

MICRO COMPONENT SYSTEM MCR-E810/MCR-E410 RX-E810/RX-E410/NX-E800

SERVICE MANUAL

The MCR-E810 is composed of the RX-E810, NX-E800 and DVD-E810.

The MCR-E410 is composed of the RX-E410, NX-E800 and CDX-E410.

This service manual is for the RX-E810, RX-E410 and NX-E800.

For service manual of the DVD-E810 and CDX-E410, please refer to the following publication number:

DVD-E810 101017

CDX-E410 101018

IMPORTANT NOTICE

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

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

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

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

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

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

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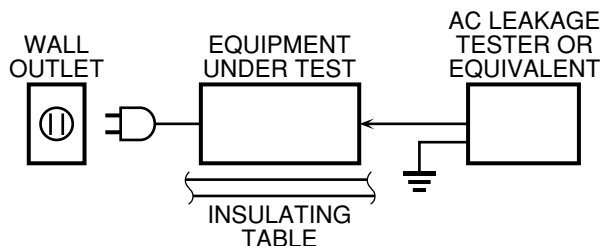
YAMAHA CORPORATION
P.O.Box 1, Hamamatsu, Japan

'06.07

RX-E810/RX-E410/
NX-E800

■ TO SERVICE PERSONNEL

1. Critical Components Information
Components having special characteristics are marked  and must be replaced with parts having specifications equal to those originally installed.
2. Leakage Current Measurement (For 120V Models Only)
When service has been completed, it is imperative to verify that all exposed conductive surfaces are properly insulated from supply circuits.
 - Meter impedance should be equivalent to 1500 ohms shunted by 0.15μF.



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



“CAUTION”

“F1, F2: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 3.5A, 125V FUSE.”

CAUTION

F1, F2: REPLACE WITH SAME TYPE 3.5A, 125V FUSE.

ATTENTION

F1, F2: UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE DE 3.5A, 125V.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the manufacturing process except soldering of the P.C.B. ass'y contains LEAD. In addition, other electrical/electronic and /or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

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

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

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

About Lead Free Solder

The P.C.B.s installed in main unit are soldered using the all lead free solder.

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

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

Caution:

As the melting point temperature of the lead free solder is about 30°C to 40°C (50°F to 70°F) higher than that of the lead solder, be sure to use a soldering iron suitable to each solder.

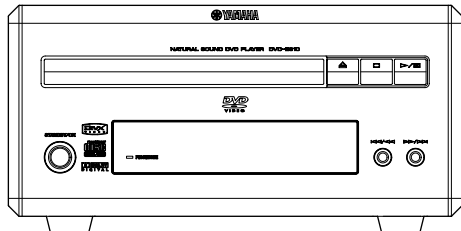
■ SYSTEM COMPOSITION

The MCR-E810 consists of the DVD-E810, RX-E810 and NX-E800.

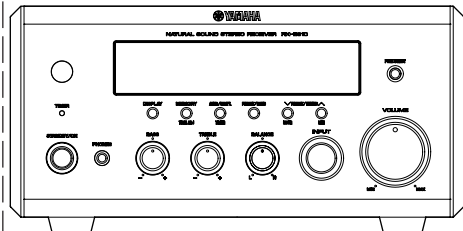
The MCR-E410 consists of the CDX-E410, RX-E410 and NX-E800.

MCR-E810 (U, C, T, K, A, B, G, L, V models)

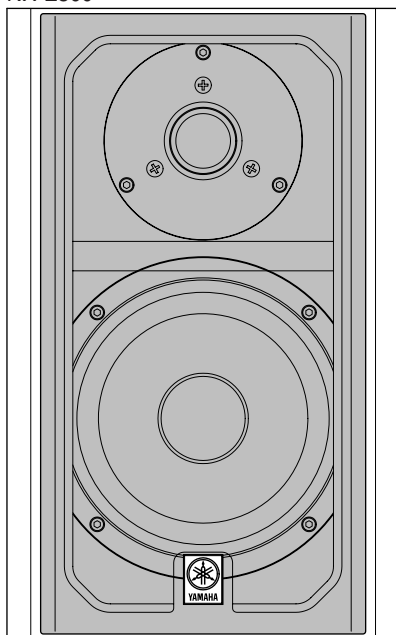
DVD-E810



RX-E810



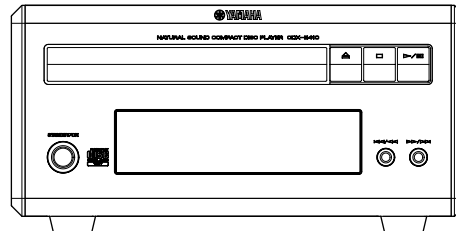
NX-E800



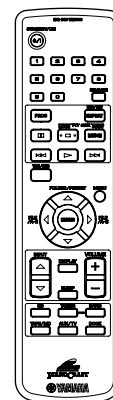
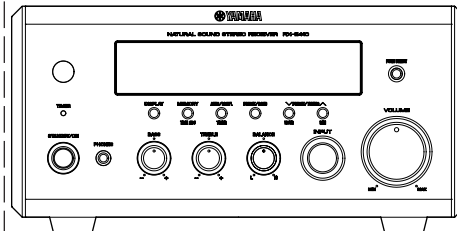
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MCR-E410 (B, G models)

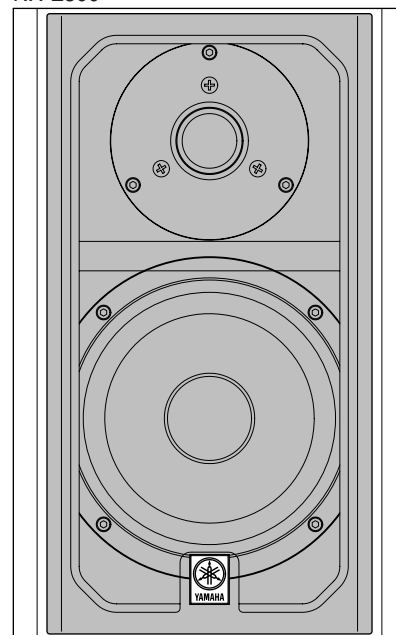
CDX-E410



RX-E410

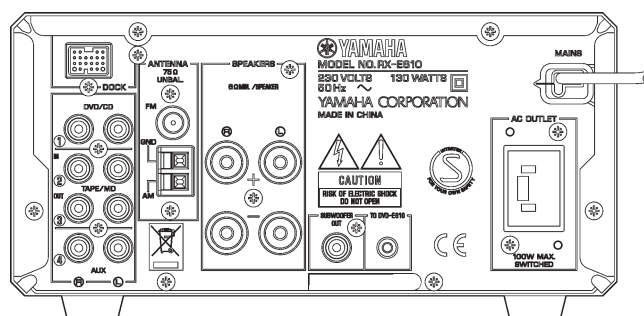


NX-E800

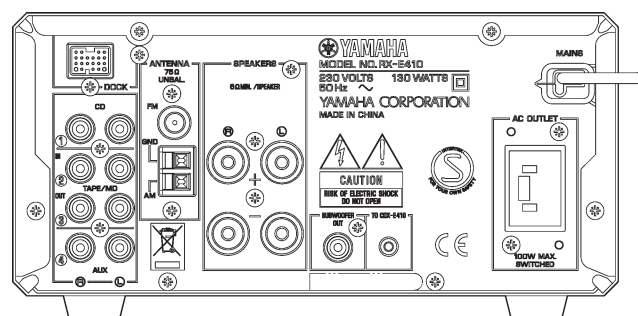


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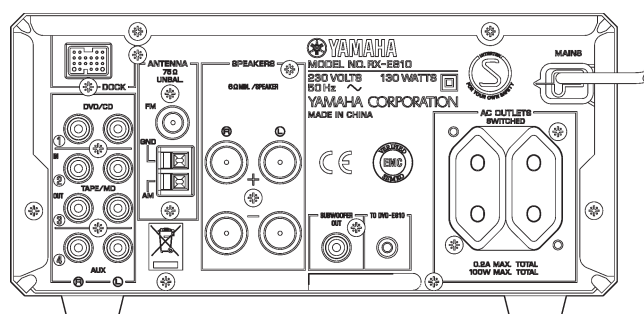
RX-E810 (B model)



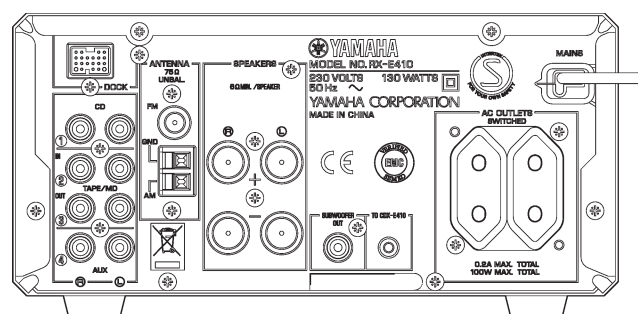
RX-E410 (B model)



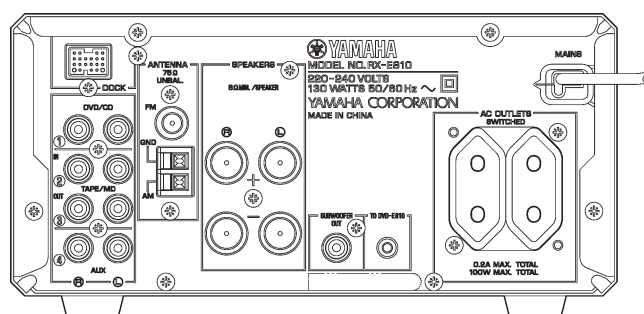
RX-E810 (G model)



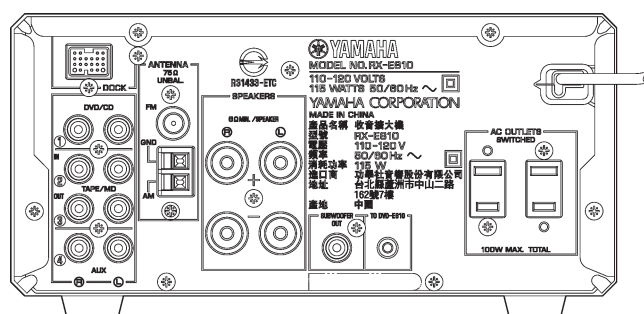
RX-E410 (G model)



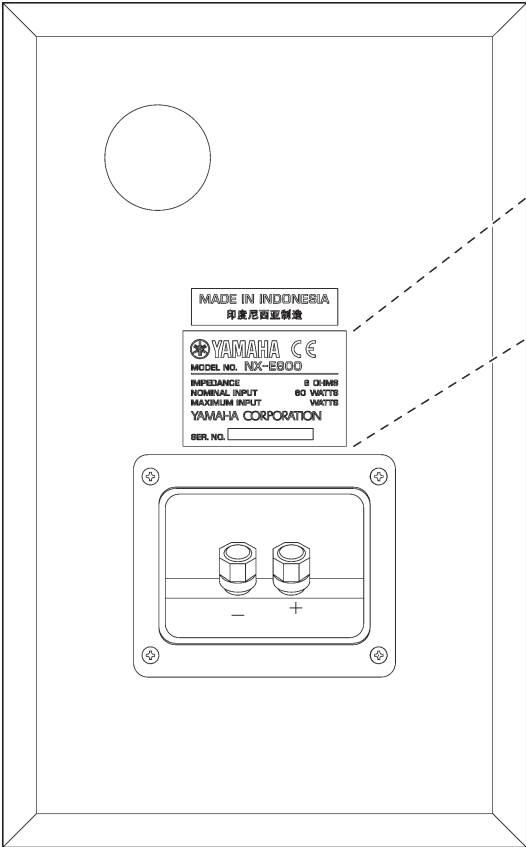
RX-E810 (L model)



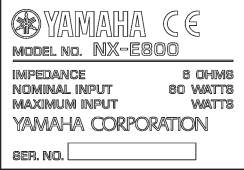
RX-E810 (V model)



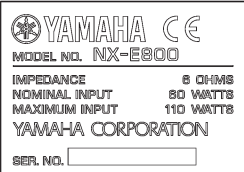
NX-E800



U, C, K, A, B, L, V models



T model

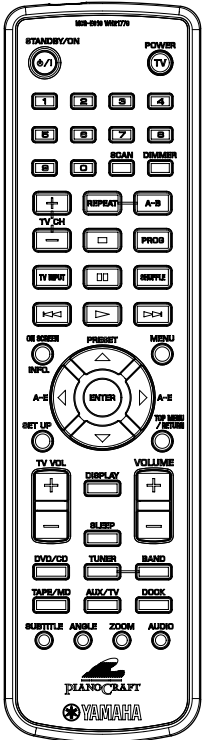


G model

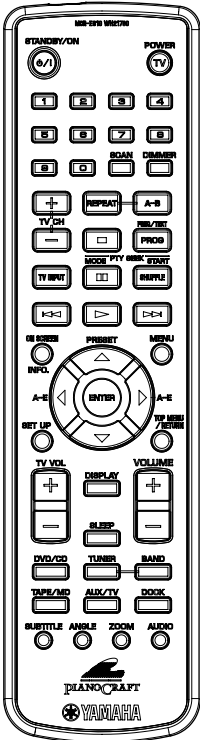


■ REMOTE CONTROL PANELS

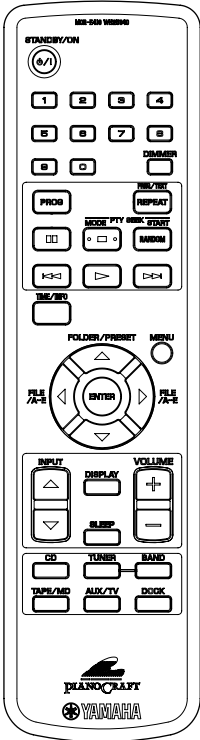
RX-E810
(U, C, T, K, A, L, V models)



RX-E810
(B, G models)



RX-E410
(B, G models)



SPECIFICATIONS

AUDIO SECTION

Minimum RMS Output Power (Power Amp. section)	
20 Hz to 20 kHz, 0.1 % THD, 6 ohms	40 W + 40 W
1 kHz, 0.1 % THD, 6 ohms	55 W + 55 W
Dynamic Power Per Channel (IHF)	
6 ohms	60 W + 60 W
4 ohms	75 W + 75 W
2 ohms	100 W + 100W
Max Power Per Channel (B, G models)	
1 kHz, 0.7 % THD, 4 ohms	60 W + 60 W
IEC Power (B, G models)	
1 kHz, 0.04 % THD, 6 ohms	55 W + 55 W
Maximum Useful Output Power (JEITA) (L, V models)	
1 kHz, 10 % THD, 6 ohms (L, V models)	65 W
Power Band Width (0.1 % THD, 30 W, 6 ohms)	
FRONT L/R	10 Hz to 50 kHz
Damping Factor	
20 Hz to 20 kHz, 6 ohms	60 or more
Input Sensitivity/Input Impedance	
[RX-E810]	
DVD, etc.	150 mV / 47 k-ohms
[RX-E410]	
CD, etc.	150 mV / 47 k-ohms
Maximum Input Voltage (1 kHz, 0.5 % THD)	
[RX-E810]	
DVD, etc.	3.0 V or more
[RX-E410]	
CD, etc.	3.0 V or more
Rated Output Voltage/Output Impedance	
SUBWOOFER	2.0 V / 680 ohms
REC OUT	150 mV / 1.2 k-ohms or less
Headphone Jack Rated Output/Impedance	
[RX-E810]	
DVD, etc. (1 kHz, 150 mV, 8 ohms)	0.23 V / 120 ohms
[RX-E410]	
CD, etc. (1 kHz, 150 mV, 8 ohms)	0.23 V / 120 ohms
Frequency Response (20 Hz to 20 kHz)	
[RX-E810]	
DVD, etc.	0 ± 0.5 dB
[RX-E410]	
CD, etc.	0 ± 0.5 dB
Total Harmonic Distortion (20 Hz to 20 kHz, 30 W/6 ohms)	
[RX-E810]	
DVD, etc. to SP OUT	0.04 % or less
[RX-E410]	
CD, etc. to SP OUT	0.04 % or less
Signal to Noise Ratio (IHF-A Network)	
[RX-E810]	
DVD, etc., Input shorted (150 mV)	93 dB or more
(250 mV)	98 dB or more
[RX-E410]	
CD, etc., Input shorted (150 mV)	93 dB or more
(250 mV)	98 dB or more
Residual Noise (IHF-A Network)	
Pure direct on	100 µV

Channel Separation	
[RX-E810]	
DVD, etc., Input 5.1 k-ohms shorted, 1 kHz / 10 kHz	60 dB / 45 dB or more
[RX-E410]	
CD, etc., Input 5.1 k-ohms shorted, 1 kHz / 10 kHz	60 dB / 45 dB or more
Tone Control Characteristics	
BASS : Boost/Cut	±10 dB (50 Hz)
Turnover Frequency	350 Hz
TREBLE : Boost/Cut	±10 dB (20 kHz)
Turnover Frequency	3.5 kHz
Gain tracking error (0 to -60 dB)	
2 dB or less	

FM SECTION

Tuning Range	
U, C, L, V models	87.5 to 107.9 MHz
T, K, A, B, G, L, V models	87.50 to 108.00 MHz
50 dB Quieting Sensitivity (IHF) (1 kHz, 100 % MOD.)	
Mono	2.8 µV (20.2 dBf)
Signal to Noise Ratio (IHF)	
Mono / Stereo	73 dB / 70 dB
Harmonic Distortion	
Mono / Stereo (1 kHz)	0.5 % / 0.5%
Antenna Input	
75 ohms unbalanced	

AM SECTION

Tuning Range	
U, C, L, V models	530 to 1710 kHz
T, K, A, B, G, L, V models	531 to 1611 kHz
Antenna	
Loop antenna	

GENERAL

Power Supply	
U, C models	AC 120 V, 60 Hz
T model	AC 220 V, 50 Hz
K model	AC 220 V, 60 Hz
A model	AC 240 V, 50 Hz
B, G models	AC 230 V, 50 Hz
L model	AC 220-240 V, 50/60 Hz
V model	AC 110-120 V, 50/60 Hz
Power Consumption	
U, C, V models	115 W
T, K, A, B, G, L models	130 W
Standby Power Consumption (Reference data)	
0.1 W	
Maximum Power Consumption (V model)	
1 kHz, 6 ohms, 10 % THD	300 W
AC Outlets	
Switched x 2	
U, C, T, G, L, V models	100 W max. total
Switched x 1	
A, B models	100 W max. total
Dimensions (W x H x D)	
215 x 108.2 x 362.5 mm	
(8-7/16" x 4-1/4" x 14-1/4")	
Weight	
5.7 kg (12 lbs. 9 oz)	

Finish	
[RX-E810]	
Gold color	T, A models
Black color	G model
Silver color	U, C, K, B, G, L, V models
[RX-E410]	
Black color	G model
Silver color	B, G models
Accessories	
Remote control x 1, Battery x 2, Indoor FM antenna x 1, AM loop antenna x 1, System control cable x 1	

SPEAKER SECTION (NX-E800)

Type	
2-way bass reflex	
Magnetic shielding type	
Driver	
Tweeter	2.5 cm (1") soft dome type
Woofer	13 cm (5-1/8") cone type
Frequency Response	
55 Hz to 28 kHz (-10 dB)	
to 80 kHz (-30 dB)	
Impedance	
6 ohms	
Rated Input	
60 W	
Maximum Input	
110 W	
Sensitivity	
87 dB / 2.83 V/m	
Crossover Frequency	
3 kHz	
Input Terminal	
Screw/Banana type	
Dimensions (W x H x D)	
186 x 300 x 223 mm	
(7-5/16" x 11-13/16" x 8-3/4")	
Weight	
4.3 kg (9 lbs. 7 oz)	
Finish	
Light cherry/Silver color	U, C, A, B, G models
Black/High gloss piano color	
	U, C, T, K, A, B, G, L, V models
Accessories	
Speaker cable x 2	

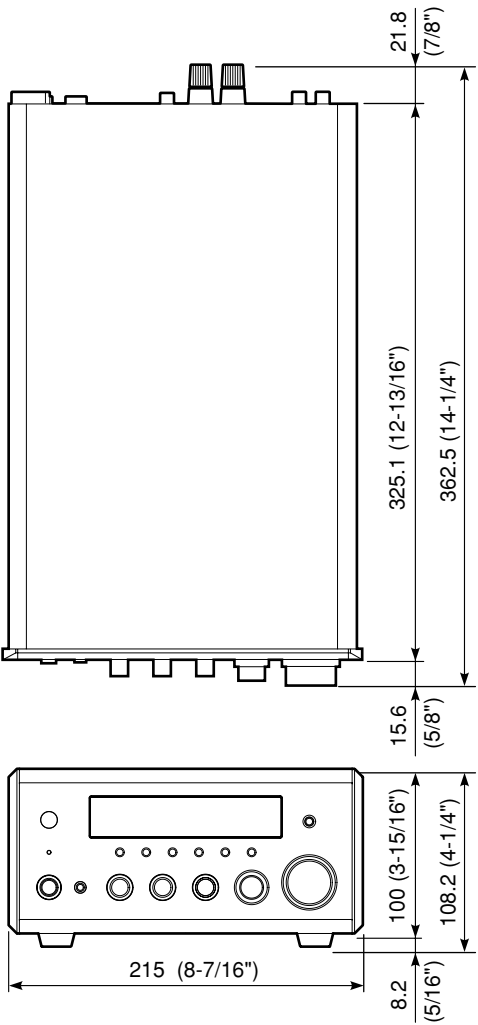
* Specifications are subject to change without notice due to product improvements.

U		USA model	C		Canadian model
T		Chinese model	K		Korean model
A		Australian model	B		British model
G		European model	L		Singapore model
V		Taiwan model			

iPod®

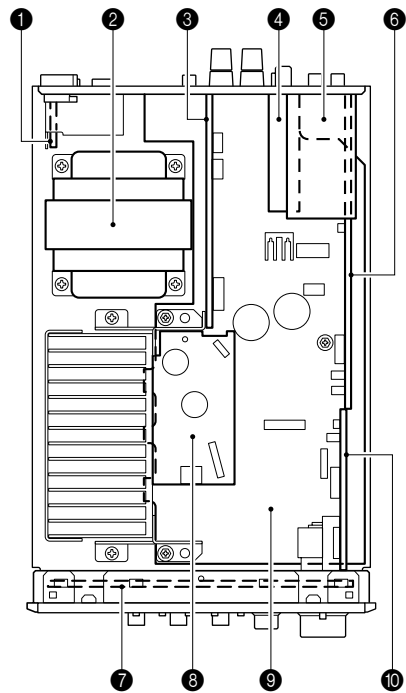
“iPod” is a trademark of Apple Computer, Inc., registered in the U.S. and other countries.

DIMENSIONS



Unit: mm (inch)

INTERNAL VIEW



- 1 MAIN (3) P.C.B. (U, C, T, A, B, G, L, V models)
- 2 Power Transformer
- 3 MAIN (2) P.C.B.
- 4 AM / FM Tuner
- 5 OPERATION (2) P.C.B.
- 6 INPUT (1) P.C.B.
- 7 OPERATION (1) P.C.B.
- 8 INPUT (2) P.C.B.
- 9 MAIN (1) P.C.B.
- 10 MAIN (4) P.C.B.

DISASSEMBLY PROCEDURES

(Remove parts in disassembly order as numbered.)

1. Removal of Top Cover

- a. Remove 4 screws (1) and 4 screws (2). (Fig. 1)
- b. Lift the top cover at the rear and move it rearward slantingly. (Fig. 1)

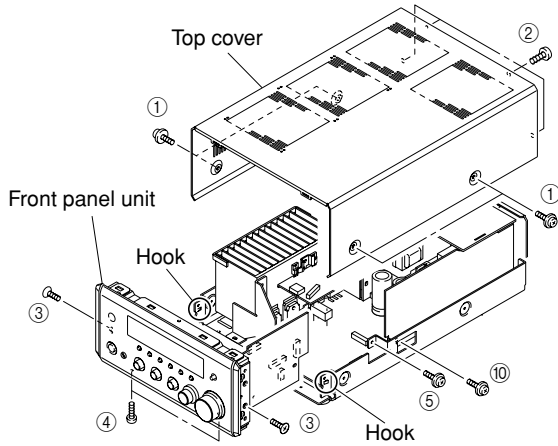


Fig. 1

2. Removal of Front Panel

- a. Remove CB18, CB21, CB200, CB201 and CB209. (Fig. 2)
- b. Remove 2 screws (3), 2 screws (4) and 1 screw (5). (Fig. 1)
- c. Release 2 hooks and remove the front panel unit by pulling it forward. (Fig. 1)

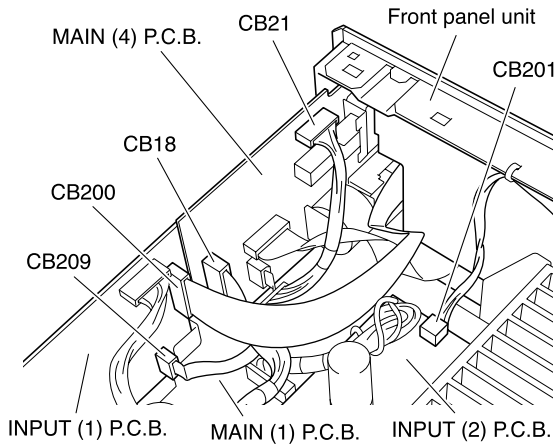


Fig. 2

When checking the P.C.B.:

- a. Remove the top cover and the front panel unit.
- b. Remove 2 screws (6). (Fig. 3)
- c. Remove the OPERATION (2) P.C.B. which is connected directly to the lower P.C.B. with connections.
- d. Remove 6 screws (7). (Fig. 4)
- e. Remove 5 screws (8). (Fig. 4)
- f. Remove 2 screws (9). (Fig. 3)
- g. Remove 1 screw (10). (Fig. 1)
- h. Reinstall the OPERATION (2) P.C.B..
- i. Reinstall 2 screws (6). (Fig. 3)
- j. Remove the power transformer and MAIN P.C.B. (with the rear panel attached) from the main chassis. (Fig. 5)

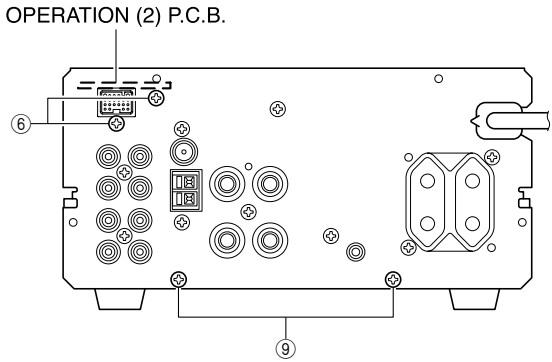


Fig. 3

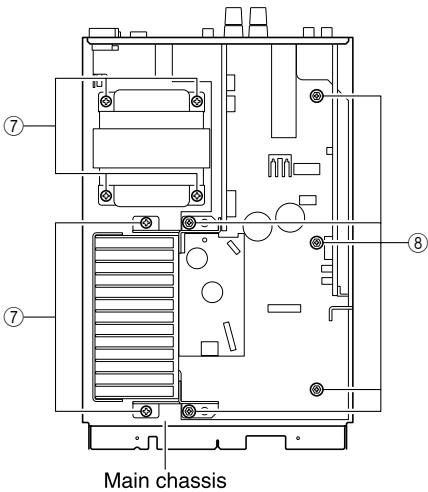


Fig. 4

- k. With the rear panel attached, set the MAIN P.C.B. on its side. At this time, set the power transformer on its side as well. (Fig. 5)
- l. Using a ground lead or the like, connect G2 and G4 of the MAIN P.C.B. with the rear panel. (Fig. 5)
- m. With the front panel unit set on its side, reconnect 5 connectors (CB18, CB21, CB200, CB201, CB209). (Fig. 6)
- n. Connect the power cable, turn on the power and check for operation.

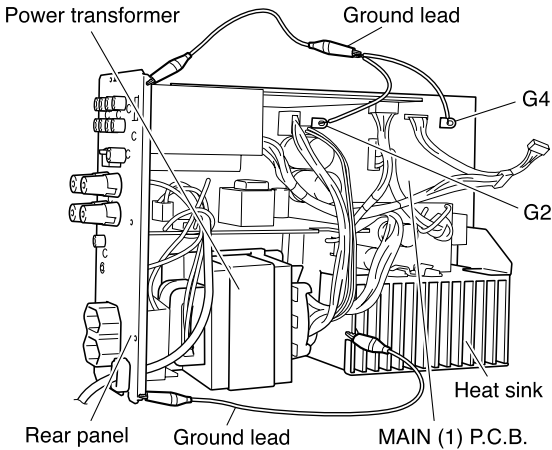


Fig. 5

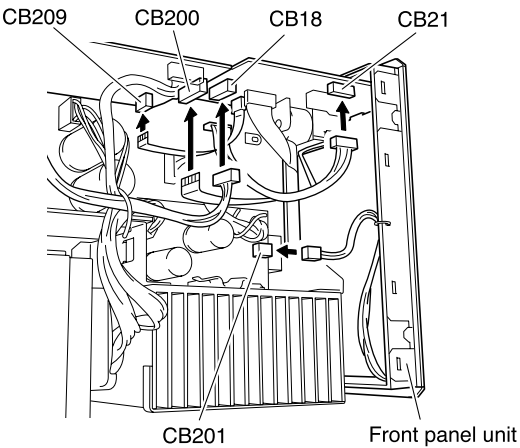


Fig. 6

■ SELF DIAGNOSIS FUNCTION (DIAG)

This unit has self diagnosis functions that are intended for inspection, measurement and location of faulty point.

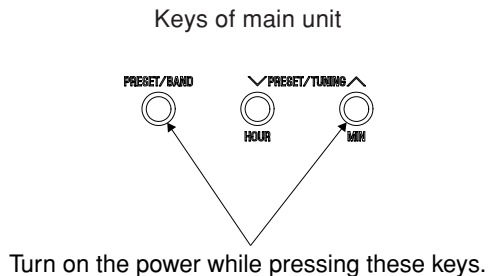
There are 9 DIAG menu items, each of which has sub-menu items.

Listed in the table below are menu items and sub-menu items.

No.	MAIN MENU	SUB MENU
1	FIRMWARE VERSION	1. FIRMWARE VERSION / MODEL / DESTINATION 2. CHECK SUM ALL
2	VFD CHECK	1. Initial display 2. VFD DISPLAY OFF 3. VFD DISPLAY ALL 4. VFD DIMMER 5. CHECK PATTERN
3	FACTORY PRESET	1. PRESET INHI (memory initialization inhibited) 2. PRESET RSRV (memory initialized)
4	AD DATA CHECK	1. PRT1/PRT2 2. PRT3/THM 3. SYSTEM STATUS 4. DESTINATION 5. PANEL KEY (Key0/Key1)
5	iPod (DOCK)	1. DOCK : OK/NG 2. IP_PWR / IP_DET
6	PROTECTION HISTORY	1. HISTORY 1 2. HISTORY 2 3. HISTORY 3 4. HISTORY 4
7	ERROR INFORMATION	1. INDICATION 2. RESET
8	MUTE CHECK	1. SP/HP OFF 2. SP MUTE 3. HP MUTE
9	POWER OFF FACTOR HISTORY	1. HISTORY 1 2. HISTORY 2 3. HISTORY 3 4. HISTORY 4 5. HISTORY 5

• Starting DIAG

Press the “STANDBY/ON” key while simultaneously pressing those two keys of the main unit as indicated in the figure below.



• Starting DIAG in the protection cancel mode

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

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

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

CAUTION!

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

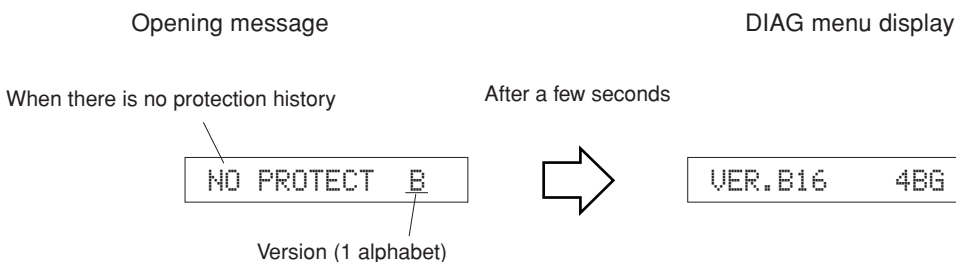
• Canceling DIAG

- ① Before canceling DIAG, execute setting for FACTORY PRESET of DIAG menu No.3 (Memory initialization inhibited or Memory initialized).
 - * In order to keep the user memory stored, be sure to select PRESET INHIBITED (Memory initialization inhibited).
- ② Turn off the power by pressing the “STANDBY/ON” key of the main unit.

• Display provided when DIAG started

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

When there is no history of protection function:



When there is a history of protection function:

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

The protection function worked due to a defect or overload in the power supply. If the power is turned on with the abnormality unsolved, the protection function works in about 3 seconds to turn off the power.

P1 PRT:000 A

P3 PRT:000 A

The protection function worked due to the temperature limit being exceeded. Causes could be poor ventilation or a defect related to the thermal sensor. If the power is turned on with the abnormality unsolved, the protection function works in about 3 seconds to turn off the power.

TM PRT:000 A

For detection of each protection function, refer to DIAG MENU No.4 AD DATA.

History of protection function

When the protection function has worked, its history is stored in memory with a backup. Even if no abnormality is noted while servicing the unit, an abnormality which has occurred previously can be defined as long as the backup data has been stored.

The history of the protection function is cleared when DIAG is cancelled by selecting PRESET RESERVED (Memory initialized) of DIAG menu No.3 or when the backup data is erased.

• Operation procedure of DIAG menu and SUB-MENU

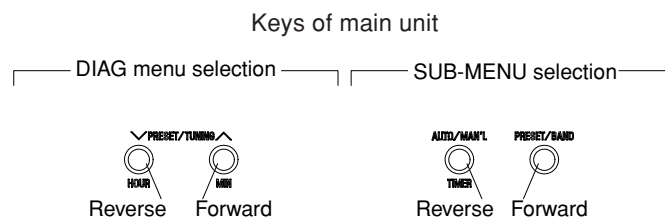
There are 9 MENU items, each of which has some SUB-MENU items.

DIAG menu selection

Main unit: Select the menu using the “^”(Forward) and “v”(Reverse) keys of PRESET/TUNING.

SUB-MENU selection

Main unit: Select the sub-menu using “PRESET/BAND” (Forward) Key and “AUTO/MAN'L” (Reverse) key.



• Functions in DIAG mode

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

- Input selection
- Muting
- Power on/off

* Functions related to the tuner and the set menu are not available.

• Initial settings used to start DIAG

The following settings are used when starting DIAG.

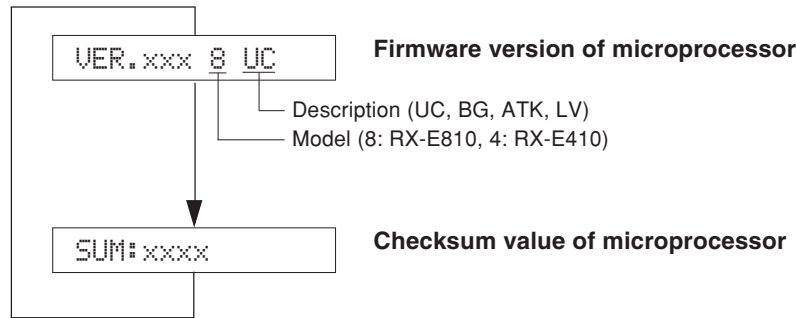
When DIAG is canceled, these settings are restored to those before starting DIAG.

- Input DVD (RX-E810 model), CD (RX-E410 model)

1. FIRMWARE VERSION

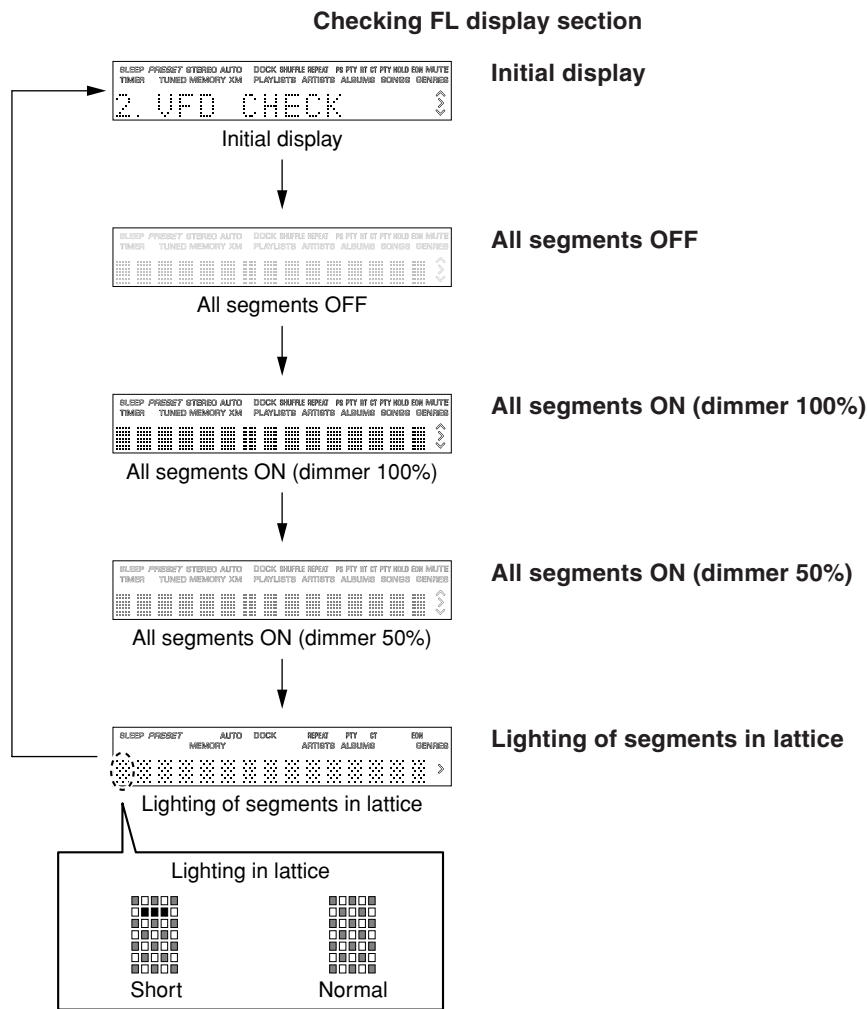
The firmware version, model, destination and checksum are displayed.
The checksum is obtained by adding the data at every 16 bits for each program area and expressing the result as a 4-figure hexadecimal data.

* Numeric values in the figure example are for reference.



2. DISPLAY CHECK

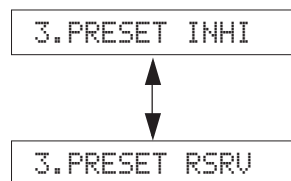
This program is used to check the FL display section.
The display condition varies as shown below according to the sub-menu operation.



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

3. FACTORY PRESET

This menu is used to reserve/inhibit initialization of the backup RAM (Set menu contents, etc. of the sound field program).



PRESET INHIBIT (Initialization inhibited)

RAM initialization is not executed. Select this sub-menu to protect the values set by the user.

Note: The protection history will not be erased using PRESET INHIBIT.

PRESET RESERVED (Initialization reserved)

Initialization of the back-up RAM is reserved. (Actually, initialization is executed the next time that the power is turned on.) Select this sub-menu to reset to the original factory settings or to reset the RAM. Use PRESET RESERVED to erase the protection history.

CAUTION: Before setting to the PRESET RESERVED, write down the existing preset memory.

Content of the Tuner in a table as shown below. (This is because setting to the PRESET RESERVED will cause ALL user memory contents to be erased.)

Preset group	P1	P2	P3	P4	P5	P6	P7	P8
A								
B								
C								
D								
E								

4. AD DATA CHECK

This menu is used to display the A/D conversion value of the Microprocessor which detects panel keys of the main unit and protection functions in using the sub-menu.

When K0/K1 menu is selected, keys become non-operable due to detection of the values of all keys. However, it is possible to advance to the next sub-menu by turning the INPUT of the main unit.

* Numeric values in the figure example are for reference.

P1/P2 (Power supply voltage protection detection)

Power supply voltage protection value (Normal value: P1: 102 to 400, P2: 102 to 329)

P1: Detects +5I, ±B and AC2.

P2: Detects +5I, ±12, +10V, -VP and AC1.

* If Px is out of the normal value range, the protection function works to turn off the power.
(Reference voltage: 5V=500)

P1:xxx P2:xxx

P3/TH (Power supply voltage protection detection/Temperature detection)

P3: Amp DC protection (Normal value: 0 to 402)

* If Px is out of the normal value range, the protection function works to turn off the power.
(Reference voltage: 5V=500)

TH: Detects the temperature of the heat sink.

Temperature detected value

(Normal value: 0 to 176) U, C, T, K, A, B, G models

(Normal value: 0 to 170) L, V models

(Reference voltage: 5V=500)

P3:xxx TH:xxx

SYSTEM STATUS

The voltage value of pin No. 92 of IC200 is displayed, using 5V/500 as standard.

SI:xxx [y]:OK

OK: Normal
NG: Out of specified range

0: 0 (PORaT_STANDBY)
1: H 1/3 (PORT_PRE_STANDBY)
2: H 2/3 (PORT_STOP)
3: H (PORT_PLAY)

Display	Description
0 - 41	[0] OK
43 - 123	0-1 NG
125 - 207	[1] OK
209 - 290	1-2 NG
292 - 374	[2] OK
376 - 456	2-3 NG
458 - 500	[3] OK

DESTINATION

The destination of this unit is displayed.

DEST:000

Destination for AD port (Pin No. 97 of IC200) Pull-up resistance 10k-ohms.

Ohm	0	2.7k	15.0k	47.0k
V	0-0.2	0.7-1.3	2.8-3.3	3.9-4.3
Pin 94 (DEST)	B, G	U, C	L, V	T, K, A

PANEL KEY (K0/K1)

When the A/D value of the panel key becomes out of the specified range, normal operation will not be available. Check each panel key for the constant of the partial pressure resistance, soldered condition, etc, referring to the table below.

(Reference voltage: 5 V=100 %)

K0:494 K1:496

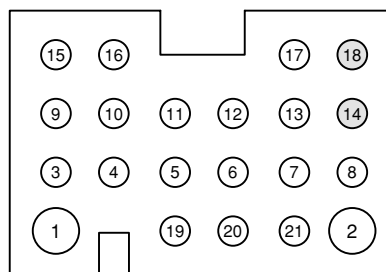
Display	K0	K1
0 - 41	DISPLAY	PRESET / TUNING ^
43 - 109	MEMORY / TIME ADJ.	PRESET / TUNING v
111 - 317	PRESET / BAND	-

5. iPod**DOCK loop back check**

After turning off the power, short between pins No. 14 (TX) and No. 18 (RX).

(Make sure that the power is turned off when shorting pins.)

Note) Be sure to return the shorted locations to their original state.



DOCK

OK: Normal
NG: Error

5.DOCK:OK

Check item	Judgment	Display
Is UART loop pack check result OK?	YES	OK
	NO	NG

DOCK status

The status of pins No.1 (PWR) and No.4 (iPDET) of the DOCK connector is displayed.

PWR (iPod accessory power)

HI: Detected

LO: Undetected

DET (iPod installation to DOCK)

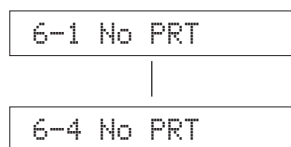
HI: Installed

LO: Not installed

PWR:LO DET:HI

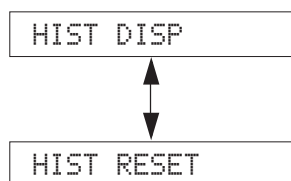
6. PROTECTION HISTORY

Four protection histories are displayed.



7. PROTECTION HISTORY RESET

The PROTECTION history is initialized. Select [HIST RESET] and press the “MEMORY” key, and the PROTECTION history will be initialized.



HISTORY DISPLAY

The RAM is not initialized. The past PROTECTION history is not erased.

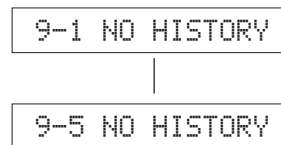
HISTORY RESET

The past PROTECTION history is erased. Have HIST RESET displayed and press the ‘MEMORY’ key, and the past PROTECTION history will be erased.

9. TURN OFF THE POWER FACTOR HISTORY

Up to 5 past factors which caused the power to turn OFF are displayed.

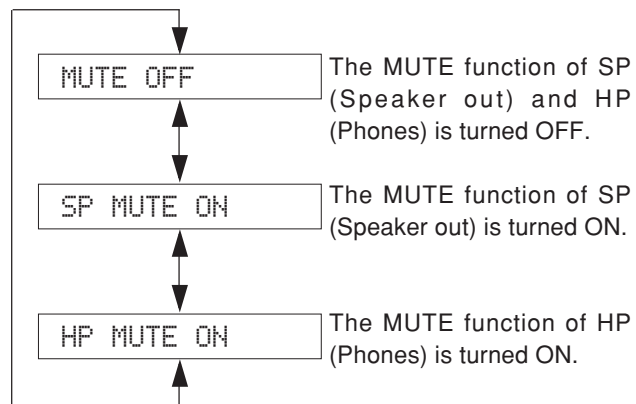
When the “MEMORY” key is pressed during display, the history of the power OFF causal factors are initialized.



Display	Factor
9-x CPU RESET	Microprocessor reset
9-x POWER DOWN	Power down
9-x PROTECTION	Protection
9-x TIMER OFF	Sleep/Timer off
9-x PANEL KEY	Panel key “STANDBY/ON”
9-x REMOCONKEY	Remote control key “STANDBY/ON”
9-xAUTOSTANDBY	Auto standby
9-x NO HISTORY	Not history

8. MUTE

Using the sub-MENU, select the MUTE status of SP (Speaker out)/HP (Phones).



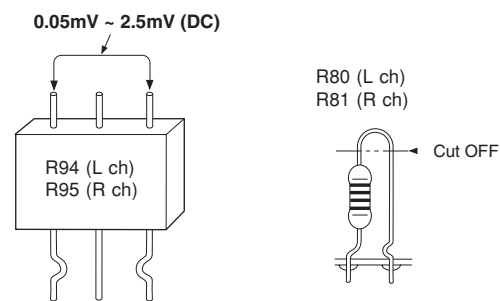
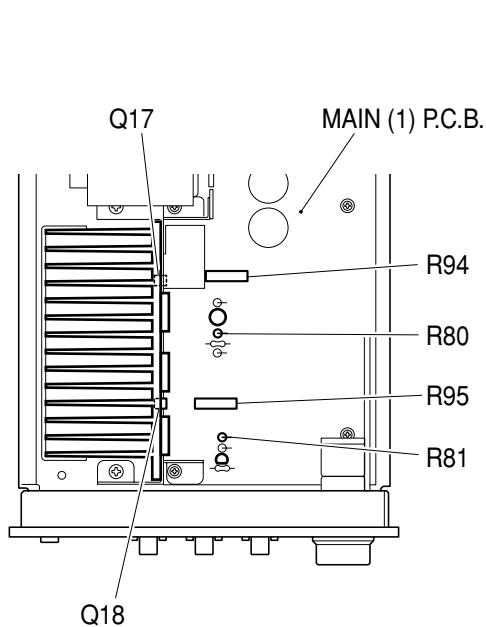
■ AMP ADJUSTMENTS

● Confirmation of Idling Current

- 1) No signal applied.
- 2) Non-loaded condition.
- 3) Aging is not necessary.

Item	Test Point	Rating (DC)	Note
MAIN L	R94 (Between terminal)	0.05mV–2.5mV	If the measured voltage exceeds 2.6mV, cut the lead wire of R80 (L ch) or R81 (R ch) and then check again if each measured value satisfies the rating.
MAIN R	R95 (Between terminal)		

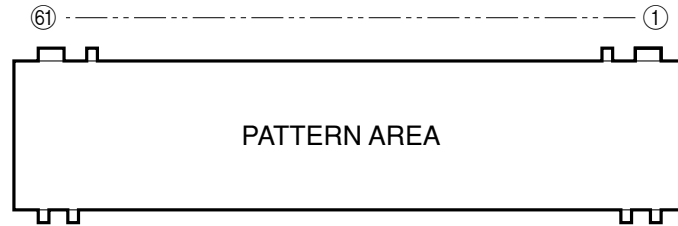
* Confirm that the idling current is 0.25mV – 15mV after 60 minutes.



- Note)**
- If the idling current exceeds 2.6mV after a power amplifier repair, check for a defective component before cutting the resistor.
 - If R80 (L ch) or R81 (R ch) have already been cut off and idling current does not flow, reconnect R80 (1k-ohms) or R81 (1k-ohms).
 - Q17 and Q18 are transistors for temperature correction. Apply silicone grease to the contact surface with the heat sink.

■ DISPLAY DATA

● V501 : 16-BT-133GNK (VH034300)



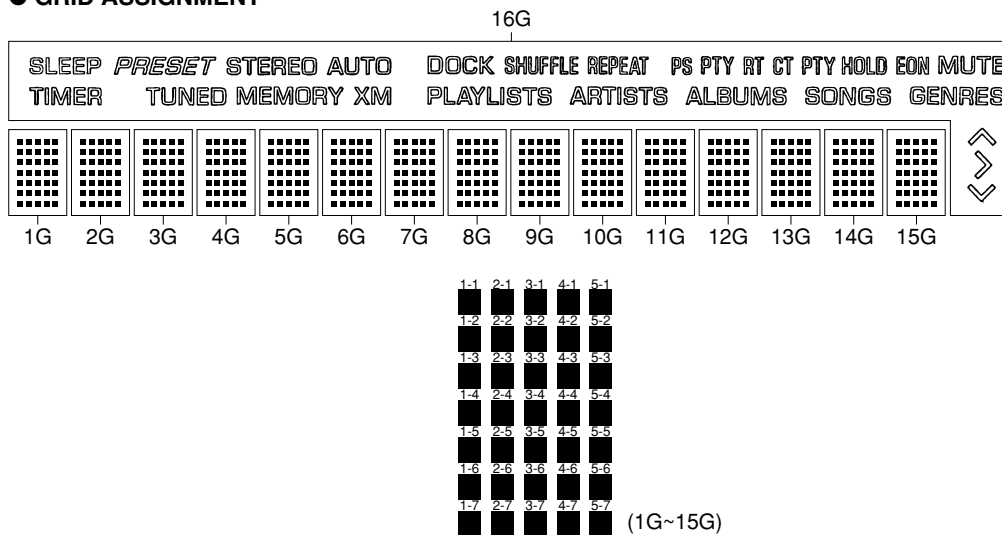
● PIN CONNECTION

Pin No.	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Connection	P17	P18	P19	P20	P21	P22	P23	P24	P25	P26	P27	P28	P29	P30	P31	P32	P33	P34	P35	NC	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	NX	F1

Pin No.	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
Connection	F2	NX	NP	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16

Note : 1) F1, F2 Filament 2) NP No pin 3) NX No extened Pin 4) 1G ~ 16G Grid 5) NC No connection

● GRID ASSIGNMENT



● ANODE CONNECTION

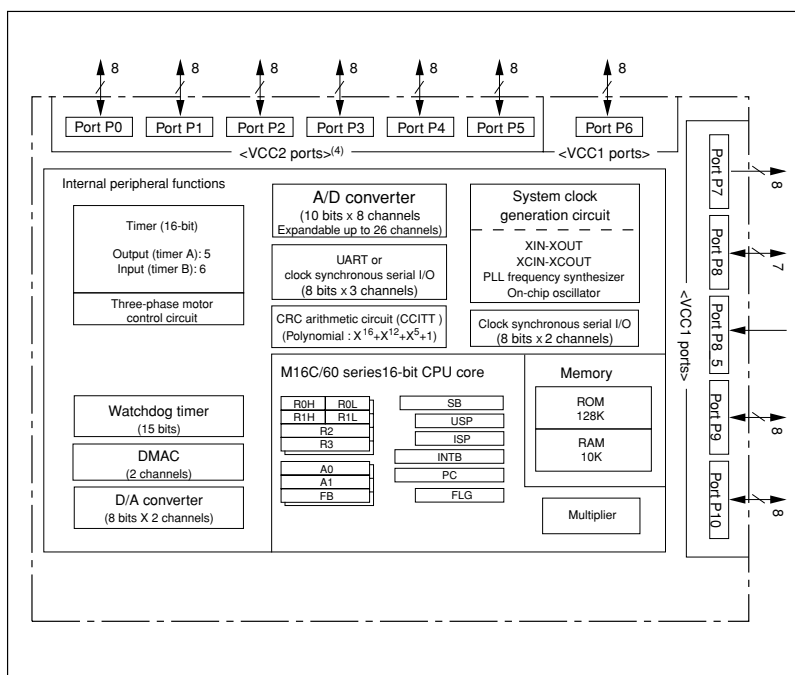
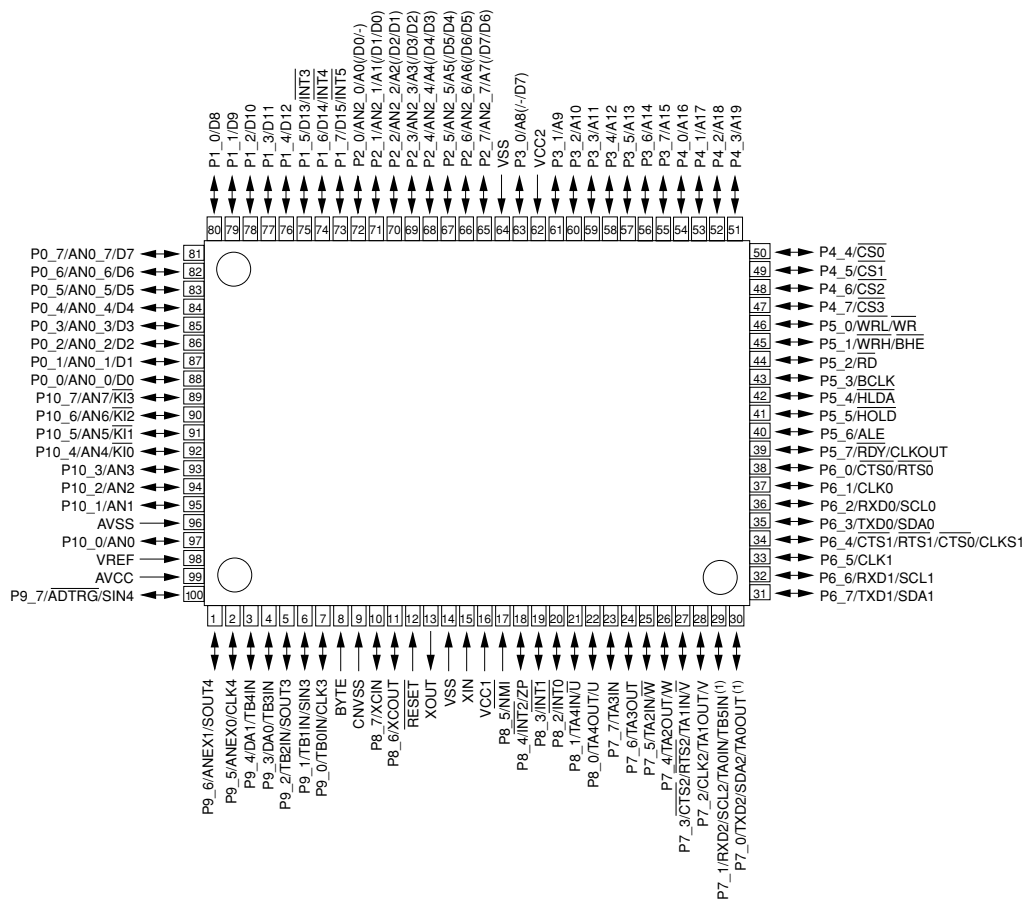
	1G~15G	16G
P1	1-1	SLEEP
P2	2-1	TIMER
P3	3-1	PRESET
P4	4-1	STEREO
P5	5-1	AUTO
P6	1-2	TUNED
P7	2-2	MEMORY
P8	3-2	XM
P9	4-2	DOCK
P10	5-2	SHUFFLE
P11	1-3	REPEAT
P12	2-3	PLAYLISTS

	1G~15G	16G
P13	3-3	ARTISTS
P14	4-3	PS
P15	5-3	PTY
P16	1-4	RT
P17	2-4	CT
P18	3-4	PTY HOLD
P19	4-4	EON
P20	5-4	MUTE
P21	1-5	ALBUMS
P22	2-5	SONGS
P23	3-5	GENRES
P24	4-5	↗

	1G~15G	16G
P25	5-5	↘
P26	1-6	↙
P27	2-6	—
P28	3-6	—
P29	4-6	—
P30	5-6	—
P31	1-7	—
P32	2-7	—
P33	3-7	—
P34	4-7	—
P35	5-7	—

IC DATA

IC200 : M30620MCP-A41FP (INPUT P.C.B.)
Microprocessor



IC200 : M30620MCP-A41FP (INPUT P.C.B.)
Microprocessor

Pin No.	Port	Name	I/O	Function
1	P96/ANEX1/SOUT4	SADEV_DI	O	Serial data output
2	P95/ANEX0/CLK4	SADEV_DO	SI	Serial data input
3	P94/DA1/TB4in	SADEV_CK	O	Serial clock output
4	P93/DA0/TB3in	TU_STAT	I	TUNED detect
5	P92/TB2in/SOUT3	TU_ST/MON	I	STEREO detect
6	P91/TB1in/SIN3	TU_MUTE	O	TUNER MUTE output
7	P90/TB0in/CLK3		O	
8	BYTE	BYTE	MCU	Vss: When using single chip mode
9	CNVss	CNVss	MCU	Vss: When using single chip mode
10	P87/Xcin	Xcin	MCU	Sub-clock oscillation input
11	P86/Xcout	Xcout	MCU	Sub-clock oscillation output
12	/RESET	/RESET	MCU	Reset
13	Xout	Xout	MCU	Oscillation output
14	Vss	Vss	MCU	Ground for microprocessor
15	Xin	Xin	MCU	Oscillation input
16	Vcc1	Vcc	MCU	Power for microprocessor +5V
17	P85/NMI	NMI	MCU	
18	P84/INT2		O	
19	P83/INT1	/TIMER	IRQ	TIMER SW
20	P82/INT0		O	
21	P81/TA4in/U	RDS_DO	I	RDS data to microprocessor (B,G models)
22	P80/TA4out/U	RDS_DI	O	RDS data to IC (B,G models)
23	P77/TA3in	RDS_CK	O	RDS serial clock out (B,G models)
24	P76/TA3out	RDS_CE	O	RDS CE out (B,G models)
25	P75/TA2in/W		O	
26	P74/TA2out/W	/CEEEP	O	
27	P73/CTS2/RTS2/TA1in/V		O	
28	P72/CLK2/TA1out/V		O	
29	P71/RXD2/SCL2/TA0in/TB5in		O	
30	P70/TXD2/SDA2/TA0out		O	
31	P67/TXD1/SDA1	TXDF	SO	
32	P66/RXD1/SCL1	RXDF	SI	
33	P65/CLK1	CLKF	SO	
34	P64/CTS1/RTS1/CTS0/CLKS1	BSY	O	
35	P63/TXD0/SDA0	IP_TXD	SO	iPod TxD
36	P62/RXD0/SCL0	IP_RXD	SI	iPod RxD
37	P61/CLK0	IP_DET	I	iPod detect
38	P60/CTS0/RTS0	IP_PWR	I	iPod accessory power detect
39	P57/RDY/CLKout	CLKOUT	I	Sub-clock output
40	P56/ALE	TU_PSW	O	Tuner power control
			O	H = Power on / L = Power off
41	P55/HOLD	/EMP	I	
42	P54/HLDA		O	
43	P53/BCLK		O	
44	P52/RD		O	
45	P51/WRH/BHE		O	
46	P50/WRL/WR	/CE	I	
47	P47/CS3		O	
48	P46/CS2		O	
49	P45/CS1		O	
50	P44/CS0		O	
51	P43/A19	MODEL	I	E810/E410 model identify (L = RX-E810)
52	P42/A18		I	
53	P41/A17		I	
54	P40/A16		I	
55	P37/A15		O	
56	P36/A14		O	
57	P35/A13		O	
58	P34/A12		I	
59	P33/A11		O	
60	P32/A10		O	
61	P31/A9		O	
62	Vcc2	Vcc	MCU	Power for microprocessor +5V

IC200 : M30620MCP-A41FP (INPUT P.C.B.)
 Microprocessor

Pin No.	Port	Name	I/O	Function
63	P30/A8		O	
64	Vss	Vss	MCU	Ground for microprocessor
65	P27/A7		O	
66	P26/A6		O	
67	P25/A5		O	
68	P24/A4	PD_LED	O	PURE DIRECT LED output
69	P23/A3	P_RLY	O	Power relay output
70	P22/A2	SYS_I	I	Protection inhibit/Permit identify input
			I	L = Permitted / H = Inhibited
71	P21/A1	SYS_O	O	System communication output
72	P20/A0	SP_RLY	O	Speaker relay output
73	P17/D15/INT5	P_DET	IRQ	Power down detect
			IRQ	Interrupt
74	P16/D14/INT4	/STANDBY	IRQ	STANDBY/ON SW input
			IRQ	Interrupt
75	P15/D13/INT3	REMOTE	IRQ	Remote control input
			IRQ	Interrupt
76	P14/D12	/HP_DET	I	Headphone detect
			I	H = Headphone mounted
77	P13/D11	TIMER_LED	O	TIMER LED output
78	P12/D10	/FL_IC	O	FL driver reset output
79	P11/D9	/FL_CE	O	FL driver CE
80	P10/D8	FL_DT	O	FL driver data output
81	P07/D7	FL_CK	O	FL driver clock output
82	P06/D6	ROT_B	I	INPUT selector rotary B
83	P05/D5	ROT_A	I	INPUT selector rotary A
84	P04/D4	PDIRECT	I	PURE DIRECT SW input
			I	L = SW on / H = SW off
85	P03/D3	MVOL_UP	O	Motor volume up output
86	P02/D2	MVOL_DW	O	Motor volume down output
87	P01/D1	HP_MUTE	O	Headphone mute output
			I	L = Mute on
88	P00/D0	SP_MUTE	O	Speaker mute output
			I	L = Mute on
89	P107/AN7/KI3	KEY1	AD	AD key1 input
90	P106/AN6/KI2	KEY0	AD	AD key0 input
91	P105/AN5/KI1	PROT_TH	AD	AD protection temperature detect
92	P104/AN4/KI0	SYS_AD	AD	AD system status detect
93	P103/AN3	PROTECT1	AD	AD protection detect 1
94	P102/AN2	PROTECT2	AD	AD protection detect 2
95	P101/AN1	PROTECT3	AD	AD protection detect 3
96	Avss	Avss	MCU	Ground for AD
97	P100/AN0	DEST	AD	AD destination identification
98	Vref	Vref	MCU	AD reference
99	Avcc	Avcc	MCU	AD power
100	P97/Adtrg/Sin4	SADEV_CE	O	CE output

Ket input (A-D) Pull-up resistance 33 k-ohms

ohm	0	+6.8 k	+5.6 k
V	0 - 0.427	- 1.110	- 3.183
pin 90 (KEY0)	DISPLAY	MEMORY/TIME ADJ	PRESET/BAND
pin 89 (KEY1)	PRESET/TUNING $\wedge$	PRESET/TUNING $\vee$	—

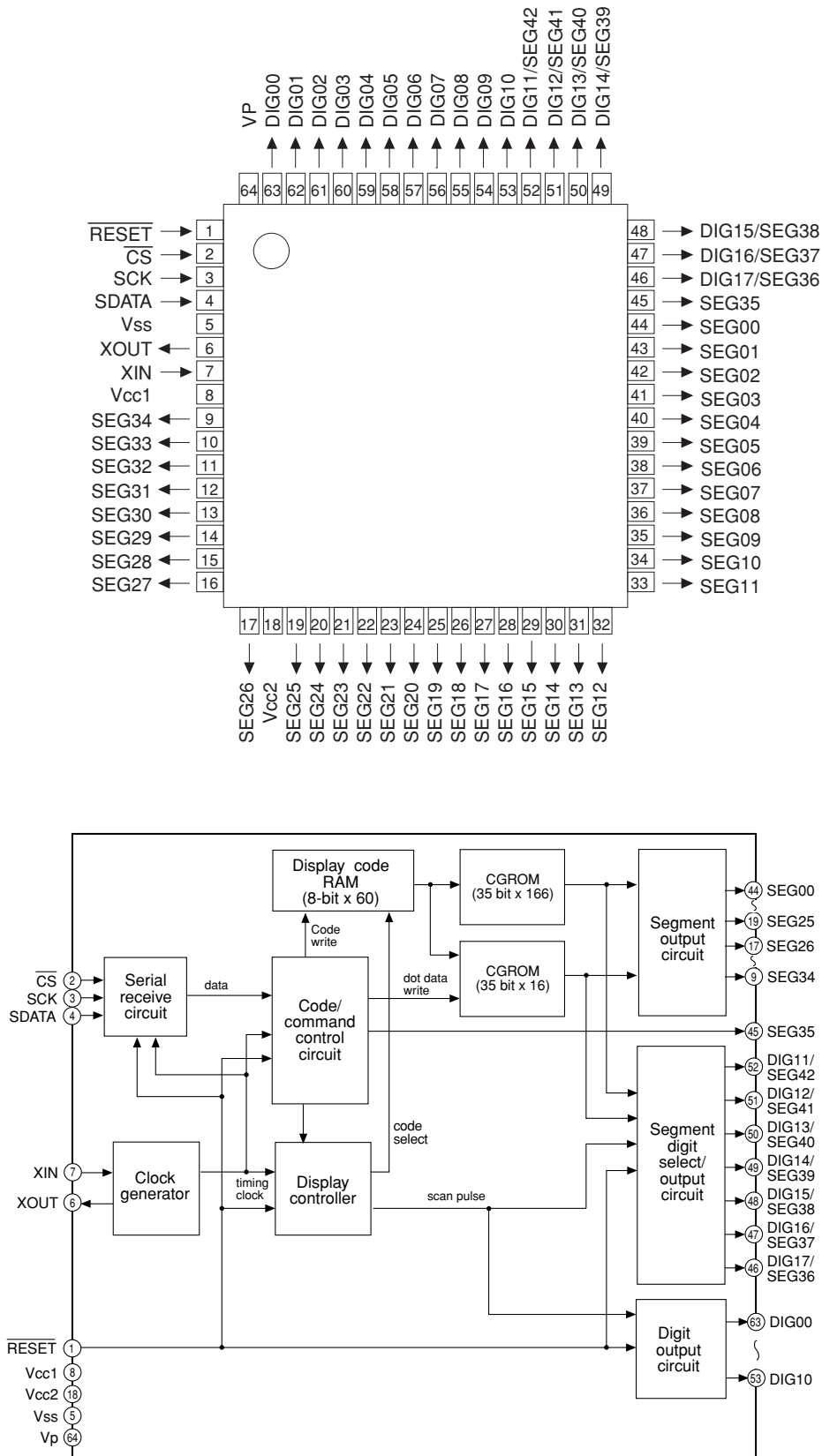
Destination for AD port

Pull-up resistance 10 k-ohms

ohm	0	2.7 k	15.0 k	47.0 k
V	0 - 0.2	0.7 - 1.3	2.8 - 3.3	3.9 - 4.3
pin94 (DEST)	B, G models	U, C models	L, V models	T, K, A models

IC501 : M66003-0131FP (OPERATION P.C.B.)

FL display driver

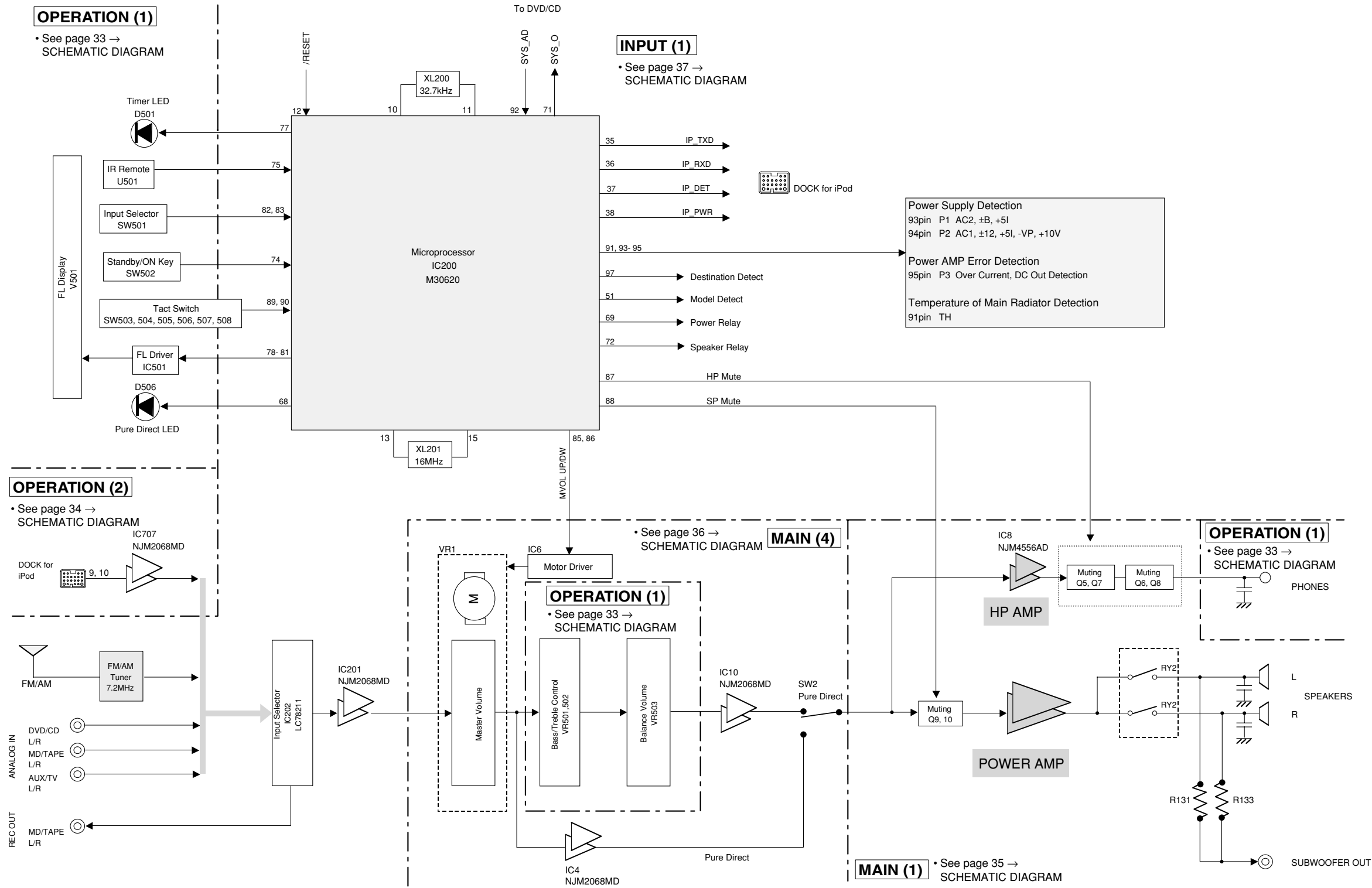


IC501 : M66003-0131FP (OPERATION P.C.B.)
FL display driver

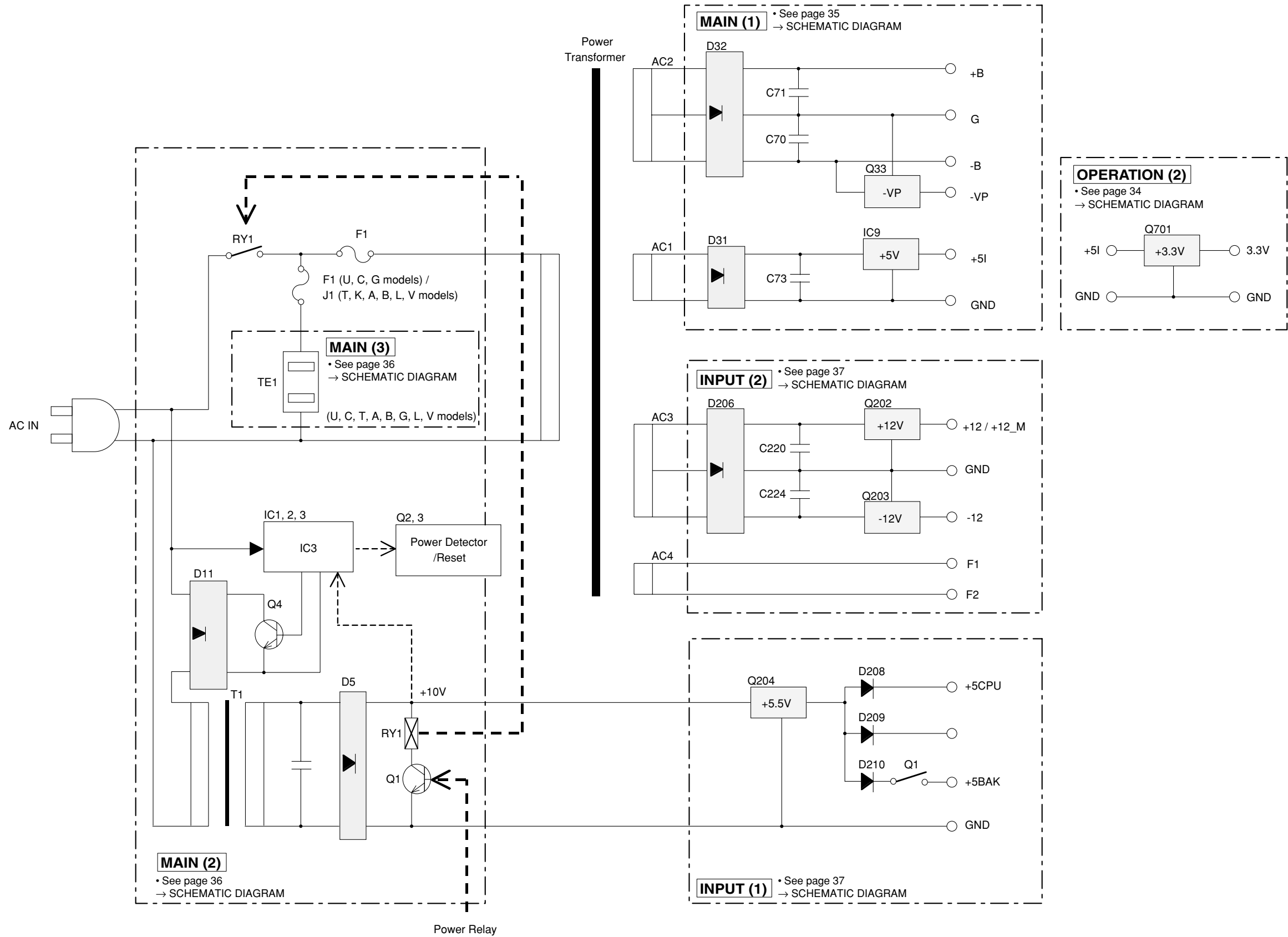
Pin No.	Symbol	Name	Function	
1	RESET	RESET	Reset input	When "L", M66003 is initialized.
2	CS	CEFD	Chip select input	When "L", communication with the MCU is possible.
3	SCK	CKFD	Shift clock input	When "H", any instruction from the MCU is neglected.
4	SDATA	DTFD	Serial data input	Serial input data is taken and shifted by the positive edge of SCK.
5	Vss	Vss		GND (0V)
6	XOUT	XOUT	Clock out	When use as a CR oscillator, connect external resistor and capacitor.
7	XIN	XIN	Clock in	When use an external clock input external clock to XIN, and XOUT must be opened.
8	Vcc1	Vcc1		Positive power supply for internal logic.
9	SEG34	P1	Segment output	Connect to segment (anode) pins of VFD. Pins from SEG00 to SEG42 correspond to segment pins of VFD as shown in the table below. SEG36–SEG42 pins are common to DIG11–DIG17 pins. So when use SEG36–SEG42, the number of digit to be used is decreased.
10	SEG33	P2		
11	SEG32	P3		
12	SEG31	P4		
13	SEG30	P5		
14	SEG29	P6		
15	SEG28	P7		
16	SEG27	P8		
17	SEG26	P9		
18	Vcc2	Vcc2		Positive power supply for DIG and SEG outputs.
19	SEG25	P10	Segment output	Connect to segment (anode) pins of VFD. Pins from SEG00 to SEG42 correspond to segment pins of VFD as shown in the table below. SEG36–SEG42 pins are common to DIG11–DIG17 pins. So when use SEG36–SEG42, the number of digit to be used is decreased.
20	SEG24	P11		
21	SEG23	P12		
22	SEG22	P13		
23	SEG21	P14		
24	SEG20	P15		
25	SEG19	P16		
26	SEG18	P17		
27	SEG17	P18		
28	SEG16	P19		
29	SEG15	P20		
30	SEG14	P21		
31	SEG13	P22		
32	SEG12	P23		
33	SEG11	P24		
34	SEG10	P25		
35	SEG09	P26		
36	SEG08	P27		
37	SEG07	P28		
38	SEG06	P29		
39	SEG05	P30		
40	SEG04	P31		
41	SEG03	P32		
42	SEG02	P33		
43	SEG01	P34		
44	SEG00	P35		
45	SEG35	N.C.		
46	DIG17/SEG36	N.C.	Digital output / Segment output	Connect to segment (anode) pins of VFD. Pins from SEG00 to SEG42 correspond to segment pins of VFD as shown in the table below. SEG36–SEG42 pins are common to DIG11–DIG17 pins. So when use SEG36–SEG42, the number of digit to be used is decreased. / Connect to digit (grid) pins of VFD.
47	DIG16/SEG37	N.C.		
48	DIG15/SEG38	G16I		
49	DIG14/SEG39	G15		
50	DIG13/SEG40	G14		
51	DIG12/SEG41	G13		
52	DIG11/SEG42	G12		
53	DIG10	G11	Digital output	Connect to digit (grid) pins of VFD.
54	DIG09	G10		
55	DIG08	G9		
56	DIG07	G8		
57	DIG06	G7		
58	DIG05	G6		
59	DIG04	G5		
60	DIG03	G4		
61	DIG02	G3		
62	DIG01	G2		
63	DIG00	G1		
64	VP	VP		Negative power supply to pull down.

BLOCK DIAGRAMS

AUDIO SECTION BLOCK DIAGRAM

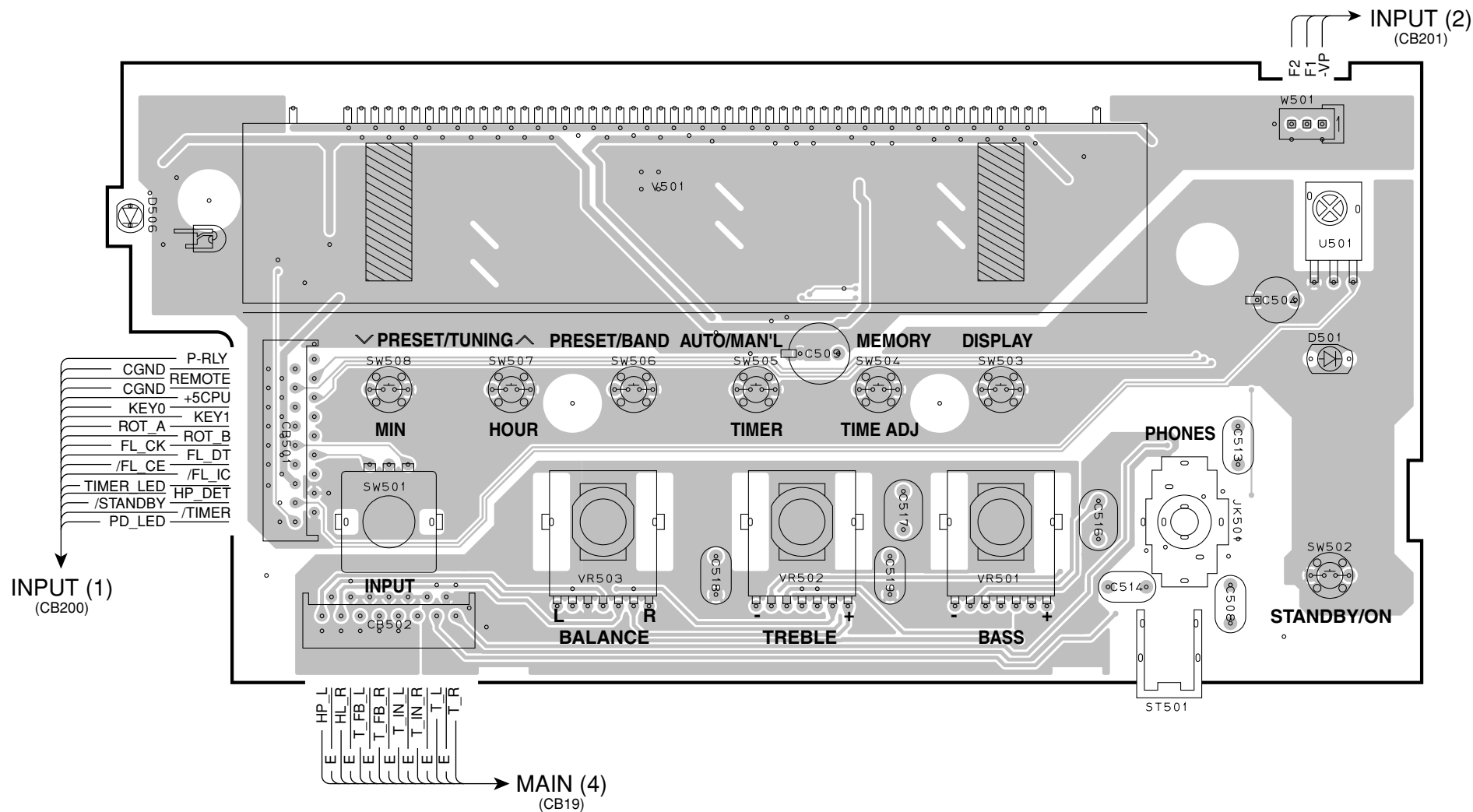


POWER SECTION BLOCK DIAGRAM

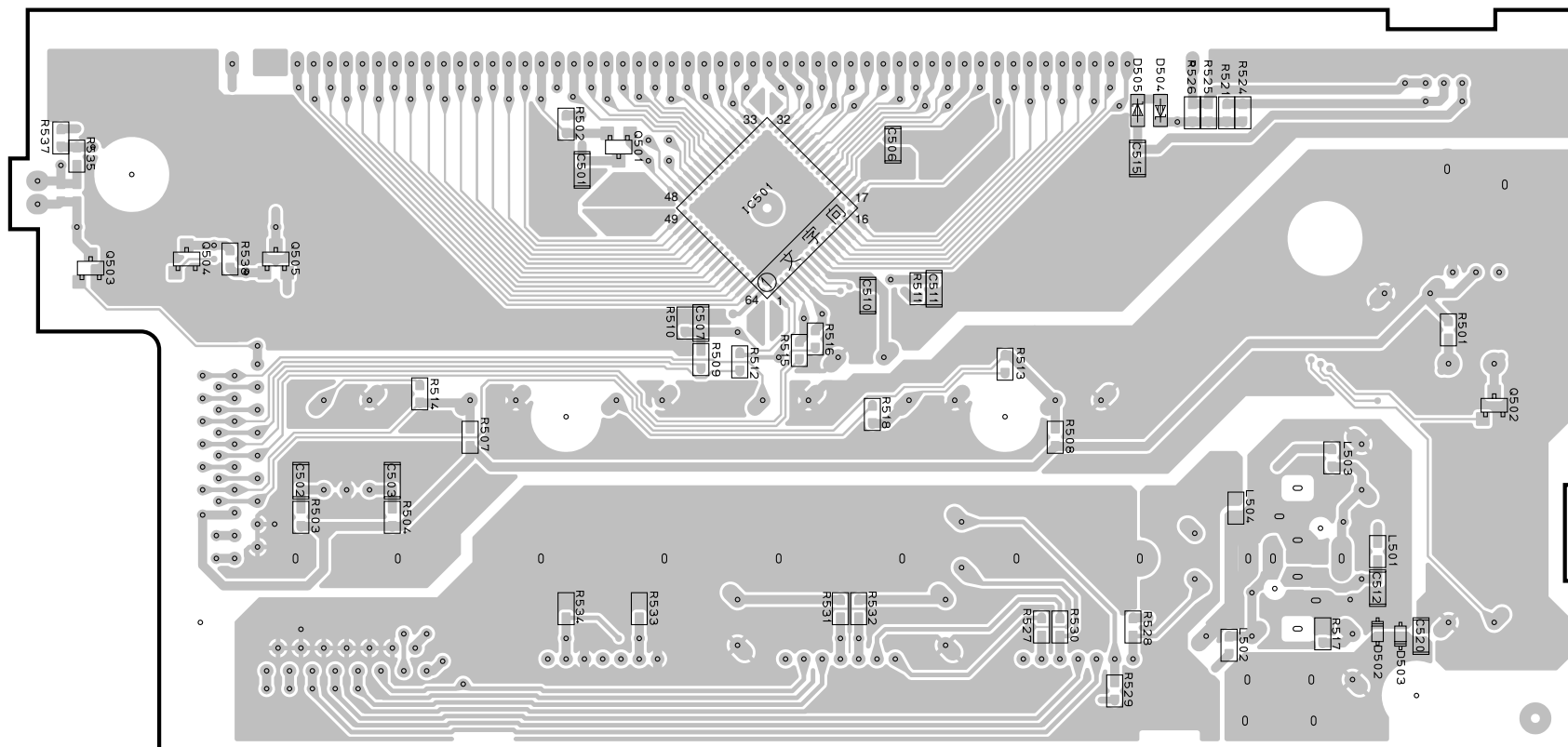


PRINTED CIRCUIT BOARDS

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

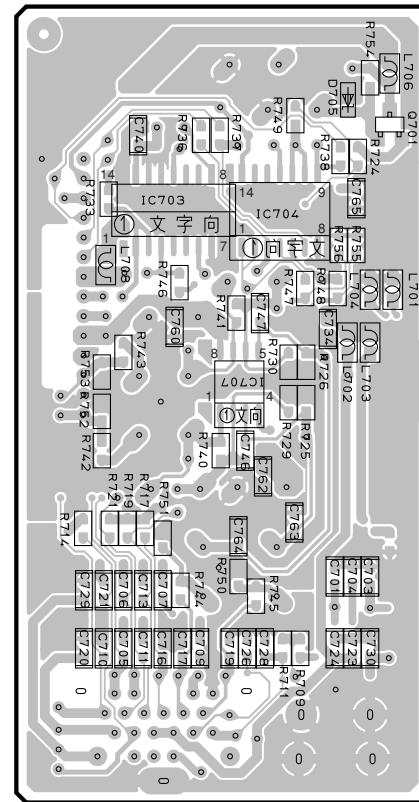


OPERATION (1) P.C.B. (Side B)



Semiconductor Location

Ref no.	Location
D501	H2
D502	H7
D503	H7
D504	G5
D505	G5
D506	C2
IC501	F5
Q501	E5
Q502	I6
Q503	D5
Q504	D5
Q505	D5



Ref no.	Location
D705	H3
IC703	G3
IC704	H3
IC707	G4
Q701	H3

Circuit No.	U, C	T, K, A, B, G	L	V
C76, C79, C125, C126	X	O	O	X
C81, C82	X	O	O	X
C116	X	X	O	X
R142, R143, R813, R184	X	O	O	X

X : NOT USED
O : USED/APPLICABLE

MAIN (1) P.C.B.

(Side A)

TO DVD-E810
(RX-E810 model)
TO CDX-E410
(RX-E410 model)

SUBWOOFER
OUT

L +/-
R +/-
SPEAKERS

MAIN (2) (CB1)

INPUT (2)
(W200)

-12V
E
DGND
+12V
+12_M
PROT_1
-VP
SGND

INPUT (1) (CB207)

HP MUTE
PROT_TH
+5QPU
CGND
SP MUTE
PROT_3
PROT_2
PROT_1
+12V_M
DGND

MAIN (4) (CB21)

MAIN (1) P.C.B.

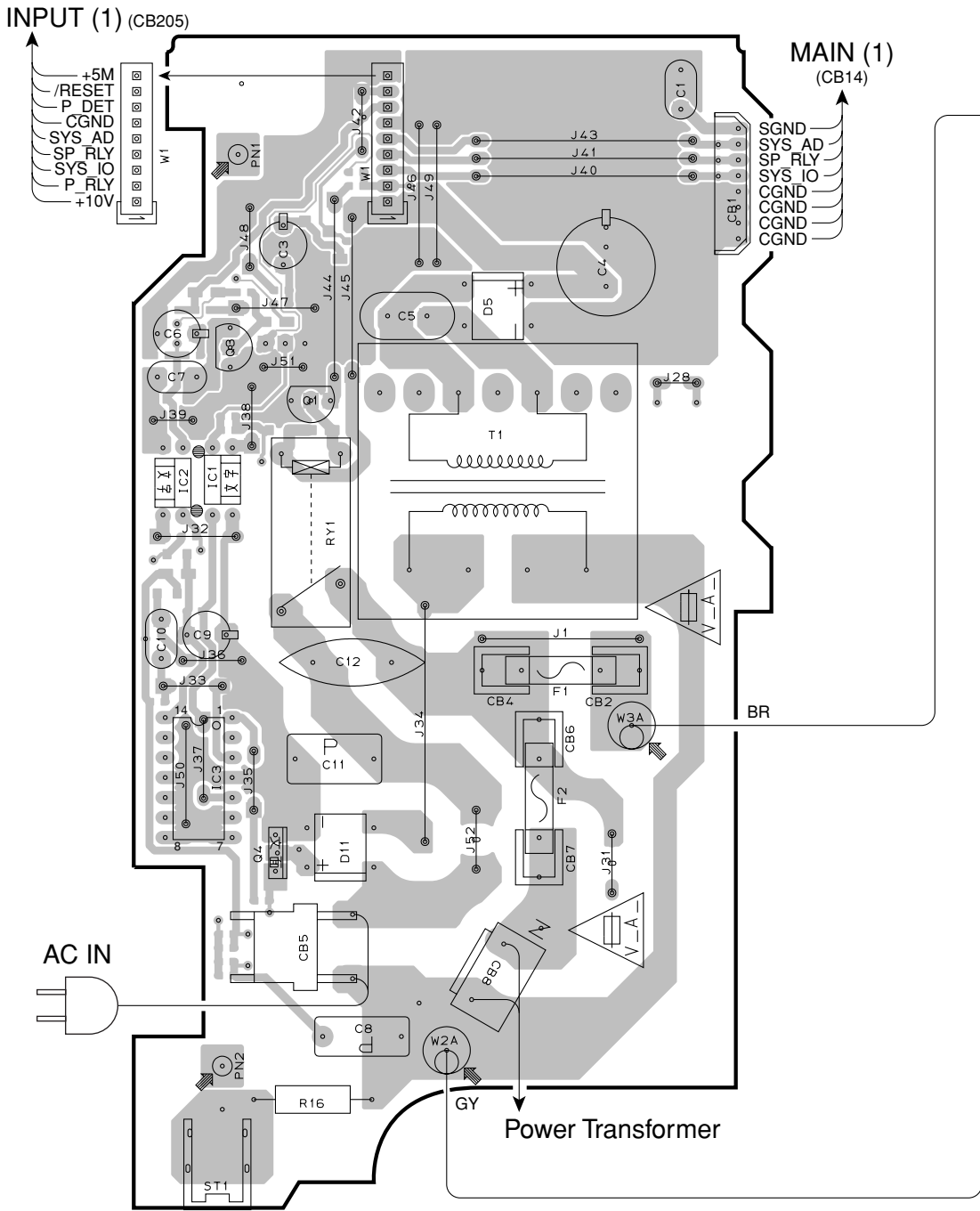
(Side B)

Power Transformer

• Semiconductor Location

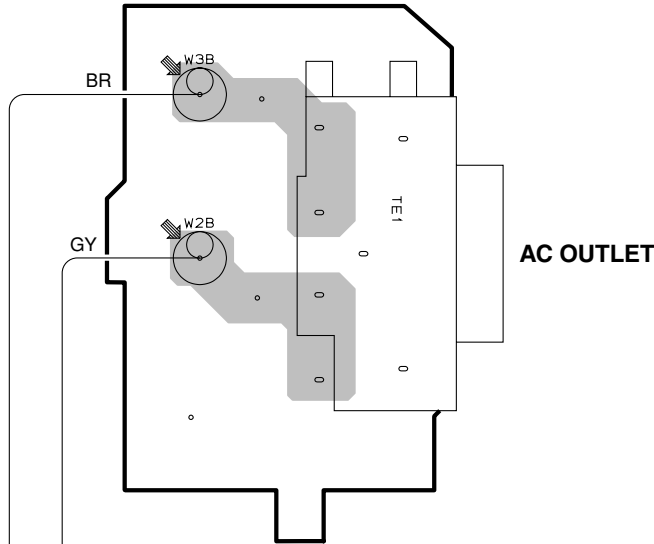
Ref no.	Location	Ref no.	Location
D13	F3	Q10	G7
D14	G3	Q11	F3
D15	F2	Q12	G3
D16	F2	Q13	F3
D17	G2	Q14	G3
D18	G2	Q15	F3
D19	F2	Q16	G3
D20	G2	Q17	F2
D23	G2	Q18	G2
D24	H2	Q19	F2
D25	D3	Q20	G2
D26	D3	Q21	F2
D28	C2	Q22	F2
D29	E3	Q23	G2
D31	C3	Q24	G2
D32	D3	Q25A	F2
D33	C3	Q25C	F2
D34	D3	Q27A	G2
IC7	G2	Q27C	H2
IC8	H3	Q29	G2
IC9	D3	Q30	F2
Q5	H6	Q31	H2
Q6	H6	Q32	D3
Q7	H6	Q33	D3
Q8	H6	Q34	G2
Q9	F7	Q35	G2

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

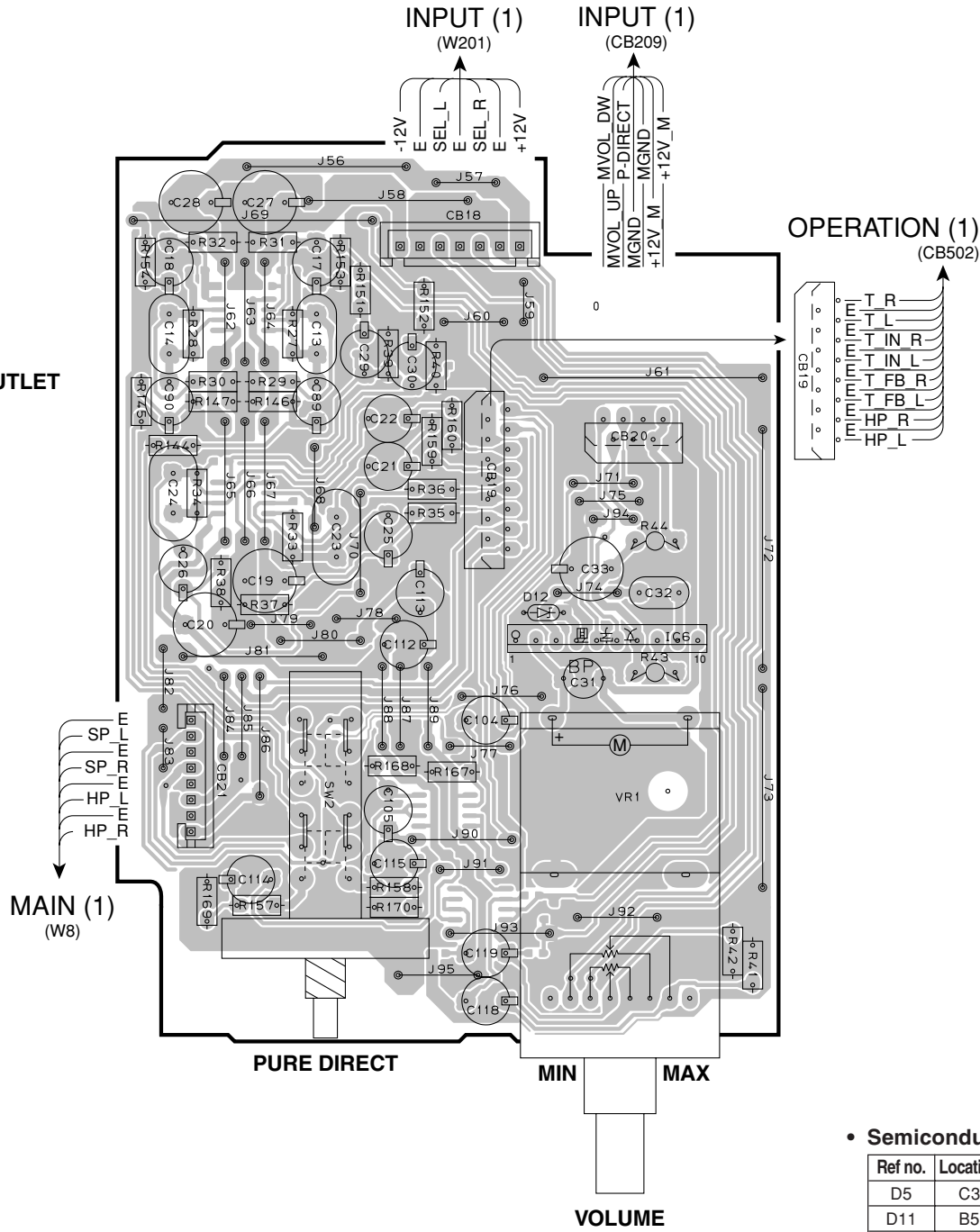


MAIN (3) P.C.B. (Side A)

U, C, T, A, B, G, L, V models



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



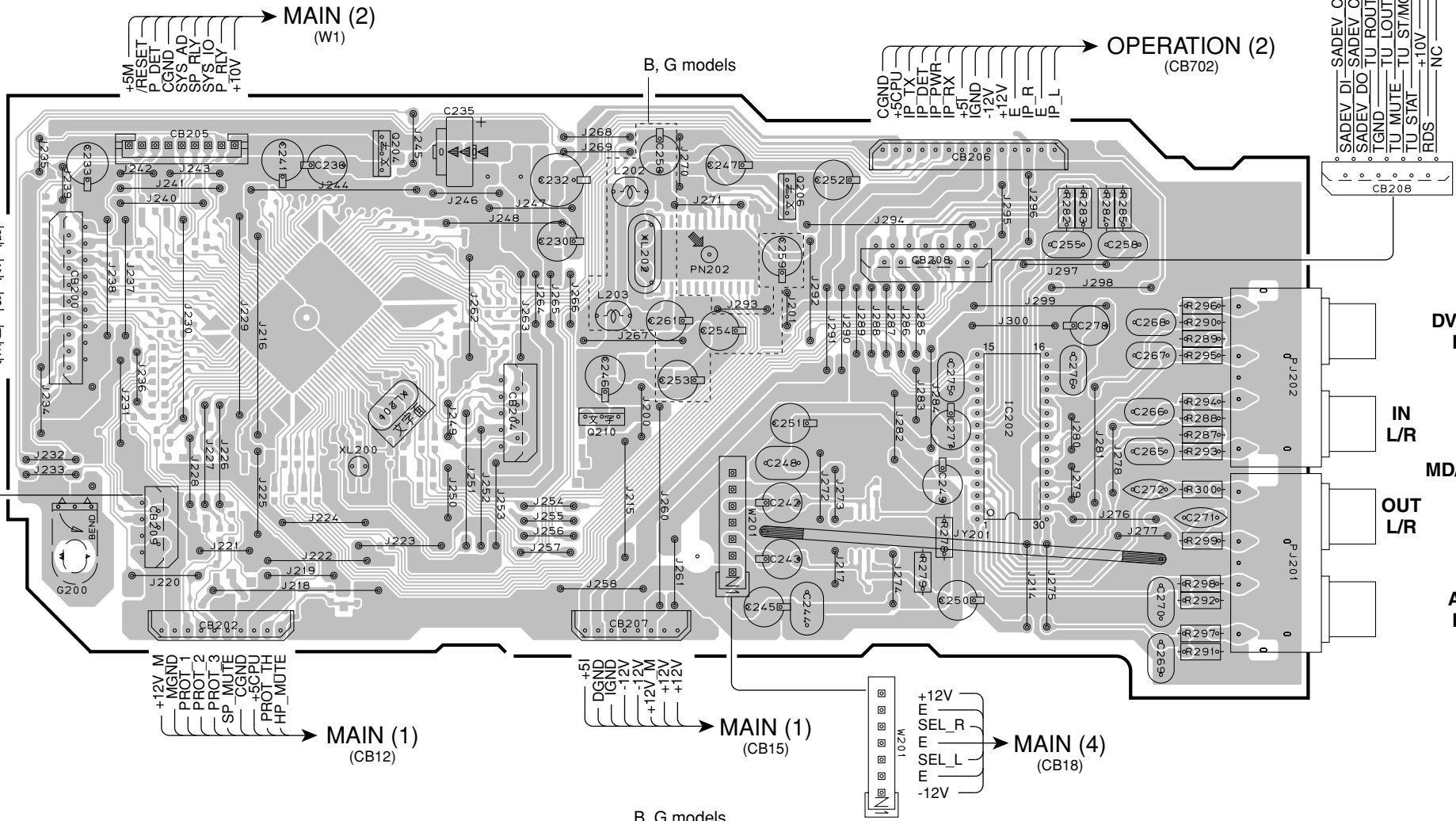
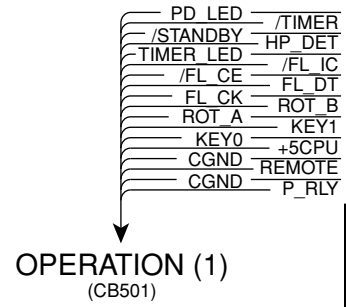
Circuit No.	U, C	T, K, A, B, L	G	V
J1	X	O	X	O
CB2, CB4	O	X	O	X
F1	O	X	O	X
R16	O	X	X	X
J28	X	O	O	X

X : NOT USED
O : USED/APPLICABLE

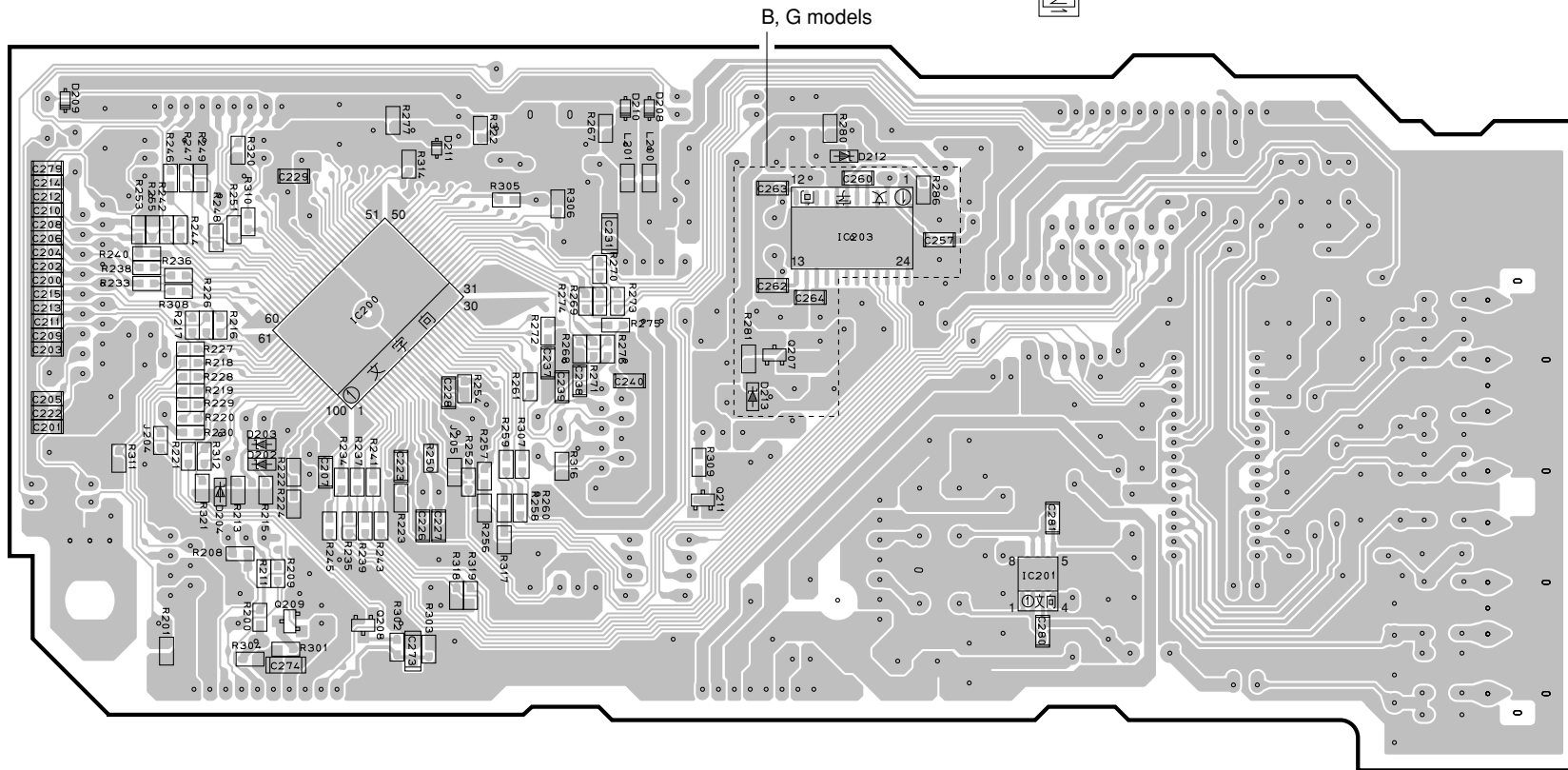
Semiconductor Location

Ref no.	Location
D5	C3
D11	B5
D12	H4
IC1	B4
IC2	B4
IC3	B5
IC6	H4
Q1	B4
Q3	B3
Q4	B5

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



INPUT (1) P.C.B. (Side B)



• Semiconductor Location

Ref no.	Location
D202	D6
D203	D6
D204	D6
D208	E5
D209	C5
D210	E5
D211	D5
D212	F5
D213	F6
IC200	D6
IC201	F6
IC202	G3
IC203	F5
Q204	D2
Q206	F2
Q207	F6
Q208	D7
Q209	D7
Q210	E3
Q211	E6

Circuit No.	RX-E810		RX-E410
	U, C, T, K, A, B, G	L, V	
PN202	X	O	X
R314	O	O	X

X : NOT USED
O : USED/APPLICABLE

1

2

3

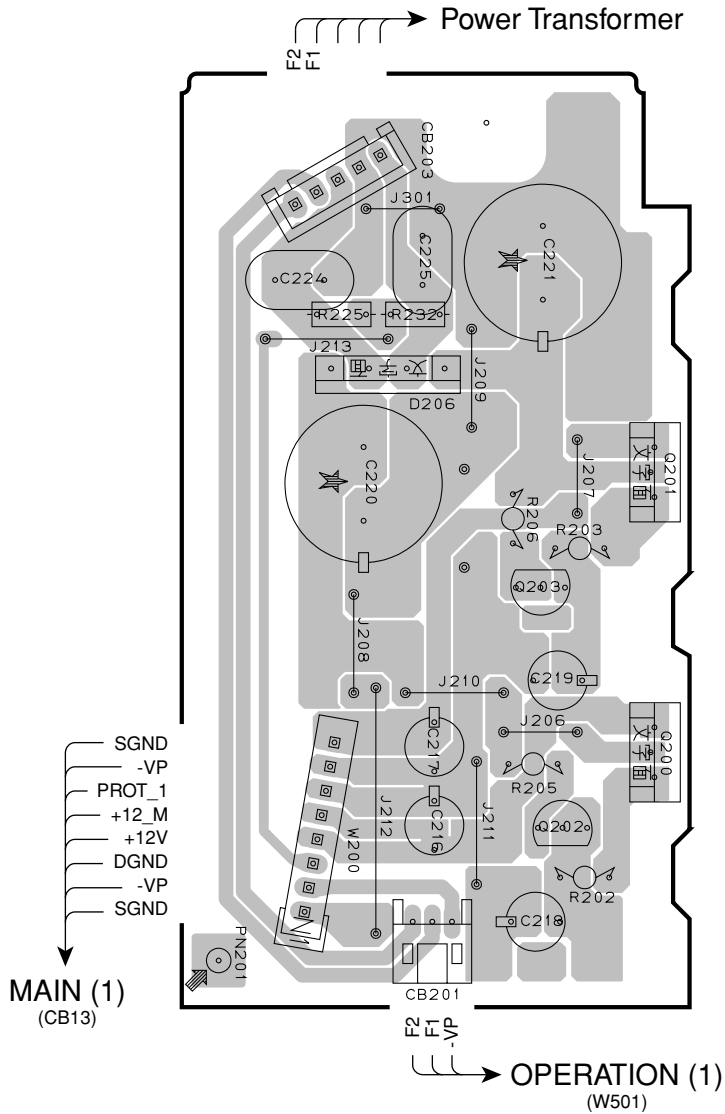
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5

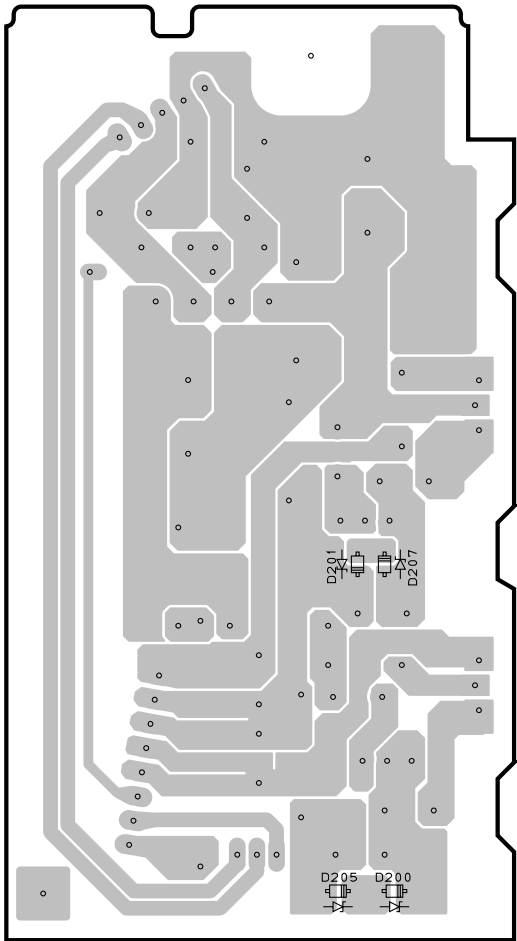
6

7

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



INPUT (2) P.C.B. (Side B)



• Semiconductor Location

Ref no.	Location
D200	H5
D201	H4
D205	H5
D206	D3
D207	H4
Q200	E5
Q201	E4
Q202	E5
Q203	E4

PIN CONNECTION DIAGRAMS

ICs

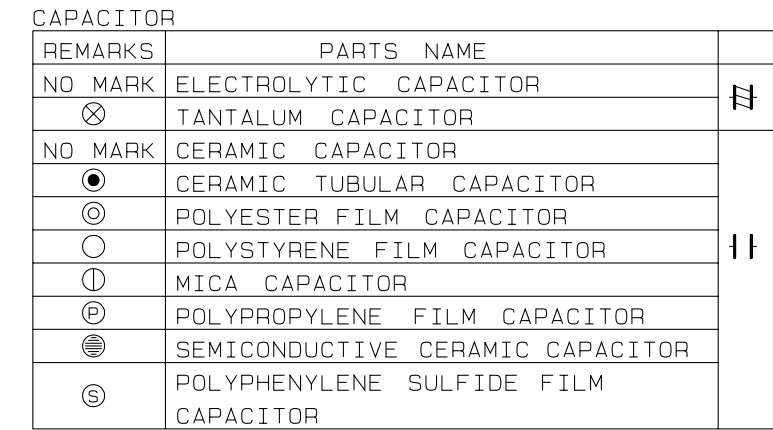
BA50BC0T	KIA7805API	LB1641	LC72722PM	LC78211
LM61CIZ	M30620MCP-A41FP	M66003-0131FP	MM74HCT08SJX	
NJM2068MD-TE2	NJM4556AD	SN74LV32ANSR	TC4013BP	TLP421

Diodes

1SS133 1SS176 1SS270A 1SR139-400 MTZJ5.1B 5.1V MTZJ5.1C 5.1V MTZJ12C 12V MTZJ22C 22V	1SS355 1SS380 MA8030-L 2.9V MA8036-H 3.7V MA8039-H 4.0V MA8051-M 5.1V MA8056-M 5.6V MA8068-M 6.8V MA8091-M 9.1V MA8100-H 10.3V MA8100-M 10V RB501V-40 UDZ6.2B 6.2V	S1NB20 1A 200V	S1NB60 1.0A 600V
D5SBA20-4001 6A	KBP103G 1.0A 200V		

Transistors

2SA1015 Y 2SA949 O,Y 2SC1815 Y 2SC1890A D,E 2SC2229 O,Y 2SC3326 A,B	2SB1257	2SD1915F S,T 2SD2014 2SK246 Y 2SK3850	2SA1708 S,T 2SA1770 S,T 2SC4488 S,T 2SC4614 S,T 2SD1938F S,T
2SA1036KT146 P,Q,R 2SC2412K Q,R,S DTA114EKA DTC114EKA DTC144EKA	2SA1694 O,P,Y 2SC4467 O,P,Y	2N5551C-AT 2N5401C-AT	



```

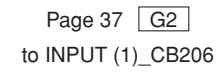
NOTICE (model)
(J)..... JAPAN
(U)..... U. S. A
(C)..... CANADA
(R)..... GENERAL
(T)..... CHINA
(K)..... KOREA
(A)..... AUSTRALIA
(B)..... BRITISH
(G)..... EUROPE
(L)..... SINGAPORE
(E)..... SOUTH EUROPE
(V)..... TAIWAN

```

Interchangeable Parts at Manufacture-Stage		
Mark	Reference Parts Number	Parts Name
111	0502-503	DTC144EKA KRC104S-RTK/P
112	0504	DTC114EKA KRC102S-RTK/P

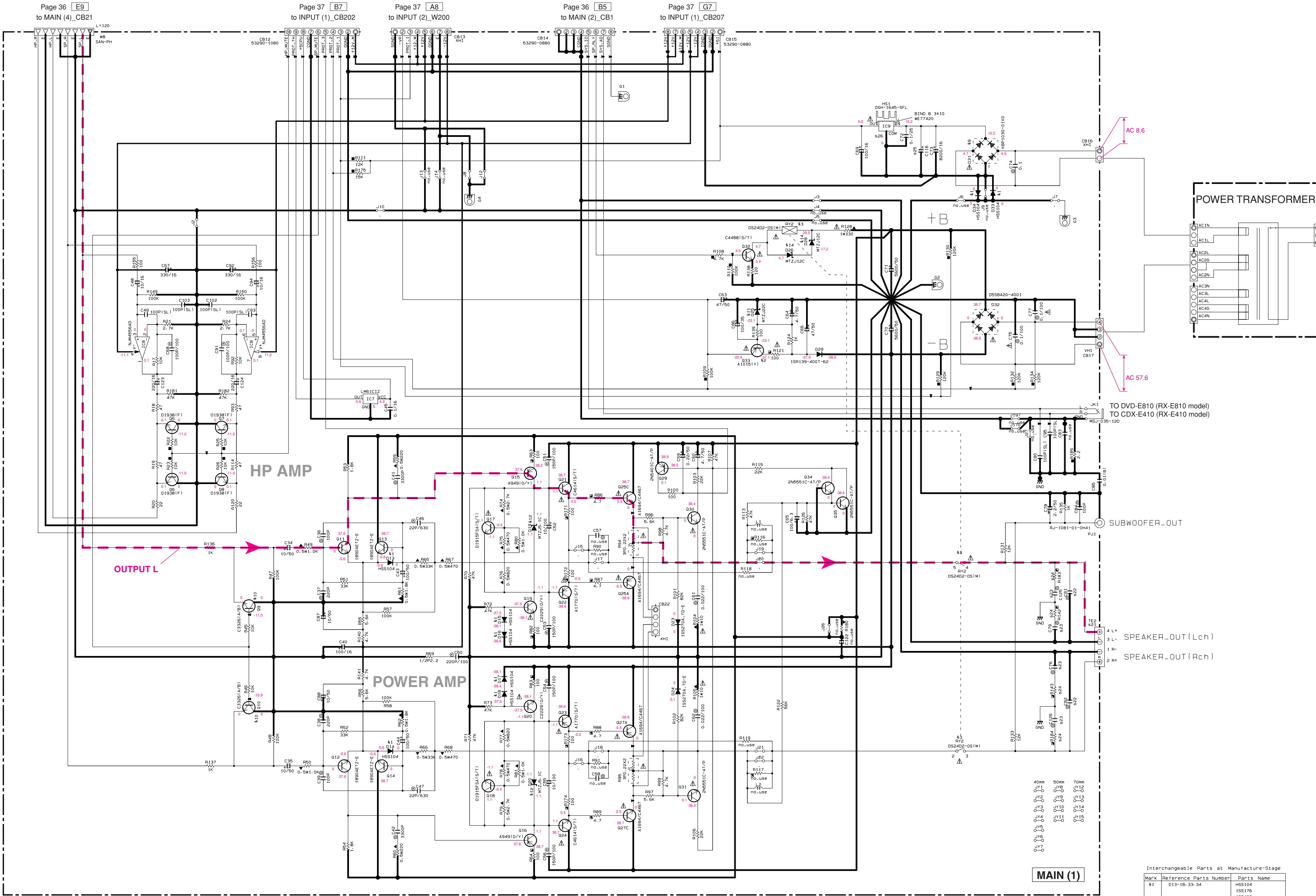
The block diagram illustrates the system architecture of the TMS320C49 DSP. Key components and their interconnections are as follows:

- Serial Interface:** The **Serial receive circuit** is connected to **CS**, **SK**, and **SDATA** pins. It provides **data** to the **Code/command control circuit**.
- Code/Command Control:** This central circuit receives **data** from the serial interface and **code select** from the **Display controller**. It manages **code write** to **Display code RAM** and **code read** from the **Display controller**.
- Memory:**
 - Display code RAM (8-bit x 60):** Receives code from the control circuit and provides **code read** to the display controller.
 - CGROM (39 bit x 166):** Provides **code read** to the **Segment output circuit**.
 - CGROM (35 bit x 16):** Provides **code read** to the **Segment digit select/output circuit**.
- Display Controller:** Receives **data** from the serial interface and **code read** from the **Display code RAM**. It outputs a **scan pulse** to the **Segment digit select/output circuit**.
- Output Circuits:**
 - Segment output circuit:** Receives **code read** from the **CGROM (39 bit x 166)** and the **scan pulse** from the display controller. It produces 16-bit **segment outputs**.
 - Segment digit select/output circuit:** Receives **code read** from the **CGROM (35 bit x 16)** and the **scan pulse** from the display controller. It produces 16-bit **digit select outputs**.
 - Digit output circuit:** Receives inputs from the **Segment digit select/output circuit** and produces 16-bit **digit outputs**.
- System Control:** The **Clock generator** provides a **clock** signal to the **Serial receive circuit**, **Code/command control circuit**, and **Display controller**. The **RESET** pin is connected to the **Serial receive circuit**, **Code/command control circuit**, and **Display controller**. Other pins include **Vcc1**, **Vcc2**, **Vss**, and **Vp**.



Pin diagram of the AD633 precision centred multiplier. The chip has 8 pins. Pin 1 is OUT1, Pin 2 is -IN1, Pin 3 is +IN1, Pin 4 is -Vcc, Pin 5 is +IN2, Pin 6 is -IN2, Pin 7 is OUT2, and Pin 8 is +Vcc. The internal circuit shows two op-amp-like blocks with feedback loops.

MAIN 1/2



NOTICE (model)

(J)..... JAPAN

(U)..... U.S.A

(C)..... CANADA

(R)..... GENERAL

(T)..... CHINA

(K)..... KOREA

(A)..... AUSTRALIA

(B)..... BRITISH

(G)..... EUROPE

(L)..... SINGAPORE

(E)..... SOUTH EUROPE

(V)..... TAIWAN

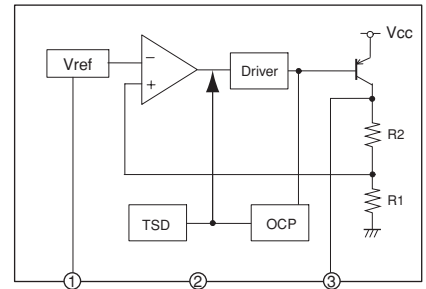
Destination Part List									
NO	LOC	UC	T	A	B	G	C	L	V
921	IC2	Y909030	Y909030	Y909030	Y909030	Y909030	Y909030	Y909030	Y909030
922	IC3	ICJ-9041A-05-020	ICJ-9041A-05-020	ICJ-9041A-05-020	ICJ-9041A-05-020	ICJ-9041A-05-020	ICJ-9041A-05-020	ICJ-9041A-05-020	ICJ-9041A-05-020
923	IC4	U465410	U465410	U465410	U465410	U465410	U465410	U465410	U465410
924	IC5	U465410	U465410	U465410	U465410	U465410	U465410	U465410	U465410
925	IC6	U465410	U465410	U465410	U465410	U465410	U465410	U465410	U465410
926	IC7	U465410	U465410	U465410	U465410	U465410	U465410	U465410	U465410

RESISTOR	
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
△	CARBON FILM RESISTOR (P=10)
□	METAL OXIDE FILM RESISTOR
▢	METAL FILM RESISTOR
▣	METAL PLATE RESISTOR
▤	FIRE PROOF CARBON FILM RESISTOR
▥	CEMENT MOLDED RESISTOR
▦	SEMI VARIABLE RESISTOR
▧	CHIP RESISTOR

CAPACITOR	
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊗	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	CERAMIC TUBULAR CAPACITOR
○	POLYESTER FILM CAPACITOR
○	POLYETHYLENE FILM CAPACITOR
○	MICA CAPACITOR
○	POLYPROPYLENE FILM CAPACITOR
⊙	SEMICONDUCTIVE CERAMIC CAPACITOR
○	POLYPHENYLENE SULFIDE FILM CAPACITOR

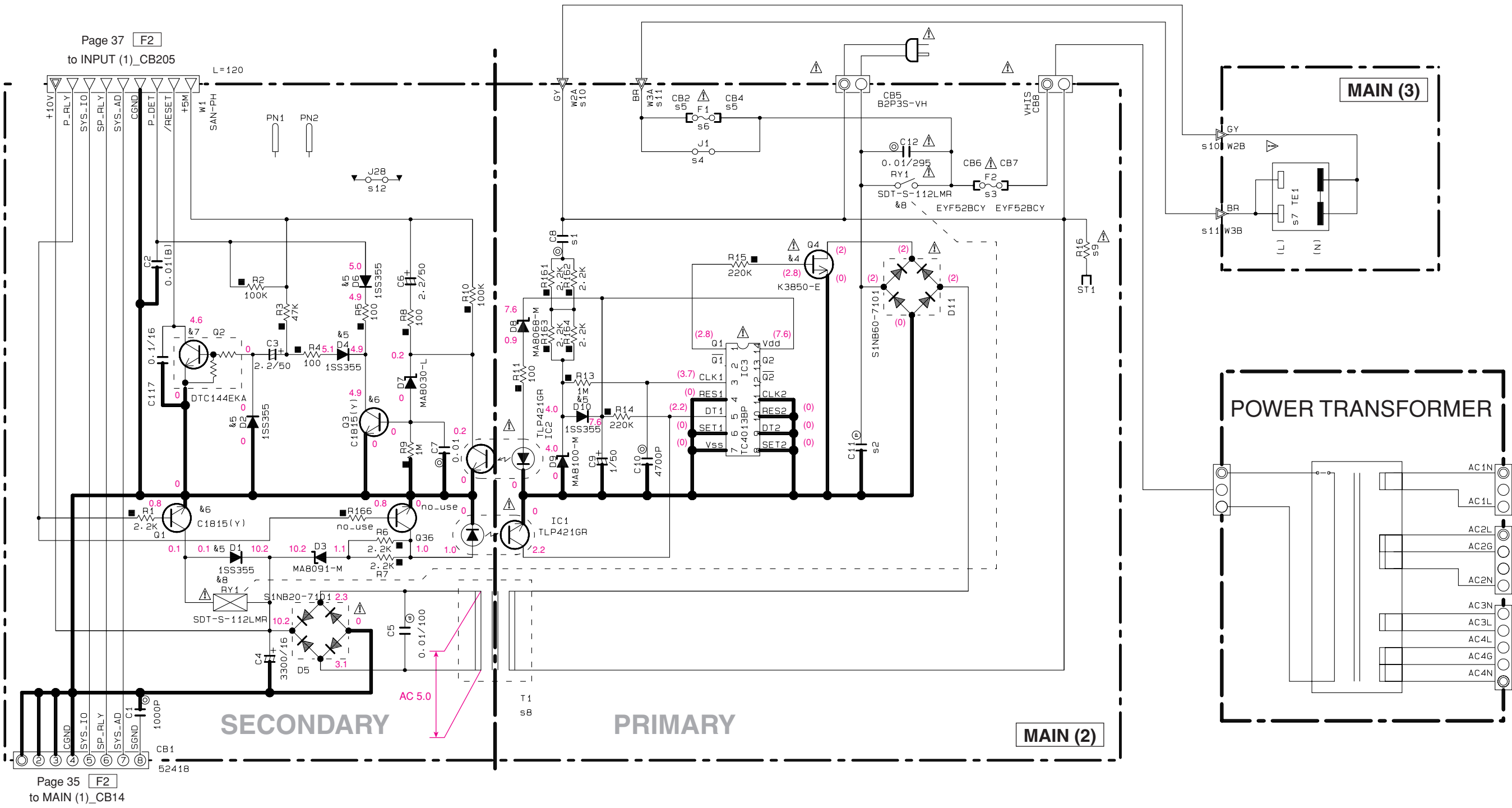
Interchangeable Parts at Manufacture Stage		
Mark	Reference Parts Number	Parts Name
41	013-19-33-34	H55104 15S176 15S133
42	Q33	2SA1015(1) 2SD1938(1) 2SC3361A(1)
43	RV2	DS2402-DS1M1 05PA-28
44	D31	KBP1030-01X0 R6103
410	09-10	2SC3361A(1) 2SC3361B(1) 2SD1938(1) 2SC3361A(1) 2SD1938(1)
411	Q25	MTZ56C 60C25C
412	019-20	MTZ56C 60C25C
414	026-28	MTZ56C 60C25C

IC9: BA50BC0T (L, V models)
Low-dropout voltage regulator with low saturation



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

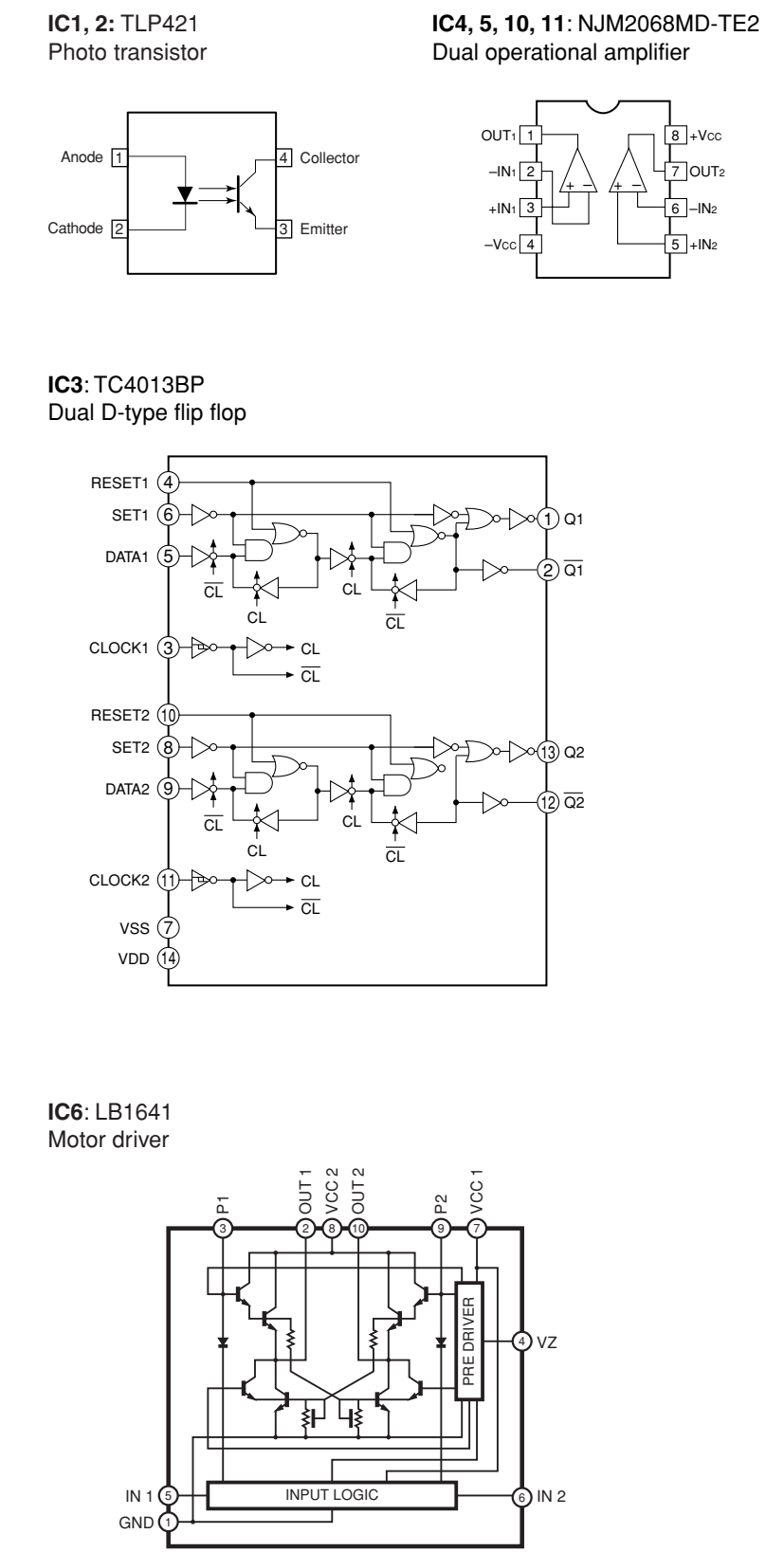
MAIN 2/2



REMARKS	PARTS	NAME
NO MARK	CARBON FILM RESISTOR (P=5)	
□	CARBON FILM RESISTOR (P=10)	
△	METAL OXIDE FILM RESISTOR	
▴	METAL FILM RESISTOR	
▾	METAL PLATE RESISTOR	
▧	FIRE PROOF CARBON FILM RESISTOR	
⊗	CEMENT MOLDED RESISTOR	
⊙	SEMI VARIABLE RESISTOR	
■	CHIP RESISTOR	

REMARKS	PARTS	NAME
NO MARK	ELECTROLYTIC CAPACITOR	
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	
●	CERAMIC TUBULAR CAPACITOR	
⊙	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
①	MICA CAPACITOR	
②	POLYPROPYLENE FILM CAPACITOR	
③	SEMICONDUCTIVE CERAMIC CAPACITOR	
④	POLYPHENYLENE SULFIDE FILM CAPACITOR	

Mark	Reference	Parts Number	Parts Name
Ⓚ4	Q4	2SK3850-E 2SK3491-E	
Ⓚ5	D1-2-4-6-10	1SS395 MA111	
Ⓚ6	Q1-3	2SC1815(Y) KTC319B Y-A/T	
Ⓚ7	Q2	DTC144EKA KRC104S-RTK/P	
Ⓚ8	RY1	SDT-S-112LMR 061201-01M111 ALKS321 G5PA-1-B	
Ⓚ13	D12	MTZJ5.1B G0ZJ5.1B	



Destination Part List									
sxx	LOC	UC	T	A	B	G	K	L	V
s1	CB	WB68710 0.047/400 W05540 0.047/630	WC04160 0.022/630	WC04160 0.022/630	WC04160 0.022/630	WC04160 0.022/630	WC04160 0.022/630	WC04160 0.022/630	WB68710 0.047/400 W05540 0.047/630
s2	C11	WB69630 0.1/400	W025760 0.047/800 W08150 0.047/630	W025760 0.047/800 W08150 0.047/630	W025760 0.047/800 W08150 0.047/630	W025760 0.047/800 W08150 0.047/630	W025760 0.047/800 W08150 0.047/630	W025760 0.047/800 W08150 0.047/630	WB69630 0.1/400
s3	F2	WB22090 3-5A125V	KB00075 T2AL250V	KB00075 T2AL250V	KB00075 T2AL250V	KB00075 T2AL250V	KB00075 T2AL250V	KB00075 T2AL250V	WB22090 3-5A125V
s4	J1	X	VN50000	VN50000	VN50000	X	VN50000	VN50000	VN50000
s5	CB2 CB4	WC05070 EYF52BCY	X	X	X	WC05070 EYF52BCY	X	X	X
s6	F1	WB22090 3-50A125V	X	X	X	VT94290 2-5A250V	X	X	X
s7	TE1	VU54319 S2-7621-214	V986740 AC-182-08-11VGY	VT91500 S2-7721-210	VU54330 S2-7721-210	VU54340 S2-7621-214	X	VU54340 S2-7621-214	V986740 AC-182-08-11VGY
s8	T1	XW60840 XW608 X422840 X4228	XW60840 XW608 X422840 X4228	XW60840 XW608 X422840 X4228	XW60840 XW608 X422840 X4228	XW60840 XW608 X422840 X4228	XW60840 XW608 X422840 X4228	XW60840 XW608 X422840 X4228	XW60840 XW608
s9	R16	V673000 1/2P2-2M	X	X	X	X	X	X	X
s10	W2	MH08025	MH08025	MH08025	MH08025	MH08025	X	MH08025	MH08025
s11	W3	MH01025	MH01025	MH01025	MH01025	MH01025	X	MH01025	MH01025
s12	J2B	X	VN50000	VN50000	VN50000	VN50000	VN50000	VN50000	X

NOTICE (model)

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

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

INPUT

Page 33 [B2]
to OPERATION (1)_CB501
(1: 2.5mm pitch PFC 10P)

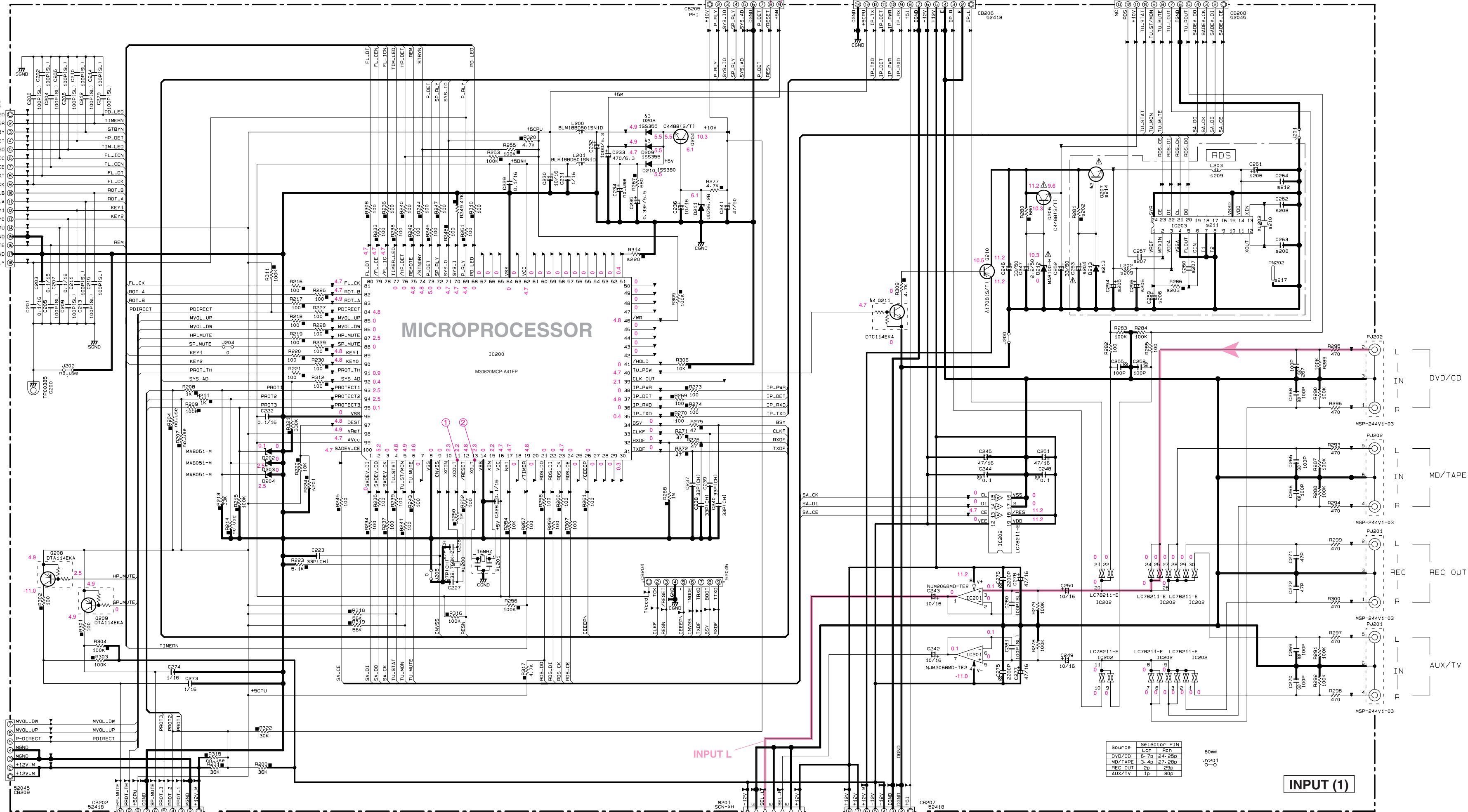
Page 36 [G3]
to MAIN (4)_CB20

Page 35 [D2]
to MAIN (1)_CB13
to OPERATION (1)_W501

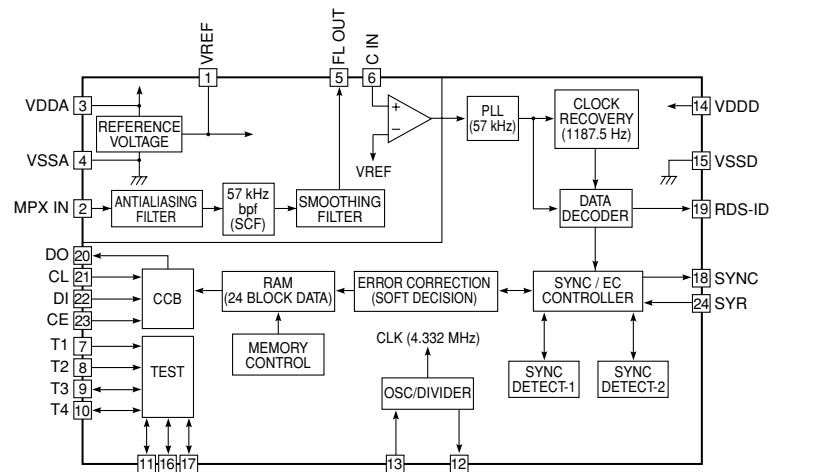
Page 35 [D2]
to MAIN (1)_CB12

Page 36 [G7]
to MAIN (4)_CB18

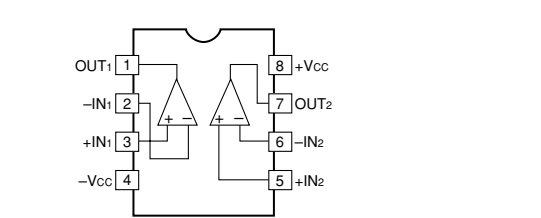
Page 35 [G2]
to MAIN (1)_CB15



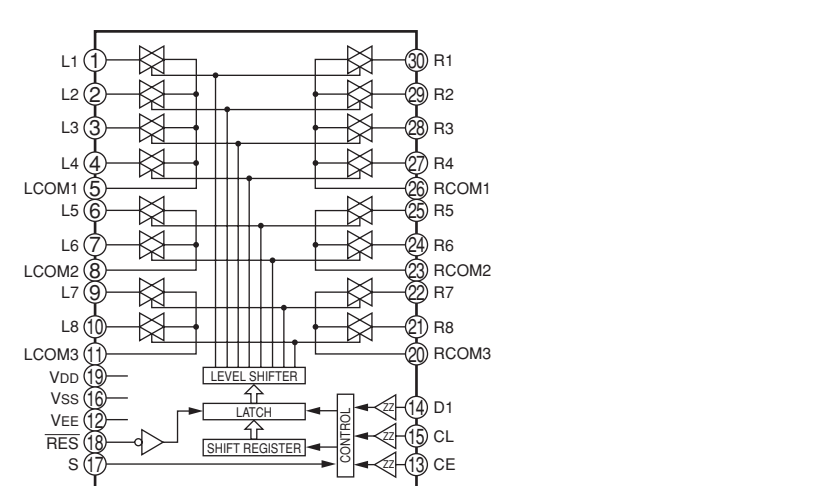
IC203: LC72722PM
RDS signal processor



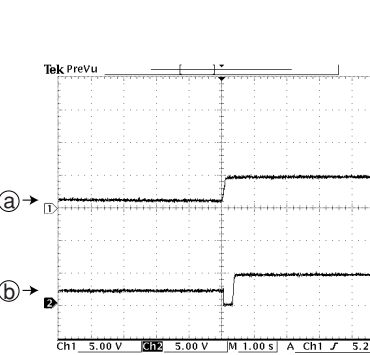
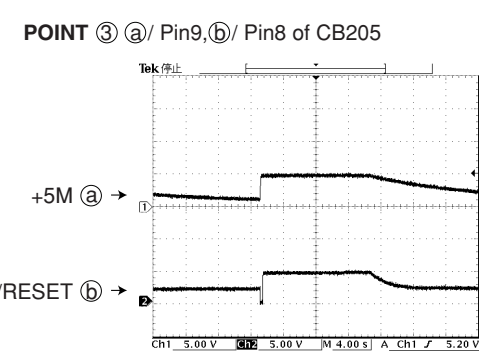
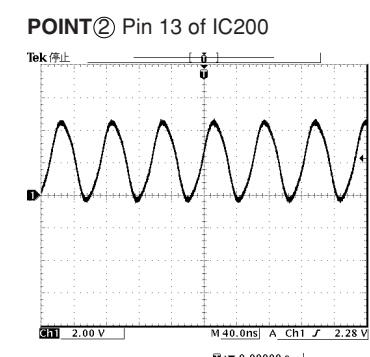
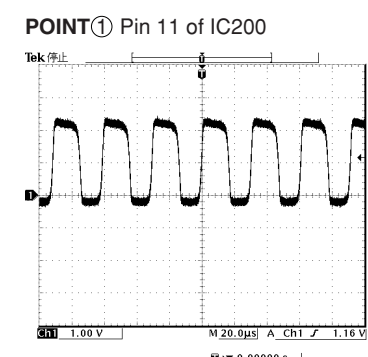
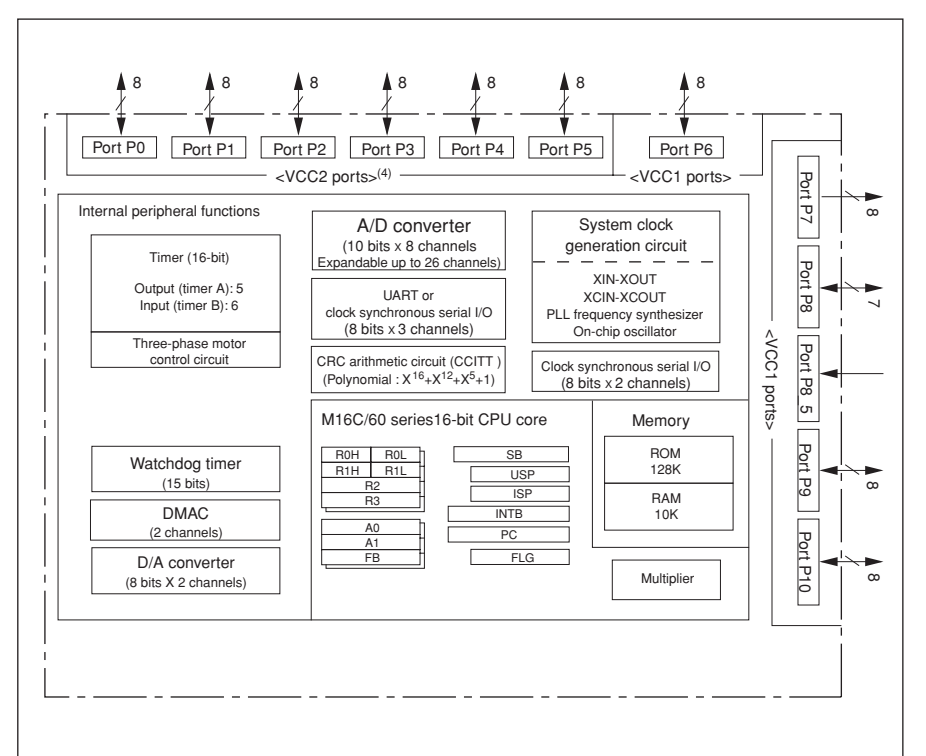
IC201: NJM2068MD-TE2
Dual operational amplifier



IC202: LC78211
Analog function switch

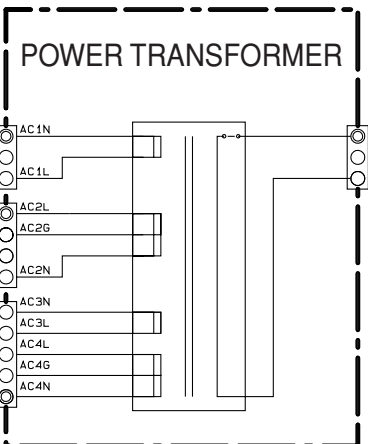
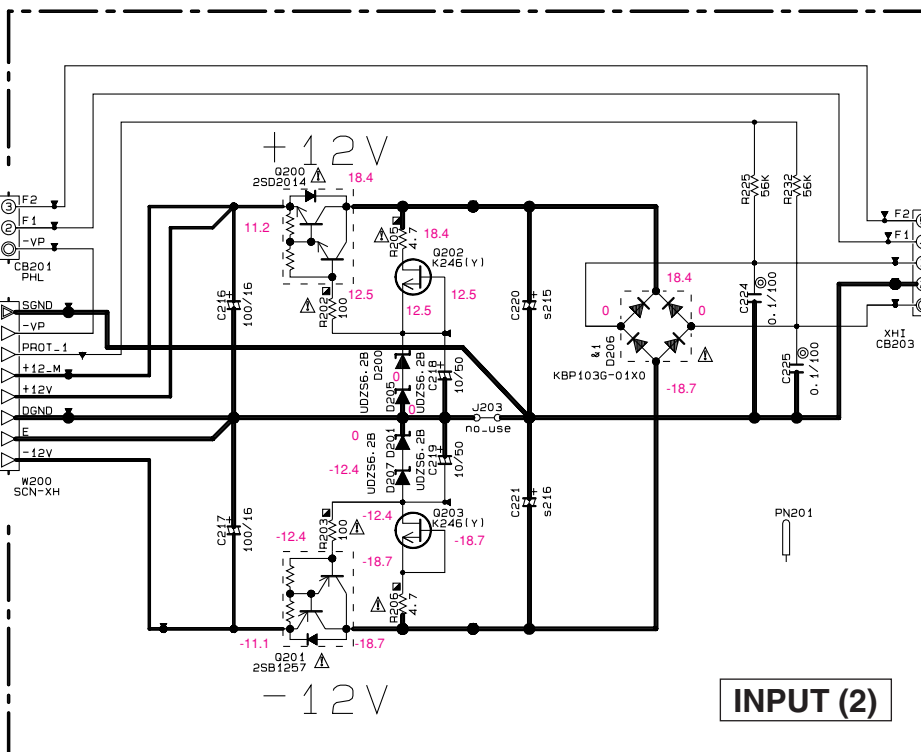


IC200: M30620MCP-A41FP
Single-chip 16-bit cmos microcomputer



AC cable ON AC cable OFF

AC cable ON



NOTICE (model)
(1) JAPAN
(2) U.S.A.
(3) CANADA
(4) GENERAL
(5) CHINA
(6) KOREA
(7) AUSTRALIA
(8) BRITAIN
(9) EUROPE
(10) SINGAPORE
(11) SOUTH EUROPE
(12) TAIWAN

REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊗	TANTALUM CAPACITOR
⊙	CERAMIC CAPACITOR
⊖	CERAMIC TUBULAR CAPACITOR
⊕	POLYESTER FILM CAPACITOR
⊖	POLYSTYRENE FILM CAPACITOR
⊕	MICA CAPACITOR
⊖	POLYPROPYLENE FILM CAPACITOR
⊕	SEMICONDUCTIVE CERAMIC CAPACITOR
⊖	SEMI-VARIABLE RESISTOR
⊕	CHIP RESISTOR

Mark	Reference Parts Number	Parts Name
k1	0306	4BP1030-0140
k2	0307	3P5247(12/2/5)
k3	0308-209	3P5247(12/2/5)
k4	0311	DT114EXA

Destination	Part List	UC	74A	80	LY	80
s201	R224	RD3900	RD3900	RD3900	RD3900	RD3900
s202	R281	X	X	RD3900	X	RD3900
s203	R286	X	X	RD3900	X	RD3900
s204	C253	X	X	UR0602	X	UR0602
s205	C254	X	X	UR0602	X	UR0602
s206	C255	X	X	UR0602	X	UR0602
s207	C256	X	X	UR0602	X	UR0602
s208	C257	X	X	UR0602	X	UR0602
s209	L203	X	X	VK26750	X	VK26750
s210	XL202	X	X	VK26750	X	VK26750
s211	IC203	X	X	LC72722PM	X	LC72722PM
s212	D213	X	X	UR0602	X	UR0602
s213	D214	X	X	UR0602	X	UR0602
s214	G207	X	X	UR0602	X	UR0602
s215	G208	U04947	U04947	U04947	U04947	U04947
s216	G209	U04933	U04933	U04933	U04933	U04933
s217	PN003	X	X	U04933	X	U04933
s220	R314	RD3907	RD3907	RD3907	RD3907	RD3907

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

■ REPLACEMENT PARTS LIST

• ELECTRICAL COMPONENT PARTS

WARNING

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

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS:

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

P.C.B. OPERATION

Ref. No.	Part No.	Description	Markets
	WH453900	P. C. B.	UCKBGLV
		OPERATION	
CB501	VU281800	CN 18P SE	
CB502	VU281500	CN 15P SE 9604S	
CB702	V0963500	CN. BS. PIN 14P	
C501	US135100	C. CE. CHP 0.1uF 16V	
C502-503	US064100	C. CE. CHP 0.01uF 50V B	
C504	UM397100	C. EL 10uF 16V	
C506-507	US135100	C. CE. CHP 0.1uF 16V	
C508	UA654100	C. MYLAR 0.01uF 50V J	
C509	UM388330	C. EL 330uF 6.3V	
C510	US135100	C. CE. CHP 0.1uF 16V	
C511	US062100	C. CE. CHP 100pF 50V B	
C512	US064100	C. CE. CHP 0.01uF 50V B	
C513-514	UA654100	C. MYLAR 0.01uF 50V J	
C515	US064100	C. CE. CHP 0.01uF 50V B	
C516-517	VE326100	C. MYLAR 0.12uF 50V	
C518-519	UA654330	C. MYLAR 0.033uF 50V J	
C520	US044220	C. CE. CHP 0.022uF 25V B	
C701	US062100	C. CE. CHP 100pF 50V B	
C703-707	US062100	C. CE. CHP 100pF 50V B	
C709	US135100	C. CE. CHP 0.1uF 16V	
C710-711	US062100	C. CE. CHP 100pF 50V B	
C713	US062100	C. CE. CHP 100pF 50V B	
C716-717	US062100	C. CE. CHP 100pF 50V B	
C719	US062100	C. CE. CHP 100pF 50V B	
C720	US135100	C. CE. CHP 0.1uF 16V	
C721	US062100	C. CE. CHP 100pF 50V B	
C723-724	US135100	C. CE. CHP 0.1uF 16V	
C726	US062100	C. CE. CHP 100pF 50V B	
C728	US062100	C. CE. CHP 100pF 50V B	
C729-730	US135100	C. CE. CHP 0.1uF 16V	
C734	US064100	C. CE. CHP 0.01uF 50V B	
C740	US135100	C. CE. CHP 0.1uF 16V	
C741	UR837470	C. EL 47uF 16V	
C742-743	UR267100	C. EL 10uF 50V	
C746-747	US062100	C. CE. CHP 100pF 50V B	
C751-752	UA652390	C. MYLAR 390pF 50V J	
C755-756	UR267100	C. EL 10uF 50V	
C759	UR267100	C. EL 10uF 50V	
C760	US135100	C. CE. CHP 0.1uF 16V	
C761	UR267100	C. EL 10uF 50V	
C762	US135100	C. CE. CHP 0.1uF 16V	
C763-764	US062100	C. CE. CHP 100pF 50V B	
C765	US135100	C. CE. CHP 0.1uF 16V	
C766	UR866220	C. EL 2.2uF 50V	
D501	VR711400	LED(gr) SLR-325MC	
D502-503	VV220700	DIODE. SHOT RB501V-40	
D504	VU990500	DIODE. ZENR MA8030-L 2.9V	
D505	VU991200	DIODE. ZENR MA8036-H 3.7V	
D506	WG760400	LED SELK6E10C BLUE	
D705	VU991500	DIODE. ZENR MA8039-H 4.0V	
IC501	X6386A00	IC M66003-0131FP	

• Note on the OPERATION P.C.B.

Of the OPERATION P.C.B. part Nos., only the U, C, K, B, G, L, V models part Nos. are included in the table.

The only different part between the T, A models and U, C, K, B, G, L, V models parts is the sheet/FL that is attached to the fluorescent character display tube. When a T, A models OPERATION P.C.B. becomes necessary, order a U, C, K, B, G, L, V models OPERATION P.C.B. and a T, A models sheet/FL and replace the sheet/FL of the U, C, K, B, G, L, V models OPERATION P.C.B. with the T, A models sheet/FL.

Ref. No.	Part No.	Description	Markets
IC703	X4176A00	IC SN74LV32ANSR OR	
IC704	XZ013A00	IC MM74HCT08SJX 2-IN	
IC707	X3505A00	IC NJM2068MD-TE2	
JK501	WH204400	JACK. MNI MSJ-035-18A GR	
Q501	VV556400	TR 2SC2412K Q, R, S	
Q502-503	VV655700	TR. DGT DTC144EKA	
Q504	VV655400	TR. DGT DTC114EKA	
Q505	WD974200	TR 2SA1036KT146 P, Q, R	
Q701	VV556400	TR 2SC2412K Q, R, S	
ST501	WA789600	SCR. TERM M3	
ST701	WA789600	SCR. TERM M3	
SW501	WH251700	SW. RT. ENC XREB12105PVB20FINA	
SW502-508	WD483100	SW. TACT SKRGAAD010	
U501	V8085300	L. DTCT GP1UA271X	
V501	WH034300	FL. DSPLY 16-BT-133GNK	
VR501	V3555600	VR B20K Ω	
VR502	V3555700	VR W25K Ω	
VR503	V3555800	VR MN100K Ω	
	WH241000	SHEET. FL BLUE	UCKBGLV
	WH241200	SHEET. FL ORANGE	TA
	WH241600	SPACER. FL	

* New Parts

* New Parts

P.C.B. MAIN

	Ref. No.	Part No.	Description	Markets		Ref. No.	Part No.	Description	Markets		
* * * * * * *		WH452600	P. C. B.	MAIN	UC	C46-47	WE100200	C. PP	22pF 630V		
		WH452700	P. C. B.	MAIN	T	C48	UR237100	C. EL	10uF 16V		
		WH452800	P. C. B.	MAIN	K	C49	US062100	C. CE. CHP	100pF 50V B		
		WH452900	P. C. B.	MAIN	A	C50	UT952220	C. PP	220pF 100V		
		WH453000	P. C. B.	MAIN	B	C51	UT952150	C. PP	150pF 100V		
		WH453100	P. C. B.	MAIN	G	C52	UU297100	C. EL	10uF 100V		
		WH453200	P. C. B.	MAIN	L	C53-54	UT952150	C. PP	150pF 100V		
		WH453300	P. C. B.	MAIN	V	C55	UU297100	C. EL	10uF 100V		
	CB1	VQ961100	CN. BS. PIN	8P		C56	UT952150	C. PP	150pF 100V		
	CB2	WC050700	CL IP. FUSE	EYF-52BCY	UCG	C59	UR265220	C. EL	0.22uF 50V		
	CB4	WC050700	CL IP. FUSE	EYF-52BCY	UCG	C60	UR266470	C. EL	4.7uF 50V		
⚠	CB5	VP245600	CN	2P		C61-62	VR324700	C. MYLAR	0.022uF 100V		
⚠	CB6-7	WC050700	CL IP. FUSE	EYF-52BCY		C63	UR267470	C. EL	47uF 50V		
	CB8	VG879900	CN. BS. PIN	2P		C64	UR266470	C. EL	4.7uF 50V		
	CB12	VQ963100	CN. BS. PIN	10P		C65	UR218100	C. EL	100uF 6.3V		
*	CB13	LB918080	CN. BS. PIN	8P		C66	UR867470	C. EL	47uF 50V		
	CB14-15	VQ962900	CN. BS. PIN	8P		C67	VG287800	C. EL	330uF 16V		
	CB16	LB918020	CN. BS. PIN	2P		C68	UT952100	C. PP	100pF 100V		
	CB17	LB932040	CN. BS. PIN	4P		C69	UR238100	C. EL	100uF 16V		
	CB18	LB918070	CN. BS. PIN	7P		*	C70-71	WH632900	C. EL	5600uF 50V	
	CB19	VM859600	CN. BS. PIN	15P		*	C72	US145100	C. CE. CHP	0.1uF 25V	
	CB20	VQ047100	CN. BS. PIN	7P			C73	UR739820	C. EL	8200uF 16V	
	CB21	VB390400	CN. BS. PIN	8P			C74	VE326000	C. MYLAR	0.1uF 50V	
	CB22	LB918040	CN. BS. PIN	4P		⚠	C75	VR324900	C. MYLAR	0.1uF 100V	
	C1	UA653100	C. MYLAR	1000pF 50V J		⚠	C76	UA654220	C. MYLAR	0.022uF 50V J	TKABGL
	C2	US064100	C. CE. CHP	0.01uF 50V B			C77	VR324900	C. MYLAR	0.1uF 100V	
	C3	UR266220	C. EL	2.2uF 50V			C78	UN866220	C. EL	2.2uF 50V	
	C4	UU239330	C. EL	3300uF 16V			C79	UA654220	C. MYLAR	0.022uF 50V J	TKABGL
*	C5	UT954100	C. PP	0.01uF 100V			C80	US062100	C. CE. CHP	100pF 50V B	
	C6	UR266220	C. EL	2.2uF 50V			C81-82	UA654100	C. MYLAR	0.01uF 50V J	TKABGL
	C7	UA654100	C. MYLAR	0.01uF 50V J			C84	UA652100	C. MYLAR	100pF 50V J	
	C8	WB687100	C. POL. MTL	0.047uF 400V	UCV		C85	US064100	C. CE. CHP	0.01uF 50V B	
	C8	WC041600	C. PP	0.022uF 630V	TAKBGL	*	C86	UR258100	C. EL	100uF 35V	
	C9	UR266100	C. EL	1uF 50V			C87-88	UR267100	C. EL	10uF 50V	
	C10	UA653470	C. MYLAR	4700pF 50V J			C89	UU266470	C. EL	4.7uF 50V	
	C11	WB696300	C. POL. MTL	0.1uF 400V	UCV		C90	UU266470	C. EL	4.7uF 50V	
	C11	WD257600	C. PP	0.047uF 800V	TAKBGL		C91	UT952100	C. PP	100pF 100V	
⚠	C12	WB121400	C. CE. SAFTY	0.01uF 295V			C92	VG287800	C. EL	330uF 16V	
	C13-14	UT952100	C. PP	100pF 100V			C93	US062100	C. CE. CHP	100pF 50V B	
	C15-16	US062100	C. CE. CHP	100pF 50V B			C94	UR237100	C. EL	10uF 16V	
	C17-18	UU266470	C. EL	4.7uF 50V			C95-99	US062100	C. CE. CHP	100pF 50V B	
	C19	UR238330	C. EL	330uF 16V			C100-103	US062100	C. CE. CHP	100pF 50V B	
	C20	UR238330	C. EL	330uF 16V			C104-105	UR237100	C. EL	10uF 16V	
	C21-22	UR237470	C. EL	47uF 16V			C110-111	US063220	C. CE. CHP	2200pF 50V B	
*	C23-24	WE100300	C. PP	33pF 630V			C112-113	UR237470	C. EL	47uF 16V	
	C25-26	UR266220	C. EL	2.2uF 50V			C114-115	UU266470	C. EL	4.7uF 50V	
	C27-28	VG287800	C. EL	330uF 16V			C116	UR266100	C. EL	1uF 50V	LV
	C29	UR266220	C. EL	2.2uF 50V			C117	US135100	C. CE. CHP	0.1uF 16V	
	C30	UR266220	C. EL	2.2uF 50V			C118-119	UU266470	C. EL	4.7uF 50V	
	C31	UN866100	C. EL	1uF 50V			C120-121	US063220	C. CE. CHP	2200pF 50V B	
	C32	UA654100	C. MYLAR	0.01uF 50V J			C123-124	UR238220	C. EL	220uF 16V	
	C33	UR238470	C. EL	470uF 16V			C125-126	UA654220	C. MYLAR	0.022uF 50V J	TKABGL
	C34-35	UU267100	C. EL	10uF 50V			D1	VT332900	DIODE	1SS355	
	C36	UA652100	C. MYLAR	100pF 50V J			D2	VT332900	DIODE	1SS355	
	C37-38	UA652220	C. MYLAR	220pF 50V J			D3	VU995000	DIODE. ZENR	MA8091-M 9.1V	
	C39	UA652100	C. MYLAR	100pF 50V J			D4	VT332900	DIODE	1SS355	
	C40	VG287600	C. EL	100uF 25V		⚠	D5	VR253700	DIODE. BRG	S1NB20 1A 200V	
	C41-42	UA653330	C. MYLAR	3300pF 50V J			D6	VT332900	DIODE	1SS355	
	C43-44	UU268100	C. EL	100uF 50V			D7	VU990500	DIODE. ZENR	MA8030-L 2.9V	
	C45	US135100	C. CE. CHP	0.1uF 16V			D8	VU993800	DIODE. ZENR	MA8068-M 6.8V	

* New Parts

* New Parts

P.C.B. MAIN and P.C.B. INPUT

Ref. No.	Part No.	Description	Markets
D9	VU995400	DIODE. ZENR MA8100-M 10V	
D10	VT332900	DIODE 1SS355	
D11	V4756800	DIODE S1NB60 1.0A 600V	
D12	VG437400	DIODE. ZENR MTZJ5.1B 5.1V	
D13-18	VD631600	DIODE 1SS133, 176	
D19	VG437500	DIODE. ZENR MTZJ5.1C 5.1V	
D20	VG437500	DIODE. ZENR MTZJ5.1C 5.1V	
D23-24	VN008700	DIODE 1SS270A	
D25	VG442200	DIODE. ZENR MTZJ22C 22V	
D26	VG440300	DIODE. ZENR MTZJ12C 12V	
D28	VG440300	DIODE. ZENR MTZJ12C 12V	
D29	VU264200	DIODE 1SR139, 400	
D31	WA653100	DIODE. BRG KBP103G 1.0A 200V	
D32	VQ111400	DIODE. BRG D5SBA20-4001 6A	
D33-34	VD631600	DIODE 1SS133, 176	
F1	WB220900	FUSE T3.5A 125V	UC
F1	VT942900	FUSE T2.5A 250V	G
F2	WB220900	FUSE T3.5A 125V	UCV
F2	KB000750	FUSE. MNI T2A 250V	TKABGL
IC1-2	V8100500	PHOT. CPL TLP421 GR	
IC3	iG001180	IC TC4013BP FF	
IC4-5	X3505A00	IC NJM2068MD-TE2	
IC6	XF494A00	IC LB1641	
IC7	X0515A00	IC LM61C1Z THERMAL	
IC8	XQ824A00	IC NJM4556AD OP AMP	
IC9	X4928A00	IC KIA7805API 5V	UCTKABG
IC9	X6520A00	IC BA50BCOT	LV
IC10-11	X3505A00	IC NJM2068MD-TE2	
JK1	V4273000	JACK. MINI MSJ-035-12D	
PJ1	WH981900	JACK. PIN RCA-107AG-01	
PN1-2	V9637500	PIN L=70 #18	
Q1	iC181510	TR 2SC1815 Y	
Q2	VV655700	TR. DGT DTC144EKA	
Q3	iC181510	TR 2SC1815 Y	
Q4	WC741200	FET 2SK3850	
Q5	VZ725900	TR 2SD1938F S, T	
Q6	VZ725900	TR 2SD1938F S, T	
Q7	VZ725900	TR 2SD1938F S, T	
Q8	VZ725900	TR 2SD1938F S, T	
Q9	VD303700	TR 2SC3326 A, B	
Q10	VD303700	TR 2SC3326 A, B	
Q11-14	VP883100	TR 2SC1890A D, E	
Q15-16	V3966800	TR 2SA949 O, Y	
Q17-18	VK432900	TR 2SD1915F S, T	
Q19	VR325600	TR 2SC2229 O, Y	
Q20	VR325600	TR 2SC2229 O, Y	
Q21	V4096100	TR 2SC4614 S, T	
Q22-23	V4096000	TR 2SA1770 S, T	
Q24	V4096100	TR 2SC4614 S, T	
Q25A	iX615750	TR 2SA1694 O, P, Y	
Q25C	iX615760	TR 2SC4467 O, P, Y	
Q27A	iX615750	TR 2SA1694 O, P, Y	
Q27C	iX615760	TR 2SC4467 O, P, Y	
Q29	WC397700	TR 2N5401C-AT	
Q30-31	WC398400	TR 2N5551C-AT	
Q32	VP872700	TR 2SC4488 S, T	
Q33	iA101510	TR 2SA1015 Y	
Q34-35	WC398400	TR 2N5551C-AT	
R16	V6730000	R. CAR. 2.2M Ω 1/2W	UC
R43	HV754100	R. CAR. FP 10 Ω 1/4W	

* New Parts

Ref. No.	Part No.	Description	Markets
R44	HV753220	R. CAR. FP 2.2 Ω 1/4W	
R49	WB633000	R. MTL. OXD 1K Ω 1/2W J	
R50	WB633000	R. MTL. OXD 1K Ω 1/2W J	
R59	WB632200	R. MTL. OXD 220 Ω 1/2W J	
R60	WB632200	R. MTL. OXD 220 Ω 1/2W J	
R61-62	WB633300	R. MTL. OXD 1.8K Ω 1/2W J	
R63-64	HV755100	R. CAR. FP 100 Ω 1/4W	
R65-66	WB634800	R. MTL. OXD 33K Ω 1/2W J	
R67-68	WB632600	R. MTL. OXD 470 Ω 1/2W J	
R69	HF353220	R. CAR 2.2 Ω 1/2W	
R74	WB633500	R. MTL. OXD 2.7K Ω 1/2W J	
R75	WB632600	R. MTL. OXD 470 Ω 1/2W J	
R76-77	WB632900	R. MTL. OXD 820 Ω 1/2W J	
R78	WB632600	R. MTL. OXD 470 Ω 1/2W J	
R79	WB633500	R. MTL. OXD 2.7K Ω 1/2W J	
R80-81	WB633000	R. MTL. OXD 1K Ω 1/2W J	
R82-83	HV755100	R. CAR. FP 100 Ω 1/4W	
R86-89	HV753470	R. CAR. FP 4.7 Ω 1/4W	
R94-95	V3873200	R. CEMENT 0.22 Ω 3W	
R104-105	WB625300	R. MTL. OXD 10 Ω 1W J	
R121	HV755100	R. CAR. FP 100 Ω 1/4W	
R128	WB627100	R. MTL. OXD 330 Ω 1W J	
R142-143	HV753220	R. CAR. FP 2.2 Ω 1/4W	TKABGL
R171-174	HV755100	R. CAR. FP 100 Ω 1/4W	
R183-184	HV753220	R. CAR. FP 2.2 Ω 1/4W	TKABGL
RY1	V2712300	RELAY DC SDT-S-112LMR	
RY2	V5966300	RELAY DS24D2-OS(M)	
ST1	WA789600	SCR. TERM M3	
SW2	VV399900	SW. PUSH SPUN12	
T1	XW606A00	TRANS. PWR	UCV
T1	XW608A00	TRANS. PWR	TKABGL
TE1	VU543100	OUTLET. AC 2P	UC
TE1	V5867400	OUTLET. AC 2P	TV
TE1	VT915000	OUTLET. AC 1P	A
TE1	VU543400	OUTLET. AC 2P	B
TE1	VU543400	OUTLET. AC 2P	GL
TE2	VY696300	TERM. SP 4P	UCTABV
TE2	VY696400	TERM. SP 4P	KGL
VR1	V7375500	VR. MTR A100K Ω RK16812MG	
	WE774200	SCR. BND. HD 3x10 MFZN2W3	
	WH453500	P. C. B. INPUT	UC
	WH453600	P. C. B. INPUT	TKA
	WH453700	P. C. B. INPUT	BG(E810)
	WH456900	P. C. B. INPUT	BG(E410)
	WH453800	P. C. B. INPUT	LV
CB200	VP573800	CN. BS. PIN 18P	
CB201	VB858200	CN. BS. PIN 3P	
CB202	VQ961300	CN. BS. PIN 10P	
CB203	LB918050	CN. BS. PIN 5P	
CB204	VQ047200	CN. BS. PIN 9P	
CB205	VB390500	CN. BS. PIN 9P	
CB206	VQ961700	CN. BS. PIN 14P	
CB207	VQ961100	CN. BS. PIN 8P	
CB208	VM923600	CN. BS. PIN 13P	
CB209	VQ047100	CN. BS. PIN 7P	
C200	US062100	C. CE. CHP 100pF 50V B	
C201	US135100	C. CE. CHP 0.1uF 16V	

* New Parts

P.C.B. INPUT

Ref. No.	Part No.	Description	Markets
C202	US062100	C. CE. CHP	100pF 50V B
C203	US135100	C. CE. CHP	0.1uF 16V
C204-206	US062100	C. CE. CHP	100pF 50V B
C207	US135100	C. CE. CHP	0.1uF 16V
C208-215	US062100	C. CE. CHP	100pF 50V B
C216-217	UU238100	C. EL	100uF 16V
C218-219	UR267100	C. EL	10uF 50V
C220	UU249470	C. EL	4700uF 25V
C220	UU249470	C. EL	4700uF 25V
C220	WH931300	C. EL	4700uF 25V
C221	UU249330	C. EL	3300uF 25V
C221	WH931200	C. EL	3300uF 25V
C222	US135100	C. CE. CHP	0.1uF 16V
C223	US061330	C. CE. CHP	33pF 50V B
C224-225	VR324900	C. MYLAR	0.1uF 100V
C226-227	US061270	C. CE. CHP	27pF 50V B
C228-229	US135100	C. CE. CHP	0.1uF 16V
C230	UR237100	C. EL	10uF 16V
C231	UB446100	C. CE. CHP	1uF 16V
C232	UR219100	C. EL	1000uF 6.3V
C233	UR218470	C. EL	470uF 6.3V
C235	WB165500	C. EL	0.33F 5.5V
C236	UM397100	C. EL	10uF 16V
C237-240	US061330	C. CE. CHP	33pF 50V B
C241	UM397470	C. EL	47uF 50V
C242-243	VG287200	C. EL	10uF 50V
C244	VE326000	C. MYLAR	0.1uF 50V
C245	VG287500	C. EL	47uF 50V
C246	UR267330	C. EL	33uF 50V
C247	UR266220	C. EL	2.2uF 50V
C248	VE326000	C. MYLAR	0.1uF 50V
C249-250	VG287200	C. EL	10uF 50V
C251	VG287500	C. EL	47uF 50V
C252	UR267330	C. EL	33uF 50V
C253	UR266220	C. EL	2.2uF 50V
C254	UR267330	C. EL	33uF 50V
C255	UA652100	C. MYLAR	100pF 50V J
C256	UR237470	C. EL	47uF 16V
C257	US062330	C. CE. CHP	330pF 50V B
C258	UA652100	C. MYLAR	100pF 50V J
C259	UR237470	C. EL	47uF 16V
C260	US062330	C. CE. CHP	330pF 50V B
C261	UR237470	C. EL	47uF 16V
C262-263	US061270	C. CE. CHP	27pF 50V B
C264	US135100	C. CE. CHP	0.1uF 16V
C265-270	UA652100	C. MYLAR	100pF 50V J
C271-272	FG651470	C. CE	47pF 50V
C273-274	UB446100	C. CE. CHP	1uF 16V
C275-276	UA353220	C. MYLAR	2200pF 50V
C277-278	VG287500	C. EL	47uF 50V
C279-281	US062100	C. CE. CHP	100pF 50V B
D200-201	VU172100	DIODE. ZENR	UDZS6.2B 6.2V
D202-204	VU992600	DIODE. ZENR	MA8051-M 5.1V
D205	VU172100	DIODE. ZENR	UDZS6.2B 6.2V
D206	WA653100	DIODE. BRG	KBP103G 1A 200V
D207	VU172100	DIODE. ZENR	UDZS6.2B 6.2V
D208-209	VT332900	DIODE	1SS355
D210	VV833200	DIODE	1SS380
D211	VU172100	DIODE. ZENR	UDZS6.2B 6.2V
D212	VU995500	DIODE. ZENR	MA8100-H 10.3V

* New Parts

Ref. No.	Part No.	Description	Markets
D213	VU993000	DIODE. ZENR	MA8056-M 5.6V
IC200	X8212A00	IC CPU	M30620MCP-A41FP (MASK ROM)
IC201	X3505A00	IC	NJM2068MD-TE2
IC202	XP894A00	IC	LC78211
IC203	X0082A00	IC	LC72722PM
PJ201-202	V9796700	JACK. PIN	4P MSP-244V1-03 GI
PN201	V9637500	PIN	L=70 #18
PN202	V9637500	PIN	L=70 #18
Q200	WF691400	TR	2SD2014
Q201	WF691300	TR	2SB1257
Q202-203	iE102620	FET	2SK246 Y
Q204	VP872700	TR	2SC4488 S, T
Q206	VP872700	TR	2SC4488 S, T
Q207	VV556400	TR	2SC2412K Q, R, S
Q208-209	VV655000	TR. DGT	DTA114EKA
Q210	VP872600	TR	2SA1708 S, T
Q211	VV655400	TR. DGT	DTC114EKA
R202-203	HV755100	R. CAR. FP	100Ω 1/4W
R205-206	HV753470	R. CAR. FP	4.7Ω 1/4W
R224		R. CHP	2.7KΩ 1/16W J
R224		R. CHP	47KΩ 1/16W J
R224		R. CHP	0Ω 1/16W J
R224		R. CHP	15KΩ 1/16W J
R281		R. CHP	3.3KΩ 1/16W J
R286		R. CHP	100KΩ 1/16W J
R314		R. CHP	4.7KΩ 1/16W J
XL200	VQ328900	RSNR. CRYST	32.768KHz
XL201	WB213000	RSNR. CE	16.0MHz
XL202	V3930900	RSNR. CRYST	4.332MHz

* New Parts

Chip Resistors

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

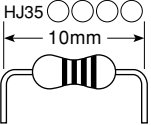
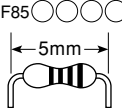
Ref. No.	Part No.	Description	Markets
	R. CHP	0 Ω	1/16W J
	R. CHP	2.2 Ω	1/16W J
	R. CHP	33 Ω	1/16W J
	R. CHP	47 Ω	1/16W J
	R. CHP	75 Ω	1/16W J
	R. CHP	100 Ω	1/16W J
	R. CHP	270 Ω	1/16W J
	R. CHP	330 Ω	1/16W J
	R. CHP	390 Ω	1/16W J
	R. CHP	470 Ω	1/16W J
	R. CHP	680 Ω	1/16W J
	R. CHP	1K Ω	1/16W J
	R. CHP	1.8K Ω	1/16W J
	R. CHP	2.2K Ω	1/16W J
	R. CHP	2.7K Ω	1/16W J
	R. CHP	3.3K Ω	1/16W J
	R. CHP	4.7K Ω	1/16W J
	R. CHP	5.1K Ω	1/16W J
	R. CHP	5.6K Ω	1/16W J
	R. CHP	6.8K Ω	1/16W J
	R. CHP	10K Ω	1/16W J
	R. CHP	12K Ω	1/16W J
	R. CHP	15K Ω	1/16W J
	R. CHP	27K Ω	1/16W J
	R. CHP	30K Ω	1/16W J
	R. CHP	33K Ω	1/16W J
	R. CHP	36K Ω	1/16W J
	R. CHP	39K Ω	1/16W F
	R. CHP	47K Ω	1/16W J
	R. CHP	56K Ω	1/16W J
	R. CHP	100K Ω	1/16W J
	R. CHP	120K Ω	1/16W J
	R. CHP	220K Ω	1/16W J
	R. CHP	330K Ω	1/16W J
	R. CHP	470K Ω	1/16W J
	R. CHP	510K Ω	1/16W J
	R. CHP	1M Ω	1/16W J

* New Parts

Ref. No.	Part No.	Description	Markets

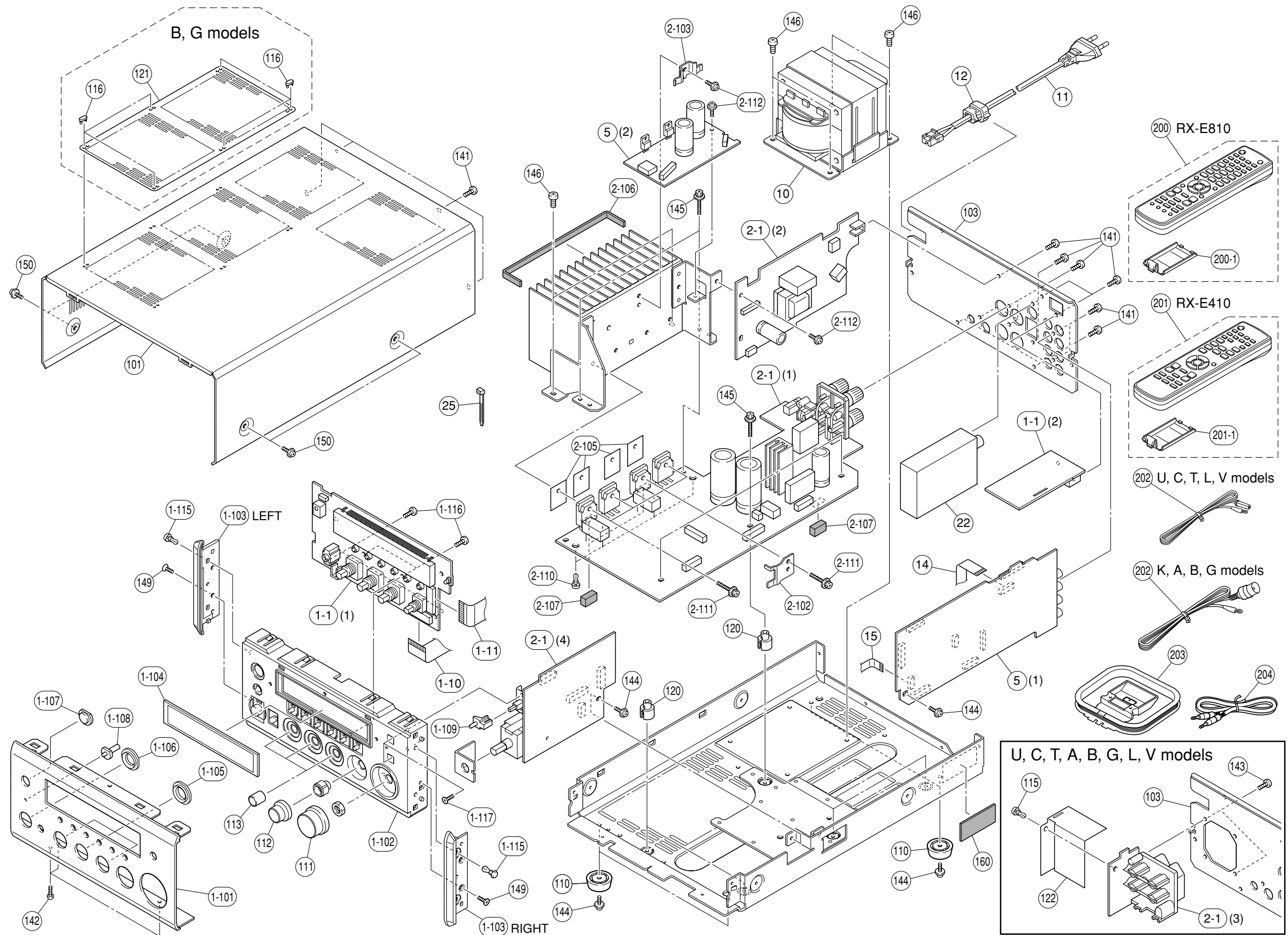
* New Parts

Carbon Resistors

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ35 3100	HF85 3100	10 kΩ	HF45 7100	HF45 7100
1.8 Ω	HJ35 3180	*	11 kΩ	HF45 7110	HF45 7110
2.2 Ω	HJ35 3220	HF85 3220	12 kΩ	HJ35 7120	HF85 7120
3.3 Ω	HJ35 3330	HF85 3330	13 kΩ	HF45 7130	HF45 7130
4.7 Ω	HJ35 3470	HF85 3470	15 kΩ	HF45 7150	HF45 7150
5.6 Ω	HJ35 3560	HF85 3560	18 kΩ	HF45 7180	HF45 7180
10 Ω	HF45 4100	HF45 4100	22 kΩ	HF45 7220	HF45 7220
15 Ω	HJ35 4150	HF85 4150	24 kΩ	HF45 7240	HF45 7240
22 Ω	HF45 4220	HF45 4220	27 kΩ	HJ35 7270	HF85 7270
27 Ω	HJ35 4270	HF85 4270	30 kΩ	HF45 7300	HF45 7300
33 Ω	HF45 4330	HF45 4330	33 kΩ	HF45 7330	HF45 7330
39 Ω	HJ35 4470	HF85 4390	36 kΩ	HF45 7360	HF45 7360
47 Ω	HF45 4470	HF45 4470	39 kΩ	HF45 7390	HF45 7390
56 Ω	HF45 4560	HF45 4560	47 kΩ	HF45 7470	HF45 7470
68 Ω	HF45 4680	HF45 4680	51 kΩ	HF45 7510	HF45 7510
75 Ω	HF45 4750	HF45 4750	56 kΩ	HF45 7560	HF45 7560
82 Ω	HF45 4820	HF45 4820	62 kΩ	HF45 7620	HF45 7620
91 Ω	HF45 4910	HF45 4910	68 kΩ	HF45 7680	HF45 7680
100 Ω	HF45 5100	HF45 5100	82 kΩ	HF45 7820	HF45 7820
110 Ω	HJ35 5110	HF85 5110	91 kΩ	HF45 7910	HF45 7910
120 Ω	HF45 5120	HF45 5120	100 kΩ	HF45 8100	HF45 8100
150 Ω	HF45 5150	HF45 5150	110 kΩ	HF45 8110	HF45 8110
160 Ω	HJ35 5160	*	120 kΩ	HF45 8120	HF45 8120
180 Ω	HF45 5180	HF45 5180	150 kΩ	HF45 8150	HF45 8150
200 Ω	HF45 5200	HF45 5200	180 kΩ	HF45 8180	HF45 8180
220 Ω	HF45 5220	HF45 5220	220 kΩ	HJ35 8220	HF85 8220
270 Ω	HF45 5270	HF45 5270	270 kΩ	HF45 8270	HF45 8270
330 Ω	HF45 5330	HF45 5330	300 kΩ	HF45 8300	HF45 8300
390 Ω	HF45 5390	HF45 5390	330 kΩ	HF45 8330	HF45 8330
430 Ω	HF45 5430	HF45 5430	390 kΩ	HJ35 8390	HF85 8390
470 Ω	HF45 5470	HF45 5470	470 kΩ	HF45 8470	HF45 8470
510 Ω	HF45 5510	HF45 5510	560 kΩ	HJ35 8560	HF85 8560
560 Ω	HF45 5560	HF45 5560	680 kΩ	HJ35 8680	HF85 8680
680 Ω	HF45 5680	HF45 5680	820 kΩ	HJ35 8820	HF85 8820
820 Ω	HF45 5820	HF45 5820	1.0 MΩ	HF45 9100	HF45 9100
910 Ω	HF45 5910	HF45 5910	1.2 MΩ	HJ35 9120	*
1.0 kΩ	HF45 6100	HF45 6100	1.5 MΩ	HJ35 9150	HF85 9150
1.2 kΩ	HF45 6120	HF45 6120	1.8 MΩ	HJ35 9180	HF85 9180
1.5 kΩ	HF45 6150	HF45 6150	2.2 MΩ	HJ35 9220	HF85 9220
1.8 kΩ	HF45 6180	HF45 6180	3.3 MΩ	HJ35 9330	HF85 9330
2.0 kΩ	HJ35 6200	HF85 6200	3.9 MΩ	HJ35 9390	*
2.2 kΩ	HF45 6220	HF45 6220	4.7 MΩ	HJ35 9470	HF85 9470
2.4 kΩ	HJ35 6240	HF85 6240			
2.7 kΩ	HF45 6270	HF45 6270			
3.0 kΩ	HF45 6300	HF45 6300		1/4W Type HJ35○○○○ ← 10mm →  1/4W Type HF45○○○○ ← 5mm → 	
3.3 kΩ	HF45 6330	HF45 6330			
3.6 kΩ	HJ35 6360	HF85 6360			
3.9 kΩ	HF45 6390	HF45 6390			
4.7 kΩ	HF45 6470	HF45 6470			
5.1 kΩ	HF45 6510	HF45 6510			
5.6 kΩ	HF45 6560	HF45 6560			
6.8 kΩ	HF45 6680	HF45 6680			
8.2 kΩ	HF45 6820	HF45 6820			
9.1 kΩ	HF45 6910	HF45 6910			

* : Not available

1 • RX-E810/RX-E410 OVERALL ASS'Y



• **Note on the OPERATION P.C.B.**
Of the OPERATION P.C.B. (1-1) part Nos., only the U, C, K, B, G, L, V models part Nos. are included in the table.
The only different part between the T, A models and U, C, K, B, G, L, V models parts is the sheet/FL that is attached to the fluorescent character display tube. When a T, A models OPERATION P.C.B. becomes necessary, order a U, C, K, B, G, L, V models OPERATION P.C.B. and a T, A models sheet/FL and replace the sheet/FL of the U, C, K, B, G, L, V models OPERATION P.C.B. with the T, A models sheet/FL.

	Ref. No.	Part No.	Description	Remarks	Markets
*	1-1	WH453900	P.C.B. ASS'Y	OPERATION	UCKBGLV
	1-10	MF115140	FLEXIBLE FLAT CABLE	15P 140mm P=1.25	
*	1-11	MF118180	FLEXIBLE FLAT CABLE	18P 180mm P=1.25	
*	1-101	WH237400	FRONT PANEL	E810GD	
*	1-101	WH325800	FRONT PANEL	E810BL	
*	1-101	WH237500	FRONT PANEL	E810SI	
*	1-101	WH237700	FRONT PANEL	E410BL	
*	1-101	WH237800	FRONT PANEL	E410SI	
*	1-102	WH228400	SUB PANEL	GD	
*	1-102	WH376500	SUB PANEL	BL	
*	1-102	WH228500	SUB PANEL	SI	
*	1-103	WH240600	PANEL SIDE		
*	1-104	WH242700	WINDOW PANEL		
*	1-105	WH235600	ESCUTCHOEN D16	GD	
*	1-105	WH336500	ESCUTCHOEN D16	BL	
*	1-105	WH235700	ESCUTCHOEN D16	SI	
*	1-106	WH235400	ESCUTCHOEN D15	GD	
*	1-106	WH333000	ESCUTCHOEN D15	BL	
*	1-106	WH235500	ESCUTCHOEN D15	SI	
*	1-107	WH240500	LENS RC	GD, SI	
*	1-107	WH347900	LENS RC	BL	
*	1-108	WH240400	LENS LED		
*	1-109	WH250100	BUTTON		
	1-115	VQ368600	PUSH RIVET	PURE DIRECT	
	1-116	WE774800	BIND HEAD P-TIGHT SCREW	3x8 MFZN2W3	
*	1-117	WF266800	FLAT HEAD B-TIGHT SCREW	3x8 MFZN2B3	
*	2-1	WH452600	P.C.B. ASS'Y	MAIN	UC
*	2-1	WH452700	P.C.B. ASS'Y	MAIN	T
*	2-1	WH452800	P.C.B. ASS'Y	MAIN	K
*	2-1	WH452900	P.C.B. ASS'Y	MAIN	A
*	2-1	WH453000	P.C.B. ASS'Y	MAIN	B
*	2-1	WH453100	P.C.B. ASS'Y	MAIN	G
*	2-1	WH453200	P.C.B. ASS'Y	MAIN	L
*	2-1	WH453300	P.C.B. ASS'Y	MAIN	V
*	2-102	WH231700	SUPPORT TR		
*	2-103	WH242100	SUPPORT IC		
*	2-105	WB221700	RADIATION SHEET	19x24	
*	2-106	WH235200	DAMPER	6x170x2	
*	2-107	WH634800	DAMPER	6x14x8	
	2-110	VQ368600	PUSH RIVET	P3555-B	
	2-111	WE774600	SCREW IC	3x18 MFZN2W3	
	2-112	WF002600	PW HEAD B-TIGHT SCREW	3x8 MFZN2W3	
*	5	WH453500	P.C.B. ASS'Y	INPUT	E810 UC
*	5	WH453600	P.C.B. ASS'Y	INPUT	E810 TKA
*	5	WH453700	P.C.B. ASS'Y	INPUT	E810 BG
*	5	WH453800	P.C.B. ASS'Y	INPUT	E810 LV
*	5	WH456900	P.C.B. ASS'Y	INPUT	E410 BG
*	10	X8038A00	POWER TRANSFORMER		UCV
*	10	X8039A00	POWER TRANSFORMER		TK
*	10	X8040A00	POWER TRANSFORMER		AL
*	10	X8041A00	POWER TRANSFORMER		BG
	11	WB120500	POWER CABLE	ME301P/TER	UC
	11	WB120600	POWER CABLE	2m	T
	11	WC753000	POWER CABLE	2m	K
	11	WC743700	POWER CABLE	2m	A
	11	WB212200	POWER CABLE	2m	B
	11	WB212300	POWER CABLE	2m	GL
	11	WC992700	POWER CABLE	2m	V
	12	V2438700	CORD STOPPER	10P1	

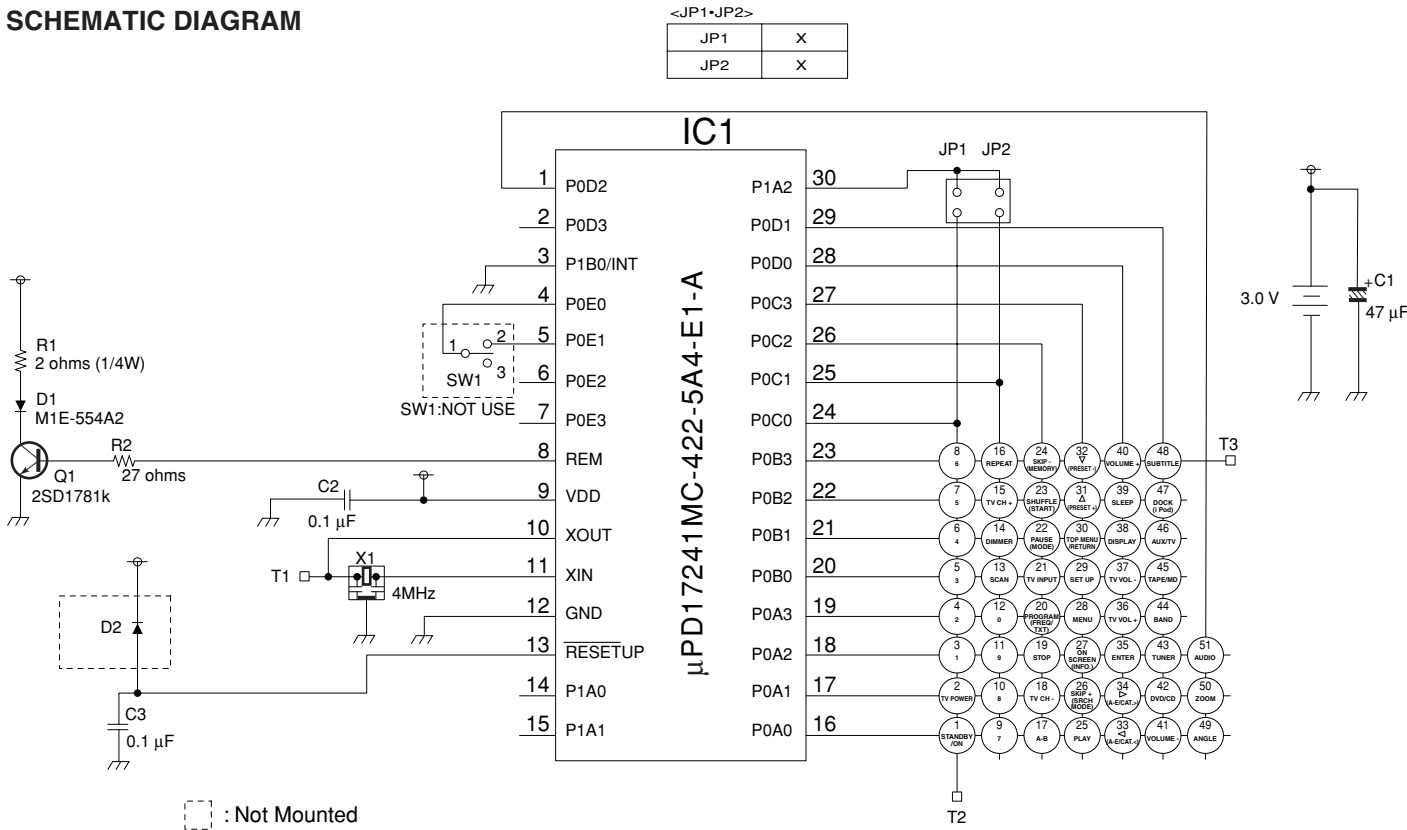
* New Parts

	Ref. No.	Part No.	Description	Remarks	Markets
*	14	MF113100	FLEXIBLE FLAT CABLE	13P 100mm P=1.25	
	15	MF107080	FLEXIBLE FLAT CABLE	7P 80mm P=1.25	
	22	WB877300	AM/FM TUNER	FAE381-A07F	UCTLV
	22	WB877400	AM/FM TUNER	FAE481-E07F	KABG
	25	WB408000	BINDING TIE	GT-100M HUA WEI	
*	101	WH242500	TOP COVER		GD
*	101	WJ040400	TOP COVER		BL
*	101	WH242600	TOP COVER		SI
*	101	WJ040200	TOP COVER		SI
*	103	WH198700	REAR PANEL		E810
*	103	WH249800	REAR PANEL		E810
*	103	WH231200	REAR PANEL		E810
*	103	WH231800	REAR PANEL		E810
*	103	WH232000	REAR PANEL		E810
*	103	WH232100	REAR PANEL		E810
*	103	WH232200	REAR PANEL		E810
*	103	WH231100	REAR PANEL		E810
*	103	WH232600	REAR PANEL		E410
*	103	WH232400	REAR PANEL		E410
*	110	WH239500	LEG		
*	111	WH239600	KNOB D28	VOLUME	GD
*	111	WH347300	KNOB D28	VOLUME	BL
*	111	WH239700	KNOB D28	VOLUME	SI
*	112	WH239000	KNOB D14.5	INPUT	GD
*	112	WH347100	KNOB D14.5	INPUT	BL
*	112	WH239100	KNOB D14.5	INPUT	SI
*	113	WH238200	KNOB	BASS, TREBLE, BALANCE	GD
*	113	WH325400	KNOB	BASS, TREBLE, BALANCE	BL
*	113	WH238300	KNOB	BASS, TREBLE, BALANCE	SI
	115	VQ368600	PUSH RIVET	P3555-B	
*	116	WJ087600	RIVET TOP		BL
*	116	WH487900	RIVET TOP		SI
*	120	WH242000	SUPPORT H8		
*	121	WH486500	SHEET TOP		
*	122	WH193400	SHEET BARRIER		
	141	WE774100	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2B3	
	142	WE774200	BIND HEAD B-TIGHT SCREW	3x10 MFZN2W3	
	143	WE774800	BIND HEAD P-TIGHT SCREW	3x8 MFZN2W3	UCTABGLV
	144	WF002600	PW HEAD B-TIGHT SCREW	3x8 MFZN2W3	
	145	WE774600	SCREW IC	3x18 MFZN2W3	
	146	WF821300	BIND HEAD S-TIGHT SCREW	4x7 MFZN2W3	
*	149	WF266800	FLAT HEAD B-TIGHT SCREW	3x8 MFZN2B3	
*	150	VY712800	PW HEAD B-TIGHT SCREW	3x8-8 MFN133	GD, SI
*	150	WE975300	PW HEAD B-TIGHT SCREW	3x8 MFZN2B3	BL
*	160	WJ081800	DAMPER	15x70 t=1.5	
			ACCESSORIES		
*	200	WH217700	REMOTE CONTROL	RRC4001-1529E	E810
*	200	WH217800	REMOTE CONTROL	RRC4001-1530E	E810
	200-1	AAX57560	BATTERY COVER	103RRS-141-07L	
*	201	WH256400	REMOTE CONTROL	RRS4004-1001E	E410
	201-1	AAX57560	BATTERY COVER	103RRS-141-07L	
	202	WB212500	INDOOR FM ANTENNA	1.4m 1pc	UCTLV
	202	WB212400	INDOOR FM ANTENNA	1.4m 1pc	KABG
	203	WB212600	AM LOOP ANTENNA	1.0m 1pc	
*	204	WH469200	SYSTEM CONTROL CABLE BATTERY	2P 600mm 1pc UM-3 2pcs	

* New Parts

■ REMOTE CONTROL WH217700: RX-E810 (U, C, T, K, A, L, V models)
WH217800: RX-E810 (B, G models)

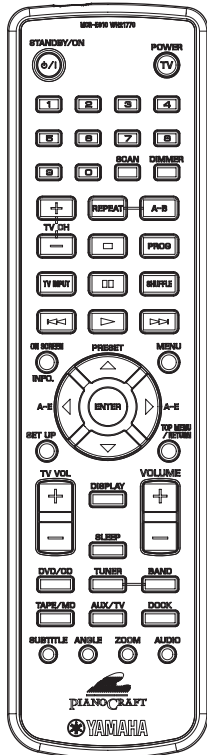
• SCHEMATIC DIAGRAM



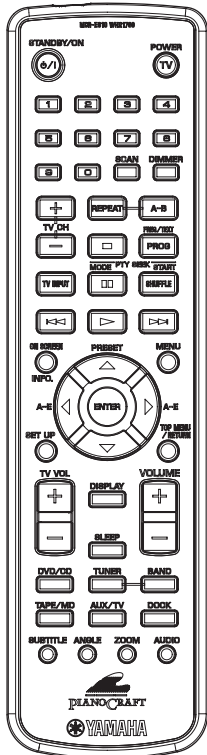
□ : Not Mounted

• PANELS

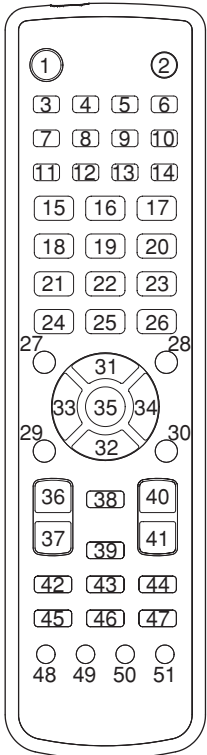
U, C, T, K, A, L, V models



B, G models



• KEY LAYOUT



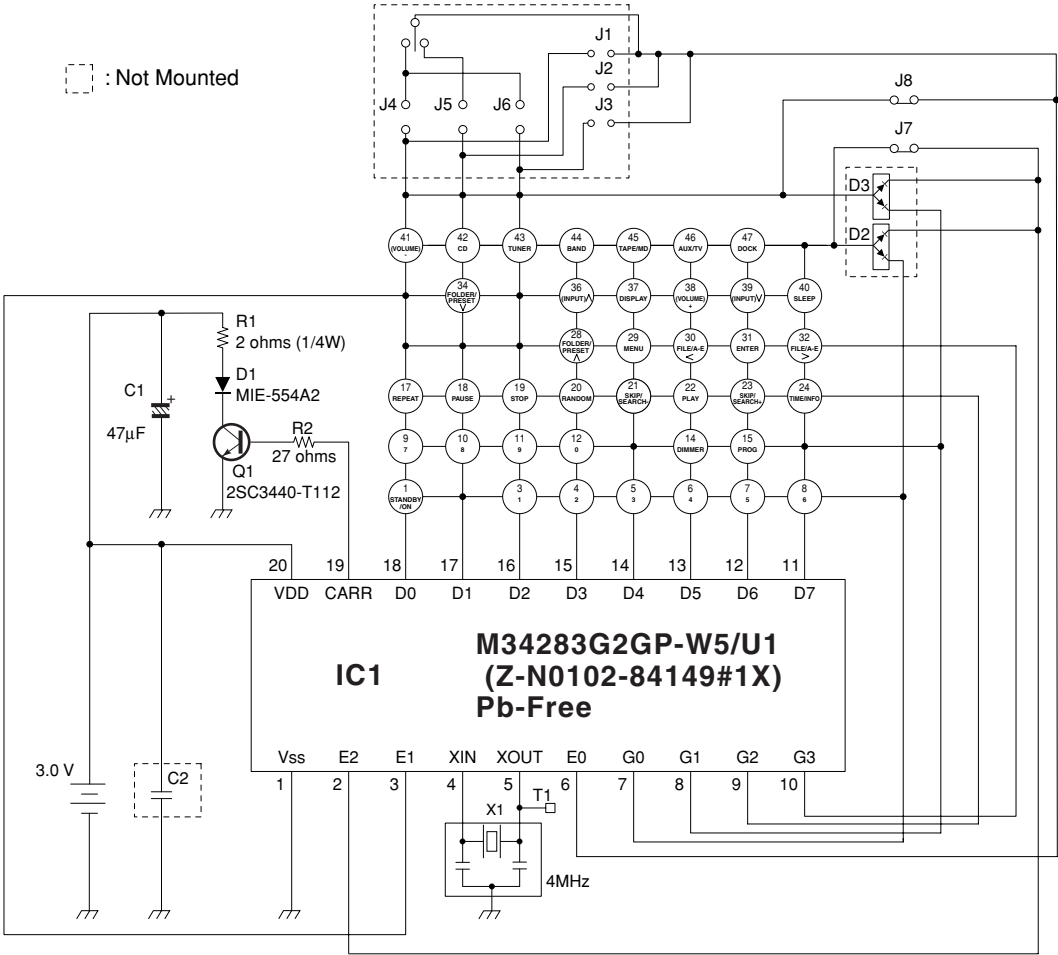
• KEY CODE

Key No.	Key Label	Common	DVD/CD		TUNER		ACX/TV		DOCK		TAPE/MD	
		code	Function	code	Function	code	Function	code	Function	code	Function	code
1	STANDBY/ON	78-0F	<	<	<	<	<	<	<	<	<	<
2	TV POWER	-	TV POWER : 50-17									
3	1	-	1	7C-94	P1	78-11	-	-	-	-	-	-
4	2	-	2	7C-95	P2	78-12	-	-	-	-	-	-
5	3	-	3	7C-96	P3	78-13	-	-	-	-	-	-
6	4	-	4	7C-97	P4	78-14	-	-	-	-	-	-
7	5	-	5	7C-98	P5	78-15	-	-	-	-	-	-
8	6	-	6	7C-99	P6	78-16	-	-	-	-	-	-
9	7	-	7	7C-9A	P7	78-17	-	-	-	-	-	-
10	8	-	8	7C-9B	P8	78-18	-	-	-	-	-	-
11	9	-	9	7C-9C	-	-	-	-	-	-	-	-
12	0	-	0	7C-93	-	-	-	-	-	-	-	-
13	SCAN	-	SCAN	7C-E2	-	-	-	-	-	-	-	-
14	DIMMER	78-BA	-	-	-	-	-	-	-	-	-	-
15	TV CH +	-	-	-	-	-	TV CH + : 50-19		-	-	-	-
16	REPEAT	-	REPEAT	7C-A3	-	-	-	-	REPEAT	7F01-45BA	-	-
17	A-B	-	A-B	7C-A4	-	-	-	-	-	-	-	-
18	TV CH -	-	-	-	-	-	TV CH - : 50-18		-	-	-	-
19	□ (STOP)	-	DVD STOP	7C-85	-	-	-	-	STOP	7F01-1DE2	STOP	7A-03
20	PROGRAM (FREQ/TXT)	-	PROGRAM	7C-A0	FREQ/TXT	78-81	-	-	-	-	-	-
21	TV INPUT	-	-	-	-	-	TV INPUT : 50-09		-	-	-	-
22	⏏ (PAUSE (MODE))	-	PAUSE	7C-83	MODE	78-82	-	-	PAUSE	7F01-1AE5	-	-
23	SHUFFLE (START)	-	SHUFFLE	7C-A1	START	78-83	-	-	SHUFFLE	7F01-46B9	-	-
24	⏮ (SKIP - (MEMORY))	-	SKIP -	7C-B9	-	-	-	-	SKIP/SEARCH -	7F01-1BE4	REW	7A-01
25	▶ (PLAY)	-	DVD PLAY	7C-82	-	-	-	-	PLAY	7F01-1EE1	PLAY	7A-00
26	⏭ (SKIP + (SRCH MODE))	-	SKIP +	7C-BA	-	-	-	-	SKIP/SEARCH +	7F01-1CE3	FF	7A-02
27	ON SCREEN (INFO.)	-	ON SCREEN	7C-A6	-	-	-	-	INFO.	7F01-15EA	-	-
28	MENU	-	MENU	7C-B2	-	-	-	-	MENU	7F01-0FF0	-	-
29	SET UP	-	SET-UP	7C-AC	-	-	-	-	-	-	-	-
30	TOP MENU/RETURN	-	RETURN	7C-B1	-	-	-	-	-	-	-	-
31	△ (PRESET +)	-	UP	7C-B4	PRESET/CH ▲	78-8E	-	-	UP	7F01-0EF1	-	7A-07
32	▽ (PRESET -)	-	DOWN	7C-B3	PRESET/CH ▼	78-8F	-	-	DOWN	7F01-14EB	DIR B	7A-40
33	◀ (A-E/CAT. <)	-	LEFT	7C-B5	A-E <	78-9F	-	-	LEFT	7F01-10EF	REC/PAUSE	7A-04
34	▶ (A-E/CAT. >)	-	RIGHT	7C-B6	A-E >	78-9E	-	-	RIGHT	7F01-12ED	DECK A/B	7A-06
35	ENTER	-	ENTER	7C-B8	-	-	-	-	ENTER	7F01-11EE	-	-
36	TV VOL +	-	TV VOLUME + : 50-12									
37	TV VOL -	-	TV VOLUME - : 50-15									
38	DISPLAY	78-4E	<	<	<	<	<	<	<	<	<	<
39	SLEEP	78-4F	<	<	<	<	<	<	<	<	<	<
40	VOLUME +	78-1E	<	<	<	<	<	<	<	<	<	<
41	VOLUME -	78-1F	<	<	<	<	<	<	<	<	<	<
42	DVD/CD	78-4A	<	<	<	<	<	<	<	<	<	<
43	TUNER	78-4B	<	<	<	<	<	<	<	<	<	<
44	BAND	-	-	-	BAND	78-B6	-	-	-	-	-	-
45	TAPE/MD	78-41	<	<	<	<	<	<	<	<	<	<
46	AUX/TV	78-49	<	<	<	<	<	<	<	<	<	<
47	DOCK (IPOD)	78-D0	<	<	<	<	<	<	<	<	<	<
48	SUBTITLE	-	SUBTITLE	7C-AA	-	-	-	-	-	-	-	-
49	ANGLE	-	ANGLE	7C-AE	-	-	-	-	-	-	-	-
50	ZOOM	-	ZOOM	7C-D7	-	-	-	-	-	-	-	-
51	AUDIO	-	AUDIO	7C-AD	-	-	-	-	-	-	-	-

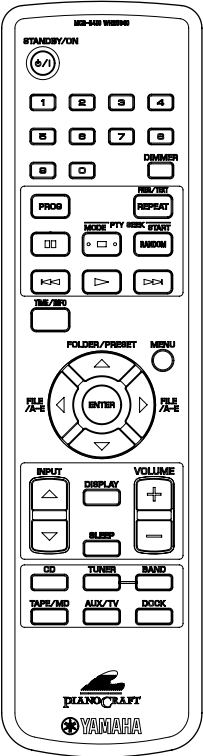
RX-E810/RX-E410/NX-E800

■ REMOTE CONTROL WH256400: RX-E410 (B, G models)

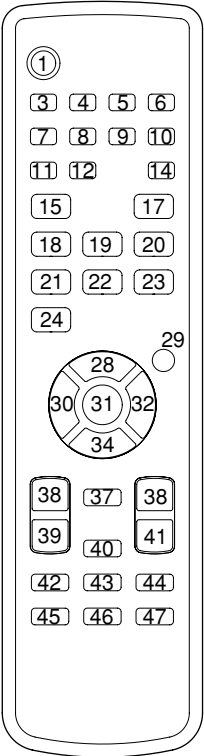
• SCHEMATIC DIAGRAM



• PANEL



• KEY LAYOUT



• KEY CODE

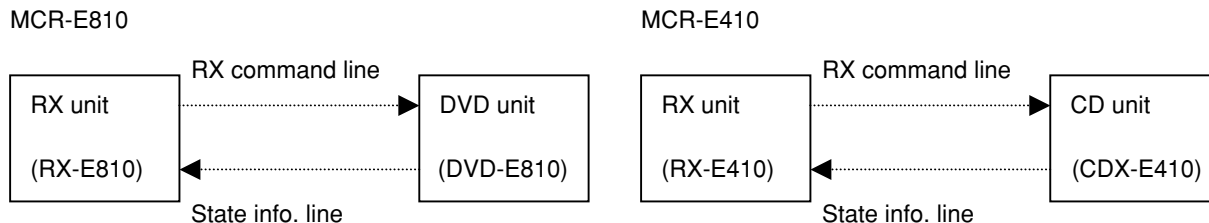
Key No.	Key Label	CUSTOM CODE	DATA CODE
1	STANDBY/ON	78	0F
3	1	78	11
4	2	78	12
5	3	78	13
6	4	78	14
7	5	78	15
8	6	78	16
9	7	78	17
10	8	78	18
11	9	78	19
12	0	78	10
14	DIMMER	78	BA
15	PROG	78	0B
17	REPEAT	78	0C
18	⏸ (PAUSE)	78	B9
19	⏹ (STOP)	78	01
20	RANDOM	78	07
21	SKIP/SEARCH -	78	04
22	▶ (PLAY)	78	02
23	SKIP/SEARCH +	78	03
24	TIME/INFO	78	0A
28	FOLDER/PRESET Δ	78	8E
29	MENU	78	9D
30	FILE/A-E ◀	78	9F
31	ENTER	78	C1
32	FILE/A-E ▶	78	9E
34	FOLDER/PRESET ▽	78	8F
36	INPUT Δ	78	5E
37	DISPLAY	78	4E
38	VOLUME +	78	1E
39	INPUT ▽	78	40
40	SLEEP	78	4F
41	VOLUME -	78	1F
42	CD	78	4A
43	TUNER	78	4B
44	BAND	78	B6
45	TAPE/MD	78	41
46	AUX/TV	78	49
47	DOCK	78	D0

■ SYSTEM CONTROL

1. External Bus

1.1. Physical format of external bus

It is composed of 2 bus lines.



1.2. Format of RX command

RX command is the request of RX to DVD or CD unit and the operation button code for CD.

Both are expressed by the remote control code of the NEC format. And the signal wave form is the demodulated signal of remote control IR signal.

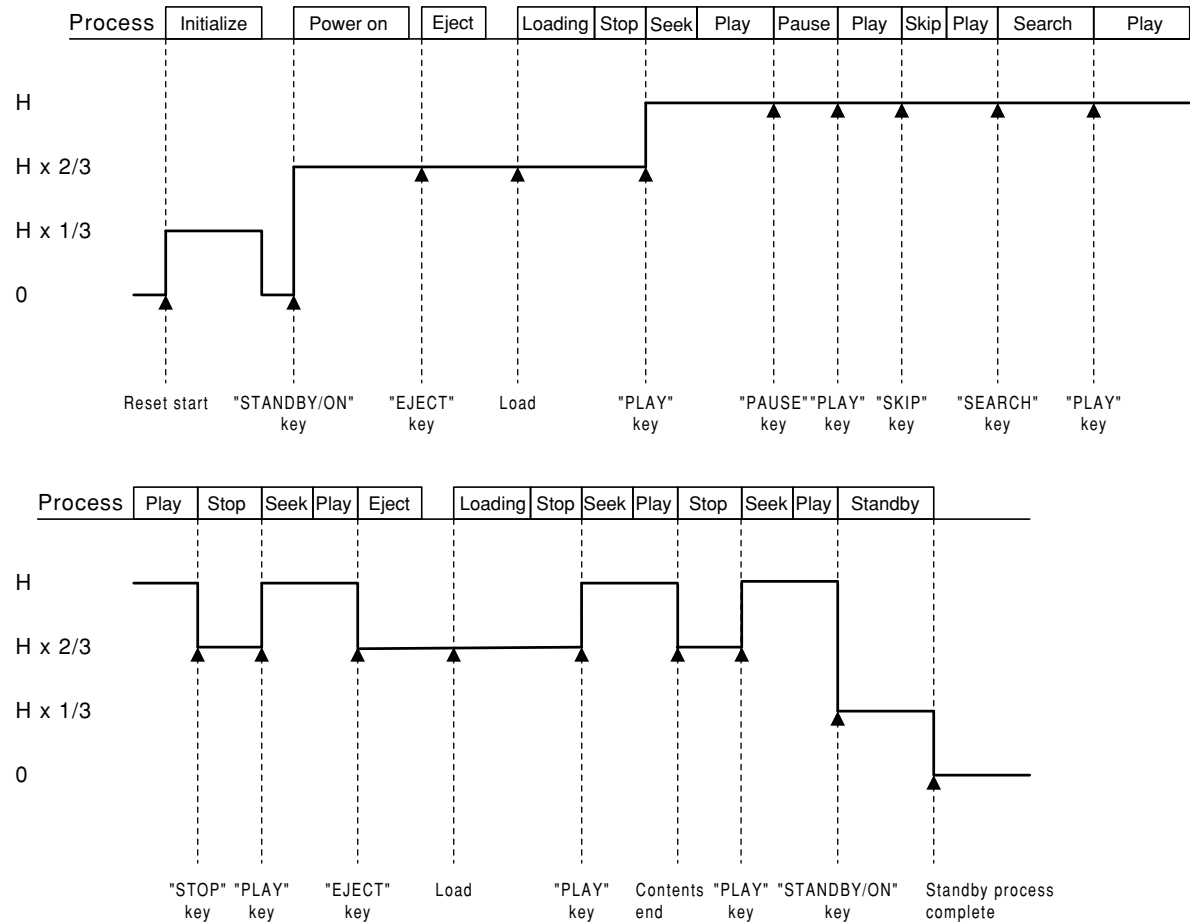
1.3. Format of state info.

State info. is the state information of CD or DVD and expressed by the DC voltage level.

Name	DC voltage level	Content
PORT_PLAY	H	The period between from playback operation to stop factor generation. Playback operation: "PLAY" key operation, disc tray hand push close Stop factor: "STOP", "EJECT", "STANDBY/ON" key operation Playback contents end Failsafe stop by abnormal detection
PORT_STOP	H x 2/3	Power on state other than PORT_PLAY state
PORT_PRE_STANDBY	H x 1/3	The period between from standby operation to standby process completion and from CD/DVD reset start to initialize process completion
PORT_STANDBY	0	Standby state after standby process completion

H: Microprocessor Vcc level

Example:



Note: The details or some limitations regarding the change of player status need the extra discussion.

2. Command and Operation Key Code

The system command and the system remote control code described as follows are transmitted through RX command bus.

2.1 RX request command

Name	Code		Function
	to DVD	to CD	
POWER_ON	7C-F6	78-7E	Power on request
POWER_OFF	7C-F7	78-7F	Standby request
PLAY	7C-82	78-02	Playback request
STOP	7C-85	78-01	playback stop request
DIMMER_ON	78-FE	78-FE	Display dimmer(decrement of brightness) request
DIMMER_OFF	78-FF	78-FF	Cancel display dimmer.
VFD_OFF	78-FD	78-FD	VFD turn off request

RX request command is not transmitted if DVD/CD is already in the state that RX requests.

2.2 Operation key code (DVD/CD unit)

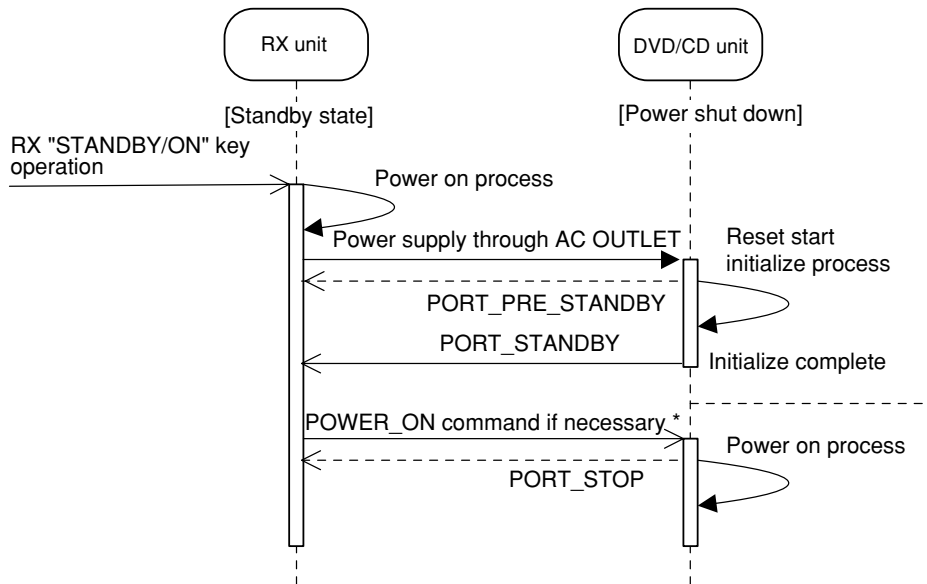
Key codes which are described at previous "REMOTE CONTROL, • KEY CODE" page are transmitted from RX unit to DVD/CD unit when user operate the system remote control unit.

3. Command Communication for System Function

3.1 Power on

(1) Power on by RX "STANDBY/ON" key operation

RX turns on the power by RX's "STANDBY/ON" key and at the same time DVD/CD also turns on the power if DVD/CD state is power on at the last RX's power on.

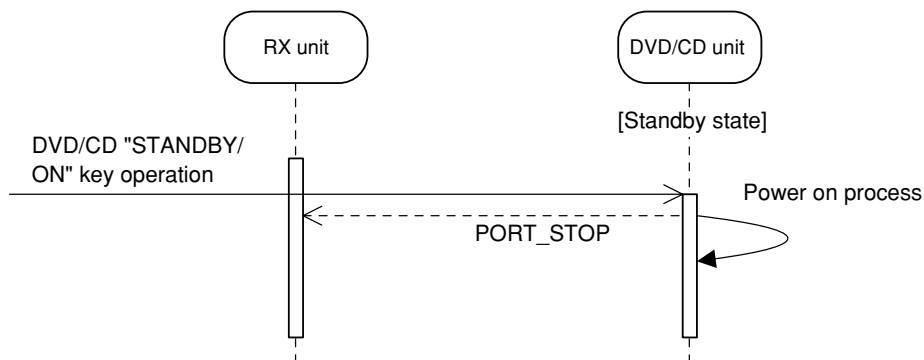


* RX transmits POWER_ON command if DVD/CD state at the last RX's power on is power on.

(2) Power on of individual unit by each "STANDBY/ON" key operation

In the system power on, the each unit can be changed into standby and then into power on again by the "STANDBY/ON" key operation of the unit.

When the power supply of the unit is individually supplied, only the unit can turn on the power by operating "STANDBY/ON" key of an individual unit even in system standby.

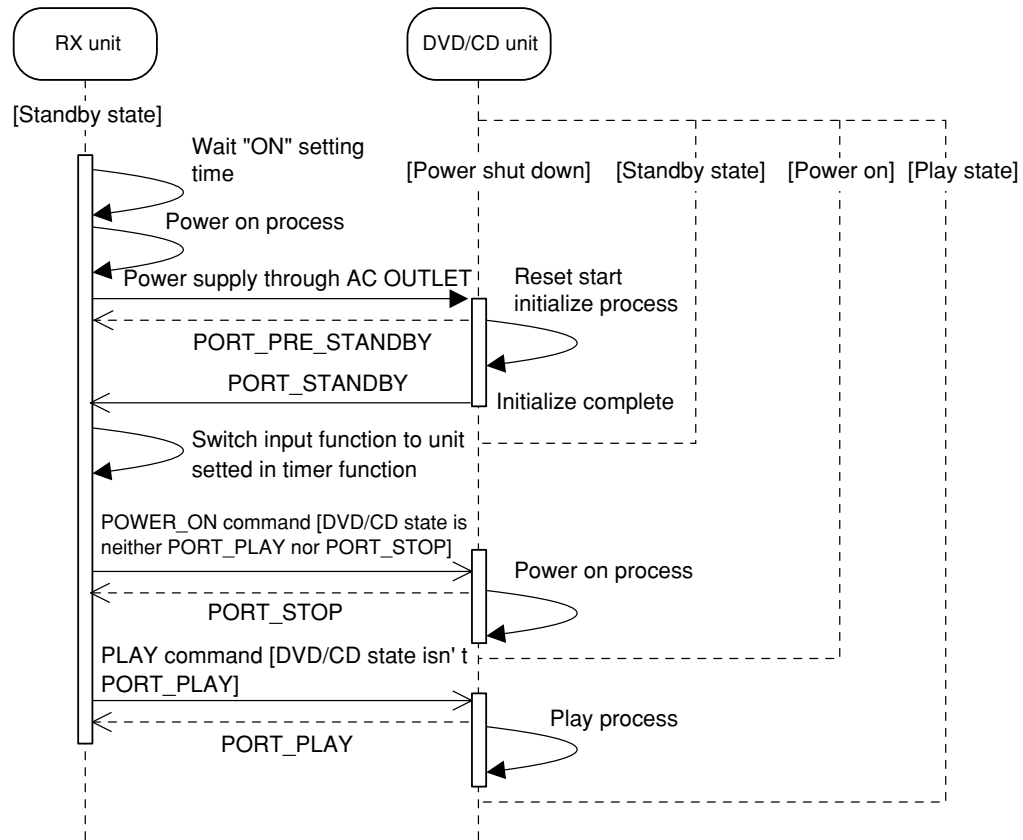


3.2 Timer function

The unit setted in this RX timer function is playbacked at the setting time as the ON-TIME.
It functions even when at setted time the system is already in power on state or the unit is already playbacked.

(1) Timer play

The state is not changed if the setted unit is already in the state of playback.



After sending POWER_ON command, if DVD/CD unit has Auto-play function after power-on, RX will not send PLAY command.

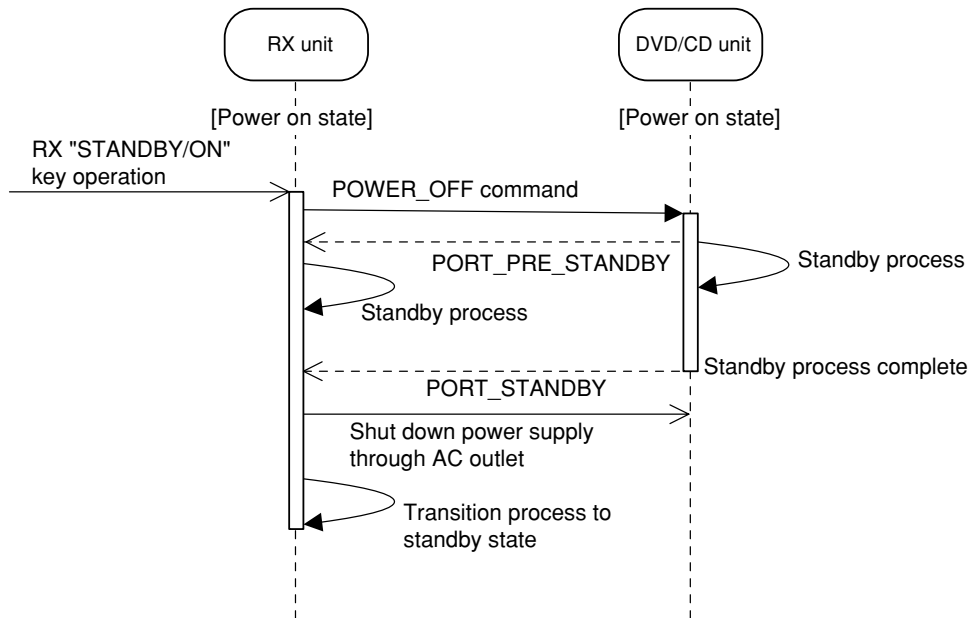
3.3 Standby (power off)

(1) System standby

The power supply through AC outlet of RX is shut down in system standby (power off).

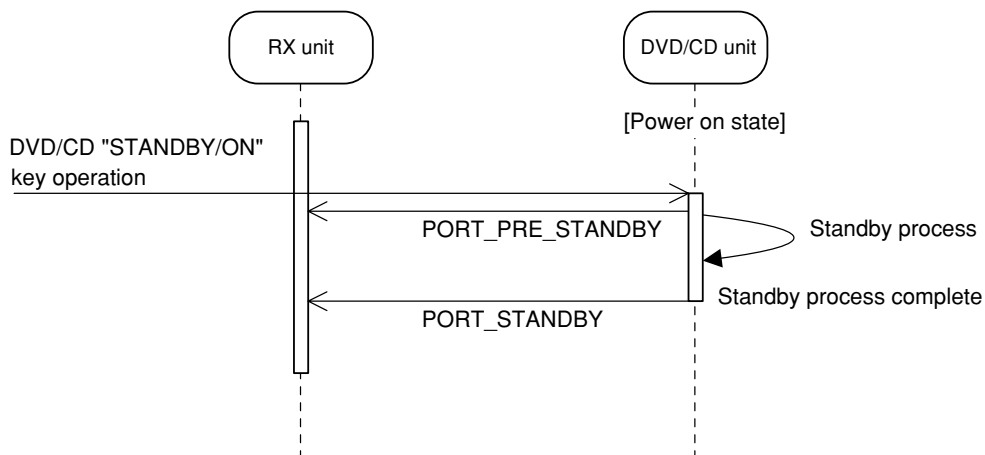
The microcomputer of the unit connected with AC outlet of RX cannot work after system power off.

When there is processing that should be finished before the system power off, the system is turned power off after such processing completion.



(2) Unit standby (power off)

Each unit can be individually standby (power off) with an individual "STANDBY/ON" key of each unit.

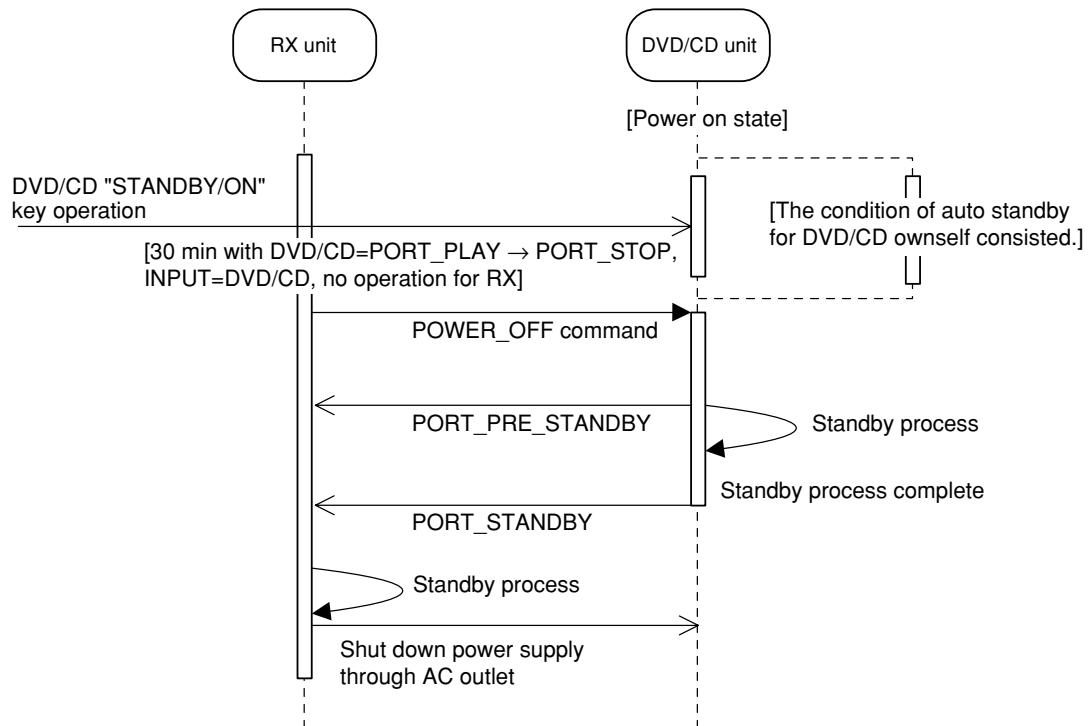


(3) Auto standby (power off)

When 30 minutes pass with the following conditions consisted, the system turns off the power (standby) automatically.

- The unit connected with an external bus is in the standby state.
- RX input function is DVD/CD.
- RX is not operated

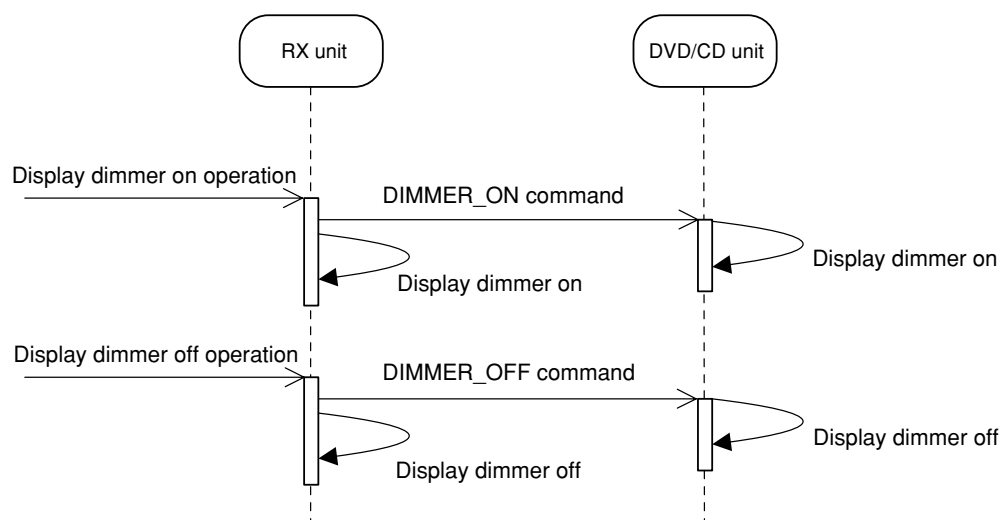
DVD/CD might turn off the power by own auto standby function.



3.4 Display control

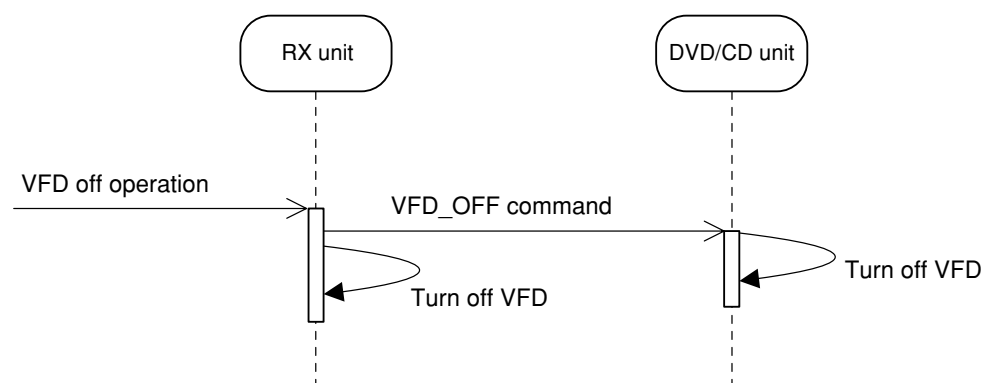
(1) Display dimmer function

This is the function to change the brightness of DVD/CD's display by operating RX.



(2) Turn off VFD

This is the function to turn off VFD.



Exit: RX sends DIMMER_ON or DIMMER_OFF command, and then DVD/CD unit turn on VFD with the appropriate dimmer value.