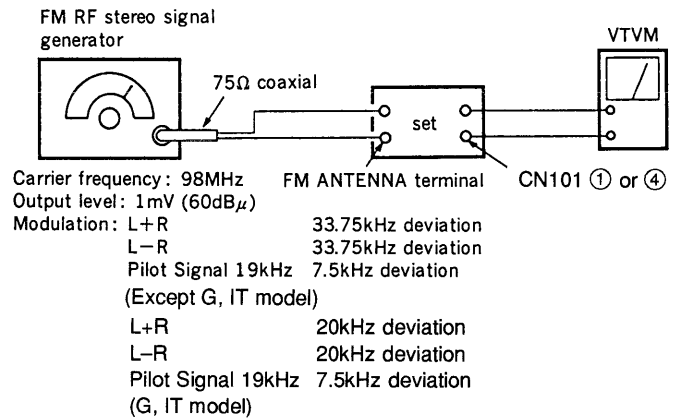
##### Procedure :

1. Tune the set to 98MHz.
2. Adjust RV52 so that the TUNED indicator goes on.

#### FM Stereo Separation Adjustment

##### Setting :

BAND : FM



##### 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 RV53 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV53 for minimum reading.

L-CH Stereo separation : Ⓐ—Ⓑ

R-CH Stereo separation : Ⓒ—Ⓓ

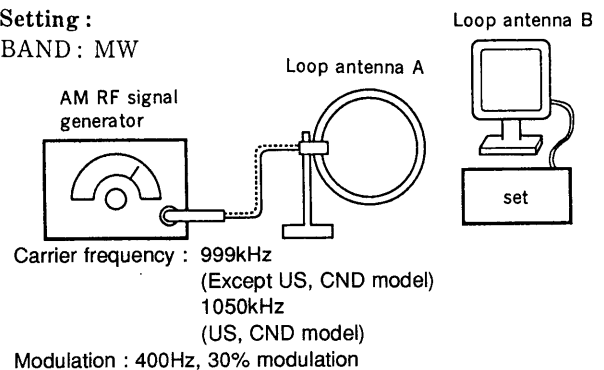
The separations of both channels should be equal.

### AM SECTION

#### AM Tuned Indication Lighting Level

##### Setting :

BAND : MW



##### Procedure :

1. Set loop antenna A so that the loop antenna B input level becomes 55dB $\mu$ /m (0.6m V/m).
2. Tune the set to 1050kHz (US, CND model) or 999kHz (Except US, CND model).
3. Adjust RV51 so that the TUNED indicator goes on.

**SW Control Voltage Adjustment  
(Frequency Coverage Adjustment)  
(E, AUS, EA, MY, SP, JE model)**

Setting :

BAND : SW

Procedure :

1. Connect digital voltmeter to diode D1 center lead and ground.
2. Adjust for a following value reading on digital voltmeter.

	Set frequency	Adjustment part	Reading on digital voltmeter
SW	f min. 5.95MHz	T2	1.2Vdc
	f min. 17.9MHz	CV2	8.5Vdc

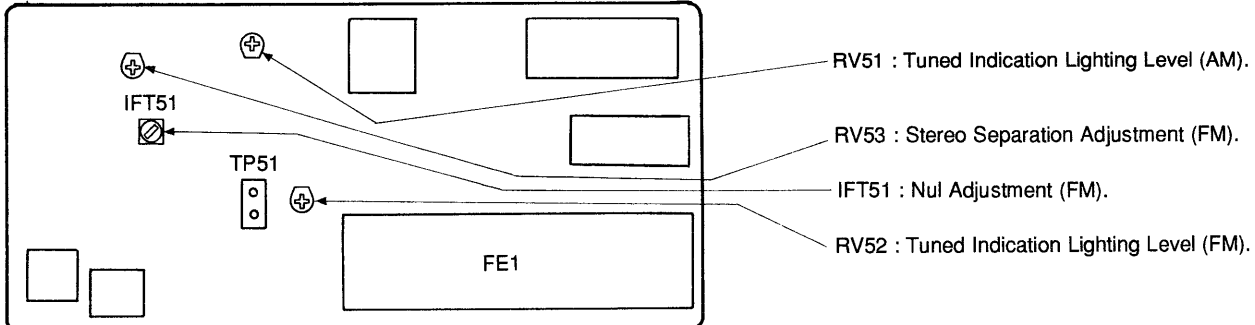
**Note .**

- CND : Canadian model
- IT : Italian model
- G : German model
- EA : Saudi Arabia model
- SP : Singapore model
- MY : Malaysia model
- AUS : Australian model
- JE : Tourist model

**Adjustment Location :**

**TCB BOARD (AEP, UK, G, IT model)**

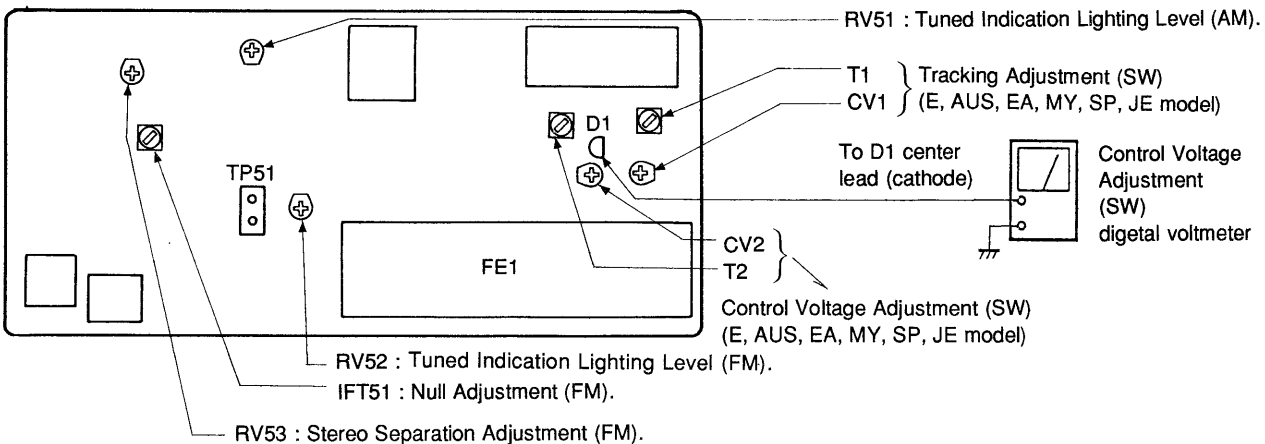
— Component Side —



**Adjustment Location :**

**TCB BOARD (US, CND, E, AUS, EA, MY SP JE model)**

— Component Side —

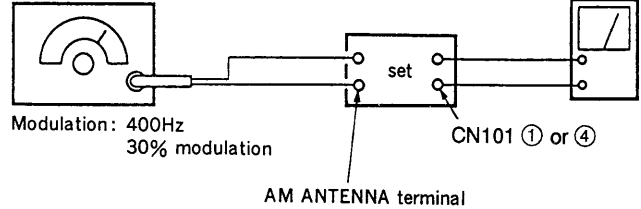


**SW Tracking Adjustment  
(E, AUS, EA, MY, SP, JE model)**

Setting :

BAND : SW

AM RF signal generator



Procedure :

Adjust for a maximum reading on VTVM.

	Set frequency	Adjustment part
SW	f low. 7MHz	T1
	f high. 17MHz	CV1

- Repeat the procedures is each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

## SECTION 4 IC PIN FUNCTIONS

### 4-1. IC PIN FUNCTIONS

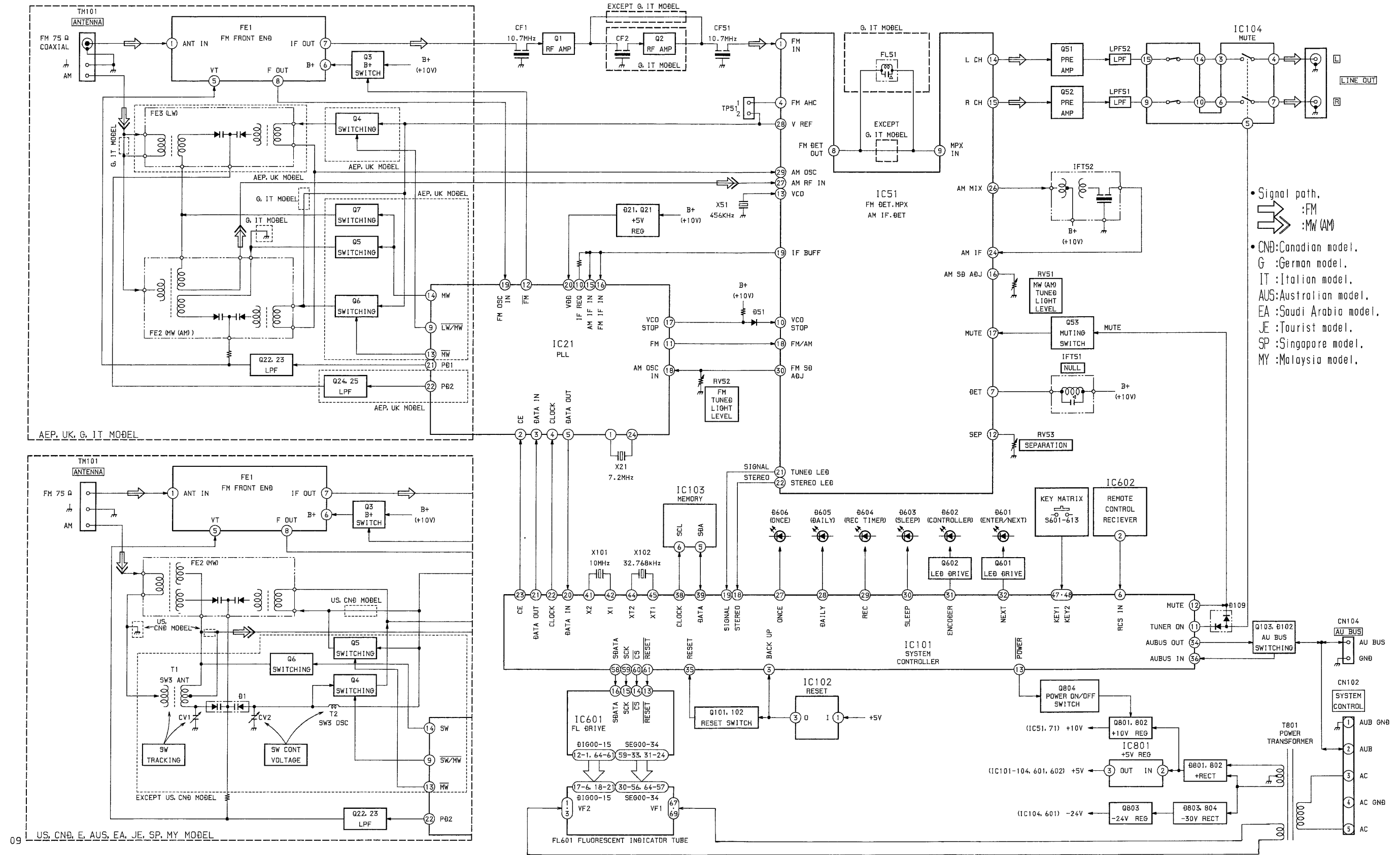
• IC101 Tuner System Controller (  $\mu$ PD78012BGC-627-AB8)

Pin No.	Pin Name	I/O	Function
1	IF+50	I	} Connected to GND.
2	IF-50	I	
3	BACK UP	I	Backup input
4	NC	-	} Not used. (Open)
5	NC	-	
6	RSC input	I	Remote control input
7	—	-	} Not used. (Open)
8	—	-	
9	V <sub>ss</sub>	-	GND
10	—	-	Not used. (Open)
11	TUNER ON	O	Tuner ON
12	MUTE	O	Mute output
13	$\overline{\text{POWER}}$	O	Power ON/OFF output. "L":ON, "H":OFF.
14	IFNG	O	} Not used. (Open)
15	AM/FM	O	
16	AM MONO	O	
17	AM	O	
18	STEREO	I	STEREO input
19	SIGNAL	I	SIGNAL input
20	DATA input	I	Data input from IC21 (PLL)
21	DATA output	O	Data output to IC21 (PLL)
22	CLOCK	O	CLOCK output to IC21 (PLL)
23	CE	O	CE output to IC21 (PLL)
24	V <sub>ss</sub>	-	GND
25	NC	-	} Not used. (Open)
26	NC	-	
27	ONCE	O	ONCE LED (D606) drive output
28	DAILY	O	DAILY LED (D605) drive output
29	REC	O	REC TIMER LED (D604) drive output
30	SLEEP	O	SLEEP LED (D603) drive output
31	ENCODER	O	CONTROLLER LED (D602) drive output
32	NEXT	O	ENTER/NEXT LED (D601) drive output.
33	ENCODER IN B	I	Encoder switch input
34	AUBUS OUT	O	Audio bus output
35	RESET	I	Reset input
36	AUBUS IN	I	Audio bus input
37	ENCODER IN A	I	Encoder switch input
38	CLOCK	O	CLOCK output to IC103 (MEMORY)
39	DATA	I/O	Data input/output with IC103 (MEMORY)
40	V <sub>DD</sub>	-	Power supply (+5V)

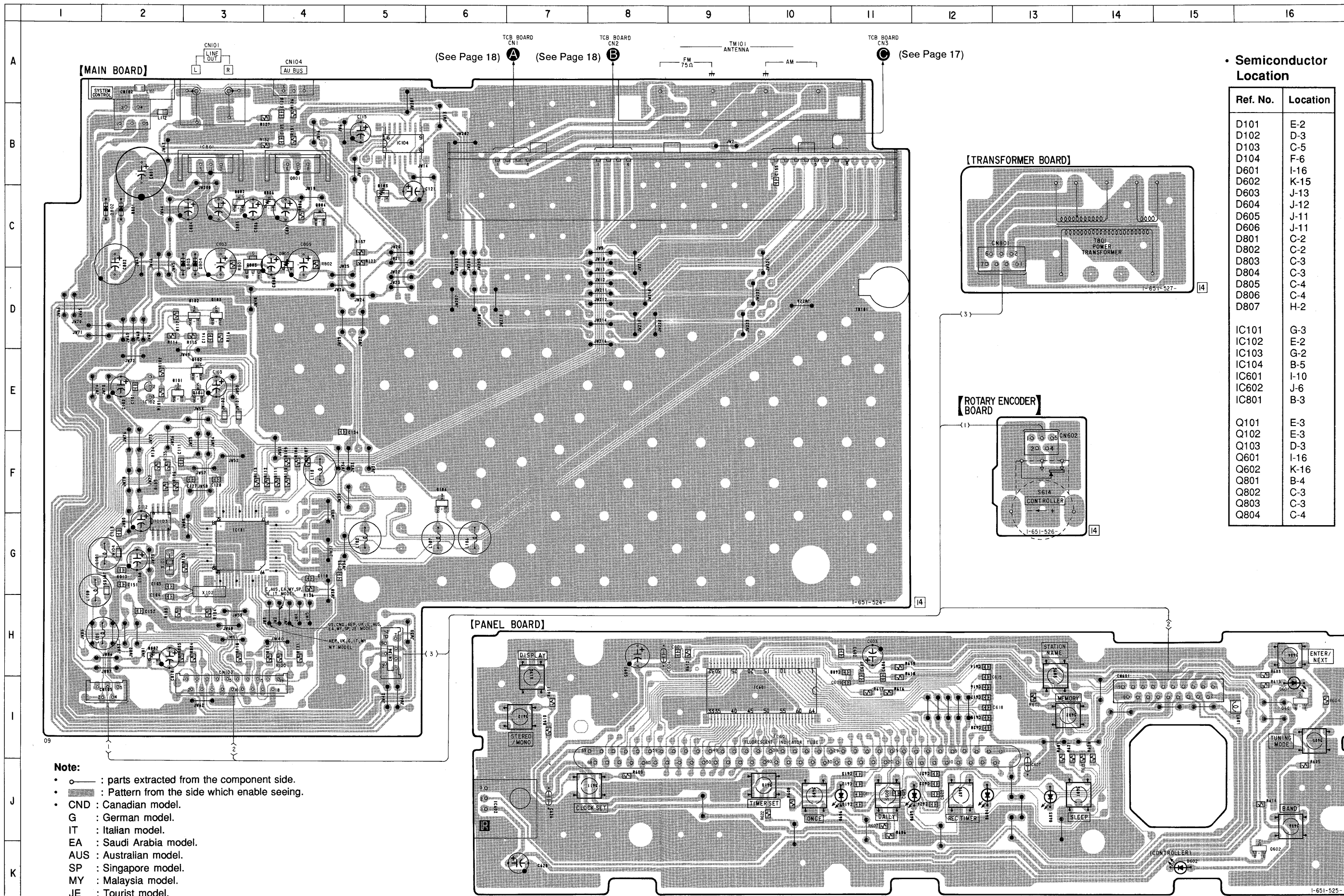
Pin No.	Pin Name	I/O	Function
41	X2	O	Main clock (10 MHz)
42	X1	I	Main clock (10 MHz)
43	GND	–	GND
44	XT2	O	} Clock (32.768 kHz)
45	XT1	I	
46	GND	–	GND
47	K1	I	} Key input
48	K2	I	
49	GND	–	} GND
50	GND	–	
51	GND	–	
52	GND	–	
53	GND	–	
54	GND	–	
55	AVDD	–	} Power supply (+5V)
56	AVREF	–	
57	GND	–	GND
58	SDATA	O	Data output to IC601 (FL driver)
59	SCK	O	CLOCK output to IC601 (FL driver)
60	$\overline{CS}$	O	CS output to IC601 (FL driver)
61	RESET	O	RESET output to IC601 (FL driver)
62	Destination	I	} Destination discrimination input
63	Destination	I	
64	Destination	I	



4-2. BLOCK DIAGRAM



4-3. PRINTED WIRING BOARDS —MAIN SECTION —  
 • See page 23 for Semiconductor Lead Layouts.

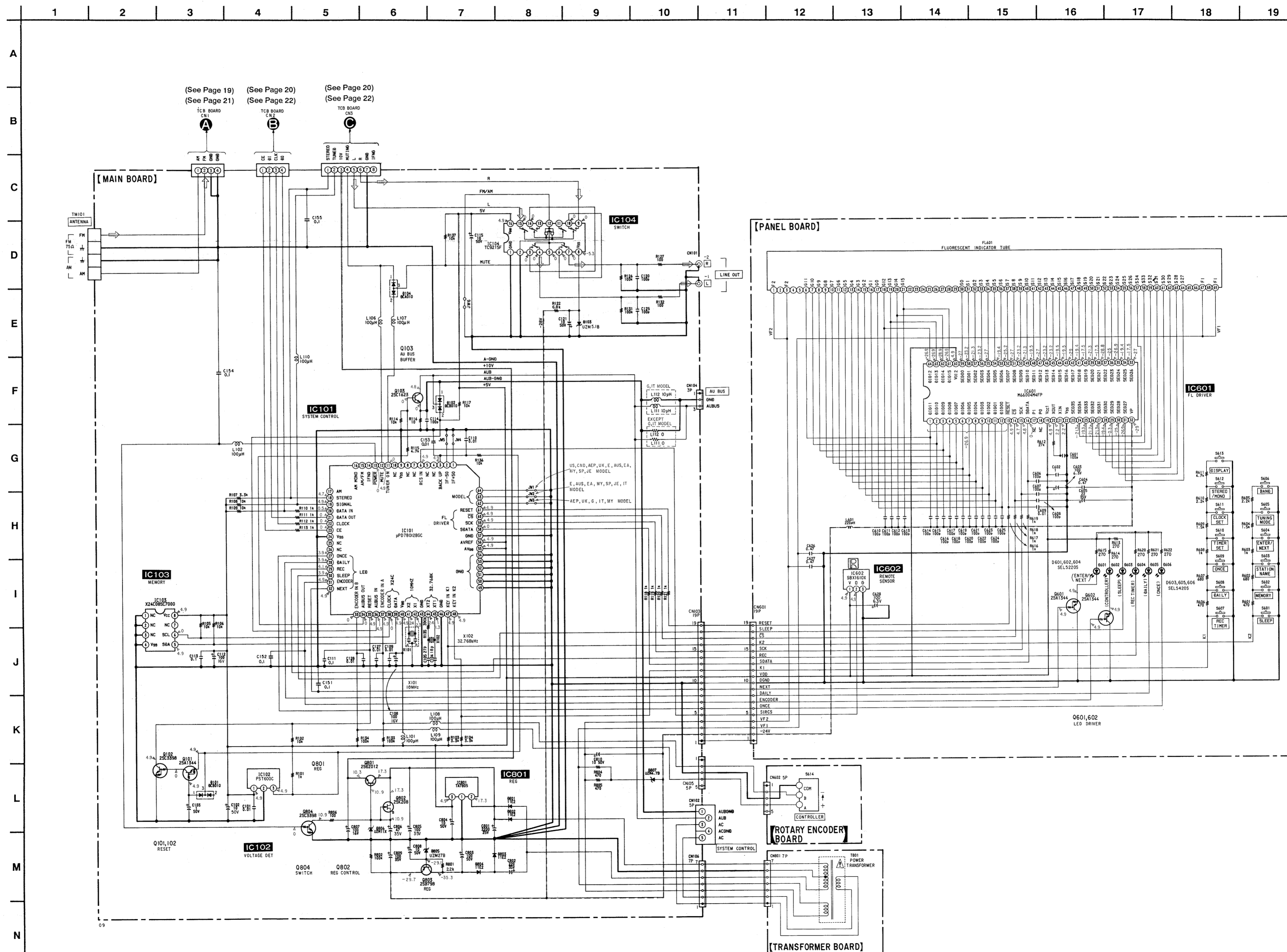


• Semiconductor Location

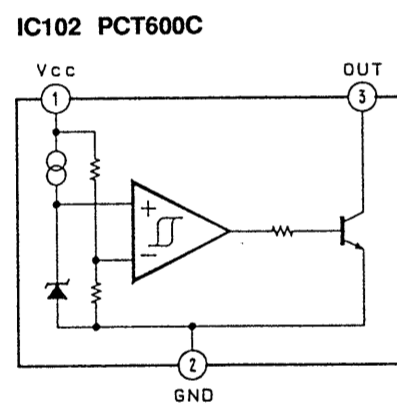
Ref. No.	Location
D101	E-2
D102	D-3
D103	C-5
D104	F-6
D601	I-16
D602	K-15
D603	J-13
D604	J-12
D605	J-11
D606	J-11
D801	C-2
D802	C-2
D803	C-3
D804	C-3
D805	C-4
D806	C-4
D807	H-2
IC101	G-3
IC102	E-2
IC103	G-2
IC104	B-5
IC601	I-10
IC602	J-6
IC801	B-3
Q101	E-3
Q102	E-3
Q103	D-3
Q601	I-16
Q602	K-16
Q801	B-4
Q802	C-3
Q803	C-3
Q804	C-4

**Note:**  
 • — : parts extracted from the component side.  
 • — : Pattern from the side which enable seeing.  
 • CND : Canadian model.  
 G : German model.  
 IT : Italian model.  
 EA : Saudi Arabia model.  
 AUS : Australian model.  
 SP : Singapore model.  
 MY : Malaysia model.  
 JE : Tourist model.

4-4. SCHEMATIC DIAGRAM — MAIN SECTION —  
• See page 7 for IC Pin Functions.



• IC BLOCK DIAGRAM



- Note:**
- 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 1/4W or less unless otherwise specified.
  - $\Delta$  : internal component.

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

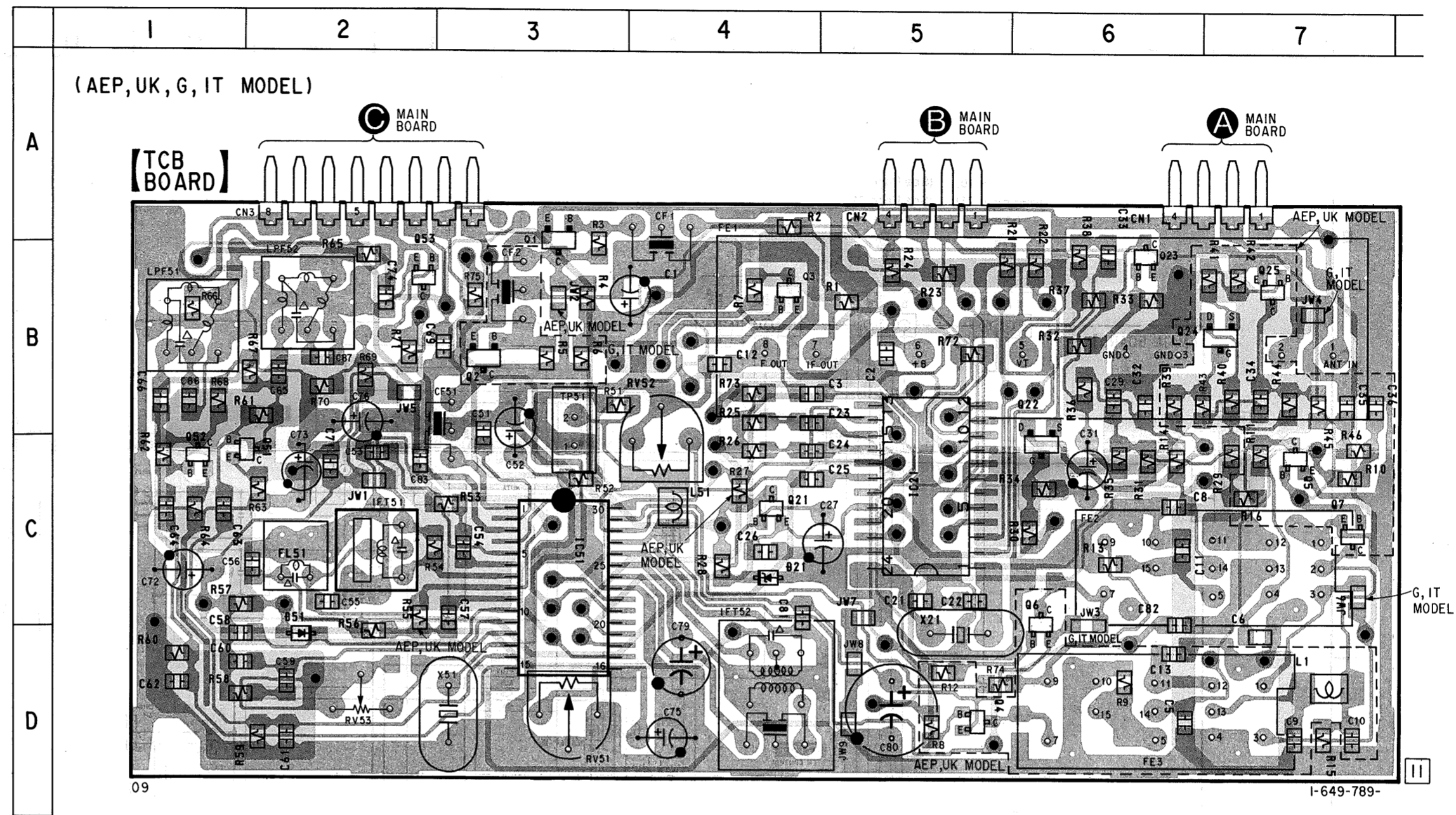
**Note:** Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ———: B+ Line
- - - - - -: B- Line
- Voltage and waveforms are dc with respect to ground. no mark : FM
- ( ) : AM
- Voltages are taken with a VOM (Input impedance 10M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- CND : Canadian model.
- G : German model.
- IT : Italian model.
- EA : Saudi Arabia model.
- AUS : Australian model.
- SP : Singapore model.
- MY : Malaysia model.
- JE : Tourist model.

4-5. PRINTED WIRING BOARD — TUNER SECTION —  
 • See page 23 for Semiconductor Lead Layouts.

• Semiconductor Location  
 (AEP, UK, G, IT Model)

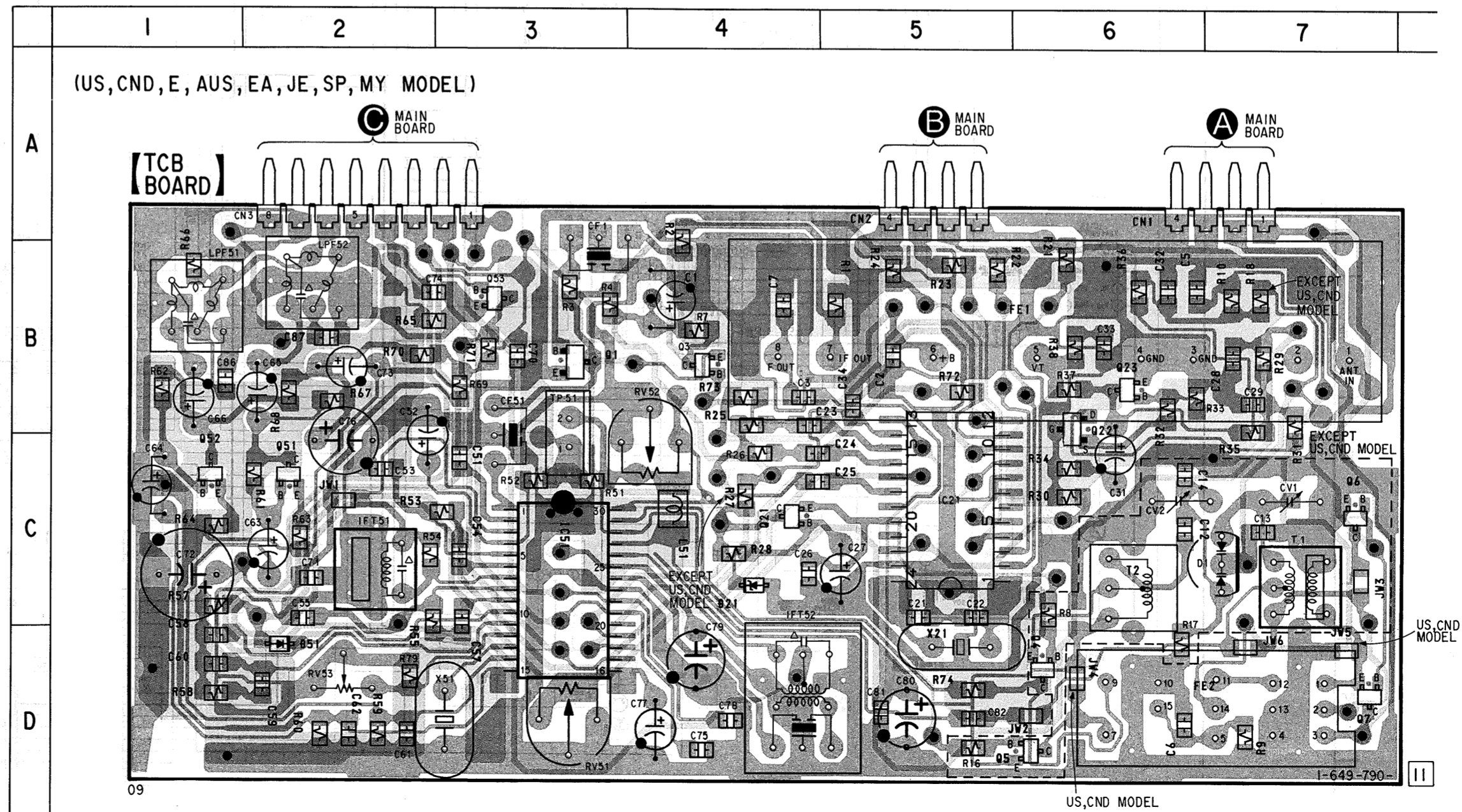
Ref. No.	Location
D21	C-4
D51	C-2
IC21	C-5
IC51	C-3
Q1	A-3
Q2	B-3
Q3	B-4
Q4	D-5
Q5	C-7
Q6	C-6
Q7	C-7
Q21	C-4
Q22	B-6
Q23	B-6
Q24	B-6
Q25	B-7
Q51	C-2
Q52	C-1
Q53	B-2



4-6. PRINTED WIRING BOARD — TUNER SECTION —  
 • See page 23 for Semiconductor Lead

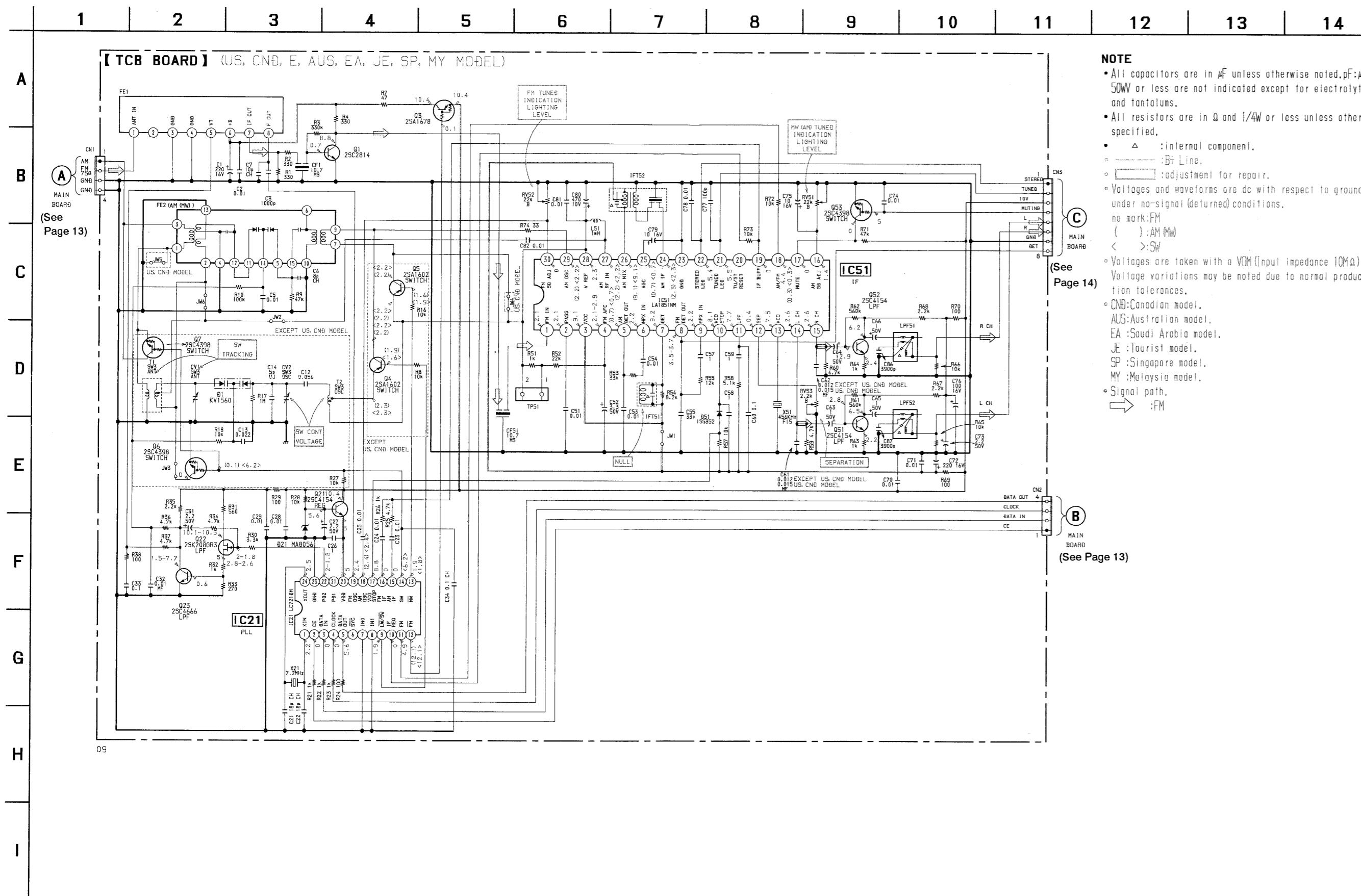
• Semiconductor Location  
 (US, CND, E, AUS, EA, JE, SP, MY Model)

Ref. No.	Location
D1	C-7
D21	C-4
D51	D-2
IC21	C-5
IC51	C-3
Q1	B-3
Q3	B-4
Q4	D-6
Q5	D-6
Q6	C-7
Q7	D-7
Q21	C-4
Q22	B-6
Q23	B-6
Q51	C-2
Q52	C-1
Q53	B-3

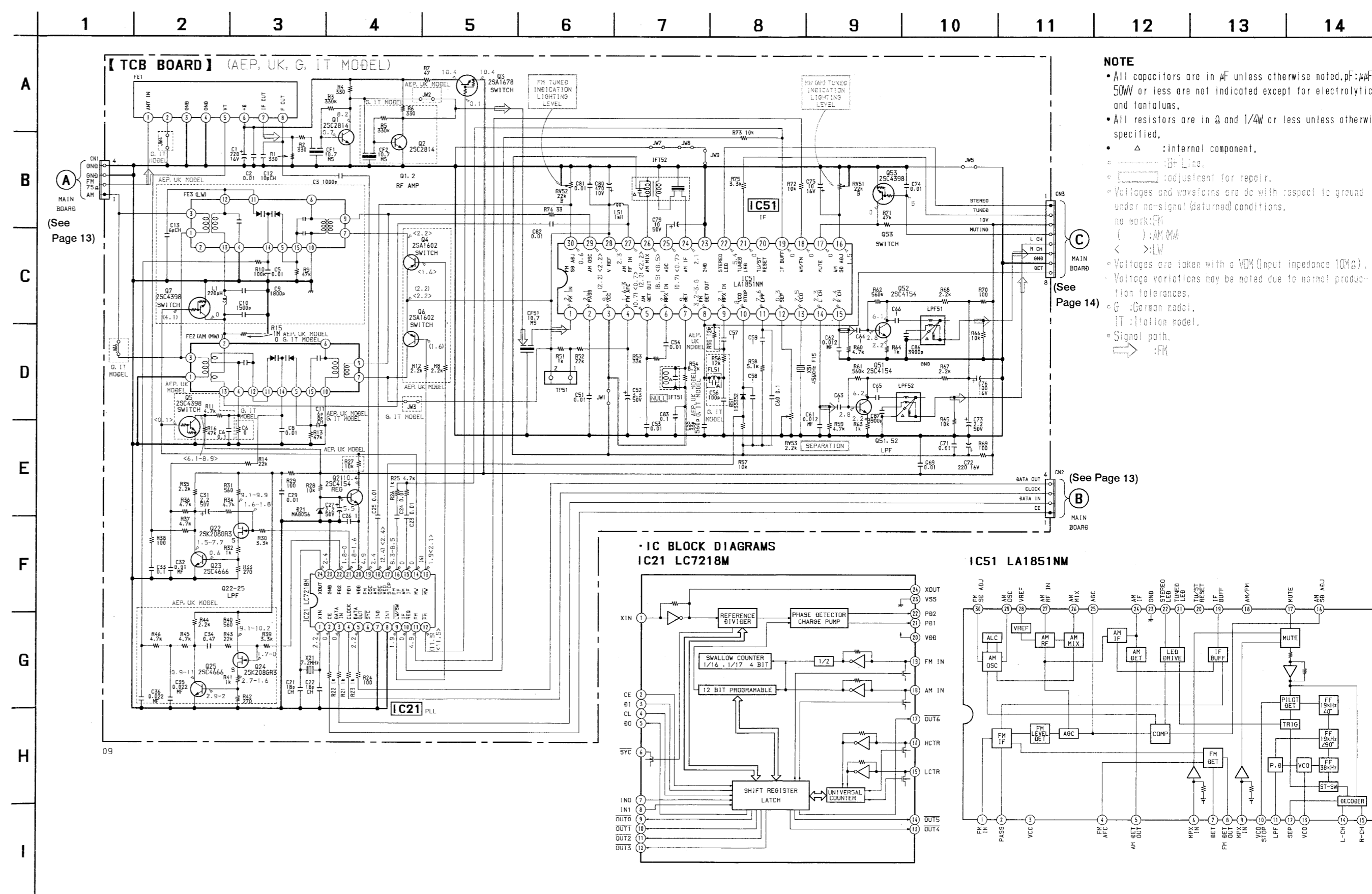


- Note:
- : parts extracted from the component side.
  - : Through hole.
  - △ : internal component.
  - ▬ : Pattern from the side which enable seeing.
  - ▬ : Pattern of the rear side.
  - CND : Canadian model.
  - G : German model.
  - IT : Italian model.
  - EA : Saudi Arabia model.
  - AUS : Australian model.
  - SP : Singapore model.
  - MY : Malaysia model.
  - JE : Tourist model.

4-7. SCHEMATIC DIAGRAM — TUNER SECTION —

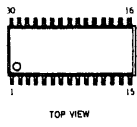


4-8. SCHEMATIC DIAGRAM — TUNER SECTION —



# 4-9. SEMICONDUCTOR LEAD LAYOUTS

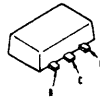
**LA1851NM**



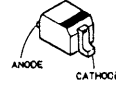
**TA7805S**



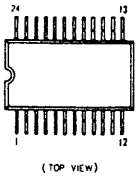
**2SB798-DL**



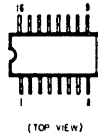
**1SS352  
MA8056**



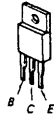
**LC7218M**



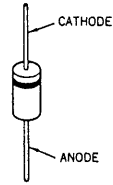
**TC9215F**



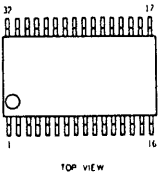
**2SD2012**



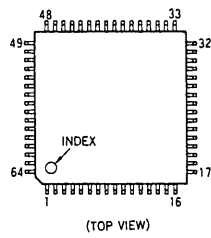
**10E2**



**M66004M4FP**



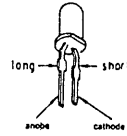
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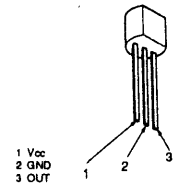
**2SK208-GR3**



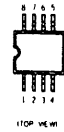
**SEL5220S**



**PST600C-T**



**X24C08SC7000**



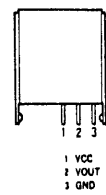
**DCA010**



**PST600C-T**



**SBX1610-59**



**2SA1344**



**DCB010**



**UZM11B  
UZM27B  
UZM4.7B  
UZM5.1B**



**2SA1678  
2SC1623-L5L6  
2SC2814-F4  
2SC3398  
2SC4154-F  
2SC4398  
2SC4666B**



## SECTION 5 EXPLODED VIEWS

**NOTE:**

- Items marked “ \* ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Color Indication of Appearance Parts Example:  
KNOB, BALANCE (WHITE) . . . (RED)

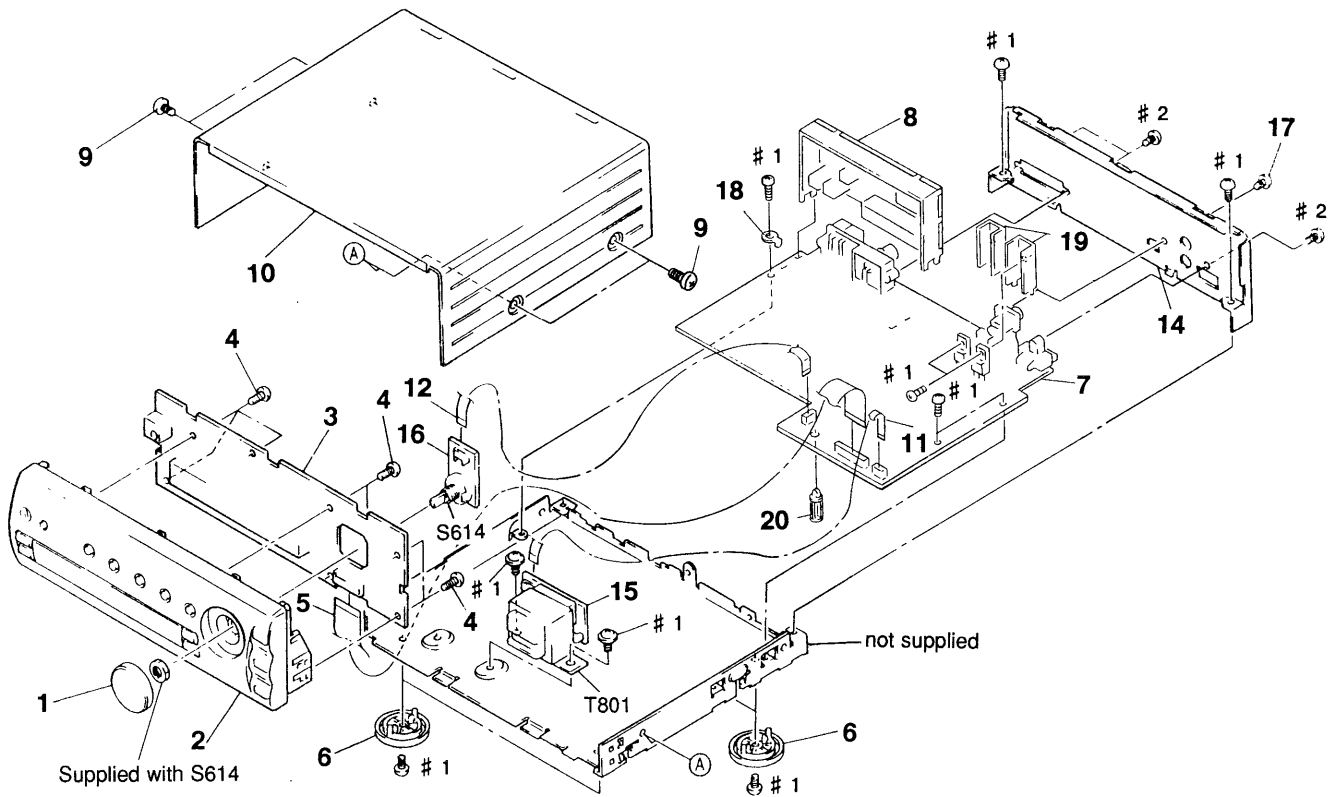
↑                    ↑  
Parts color    Cabinet's color

- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- CND : Canadian model
- G : German model
- IT : Italian model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model
- MY : Malaysia model
- JE : Tourist model

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.

### 5-1. CASE AND CHASSIS BLOCK



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-961-134-01	KNOB (ROTARY)		* 8	A-4303-461-A	TCB BOARD, COMPLETE (E, AUS, EA, JE, SP, MY)	
2	X-4944-021-1	PANEL ASSY, FRONT		* 8	A-4303-462-A	TCB BOARD, COMPLETE (US, CND)	
* 3	A-4365-452-A	PANEL BOARD, COMPLETE (AEP, UK)		9	3-363-099-21	SCREW (CASE 3 TP2)	
* 3	A-4365-456-A	PANEL BOARD, COMPLETE (G)		* 10	4-961-481-01	CASE	
* 3	A-4365-460-A	PANEL BOARD, COMPLETE (IT)		11	1-590-769-31	WIRE, FLAT TYPE (7 CORE)	
* 3	A-4365-464-A	PANEL BOARD, COMPLETE (E, AUS, EA, JE, SP)		12	1-751-686-11	WIRE (FLAT TYPE) (5 CORE)	
* 3	A-4365-451-A	MAIN BOARD, COMPLETE (AEP, UK)		* 14	4-961-135-11	PANEL, BACK (AEP, UK)	
* 3	A-4365-455-A	MAIN BOARD, COMPLETE (G)		* 14	4-961-135-21	PANEL, BACK (US, CND)	
* 3	A-4365-472-A	PANEL BOARD, COMPLETE (MY)		* 14	4-961-135-31	PANEL, BACK (G)	
4	4-951-620-01	SCREW (2.6X8), +BVTP		* 14	4-961-135-41	PANEL, BACK (IT)	
5	1-765-242-31	WIRE (FLAT TYPE) (19 CORE)		* 14	4-961-135-51	PANEL, BACK (E, AUS, EA, JE, SP, MY)	
6	X-4944-053-1	FOOT (DIA. 42) ASSY		* 15	1-651-527-11	TRANSFORMER BOARD	
* 7	A-4365-451-A	MAIN BOARD, COMPLETE (AEP, UK)		16	1-651-577-11	ROTARY ENCODER BOARD	
* 7	A-4365-455-A	MAIN BOARD, COMPLETE (G)		17	3-704-515-21	SCREW (BV/RING)	
* 7	A-4365-459-A	MAIN BOARD, COMPLETE (IT)		18	3-870-539-00	PLATE GROUND	
7	A-4365-463-A	MAIN BOARD, COMPLETE (E, AUS, EA, JE, SP)		19	3-309-144-21	HEAT SINK	
* 7	A-4365-467-A	MAIN BOARD, COMPLETE (US, CND)		* 20	3-669-610-00	SPACER	
* 7	A-4365-471-A	MAIN BOARD, COMPLETE (MY)		$\triangle$ T801	1-423-811-11	TRANSFORMER POWER	
* 8	A-4303-459-A	TCB BOARD, COMPLETE (AEP, UK)					
* 8	A-4303-460-A	TCB BOARD, COMPLETE (G, IT)					

# SECTION 6 ELECTRICAL PARTS LIST

MAIN

**NOTE:**

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 name.

- 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.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -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 color  Cabinet's color
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$  A..., uPA...:  $\mu$  PA..., uPB...:  $\mu$  PB...,  
uPC...:  $\mu$  PC..., uPD...:  $\mu$  PD...
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

- RESISTORS  
All resistors are in ohms  
METAL: Metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F : nonflammable
- CAPACITORS  
uF :  $\mu$  F
- COILS  
uH :  $\mu$  H
- CND : Canadian model
- G : German model
- IT : Italian model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model
- MY : Malaysia model
- JE : Tourist model

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4365-451-A	MAIN BOARD, COMPLETE (AEP, UK) *****		C153	1-164-232-11	CERAMIC CHIP 0.01uF	50V
*	A-4365-455-A	MAIN BOARD, COMPLETE (G) *****		C154	1-163-038-00	CERAMIC CHIP 0.1uF	25V
*	A-4365-459-A	MAIN BOARD, COMPLETE (IT) *****		C155	1-163-038-00	CERAMIC CHIP 0.1uF	25V
*	A-4365-463-A	MAIN BOARD, COMPLETE (E, AUS, EA, JE, SP) *****		C801	1-126-943-11	ELECT 2200uF	20% 25V
*	A-4365-467-A	MAIN BOARD, COMPLETE (US, CND) *****		C802	1-126-949-11	ELECT 220uF	20% 35V
*	A-4365-471-A	MAIN BOARD, COMPLETE (MY) *****		C803	1-124-122-11	ELECT 100uF	20% 50V
*	3-309-144-21	HEAT SINK		C804	1-126-964-11	ELECT 10uF	20% 50V
*	4-870-539-00	PLATE, GROUND		C805	1-126-948-11	ELECT 100uF	20% 35V
*	7-682-547-09	SCREW +BVTT 3X6 (S)		C806	1-126-947-11	ELECT 47uF	20% 35V
		< CAPACITOR >		C807	1-126-933-11	ELECT 100uF	20% 16V
				C808	1-126-964-11	ELECT 10uF	20% 50V
				C809	1-126-948-11	ELECT 100uF	20% 35V
				C810	1-126-964-11	ELECT 10uF	20% 50V
						< CONNECTOR >	
				CN101	1-750-679-11	JACK, PIN 2P (LINE OUT)	
				CN102	1-764-016-31	HOUSING, CONNECTOR(PC BOARD) 5P (SYSTEM CONTROL)	
				CN103	1-568-802-11	SOCKET, CONNECTOR 19P	
				* CN104	1-565-561-11	PIN, CONNECTOR 3P (AU BUS)	
				* CN105	1-568-824-11	SOCKET, CONNECTOR 5P	
				* CN106	1-568-826-11	SOCKET, CONNECTOR 7P	
						< DIODE >	
				D101	8-719-990-39	DIODE DCB010	
				D102	8-719-990-39	DIODE DCB010	
				D103	8-719-021-31	DIODE UZM5.1B	
				D104	8-719-990-36	DIODE DCA010	
				D801	8-719-200-02	DIODE 10E2	
				D802	8-719-200-02	DIODE 10E2	
				D803	8-719-200-02	DIODE 10E2	
				D804	8-719-200-02	DIODE 10E2	
				D805	8-719-022-74	DIODE UZM27B	
				D806	8-719-021-95	DIODE UZM11B	
				D807	8-719-021-23	DIODE UZM4.7B	
						< IC >	
				IC101	8-759-276-40	IC uPD78012BGC-627-AB8	
				IC102	8-759-165-80	IC PST600C-T	



# MAIN PANEL

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
IC103	8-759-095-56	IC X24C08SC7000		R116	1-216-001-00	METAL CHIP 10 5%	1/10W
IC104	8-759-051-64	IC TC9215F (TP1)		R117	1-216-073-00	METAL CHIP 10K 5%	1/10W
IC801	8-759-231-53	IC TA7805S		R118	1-216-049-00	METAL CHIP 1K 5%	1/10W
< JUMPER RESISTOR >				R119	1-216-049-00	METAL CHIP 1K 5%	1/10W
JW101	1-216-295-00	METAL CHIP 0 5%	1/10W	R120	1-216-049-00	METAL CHIP 1K 5%	1/10W
JW102	1-216-295-00	METAL CHIP 0 5%	1/10W	R121	1-216-049-00	METAL CHIP 1K 5%	1/10W
JW103	1-216-295-00	METAL CHIP 0 5%	1/10W	R122	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
JW104	1-216-295-00	METAL CHIP 0 5%	1/10W	R126	1-216-097-00	METAL CHIP 100K 5%	1/10W
< COIL >				R127	1-216-025-00	METAL CHIP 100 5%	1/10W
L101	1-410-482-31	INDUCTOR 100uH		R131	1-216-097-00	METAL CHIP 100K 5%	1/10W
L102	1-410-482-31	INDUCTOR 100uH		R132	1-216-025-00	METAL CHIP 100 5%	1/10W
L106	1-410-482-31	INDUCTOR 100uH		R133	1-216-097-00	METAL CHIP 100K 5%	1/10W
L107	1-410-482-31	INDUCTOR 100uH		R134	1-216-097-00	METAL CHIP 100K 5%	1/10W
L108	1-410-482-31	INDUCTOR 100uH		R135	1-216-111-00	METAL CHIP 390K 5%	1/10W
L109	1-410-482-31	INDUCTOR 100uH		R136	1-216-073-00	METAL CHIP 10K 5%	1/10W
L110	1-410-482-31	INDUCTOR 100uH		R137	1-216-073-00	METAL CHIP 10K 5%	1/10W
L111	1-216-296-00	METAL CHIP 0 5%	1/8W	R801	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
(US, CND, AEP, UK, E, AUS, EA, JE, SP, MY)				R802	1-216-097-00	METAL CHIP 100K 5%	1/10W
L111	1-410-381-11	INDUCTOR 10uH (G, IT)		R804	1-216-041-00	METAL CHIP 470 5%	1/10W
L112	1-216-296-00	METAL CHIP 0 5%	1/8W	R805	1-216-041-00	METAL CHIP 470 5%	1/10W
(US, CND, AEP, UK, E, AUS, EA, JE, SP, MY)				R806	1-216-025-00	METAL CHIP 100 5%	1/10W
L112	1-410-381-11	INDUCTOR 10uH (G, IT)		< TERMINAL >			
< TRANSISTOR >				TM101	1-537-238-21	TERMINAL BOARD	
Q101	8-729-805-65	TRANSISTOR 2SA1344		(US, CND, E, AUS, EA, JE, SP, MY)			
Q102	8-729-805-41	TRANSISTOR 2SC3398		TM101	1-537-488-11	TERMINAL BOARD (ANT) (AEP, UK, G, IT)	
Q103	8-729-120-28	TRANSISTOR 2SC1623-L5L6		< VIBRATOR >			
Q801	8-729-209-15	TRANSISTOR 2SD2012		X101	1-579-175-11	VIBRATOR, CERAMIC (10MHz)	
Q802	8-729-232-69	TRANSISTOR 2SK208GR3		X102	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)	
Q803	8-729-101-07	TRANSISTOR 2SB798-DL		*****			
Q804	8-729-805-41	TRANSISTOR 2SC3398		*	A-4365-452-A	PANEL BOARD, COMPLETE (AEP, UK)	
< RESISTOR >				*****			
R101	1-216-049-00	METAL CHIP 1K 5%	1/10W	*	A-4365-456-A	PANEL BOARD, COMPLETE (G)	
R102	1-216-073-00	METAL CHIP 10K 5%	1/10W	*****			
R103	1-216-061-00	METAL CHIP 3.3K 5%	1/10W	*	A-4365-460-A	PANEL BOARD, COMPLETE (IT)	
R104	1-216-061-00	METAL CHIP 3.3K 5%	1/10W	*****			
R105	1-216-073-00	METAL CHIP 10K 5%	1/10W	*	A-4365-464-A	PANEL BOARD, COMPLETE (E, AUS, EA, JE, SP)	
R106	1-216-073-00	METAL CHIP 10K 5%	1/10W	*****			
R107	1-216-061-00	METAL CHIP 3.3K 5%	1/10W	*	A-4365-468-A	PANEL BOARD, COMPLETE (US, CND)	
R108	1-216-073-00	METAL CHIP 10K 5%	1/10W	*****			
R109	1-216-073-00	METAL CHIP 10K 5%	1/10W	*	A-4365-472-A	PANEL BOARD, COMPLETE (MY)	
R110	1-216-049-00	METAL CHIP 1K 5%	1/10W	*****			
R111	1-216-049-00	METAL CHIP 1K 5%	1/10W	*	4-961-133-01	HOLDER (FL)	
R112	1-216-049-00	METAL CHIP 1K 5%	1/10W				
R113	1-216-049-00	METAL CHIP 1K 5%	1/10W				
R114	1-216-073-00	METAL CHIP 10K 5%	1/10W				
R115	1-216-065-00	METAL CHIP 4.7K 5%	1/10W				

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< CAPACITOR >				< COIL >			
C601	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	L601	1-408-793-21	INDUCTOR CHIP 220uH	
C602	1-164-346-11	CERAMIC CHIP	1uF 16V	< TRANSISTOR >			
C603	1-124-584-00	ELECT	100uF 20% 10V	Q601	8-729-805-65	TRANSISTOR 2SA1344	
C604	1-136-173-00	FILM	0.47uF 5% 50V	Q602	8-729-805-65	TRANSISTOR 2SA1344	
C605	1-124-248-00	ELECT	22uF 20% 35V	< RESISTOR >			
C606	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R601	1-216-041-00	METAL CHIP 470 5% 1/10W	
C607	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R602	1-216-045-00	METAL CHIP 680 5% 1/10W	
C608	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R603	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C609	1-164-232-11	CERAMIC CHIP	0.01uF 50V	R604	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
C610	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R605	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
C611	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R606	1-216-041-00	METAL CHIP 470 5% 1/10W	
C612	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R607	1-216-045-00	METAL CHIP 680 5% 1/10W	
C613	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R608	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C614	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R609	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
C615	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R610	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
C616	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R611	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
C617	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R612	1-216-083-00	METAL CHIP 27K 5% 1/10W	
C618	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R613	1-216-035-00	METAL CHIP 270 5% 1/10W	
C619	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R614	1-216-035-00	METAL CHIP 270 5% 1/10W	
C620	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R615	1-216-035-00	METAL CHIP 270 5% 1/10W	
C621	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R616	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C622	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R617	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C623	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R618	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C624	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R619	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C625	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	R620	1-216-035-00	METAL CHIP 270 5% 1/10W	
C626	1-136-173-00	FILM	0.47uF 5% 50V	R621	1-216-035-00	METAL CHIP 270 5% 1/10W	
C627	1-136-173-00	FILM	0.47uF 5% 50V	R622	1-216-035-00	METAL CHIP 270 5% 1/10W	
C628	1-124-584-00	ELECT	100uF 20% 10V	< SWITCH >			
< CONNECTOR >				S601	1-554-303-21	SWITCH, TACTILE (SLEEP)	
* CN601	1-568-862-11	SOCKET, CONNECTOR 19P		S602	1-554-303-21	SWITCH, TACTILE (MEMORY)	
< DIODE >				S603	1-554-303-21	SWITCH, TACTILE (STATION NAME)	
D601	8-719-032-83	DIODE SEL5220S-TP15 (ENTER/NEXT)		S604	1-554-303-21	SWITCH, TACTILE (ENTER/NEXT)	
D602	8-719-032-83	DIODE SEL5220S-TP15 (CONTROLLER)		S605	1-554-303-21	SWITCH, TACTILE (TUNING MODE)	
D603	8-719-032-87	DIODE SEL5420S-TP15 (SLEEP)		S606	1-554-303-21	SWITCH, TACTILE (BAND)	
D604	8-719-032-83	DIODE SEL5220S-TP15 (REC TIMER)		S607	1-554-303-21	SWITCH, TACTILE (REC TIMER)	
D605	8-719-032-87	DIODE SEL5420S-TP15 (DAILY)		S608	1-554-303-21	SWITCH, TACTILE (DAILY)	
D606	8-719-032-87	DIODE SEL5420S-TP15 (ONCE)		S609	1-554-303-21	SWITCH, TACTILE (ONCE)	
< FLUORESCENT INDICATOR >				S610	1-554-303-21	SWITCH, TACTILE (TIMER SET)	
FL601	1-517-229-11	INDICATOR TUBE, FLUORESCENT		S611	1-554-303-21	SWITCH, TACTILE (CLOCK SET)	
< IC >				S612	1-554-303-21	SWITCH, TACTILE (STEREO/MONO)	
IC601	8-759-254-76	IC M66004M4FP		S613	1-554-303-21	SWITCH, TACTILE (DISPLAY)	
IC602	8-741-100-48	IC SBX1610-59		*****			

# ROTARY ENCODER

# TCB

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
*	1-651-526-11	ROTARY ENCODER BOARD *****		C60	1-163-038-00	CERAMIC CHIP	0.1uF 25V
		< CONNECTOR >		C61	1-163-022-00	CERAMIC CHIP	0.012uF 10% 50V (E, AUS, EA, JE, SP, MY)
* CN602	1-568-848-11	SOCKET, CONNECTOR 5P  < SWITCH >		C61	1-163-023-00	CERAMIC CHIP	0.015uF 50V (US, CND)
S614	1-467-314-11	ENCODER, ROTARY (CONTROLLER)		C62	1-163-022-00	CERAMIC CHIP	0.012uF 10% 50V (E, AUS, EA, JE, SP, MY)
*****				C62	1-163-023-00	CERAMIC CHIP	0.015uF 50V (US, CND)
*	A-4303-461-A	TCB BOARD, COMPLETE (E, AUS, EA, JE, SP, MY) *****		C63	1-126-301-11	ELECT	1uF 20% 50V
*	A-4303-462-A	TCB BOARD, COMPLETE (US, CND) *****		C64	1-126-301-11	ELECT	1uF 20% 50V
		< CAPACITOR >		C65	1-126-301-11	ELECT	1uF 20% 50V
C1	1-126-934-11	ELECT	220uF 20% 16V	C66	1-126-301-11	ELECT	1uF 20% 50V
C2	1-163-031-11	CERAMIC CHIP	0.01uF 50V	C70	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C3	1-163-009-11	CERAMIC CHIP	1000PF 10% 50V	C71	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C5	1-163-033-00	CERAMIC CHIP	0.022uF 50V	C72	1-126-934-11	ELECT	220uF 20% 16V
C6	1-163-091-00	CERAMIC CHIP	8PF 0.25PF 50V	C73	1-124-257-00	ELECT	2.2uF 20% 50V
C7	1-163-227-11	CERAMIC CHIP	10PF 0.5PF 50V	C74	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C12	1-164-343-11	CERAMIC CHIP	0.056uF 10% 25V (E, AUS, EA, JE, SP, MY)	C75	1-126-157-11	ELECT	10uF 20% 16V
C13	1-163-033-11	CERAMIC CHIP	0.022uF 50V (E, AUS, EA, JE, SP, MY)	C76	1-126-933-11	ELECT	100uF 20% 16V
C14	1-163-088-00	CERAMIC CHIP	5PF 0.25PF 50V (E, AUS, EA, JE, SP, MY)	C77	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C21	1-163-099-00	CERAMIC CHIP	18PF 5% 50V	C78	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C22	1-163-099-00	CERAMIC CHIP	18PF 5% 50V	C79	1-126-157-11	ELECT	10uF 20% 16V
C23	1-163-031-11	CERAMIC CHIP	0.01uF 50V	C80	1-126-925-11	ELECT	470uF 20% 10V
C24	1-163-031-11	CERAMIC CHIP	0.01uF 50V	C81	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C25	1-163-031-11	CERAMIC CHIP	0.01uF 50V	C82	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C26	1-164-346-11	CERAMIC CHIP	1uF 16V	C86	1-163-016-00	CERAMIC CHIP	3900PF 10% 50V
C27	1-124-257-00	ELECT	2.2uF 20% 50V	C87	1-163-016-00	CERAMIC CHIP	3900PF 10% 50V
C28	1-163-031-11	CERAMIC CHIP	0.01uF 50V			< FILTER >	
C29	1-163-031-11	CERAMIC CHIP	0.01uF 50V	CF1	1-567-389-11	FILTER, CERAMIC	
C31	1-124-257-00	ELECT	2.2uF 20% 50V	CF51	1-567-389-11	FILTER, CERAMIC	
C32	1-163-031-11	CERAMIC CHIP	0.01uF 50V			< TERMINAL >	
C33	1-163-038-00	CERAMIC CHIP	0.1uF 25V	* CN3	1-537-613-11	TERMINAL (8P)	
C34	1-163-038-00	CERAMIC CHIP	0.1uF 25V			< VARIABLE CAPACITOR >	
C51	1-163-031-11	CERAMIC CHIP	0.01uF 50V	CV1	1-141-227-00	CAP, TRIMMER (E, AUS, EA, JE, SP, MY)	
C52	1-126-162-11	ELECT	3.3uF 20% 50V	CV2	1-141-227-00	CAP, TRIMMER (E, AUS, EA, JE, SP, MY)	
C53	1-163-031-11	CERAMIC CHIP	0.01uF 50V			< DIODE >	
C54	1-163-031-11	CERAMIC CHIP	0.01uF 50V	D1	8-719-976-30	DIODE KV1560N (E, AUS, EA, JE, SP, MY)	
C55	1-163-105-00	CERAMIC CHIP	33PF 5% 50V	D21	8-719-422-46	DIODE MA8056	
C57	1-164-346-11	CERAMIC CHIP	1uF 16V	D51	8-719-016-74	DIODE 1SS352	
C58	1-164-346-11	CERAMIC CHIP	1uF 16V			< FRONT END >	
C59	1-164-346-11	CERAMIC CHIP	1uF 16V	FE1	1-465-673-11	FRONT END (2 BAND)	
				FE2	1-239-260-11	ESCAPSULATED COMPONENT (US, CND)	
				FE2	1-239-262-11	ESCAPSULATED COMPONENT (E, AUS, EA, JE, SP, MY)	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< IC >		R10	1-216-097-11	METAL CHIP	100K 5% 1/10W
IC21	8-759-821-43	IC LC7218M		R16	1-216-073-00	METAL CHIP	10K 5% 1/10W
IC51	8-759-823-68	IC LA1851NM					(E, AUS, EA, JE, SP, MY)
		< TRANSFORMER >		R17	1-216-121-00	METAL CHIP	1M 5% 1/10W
							(E, AUS, EA, JE, SP, MY)
IFT51	1-406-821-11	COIL (DISCRIMINATOR)		R18	1-216-073-00	METAL CHIP	10K 5% 1/10W
IFT52	1-404-713-11	TRANSFORMER, IF					(E, AUS, EA, JE, SP, MY)
		< JUMPER RESISTOR >		R21	1-216-049-00	METAL CHIP	1K 5% 1/10W
JW1	1-216-295-00	METAL CHIP	0 5% 1/10W	R22	1-216-049-00	METAL CHIP	1K 5% 1/10W
JW2	1-216-295-00	METAL CHIP	0 5% 1/10W	R23	1-216-049-00	METAL CHIP	1K 5% 1/10W
JW3	1-216-295-00	METAL CHIP	0 5% 1/10W	R24	1-216-025-00	METAL CHIP	100 5% 1/10W
							(E, AUS, EA, JE, SP, MY)
JW4	1-216-295-00	METAL CHIP	0 5% 1/10W (US, CND)	R25	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
JW5	1-216-295-00	METAL CHIP	0 5% 1/10W (US, CND)	R26	1-216-049-00	METAL CHIP	1K 5% 1/10W
JW6	1-216-295-00	METAL CHIP	0 5% 1/10W	R27	1-216-073-00	METAL CHIP	10K 5% 1/10W
		< COIL >					(E, AUS, EA, JE, SP, MY)
L51	1-408-798-00	CHIP INDUCTOR 1MMH		R28	1-216-073-00	METAL CHIP	10K 5% 1/10W
		< FILTER >		R29	1-216-025-00	METAL CHIP	100 5% 1/10W
LPF51	1-239-597-11	FILTER, LOW PASS		R30	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
LPF52	1-239-597-11	FILTER, LOW PASS		R31	1-216-043-00	METAL CHIP	560 5% 1/10W
		< TRANSISTOR >		R32	1-216-049-00	METAL CHIP	1K 5% 1/10W
Q1	8-729-804-72	TRANSISTOR	2SC2814-F4	R33	1-216-035-00	METAL CHIP	270 5% 1/10W
Q3	8-729-810-16	TRANSISTOR	2SA1678	R34	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
Q4	8-729-602-36	TRANSISTOR	2SA1602-F				
				R35	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
				R36	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
Q5	8-729-602-36	TRANSISTOR	2SA1602-F	R37	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
				R38	1-216-025-00	METAL CHIP	100 5% 1/10W
				R51	1-216-049-00	METAL CHIP	1K 5% 1/10W
Q6	8-729-810-28	TRANSISTOR	2SC4398				
				R52	1-216-081-00	METAL CHIP	22K 5% 1/10W
Q7	8-729-810-28	TRANSISTOR	2SC4398	R53	1-216-085-00	METAL CHIP	33K 5% 1/10W
Q21	8-729-602-21	TRANSISTOR	2SC4154-F	R54	1-216-071-00	METAL CHIP	8.2K 5% 1/10W
Q22	8-729-232-69	TRANSISTOR	2SK208GR3	R55	1-216-075-00	METAL CHIP	12K 5% 1/10W
Q23	8-729-232-59	TRANSISTOR	2SC4666B	R57	1-216-073-00	METAL CHIP	10K 5% 1/10W
Q51	8-729-602-21	TRANSISTOR	2SC4154-F				
				R58	1-216-066-00	METAL CHIP	5.1K 5% 1/10W
Q52	8-729-602-21	TRANSISTOR	2SC4154-F	R59	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
Q53	8-729-810-28	TRANSISTOR	2SC4398	R60	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
		< RESISTOR >		R61	1-216-115-00	METAL CHIP	560K 5% 1/10W
R1	1-216-037-00	METAL CHIP	330 5% 1/10W	R62	1-216-115-00	METAL CHIP	560K 5% 1/10W
R2	1-216-037-00	METAL CHIP	330 5% 1/10W				
R3	1-216-109-00	METAL CHIP	330K 5% 1/10W	R63	1-216-049-00	METAL CHIP	1K 5% 1/10W
R4	1-216-037-00	METAL CHIP	330 5% 1/10W	R64	1-216-049-00	METAL CHIP	1K 5% 1/10W
R7	1-216-017-00	METAL CHIP	47 5% 1/10W	R65	1-216-073-00	METAL CHIP	10K 5% 1/10W
				R66	1-216-073-00	METAL CHIP	10K 5% 1/10W
R8	1-216-073-00	METAL CHIP	10K 5% 1/10W	R67	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R9	1-216-089-11	METAL CHIP	47K 5% 1/10W	R68	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
				R69	1-216-025-00	METAL CHIP	100 5% 1/10W
				R70	1-216-025-00	METAL CHIP	100 5% 1/10W
				R71	1-216-089-11	METAL CHIP	47K 5% 1/10W
				R72	1-216-073-00	METAL CHIP	10K 5% 1/10W
				R73	1-216-073-00	METAL CHIP	10K 5% 1/10W
				R74	1-216-013-00	METAL CHIP	33 5% 1/10W

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >					
RV51	1-238-601-11	RES, ADJ, CARBON 22K		C31	1-124-257-00	ELECT 2.2uF 20%	50V
RV52	1-238-601-11	RES, ADJ, CARBON 22K		C32	1-163-031-11	CERAMIC CHIP 0.01uF	50V
RV53	1-238-598-11	RES, ADJ, CARBON 2.2K		C33	1-163-038-00	CERAMIC CHIP 0.1uF	25V
		< COIL >		C34	1-164-005-11	CERAMIC CHIP 0.47uF	25V (AEP, UK)
T1	1-402-424-11	COIL (ANT, SW3) (E, AUS, EA, JE, SP, MY)		C35	1-163-033-00	CERAMIC CHIP 0.022uF	50V (AEP, UK)
T2	1-406-346-11	COIL (OSC, SW3) (E, AUS, EA, JE, SP, MY)		C36	1-163-033-00	CERAMIC CHIP 0.022uF	50V (AEP, UK)
		< CONNECTOR >		C51	1-163-031-11	CERAMIC CHIP 0.01uF	50V
TP51	1-564-505-11	PLUG, CONNECTOR 2P		C52	1-126-162-11	ELECT 3.3uF 20%	50V
		< VIBRATOR >		C53	1-163-031-11	CERAMIC CHIP 0.01uF	50V
X21	1-579-585-11	VIBRATOR, CRYSTAL (7.2MHz)		C54	1-163-031-11	CERAMIC CHIP 0.01uF	50V
X51	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)		C55	1-163-105-00	CERAMIC CHIP 33PF 5%	50V (AEP, UK)
*	A-4303-459-A	TCB BOARD, COMPLETE (AEP, UK) *****		C55	1-163-135-00	CERAMIC CHIP 560PF 5%	50V (G, IT)
*	A-4303-460-A	TCB BOARD, COMPLETE (G, IT) *****		C56	1-163-117-00	CERAMIC CHIP 100PF 5%	50V (G, IT)
		< CAPACITOR >		C57	1-164-346-11	CERAMIC CHIP 1uF	16V
C1	1-126-934-11	ELECT 220uF 20%	16V	C58	1-164-346-11	CERAMIC CHIP 1uF	16V
C2	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C59	1-164-346-11	CERAMIC CHIP 1uF	16V
C3	1-163-009-11	CERAMIC CHIP 1000PF 10%	50V	C60	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C5	1-163-031-11	CERAMIC CHIP 0.01uF	50V (AEP, UK)	C61	1-163-022-00	CERAMIC CHIP 0.012uF 10%	50V
C6	1-163-038-00	CERAMIC CHIP 0.1uF	25V (AEP, UK)	C62	1-163-022-00	CERAMIC CHIP 0.012uF 10%	50V
C6	1-216-295-00	METAL CHIP 0 5%	1/10W (G, IT)	C63	1-164-346-11	CERAMIC CHIP 1uF	16V
C8	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C64	1-164-346-11	CERAMIC CHIP 1uF	16V
C9	1-163-012-00	CERAMIC CHIP 1800PF 10%	50V (AEP, UK)	C65	1-164-346-11	CERAMIC CHIP 1uF	16V
C10	1-163-011-11	CERAMIC CHIP 1500PF 10%	50V (AEP, UK)	C66	1-164-346-11	CERAMIC CHIP 1uF	16V
C11	1-163-089-00	CERAMIC CHIP 6PF 0.5PF	50V (AEP, UK)	C69	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C11	1-163-091-00	CERAMIC CHIP 8PF 0.25PF	50V (G, IT)	C71	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C12	1-163-227-11	CERAMIC CHIP 10PF 0.5PF	50V	C72	1-126-934-11	ELECT 220uF 20%	16V
C13	1-163-089-00	CERAMIC CHIP 6PF 0.5PF	50V (AEP, UK)	C73	1-124-257-00	ELECT 2.2uF 20%	50V
C21	1-163-099-00	CERAMIC CHIP 18PF 5%	50V	C74	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C22	1-163-099-00	CERAMIC CHIP 18PF 5%	50V	C75	1-126-157-11	ELECT 10uF 20%	16V
C23	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C76	1-126-933-11	ELECT 100uF 20%	16V
C24	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C79	1-126-157-11	ELECT 10uF 20%	16V
C25	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C80	1-126-925-11	ELECT 470uF 20%	10V
C26	1-164-346-11	CERAMIC CHIP 1uF	16V	C81	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C27	1-124-257-00	ELECT 2.2uF 20%	50V	C82	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C29	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C83	1-163-031-11	CERAMIC CHIP 0.01uF	50V
		< FILTER >		C86	1-163-016-00	CERAMIC CHIP 3900PF 10%	50V
		< TERMINAL >		C87	1-163-016-00	CERAMIC CHIP 3900PF 10%	50V
				CF1	1-567-389-11	FILTER, CERAMIC	
				CF2	1-567-389-11	FILTER, CERAMIC (G, IT)	
				CF51	1-567-389-11	FILTER, CERAMIC	
				* CN3	1-537-613-11	TERMINAL (8P)	

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
		< DIODE >					
D21	8-719-422-46	DIODE MA8056		Q21	8-729-602-21	TRANSISTOR 2SC4154-F	
D51	8-719-016-74	DIODE 1SS352		Q22	8-729-232-69	TRANSISTOR 2SK208GR3	
		< FRONT END >		Q23	8-729-232-59	TRANSISTOR 2SC4666B	
FE1	1-465-673-11	FRONT END (2 BAND) (AEP, UK)		Q24	8-729-232-69	TRANSISTOR 2SK208GR3 (AEP, UK)	
FE1	1-465-007-11	FRONT END (4 GANG) (G, IT)		Q25	8-729-232-59	TRANSISTOR 2SC4666B (AEP, UK)	
FE2	1-239-261-12	ESCAPSULATED COMPONENT (AEP, UK)		Q51	8-729-602-21	TRANSISTOR 2SC4154-F	
FE2	1-239-260-11	ESCAPSULATED COMPONENT (G, IT)		Q52	8-729-602-21	TRANSISTOR 2SC4154-F	
FE3	1-236-463-11	ESCAPSULATED COMPONENT (AEP, UK)		Q53	8-729-810-28	TRANSISTOR 2SC4398	
		< FILTER >				< RESISTOR >	
FL51	1-239-029-11	ESCAPSULATED COMPONENT (G, IT)		R1	1-216-037-00	METAL CHIP 330 5% 1/10W	
		< IC >		R2	1-216-037-00	METAL CHIP 330 5% 1/10W	
IC21	8-759-821-43	IC LC7218M		R3	1-216-109-00	METAL CHIP 330K 5% 1/10W	
IC51	8-759-823-68	IC LA1851NM		R4	1-216-037-00	METAL CHIP 330 5% 1/10W	
		< TRANSFORMER >		R5	1-216-109-00	METAL CHIP 330K 5% 1/10W (G, IT)	
IFT51	1-406-821-11	COIL (DISCRIMINATOR)		R6	1-216-037-00	METAL CHIP 330 5% 1/10W (G, IT)	
IFT52	1-404-713-11	TRANSFORMER, IF		R7	1-216-017-00	METAL CHIP 47 5% 1/10W	
		< JUMPER RESISTOR >		R8	1-216-057-00	METAL CHIP 2.2K 5% 1/10W (AEP, UK)	
JW1	1-216-295-00	METAL CHIP 0 5% 1/10W		R9	1-216-089-11	METAL CHIP 47K 5% 1/10W (AEP, UK)	
JW2	1-216-295-00	METAL CHIP 0 5% 1/10W (AEP, UK)		R10	1-216-097-11	METAL CHIP 100K 5% 1/10W (AEP, UK)	
JW3	1-216-295-00	METAL CHIP 0 5% 1/10W (G, IT)		R11	1-216-065-00	METAL CHIP 4.7K 5% 1/10W (AEP, UK)	
JW4	1-216-295-00	METAL CHIP 0 5% 1/10W (G, IT)		R12	1-216-057-00	METAL CHIP 2.2K 5% 1/10W (AEP, UK)	
JW5	1-216-295-00	METAL CHIP 0 5% 1/10W		R13	1-216-089-11	METAL CHIP 47K 5% 1/10W	
JW6	1-216-295-00	METAL CHIP 0 5% 1/10W (G, IT)		R14	1-216-081-00	METAL CHIP 22K 5% 1/10W	
JW7	1-216-295-00	METAL CHIP 0 5% 1/10W		R15	1-216-121-00	METAL CHIP 1M 5% 1/10W (AEP, UK)	
JW8	1-216-295-00	METAL CHIP 0 5% 1/10W		R15	1-216-295-00	METAL CHIP 0 5% 1/10W (G, IT)	
JW9	1-216-295-00	METAL CHIP 0 5% 1/10W		R16	1-216-089-11	METAL CHIP 47K 5% 1/10W (AEP, UK)	
		< COIL >		R21	1-216-049-00	METAL CHIP 1K 5% 1/10W	
L1	1-408-793-21	CHIP INDUCTOR 220uH (AEP, UK)		R22	1-216-049-00	METAL CHIP 1K 5% 1/10W	
L51	1-408-798-00	CHIP INDUCTOR 1MMH		R23	1-216-049-00	METAL CHIP 1K 5% 1/10W	
		< FILTER >		R24	1-216-025-00	METAL CHIP 100 5% 1/10W	
LPF51	1-239-597-11	FILTER, LOW PASS		R25	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
LPF52	1-239-597-11	FILTER, LOW PASS		R26	1-216-049-00	METAL CHIP 1K 5% 1/10W	
		< TRANSISTOR >		R27	1-216-073-00	METAL CHIP 10K 5% 1/10W (AEP, UK)	
Q1	8-729-804-72	TRANSISTOR 2SC2814-F4		R28	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q2	8-729-804-72	TRANSISTOR 2SC2814-F4 (G, IT)		R29	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q3	8-729-810-16	TRANSISTOR 2SA1678		R30	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
Q4	8-729-602-36	TRANSISTOR 2SA1602-F (AEP, UK)		R31	1-216-043-00	METAL CHIP 560 5% 1/10W	
Q5	8-729-810-28	TRANSISTOR 2SC4398 (AEP, UK)		R32	1-216-049-00	METAL CHIP 1K 5% 1/10W	
Q6	8-729-602-36	TRANSISTOR 2SA1602-F (AEP, UK)		R33	1-216-035-00	METAL CHIP 270 5% 1/10W	
Q7	8-729-810-28	TRANSISTOR 2SC4398 (AEP, UK)		R34	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
				R35	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
				R36	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
				R37	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
				R38	1-216-025-00	METAL CHIP 100 5% 1/10W	
				R39	1-216-061-00	METAL CHIP 3.3K 5% 1/10W (AEP, UK)	
				R40	1-216-043-00	METAL CHIP 560 5% 1/10W (AEP, UK)	
				R41	1-216-049-00	METAL CHIP 1K 5% 1/10W (AEP, UK)	
				R42	1-216-035-00	METAL CHIP 270 5% 1/10W (AEP, UK)	
				R43	1-216-081-00	METAL CHIP 22K 5% 1/10W (AEP, UK)	

**TCB TRANSFORMER**

Ref. No.	Part No.	Description	Remark
R44	1-216-057-00	METAL CHIP 2.2K 5%	1/10W (AEP, UK)
R45	1-216-065-00	METAL CHIP 4.7K 5%	1/10W (AEP, UK)
R46	1-216-065-00	METAL CHIP 4.7K 5%	1/10W (AEP, UK)
R51	1-216-049-00	METAL CHIP 1K 5%	1/10W
R52	1-216-081-00	METAL CHIP 22K 5%	1/10W
R53	1-216-085-00	METAL CHIP 33K 5%	1/10W
R54	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R55	1-216-075-00	METAL CHIP 12K 5%	1/10W (AEP, UK)
R56	1-216-075-00	METAL CHIP 12K 5%	1/10W (G, IT)
R57	1-216-073-00	METAL CHIP 10K 5%	1/10W
R58	1-216-066-00	METAL CHIP 5.1K 5%	1/10W
R59	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R60	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R61	1-216-115-00	METAL CHIP 560K 5%	1/10W
R62	1-216-115-00	METAL CHIP 560K 5%	1/10W
R63	1-216-049-00	METAL CHIP 1K 5%	1/10W
R64	1-216-049-00	METAL CHIP 1K 5%	1/10W
R65	1-216-073-00	METAL CHIP 10K 5%	1/10W
R66	1-216-073-00	METAL CHIP 10K 5%	1/10W
R67	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R68	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R69	1-216-025-00	METAL CHIP 100 5%	1/10W
R70	1-216-025-00	METAL CHIP 100 5%	1/10W
R71	1-216-089-11	METAL CHIP 47K 5%	1/10W
R72	1-216-073-00	METAL CHIP 10K 5%	1/10W
R73	1-216-073-00	METAL CHIP 10K 5%	1/10W
R74	1-216-013-00	METAL CHIP 33 5%	1/10W
R75	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
< VARIABLE RESISTOR >			
RV51	1-238-601-11	RES, ADJ, CARBON 22K	
RV52	1-238-601-11	RES, ADJ, CARBON 22K	
RV53	1-238-598-11	RES, ADJ, CARBON 2.2K	
< CONNECTOR >			
TP51	1-564-505-11	PLUG, CONNECTOR 2P	
< VIBRATOR >			
X21	1-579-585-11	VIBRATOR, CRYSTAL (7.2MHz)	
X51	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)	

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Ref. No.	Part No.	Description	Remark
*	1-651-527-11	TRANSFORMER BOARD	*****
< CONNECTOR >			
* CN801	1-568-850-11	SOCKET, CONNECTOR 7P	
< TRANSFORMER >			
△T801	1-423-811-11	TRANSFORMER, POWER	
*****			
MISCELLANEOUS			
*****			
5	1-765-242-31	WIRE (FLAT TYPE) (19 CORE)	
11	1-590-769-31	WIRE, FLAT TYPE (7 CORE)	
12	1-751-686-11	WIRE (FLAT TYPE) (5 CORE)	
△T801	1-423-811-11	TRANSFORMER POWER	
*****			
*****			
HARDWARE LIST			
*****			
#1	7-682-547-09	SCREW +BVTT 3X6 (S)	
#2	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	

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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