AV RECEIVER

RX-V367/HTR-3063

SERVICE MANUAL

When the following parts are replaced, the model name and the destination MUST be written to the back-up IC (EEPROM: IC222 of the DIGITAL P.C.B.) to have proper operation. (See No. 22 SOFT SWITCH menu of the self-diagnostic function.)

- EEPROM (IC222) of DIGITAL P.C.B.
- DIGITAL P.C.B.

IMPORTANT NOTICE

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

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

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

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

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

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

RX-V367/HTR-3063

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This Service Manual uses recycled paper.

101167

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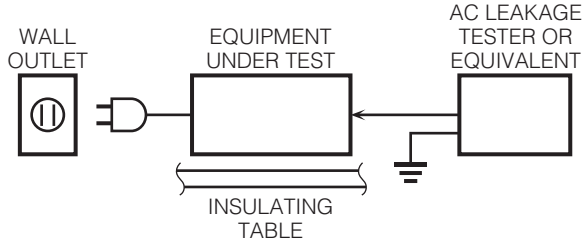
YAMAHA
YAMAHA CORPORATION
P.O.Box 1, Hamamatsu, Japan
'10.03

■ 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 0.15 μF.



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

For U model

"CAUTION"

"F1501: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 6A, 125V FUSE."

For C model

CAUTION

F1501: REPLACE WITH SAME TYPE 6A, 125V FUSE.

ATTENTION

F1501: UTILISER UN FUSIBLE DE RECHANGE DE MÉME TYPE DE 6A, 125V.

WARNING: CHEMICAL CONTENT NOTICE!

This product contains chemicals known to the State of California to cause cancer, 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

All of the P.C.B.s installed in this unit and solder joints are soldered using the 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)

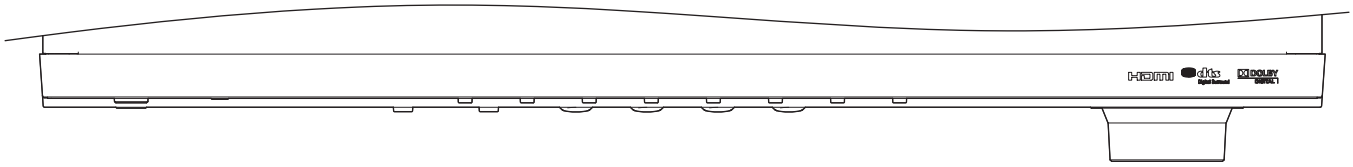
Caution:

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.

■ FRONT PANELS

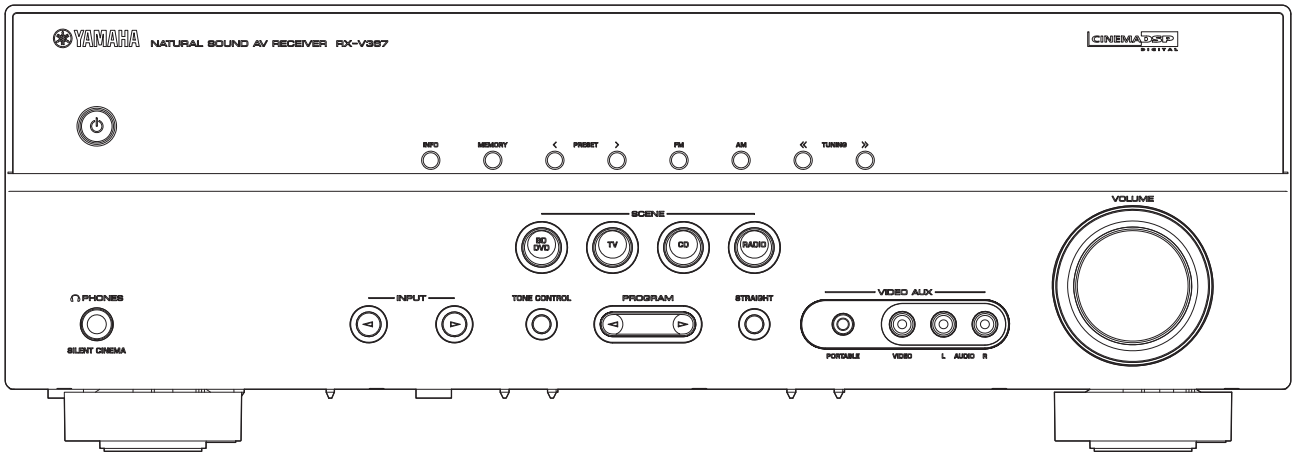
Top view

RX-V367 / HTR-3063

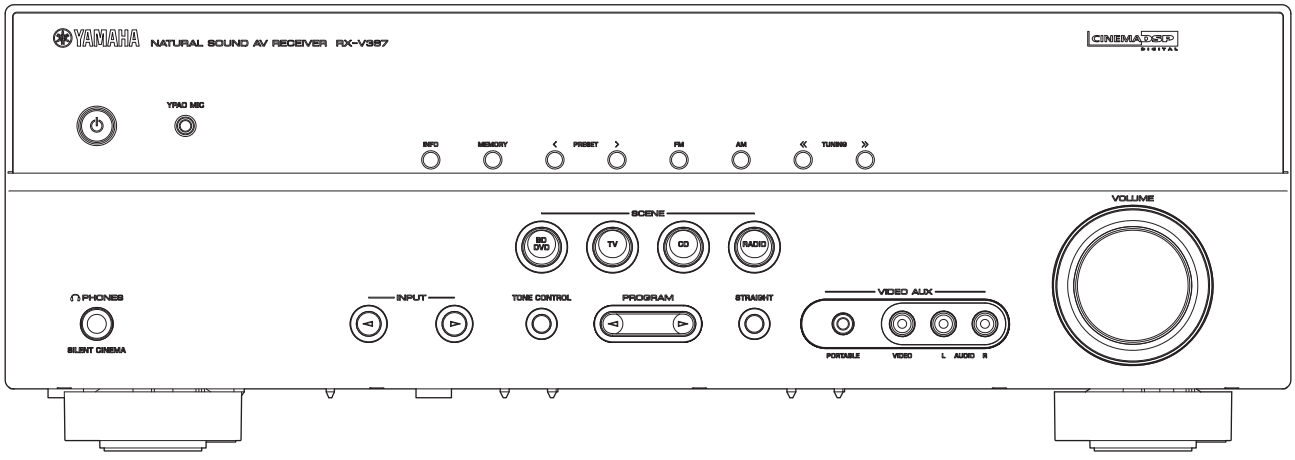


Front view

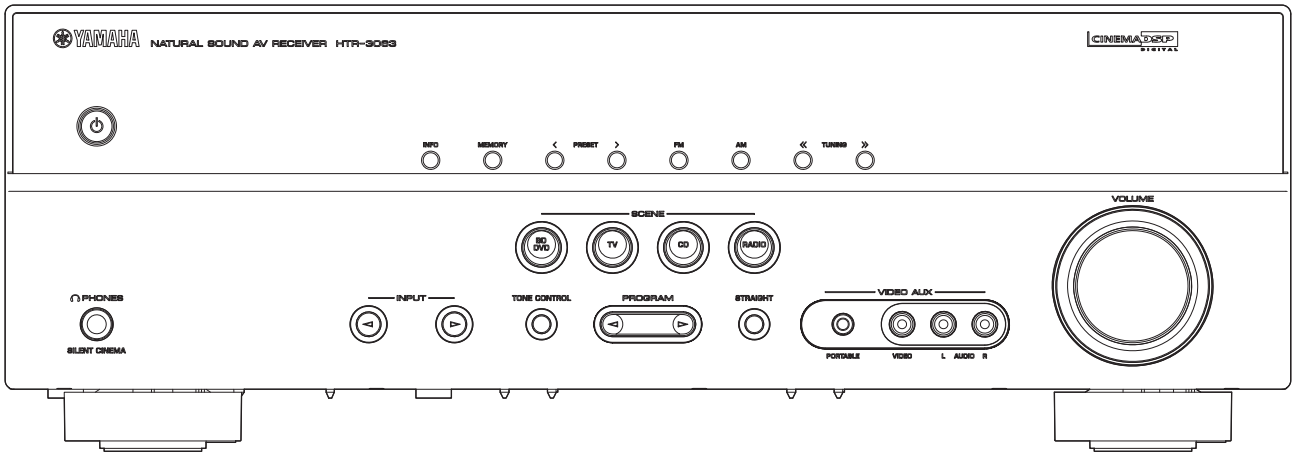
RX-V367 (U, C, T models)



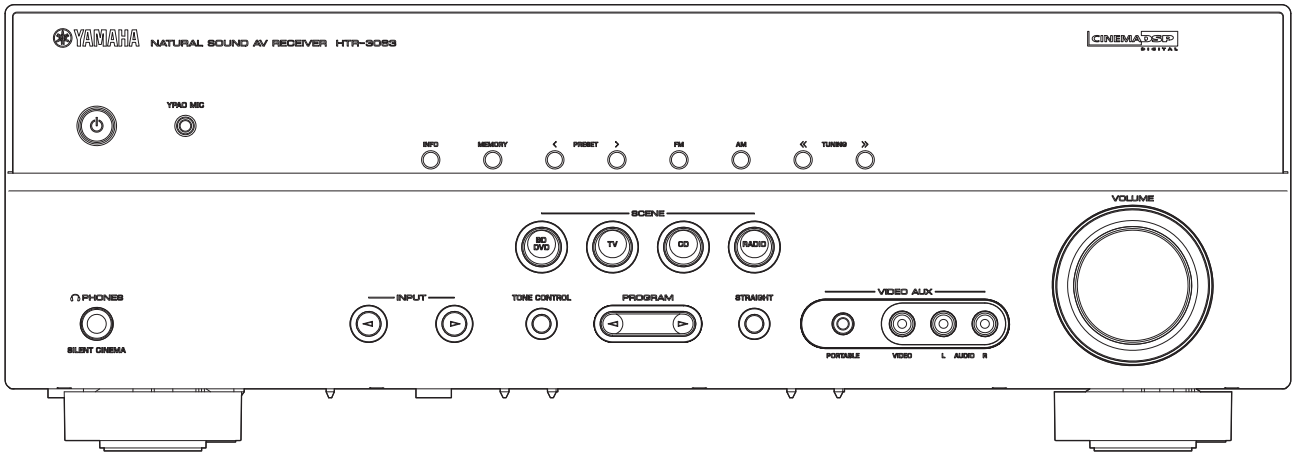
RX-V367 (R, K, A, B, G, F, L models)



HTR-3063 (U, C, T models)

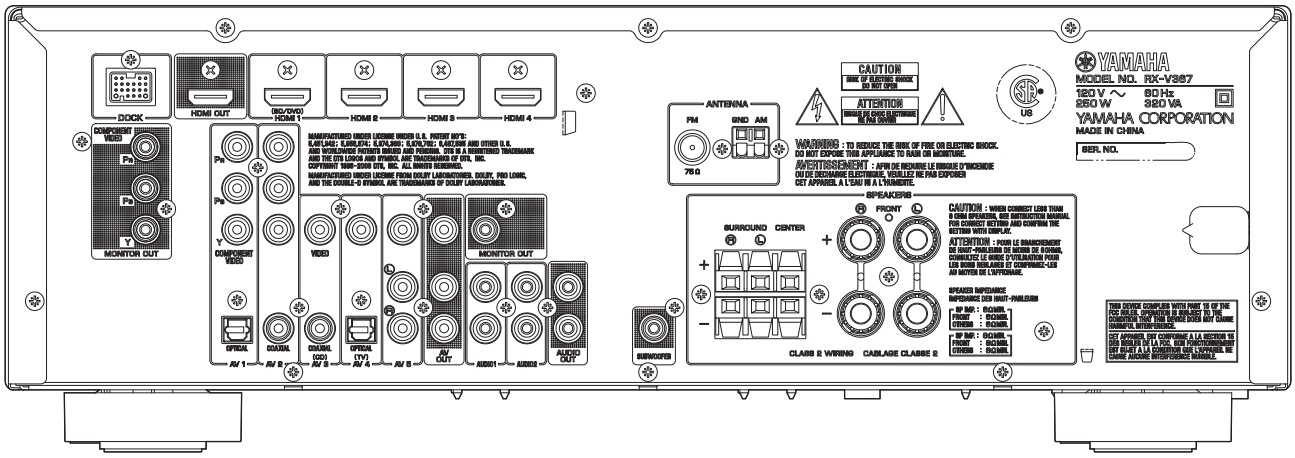


HTR-3063 (R, K, A, G, F, L models)

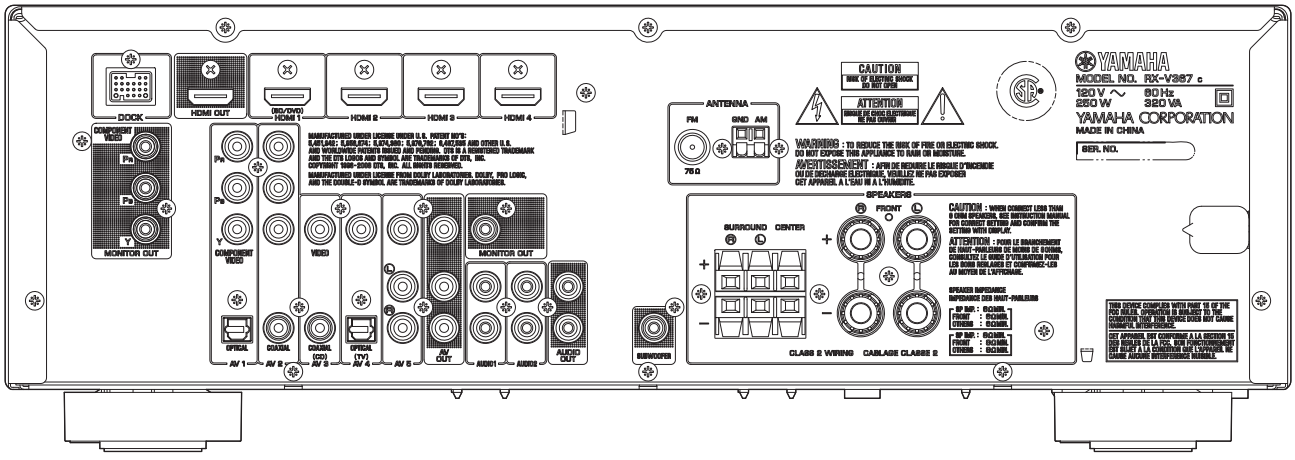


■ REAR PANELS

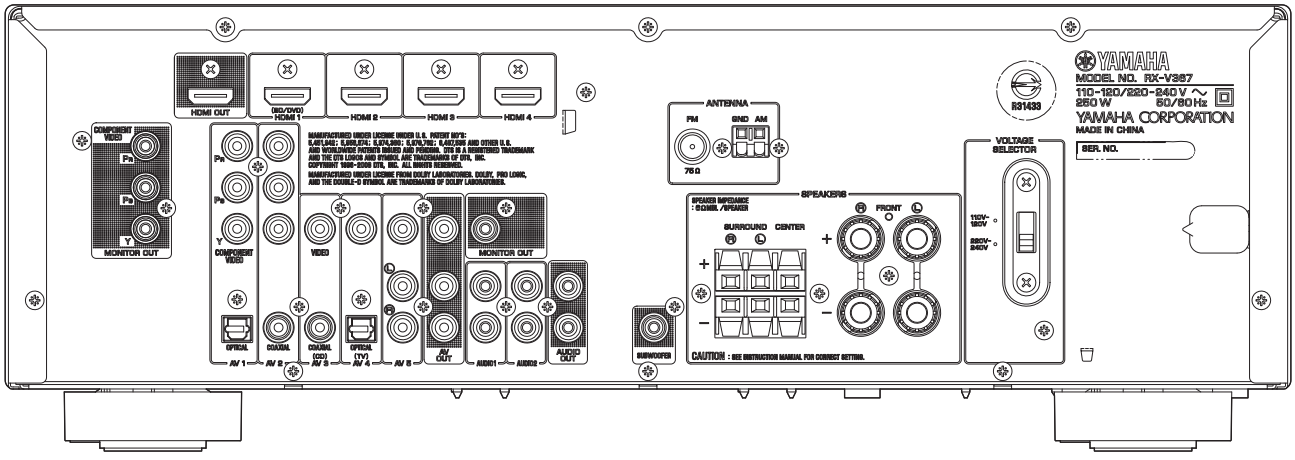
RX-V367 (U model)



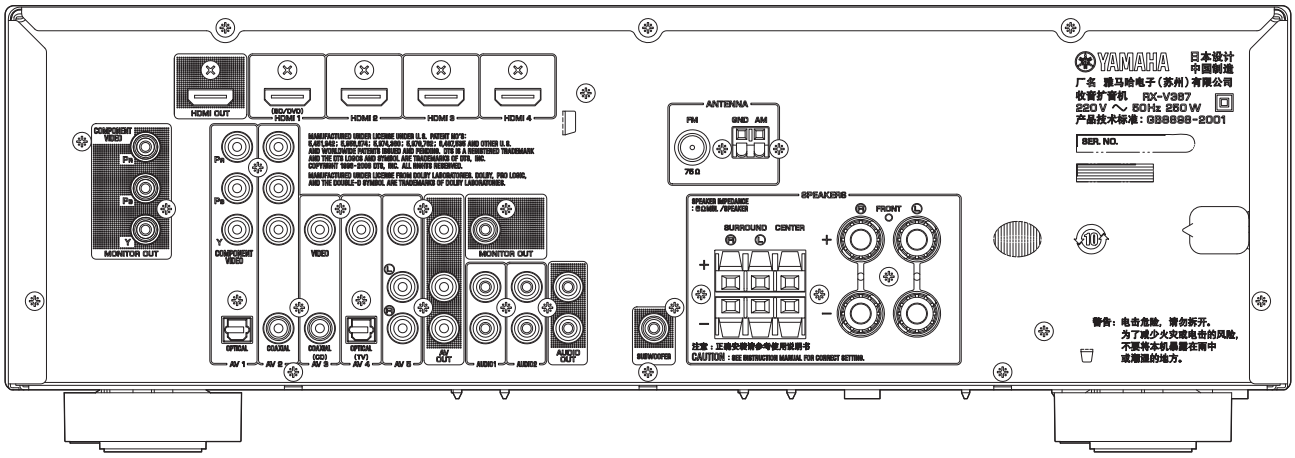
RX-V367 (C model)



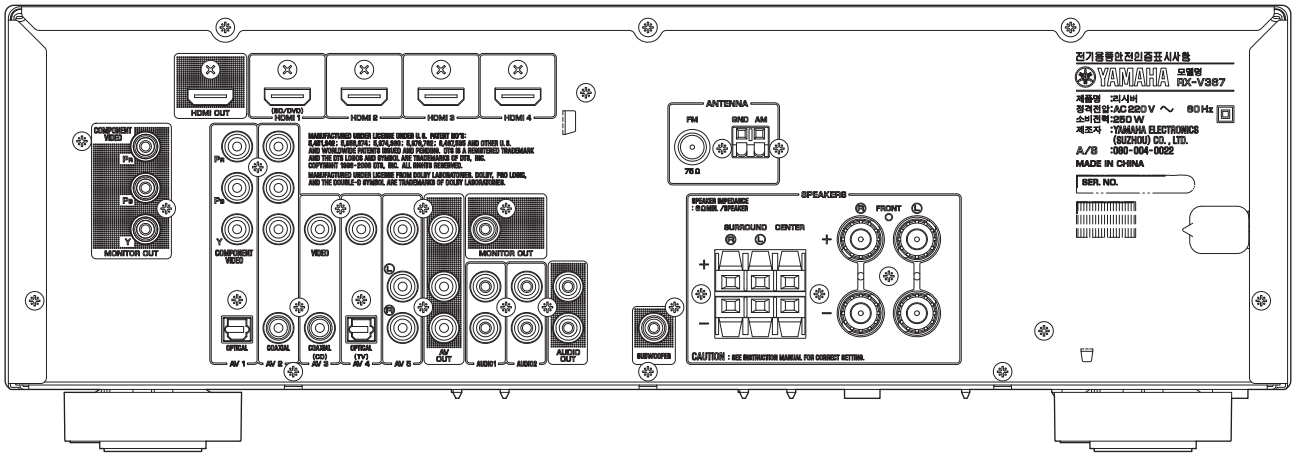
RX-V367 (R model)



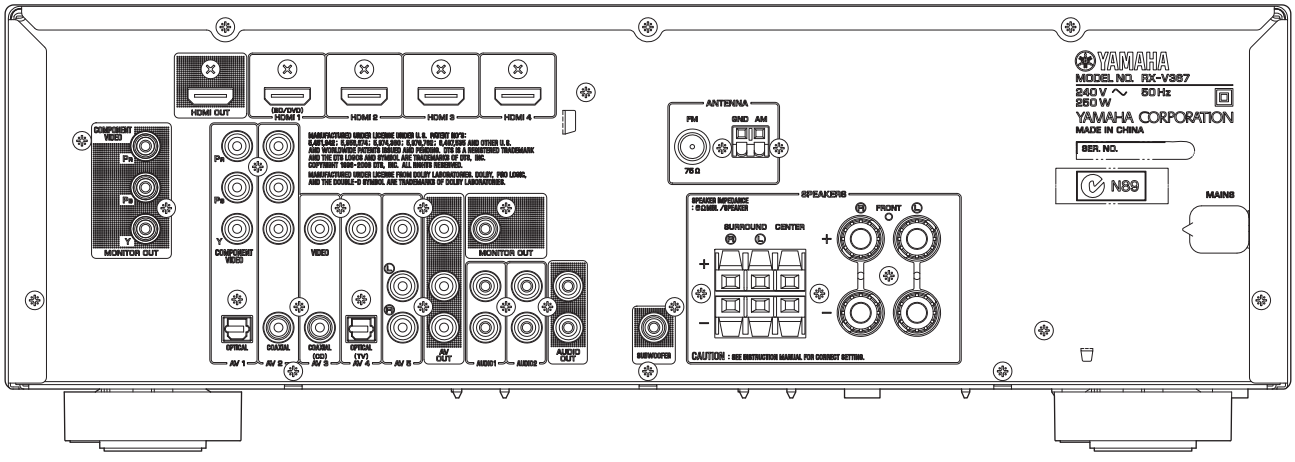
RX-V367 (T model)



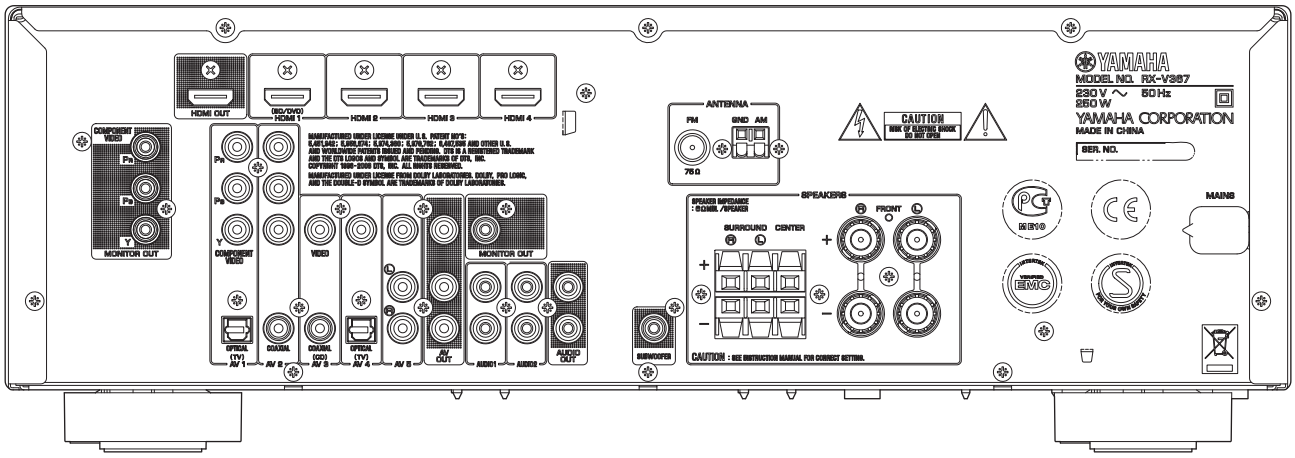
RX-V367 (K model)



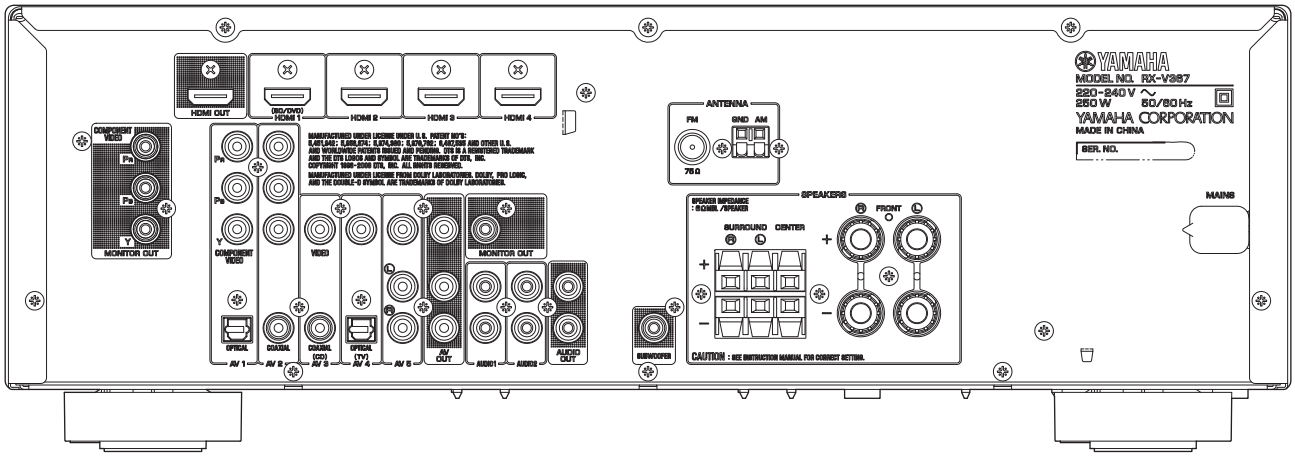
RX-V367 (A model)



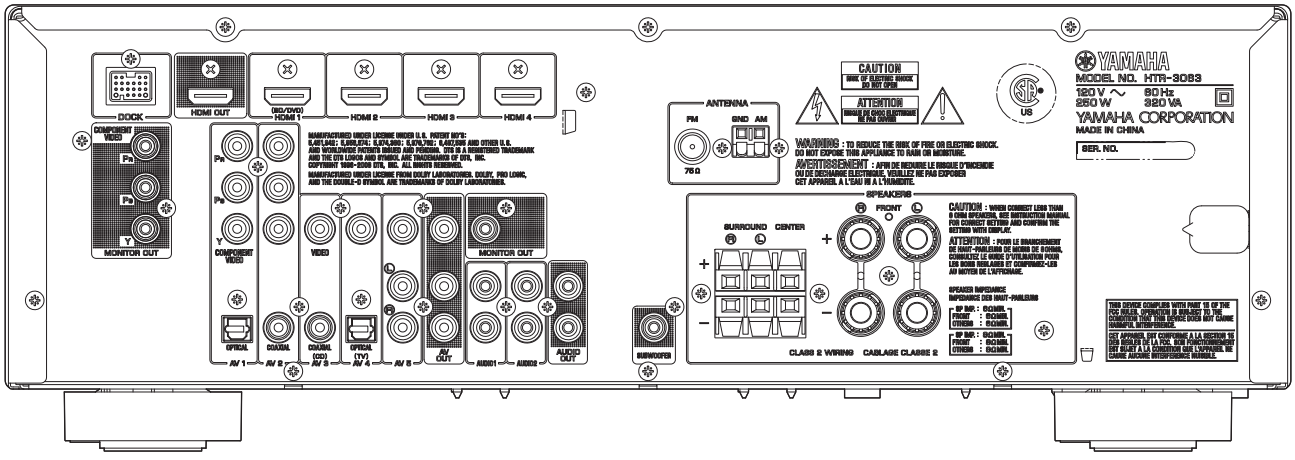
RX-V367 (B, G, F models)



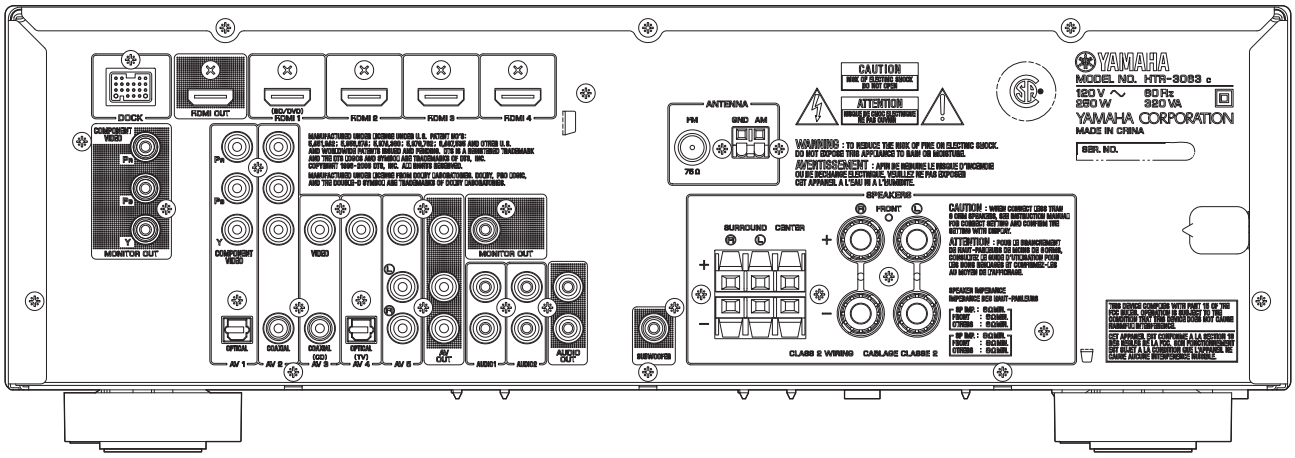
RX-V367 (L model)



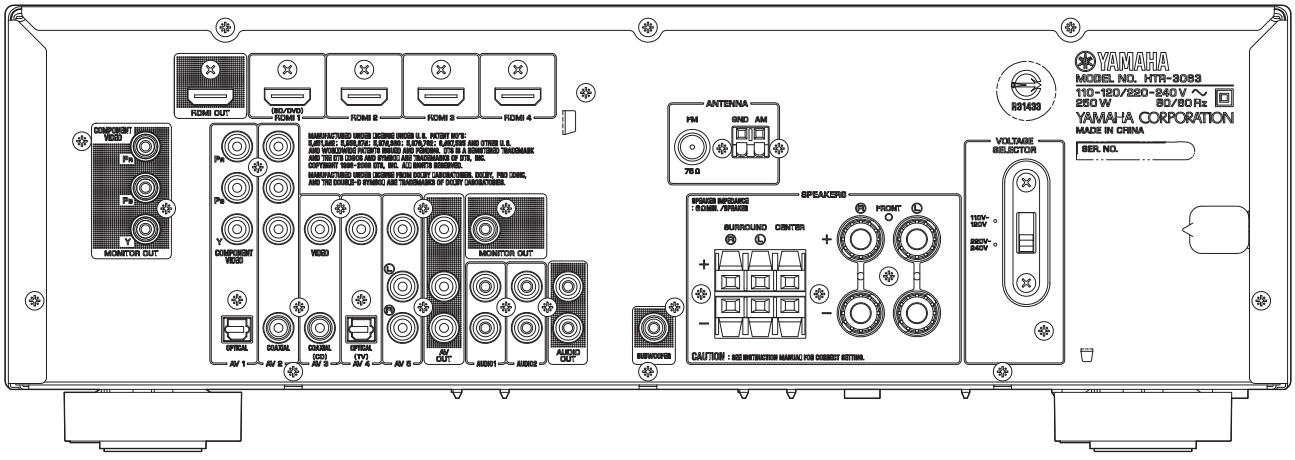
HTR-3063 (U model)



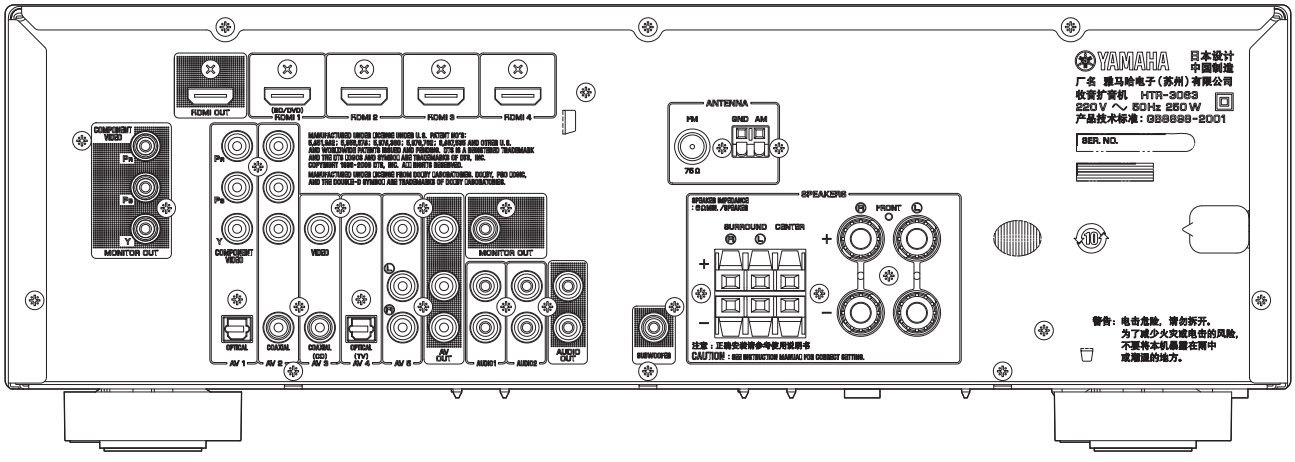
HTR-3063 (C model)



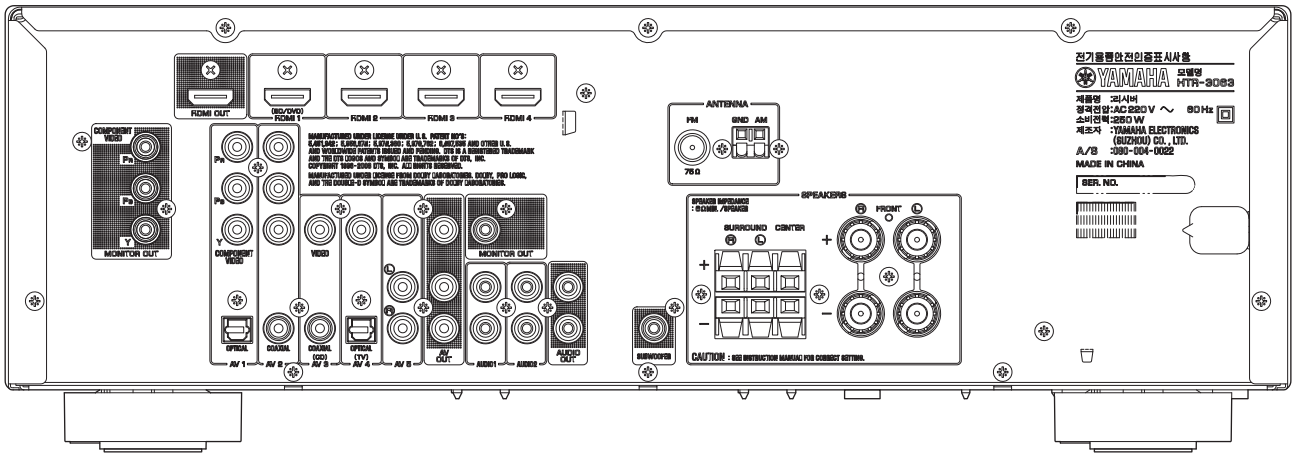
HTR-3063 (R model)



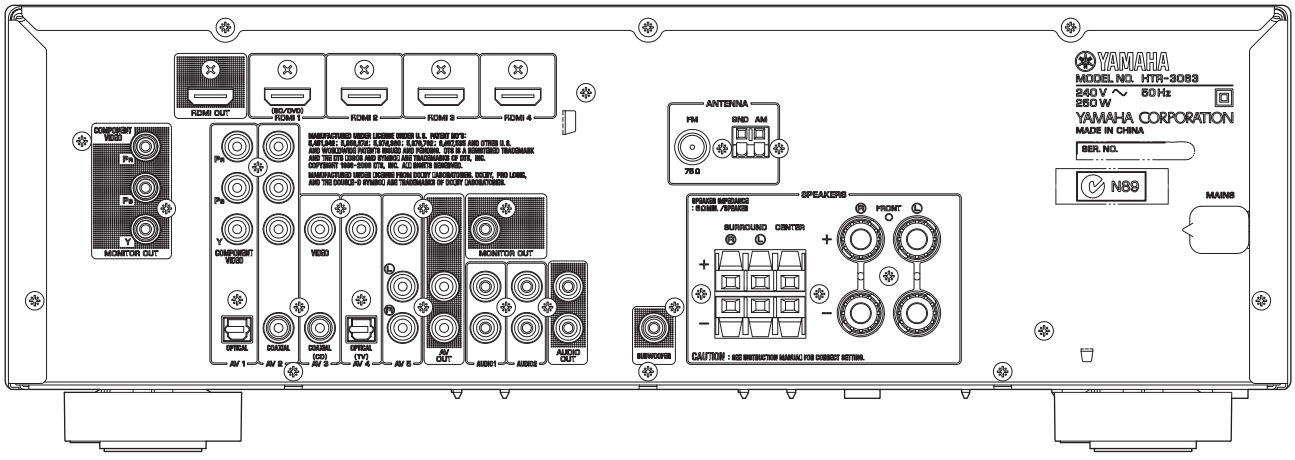
HTR-3063 (T model)



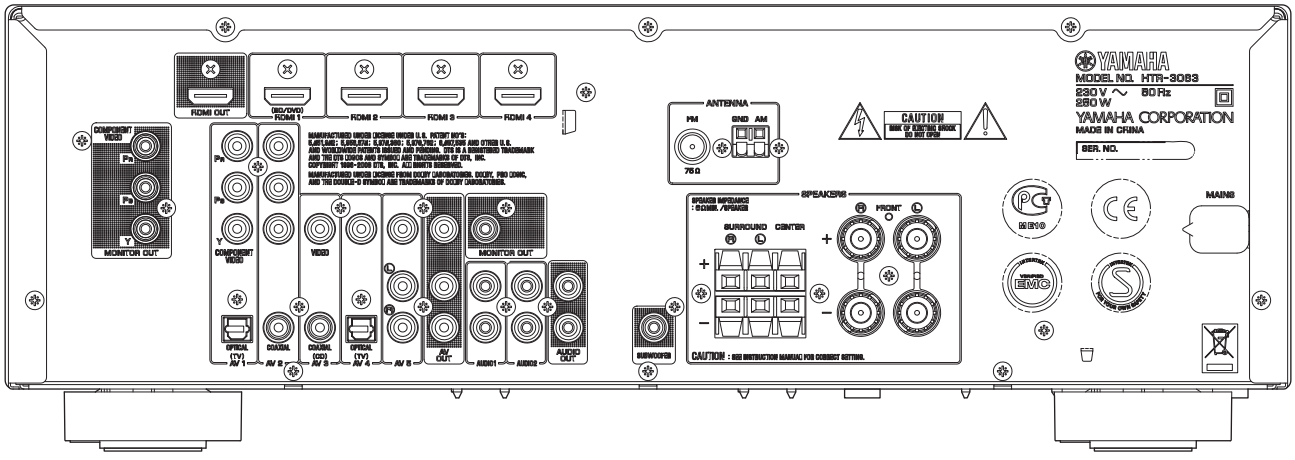
HTR-3063 (K model)



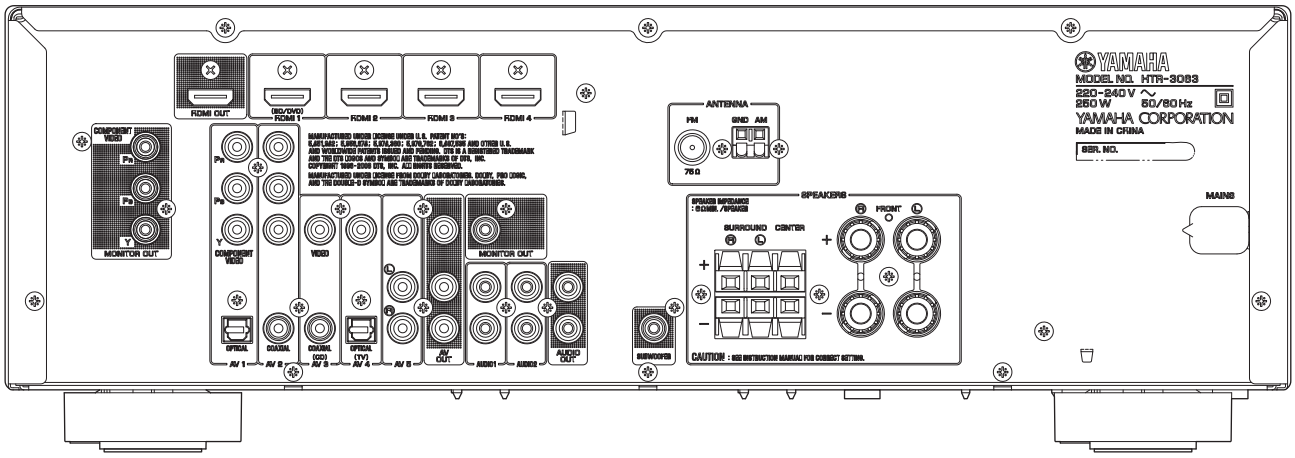
HTR-3063 (A model)



HTR-3063 (G, E, F models)

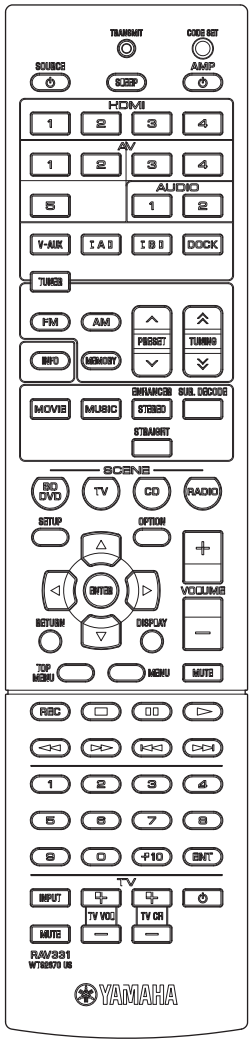


HTR-3063 (L model)

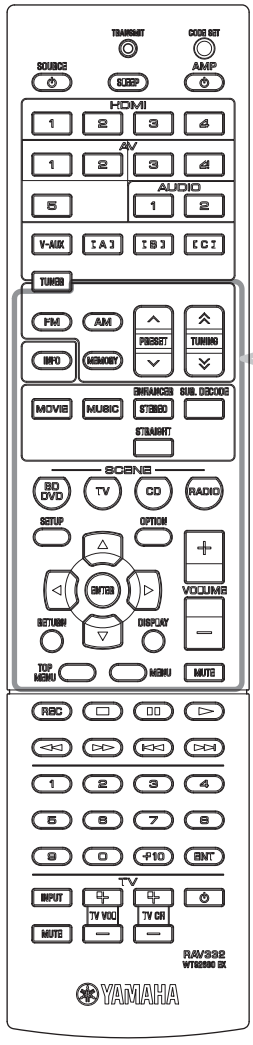


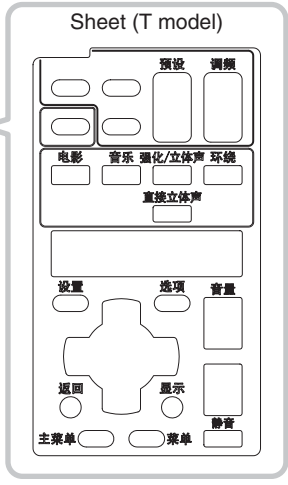
■ REMOTE CONTROL PANELS

RAV331
(U, C models)

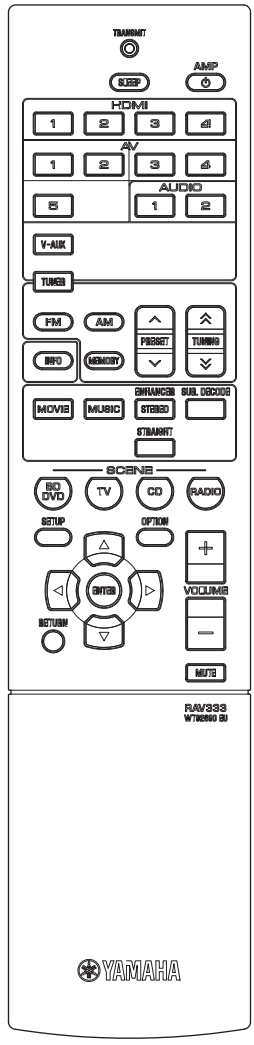


RAV332
(R, T, K, A, L models)





RAV333
(B, G, E, F models)



■ SPECIFICATIONS

■ Audio Section

Minimum RMS Output Power (Power Amp. Section)
(1 kHz, 0.9 % THD)

U, C models (8 ohms)
FRONT L/R ..... 100 W/ch
CENTER ..... 100 W
SURROUND L/R ..... 100 W/ch

R, T, K, A, B, G, F, L models (6 ohms)
FRONT L/R ..... 100 W/ch
CENTER ..... 100 W
SURROUND L/R ..... 100 W/ch

Maximum Power (JEITA) (1 kHz, 10 % THD, 6 ohms)
[R, T, K, L models]
FRONT L/R ..... 135 W/ch
CENTER ..... 135 W
SURROUND L/R ..... 135 W/ch

Max. Power Per Channel (1 kHz, 0.7 % THD, 4 ohms)
[B, G, F, L models]
FRONT L/R ..... 120 W/ch
CENTER ..... 120 W
SURROUND L/R ..... 120 W/ch

IEC Power (1 kHz, 0.9 % THD, 8 ohms) [B, G, F, L models]
FRONT L/R ..... 95 W/ch

Dynamic Power Per Channel (IHF) (FRONT L/R drive)

U, C models
(8/6/4/2 ohms) ..... 110/130/160/180 W

R, T, K, A, B, G, F, L models
(6/4/2 ohms) ..... 105/130/150 W

Dynamic Headroom [U, C models]
(8 ohms) .....0.23 dB

Input Sensitivity/Input Impedance
AV5, etc. ..... 200 mV / 47 k-ohms

Maximum Input Signal (1 kHz, 0.5 % THD, Effect on)
AV5, etc. .....2.3 V or more

Output Level/Output Impedance

AUDIO OUT (REC) ..... 200 mV / 1.2 k-ohms

SUBWOOFER (2 ch STEREO and FRONT SP: Small)
..... 1 V / 1.2 k-ohms

Headphone Jack Rated Output/Impedance
AV5, etc. (1 kHz, 50 mV, 8 ohms) ..... 100 mV / 470 ohms

Frequency Response (10 Hz to 100 kHz)
AV5, etc. to FRONT L/R .....0 / -3.0 dB

Total Harmonic Distortion (1 kHz, 50 W)
AV5, etc. (straight) to FRONT L/R SP OUT

U, C models
(8 ohms) .....0.06 % or less

R, T, K, A, B, G, F, L models
(6 ohms) .....0.06 % or less

Signal to Noise Ratio (IHF-A Network)
AV5, etc. (STEREO) (Input shorted) to SP OUT
250 mV ..... 98 dB or more

Residual Noise (IHF-A Network)
FRONT L/R SP OUT .....150 µV or less

Channel Separation
AV5, etc. (Input 5.1 k-ohms shorted, 1 kHz / 10 kHz)
..... 60 dB or more / 45 dB or more

Volume Control
..... MUTE / -80 dB to +16.5 dB / 0.5 dB step

Tone Control Characteristics

BASS
Boost/Cut ..... ±10 dB / 2 dB step / 50 Hz
Turnover frequency .....350 Hz

TREBLE
Boost/Cut .....±10 dB / 2 dB step / 20 kHz
Turnover frequency .....3.5 kHz

Filter Characteristics

FRONT, CENTER, SURROUND (H.P.F.)
.....fc=40/60/80/90/100/110/120/160/200 Hz, 12 dB/oct.

SUBWOOFER (L.P.F.)
.....fc=40/60/80/90/100/110/120/160/200 Hz, 24 dB/oct.

■ Video Section

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

Component Signal Level

Y .....1 Vp-p / 75 ohms

P_B/P_R .....0.7 Vp-p / 75 ohms

Video Maximum Input Level (VIDEO COMV. OFF)
..... 1.5 Vp-p or more

Signal to Noise Ratio (IHF)
..... 50 dB or more

Monitor Out Frequency Response
Component video signal .....5 Hz to 60 MHz, ±3 dB

■ FM Section

Tuning Range

U, C models .....87.5 to 107.9 MHz

R, L models .....87.5 to 108.0 / 87.50 to 108.00 MHz

T, K, A, B, G, F models .....87.50 to 108.00 MHz

50 dB Quieting Sensitivity (IHF) (1 kHz, 100 % Mod.)
Mono .....3 µV (20.8 dBf)

Signal to Noise Ratio (IHF)

Mono .....74 dB

Stereo .....69 dB

Harmonic Distortion (1 kHz)

Mono ..... 0.3 %

Stereo ..... 0.3 %

Antenna Input
..... 75 ohms unbalanced

■ AM Section

Tuning Range

U, C models ..... 530 to 1,710 kHz

R, L models ..... 530 to 1,710 / 531 to 1,611 kHz

T, K, A, B, G, F models ..... 531 to 1,611 kHz

Antenna Input

..... Loop antenna

■ General

Power Supply

U, C models ..... AC 120 V, 60 Hz

R model ..... AC 110-120/220-240 V, 50/60 Hz

T model ..... AC 220 V, 50 Hz

K model ..... AC 220 V, 60 Hz

A model ..... AC 240 V, 50 Hz

B, G, F models ..... AC 230 V, 50 Hz

L model ..... AC 220-240 V, 50/60 Hz

Power Consumption

U, C models ..... 250 W / 320 VA

R, T, K, A, B, G, F, L models ..... 250 W

Standby Power Consumption

U, C, T, K, A, B, G, F models ..... 0.5 W or less

R model ..... 1.0 W or less

Maximum Power Consumption

..... 440 W

Dimensions (W x H x D)

..... 435 x 151 x 315 mm (17-1/8" x 5-7/8" x 12-3/8")

Weight ..... 7.5 kg (16.5 lbs.)

Finish

[RX-V367]

T model ..... Gold color

U, C, R, T, K, A, B, G, F, L models ..... Black color

R, G, F, L models ..... Titanium color

Silver color

[HTR-3063]

T model ..... Gold color

U, C, R, T, K, A, G, F, L models ..... Black color

R, G models ..... Silver color

Accessories

Remote control ..... x 1

Batteries (R03, AAA, UM-4) ..... x 2

Indoor FM antenna (1.4 m) ..... x 1

AM loop antenna (1.0 m) ..... x 1

Optimizer microphone (6.0 m) ..... x 1

Sheet (T model) ..... x 1

* **Specifications are subject to change without notice.**

U ..... ***U.S.A. model***
C ..... ***Canadian model***
R ..... ***General model***
T ..... ***Chinese model***
K ..... ***Korean model***
A ..... ***Australian model***
B ..... ***British model***
G ..... ***European model***
F ..... ***Russian model***
L ..... ***Singapore model***

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dts Digital Surround

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"iPhone" is a trademark of Apple Inc.

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SILENT™ CINEMA

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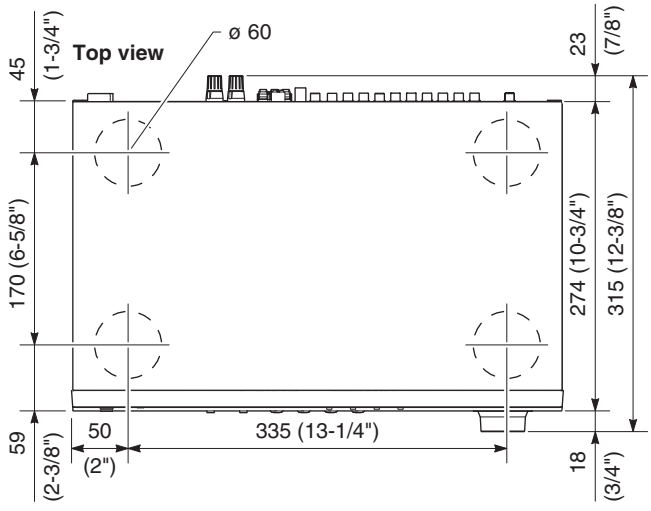
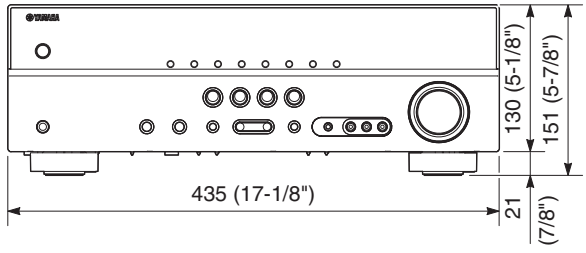
- **DIMENSIONS**



Front view



Unit: mm (inch)

- **SELECT MENU**

Sound field parameters

Category	Program \ Parameter	Decode Type	DSP Level: -6dB to +3dB	Center Level: 0 to 100%	Surround L Level: 0 to 100%	Surround R Level: 0 to 100%	Direct: Auto/Off	Effect Level: High/Low	Panorama: On/Off	Initialize
MOVIE	Standard		●							●
	Spectacle		●							●
	Sci-Fi		●							●
	Adventure		●							●
	Drama		●							●
	Mono Movie		●							●
	Sports		●							●
	Action Game		●							●
	Roleplaying Game		●							●
MUSIC	Hall in Munich		●							●
	Hall in Vienna		●							●
	Chamber		●							●
	Cellar Club		●							●
	The Roxy Theatre		●							●
	The Bottom Line		●							●
	Music Video		●							●
STEREO	2ch Stereo						●			●
	5ch Stereo			●	●	●				●
MUSIC ENHANCER	Straight Enhancer							●		●
	5ch Enhancer							●		●
SUR. DECODE	Surround Decoder	● *1							△	●
STRAIGHT										

△ : Setting is possible only when Pro Logic II Music is selected using decode type.
Decode Type で Pro Logic II Music を選択時のみ設定可

*1 Decode Type

Decode Type	Pro Logic
	PL II Movie
	PL II Music
	PL II Game

- **SET MENU TABLE**

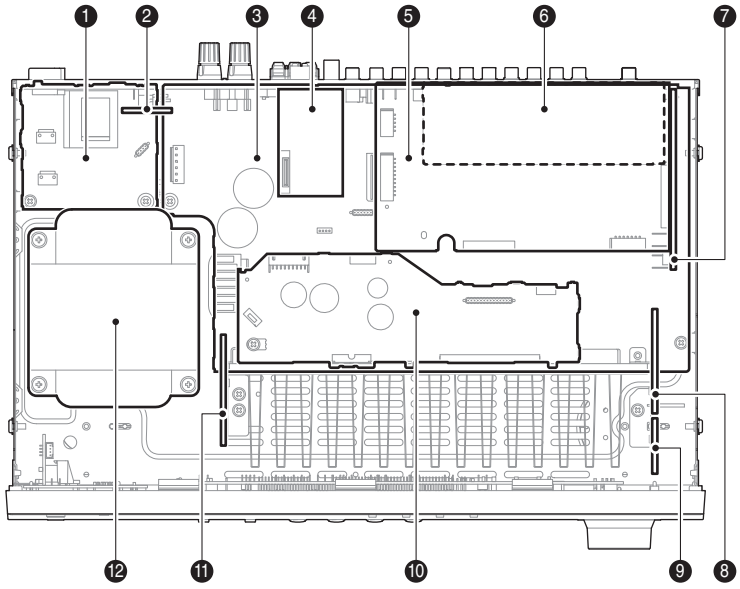
MAIN MENU	SUB-MENU	PARAMETER	VALUE [INITIAL VALUE]
1 Speaker Setup			
	1 Config	Subwoofer	[Yes] / None
		Front speaker	Small / [Large]
		Center speaker	None / [Small] / Large
		Surround speaker L/R	
		Crossover	40 / 60 / [80] / 90 / 100 / 110 / 120 / 160 / 200 Hz
		Subwoofer Phase	[NRM] / REV
		Extra Bass	On / [Off]
	2 Level	FL (Front speaker L)	-10.0 to +10.0 dB, [0 dB], 0.5 dB step
		FR (Front speaker R)	
		C (Center speaker)	-10.0 to +10.0 dB, [-1.0 dB], 0.5 dB step
		SL (Surround speaker L)	
		SR (Surround speaker R)	
		SWFR (Subwoofer)	-10.0 to +10.0 dB, [0 dB], 0.5 dB step
	3 Distance	Unit	meters (m) / [feet (ft)]
		Front L	0.30 to 24.00 m, [3.00 m], 0.1 m step
		Front R	1.0 to 80.0 ft, [10.0 ft], 0.5 ft step
		Center	0.30 to 24.00 m, [2.60 m], 0.1 m step 1.0 to 80.0 ft, [8.5 ft], 0.5 ft step
		Sur. L	0.30 to 24.00 m, [2.40 m], 0.1 m step
		Sur. R	1.0 to 80.0 ft, [8.0 ft], 0.5 ft step
		SWFR	0.30 to 24.00 m, [3.00 m], 0.1 m step 1.0 to 80.0 ft, [10.0 ft], 0.5 ft step
	4 Equalizer	EQ Type Select	[GEQ] / Off
		GEQ	* "GEQ" is available only when "EQ Type Select" is set to "GEQ".
		Front L 63 Hz ······||····· 0 dB	-6.0 to +6.0 dB, [0 dB], 0.5 dB step
		Front R 160 Hz ······||····· 0 dB	
		Center 400 Hz ······||····· 0 dB	
		Sur. L 1 kHz ······||····· 0 dB	
		Sur. R 2.5 kHz ······||····· 0 dB	
		6.3 kHz ······||····· 0 dB	
		16 kHz ······||····· 0 dB	
	5 Test Tone		[Off] / On
2 Sound Setup			
	1 Lipsync	HDMI Auto	[Off] / On
		Auto	0 to 240 ms, 1 ms step
		Manual	0 to 240 ms, [0 ms], 1 ms step
	2 Adaptive DRC		Auto / [Off]
	3 D.Range		[Max] / STD / Min
	4 Max Volume		-30.0 to +15.0 dB / +16.5 dB (Maximum volume), [+16.5 dB], 5.0 dB step
	5 Init. Volume		Off, Mute, -80 dB to +16.5 dB [Off], 0.5 dB step
	6 HDMI Audio Out		[Amp] / TV / Amp+TV
3 Function Setup			
	1 Input Rename		Input is possible to 9 characters Input possible Character type Capital : A to Z Small : a to z Figure : 0 to 9 Symbols : # * + , - etc. Space
	2 Auto Power Down		[Off] / 4 hours / 8 hours / 12 hours
	3 Dimmer		-4 to 0, [0]

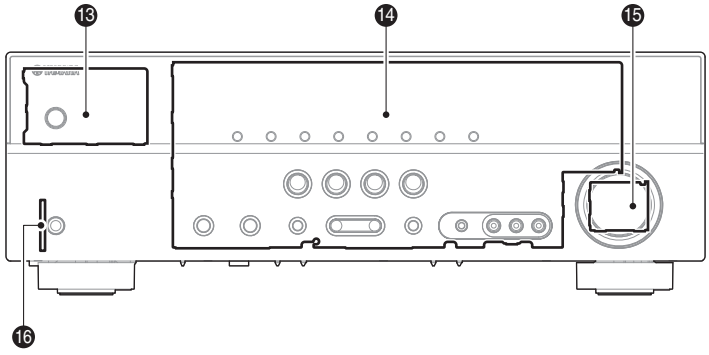
MAIN MENU	SUB-MENU	PARAMETER	VALUE [INITIAL VALUE]
4 DSP Parameter			
MOVIE	Standard	[2], [9]	
	Spectacle		
	Sci-Fi		
	Adventure		
	Drama		
	Mono Movie		
	Sports		
	Action Game		
	Roleplaying Game		
MUSIC	Hall in Munich	[2], [9]	
	Hall in Vienna		
	Chamber		
	Cellar Club		
	The Roxy Theatre		
	The Bottom Line		
	Music Video		
STEREO	2ch Stereo	[6], [9]	
	5ch Stereo	[3], [4], [5], [9]	
MUSIC ENHANCER	Straight Enhancer	[7], [9]	
	5ch Enhancer	[7], [9]	
SUR. DECODE	Sur. Decoder	[1], [8], [9]	
STRAIGHT			

[1]	Decode Type	Pro Logic, PL II Movie, PL II Music, PL II Game
[2]	DSP Level	-6 to +3 dB, [0 dB]
[3]	Center Level	0 to 100 %, [100 %]
[4]	Surround L Level	
[5]	Surround R Level	
[6]	Direct	[Auto] / Off
[7]	Effect Level	[High] / Low
[8]	Panorama	[Off] / On
[9]	Initialize	

5 Memory Guard	[Off] / On

■ INTERNAL VIEW





❶ OPERATION (3) P.C.B.
❷ MAIN (3) P.C.B. (R model)
❸ MAIN (1) P.C.B.
❹ AM/FM TUNER
❺ DIGITAL P.C.B.
❻ MAIN (2) P.C.B.
❼ OPERATION (4) P.C.B.
❽ MAIN (4) P.C.B.
❾ OPERATION (9) P.C.B.
❿ OPERATION (2) P.C.B.
⓫ OPERATION (8) P.C.B.
⓬ POWER TRANSFORMER
⓭ OPERATION (7) P.C.B.
⓮ OPERATION (1) P.C.B.
⓯ OPERATION (6) P.C.B.
⓰ OPERATION (5) P.C.B.

■ DISASSEMBLY PROCEDURES

(Remove parts in the order as numbered.)
Disconnect the power cable from the AC outlet.

1. Removal of Top Cover

a. Remove 5 screws (①) and 4 screws (②). (Fig. 1)
b. Slide the top cover rearward to remove it. (Fig. 1)

2. Removal of Front Panel Unit

a. Remove 7 screws (③). (Fig. 1)
b. Remove CB166, CB193 and CB221. (Fig. 1)
c. Unlock and remove CB136. (Fig. 1)
d. Release hook and then remove the front panel unit. (Fig. 1)

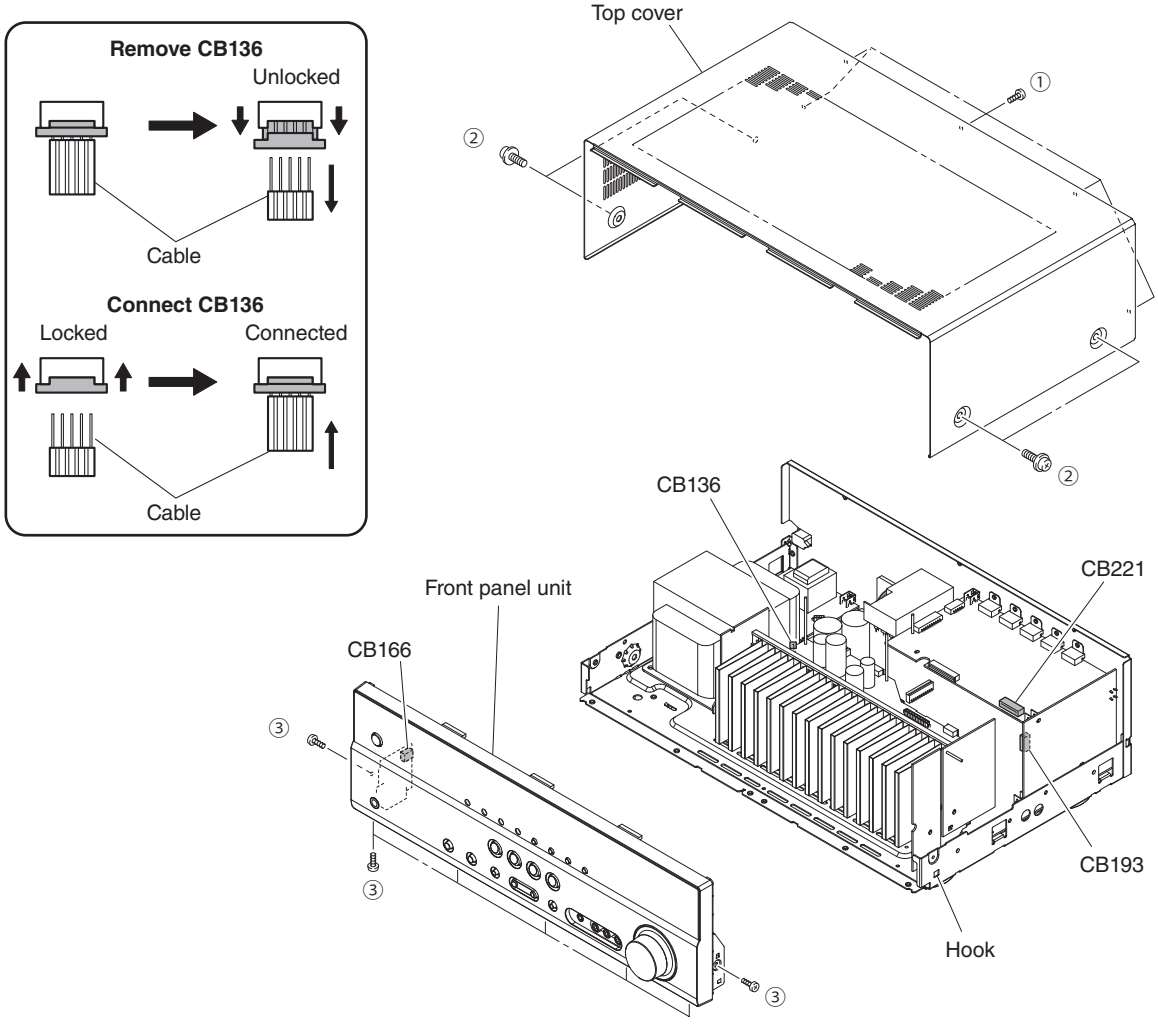


Fig. 1

3. Removal of DIGITAL P.C.B.

a. Remove CB222–223 and CB262. (Fig. 2)
b. Remove 2 screws (U, C models)/1 screw (R, T, K, A, B, G, L models) (④) and 5 screws (⑤). (Fig. 3)
c. Remove the DIGITAL P.C.B. which is connected directly to the OPERATION (4) P.C.B. with board-to-board connectors. (Fig. 2)

4. Removal of OPERATION (4) P.C.B.

a. Remove CB194. (Fig. 2)
b. Remove screw (⑥) and 2 screws (⑦). (Fig. 3)
c. Remove the OPERATION (4) P.C.B. which is connected directly to the MAIN (1) P.C.B. with board-to-board connectors. (Fig. 2)

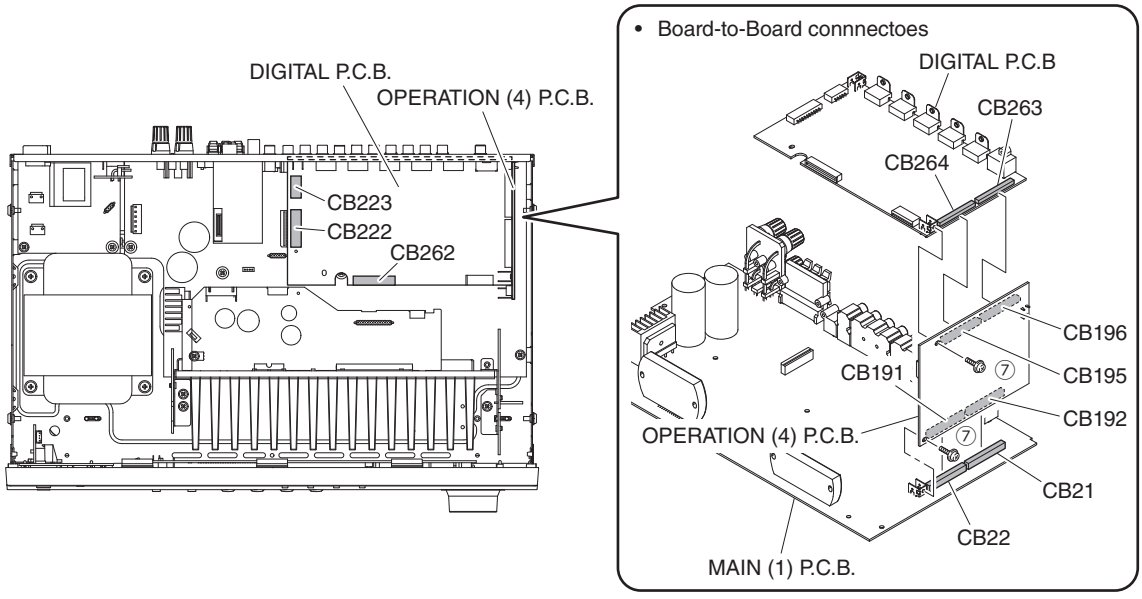


Fig. 2

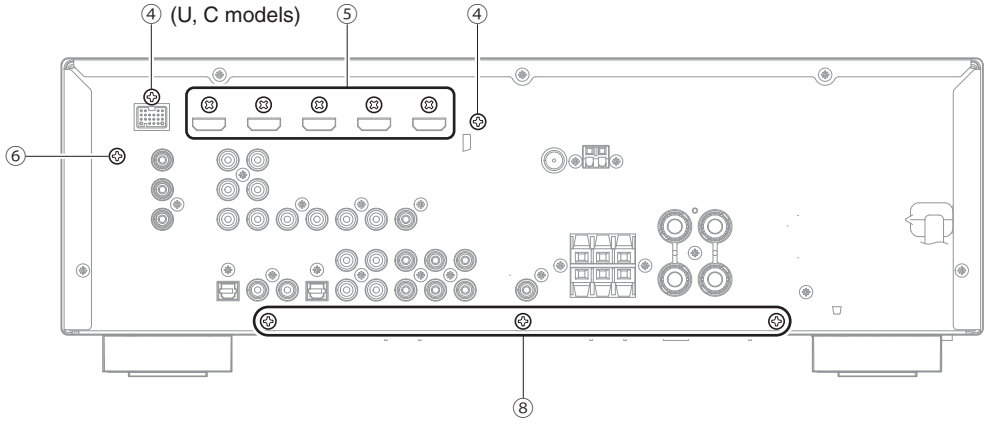


Fig. 3

When checking the P.C.B.

a. Remove the top cover. (Fig. 1)
b. Remove 3 screws (⑧). (Fig. 3)
c. Remove 5 screws (⑨) and 4 screws (⑩). (Fig. 4)
d. Place the P.C.B.s (with rear panel) upright. (Fig. 5)
e. Connect the ground of heat sink, rear panel and MAIN (1) P.C.B. (G3) to the chassis with a ground lead or the like. (Fig. 5)

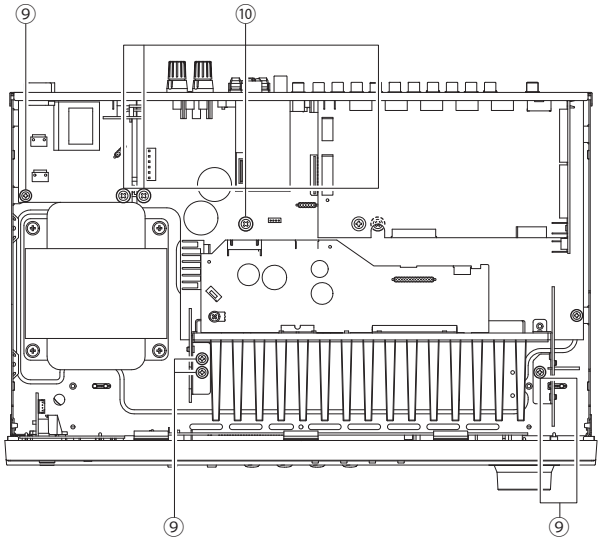


Fig. 4

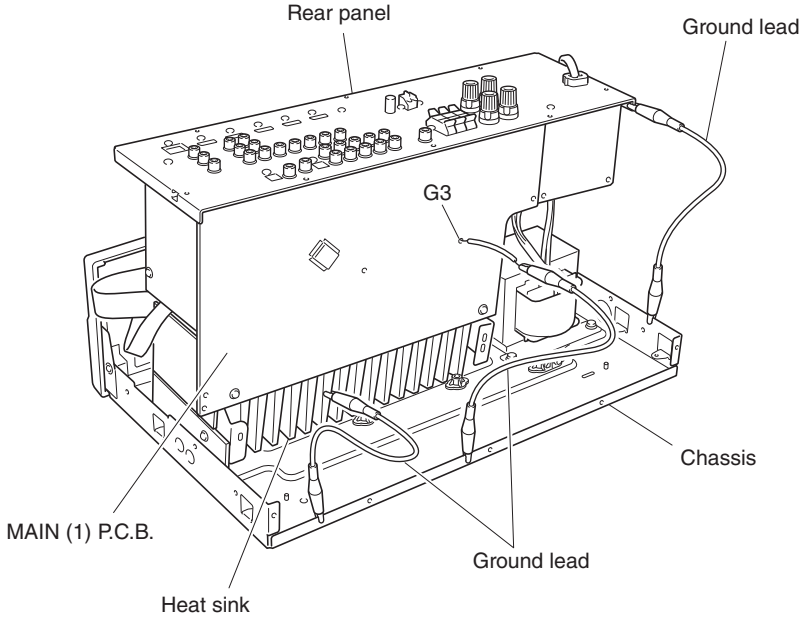


Fig. 5

■ UPDATING FIRMWARE

Note) Updating the firmware restores all the set up information (soundfield parameters, system memory and tuner presetting, etc.) to the original factory settings.

When the following parts are replaced, the firmware must be updated to the latest version.

DIGITAL P.C.B.

Microprocessor (IC221, DIGITAL P.C.B.)

● Confirmation of firmware version and checksum

Before and after updating the firmware, check the firmware version and checksum by using the self-diagnostic function menu.

Start up the self-diagnostic function and select “25. ROM VER/SUM/PORT” menu.

Using the sub-menu, have the firmware version and checksum displayed, and note them down.
(See “SELF-DIAGNOSTIC FUNCTION”)

* When the firmware version is different from written one after updating, perform the updating procedure again from the beginning.

● Initializing the back-up IC (EEPROM: IC222 of the DIGITAL P.C.B.)

After updating the firmware, the back-up IC MUST be initialized by the following procedure to have proper memorization of the set up information (soundfield parameters, system memory and tuner presetting, etc.).

Start up the self-diagnostic function and select “24. FACTORY PRESET” menu. (See “SELF-DIAGNOSTIC FUNCTION”)

Select “24. PRESET RSRV”, press the “⏻” (Power) key of this unit to turn off the power once and turn on the power again. Then the back-up IC is initialized.

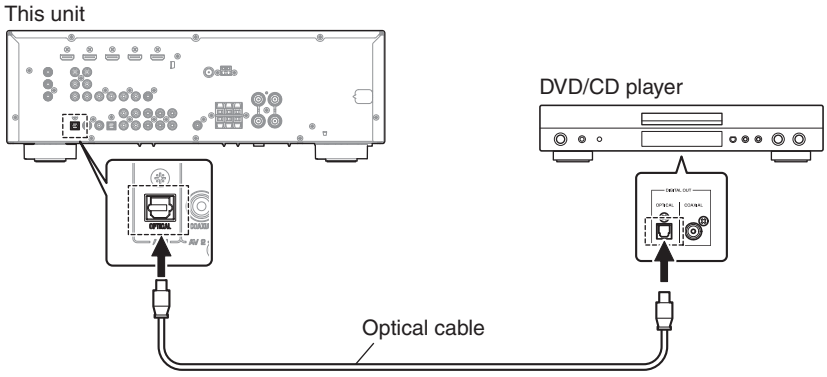
● Required Tools

- DVD or CD player (with DIGITAL OUTPUT (OPTICAL or COAXIAL) jack)
- Optical cable (when OPTICAL jack is used)
- Digital audio pin cable (when COAXIAL jack is used)
- Firmware CD
  * Download the latest firmware from the specified download source and create the firmware CD.

Connection

Connect this unit and DVD/CD player as shown below. (Fig. 1)

Example of connection between digital OPTICAL jacks



Example of connection between digital COAXIAL jacks

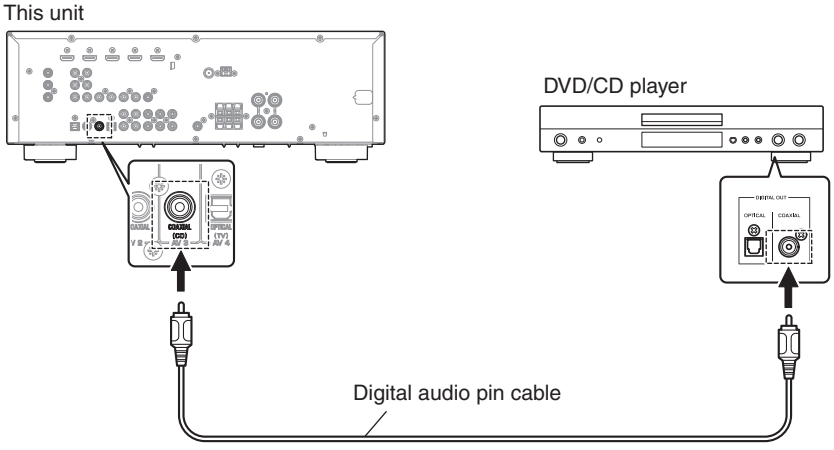
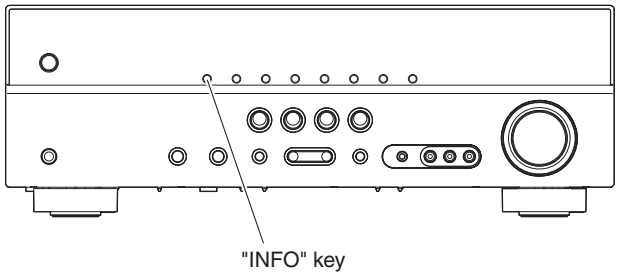


Fig. 1

● Operation Procedures

1. While pressing the “INFO” key of this unit, connect the power cable of this unit to the AC outlet. (Fig. 2)
   The FIRMWARE UPDATE mode is activated and “CDDA Upgrader” is displayed. (Fig. 2)



Display

CDDA Upgrader

Fig. 2

2. Eject the disc tray of the DVD/CD player, load the firmware CD on it and press the “PLAY” key. Writing of the firmware starts automatically. (Fig. 3)
3. When writing of the firmware is completed, “Update Success”, “Please...” and “Power off!!” are displayed repeatedly. (Fig. 3)

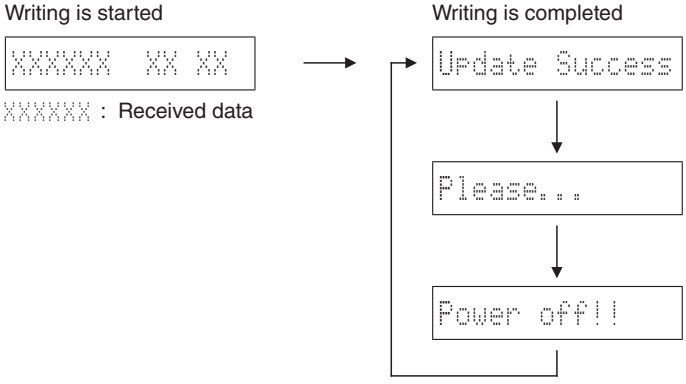


Fig. 3

* When the version of the firmware to be written is the same as the one existing in this unit, “Same Version”, “Please...” and “Power off!!” are displayed repeatedly. (Updating is not necessary.)

If the display remains unchanged for more than 10 seconds after starting the firmware CD play procedure, perform the firmware CD play procedure again from the beginning.

If “FILE CORRUPTED” is displayed after “Address:XXXXXX”, make sure that the written data is not corrupted and perform Steps 1 to 7 of “Operation Procedures” again.

If “Upgrade Failed” is displayed, perform “operation procedures” again from the beginning.

4. Press the “⏻” (Power) key of this unit to turn off the power.
5. Eject the disc tray of the DVD/CD player and unload the firmware CD from it.
6. Start up the self-diagnostic function and check that the firmware version and checksum are the same as written ones. (See “Confirmation of firmware version and checksum”)

■ SELF-DIAGNOSTIC FUNCTION

This unit has self-diagnostic functions that are intended for inspection, measurement and location of faulty point.
There are 26 main menu items, each of which has sub-menu items.
Listed in the table below are main menu items and sub-menu items.
Note that not all menu items listed will apply to the models covered in this service manual.

No.	Main menu	Sub-menu
1	BYPASS	1 ANALOG BYPASS
2	RAM THROUGH	1 RAM MARGIN
		2 RAM FULL ALL
		3 RAM FULL CENTER
		4 RAM FULL SURROUND
		5 RAM FULL SURROUND BACK (Not for service)
3	HDMI AUDIO	1 SPDIF
		2 Multi
		3 DSD
4	SPEAKERS SET	1 FRONT: SML 0dB
		2 CENTER: NONE
		3 LFE/BASS: FRNT
		4 TONE: MAX
		5 TONE: MIN
		6 SPEAKER 6-ohms (Not for service)
5	LIMITER CONTROL (Not for service)	1 AC_B: Hi
		2 AC_B: Lo
		3 LIM/PLDET/THM
6	MIC CHECK (R, K, A, B, G, F, L models)	1 MIC CHECK
7	FL/MONITOR CHECK	1 INITIAL DISPLAY
		2 ALL SEGMENT OFF/MONITOR (VIDEO) MUTE
		3 ALL SEGMENT ON/MONITOR (COMPONENT) MUTE
		4 DIMMER 50%
		5 CHECK PATTERN
8	MANUAL TEST	1 TEST ALL
9	AD DATA CHECK	1 PS/DC
		2 TH1/TH2
		3 AMP/DK
		4 K1/K2
10	VIDEO CHECK	1 I2C
		2 DIGITAL COMPONENT (Not for service)
		3 DIGITAL CVBS (Not for service)
		4 DIGITAL Y/C (Not for service)
		5 ANALOG BYPASS (Not for service)
11	NO MENU	Invalidity
12	NO MENU	Invalidity
13	NO MENU	Invalidity
14	DOCK	1 DOCK
		2 BT VERSION (Not for service)

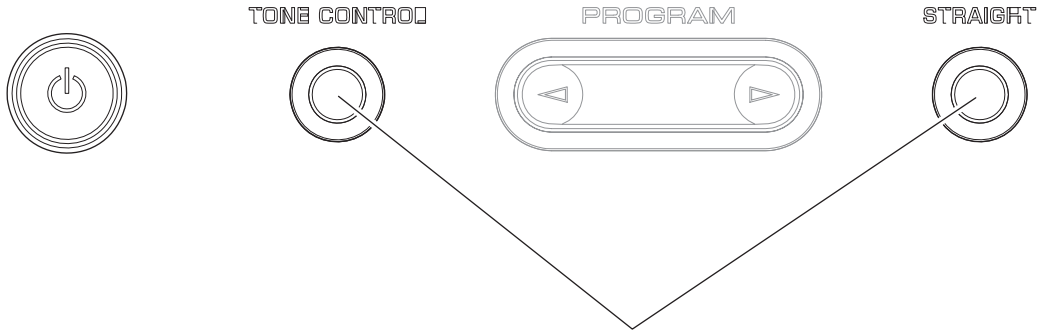
No.	Main menu	Sub-menu
15	HDMI INFORMATION	1 MODEL NAME
		2 PRODUCT ID
		3 VENDOR NAME
16	HDMI SELECT	1 HDMI NONE
		2 HDMI IN 1 ❋❋
		3 HDMI IN 2 ❋❋
		4 HDMI IN 3 ❋❋
		5 HDMI IN 4 ❋❋
17	NO MENU	Invalidity
18	IF STATUS (Not for service)	1 DSP STATUS
19	BUS CHECK	1 TI BUS:
		2 EEPROM:
20	NO MENU	Invalidity
21	PROTECTION HISTORY	1 HISTORY 1
		2 HISTORY 2
		3 HISTORY 3
		4 HISTORY 4
22	SOFT SWITCH	1 SWITCH MODE
		2 MDOEL
		3 DESTINATION
23	UPDATE (Not for service)	1 TI FLASH BOOT
24	FACTORY PRESET	1 PRESET INHIBIT
		2 PRESET RESERVED
25	ROM VER/SUM/PORT	1 FIRMWARE VERSION
		2 ALL CHECKSUM
		3 TI (DSP) FLASH ROM VERSION
		4 TI (DSP) FLASH ROM CHECKSUM
		5 MODEL/DESTINATION
		6 Verify (Not for service)
26	MODEL/DESTINATION (Not for service)	1 MODEL/DEST
		2 M/D:

● Starting Self-Diagnostic Function

While pressing the “TONE CONTROL” and “STRAIGHT” keys of this unit as shown in the figure below, press the “⏻” (Power) key of this unit to turn on the power.

The self-diagnostic function mode is activated.

Keys of this unit



While pressing these keys, turn on the power.

● Starting Self-Diagnostic Function in the protection cancel mode

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

While pressing the “TONE CONTROL” and “STRAIGHT” keys as shown in the figure above, press the “⏻” (Power) key to turn on the power and keep pressing those 2 keys and the “⏻” (Power) key for 3 seconds or longer.

The self-diagnostic function mode is activated with the protection functions disabled.

In this mode, the “SLEEP” segment of the FL display of this unit flashes to indicate that the mode is self-diagnostic function mode with the protection functions disabled.

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

● Canceling Self-Diagnostic Function

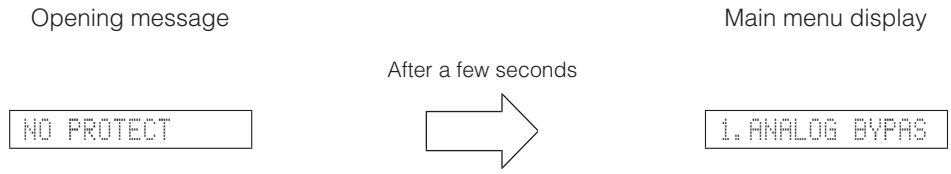
1. Before canceling self-diagnostic function, execute setting for FACTORY PRESET of main menu No.24. (Memory initialization inhibited or Memory initialized).
   * In order to keep the user memory preserved, be sure to select PRESET INHIBITED (Memory initialization inhibited).
2. Press the “⏻” (Power) key of this unit to turn off the power.

● Display provided when Self-Diagnostic Function started

The display is as described below depending on the situation when the last time the power to this unit is turned off.

1. When the power is turned off by usual operation:

The FL display of this unit displays “NO PROTECT” then the main menu (sub-menu “1. ANALOG BYPAS” of main menu 1 BYPASS) a few seconds later.



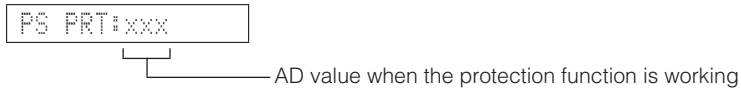
2. When the protection function worked to turn off the power:

The FL display of this unit displays the data of protection function which worked at that time then the main menu (sub-menu “1. ANALOG BYPAS” of main menu 1 BYPASS) a few seconds later.

Note: At that time if you reactivate the self-diagnostic function after turning off the power once by pressing the “⏻” (Power) key, “NO PROTECT” will be displayed because that situation is equal to “1. When the power is turned off by usual operation:” described above.

However the protection function history is stored in a back-up IC with a backup. For details, refer to main menu 21 PROTECTION HISTORY.

2-1. When the protection function worked due to excess current.



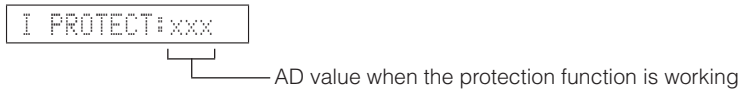
Cause: An excessive current flowed through the power amplifier.
Supplementary information: As current of the power amplifier is detected, the abnormal channel can be identified by checking the current detect transistor.

Turning on the power without correcting the abnormality will cause the protection function to work immediately and the power supply will instantly be shut off.

Notes)

- **Applying the power to this unit without correcting the abnormality can be dangerous and cause additional circuit damage. To avoid this, if “PRI” and “PRD” protection function has been activated 3 times continuously, the power will not turn on even when the “⏻” (Power) key is pressed.**
  In order to turn on the power again, disconnect the power cable of this unit from the AC outlet once and then reconnect it again.
- **The output transistors in each amplifier channel should be checked for damage before applying power to this unit.**
- **Amplifier current should be monitored by measuring DC voltage across the emitter resistors for each channel.**

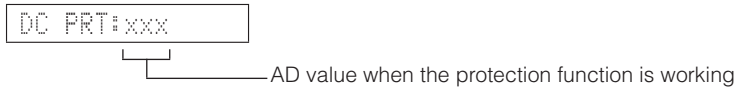
2-2. When the protection function worked due to a short between speaker terminals.



Cause: The line between speaker terminals is shorted.
Supplementary information: As the excess current is detected after operation of the speaker relay, the shorted speaker terminal and the connected speaker can be identified.

Turning on the power without correcting the abnormality will cause the protection function to work immediately and the power supply will instantly be shut off.

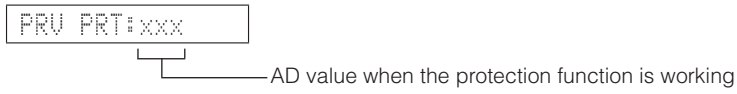
2-3. When the protection function worked due to abnormal DC output.



Cause: DC output of the power amplifier is abnormal.
Supplementary information: The protection function worked due to a DC voltage appearing at the speaker terminal. A cause could be a defect in the amplifier.

Turning on the power without correcting the abnormality will cause the protection function to work in 3 seconds and the power supply will be shut off.

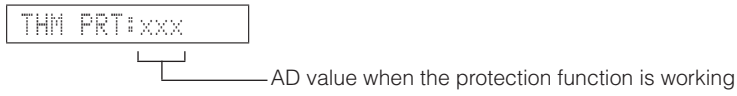
2-4. When the protection function worked due to abnormal voltage in the power supply section.



Cause: The voltage in the power supply section is abnormal.
Supplementary information: The protection function worked due to a defect or overload in the power supply.

Turning on the power without correcting the abnormality will cause the protection function to work in 1 seconds and the power supply will be shut off.

2-5. When the protection function worked due to excessive heatsink temperature.



Cause: The temperature of the heatsink is excessive.
Supplementary information: The protection function worked due to the temperature limit being exceeded.
Causes could be poor ventilation or a defect related to the thermal sensor.

Turning on the power without correcting the abnormality will cause the protection function to work in 1 seconds and the power supply will be shut off.

* For detection of each protection function, refer to main menu described later.

● 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 will be initialized when self-diagnostic function is cancelled by selecting No. 24-2. PRESET RESERVED (Memory initialized) sub-menu.

● Operation procedure of Main menu and Sub-menu

There are 26 main menu items, each of having sub-menu items.

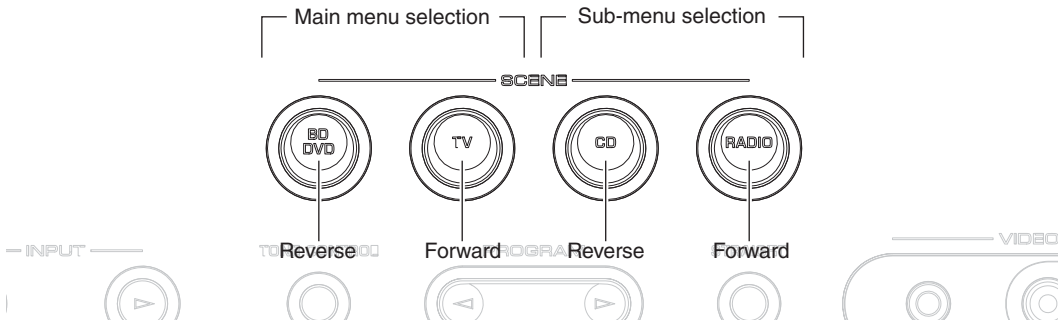
Main menu selection

Select the menu using “SCENE TV” (forward) and “SCENE BD/DVD” (reverse) keys.

Sub-menu selection

Select the sub-menu using “SCENE RADIO” (forward) and “SCENE CD” (reverse) keys.

Keys of this unit



● Functions in Self-Diagnostic Function mode

In addition to the self-diagnostic function menu items, functions as listed below are available.

- Power ON/OFF
- Master volume
- Muting
- Input selection

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

● Initial settings used to start Self-Diagnostic Function

The following initial settings are used when starting self-diagnostic function.
When self-diagnostic function is canceled, these settings are restored to those before starting self-diagnostic function.

- Master volume: -20 dB
- Input: AV5
- Main menu: 1. ANALOG BYPASS
- Speaker setting: LARGE, Bass out to SWFR (All channels)

● Details of Self-Diagnostic Function menu

1. BYPASS

Using the sub-menu, it is possible to select ANALOG BYPASS output.

1-1. ANALOG BYPASS

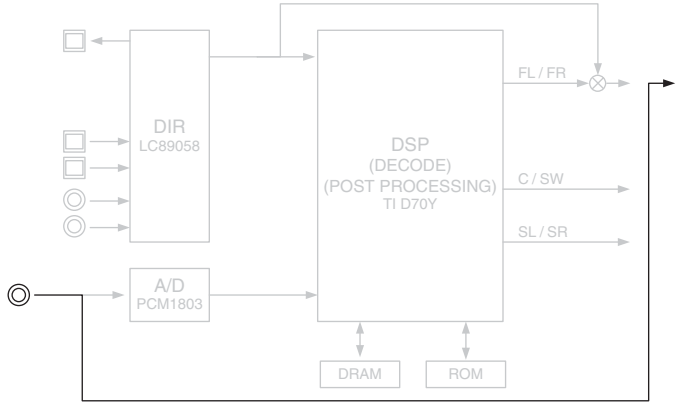
The analog input audio signal is output to FRONT L/R in DIRECT mode.

1.ANALOG BYPAS

INPUT: AV5 ANALOG
SPEAKER OUT: 1 kHz, SUBWOOFER OUTPUT: 50 Hz

Input level	Volume	SPEAKER OUTPUT			SUBWOOFER OUTPUT
		FRONT	CENTER	SURROUND	
Both ch, -20 dBm	+6.5 dB	+11.5 dBm	-∞	-∞	-∞

ANALOG BYPASS



(Shaded items not used in this example)

2. RAM THROUGH

Using the sub-menu, it is possible to select MARGIN output or FULL BIT output.

2-1. RAM MARGIN

The audio signal is output including the head margin.

2.RAM MARGIN

INPUT: AV5 ANALOG
SPEAKER OUT: 1 kHz, SUBWOOFER OUTPUT: 50 Hz

Input level	Volume	SPEAKER OUTPUT			SUBWOOFER OUTPUT
		FRONT	CENTER	SURROUND	
Both ch, -20 dBm	+6.5 dB	+11.5 dBm	+11.5 dBm	+11.5 dBm	-6.5 dBm

2-2. RAM FULL ALL

The audio signal is output to all channels in digital full bit without including the head margin.
The SUBWOOFER signal is output but not in digital full bit.

2.RAM FULL ALL

INPUT: AV5 ANALOG
SPEAKER OUT: 1 kHz, SUBWOOFER OUTPUT: 50 Hz

Input level	Volume	SPEAKER OUTPUT			SUBWOOFER OUTPUT
		FRONT	CENTER	SURROUND	
Both ch, -20 dBm	+6.5 dB	+11.5 dBm	+11.5 dBm	+11.5 dBm	-6.5 dBm

2-3. RAM FULL CENTER

The audio signal is output to only CENTER channel in digital full bit without including the head margin.

2.RAM FULL C

INPUT: AV5 ANALOG
SPEAKER OUT: 1 kHz, SUBWOOFER OUTPUT: 50 Hz

Input level	Volume	SPEAKER OUTPUT			SUBWOOFER OUTPUT
		FRONT	CENTER	SURROUND	
Both ch, -20 dBm	+6.5 dB	-∞	+11.5 dBm	-∞	-∞

2-4. RAM FULL SURROUND

The audio signal is output to only SURROUND L/R channels in digital full bit without including the head margin.

2.RAM FULL SUR

INPUT: AV5 ANALOG
SPEAKER OUT: 1 kHz, SUBWOOFER OUTPUT: 50 Hz

Input level	Volume	SPEAKER OUTPUT			SUBWOOFER OUTPUT
		FRONT	CENTER	SURROUND	
Both ch, -20 dBm	+6.5 dB	-∞	-∞	+11.5 dBm	-∞

2-5. RAM FULL SURROUND BACK

Not for service.

2.RAM FULL SB

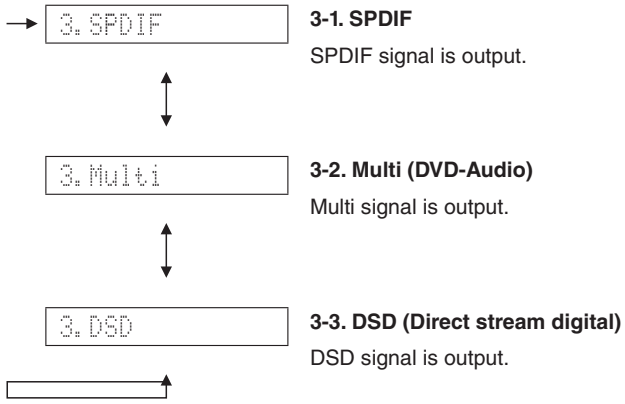
INPUT: AV5 ANALOG
SPEAKER OUT: 1 kHz, SUBWOOFER OUTPUT: 50 Hz

Input level	Volume	SPEAKER OUTPUT			SUBWOOFER OUTPUT
		FRONT	CENTER	SURROUND	
Both ch, -20 dBm	+6.5 dB	-∞	-∞	-∞	-∞

3. HDMI AUDIO

Using the sub-menu, the audio signals input to HDMI IN are selected and output.

* When selecting “DSD”, be sure to connect an HDMI unit equipped with DSD output function to this unit.



3-1. SPDIF
SPDIF signal is output.

3-2. Multi (DVD-Audio)
Multi signal is output.

3-3. DSD (Direct stream digital)
DSD signal is output.

4. SPEAKER SET

The analog switch settings for each sub-menu are as shown in the table below.

	FRONT	CENTER	SURROUND	SUBWOOFER
FRONT : SML 0dB	SMALL	LARGE	LARGE	SWFR
CENTER : NONE	LARGE	NONE	LARGE	SWFR
LFE/B : FRONT	LARGE	SMALL	SMALL	FRONT
TONE : MAX	LARGE	LARGE	LARGE	SWFR
TONE : MIN	LARGE	LARGE	LARGE	SWFR
SPEAKER 6-ohm	LARGE	LARGE	LARGE	SWFR

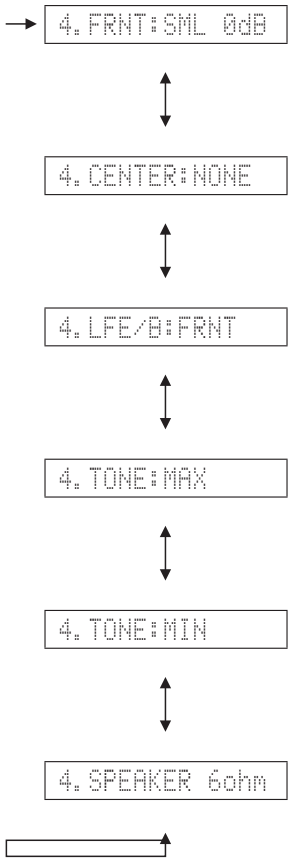
LARGE: This mode is used for a speaker with high bass reproduction performance (a large unit). Full bandwidth signals are output.

SMALL: This mode is used for a speaker with low bass reproduction performance (a small unit).
The signals of 90 Hz or less are mixed into the channel specified by LFE/BASS.

NONE: This mode is used for no center speaker.
The center content is reduced by 3 dB and distributed to FRONT L/R.

SWFR: LFE of 5.1 channel signal or LFE/BASS lower than 90 Hz is output through SUBWOOFER OUT.

FRONT: LFE of 5.1 channel signal or LFE/BASS lower than 90 Hz is distributed to FRONT L/R.



4-1. FRONT: SML 0dB

The FRONT L/R signal, when 90 Hz or lower, is mixed to the channel specified by LFE/BASS.

4-2. CENTER: NONE

The CENTER signal is distributed to FRONT L/R.

4-3. LFE / BASS: FRONT

The LFE/BASS signal is distributed to FRONT L/R.

4-4. TONE: MAX

The audio signal is output with the tone control “BASS +10 dB”, “TREBLE +10 dB”.

4-5. TONE: MIN

The audio signal is output with the tone control “BASS +10 dB”, “TREBLE +10 dB”.

4-6. SPEAKER 6 ohms

Not for service.

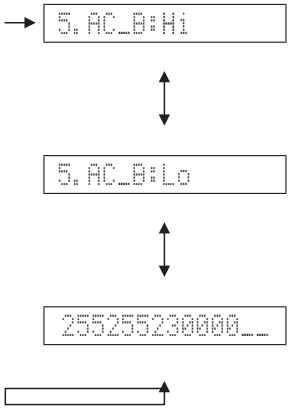
INPUT: AV5 ANALOG
SPEAKER OUT: 1 kHz, SUBWOOFER OUTPUT: 50 Hz

Input level	Volume	SPEAKER OUTPUT			SUBWOOFER OUTPUT
		FRONT	CENTER	SURROUND	
Both ch, -20 dBm	+6.5 dB	+11.5 dB	+11.5 dB	+11.5 dB	-1.5 dB
Both ch, -20 dBm	+6.5 dB	+16.0 dB	-∞	+11.5 dB	-6.5 dB
Both ch, -20 dBm	+6.5 dB	-∞	+11.5 dB	+11.5 dB	-∞
Both ch, -20 dBm	+6.5 dB	+14.0 dB	+11.5 dB	+11.5 dB	-6.5 dB
Both ch, -20 dBm	+6.5 dB	+8.5 dB	+11.5 dB	+11.5 dB	-6.5 dB
Both ch, -20 dBm	+6.5 dB	+11.5 dB	+11.5 dB	+11.5 dB	-6.5 dB

5. LIMITER CONTROL

Not for service.

* When “5-3. LIM/PLDET/THM” sub-menu is selected, keys become non-operable. However, it is possible to advance to the next main menu by pressing the “SCENE TV” (forward) or “SCENE BD/DVD” (reverse) keys of this unit.



5-1. AC-B: Hi

5-2. AC-B: Lo

5-3. LIM / PLDET / THM

* Do not change the setting value because this item is only for the use of development staff.

6. MIC CHECK (R, K, A, B, G, F, L models)

The signals input through the microphone are output to only FRONT L channel via A/D–D/A.

6.MIC CHK ON

7. FL/MONITOR CHECK

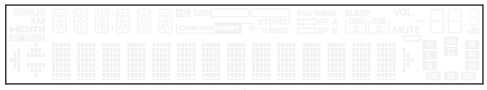
This menu is used to check the FL display and video monitor output.
When checking the video monitor output, connect a TV monitor to this unit with a component video cable and video pin cable.
Using the sub-menu, the FL display and video monitor output change together as shown below.

Checking FL display section | **Check of the Video control section. (Monitor out)**

7-1. INITIAL DISPLAY

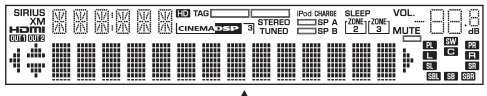
MONITOR output ON

7-2. ALL SEGMENT OFF



MONITOR (VIDEO) output mute

7-3. ALL SEGMENT ON



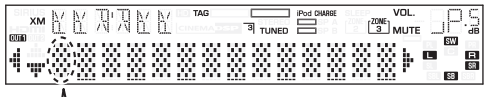
MONITOR (COMPONENT) output mute

* After check, change to next menu at once.

7-4. DIMMER 50 %

MONITOR output ON

7-5. CHECK PATTERN



MONITOR output ON

Lighting in lattice

Short

Normal

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.)

8. MANUAL TEST

The built-in noise generator of DSP outputs the test noise through the channels specified by using the sub-menu.

The noise frequency for subwoofer is 30 to 80 Hz. Other than that, the noise frequency is 500 to 2 kHz.

8-1. TEST ALL

Noise is output from all channels.

```
8.TEST ALL
```

9. A/D DATA CHECK

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

When K1/K2 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 main menu by turning the “VOLUME” knob of this unit.

* Numeric values in the figure are given as reference only.

9-1. PS/DC

PS: Power supply voltage protection detection

Voltage detects: AC2, ±12A, S9, +7D, +5A, +5I, -VP

Normal value: 101 to 155
(Reference voltage: 3.3 V=255)

DC: Power amplifier DC (DC voltage) output is detected.

Normal value: 27 to 88
(Reference voltage: 3.3 V=255)

* If PS or DC becomes out of the normal value range, the protection function works to turn off the power.

```
PS:126 DC:058
```

9-2. TH1/TH2

Temperature of the heatsink is detected.

Normal value: 87 to 255
(Reference voltage: 3.3 V=255)

* If TH1 or TH2 becomes out of the normal value range, the protection function works to turn off the power.

```
TH1:226  2:255
```

9-3. AMP/DK

AMP: Power amplifier output is detected.

Normal value: 128 to 255
(Reference voltage: 3.3 V=255)

DK: DOCK type detection (U, C models)
(Reference voltage: 3.3 V=255)

AMP:255 DK:255

DOCK detection for AD port
Pull-up resistance 10 k-ohms

DOCK type (DKID 141 pin)	Bluetooth	iPod	Wireless iPod	No connected
A/D value (3.3 V=255)	5 – 25	120 – 140		255

9-4. K1/K2

Panel key of this unit is detected.

When the A/D conversion value of the panel key becomes out of the specified range, normal operation will not be available.

In that case, check the constant of voltage dividing resistor, solder condition, etc. Refer to table.
(Reference voltage: 3.3 V=255)

K1:255 K2:255

Display	K1
0 – 11	STRAIGHT
12 – 37	TUNING >>
38 – 64	TUNING <<
65 – 88	AM
79 – 113	FM
114 – 139	PRESET >
140 – 164	PRESET <
165 – 186	MEMORY
187 – 226	INFO
255	KEY OFF

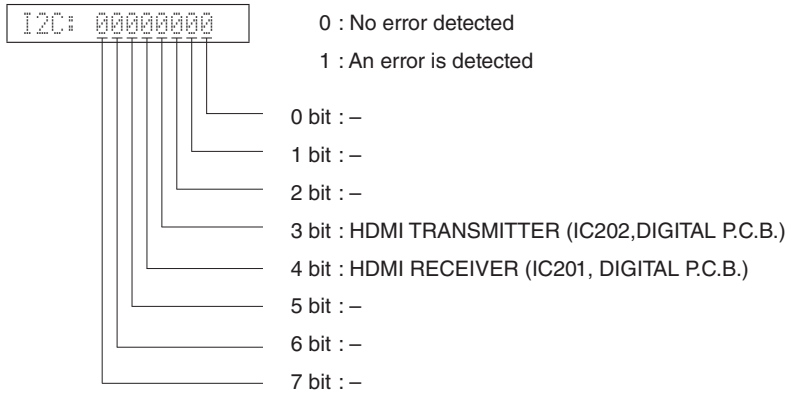
Display	K2
0 – 11	RADIO (SCENE4)
12 – 32	CD (SCENE3)
33 – 54	TV (SCENE2)
55 – 75	BD/DVD (SCENE1)
76 – 96	PROGRAM >
97 – 119	PROGRAM <
120 – 142	INPUT >
143 – 163	INPUT <
164 – 181	–
182 – 197	⏻ (Power)
198 – 209	TONE CONTROL
255	KEY OFF

10. VIDEO CHECK

This menu is used to check the video control section.

10-1. I2C check

The I2C (Inter integrated circuit) bus line connection is checked.



10-2. Digital component

Not for service.

DIGITAL COMP

10-3. Digital CVBS (Video)

Not for service.

DIGITAL CVBS

10-4. Digital Y/C (S-Video)

Not for service.

DIGITAL Y/C

10-5. Analog bypass

Not for service.

ANALOG BYPASS

11. NO MENU

```
11.Invalidity
```

12. NO MENU

```
12.Invalidity
```

13. NO MENU

```
13.Invalidity
```

14. DOCK

14-1. DOCK

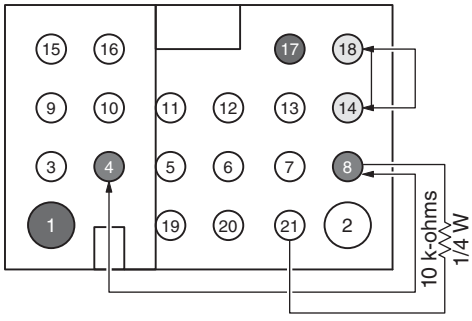
This menu is used to check the DOCK connector without the iPod itself.

With the power to this unit turned off, short between pins No. 14 (TX) and No. 18 (RX), between pins No. 4 (iPDET) and No. 8 (DGND). Also, connect a 10 k-ohms, 1/4 W resistor between pins No. 21 (DKID) and No. 8 (DGND). (Make sure that the power is turned off.)

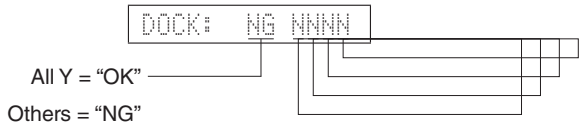
Start up the self-diagnostic function and select this menu.

The check result is displayed according to the following display specifications.

Note) Be sure to return the shorted pins to their original condition after executing this test.



DOCK CONNECTOR



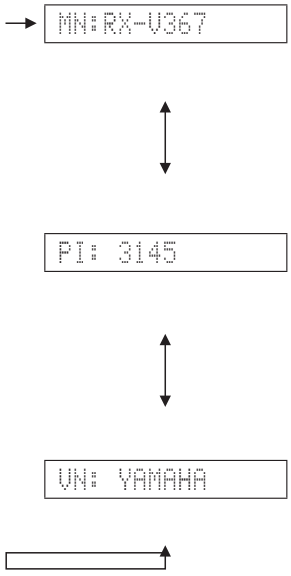
Check item	Short pins	Result		Display
UART loop back test	Pins No.14 (TX) – No.18 (RX)	OK		Y
		NG		N
iPAP (iPod accessory power) detection		IC221 pin No. 64	High = YES	Y
			Low = No	N
iPDET (iPod installation to DOCK) detection	Pins No.4 (iPDET) – No.8 (DGND)	IC221 pin No. 65	Low = installed	Y
			High = not installed	N
DKID (DOCK ID) detection	Pins No.21 (DKID) – No.8 (DGND) * 10 k-ohms, 1/4 W pull down	IC221 pin No. 95	10 k-ohms, 1/4 W pull down	Y
			Other	N

14-2. BT (Bluetooth version)

The DOCK (Bluetooth module) version is displayed.

15. HDMI INFORMATION

The HDMI informations are displayed.



15-1. HDMI model name

The model name of this unit written in HDMI module is displayed.

RX-V367/HTR-3063

15-2. HDMI product ID

The product ID of this unit written in HDMI module is displayed.

RX-V367: 3145

HTR-3063: 3146

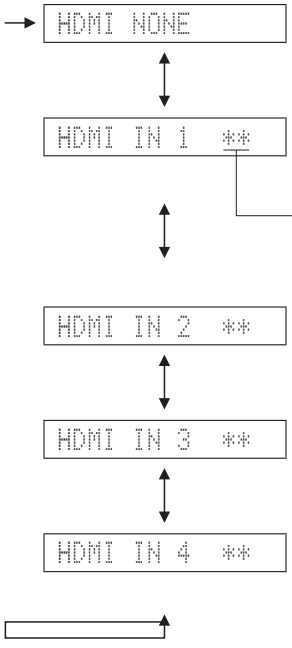
15-3. HDMI vendor name

The vendor name "YAMAHA" of this unit written in HDMI module is displayed.

16. HDMI SELECT

Using the sub-menu, the selected input signal is output to HDMI OUT.

* Support audio is set to "OTHER".



16-1. HDMI none

No signal is output.

16-2. HDMI in 1

The signal input from HDMI "IN 1" is output.

** When deep color video signals are input, "30" bit or "36" bit is displayed.

16-3. HDMI in 2

The signal input from HDMI "IN 2" is output.

16-4. HDMI in 3

The signal input from HDMI "IN 3" is output.

16-5. HDMI in 4

The signal input from HDMI "IN 4" is output.

17. NO MENU

```
17.Invalidity
```

18. IF STATUS (Input function status)

Not for service.

```
DST:710E0F2390
```

19. BUS CHECK

Communication and bus line connection between devices on the DIGITAL P.C.B. are checked.

19-1. TI (DSP) BUS check

Communication and bus line connection between microprocessor (IC221) and TI (DSP, IC241) are checked.

```
TI BUS:NoEr
```

NoEr: No error detected.

Boot: When “Boot” is displayed for a few seconds or “Boot” and “NoEr” are displayed alternately, there is a possibility that an error had occurred.

19-2. EEPROM BUS check

Communication and bus line connection between microprocessor (IC221) and EEPROM (IC222) are checked.

```
EEPROM BUS:OK
```

OK: No error detected.

NG: An error is detected.

20. NO MENU

```
20.Invalidity
```

21. PROTECTION HISTORY

This menu is used to display the history of protection function.

All history of protection function will be erased by pressing the “STRAIGHT” key.

Example

21-1.PS1 078L

21-1. History 1

H: When the upper limit of the protection function is exceeded.

L: When the lower limit of the protection function is exceeded.

A/D value when the protection function is activated. (Reference voltage: 3.3 V=255)

Example

21-2.NoPRT

21-2. History 2

Example

21-3.NoPRT

21-3. History 3

Example

21-4.NoPRT

21-4. History 4

22. SOFT SWITCH

When the following parts are replaced, the model name and the destination MUST be written to the back-up IC (EEPROM: IC222 of the DIGITAL P.C.B.) to have proper operation.

- EEPROM (IC222) of DIGITAL P.C.B.
- DIGITAL P.C.B.

Note) When the DIGITAL P.C.B. is replaced, the firmware also must be updated to the latest version. (See "UPDATING FIRMWARE")

22-1. SWITCH MODE

Press the "STRAIGHT" key to select the "22. SW: MODEL". This unit is in the mode where the name and the destination can be written.

PCB: Model name and destination can not be written.
MODEL: Model name and destination can be written.

Press the "STRAIGHT" key is selected.

22-2. MODEL

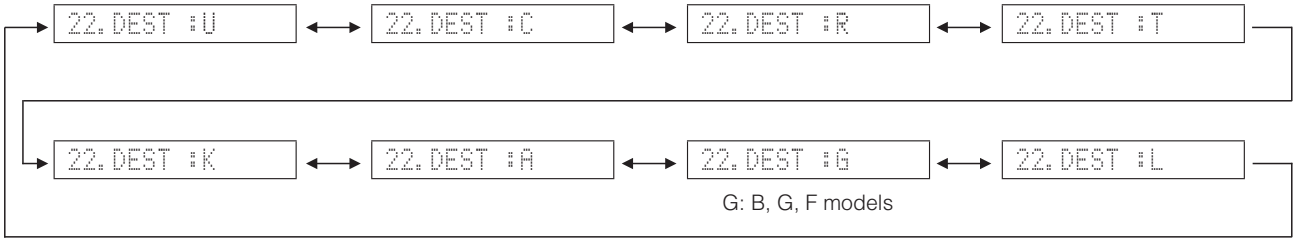
Press the "STRAIGHT" key to select the model name, "V367" (RX-V367) or "H3063" (HTR-3063). Selected model name is written.

Press the "STRAIGHT" key is selected.

22-3. DESTINATION

Press the "STRAIGHT" key repeatedly to select the destination. Selected destination is written.

Press the "STRAIGHT" key is selected.



23. UPDATE TI

Not for service.

23.UPDATE TI

24. FACTORY PRESET

This menu is used to reserve/inhibit initialization of the back-up IC (EEPROM: IC222 of the DIGITAL P.C.B.).

24.PRESET INHI

24-1. PRESET INHIBIT (Initialization inhibited)

Initialization of the back-up IC is not executed. Select this sub-menu to protect the values set by the user.

↕

24.PRESET RSRV

24-2. PRESET RESERVED (Initialization reserved)

Initialization of the back-up IC is reserved. (Actual initialization is executed the next time the power is turned on.) Press the "⏻" (Power) key of this unit to turn off the power after this sub-menu is selected, reset the original factory settings or to reset the backup IC. Any protection history will be initialized.

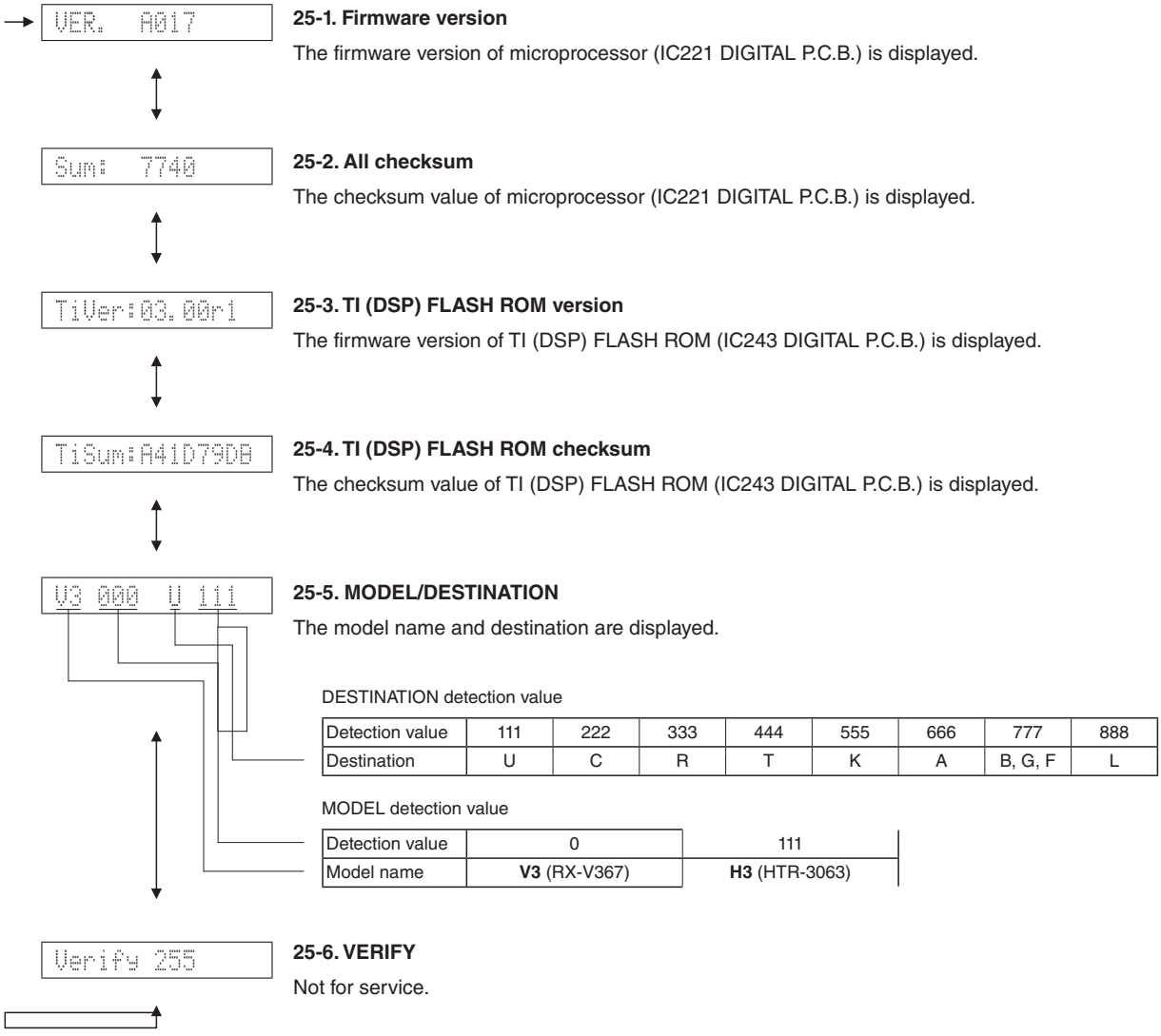
CAUTION: Before setting to the PRESET RESERVED, write down the existing preset memory content of the tuner. (This is because setting to the PRESET RESERVED will cause the user memory content to be erased.)

25. ROM VER/SUM/PORT

The firmware version, checksum values, model name and destination are displayed.

The checksum is obtained by adding the data at every 8-bits for each program area and expressing the result as a 4-figure hexadecimal notation.

* Numeric values in the figure are given as reference only.



25-1. Firmware version

The firmware version of microprocessor (IC221 DIGITAL P.C.B.) is displayed.

25-2. All checksum

The checksum value of microprocessor (IC221 DIGITAL P.C.B.) is displayed.

25-3. TI (DSP) FLASH ROM version

The firmware version of TI (DSP) FLASH ROM (IC243 DIGITAL P.C.B.) is displayed.

25-4. TI (DSP) FLASH ROM checksum

The checksum value of TI (DSP) FLASH ROM (IC243 DIGITAL P.C.B.) is displayed.

25-5. MODEL/DESTINATION

The model name and destination are displayed.

25-6. VERIFY

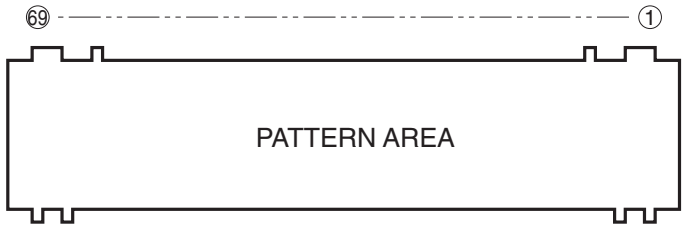
Not for service.

26. MODEL/DESTINATION

Not for service.

■ DISPLAY DATA

● **V1001 : 18-MT-09GNK (OPERATION P.C.B.)**



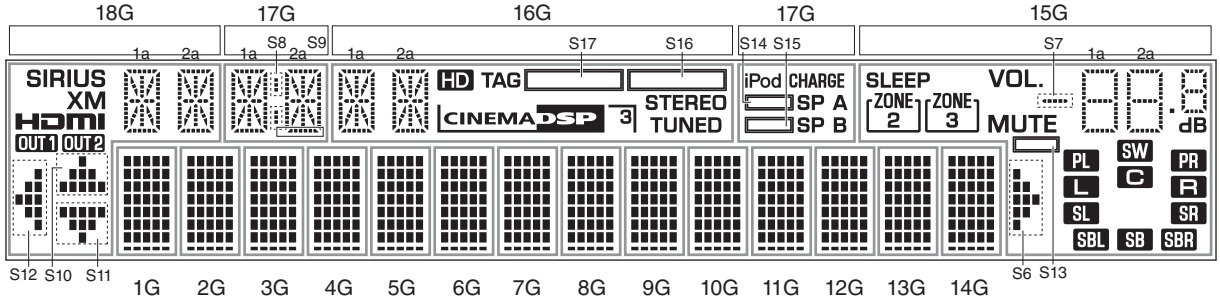
● **PIN CONNECTION**

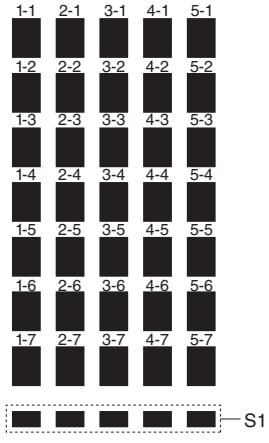
Pin No.	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
Connection	F2	NX	NP	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25	P26	P27	P28	P29	P30	P31

Pin No.	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	P32	P33	P34	P35	P36	NX	NX	NX	NX	NX	NX	NX	18G	17G	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	NX	F1

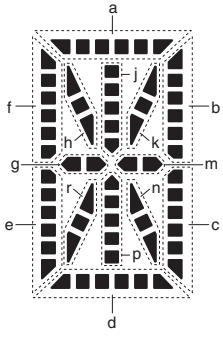
Note : 1) F1, F2 ..... Filament pin 2) NP ..... No pin 3) NX ..... No extend pin 4) 1G-18G ..... Grid pin

● **GRID ASSIGNMENT**

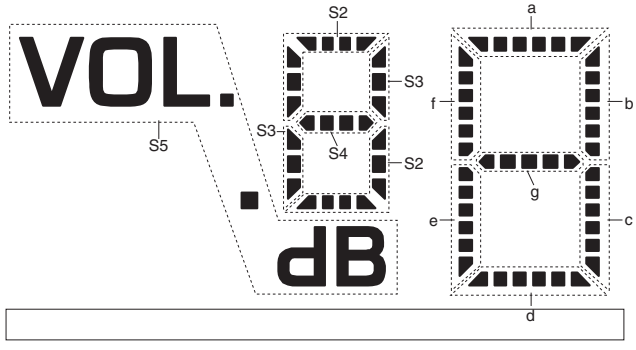




(1G-14G)



(18G-16G)



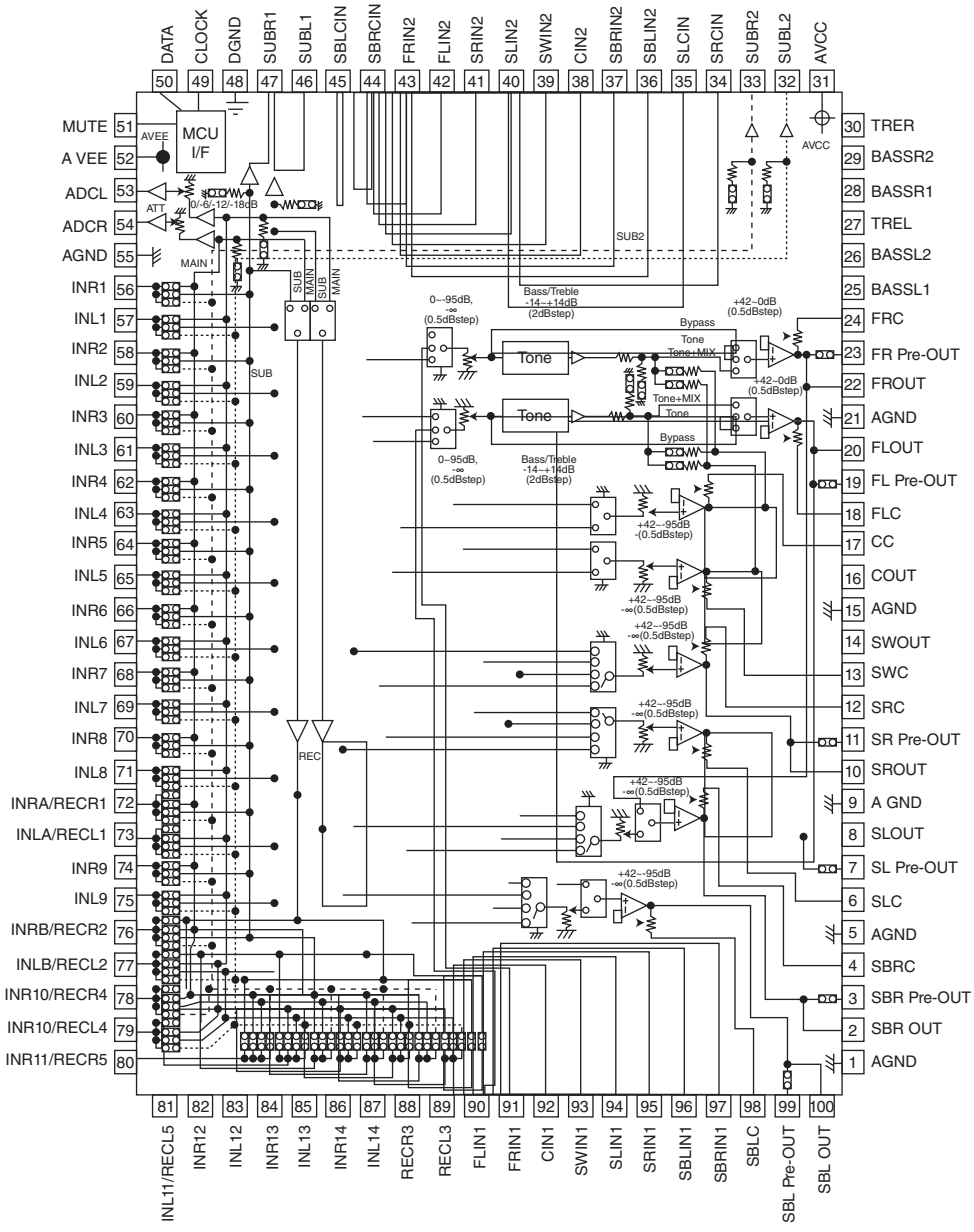
(15G)

● **ANODE CONNECTION**

	18G	17G	16G	15G	1G-14G
P1	1a	1a	1a	S5	1-1
P2	1h	1h	1h	S7	2-1
P3	1j	1j	1j	1d	3-1
P4	1k	1k	1k	2d	4-1
P5	1b	1b	1b	S2	5-1
P6	1f	1f	1f	1e	1-2
P7	1m	1m	1m	2e	2-2
P8	1g	1g	1g	S3	3-2
P9	1c	1c	1c	1c	4-2
P10	1e	1e	1e	2c	5-2
P11	1r	1r	1r	S4	1-3
P12	1p	1p	1p	1g	2-3
P13	1n	1n	1n	2g	3-3
P14	1d	1d	1d	1f	4-3
P15	2a	2a	2a	2f	5-3
P16	2h	2h	2h	1b	1-4
P17	2j	2j	2j	2b	2-4
P18	2k	2k	2k	1a	3-4
P19	2b	2b	2b	2a	4-4
P20	2f	2f	2f	PL	5-4
P21	2m	2m	2m	SW	1-5
P22	2g	2g	2g	PR	2-5
P23	2c	2c	2c	L	3-5
P24	2e	2e	2e	C	4-5
P25	2r	2r	2r	R	5-5
P26	2p	2p	2p	SL	1-6
P27	2n	2n	2n	SR	2-6
P28	2d	2d	2d	SBL	3-6
P29	SIRIUS	S8	HD	SB	4-6
P30	XM	S9	TAG	SBR	5-6
P31	HDMI	iPod CHARGE	CINEMA DSP	S6	1-7
P32	OUT1	SP B	3	S13	2-7
P33	OUT2	S15	STEREO	MUTE	3-7
P34	S12	SP A	TUNED	ZONE 2	4-7
P35	S10	S14	S17	ZONE 3	5-7
P36	S11	–	S16	SLEEP	S1

■ IC DATA

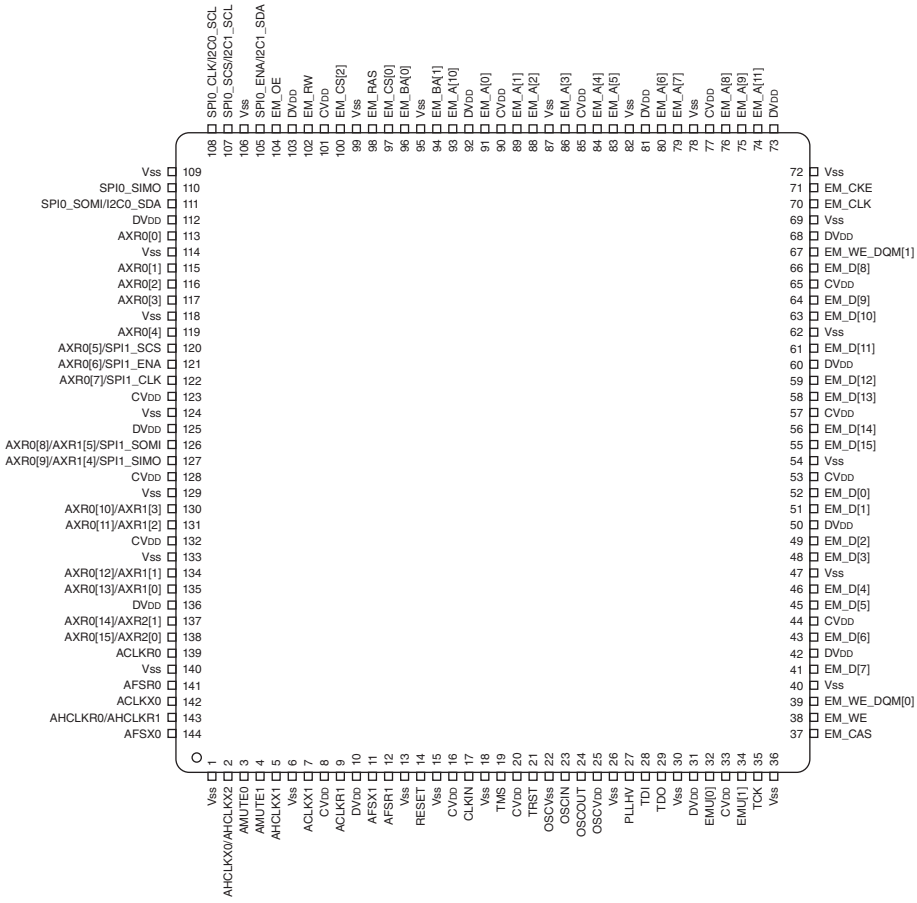
IC21: R2A15220FP (MAIN P.C.B.)
8-channel electronic volume with 11 input selector and tone control

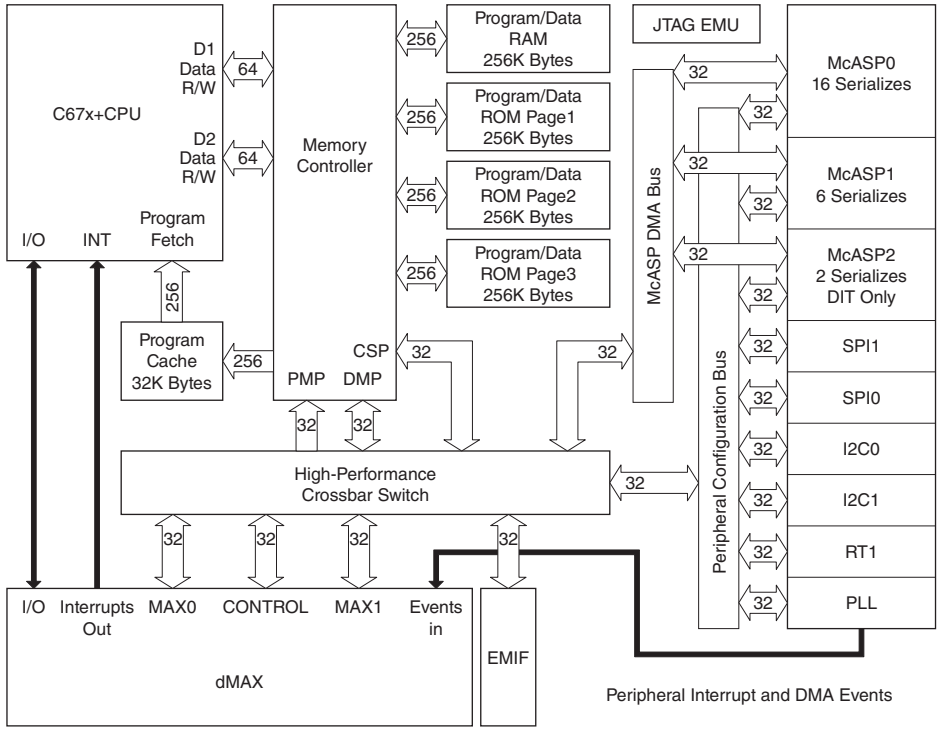


Pin No.	Port Name	Function Name	Detail of Function
1	AGND	AE	Analog ground of internal circuit
2	SBROUT	VOSBL	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
3	SBR Pre-OUT	VOPSBL	Pre-output pin of FL/FR/SL/SR/SBL/SBR channel
4	SBRC	AE	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
5	AGND	AE	Analog ground of internal circuit
6	SLC	VOPSR	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
7	SL Pre-OUT	VOSR	Pre-output pin of FL/FR/SL/SR/SBL/SBR channel
8	SLOUT	AE	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
9	AGND	AE	Analog ground of internal circuit
10	SROUT	VOSL	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
11	SR Pre-OUT	VOPSL	Pre-output pin of FL/FR/SL/SR/SBL/SBR channel
12	SRC	AE	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
13	SWC	AE	
14	SWOUT	VOSW	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
15	AGND	AE	Analog ground of internal circuit
16	COUT	VOC	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
17	CC	AE	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
18	FLC	AE	
19	FL Pre-OUT	VOPFR	Pre-output pin of FL/FR/SL/SR/SBL/SBR channel
20	FLOUT	VOFR	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
21	AGND	POE	Analog ground of internal circuit
22	FROUT	VOFL	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
23	FR Pre-OUT	VOPFL	Pre-output pin of FL/FR/SL/SR/SBL/SBR channel
24	FRC	AE	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
25	BASSL1	AE	Frequency characteristic setting pin of L/R channel tone control (Bass)
26	BASSL2	AE	
27	TREL	AE	Frequency characteristic setting pin of L/R channel tone control (Treble)
28	BASSR1	AE	Frequency characteristic setting pin of L/R channel tone control (Bass)
29	BASSR2	AE	
30	TRER	AE	Frequency characteristic setting pin of L/R channel tone control (Treble)
31	AVCC	VCC	Positive power supply to internal circuit
32	SUBL1	N.C.	Output pin for L/R channel SUB1/SUB2 output
33	SUBL2	N.C.	
34	SRCIN	N.C.	3rd multi input pin for SBL/SBR/SL/SR channel volume that is able to swap SBR/SBL with SR/SL
35	SLCIN	N.C.	
36	SBLIN2	8SBR	Multi input pin of L/R/C/SW/SL/SR/SBL/SBR channel (Multi IN 1/2)
37	SBRIN2	8SBL	
38	CIN2	8C	
39	SWIN2	8SW	
40	SLIN2	8SR	
41	SRIN2	8SL	
42	FLIN2	8FR	
43	FRIN2	8FL	
44	SBRCIN	Z2L	3rd multi input pin for SBL/SBR/SL/SR channel volume that is able to swap SBR/SBL with SR/SL
45	SBLCIN	Z2R	
46	SUBL1	Z2R	Output pin for L/R channel SUB1/SUB2 output
47	SUBR1	Z2L	
48	DGND	MG	Digital ground of internal circuit
49	DATA	VOL_SCK	Input pin of control data
50	CLOCK	VOL_MOSI	Input pin of control clock

Pin No.	Port Name	Function Name	Detail of Function
51	MUTE	AE	Outside mute control pin
52	AVEE	–	Negative power supply to internal circuit
53	ADCL	ADR	Output pin for L/R channel ADC
54	ADCR	ADL	
55	AGND	AE	Analog ground of internal circuit
56	INR1	AU2L	Input pin of L/R channel (Input selector)
57	INL1	AU2R	
58	INR2	AU1L	
59	INL2	AU1R	
60	INR3	AV-6L	
61	INL3	AV-6R	
62	INR4	AV-5L	
63	INL4	AV-5R	
64	INR5	PHL	
65	INL5	PHR	
66	INR6	SRL	
67	INL6	SRR	
68	INR7	IPL	
69	INL7	IPR	
70	INR8	XML	
71	INL8	XMR	
72	INRA/RECR1	AV-OUT_L	Output pin for L/R channel (input selector)/Output pin for L/R channel REC output
73	INLA/RECL1	AV-OUT_R	
74	INR9	USBL	Input pin of L/R channel (Input selector)
75	INL9	USBR	
76	INRB/RECR2	AOL	Output pin for L/R channel (input selector)/Output pin for L/R channel REC output
77	INLB/RECL2	AOR	
78	INR10/RECR4	TUL	
79	INL10/RECL4	TUR	
80	INR11/RECR5	MIC	
81	INL11/RECL5	AE	
82	INR12	AUXL	Input pin of L/R channel (Input selector)
83	INL12	AUXR	
84	INR13	AE	
85	INL13	AE	
86	INR14	AE	
87	INL14	AE	
88	RECR3	N.C.	Output pin for L/R channel REC output
89	RECL3	N.C.	
90	FLIN1	DAFR	Multi input pin of L/R/C/SW/SL/SR/SBL/SBR channel (Multi IN 1/2)
91	FRIN1	DAFL	
92	CIN1	DAC	
93	SWIN1	DASW	
94	SLIN1	DASR	
95	SEIN1	DASL	
96	SBLIN1	DASBR	
97	SBRIN1	DASBL	
98	SBLC	AE	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
99	SBL Pre-OUT	VOPSBR	Pre-output pin of FL/FR/SL/SR/SBL/SBR channel
100	SBL OUT	VOSBR	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel

IC241: D70YE101BRFP266 (DIGITAL P.C.B.)
Decoder/Post processor
*** No replacement part available.**



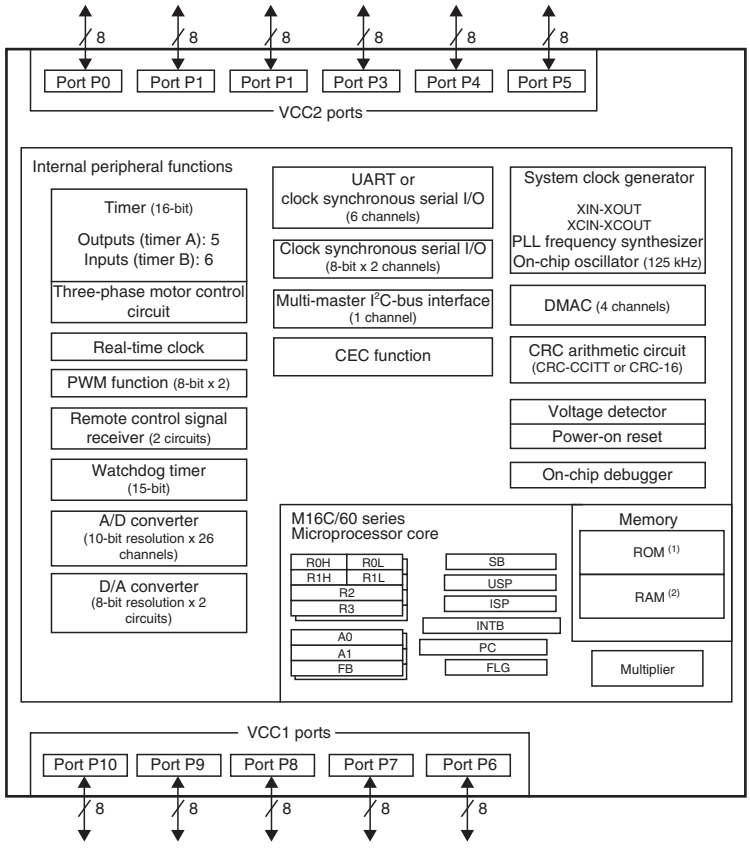


No.	Function Name (P.C.B.)	TYPE(1)	PULL(2)	GPIO(3)	Detail of Function
1	VSS				
2	AHCLKX0/AHCLKX2	IO	–	Y	McASP0 and McASP2 transmit master clock
3	AMUTE0	IO	–	Y	McASP0 mute output
4	AMUTE1	IO	–	Y	McASP1 mute output
5	AHCLKX1	IO	–	Y	McASP1 transmit master clock
6	VSS				
7	ACLKX1	IO	–	Y	McASP1 transmit bit clock
8	CVDD				
9	ACLKR1	IO	–	Y	McASP1 receive bit clock
10	DVDD				
11	AFSX1	IO	–	Y	McASP1 transmit frame Sync (L/R clock)
12	AFSR1	IO	–	Y	McASP1 receive frame Sync (L/R clock)
13	VSS				
14	RESET	IO	–	N	Device reset pin
15	VSS				
16	CVDD				
17	CLKIN	IO	–	N	Alternate clock input (3.3-V LVCMOS input)
18	VSS				
19	TMS	IO	IPU	N	Test mode select
20	CVDD				
21	TRST	IO	IPU	N	Test reset
22	OSCVSS	PWR	–	N	Oscillator Vss tap point (for filter only)
23	OSCIN	IO	–	N	1.2-V oscillator input
24	NC	O	–	N	
25	OSCVDD	PWR	–	N	Oscillator 1.2-V Vpp tap point (for filter only)
26	VSS				
27	PLLHV	PWR	–	N	PLL 3.3-V supply input (requires external filter)
28	TDI	IO	IPU	N	Test data in
29	TDO	OZ	IPU	N	Test data out
30	VSS				
31	DVDD				
32	EMU[0]	IO	IPU	N	Emulation pin 0
33	CVDD				
34	EMU[1]	IO	IPU	N	Emulation pin 1
35	TCK	IO	IPU	N	Test clock
36	Ground(Vss)				
37	EM_CAS	O	–	N	SDRAM column address strobe
38	EM_WE	O	–	N	SDRAM write enable
39	EM_WE_DQM[0]	O	–	N	Write enable or byte enable for EM_D [7:0]
40	VSS				
41	EM_D[7]	IO	–	N	EMIF data bus [lower 16-bits]
42	DVDD				
43	EM_D[6]	IO	–	N	EMIF data bus [lower 16-bits]
44	CVDD				
45	EM_D[5]	IO	–	N	EMIF data bus [lower 16-bits]
46	EM_D[4]	IO	–	N	EMIF data bus [lower 16-bits]
47	VSS				
48	EM_D[3]	IO	–	N	EMIF data bus [lower 16-bits]
49	EM_D[2]	IO	–	N	EMIF data bus [lower 16-bits]
50	DVDD				

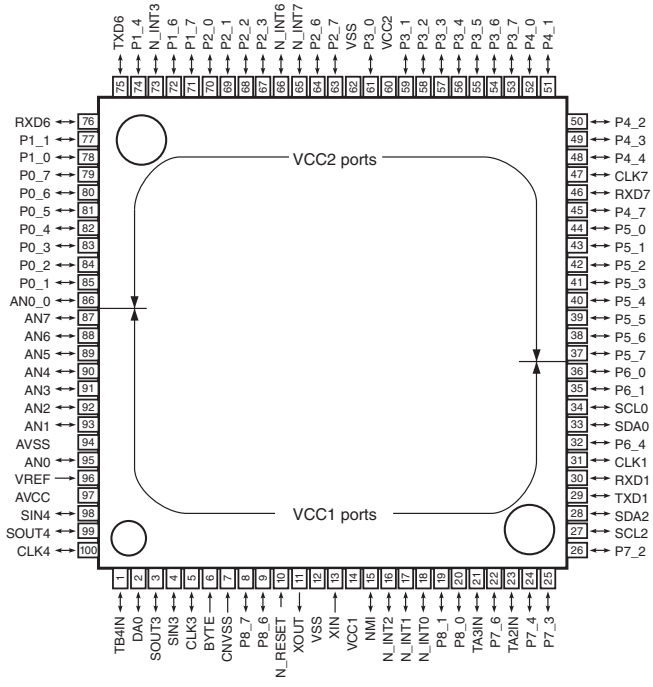
No.	Function Name (P.C.B.)	TYPE(1)	PULL(2)	GPIO(3)	Detail of Function
51	EM_D[1]	IO	–	N	EMIF data bus [lower 16-bits]
52	EM_D[0]	IO	–	N	EMIF data bus [lower 16-bits]
53	CVDD				
54	VSS				
55	EM_D[15]	IO	–	N	EMIF data bus [lower 16-bits]
56	EM_D[14]	IO	–	N	EMIF data bus [lower 16-Bits]
57	CVDD				
58	EM_D[13]	IO	–	N	EMIF data bus [lower 16-Bits]
59	EM_D[12]	IO	–	N	EMIF data bus [lower 16-Bits]
60	DVDD				
61	EM_D[11]	IO	–	N	EMIF data bus [lower 16-Bits]
62	VSS				
63	EM_D[10]	IO	–	N	EMIF data bus [lower 16-Bits]
64	EM_D[9]	IO	–	N	EMIF data bus [lower 16-Bits]
65	CVDD				
66	EM_D[8]	IO	–	N	EMIF data bus [lower 16-bits]
67	EM_WE_DQM[1]	O	–	N	Write enable or byte enable for EM_D [15:8]
68	DVDD				
69	VSS				
70	EM_CLK	O	–	N	SDRAM clock
71	EM_CKE	O	–	N	SDRAM clock enable
72	VSS				
73	DVDD				
74	EM_A[11]	O	–	N	EMIF address bus
75	EM_A[9]	O	–	N	EMIF address bus
76	EM_A[8]	O	–	N	EMIF address bus
77	CVDD				
78	VSS				
79	EM_A[7]	O	–	N	EMIF address bus
80	EM_A[6]	O	–	N	EMIF address bus
81	DVDD				
82	VSS				
83	EM_A[5]	O	–	N	EMIF address bus
84	EM_A[4]	O	–	N	EMIF address bus
85	CVDD				
86	EM_A[3]	O	–	N	EMIF address bus
87	VSS				
88	EM_A[2]	O	–	N	EMIF address bus
89	EM_A[1]	O	–	N	EMIF address bus
90	CVDD				
91	EM_A[0]	O	–	N	EMIF address bus
92	DVDD				
93	EM_A[10]	O	–	N	EMIF address bus
94	EM_BA[1]	O	–	N	SDRAM bank address and asynchronous memory Low-Order address
95	VSS				
96	EM_BA[0]	O	–	N	SDRAM bank address and asynchronous memory Low-Order address
97	EM_CS[0]	O	–	N	SDRAM chip select
98	EM_RAS	O	–	N	SDRAM row address strobe
99	VSS				
100	EM_CS[2]	O	–	N	Asynchronous memory chip select

No.	Function Name (P.C.B.)	TYPE(1)	PULL(2)	GPIO(3)	Detail of Function
101	CVDD				
102	NC	O	–	N	Asynchronous memory read/not write
103	DVDD				
104	EM_OE	O	–	N	SDRAM output enable
105	SPI0_ENA/I2C1_SDA	IO	–	Y	SPI0 enable (ready) or I2c1 serial data
106	VSS				
107	SPI0_ENA/I2C1_SCL	IO	–	Y	SPI0 enable (ready) or I2c1 serial clock
108	SPI0_CLK/I2C0_SCL	IO	–	Y	SPI0 serial clock or I2c0 serial clock
109	VSS				
110	SPIO_SIMO	IO	–	Y	SPI0 data pin slave in master out
111	SPIO_SOMI/I2C0_SDA	IO	–	Y	SPI0 data pin slave out master in or I2C0 serial data
112	DVDD				
113	AXR0[0]	IO	–	Y	McASP0 serial data 0
114	VSS				
115	AXR0[1]	IO	–	Y	McASP0 serial data 1
116	AXR0[2]	IO	–	Y	McASP0 serial data 2
117	AXR0[3]	IO	–	Y	McASP0 serial data 3
118	VSS				
119	AXR0[4]	IO	–	Y	McASP0 serial data 4
120	SPI1_SCS	IO	–	Y	McASP0 serial data 5 or SPI1 slave chip select
121	SPI1_ENA	IO	–	Y	McASP0 serial data 6 or SPI1 enable (ready)
122	SPI1_CLK	IO	–	Y	McASP0 serial data 7 or SPI1 serial clock
123	CVDD				
124	VSS				
125	DVDD				
126	/SPI1_SOMI	IO	–	Y	McASP0 serial data 8 or McASP1 serial data 5 or SPI1 data pin slave out master in
127	/SPI1_SIMO	IO	–	Y	McASP0 serial data 9 or McASP1 serial data 4 or SPI1 data pin slave in master out
128	CVDD				
129	VSS				
130	AXR0[10]	IO	–	Y	McASP0 serial data 10 or McASP1 serial data 3
131	AXR0[11]	IO	–	Y	McASP0 serial data 11 or McASP1 serial data 2
132	CVDD				
133	VSS				
134	AXR0[12]	IO	–	Y	McASP0 serial data 12 or McASP1 serial data 1
135	AXR0[13]	IO	–	Y	McASP0 serial data 13 or McASP1 serial data 0
136	DVDD				
137	AXR0[14]	IO	–	Y	McASP0 serial data 14 or McASP2 serial data 1
138	AXR0[15]	IO	–	Y	McASP0 serial data 15 or McASP2 serial data 0
139	ACLKR0	IO	–	Y	McASP0 receive bit clock
140	VSS				
141	AFSR0	IO	–	Y	McASP0 receive frame Sync (L/R clock)
142	ACLKX0	IO	–	Y	McASP0 transmit bit clock
143	AHCLKR0/AHCLKR1	IO	–	Y	McASP0 and McASP1 receive master clock
144	AFSX0	IO	–	Y	McASP0 transmit frame Sync (L/R clock)

IC221: R5F364AMNBF (DIGITAL P.C.B.)
Microprocrssor



Notes:
1. ROM size depends on MCU type.
2. RAM size depends on MCU type.



Notes:
1. N-channel open drain output.
2. Check the position of pin 1 by referring to appendix 1, Package Dimensions.

Pin No.	Port Name	Function Name (P.C.B.)	Full on	Power off	MCU sleep	AC off	Detail of Function
1	TB4IN	RDS_RDY	TMR	O	O	O	RDS READY input / Open drain output (Imax=8 mZ) on LC72725 side
				Low Fix	Low Fix	Low Fix	
2	DA0	AMP_LMT	DA	O	O	O	Remitter control output
				Low Fix	Low Fix	Low Fix	
3	SOUT3	DSP_MOSI	SO	O	O	O	Synchronous data output for DSP, DIR, DAC
				Low Fix	Low Fix	Low Fix	
4	SIN3	DSP_MISO	SI	I-	I-	I-	Synchronous data input for DSP, DIR, DAC
5	CLK3	DSP_SCK	SO	O	O	O	Synchronous clock output for DSP, DIR, DAC
				Low Fix	Low Fix	Low Fix	
6	BYTE	BYTE	MCU	MCU	MCU	MCU	Data but width change input When in single chip mode: L (16 bit)
7	CNVSS	E8A_CNVSS	MCU	MCU	MCU	MCU	Processor mode select Low: Single chip mode
8	P8_7	VOL_RB	I+	I+	I+	I+	Volume rotary encoder B
9	P8_6	VOL_RA	I+	I+	I+	I+	Volume rotary encoder A
10	N_RESET	N_CPU_RST	MCU	MCU	MCU	MCU	Reset input
11	XOUT	XOUT	MCU	MCU	MCU	MCU	Oscillation circuit output
12	VSS	DGND	MCU	MCU	MCU	MCU	Microprocessor GND
13	XIN	XIN	MCU	MCU	MCU	MCU	Oscillation circuit input
14	VCC1	+3.3M	MCU	MCU	MCU	MCU	Microprocessor power supply
15	NMI	(no use)	I+	I+	I+	I+	
16	N_INT2	REM_IN	IRQ	IRQ	IRQ	I	Remote control pulse input
17	N_INT1	HDM_MUT	IRQ	I-	I-	I-	HDMI mute input H: Mute
			O				
18	N_INT0	HDM_INT	IRQ	I-	I-	I-	Interrupt input from HDMI Rx
19	P8_1	N_MIC_DET	I-	I-	I-	I-	MIC detection L: MIC available
20	P8_0	HTX_PON	O	O	O	O	HDMI Tx +5V power regulator control H: Regulator ON
			High Act	Low Fix	Low Fix	Low Fix	
21	TA3IN	N_DSP_INT	TMR	I+	O	I+	Interrupt input from DSP
					Low Fix		
22	P7_6	(no use)	O	O	O	O	
			Low Fix	Low Fix	Low Fix	Low Fix	
23	TA2IN	N_PDET	TMR	I+	I+	I+	AC power detection L: Power down
24	P7_4	(no use)	O	O	O	O	
			Low Fix	Low Fix	Low Fix	Low Fix	
25	P7_3	N_FLD_RST	O	O	O	O	FL driver reset
			Low Act	Low Fix	Low Fix	Low Fix	
26	P7_2	N_FLD_CS	O	O	O	O	FL driver chip select
			Low Act	Low Fix	Low Fix	Low Fix	
27	SCL2	HDM_SCL	SI	O	O	O	HDMI Rx/Tx I2C SCL output
				Low Fix	Low Fix	Low Fix	
28	SDA2	HDM_SDA	SO	O	O	O	HDMI Rx/Tx I2C SDA input/output
				Low Fix	Low Fix	Low Fix	
29	TXD1	E8A_TXD	SO	SO	I+	I+	
30	RXD1	E8A_RXD	SI	SI	I+	I+	
31	CLK1	E8A_SCLK	O	O	I+	I+	
32	P6_4	E8A_BUSY	I-	I-	I-	I-	
33	SDA0	TUN_SDA	SI	O	O	O	Synchronous data input/output for tuner I2C
			O	Low Fix	Low Fix	Low Fix	
34	SCL0	TUN_SCL	SO	O	O	O	Synchronous clock output for tuner I2C
				Low Fix	Low Fix	Low Fix	
35	P6_1	N_HRX_RST	O	O	O	O	HDMI Rx reset
			Low Act	Low Fix	Low Fix	Low Fix	
36	P6_0	N_HTX_RST	O	O	O	O	HDMI Tx reset
			Low Act	Low Fix	Low Fix	Low Fix	

Pin No.	Port Name	Function Name (P.C.B.)	Full on	Power off	MCU sleep	AC off	Detail of Function
37	P5_7	N_DIR_RST	O Low Act	O Low Fix	O Low Fix	O Low Fix	DIR reset
38	P5_6	N_DIR_CS	O Low Act	O Low Fix	O Low Fix	O Low Fix	DIR chip select
39	P5_5	N_E8A_EPM	I-	I-	I-	I-	
40	P5_4	DIR_WCK	I	I	O Low Fix	I	DIR_WCK input for CDDA writing
41	P5_3	DIR_SDO	I	I	O Low Fix	I	DIR_SDO input for CDDA writing
42	P5_2	N_ADC_PDN	O Low Act	O Low Fix	O Low Fix	O Low Fix	ADC power down
43	P5_1	N_DAC_CS	O Low Act	O Low Fix	O Low Fix	O Low Fix	DAC chip select
44	P5_0	N_E8A_CE	I+	I+	I+	I+	
45	P4_7	N_DSP_RDY	I+	I+	O Low Fix	I+	DSP ready input
46	RXD7	RDS_MISO	I-	I-	I-	I-	RDS data input
47	CLK7	RDS_SCK	O	O Low Fix	O Low Fix	O Low Fix	RDS clock output
48	P4_4	N_TUN_TUND	I+	I+	O Low Fix	I+	Tuner tuned input
49	P4_3	N_TUN_ST	I+	I+	O Low Fix	I+	Tuner stereo input
50	P4_2	DSP_FMT	O High Act	O Low Fix	O Low Fix	O Low Fix	DSP full mute output H: Mute
51	P4_1	N_DSP_CS	O Low Act	O Low Fix	O Low Fix	O Low Fix	DSP chip select
52	P4_0	N_DSP_RST	O High Act	O Low Fix	O Low Fix	O Low Fix	DSP reset
53	P3_7	N_E2R_CS	O Low Act	O Low Act	O Low Act	O Low Act	EEPROM chip select
54	P3_6	N_RDS_RST	O Low Act	O Low Fix	O Low Fix	O Low Fix	RDS reset
55	P3_5	R2A_MOSI	O	O Low Fix	O Low Fix	O Low Fix	Electronic vol pattering synchronous data output
56	P3_4	R2A_SCK	O	O Low Fix	O Low Fix	O Low Fix	Electronic vol pattering synchronous clock output
57	P3_3	I_PRT	I-	I-	I-	I-	Overcurrent protection detection
58	P3_2	SP_IMP	O	O Low Fix	O Low Fix	O Low Fix	Speaker impedance changing relay control / At 8 ohm: Low (Relay off, B voltage high) At 6 ohm and temperature rise: High (Relay ON, B voltage low)
59	P3_1	N_CNPT_PS	O Low Act	O Low Fix	O Low Fix	O Low Fix	Component video selector IC power save
60	VCC2	VCC2	MCU	MCU	MCU	MCU	Microprocessor power supply
61	P3_0	N_VO_MT	O Low Act	O Low Fix	O Low Fix	O Low Fix	Composite video selector mute
62	VSS	VSS	MCU	MCU	MCU	MCU	Microprocessor GND
63	P2_7	N_HP_DET	I+	O Low Fix	O Low Fix	O Low Fix	Headphone detection L: Headphone available
64	P2_6	IPD_APDT	I-	I-	I-	I-	iPod accessory power detection / Low while iPod booting (about 2 seconds). Execute identification when booting seems to have completed. Change to constant input to prevent pulling between high output of iPod and Low Fix of microprocessor output.
65	N_INT7	N_IPD_DET	IRQ	IRQ	IRQ	O Low Fix	iPod detection When inserting an iPod into the DOCK H to L

Pin No.	Port Name	Function Name (P.C.B.)	Full on	Power off	MCU sleep	AC off	Detail of Function
66	N_INT6	N_DIR_INT	IRQ	I	O	I	DIR interrupt input
					Low Fix		
67	P2_3	HPRY	O	O	O	O	Headphone relay control
			High Act	Low Fix	Low Fix	Low Fix	
68	P2_2	SPRY_S	O	O	O	O	Speaker relay control (Surround)
			High Act	Low Fix	Low Fix	Low Fix	H: Relay ON
69	P2_1	SPRY_C	O	O	O	O	Speaker relay control (Center)
			High Act	Low Fix	Low Fix	Low Fix	H: Relay ON
70	P2_0	SPRY_F	O	O	O	O	Speaker relay control (Front)
			High Act	Low Fix	Low Fix	Low Fix	H: Relay ON
71	P1_7	3D_PON	O	O	O	O	PCB DIGITAL +3.3D, +1.2D regulator control
			High Act	Low Fix	Low Fix	Low Fix	H: Regulator ON
72	P1_6	5D_PON	O	O	O	O	PCB DIGITAL +5D regulator control
			High Act	Low Fix	Low Fix	Low Fix	H: Regulator ON
73	N_INT3	PSW_DET	IRQ	IRQ	IRQ	I	Power system switch (Power, Scene) detection
74	P1_4	VSEL3	O	O	O	O	Video input select
				Low Fix	Low Fix	Low Fix	
75	TXD6	IPD_MOSI	SO	O	O	O	Synchronous data output for iPod
				Low Fix	Low Fix	Low Fix	
76	RXD6	IPD_MISO	SI	I+	I+	I+	Synchronous data input for iPod
77	P1_1	VSEL2	O	O	O	O	Video input select
				Low Fix	Low Fix	Low Fix	
78	P1_0	VSEL1	O	O	O	O	Video input select
				Low Fix	Low Fix	Low Fix	
79	P0_7	N_SB_MT	O	O	O	O	Mute control (Surround back)
			Low Act	Low Fix	Low Fix	Low Fix	* Spare to use for HD audio when necessary
80	P0_6	N_SW_MT	O	O	O	O	Mute control (Subwoofer)
			Low Act	Low Fix	Low Fix	Low Fix	
81	P0_5	N_S_MT	O	O	O	O	Mute control (Surround)
			Low Act	Low Fix	Low Fix	Low Fix	
82	P0_4	N_C_MT	O	O	O	O	Mute control (Center)
			Low Act	Low Fix	Low Fix	Low Fix	
83	P0_3	N_F_MT	O	O	O	O	Mute control (Front)
			Low Act	Low Fix	Low Fix	Low Fix	
84	P0_2	PWR_RY	O	O	O	O	Power relay control
			High Act	Low Fix	Low Fix	Low Fix	H: ON
85	P0_1	N_FCT	I	I	I	I	FCT detection H: Product mode L: FCT mode
86	AN0_0	(no use)	AD	I	I	I	
				AD standby	AD standby	AD standby	
87	AN7	DC_PRT	AD	I	I	I	Power AMP DC detection
				AD standby	AD standby	AD standby	
88	AN6	AMP_OLV	AD	I	I	I	Power AMP output level detection
				AD standby	AD standby	AD standby	
89	AN5	THM1_PRT	AD	I	I	I	Temperature detection 1
				AD standby	AD standby	AD standby	
90	AN4	THM2_PRT	AD	I	I	I	Temperature detection 2 (U model)
				AD standby	AD standby	AD standby	
91	AN3	KEY2	AD	I	I	I	KEY1 AD value taken in
				AD standby	AD standby	AD standby	
92	AN2	KEY1	AD	I	I	I	KEY1 AD value taken in
				AD standby	AD standby	AD standby	
93	AN1	PS_PRT	AD	I	I	I	PS protection detection
				AD standby	AD standby	AD standby	
94	AVSS	AVSS	MCU	MCU	MCU	MCU	Microprocessor GND

Pin No.	Port Name	Function Name (P.C.B.)	Full on	Power off	MCU sleep	AC off	Detail of Function
95	AN0	IPD_TYPE	AD	I	I	I	DOCK discriminate
				AD standby	AD standby	AD standby	
96	VREF	VREF	MCU	MCU	MCU	MCU	AD reference voltage
97	AVCC	AVCC	MCU	MCU	MCU	MCU	Microprocessor power supply
98	SIN4	E2R_MISO	SI	SI	O	SI	Synchronous data input for EEPROM
99	SOUT4	FLD_MOSI	SO	SO	O	SO	FL driver/Synchronous data output for EEPROM
					Low Fix		
100	CLK4	FLD_SCK	SO	SO	O	SO	FL driver/Synchronous clock output for EEPROM
					Low Fix		

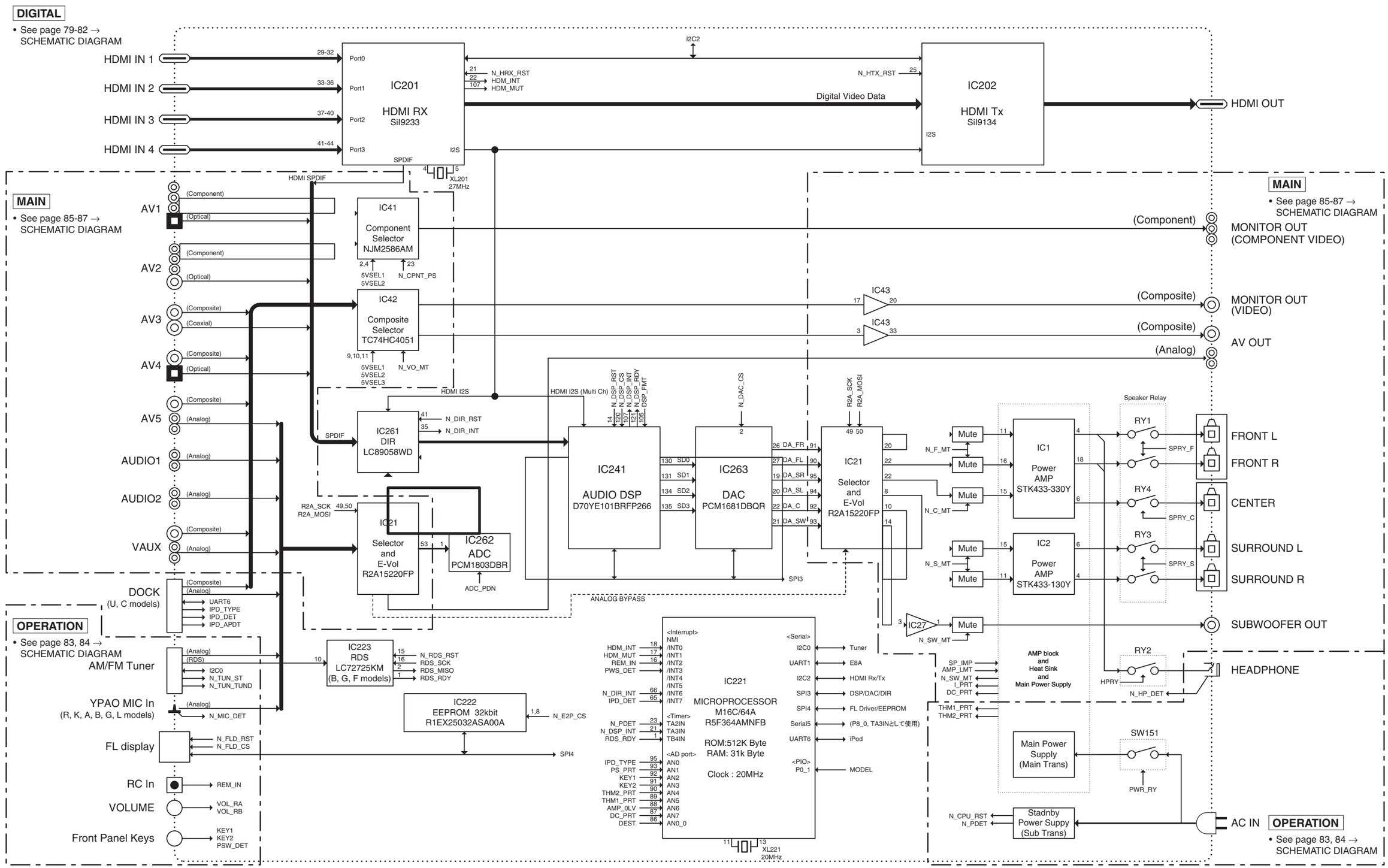
Key detection for A/D port

Key input (A/D) pull-up resistance 10 k-ohms

Ohm	0	+ 1.0 k	+ 1.5 k	+ 1.8 k	+ 2.2 k	+ 3.3 k	+ 4.7 k	+ 8.2 k	+ 10.0 k
V	0 – 0.15	0.15 – 0.48	0.49 – 0.82	0.83 – 1.14	1.15 – 1.46	1.47 – 1.79	1.80 – 2.12	2.13 – 2.40	2.41 – 2.91
A/D value (3.3 V=255)	0 – 11	12 – 37	38 – 64	65 – 88	89 – 113	114 – 139	140 – 164	165 – 186	187 – 226
KEY1 (92 pin)	STRAIGHT	TUNING >>	TUNING <<	AM	FM	PRESET >	PRESET <	MEMORY	INFO

Ohm	0	+ 1.0 k	+ 1.0 k	+ 1.5 k	+ 1.5 k	+ 2.2 k	+ 3.3 k	+ 4.7 k	(22 k + 33 k)	22.0 k	33.0 k
V	0 – 0.15	0.15 – 0.42	0.43 – 0.70	0.71 – 0.97	0.98 – 1.24	1.25 – 1.53	1.54 – 1.84	1.84 – 2.10	2.11 – 2.33	2.34 – 2.54	2.54 – 2.71
A/D value (3.3 V=255)	0 – 11	12 – 32	33 – 54	55 – 75	76 – 96	97 – 119	120 – 142	143 – 163	164 – 181	182 – 197	198 – 209
KEY2 (91 pin)	SCENE RADIO	SCENE CD	SCENE TV	SCENE BD/DVD	PROGRAM >	PROGRAM <	INPUT >	INPUT <	–	⏻ (Power)	TONE CONTROL

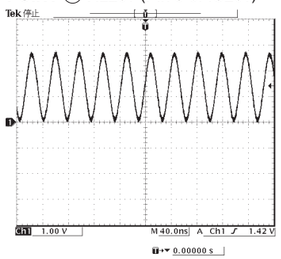
■ BLOCK DIAGRAM



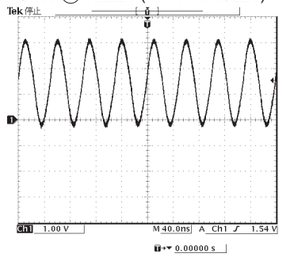
■ PRINTED CIRCUIT BOARDS

DIGITAL P.C.B. (Side A)

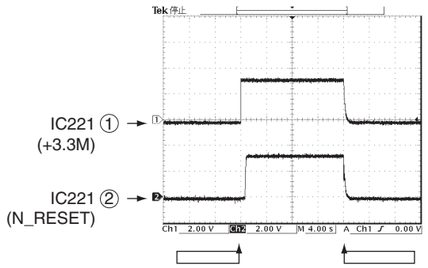
POINT Ⓐ XL201 (Pin 5 of IC201)

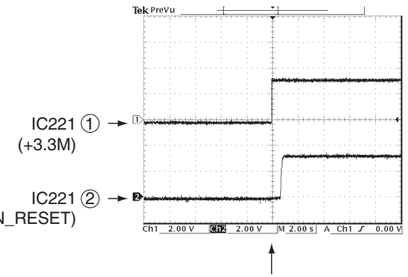


POINT Ⓑ XL221 (Pin 11 of IC221)

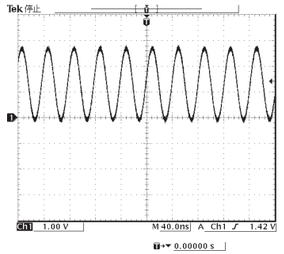


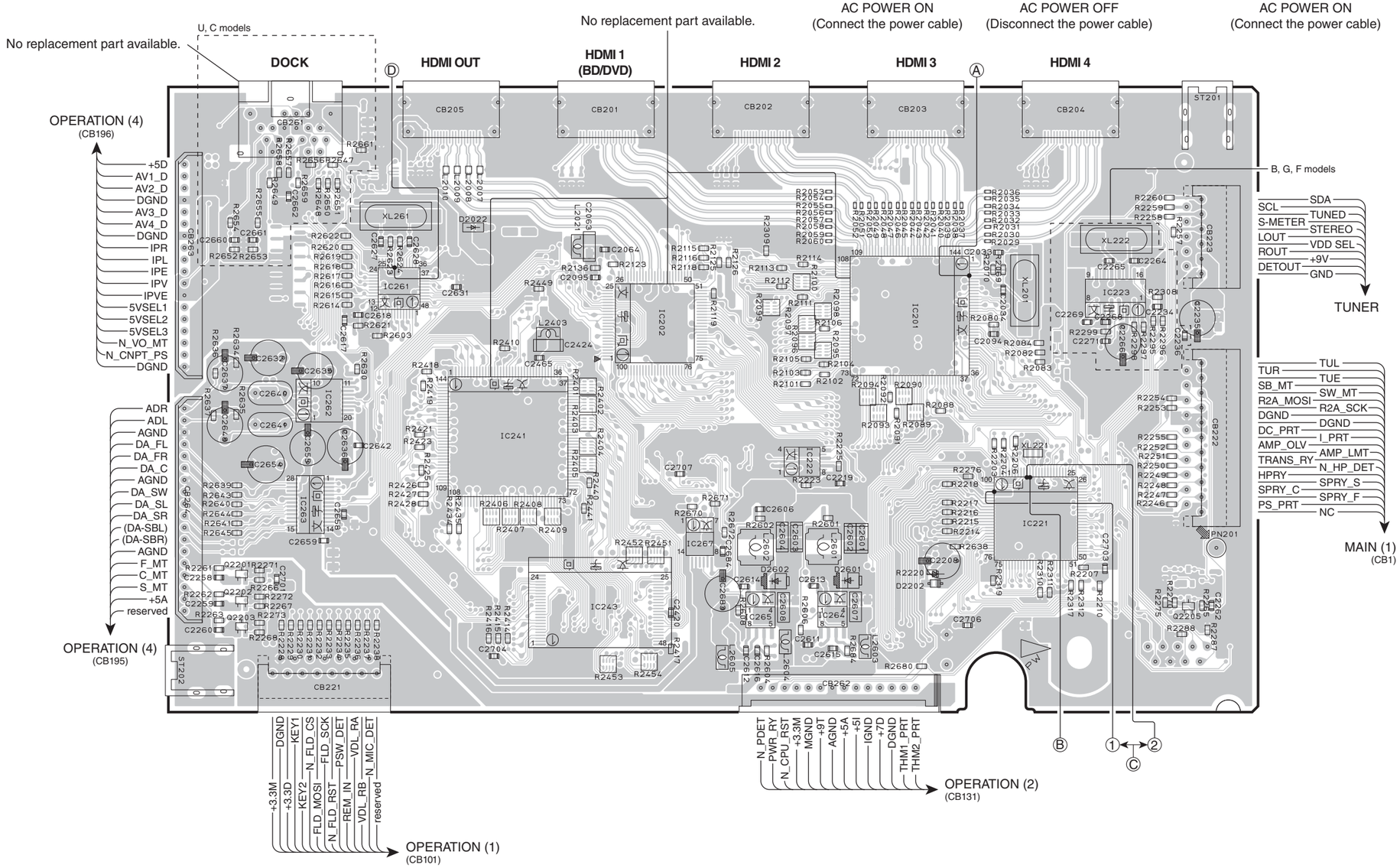
POINT Ⓒ ①/ IC221 (97 pin, +3.3M), ②/ IC221 (10 pin, N_RESET)





POINT Ⓓ XL261 (Pin 29 of IC261)

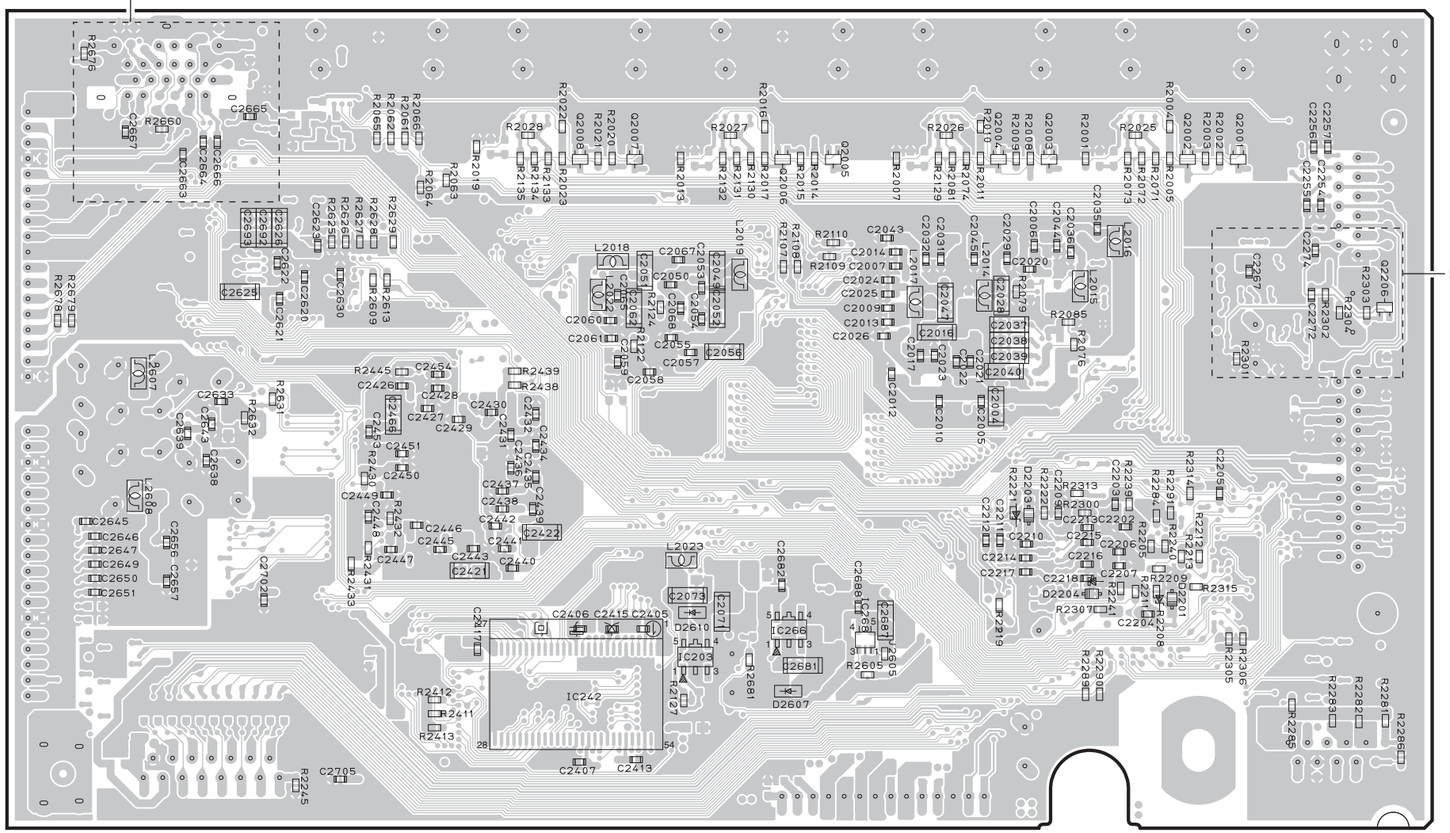




• Semiconductor Location

Ref no.	Location
D2022	D4
D2202	G5
D2601	F5
D2602	F5
IC201	F4
IC202	E4
IC221	G5
IC222	F5
IC223	H4
IC241	D5
IC243	E6
IC261	D4
IC262	C4
IC263	C5
IC264	F6
IC265	F6
IC267	E5
Q2201	C5
Q2202	C6
Q2203	C6
Q2205	H6

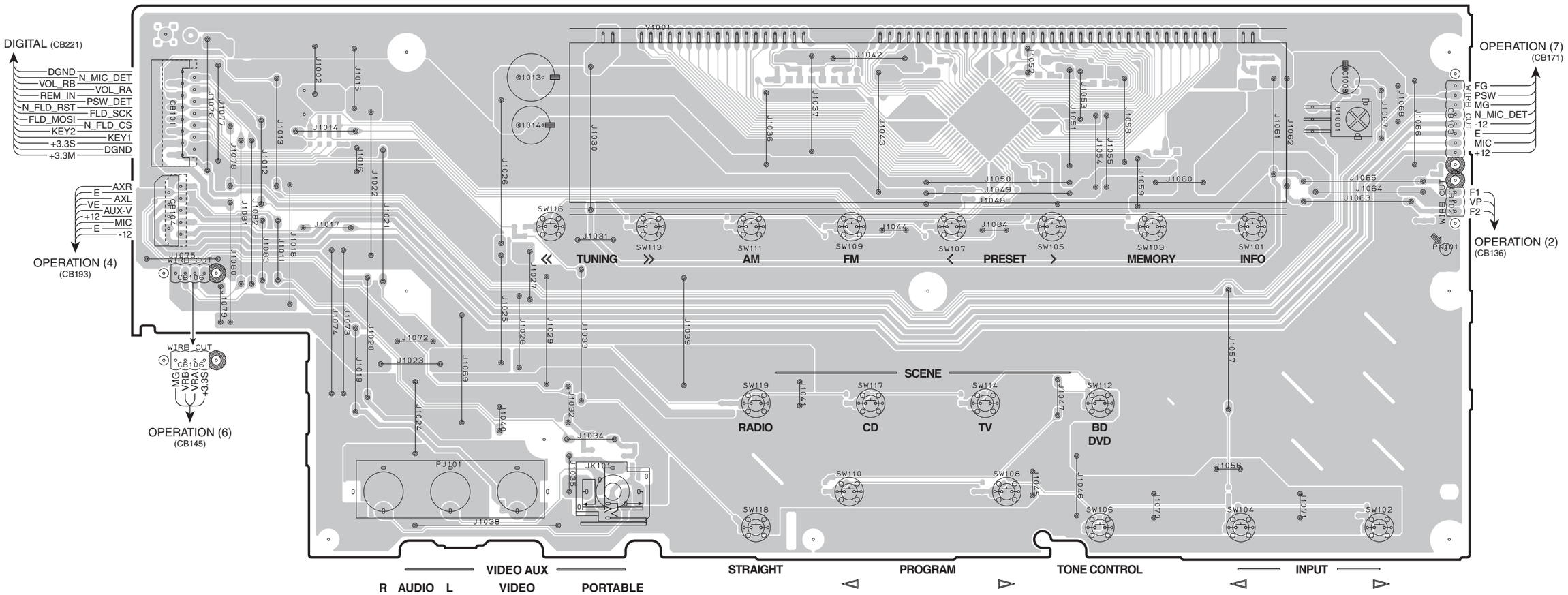
DIGITAL P.C.B. (Side B)



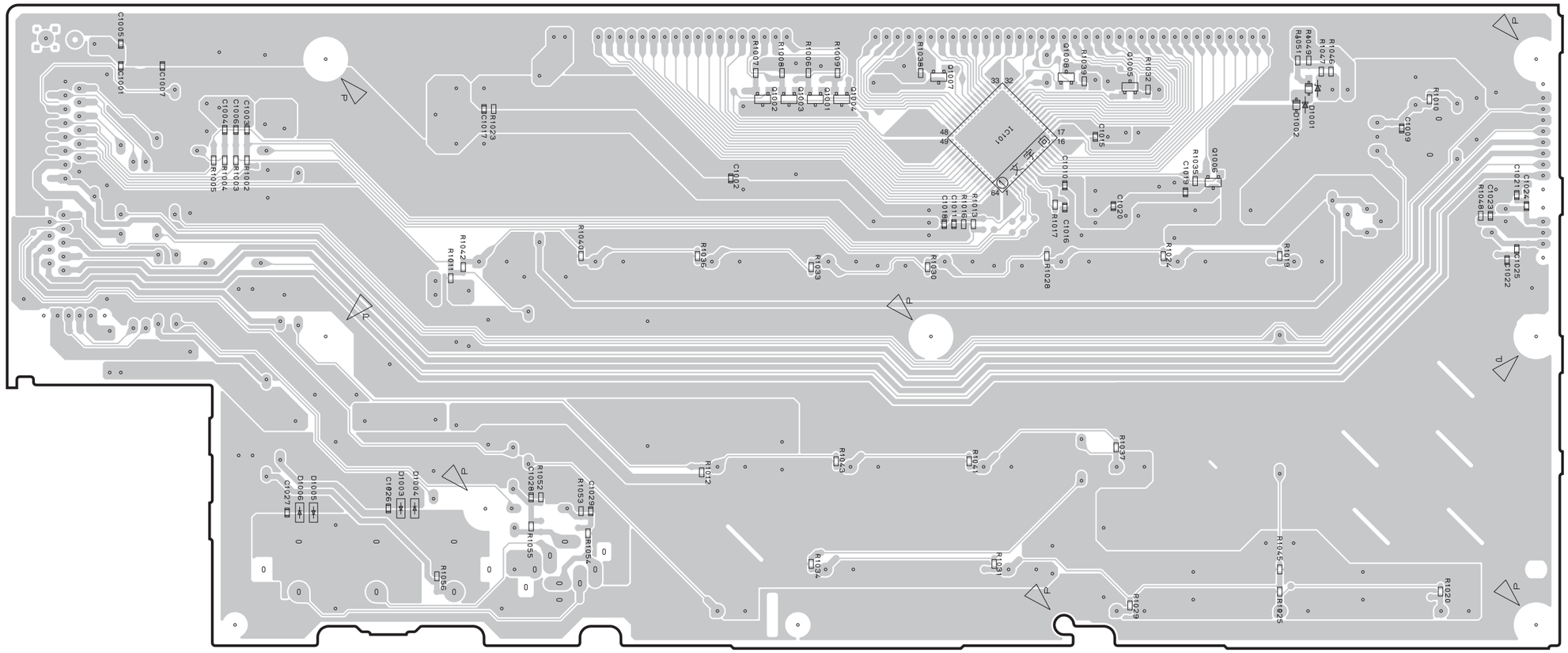
• Semiconductor Location

Ref no.	Location
D2201	G5
D2203	G5
D2204	G5
D2607	F6
D2610	E5
IC203	E5
IC242	E6
IC266	F5
IC268	F5
Q2001	G3
Q2002	G3
Q2003	G3
Q2004	F3
Q2005	F3
Q2006	F3
Q2007	E3
Q2008	E3
Q2206	H4

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



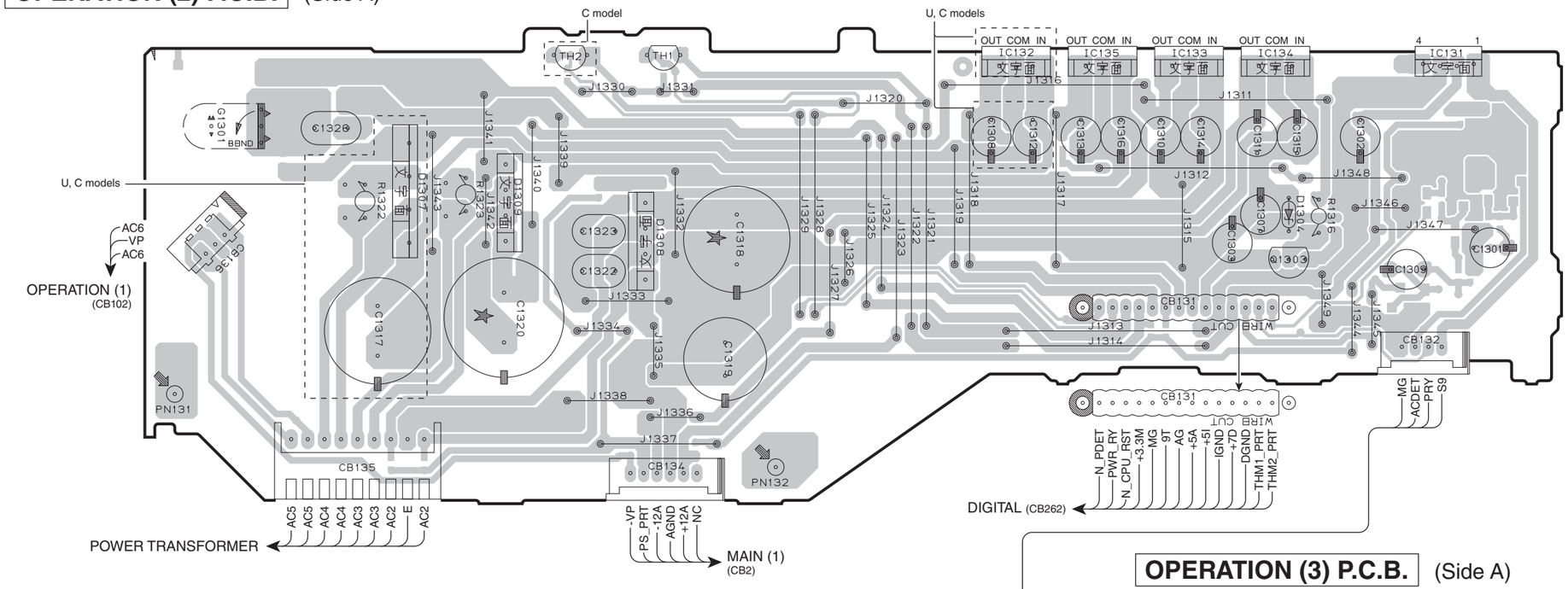
OPERATION (1) P.C.B. (Side B)



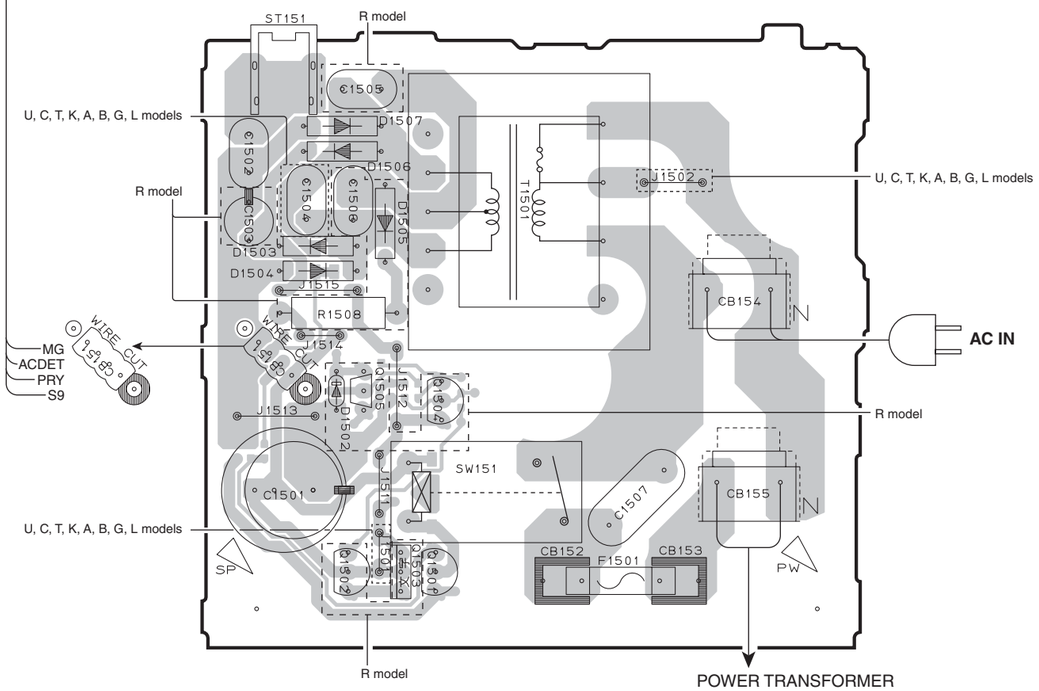
• Semiconductor Location

Ref no.	Location	Ref no.	Location
D1001	H3	Q1002	F3
D1002	H3	Q1003	F3
D1003	D5	Q1004	F3
D1004	D5	Q1005	G3
D1005	C5	Q1006	H3
D1006	C5	Q1007	F3
IC101	G3	Q1008	G3
Q1001	F3		

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



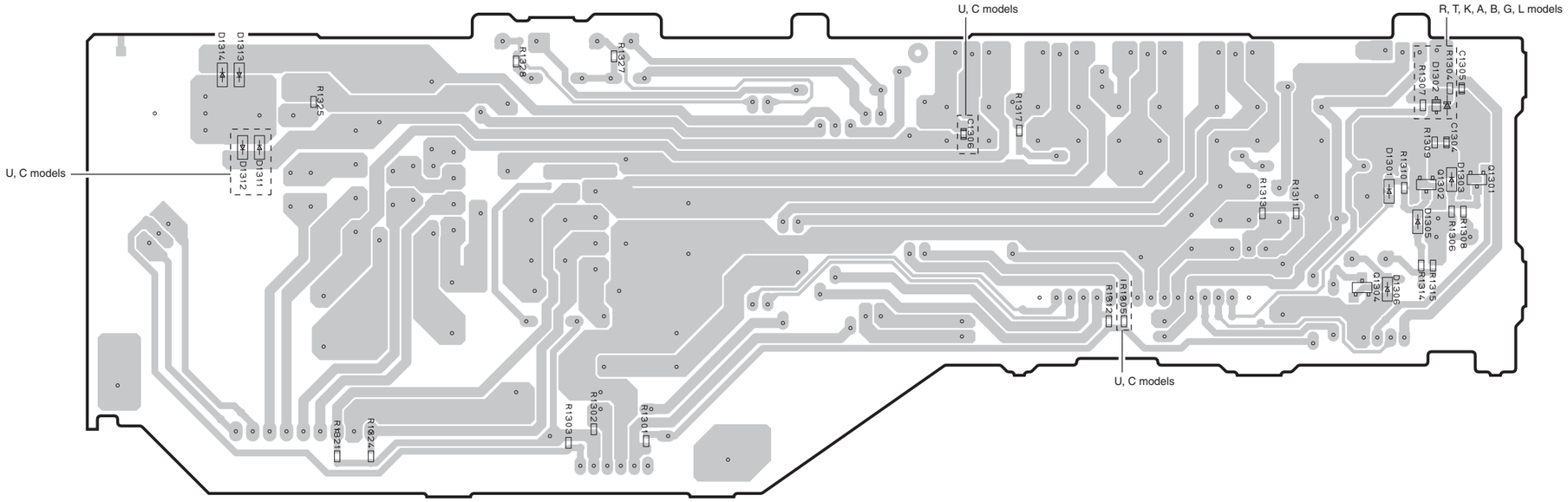
OPERATION (3) P.C.B. (Side A)



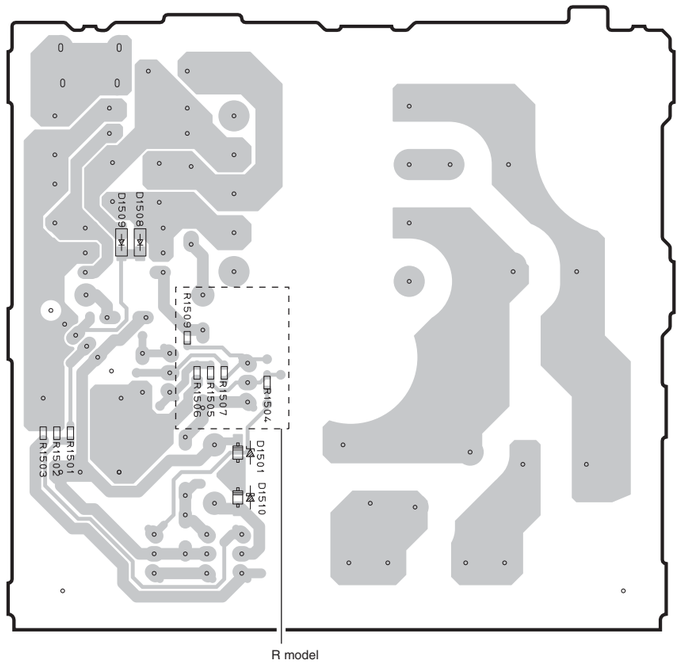
• Semiconductor Location

Ref no.	Location	Ref no.	Location
D1304	G2	IC132	F2
D1307	C2	IC133	G2
D1308	D3	IC134	G2
D1309	D2	IC135	G2
D1502	H6	Q1303	G3
D1503	G5	Q1501	H7
D1504	G5	Q1502	H7
D1505	H5	Q1503	H7
D1506	H5	Q1504	H6
D1507	H5	Q1505	H6
IC131	H2		

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



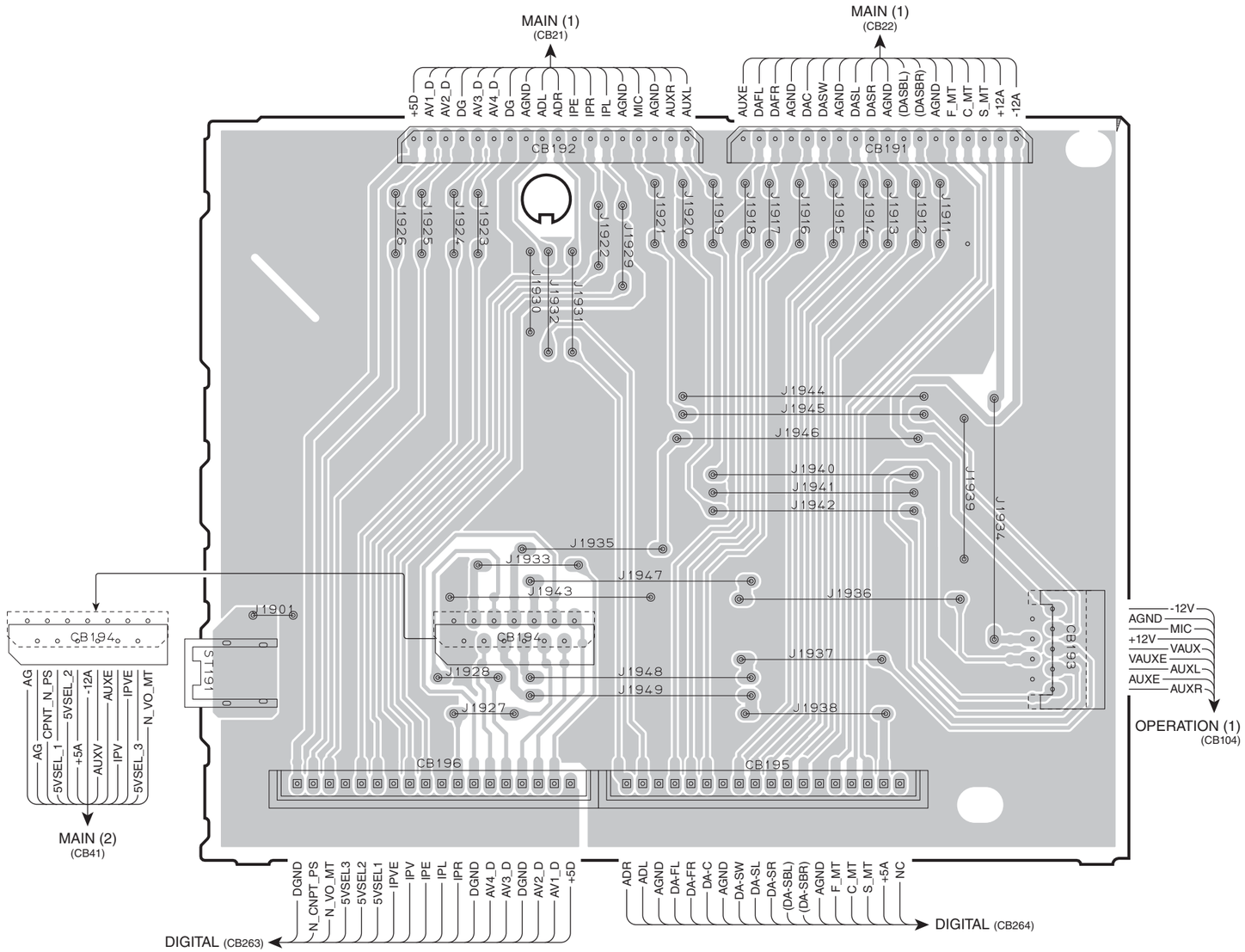
OPERATION (3) P.C.B. (Side B)



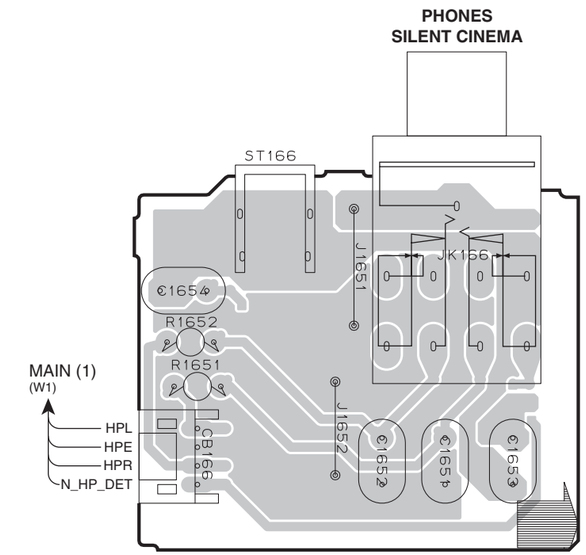
• Semiconductor Location

Ref no.	Location
D1301	H2
D1302	H2
D1303	H2
D1305	H2
D1306	H3
D1311	C2
D1312	C2
D1313	C2
D1314	C2
D1501	H6
D1508	H5
D1509	G5
D1510	H6
Q1301	I2
Q1302	H2
Q1304	H3

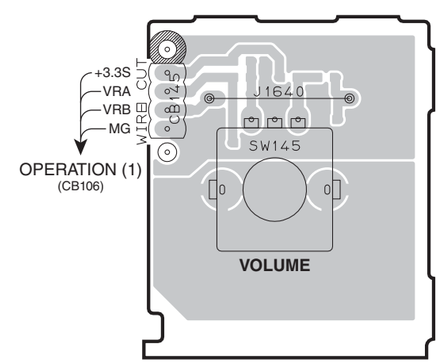
OPERATION (4) P.C.B. (Side A)



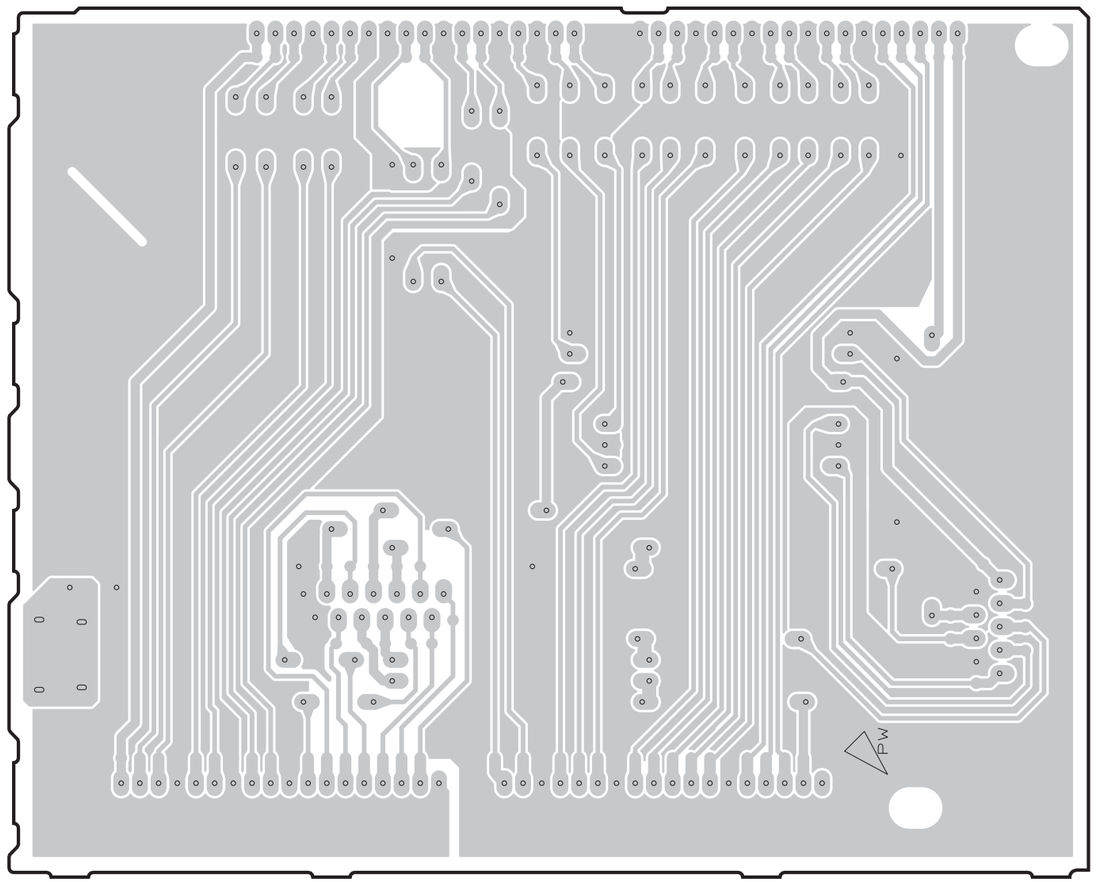
OPERATION (5) P.C.B. (Side A)



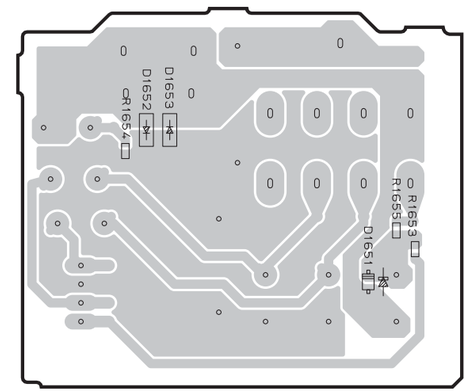
OPERATION (6) P.C.B. (Side A)



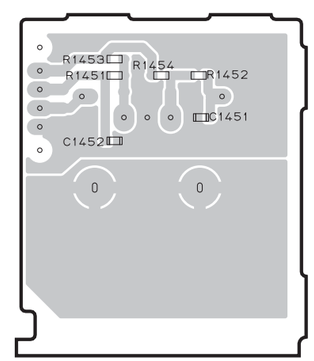
OPERATION (4) P.C.B. (Side B)



OPERATION (5) P.C.B. (Side B)



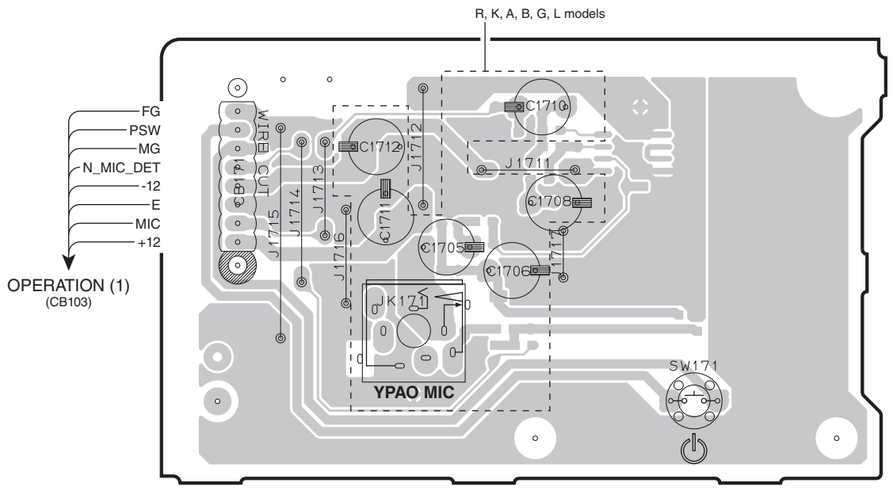
OPERATION (6) P.C.B. (Side B)



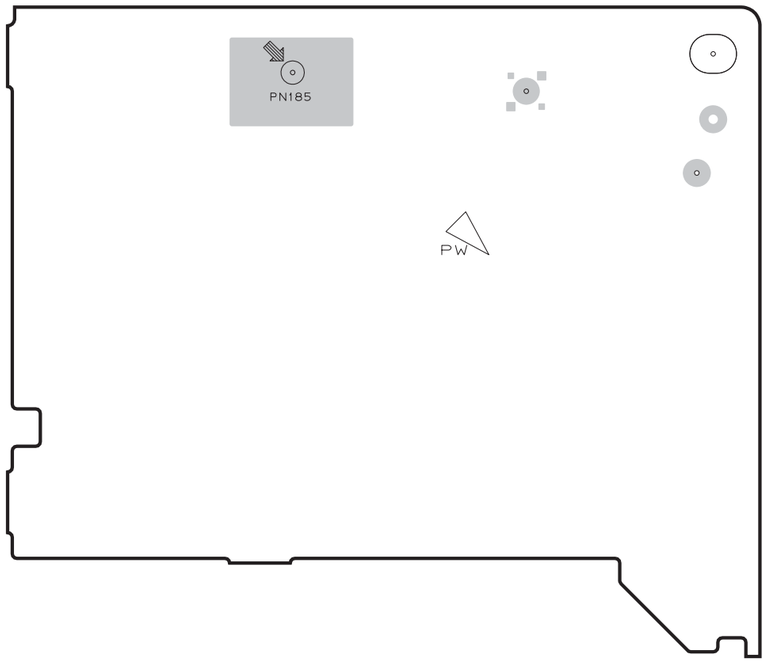
• Semiconductor Location

Ref no.	Location
D1651	I3
D1652	H3
D1653	H3

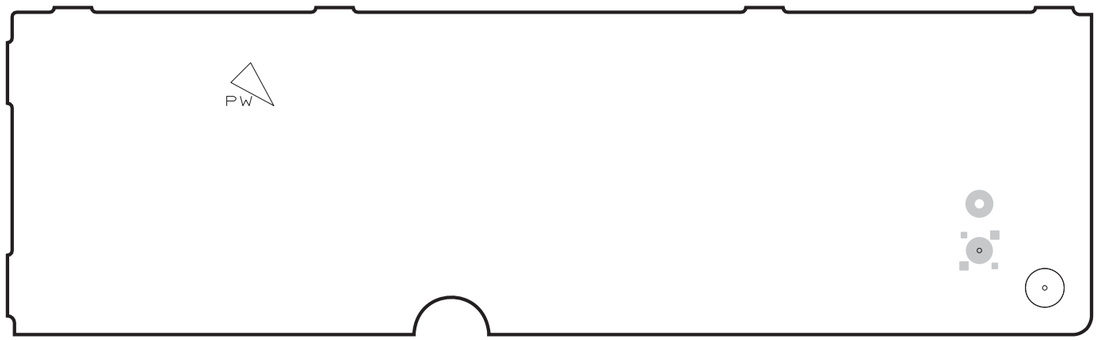
OPERATION (7) P.C.B. (Side A)



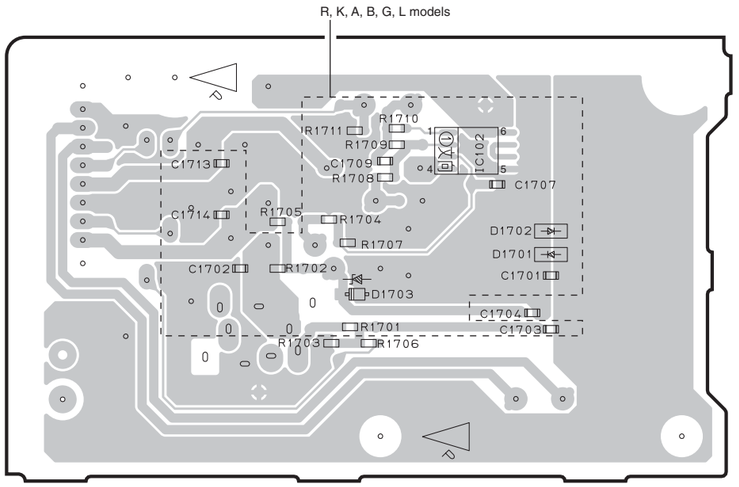
OPERATION (8) P.C.B. (Side A)



OPERATION (9) P.C.B. (Side A)



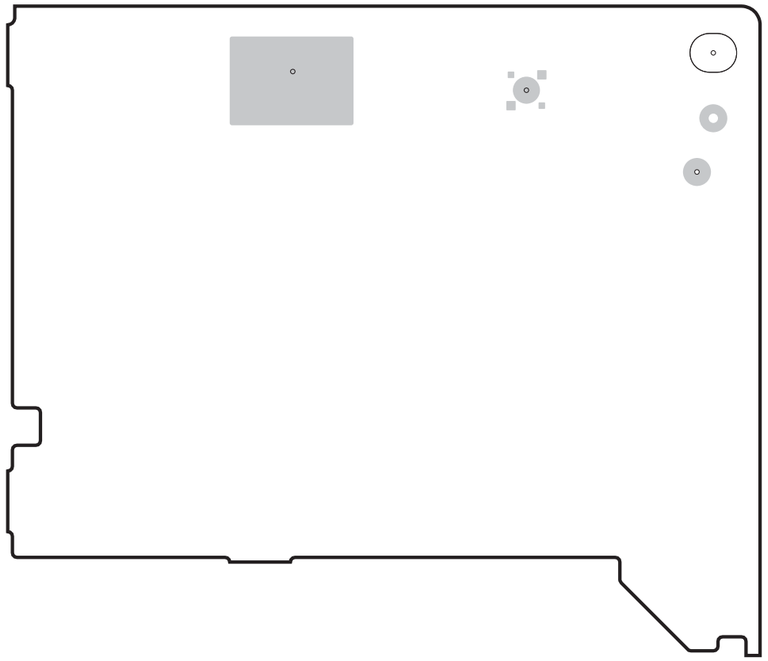
OPERATION (7) P.C.B. (Side B)



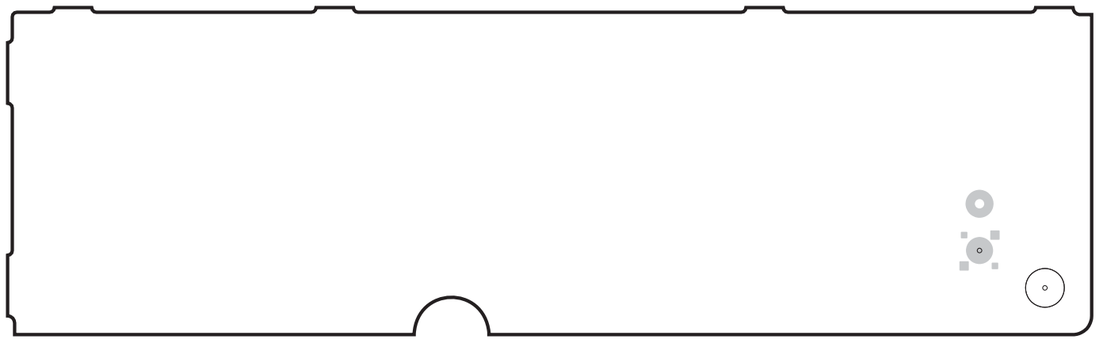
• Semiconductor Location

Ref no.	Location
D1701	D3
D1702	D3
D1703	C3
IC102	D2

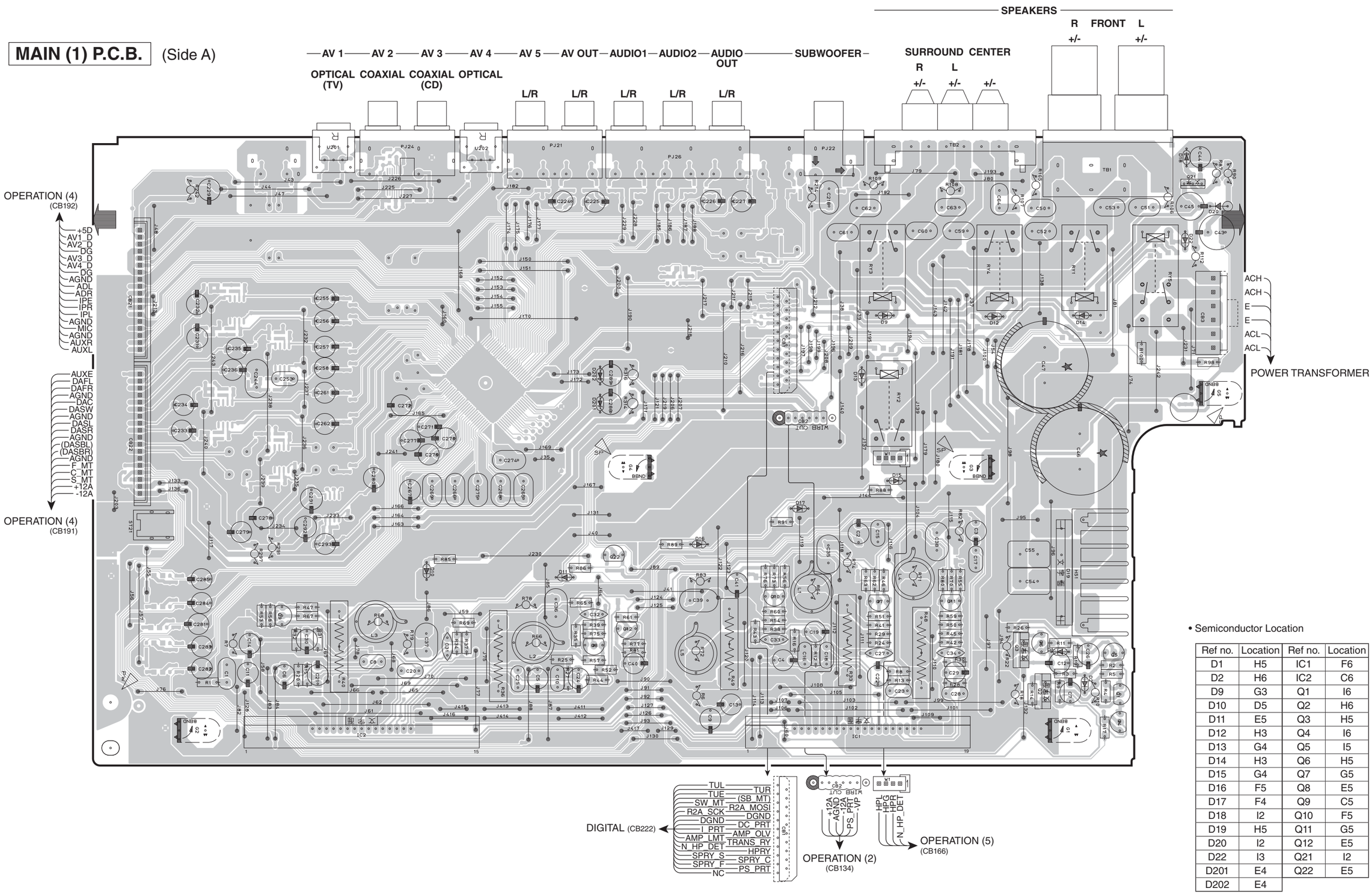
OPERATION (8) P.C.B. (Side B)



OPERATION (9) P.C.B. (Side B)



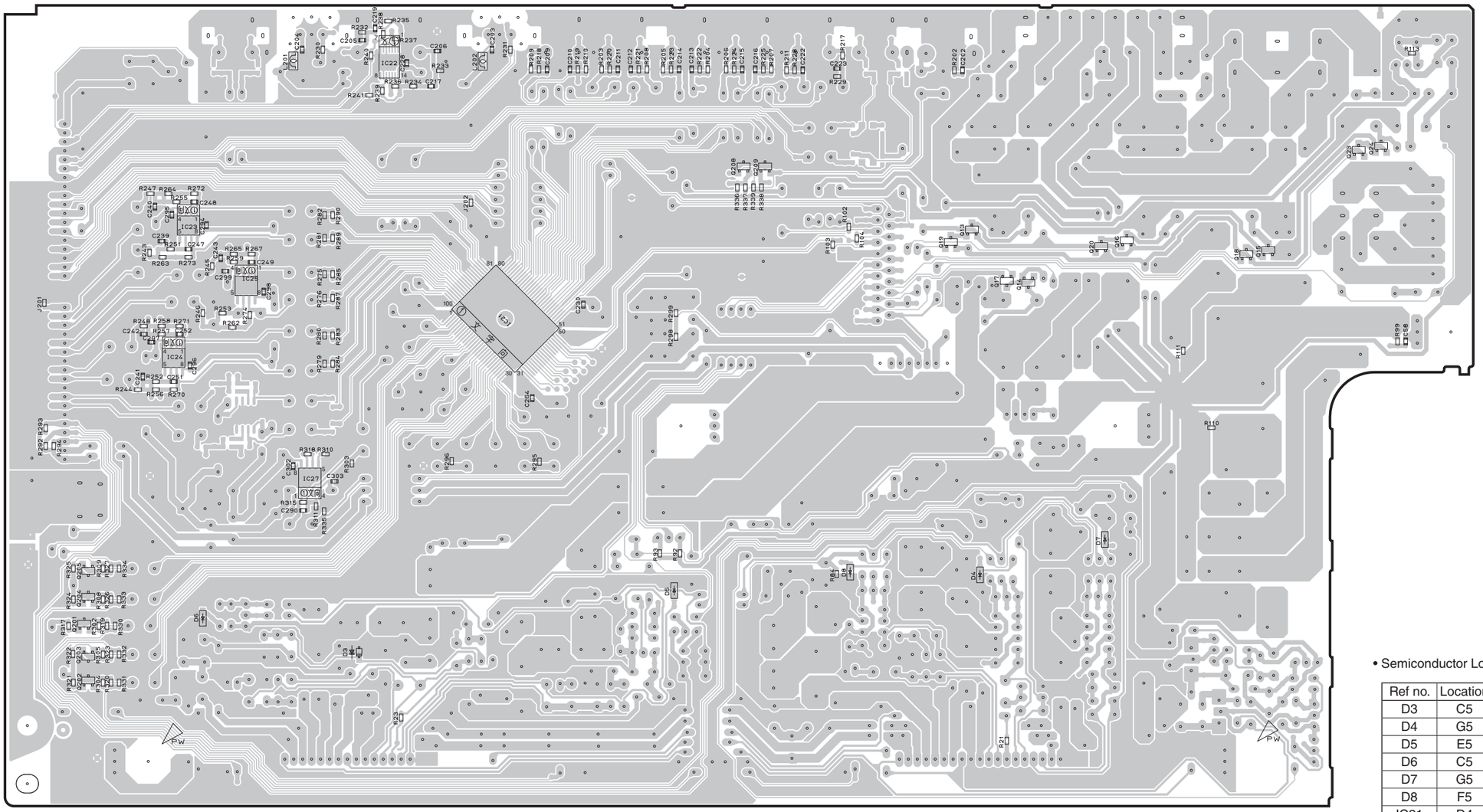
MAIN (1) P.C.B. (Side A)



• Semiconductor Location

Ref no.	Location	Ref no.	Location
D1	H5	IC1	F6
D2	H6	IC2	C6
D9	G3	Q1	I6
D10	D5	Q2	H6
D11	E5	Q3	H5
D12	H3	Q4	I6
D13	G4	Q5	I5
D14	H3	Q6	H5
D15	G4	Q7	G5
D16	F5	Q8	E5
D17	F4	Q9	C5
D18	I2	Q10	F5
D19	H5	Q11	G5
D20	I2	Q12	E5
D22	I3	Q21	I2
D201	E4	Q22	E5
D202	E4		

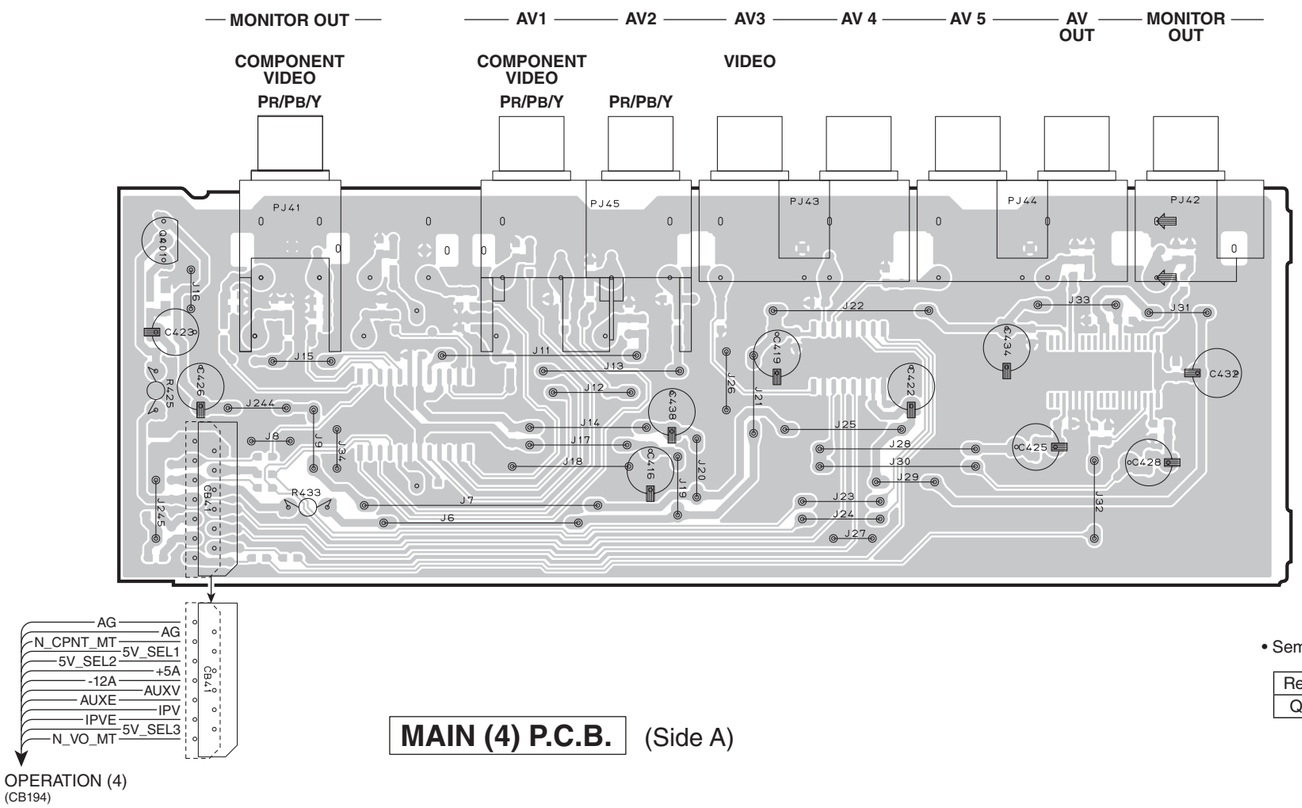
MAIN (1) P.C.B. (Side B)



• Semiconductor Location

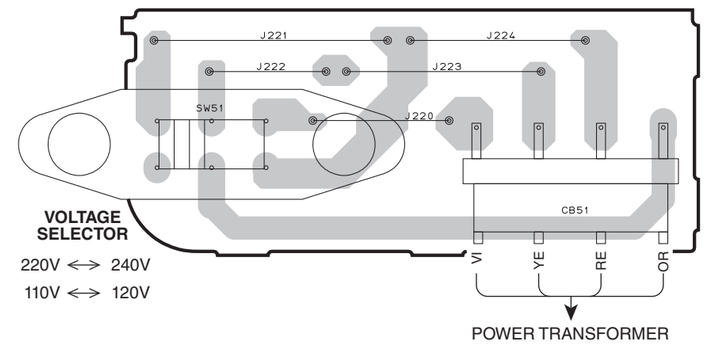
Ref no.	Location	Ref no.	Location
D3	C5	Q16	H3
D4	G5	Q17	G3
D5	E5	Q18	H3
D6	C5	Q19	G3
D7	G5	Q20	G3
D8	F5	Q23	I3
IC21	D4	Q24	I3
IC22	D2	Q201	B5
IC23	B3	Q202	B6
IC24	B4	Q203	B5
IC25	C3	Q204	B5
IC27	C4	Q205	B5
Q13	G3	Q208	F3
Q14	G3	Q209	F3
Q15	H3		

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



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

R model

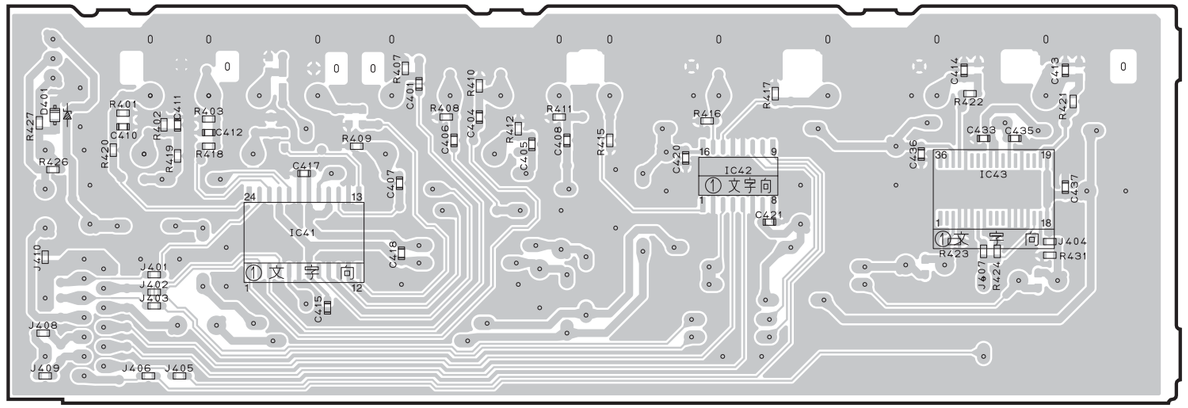


• Semiconductor Location

Ref no.	Location
Q401	B3

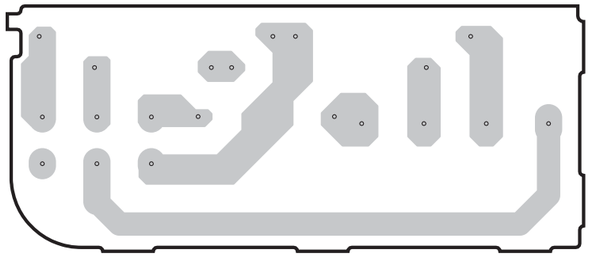
MAIN (4) P.C.B. (Side A)

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



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

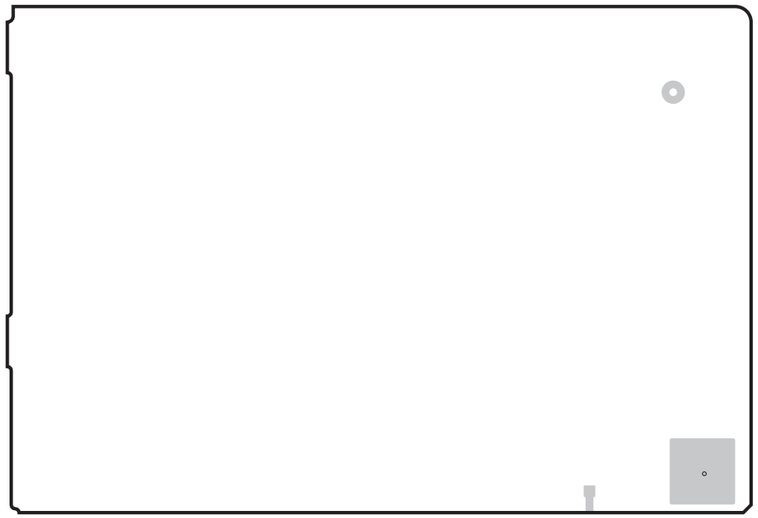
R model



• Semiconductor Location

Ref no.	Location
D401	B3
IC41	C3
IC42	D3
IC43	E3

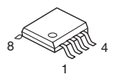
MAIN (4) P.C.B. (Side B)



■ PIN CONNECTION DIAGRAMS

• ICs

BD9325FJ



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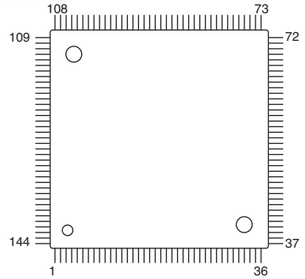
Sil9233ACTU



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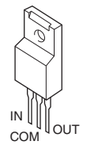

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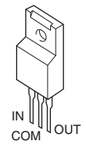

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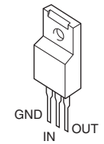
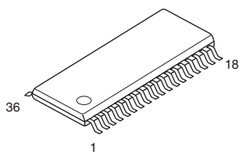
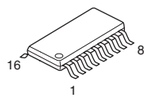


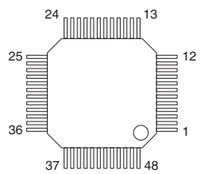
LA73050-TLM-E



LC72725KM-UY-TLM-E



LC89058WD-E



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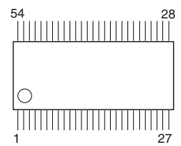

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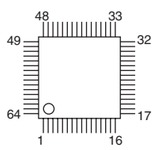

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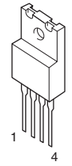
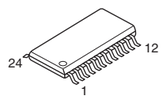
NJM2388F33

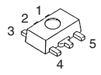


1. V_{IN}
2. V_{OUT}
3. GND
4. ON/OFF CONTROL

NJM2586AM (TE2)



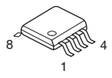
NJM2830U1-05 (TE1)
NJM2884U1-18 (TE1)



1. CONTROL (Active High)
2. GND
3. NC
4. V_{OUT}
5. V_{IN}

NJM2867F3-05

NJM4565M (TE1)



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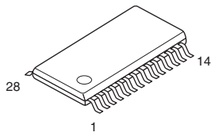

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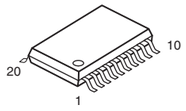

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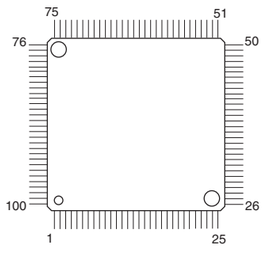

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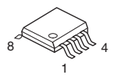
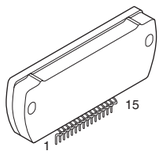
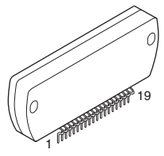


STK433-130Y-E



STK433-330Y-E



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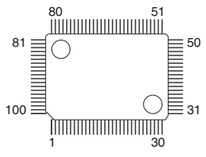

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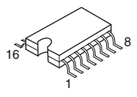

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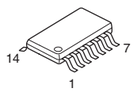
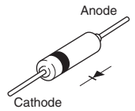
TC74VHCU04FT



• Diodes

1N4003S
1SS133
1SS176
1SS270A



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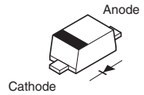
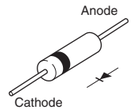


1T2



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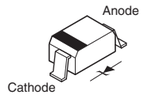

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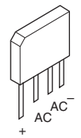

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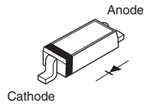

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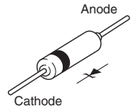
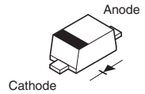
MTZJ6.8C
MTZJ10B
MTZJ39D



RB051LA-40
RB501V-40



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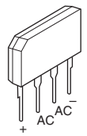
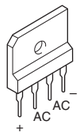
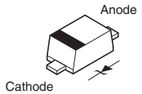


TS6P03G 6.0A 200V

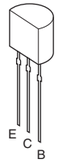


UDZS4.7B
UDZ5.1B
UDZS5.6B TE-17 5.6V
UDZS9.1B



• Transistors

2N5401C-AT/P
2SA1015-Y



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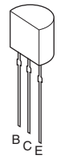
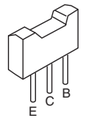
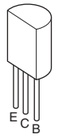


2SA1576A

2SA1708



2SC1815 Y
2SC1815 Y TP

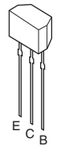


2SC4081 T106

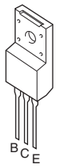
2SD2704 K

KRA104S-RTK
KRC102S-RTK
KRC104S-RTK

KRC102M-AT

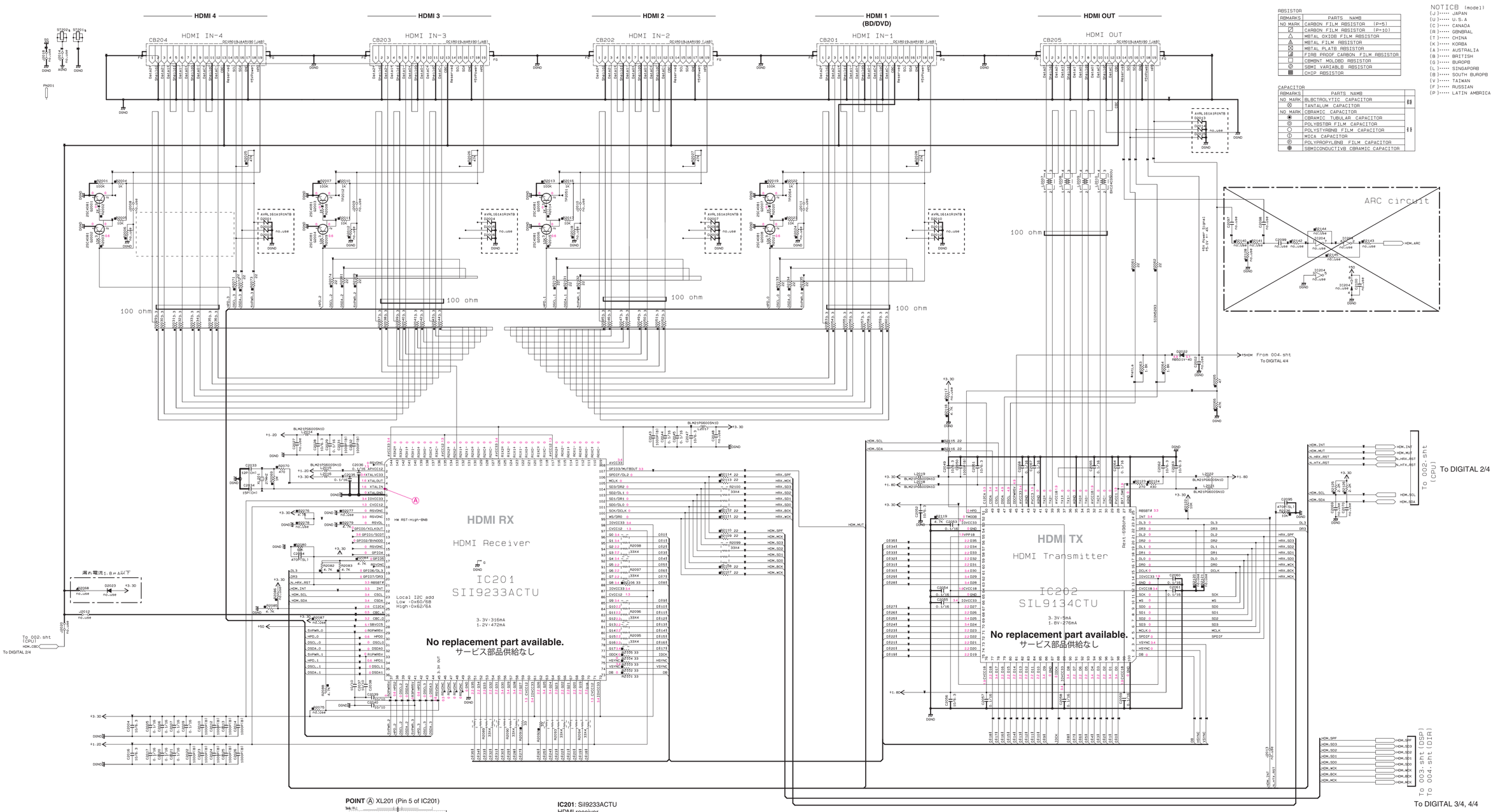


KTA1046-Y-U/P



KTC3875S

■ SCHEMATIC DIAGRAMS
DIGITAL 1/4



RESISTOR

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

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	
◉	CERAMIC TUBULAR CAPACITOR	
◎	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
①	MICA CAPACITOR	
⊙	POLYPROPYLENE FILM CAPACITOR	
●	SEMICONDUCTIVE CERAMIC CAPACITOR	

NOTICE (model)
(J)····· JAPAN
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(C)····· CANADA
(A)····· GENERAL
(T)····· CHINA
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(A)····· AUSTRALIA
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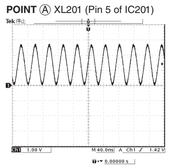
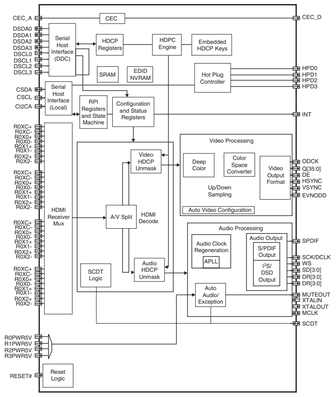
(G)····· EUROPE
(L)····· SINGAPORE
(B)····· SOUTH EUROPE
(V)····· TAIWAN
(F)····· RUSSIAN
(P)····· LATIN AMERICA

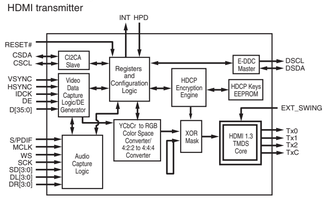
POINT Ⓐ XL201 (Pin 5 of IC201)



IC201: SII9233ACTU
HDMI receiver

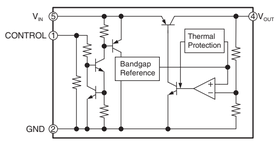


IC202: Sil9134CTU
HDMI transmitter



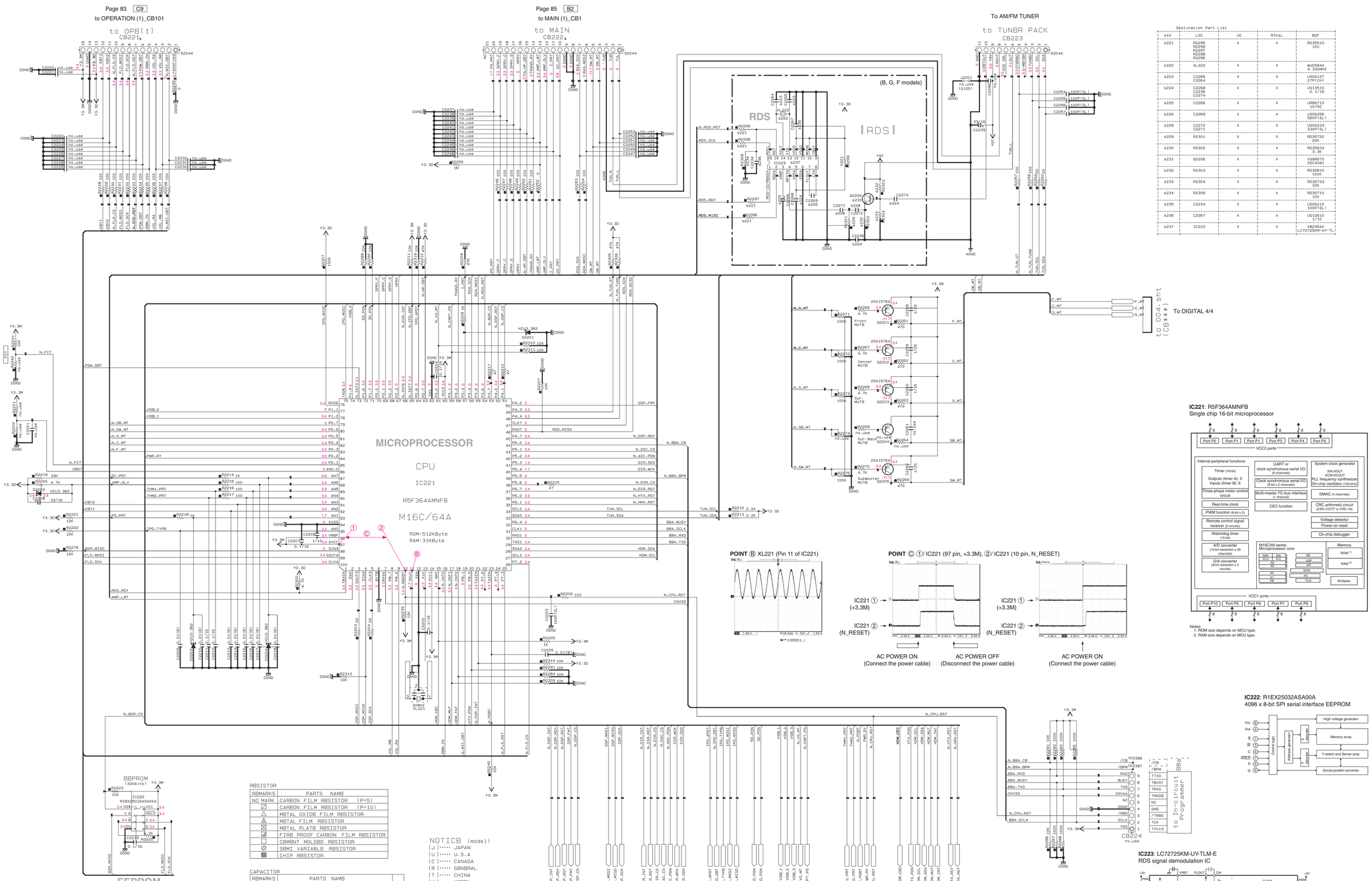
3.3V 1.8V

IC203: NJM2884U1-18 (TE1)
Low dropout voltage regulator



★ All voltages are measured with a 10MΩ/V DC electronic voltmeter.
★ 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.

DIGITAL 2/4



Destination Part List

sXX	LOC	UC	RTKAL	BGF
s221	R2295 R2299 R2297 R2298 R2296	X	X	RD35510 100
s222	XL222	X	X	WU05840 4.332MHZ
s223	C2265 C2264	X	X	US06127 27P(CH)
s224	C2268 C2236 C2274	X	X	US13510 0.1/16
s225	C2266	X	X	UR86710 10/50
s226	C2269	X	X	US06256 560P(SL)
s228	C2272 C2271	X	X	US06233 330P(SL)
s229	R2301	X	X	RD35722 22K
s230	R2302	X	X	RD35633 3.3K
s231	Q2206	X	X	VQ98670 2SC4081
s232	R2303	X	X	RD35810 100K
s233	R2304	X	X	RD35733 33K
s234	R2308	X	X	RD35710 10K
s235	C2234	X	X	US06210 100P(SL)
s236	C2267	X	X	US12610 1/10
s237	IC223	X	X	X82354D LC72725KM-UY-TL

POINT Ⓑ XL221 (Pin 11 of IC221)

POINT Ⓒ ①/ IC221 (97 pin, +3.3M), ②/ IC221 (10 pin, N_RESET)

IC221 ① (+3.3M)
IC221 ② (N_RESET)

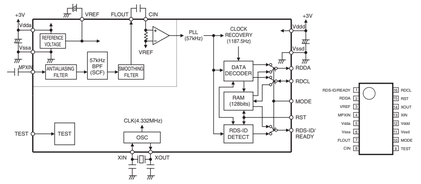
AC POWER ON (Connect the power cable)
AC POWER OFF (Disconnect the power cable)
AC POWER ON (Connect the power cable)

IC221: R5F364AMNFB
Single chip 16-bit microprocessor

Notes:
1. ROM size depends on MCU type.
2. RAM size depends on MCU type.

IC222: R1EX25032ASA00A
4096 x 8-bit SPI serial interface EEPROM

IC223: LC72725KM-UY-TLM-E
RDS signal demodulation IC



RESISTOR

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

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⊟
⊘	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	⊥⊥
◉	CERAMIC TUBULAR CAPACITOR	
◎	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
ⓘ	MICA CAPACITOR	
ⓟ	POLYPROPYLENE FILM CAPACITOR	
⊛	SEMICONDUCTIVE CERAMIC CAPACITOR	

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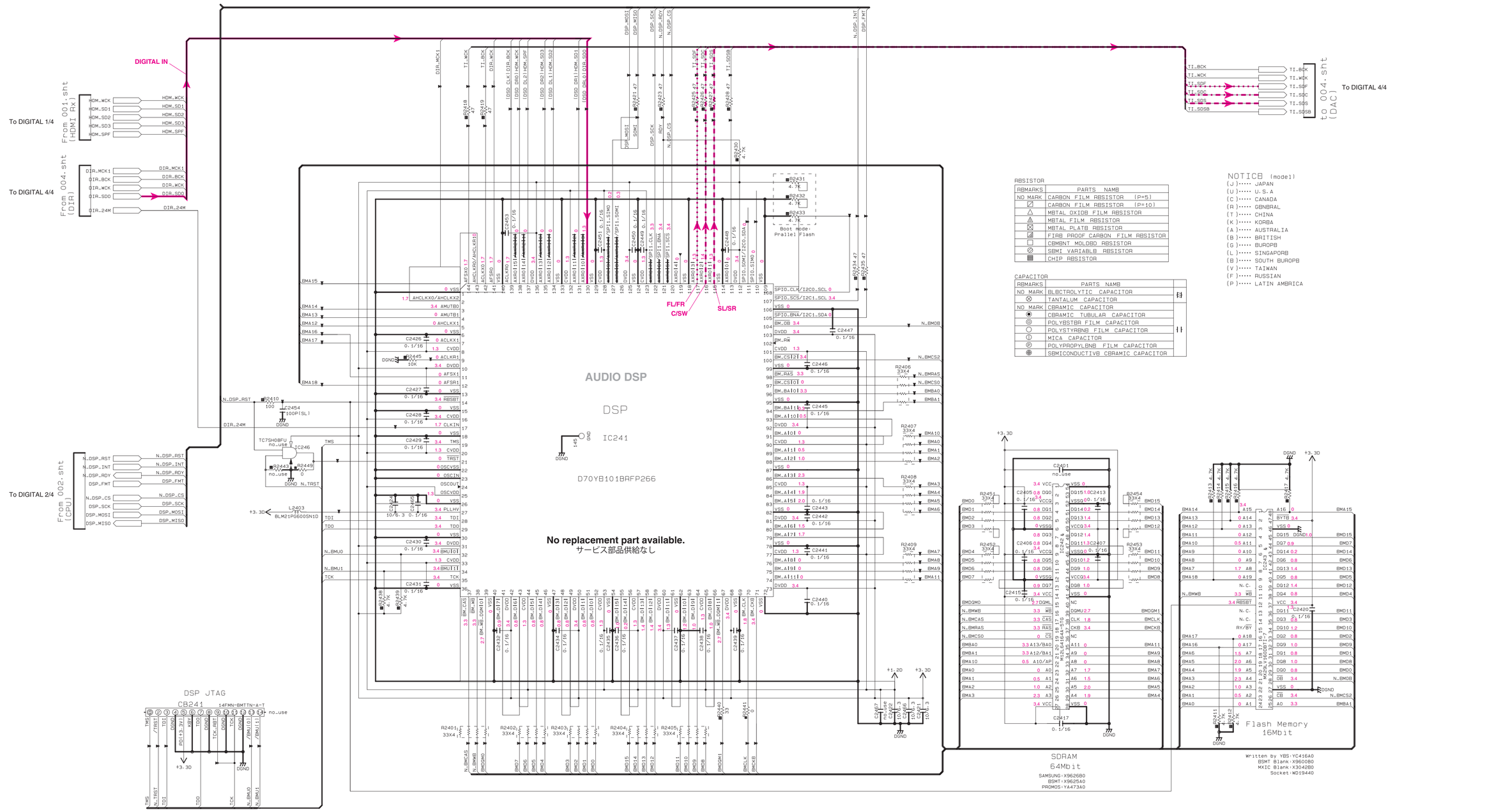
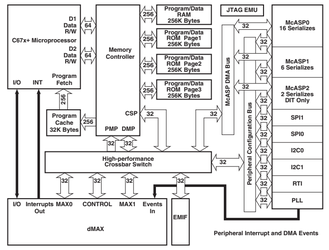
★ Schematic diagram is subject to change without notice.

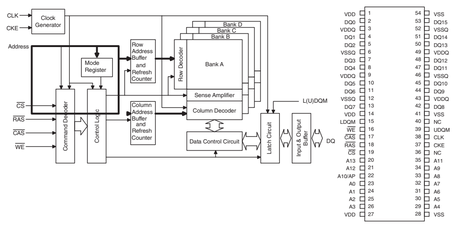
DIGITAL 3/4



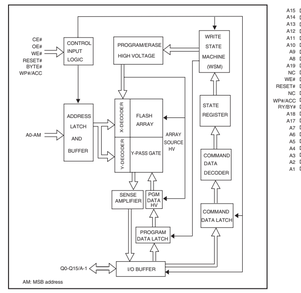
IC241: D70YE101BRFP266
Floating-point digital signal processors



IC242: M12L64164A-5TG
1M x 16-bit x 4 banks synchronous DRAM



IC243: MX29LV160DBTI-70G
16M-bit 3V supply flash memory



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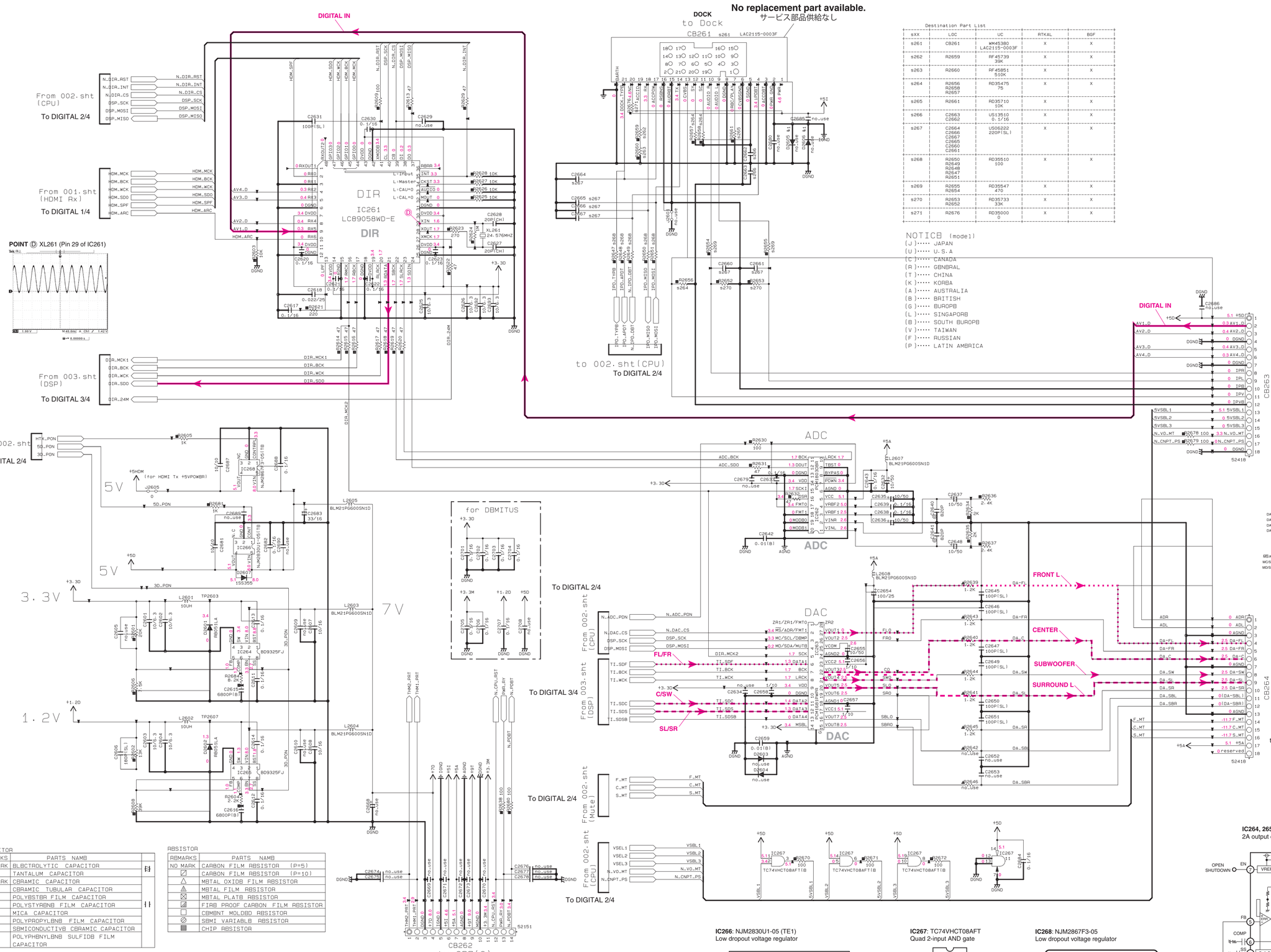
★ Schematic diagram is subject to change without notice.

DIGITAL 4/4



Destination Part List

sXX	LOC	UC	RTKAL	BGF
s261	C8261	WM45380 LAC2115-0003F	X	X
s262	R2659	RF45739 39K	X	X
s263	R2660	RF45851 510K	X	X
s264	R2656 R2658 R2657	RD35475 75	X	X
s265	R2661	RD35710 10K	X	X
s266	C2663 C2662	US13510 0.1/16	X	X
s267	C2664 C2666 C2667 C2665 C2660 C2661	US06222 220P(SL)	X	X
s268	R2650 R2649 R2648 R2647 R2651	RD35510 100	X	X
s269	R2655 R2654	RD35547 470	X	X
s270	R2653 R2652	RD35733 33K	X	X
s271	R2676	RD35000 0	X	X

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(V)····· TAIWAN
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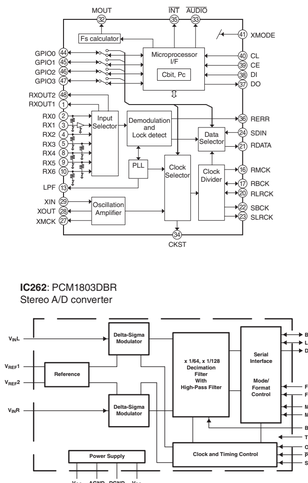
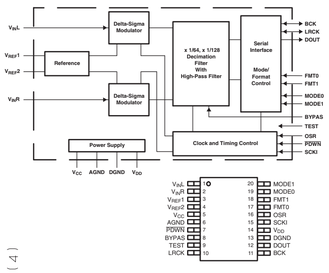
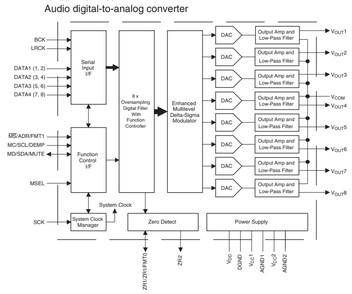
IC261: LC89058WD-E
Digital audio interface receiver



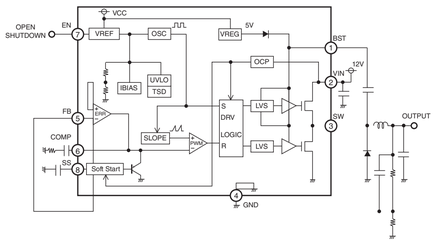
IC262: PCM1803DBR
Stereo A/D converter



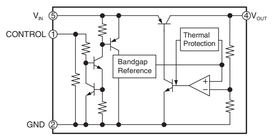
IC263: PCM1681PWPR
Audio digital-to-analog converter



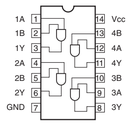
IC264, 265: BD9325FJ
2A output current integrated MOSFET step down regulator



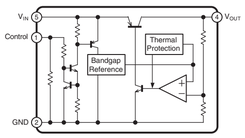
IC266: NJM2830U1-05 (TE1)
Low dropout voltage regulator



IC267: TC74VHCT08AFT
Quad 2-input AND gate



IC268: NJM2867F3-05
Low dropout voltage regulator



CAPACITOR

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

RESISTOR

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

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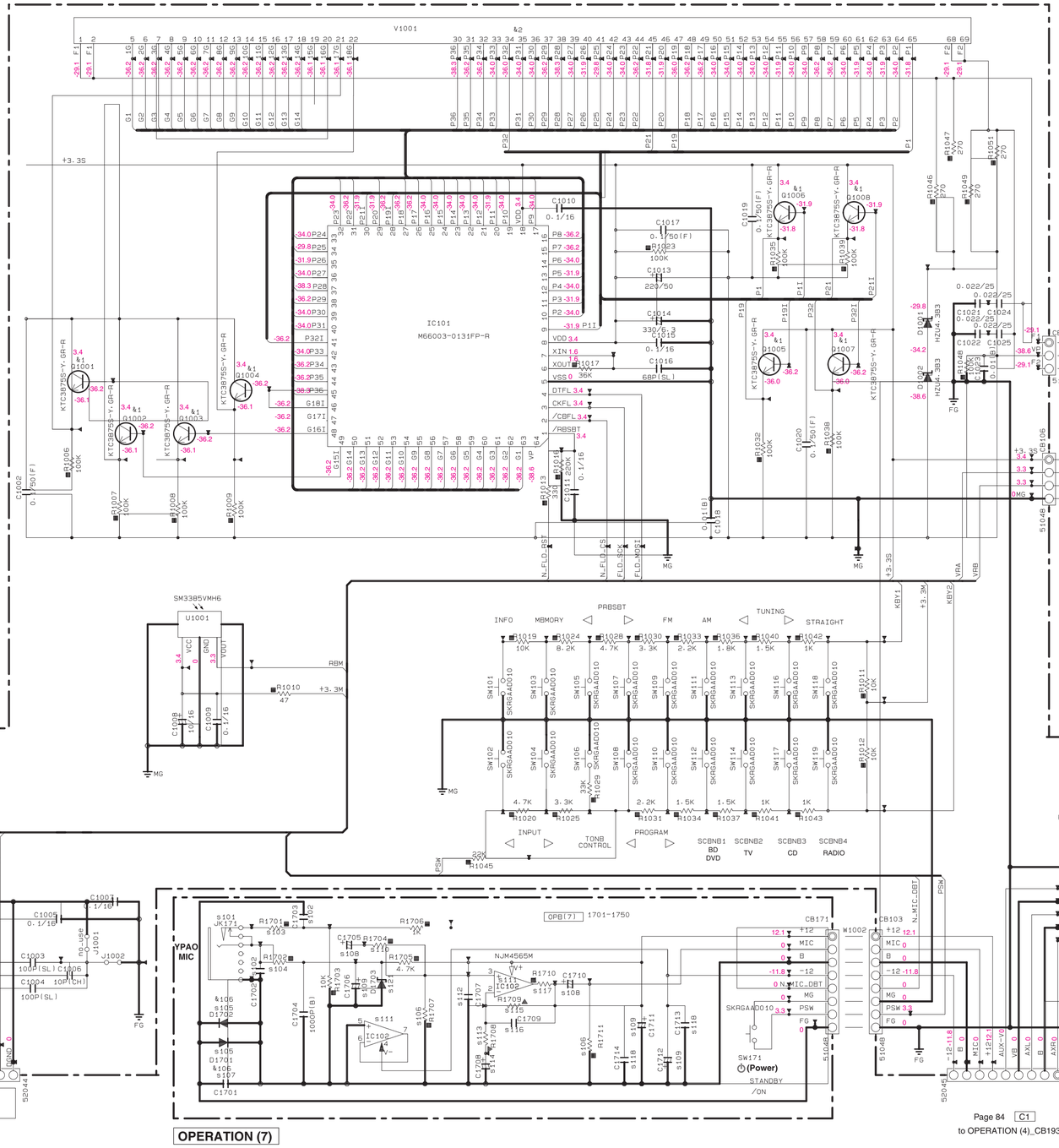
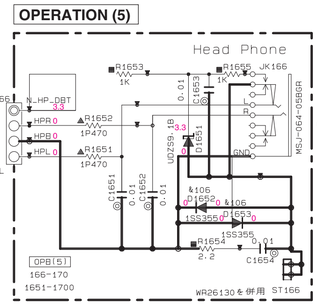
★ Schematic diagram is subject to change without notice.

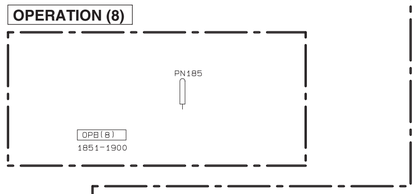
OPERATION 1/2



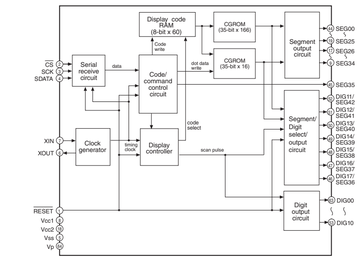


PHONES
CILENT CINEMA

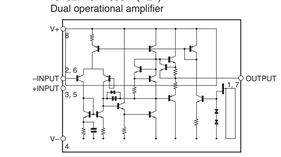
Page 85 J4
to MAIN (1)_W1



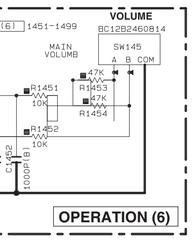
Page 80 B2
to DIGITAL_CB221



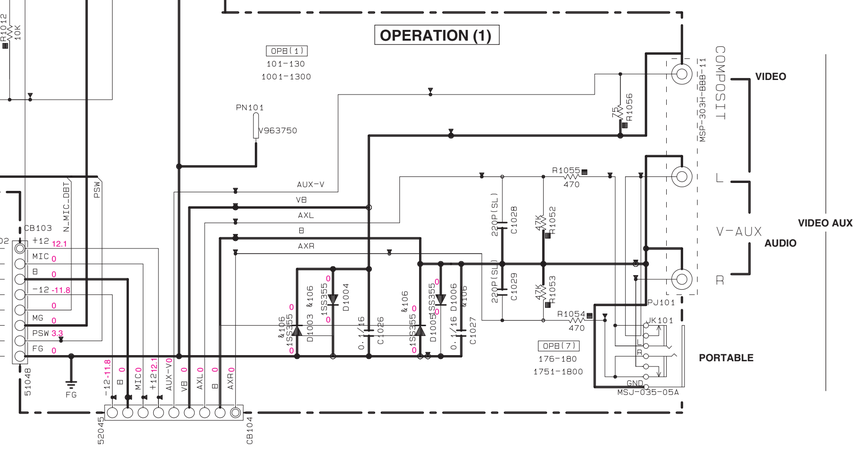
IC101: M66003-0131FP-R
18 digit 5 x 7 segment VFD controller/driver



IC102: NJM4565M (TE1)
Dual operational amplifier



Page 84 F9
to OPERATION (2)_CB136



Page 84 C1
to OPERATION (4)_CB193

Key detection for A/D port
Key input (A/D) pull-up resistance 10 k-ohms

Ohm	0	+ 1.0 k	+ 1.5 k	+ 1.8 k	+ 2.2 k	+ 3.3 k	+ 4.7 k	+ 8.2 k	+ 10.0 k
V	0 – 0.15	0.15 – 0.48	0.49 – 0.82	0.83 – 1.14	1.15 – 1.46	1.47 – 1.79	1.80 – 2.12	2.13 – 2.40	2.41 – 2.91
A/D value (3.3V=255)	0 – 11	12 – 37	38 – 64	65 – 88	89 – 113	114 – 139	140 – 164	165 – 186	187 – 226
KEY1 (92 pin)	STRAIGHT	TUNING >>	TUNING <<	AM	FM	PRESET >	PRESET <	MEMORY	INFO

Ohm	0	+ 1.0 k	+ 1.0 k	+ 1.5 k	+ 1.5 k	+ 2.2 k	+ 3.3 k	+ 4.7 k	(22 k + 33 k)	22.0 k	33.0 k
V	0 – 0.15	0.15 – 0.42	0.43 – 0.70	0.71 – 0.97	0.98 – 1.24	1.25 – 1.53	1.54 – 1.84	1.84 – 2.10	2.11 – 2.33	2.34 – 2.54	2.54 – 2.71
A/D value (3.3V=255)	0 – 11	12 – 32	33 – 54	55 – 75	76 – 96	97 – 119	12 – 142	143 – 163	164 – 181	182 – 197	198 – 209
KEY2 (91 pin)	SCENE RADIO	SCENE CD	SCENE TV	SCENE BD/DVD	PROGRAM >	PROGRAM <	INPUT >	INPUT <	–	(Power)	TONE CONTROL

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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
□	COMPONENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

CAPACITOR

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

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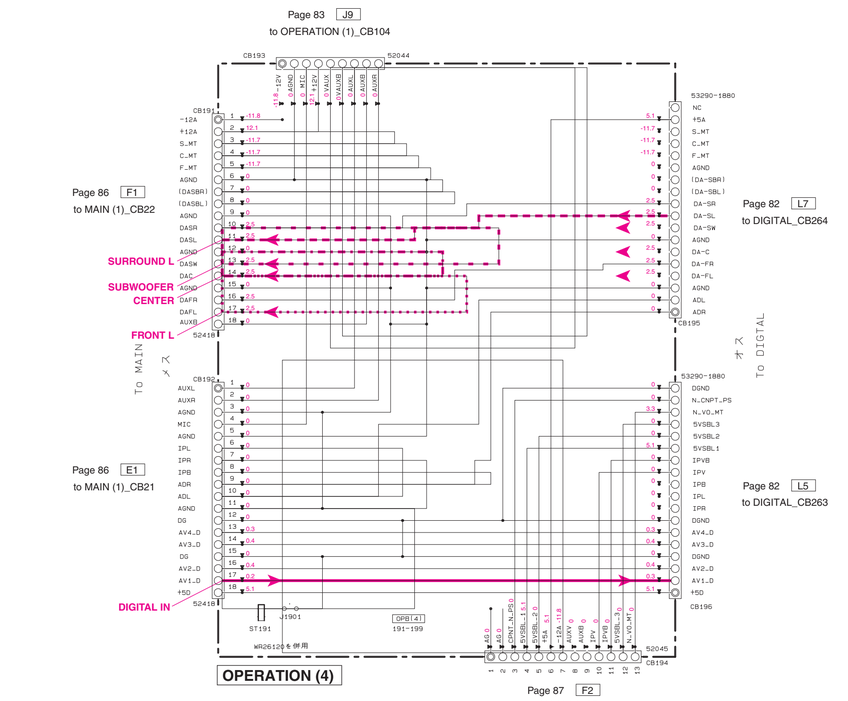
OPERATION 2/2



Destination Part List

sXX	LOC	U	C	R	T	KABGL
s101	JK171	X	X	WJ11730 MSJ-2200C_AG	X	WJ11730 MSJ-2200C_AG
s102	C1703 C1702	X	X	US06310 100SP(B)	X	US06310 100SP(B)
s103	R1701	X	X	RD35610 1K	X	RD35610 1K
s104	R1702	X	X	RD35647 4.7K	X	RD35647 4.7K
s105	D1702 D1701	X	X	VT33290 1SS355	X	VT33290 1SS355
s106	R1707 R1711	X	X	RD35810 100K	X	RD35810 100K
s107	C1701	X	X	US06410 0.01(B)	X	US06410 0.01(B)
s108	C1705 C1710	X	X	UM39710 10/16	X	UM39710 10/16
s109	C1711 C1712 C1706	X	X	UM39722 22/16	X	UM39722 22/16
s110	R1704	X	X	RD35522 220	X	RD35522 220
s111	IC102	X	X	X7378A0 N_M4565M	X	X7378A0 N_M4565M
s112	C1707	X	X	US06210 100P(SL)	X	US06210 100P(SL)
s113	R1708	X	X	RF35547 470	X	RF35547 470
s114	C1708	X	X	UM38747 47/6.3	X	UM38747 47/6.3
s115	R1709	X	X	RF35712 12K	X	RF35712 12K
s116	C1709	X	X	US06133 33P(CH)	X	US06133 33P(CH)
s117	R1710	X	X	RD35682 8.2K	X	RD35682 8.2K
s118	C1713 C1714	X	X	US06510 0.1/50(F)	X	US06510 0.1/50(F)
s121	D1703	X	X	VU17190 UDZ55.1B	X	VU17190 UDZ55.1B
s132	TH2	X	WT69B30 WC92N4103J1	X	X	X
s133	C1306	US13510 0.1/16	US13510 0.1/16	X	X	X
s136	C1317	UR73947 4700/16	UR73947 4700/16	X	X	X
s151	T1501	X8521A0 X8521	X8521A0 X8521	X8522A0 X8522	X8523A0 X8523	X8523A0 X8523
s152	C1506 C1505	X	X	WJ60500 0.01	X	X
s153	C1504	WJ60500 0.01	WJ60500 0.01	X	WJ60500 0.01	WJ60500 0.01
s154	D1505	X	X	VS99780 1T241	X	X

Destination Part List

sXX	LOC	U	C	R	T	KABGL
s155	R1508	X	X	VC75790 2P47	X	X
s156	J1501	VN50000	VN50000	X	VN50000	VN50000
s157	Q1503	X	X	VP87260 A170B(S/T)	X	X
s158	Q1502 Q1504	X	X	TA10151 A101S(Y)	X	X
s159	Q1505	X	X	WC52920 KRC102M-AT/P	X	X
s160	R1507	X	X	RD35747 47K	X	X
s161	D1502	X	X	VG43700 MTZJ4.7A	X	X
s162	R1504	X	X	RD35610 1K	X	X
s163	R1505	X	X	RD35722 22K	X	X
s164	R1506	X	X	RD35647 4.7K	X	X
s171	F1501	WB22120 6.00A125V	WB22120 6.00A125V	WM93310 TS05.0A250V	VV07170 3.15A250V	VV07170 3.15A250V
s174	D1307	WH48730 RS203M-B-C-JB0	WH48730 RS203M-B-C-JB0	X	X	X
s175	D1312 D1311	VT33290 1SS355	VT33290 1SS355	X	X	X
s178	C1503	X	X	UR89710 10/100	X	X
s179	R1509	X	X	RD35810 100K	X	X
s180	J1502	VN50000	VN50000	X	VN50000	VN50000
s181	C1501	UR74922 2200/25	UR74922 2200/25	UR75922 2200/35	UR74922 2200/25	UR74922 2200/25
s182	IC132	X4928A0 KIA7805API	X4928A0 KIA7805API	X4928A0 KIA7805API	X	X
s183	C1312 C1308	UR86610 1/50	UR86610 1/50	UR86610 1/50	X	X
s184	R1322	WJ68160 1P0.22	WJ68160 1P0.22	X	X	X
s185	R1304	X	X	RD35610 1K	RD35610 1K	RD35610 1K
s186	D1302	X	X	VU17190 UDZ55.1B	VU17190 UDZ55.1B	VU17190 UDZ55.1B
s187	R1307	X	X	RD35718 18K	RD35718 18K	RD35718 18K
s188	R1305	RD35715 15K	RD35715 15K	X	X	X

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
□	COMPOSITION MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	日
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	日
◉	CERAMIC TUBULAR CAPACITOR	
⓪	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
ⓘ	MICA CAPACITOR	
ⓟ	POLYPROPYLENE FILM CAPACITOR	
◉	SEMICONDUCTIVE CERAMIC CAPACITOR	

NOTICE (model)
(J)····· JAPAN
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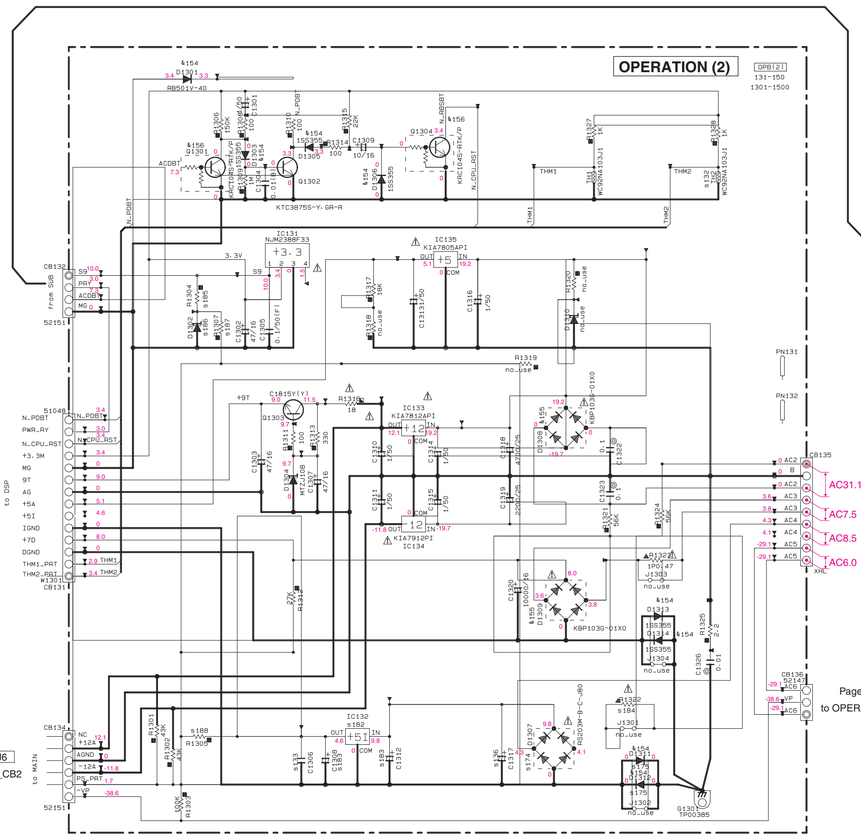
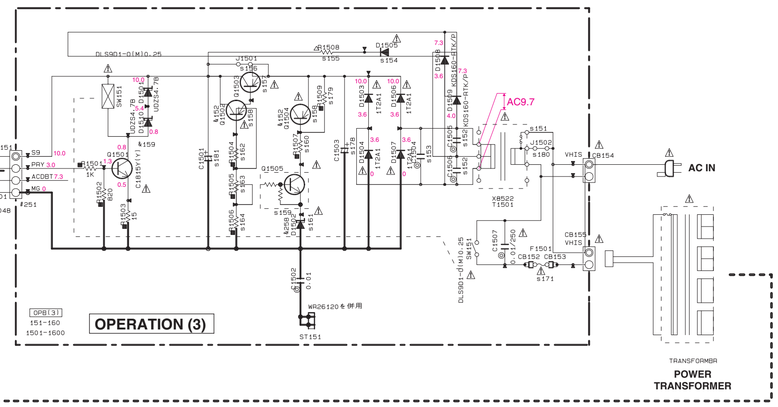
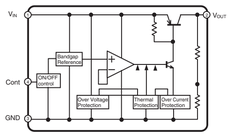
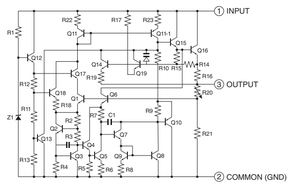




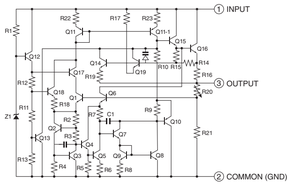
IC131: NJM2388F33
Low dropout voltage regulator with ON/OFF control



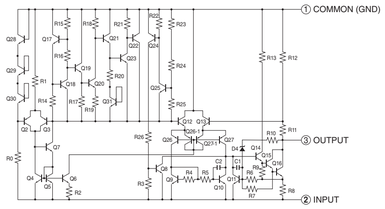
IC132, 135: KIA7805API
Voltage regulator



IC133: KIA7812API
Voltage regulator



IC134: KIA7912PI
Voltage regulator



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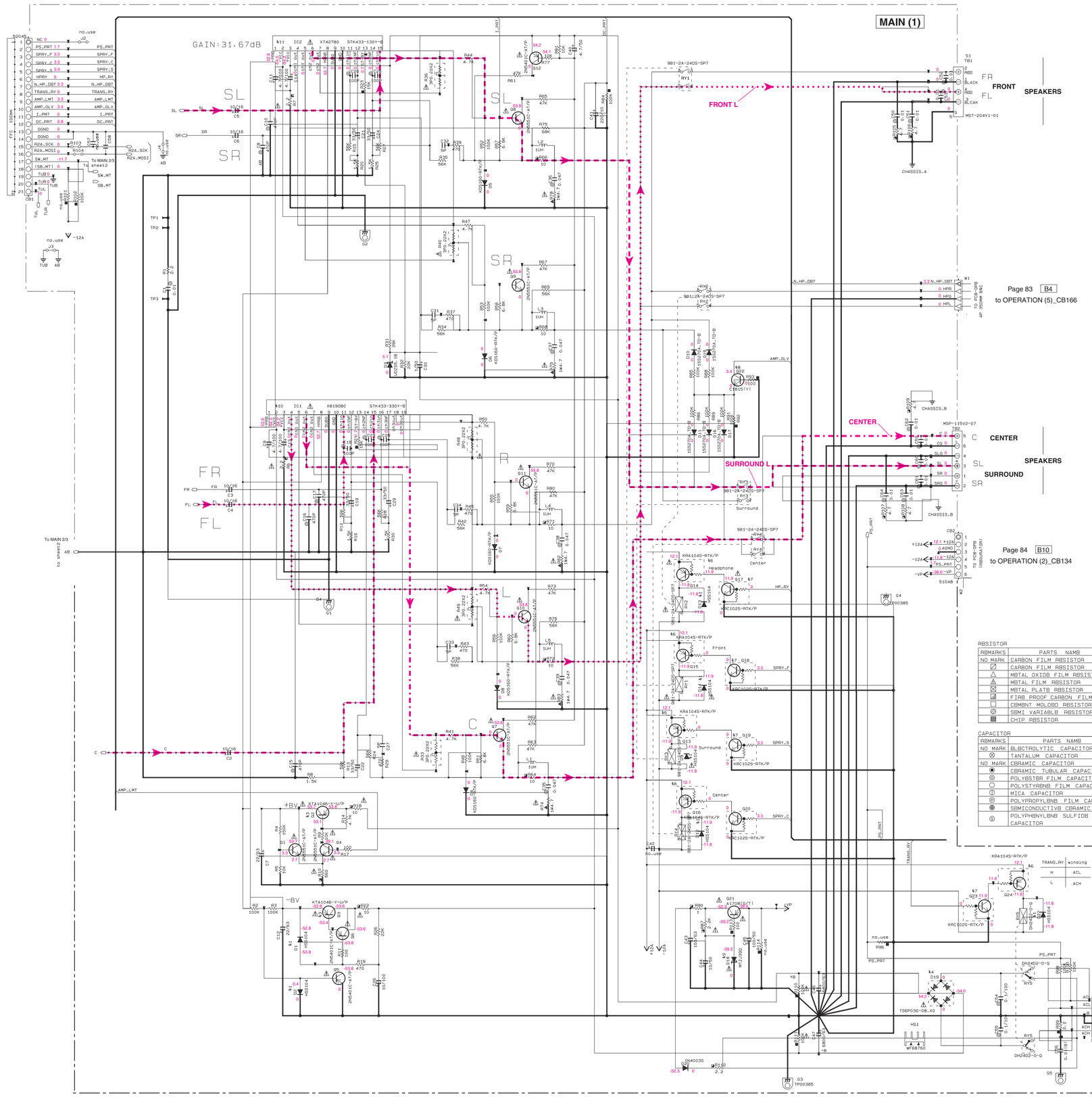
★ Schematic diagram is subject to change without notice.

MAIN 1/3



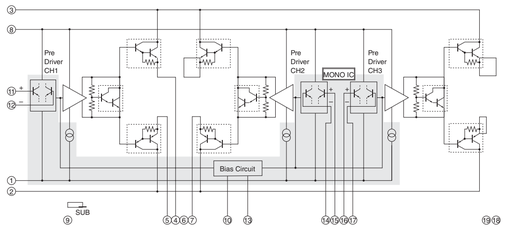
MAIN(1)

Location:TP1～TP200

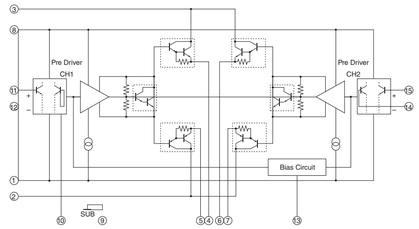
Location:*1～*200

Location:**1～**20

IC1: STK433-330Y-E
3-channel AF power amplifier, stand-by circuit built-in



IC2: STK433-130Y-E
2-channel AF power amplifier, stand-by circuit built-in



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
	COMPOSITE MOLDED RESISTOR
	SEMI VARIABLE RESISTOR
	CHIP RESISTOR

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	
	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	
	CERAMIC TUBULAR CAPACITOR	
	POLYESTER FILM CAPACITOR	
	POLYSTYRENE FILM CAPACITOR	
	MICA CAPACITOR	
	POLYPROPYLENE FILM CAPACITOR	
	SEMICONDUCTIVE CERAMIC CAPACITOR	
	POLYPHENYLENE SULFIDE FILM CAPACITOR	

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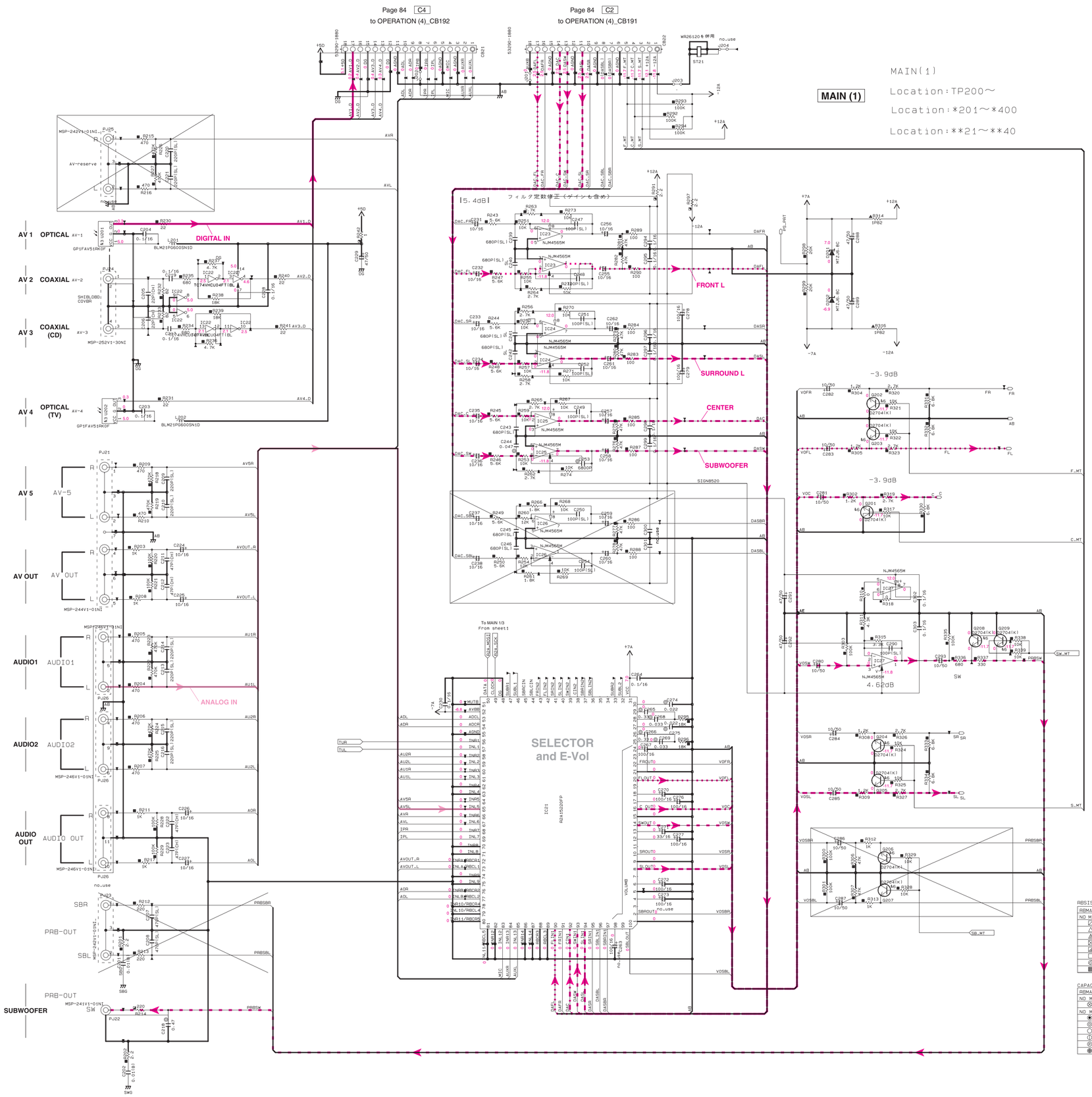
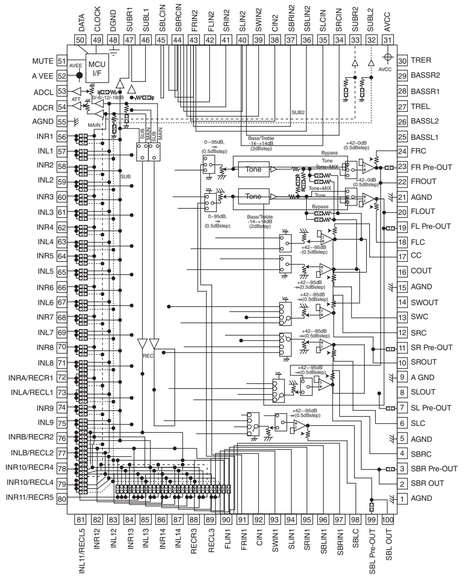
★ Schematic diagram is subject to change without notice.

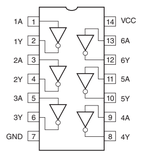
MAIN 2/3



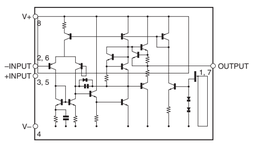
IC21: R2A15220FP
8-channel electronic volume with 11 input selector and tone control



IC22: TC74VHCU04FT
Hex inverters



IC23, 24, 25, 27: NJM4565M (TE1)
Dual operational amplifier



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
□	COMPONENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	
✱	CERAMIC TUBULAR CAPACITOR	
◎	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
ⓘ	MICA CAPACITOR	
ⓟ	POLYPROPYLENE FILM CAPACITOR	
●	SEMICONDUCTIVE CERAMIC CAPACITOR	

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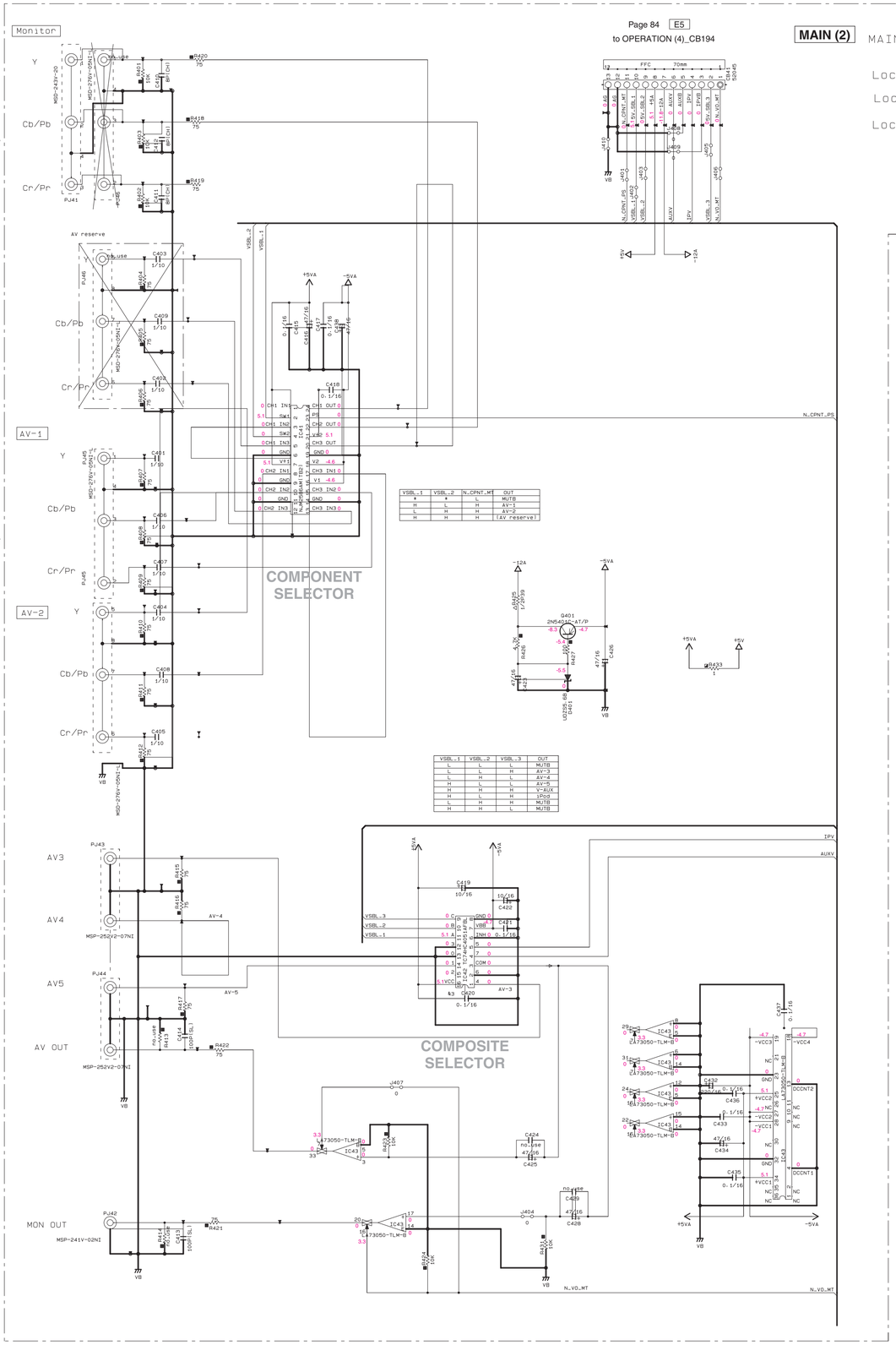
★ Schematic diagram is subject to change without notice.

MAIN 3/3



RESISTOR

RBMARKS	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
	COMPONENT MOLDED RESISTOR
	SEMI VARIABLE RESISTOR
	CHIP RESISTOR

CAPACITOR

RBMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
	CERAMIC TUBULAR CAPACITOR
	POLYESTER FILM CAPACITOR
	POLYSTYRENE FILM CAPACITOR
	MICA CAPACITOR
	POLYPROPYLENE FILM CAPACITOR
	SEMICONDUCTIVE CERAMIC CAPACITOR

NOTICE [model]
(J)…… JAPAN
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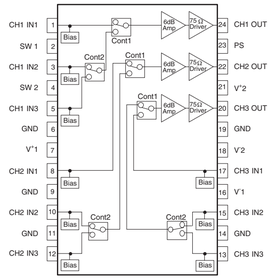
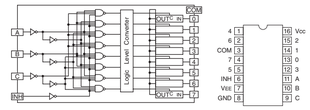
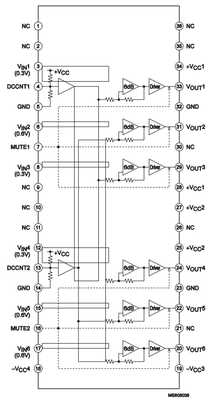
IC41: NJM2586AM (TE2)
Wide band 3-input 1-output 3-circuit video amplifier



IC42: TC74HC4051AFEL
8-channel analog multiplexer/demultiplexer



IC43: LA73050-TLM-E
6-channel 75-ohm video driver



Destination Part List

sXX	LOC	UCTA	R	KBGLF	
S1	TB1	WK56080 MST-204V1-01	WK56080 MST-204V1-01	WK56090 MST-204V1-01	SP terminal type
SS1	SW51	X	VZ07550 SL14-22AM5F	X	VOLTAGE switch
SS2	CBS1	X	VB37790 B4P7S-VH	X	

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

P.C.B. DIGITAL

	Ref No.	Part No.	Description			Markets
*		WU125000	P. C. B.	DIGITAL		UC
*		WU125100	P. C. B.	DIGITAL		RTKAL
*		WU125200	P. C. B.	DIGITAL		BGF
	CB201-205	WU167400	CN. HDMI	HDMI 19P SE		
	CB221	VM929900	CN. BS. PIN	15P		
	CB222	VQ045100	CN. BS. PIN	21P		
	CB223	VQ044500	CN. BS. PIN	11P		
	CB262	VK027300	CN. BS. PIN	14P		
	CB263-264	VQ962100	CN. BS. PIN	18P		
*	C2004	WP882000	C. CE. CHP	10uF	6. 3V	
	C2005-2007	US135100	C. CE. CHP	0. 1uF	16V	
	C2009	US135100	C. CE. CHP	0. 1uF	16V	
	C2010	US063100	C. CE. CHP	1000pF	50V B	
	C2012-2014	US063100	C. CE. CHP	1000pF	50V B	
*	C2016	WP882000	C. CE. CHP	10uF	6. 3V	
	C2017	US135100	C. CE. CHP	0. 1uF	16V	
	C2020-2021	US135100	C. CE. CHP	0. 1uF	16V	
	C2022-2026	US063100	C. CE. CHP	1000pF	50V B	
*	C2028	WP882000	C. CE. CHP	10uF	6. 3V	
	C2029	US135100	C. CE. CHP	0. 1uF	16V	
	C2031-2032	US063100	C. CE. CHP	1000pF	50V B	
	C2033	US061120	C. CE. CHP	12pF	50V B	
	C2034	US061150	C. CE. CHP	15pF	50V B	
	C2035-2036	US135100	C. CE. CHP	0. 1uF	16V	
	C2037-2040	WD758300	C. CE. CHP	10uF	10V	
	C2043	US063100	C. CE. CHP	1000pF	50V B	
	C2044-2045	US135100	C. CE. CHP	0. 1uF	16V	
*	C2047	WP882000	C. CE. CHP	10uF	6. 3V	
*	C2049	WP882000	C. CE. CHP	10uF	6. 3V	
	C2050	US063100	C. CE. CHP	1000pF	50V B	
*	C2051-2052	WP882000	C. CE. CHP	10uF	6. 3V	
	C2053-2055	US135100	C. CE. CHP	0. 1uF	16V	
*	C2056	WP882000	C. CE. CHP	10uF	6. 3V	
	C2057-2061	US135100	C. CE. CHP	0. 1uF	16V	
*	C2062-2063	WP882000	C. CE. CHP	10uF	6. 3V	
	C2064-2065	US135100	C. CE. CHP	0. 1uF	16V	
	C2067-2068	US135100	C. CE. CHP	0. 1uF	16V	
*	C2071	WP882000	C. CE. CHP	10uF	6. 3V	
*	C2073	WP882000	C. CE. CHP	10uF	6. 3V	
	C2094-2095	US062470	C. CE. CHP	470pF	50V B	
	C2202	US135100	C. CE. CHP	0. 1uF	16V	
	C2203	US062100	C. CE. CHP	100pF	50V B	
	C2204	US135100	C. CE. CHP	0. 1uF	16V	
	C2205	US064100	C. CE. CHP	0. 01uF	50V B	
	C2206	US126100	C. CE. CHP	1uF	10V	
	C2207	US135100	C. CE. CHP	0. 1uF	16V	
	C2208	UR837330	C. EL	33uF	16V	
	C2209-2210	US064100	C. CE. CHP	0. 01uF	50V B	
	C2211-2212	US135100	C. CE. CHP	0. 1uF	16V	
	C2213-2218	US064100	C. CE. CHP	0. 01uF	50V B	
	C2219	US135100	C. CE. CHP	0. 1uF	16V	
	C2234	US062100	C. CE. CHP	100pF	50V B	BGF
	C2235	UR837330	C. EL	33uF	16V	
	C2236	US135100	C. CE. CHP	0. 1uF	16V	BGF
	C2254-2257	US062100	C. CE. CHP	100pF	50V B	
	C2258-2260	US046100	C. CE. CHP	1uF	25V	
	C2262	US046100	C. CE. CHP	1uF	25V	

* New Parts

P.C.B. DIGITAL

	Ref No.	Part No.	Description			Markets
	C2264-2265	US061270	C. CE. CHP	27pF	50V B	BGF
	C2266	UR867100	C. EL	10uF	50V	BGF
	C2267	US126100	C. CE. CHP	1uF	10V	BGF
	C2268	US135100	C. CE. CHP	0. 1uF	16V	BGF
	C2269	US062560	C. CE. CHP	560pF	50V B	BGF
	C2271-2272	US062330	C. CE. CHP	330pF	50V B	BGF
	C2274	US135100	C. CE. CHP	0. 1uF	16V	BGF
	C2405-2407	US135100	C. CE. CHP	0. 1uF	16V	
	C2413	US135100	C. CE. CHP	0. 1uF	16V	
	C2415	US135100	C. CE. CHP	0. 1uF	16V	
	C2417	US135100	C. CE. CHP	0. 1uF	16V	
	C2420	US135100	C. CE. CHP	0. 1uF	16V	
*	C2421-2422	WP882000	C. CE. CHP	10uF	6. 3V	
*	C2424	WP882000	C. CE. CHP	10uF	6. 3V	
	C2426-2432	US135100	C. CE. CHP	0. 1uF	16V	
	C2434-2443	US135100	C. CE. CHP	0. 1uF	16V	
	C2445-2451	US135100	C. CE. CHP	0. 1uF	16V	
	C2453	US135100	C. CE. CHP	0. 1uF	16V	
	C2454	US062100	C. CE. CHP	100pF	50V B	
	C2465	US135100	C. CE. CHP	0. 1uF	16V	
*	C2466	WP882000	C. CE. CHP	10uF	6. 3V	
*	C2601-2604	WP882000	C. CE. CHP	10uF	6. 3V	
	C2606	US062180	C. CE. CHP	180pF	50V B	
	C2607-2608	WK004400	C. CE. M. CHP	10uF	16V	
	C2611-2614	US135100	C. CE. CHP	0. 1uF	16V	
	C2615-2616	US063680	C. CE. CHP	6800pF	50V B	
	C2617	US035100	C. CE. CHP	0. 1uF	16V B	
	C2618	US044220	C. CE. CHP	0. 022uF	25V B	
	C2620-2623	US135100	C. CE. CHP	0. 1uF	16V	
*	C2625-2626	WP882000	C. CE. CHP	10uF	6. 3V	
	C2627-2628	US061200	C. CE. CHP	20pF	50V B	
	C2630	US135100	C. CE. CHP	0. 1uF	16V	
	C2631	US062100	C. CE. CHP	100pF	50V B	
	C2632	UR867100	C. EL	10uF	50V	
	C2633	US135100	C. CE. CHP	0. 1uF	16V	
	C2635-2637	UR867100	C. EL	10uF	50V	
	C2638-2639	US135100	C. CE. CHP	0. 1uF	16V	
	C2640-2641	WJ603600	C. MYLAR	820pF	50V J	
	C2642	US064100	C. CE. CHP	0. 01uF	50V B	
	C2643	US135100	C. CE. CHP	0. 1uF	16V	
	C2645-2647	US062100	C. CE. CHP	100pF	50V B	
	C2648	UR867100	C. EL	10uF	50V	
	C2649-2651	US062100	C. CE. CHP	100pF	50V B	
	C2654	UR848100	C. EL	100uF	25V	
	C2655	UR867100	C. EL	10uF	50V	
	C2656-2658	US126100	C. CE. CHP	1uF	10V	
	C2659	US064100	C. CE. CHP	0. 01uF	50V B	
	C2660-2661	US062220	C. CE. CHP	220pF	50V B	UC
	C2662-2663	US135100	C. CE. CHP	0. 1uF	16V	UC
	C2664-2667	US062220	C. CE. CHP	220pF	50V B	UC
	C2681	WD758300	C. CE. CHP	10uF	10V	
	C2682	US135100	C. CE. CHP	0. 1uF	16V	
	C2683	UR837330	C. EL	33uF	16V	
	C2684	US135100	C. CE. CHP	0. 1uF	16V	
	C2687	WD758300	C. CE. CHP	10uF	10V	
	C2688	US135100	C. CE. CHP	0. 1uF	16V	
*	C2692-2693	WP882000	C. CE. CHP	10uF	6. 3V	

* New Parts

P.C.B. DIGITAL and P.C.B. OPERATION

	Ref No.	Part No.		Description	Markets
	C2701-2707	US135100	C. CE. CHP	0. 1uF 16V	
	D2022	VV220700	DIODE. SCHOTTKY	RB501V-40	
*	D2201-2204	WS692300	DIODE. ZENR	HZU3. 3B2 TRF-E	
*	D2601-2602	WR452500	DIODE. SCHOTTKY	RB051LA-40	
	D2607	VT332900	DIODE	1SS355	
	D2610	VT332900	DIODE	1SS355	
*	IC203	YC394A00	IC	NJM2884U1-18(TE1)	
*	IC221	YC683A00	IC. CPU	R5F364AMNFB CPU	(written)
*	IC222	YC408A00	IC	R1EX25032ASA00A	
	IC223	X8235A00	IC	LC72725KM	BGF
	IC242	X9625A00	IC	M12L64164A-5TG	
*	IC243	YC416A00	IC. MEMORY	MX29LV160DBTI-70G	(written)
*	IC261	YA399A00	IC	LC89058WD-E	
	IC262	X7357A00	IC	PCM1803DBR	
*	IC263	X9870A00	IC	PCM1681PWPR	
*	IC264-265	YC391A00	IC	BD9325FJ	
	IC266	YC604A00	IC	NJM2830U1-05(TE1)	
	IC267	X3586B00	IC	TC74VHCT08AFT EL,K	
	IC268	X7741A00	IC	NJM2867F3-05(TE1)	
	Q2001-2008	VQ986700	TR	2SC4081 T106	
	Q2201-2203	VR936300	TR	2SA1576A T106	
	Q2205	VR936300	TR	2SA1576A T106	
	Q2206	VQ986700	TR	2SC4081 T106	BGF
*	XL201	WU058300	RSNR. CRYS	27MHz	
	XL221	WF997400	RSNR. CE	20MHz	
*	XL222	WU058400	RSNR. CRYS	4. 332MHz	BGF
	XL261	WJ625200	RSNR. CRYS	24. 576MHz	
*		WU124500	P. C. B.	OPERATION	U
*		WU124600	P. C. B.	OPERATION	C
*		WU124700	P. C. B.	OPERATION	R
*		WU124800	P. C. B.	OPERATION	T
*		WU124900	P. C. B.	OPERATION	KABGFL
	CB101	VM929900	CN. BS. PIN	15P	
	CB104	VQ047200	CN. BS. PIN	9P	
	CB132	VK026300	CN. BS. PIN	4P	
	CB134	VK026500	CN. BS. PIN	6P	
	CB135	LB919090	CN. BS. PIN	9P	
	CB136	VK024700	CN. BS. PIN	3P	
	CB152-153	WN077700	CLIP. FUSE	CLIP PFC5000-0202F	
⚠	CB154-155	VG879900	CN. BS. PIN	2P	
	CB166	VB858300	CN. BS. PIN	4P	
	CB191-192	VQ962100	CN. BS. PIN	18P	
	CB193	VQ044400	CN. BS. PIN	9P	
	CB194	VM923600	CN. BS. PIN	13P	
	CB195-196	VQ963900	CN. BS. PIN	18P	
	C1001-1002	US065100	C. CE. CHP	0. 1uF 50V B	
	C1003-1004	US062100	C. CE. CHP	100pF 50V B	
	C1005	US135100	C. CE. CHP	0. 1uF 16V	
	C1006	US061100	C. CE. CHP	10pF 50V B	
	C1007	US135100	C. CE. CHP	0. 1uF 16V	
	C1008	UM397100	C. EL	10uF 16V	
	C1009-1011	US135100	C. CE. CHP	0. 1uF 16V	
	C1013	UR268220	C. EL	220uF 50V	
	C1014	UM388330	C. EL	330uF 6. 3V	

* New Parts

P.C.B. OPERATION

	Ref No.	Part No.		Description	Markets
	C1015	US135100	C. CE. CHP	0. 1uF 16V	
	C1016	US061680	C. CE. CHP	68pF 50V B	
	C1017	US065100	C. CE. CHP	0. 1uF 50V B	
	C1018	US064100	C. CE. CHP	0. 01uF 50V B	
	C1019-1020	US065100	C. CE. CHP	0. 1uF 50V B	
	C1021-1022	US044220	C. CE. CHP	0. 022uF 25V B	
	C1023	US064100	C. CE. CHP	0. 01uF 50V B	
	C1024-1025	US044220	C. CE. CHP	0. 022uF 25V B	
	C1026-1027	US135100	C. CE. CHP	0. 1uF 16V	
	C1028-1029	US062220	C. CE. CHP	220pF 50V B	
	C1301	UR866100	C. EL	1uF 50V	
	C1302-1303	UR837470	C. EL	47uF 16V	
	C1304	US064100	C. CE. CHP	0. 01uF 50V B	
	C1305	US065100	C. CE. CHP	0. 1uF 50V B	
	C1306	US135100	C. CE. CHP	0. 1uF 16V	UC
	C1307	UR837470	C. EL	47uF 16V	
	C1308	UR866100	C. EL	1uF 50V	UC
	C1309	UR837100	C. EL	10uF 16V	
	C1310-1311	UR866100	C. EL	1uF 50V	
	C1312	UR866100	C. EL	1uF 50V	UC
	C1313-1316	UR866100	C. EL	1uF 50V	
	C1317	UR739470	C. EL	4700uF 16V	UC
	C1318	UR749470	C. EL	4700uF 25V	
	C1319	UR749220	C. EL	2200uF 25V	
	C1320	UR73A100	C. EL	10000uF 16V	
	C1322-1323	VE326000	C. MYLAR	0. 1uF 50V	
	C1326	WJ605000	C. MYLAR	0. 01uF 50V J	
	C1451-1452	US063100	C. CE. CHP	1000pF 50V B	
	C1501	UR749220	C. EL	2200uF 25V	UCTKABGFL
	C1501	UR759220	C. EL	2200uF 35V	R
	C1502	WJ605000	C. MYLAR	0. 01uF 50V J	R
	C1503	UR897100	C. EL	10uF 100V	R
	C1504	WJ605000	C. MYLAR	0. 01uF 50V J	UCTKABGFL
	C1505-1506	WJ605000	C. MYLAR	0. 01uF 50V J	R
⚠ *	C1507	WQ939400	C. CE. SAFTY	0. 01uF 250V	
	C1651-1654	WJ605000	C. MYLAR	0. 01uF 50V J	
	C1701	US064100	C. CE. CHP	0. 01uF 50V B	RKABGFL
	C1702	US063100	C. CE. CHP	1000pF 50V B	RKABGFL
	C1703	US063100	C. CE. CHP	1000pF 50V B	RKABGFL
	C1704	US063100	C. CE. CHP	1000pF 50V B	
	C1705	UM397100	C. EL	10uF 16V	RKABGFL
	C1706	UM397220	C. EL	22uF 25V	RKABGFL
	C1707	US062100	C. CE. CHP	100pF 50V B	RKABGFL
	C1708	UM387470	C. EL	47uF 16V	RKABGFL
	C1709	US061330	C. CE. CHP	33pF 50V B	RKABGFL
	C1710	UM397100	C. EL	10uF 16V	RKABGFL
	C1711	UM397220	C. EL	22uF 25V	RKABGFL
	C1712	UM397220	C. EL	22uF 25V	RKABGFL
	C1713	US065100	C. CE. CHP	0. 1uF 50V B	RKABGFL
	C1714	US065100	C. CE. CHP	0. 1uF 50V B	RKABGFL
	D1003-1006	VT332900	DIODE	1SS355	
	D1301	VV220700	DIODE. SCHO	RB501V-40	
	D1302	VU171900	DIODE. ZENR	UDZS5. 1B 5. 1V	RKABGFL
	D1303	VT332900	DIODE	1SS355	
	D1304	VG439500	DIODE. ZENR	MTZJ10B 10V	
	D1305-1306	VT332900	DIODE	1SS355	
⚠	D1307	WH487300	DIODE. BRG	RS203M 2. 0A 200V	UC

* New Parts

P.C.B. OPERATION

	Ref No.	Part No.		Description	Markets
⚠	D1308-1309	WA653100	DIODE. BRG	KBP103G 1A 200V	
	D1311-1312	VT332900	DIODE	1SS355	UC
	D1313-1314	VT332900	DIODE	1SS355	
	D1501	VU171800	DIODE. ZENR	UDZS4. 7B 4. 7V	
⚠	D1502	VG437000	DIODE. ZENR	MTZJ4. 7A 4. 7V	R
⚠	D1503-1504	VS997800	DIODE	1T2	
⚠	D1505	VS997800	DIODE	1T2	R
⚠	D1506-1507	VS997800	DIODE	1T2	
	D1508-1509	WC398800	DIODE	KDS160-RTK	
	D1510	VU171800	DIODE. ZENR	UDZS4. 7B 4. 7V	
	D1651	VU172500	DIODE. ZENR	UDZS9. 1B	
	D1652-1653	VT332900	DIODE	1SS355	
	D1701	VT332900	DIODE	1SS355	RKABGFL
	D1702	VT332900	DIODE	1SS355	RKABGFL
	D1703	VU171900	DIODE. ZENR	UDZS5. 1B 5. 1V	RKABGFL
⚠	F1501	WB221200	FUSE	T6A 125V	UC
⚠	F1501	WM933100	FUSE	T5A 250V	R
⚠	F1501	VV071700	FUSE	3. 15A 250V	TKABGFL
	IC101	X6386A00	IC	M66003-0131FP	
	IC102	X7378A00	IC	NJM4565M(TE1)	RKABGFL
⚠	IC131	X6248A00	IC	NJM2388F33	
	IC132	X4928A00	IC	KIA7805API 5V	UC
⚠	IC133	X4153A00	IC	KIA7812API	
⚠	IC134	X4154A00	IC	KIA7912PI	
⚠	IC135	X4928A00	IC	KIA7805API 5V	
	JK101	WJ117400	JACK. MNI	OPTIMIZER MIC	
	JK166	V9408200	JACK. PHONE	MSJ-064-05B GR	
	JK171	WJ117300	JACK. PHONE	PHONES	RKABGFL
	PJ101	WJ117500	JACK. PIN	3P	
	Q1001-1008	WC529400	TR	KTC3875S Y GR RTK	
	Q1301	WC435100	TR. DGT	KRC104S-RTK	
	Q1302	WC529400	TR	KTC3875S Y GR RTK	
*	Q1303	WJ173600	TR	2SC1815Y TP	
	Q1304	WC435100	TR. DGT	KRC104S-RTK	
⚠ *	Q1501	WJ173600	TR	2SC1815Y TP	
⚠	Q1502	iA101510	TR	2SA1015 Y	R
⚠	Q1503	VP872600	TR	2SA1708 S, T	R
⚠	Q1504	iA101510	TR	2SA1015 Y	R
⚠	Q1505	WC529200	TR. DGT	KRC102M-AT	R
⚠	R1316	HV754180	R. CAR. FP	18Ω 1/4W	
⚠	R1322	WJ681600	R. MTL. FLM	0. 22Ω 1W	UC
⚠	R1323	WJ682000	R. MTL. FLM	0. 47Ω 1W J	
	R1508	VC757900	R. MTL. OXD	47Ω 2W	R
	R1651-1652	WJ685600	R. MTL. FLM	470Ω 1W J	
	SW101-114	WD483100	SW. TACT	SKRGAAD010	
	SW116-119	WD483100	SW. TACT	SKRGAAD010	
	SW145	V9597100	SW. RT. ENC	EC12E2460802	
⚠	SW151	V9366900	RELAY	DLS9D1-0(M)0. 25W	
	SW171	WD483100	SW. TACT	SKRGAAD010	
⚠	T1501	X8521A00	TRANS. PWR		UC
⚠	T1501	X8522A00	TRANS. PWR		R
⚠	T1501	X8523A00	TRANS. PWR		TKABGFL
*	TH1	WT698300	THERMISTOR	WC92NA103J1	
*	TH2	WT698300	THERMISTOR	WC92NA103J1	C
*	U1001	WQ600700	L. DTCT	SM3385VMH6	
*	V1001	WQ842100	FL. DSPLY	18-MT-09GNK	
		WA790900	SPACER	4. 6/10/32	

✻ New Parts

P.C.B. MAIN

	Ref No.	Part No.		Description	Markets
*		WU124200	P. C. B.	MAIN	UCTA
*		WU124300	P. C. B.	MAIN	R
*		WU124400	P. C. B.	MAIN	KBGFL
	CB1	VQ047600	CN. BS. PIN	21P	
	CB3	LB932060	CN. BS. PIN	6P	
	CB21-22	VQ963900	CN. BS. PIN	18P	
	CB41	VM923600	CN. BS. PIN	13P	
	CB51	V9377900	CN. BS. PIN	4P	R
	C1	WJ605000	C. MYLAR	0. 01uF 50V J	
	C2-6	UR837100	C. EL	10uF 16V	
	C7	UR877220	C. EL	22uF 63V	
	C8	WJ603300	C. MYLAR	470pF 50V J	
	C9	UR896470	C. EL	4. 7uF 100V	
	C10	WJ603300	C. MYLAR	470pF 50V J	
	C11	UR896470	C. EL	4. 7uF 100V	
	C12	UR877220	C. EL	22uF 63V	
	C13-14	UR896470	C. EL	4. 7uF 100V	
	C15-17	WJ603300	C. MYLAR	470pF 50V J	
	C18	WJ602900	C. MYLAR	100pF 50V K	
	C19	UR867330	C. EL	33uF 50V	
	C20	WJ602900	C. MYLAR	100pF 50V K	
	C21-22	UR867330	C. EL	33uF 50V	
	C23	WJ602900	C. MYLAR	100pF 50V K	
	C24	UR867330	C. EL	33uF 50V	
	C25	WJ602900	C. MYLAR	100pF 50V K	
	C26	UR897100	C. EL	10uF 100V	
	C27	FG650500	C. CE	5pF 50V	
	C28	WJ602900	C. MYLAR	100pF 50V K	
	C29	UR867330	C. EL	33uF 50V	
	C30	UR866100	C. EL	1uF 50V	
	C31-34	FG650500	C. CE	5pF 50V	
	C35-39	WJ605800	C. MYLAR	0. 047uF 50V J	
	C40	UR866470	C. EL	4. 7uF 50V	
	C41	UR828220	C. EL	220uF 10V	
	C43	UR878100	C. EL	100uF 63V	
	C44	UR867100	C. EL	10uF 50V	
	C45	UR868100	C. EL	100uF 50V	
	C46-47	WE514200	C. EL	6800uF 63V	
	C50-53	WJ605000	C. MYLAR	0. 01uF 50V J	
	C54-55	WJ611400	C. MYLAR	0. 1uF 100V J	
	C56	US064100	C. CE. CHP	0. 01uF 50V B	
	C59-64	WJ605000	C. MYLAR	0. 01uF 50V J	
	C202	US064100	C. CE. CHP	0. 01uF 50V B	
	C203-204	US135100	C. CE. CHP	0. 1uF 16V	
	C205-206	US061220	C. CE. CHP	22pF 50V B	
	C209-210	US062220	C. CE. CHP	220pF 50V B	
	C211-212	US061470	C. CE. CHP	47pF 50V B	
	C213-216	US062220	C. CE. CHP	220pF 50V B	
	C217	US135100	C. CE. CHP	0. 1uF 16V	
	C218	VR169200	C. MYLAR	0. 47uF 50V	
	C219	US135100	C. CE. CHP	0. 1uF 16V	
	C222-223	US061470	C. CE. CHP	47pF 50V B	
	C224-227	UR837100	C. EL	10uF 16V	
	C228	US135100	C. CE. CHP	0. 1uF 16V	
	C229	UR867470	C. EL	47uF 50V	
	C230	US135100	C. CE. CHP	0. 1uF 16V	
	C231-236	UR837100	C. EL	10uF 16V	

✻ New Parts

P.C.B. MAIN

	Ref No.	Part No.		Description	Markets
	C239-243	US062680	C. CE. CHP	680pF 50V B	
	C244	WJ605800	C. MYLAR	0. 047uF 50V J	
	C247-249	US062100	C. CE. CHP	100pF 50V B	
	C251-252	US062100	C. CE. CHP	100pF 50V B	
*	C253	WJ604700	C. MYLAR	6800pF 50V	
	C255-258	UR837100	C. EL	10uF 16V	
	C261-262	UR837100	C. EL	10uF 16V	
	C264	US135100	C. CE. CHP	0. 1uF 16V	
	C265-266	VR169000	C. MYLAR	0. 33uF 50V	
	C267	UR838100	C. EL	100uF 16V	
*	C268-269	WJ605600	C. MYLAR	0. 033uF 50V	
	C270	UR838100	C. EL	100uF 16V	
	C271	UR837330	C. EL	33uF 16V	
	C272	UR838100	C. EL	100uF 16V	
	C274-275	WJ605400	C. MYLAR	0. 022uF 50V J	
	C276-279	UR838100	C. EL	100uF 16V	
	C280	UR867100	C. EL	10uF 50V	
	C281-283	UR267100	C. EL	10uF 50V	
	C284-285	UR867100	C. EL	10uF 50V	
	C288-289	UR867470	C. EL	47uF 50V	
	C290	US062100	C. CE. CHP	100pF 50V B	
	C291-292	UR267470	C. EL	47uF 50V	
	C293	UR267100	C. EL	10uF 50V	
	C294-299	US135100	C. CE. CHP	0. 1uF 16V	
	C302-303	US135100	C. CE. CHP	0. 1uF 16V	
	C401	WE773800	C. CE. M. CHP	1uF 10V B	
	C404-408	WE773800	C. CE. M. CHP	1uF 10V B	
	C410-412	US060800	C. CE. CHP	8pF 50V B	
	C413-414	US062100	C. CE. CHP	100pF 50V B	
	C415	US135100	C. CE. CHP	0. 1uF 16V	
	C416	UR837470	C. EL	47uF 16V	
	C417-418	US135100	C. CE. CHP	0. 1uF 16V	
	C419	UR837100	C. EL	10uF 16V	
	C420-421	US135100	C. CE. CHP	0. 1uF 16V	
	C422	UR837100	C. EL	10uF 16V	
	C423	UR837470	C. EL	47uF 16V	
	C425-426	UR837470	C. EL	47uF 16V	
	C428	UR837470	C. EL	47uF 16V	
	C432	UR838220	C. EL	220uF 16V	
	C433	US135100	C. CE. CHP	0. 1uF 16V	
	C434	UR837470	C. EL	47uF 16V	
	C435-437	US135100	C. CE. CHP	0. 1uF 16V	
	C438	UR837470	C. EL	47uF 16V	
	D1-2	VD631600	DIODE	1SS133, 176	
	D3	VU171900	DIODE. ZENR	UDZS5. 1B 5. 1V	
	D4-8	WC398800	DIODE	KDS160-RTK	
⚠	D9	VD631600	DIODE	1SS133, 176	
	D10-11	VN008700	DIODE	1SS270A	
⚠	D12-14	VD631600	DIODE	1SS133, 176	
	D15-17	VN008700	DIODE	1SS270A	
⚠ *	D18	VG444700	DIODE. ZENR	MTZ J 39D 39. 0V TP	
⚠	D19	WA653200	DIODE. BRG	TS6P03G 6A 200V	
*	D20	WU201600	DIODE	1N4003S TP	
	D22	VD631600	DIODE	1SS133, 176	
	D201-202	VG438400	DIODE. ZENR	MTZJ6. 8C 6. 8V	
	D401	VU172000	DIODE. ZENR	UDZS5. 6B 5. 6V	
⚠	IC1	X8190B00	IC	STK433-330Y-E	

✻ New Parts

P.C.B. MAIN

	Ref No.	Part No.		Description	Markets
⚠	IC2	X7427B00	IC	STK433-130Y-E	
*	IC21	YA361A00	IC	R2A15220FP	
	IC22	XZ509A00	IC	TC74VHCU04FT INVER	
	IC23-25	X7378A00	IC	NJM4565M(TE1)	
	IC27	X7378A00	IC	NJM4565M(TE1)	
	IC41	X7362A00	IC	NJM2586AM(TE2)	
	IC42	XY549A00	IC	TC74HC4051AFEL	
	IC43	X6742A00	IC	LA73050-TLM-E	
	PJ21	V7046700	JACK. PIN	4P MSP-244V1-01NI	
	PJ22	V7189700	JACK. PIN	1P	
	PJ24	V9420700	JACK. PIN	2P MSP-252V1-30NI	
	PJ26	V7046800	JACK. PIN	6P MSP-246V1-01NI	
*	PJ41	WH380800	JACK. PIN	3P JACK G, B, R	
	PJ42	V7189800	JACK. PIN	1P	
	PJ43-44	V7190000	JACK. PIN	2P	
	PJ45	WG505100	JACK. PIN	6P	
⚠	Q1	WC398400	TR	2N5551C-AT	
⚠	Q2-3	WG538600	TR	KTA1046-Y-U/P	
⚠	Q4	WC398400	TR	2N5551C-AT	
⚠	Q5-6	WC397700	TR	2N5401C-AT	
⚠	Q7-11	WC398400	TR	2N5551C-AT	
⚠	Q12	WC397700	TR	2N5401C-AT	
⚠	Q13-16	WC434900	TR. DGT	KRA104S-RTK	
⚠	Q17-20	WC435000	TR. DGT	KRC102S-RTK	
⚠	Q21	VP872600	TR	2SA1708 S, T	
	Q22	iC181510	TR	2SC1815 Y	
	Q23	WC435000	TR. DGT	KRC102S-RTK	
	Q24	WC434900	TR. DGT	KRA104S-RTK	
	Q201-205	WC883400	TR	2SD2704 K	
	Q208-209	WC883400	TR	2SD2704 K	
	Q401	WC397700	TR	2N5401C-AT	
⚠	R6-7	HV753220	R. CAR. FP	2. 2Ω 1/4W	
⚠	R10	HV755560	R. CAR. FP	560Ω 1/4W	
⚠	R18	HV754100	R. CAR. FP	10Ω 1/4W	
⚠	R22	HV754100	R. CAR. FP	10Ω 1/4W	
⚠ *	R33	WP839400	R. CEMENT	0. 22+0. 22 3W	
⚠ *	R36	WP839400	R. CEMENT	0. 22+0. 22 3W	
⚠ *	R40	WP839400	R. CEMENT	0. 22+0. 22 3W	
⚠ *	R48-49	WP839400	R. CEMENT	0. 22+0. 22 3W	
	R64	HV754100	R. CAR. FP	10Ω 1/4W	
	R66	HV754100	R. CAR. FP	10Ω 1/4W	
	R68	HV754100	R. CAR. FP	10Ω 1/4W	
	R71-72	HV754100	R. CAR. FP	10Ω 1/4W	
⚠	R74	WB625100	R. MTL. FLM	4. 7Ω 1W J	
⚠	R78-79	WB625100	R. MTL. FLM	4. 7Ω 1W J	
⚠	R82-83	WB625100	R. MTL. FLM	4. 7Ω 1W J	
⚠	R87	HV756220	R. CAR. FP	2. 2KΩ 1/4W	
	R90	HV753100	R. CAR. FP	1Ω 1/4W	
	R105-109	HV753470	R. CAR. FP	4. 7Ω 1/4W	
	R112	HV753220	R. CAR. FP	2. 2Ω 1/4W	
	R214	HV755220	R. CAR. FP	220Ω 1/4W	
	R242	HV753100	R. CAR. FP	1Ω 1/4W	
	R291	HV753220	R. CAR. FP	2. 2Ω 1/4W	
	R297	HV753220	R. CAR. FP	2. 2Ω 1/4W	
*	R314	WJ684700	R. MTL. FLM	82Ω 1W	
*	R316	WJ684700	R. MTL. FLM	82Ω 1W	
	R425	HL004390	R. MTL. OXD	39Ω 1/2W	

✻ New Parts

P.C.B. MAIN

	Ref No.	Part No.		Description	Markets
	R433	HV753100	R. CAR. FP	1Ω 1/4W	
⚠	RY1-4	WJ122400	RELAY	981-2A-24DS-SP7	
	RY5	WE648700	RELAY	DC DH24D2-0-Q	
	TE1	WK560800	TERM. SP	4P MST-204V1-01 NC	UCRTA
	TE1	WK560900	TERM. SP	4P MST-204V1-01 WC	KBGFL
	TE2	WB214000	TERM. SP	6P PUSH MSP-115V2	
	U201-202	WH169900	CN. PHOTO. R	1P GP1FAV51RK0F	
		WE774200	SCR. BND. HD	3x10 MFZN2W3	

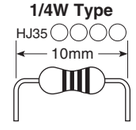
Ref No.	Part No.		Description	Markets

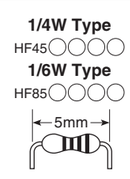
✻ New Parts

✻ New Parts

Carbon Resistors

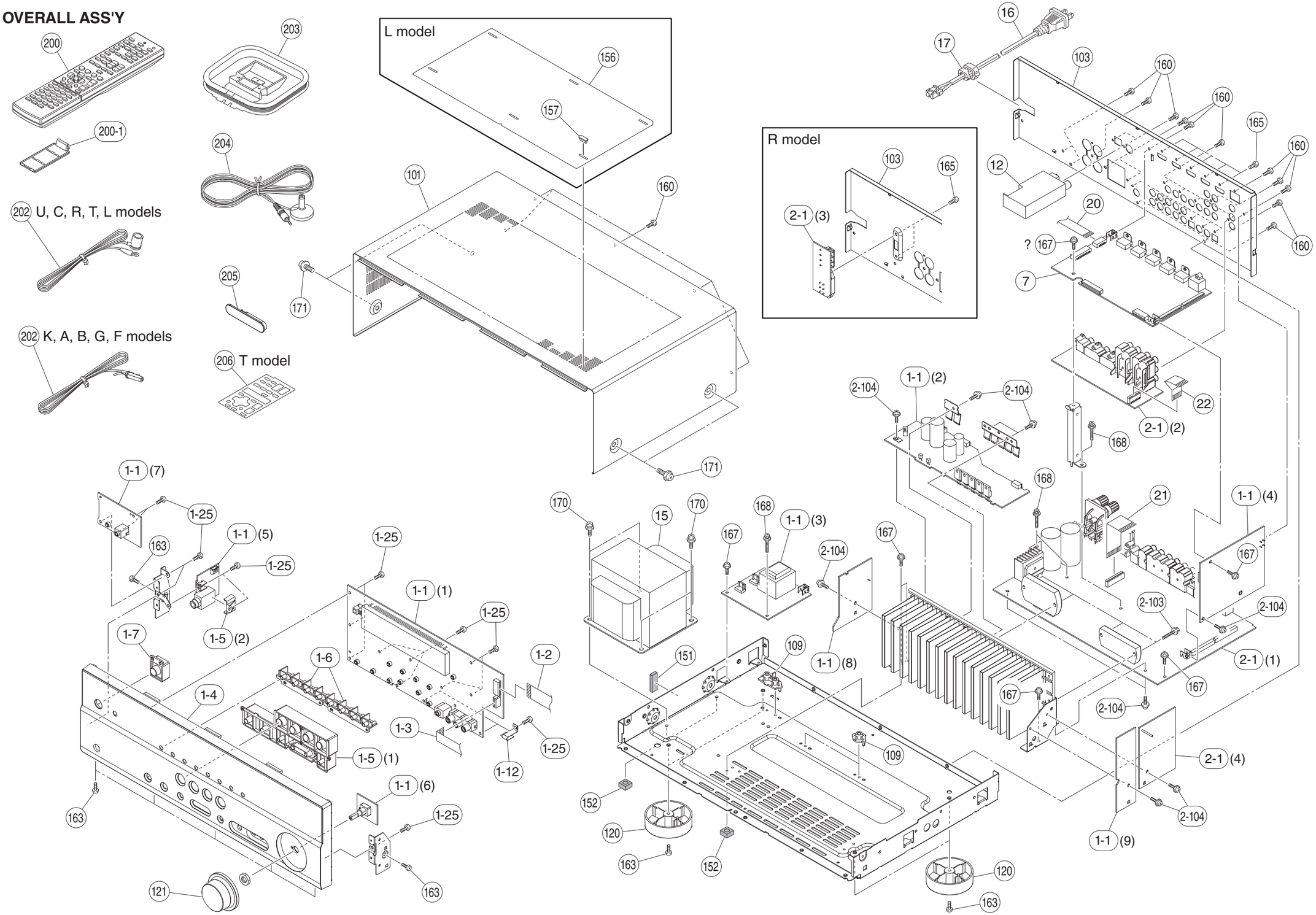
Value	**1/4W** Type Part No.	**1/6W** Type Part No.	Value	**1/4W** Type Part No.	**1/6W** Type Part No.
1.0 Ω	HJ35 3100	HF85 3100	11 kΩ	HF45 7110	HF45 7110
1.8 Ω	HJ35 3180	✻	12 kΩ	HJ35 7120	HF85 7120
2.2 Ω	HJ35 3220	HF85 3220	13 kΩ	HF45 7130	HF45 7130
3.3 Ω	HJ35 3330	HF85 3330	15 kΩ	HF45 7150	HF45 7150
4.7 Ω	HJ35 3470	HF85 3470	18 kΩ	HF45 7180	HF45 7180
5.6 Ω	HJ35 3560	HF85 3560	22 kΩ	HF45 7220	HF45 7220
10 Ω	HF45 4100	HF45 4100	24 kΩ	HF45 7240	HF45 7240
15 Ω	HJ35 4150	HF85 4150	27 kΩ	HJ35 7270	HF85 7270
22 Ω	HF45 4220	HF45 4220	30 kΩ	HF45 7300	HF45 7300
27 Ω	HJ35 4270	HF85 4270	33 kΩ	HF45 7330	HF45 7330
33 Ω	HF45 4330	HF45 4330	36 kΩ	HF45 7360	HF45 7360
39 Ω	HJ35 4470	HF85 4390	39 kΩ	HF45 7390	HF45 7390
47 Ω	HF45 4470	HF45 4470	47 kΩ	HF45 7470	HF45 7470
56 Ω	HF45 4560	HF45 4560	51 kΩ	HF45 7510	HF45 7510
68 Ω	HF45 4680	HF45 4680	56 kΩ	HF45 7560	HF45 7560
75 Ω	HF45 4750	HF45 4750	62 kΩ	HF45 7620	HF45 7620
82 Ω	HF45 4820	HF45 4820	68 kΩ	HF45 7680	HF45 7680
91 Ω	HF45 4910	HF45 4910	82 kΩ	HF45 7820	HF45 7820
100 Ω	HF45 5100	HF45 5100	91 kΩ	HF45 7910	HF45 7910
110 Ω	HJ35 5110	HF85 5110	100 kΩ	HF45 8100	HF45 8100
120 Ω	HF45 5120	HF45 5120	110 kΩ	HF45 8110	HF45 8110
150 Ω	HF45 5150	HF45 5150	120 kΩ	HF45 8120	HF45 8120
160 Ω	HJ35 5160	✻	130 kΩ	HF45 8130	✻
180 Ω	HF45 5180	HF45 5180	150 kΩ	HF45 8150	HF45 8150
200 Ω	HF45 5200	HF45 5200	180 kΩ	HF45 8180	HF45 8180
220 Ω	HF45 5220	HF45 5220	220 kΩ	HJ35 8220	HF85 8220
270 Ω	HF45 5270	HF45 5270	270 kΩ	HF45 8270	HF45 8270
330 Ω	HF45 5330	HF45 5330	300 kΩ	HF45 8300	HF45 8300
390 Ω	HF45 5390	HF45 5390	330 kΩ	HF45 8330	HF45 8330
430 Ω	HF45 5430	HF45 5430	390 kΩ	HJ35 8390	HF85 8390
470 Ω	HF45 5470	HF45 5470	470 kΩ	HF45 8470	HF45 8470
510 Ω	HF45 5510	HF45 5510	560 kΩ	HJ35 8560	HF85 8560
560 Ω	HF45 5560	HF45 5560	680 kΩ	HJ35 8680	HF85 8680
680 Ω	HF45 5680	HF45 5680	820 kΩ	HJ35 8820	HF85 8820
820 Ω	HF45 5820	HF45 5820	1.0 MΩ	HF45 9100	HF45 9100
910 Ω	HF45 5910	HF45 5910	1.2 MΩ	HJ35 9120	✻
1.0 kΩ	HF45 6100	HF45 6100	1.5 MΩ	HJ35 9150	HF85 9150
1.2 kΩ	HF45 6120	HF45 6120	1.8 MΩ	HJ35 9180	HF85 9180
1.5 kΩ	HF45 6150	HF45 6150	2.2 MΩ	HJ35 9220	HF85 9220
1.8 kΩ	HF45 6180	HF45 6180	3.3 MΩ	HJ35 9330	HF85 9330
2.0 kΩ	HJ35 6200	HF85 6200	3.9 MΩ	HJ35 9390	✻
2.2 kΩ	HF45 6220	HF45 6220	4.7 MΩ	HJ35 9470	HF85 9470
2.4 kΩ	HJ35 6240	HF85 6240			
2.7 kΩ	HF45 6270	HF45 6270			
3.0 kΩ	HF45 6300	HF45 6300			
3.3 kΩ	HF45 6330	HF45 6330			
3.6 kΩ	HJ35 6360	HF85 6360			
3.9 kΩ	HF45 6390	HF45 6390			
4.7 kΩ	HF45 6470	HF45 6470			
5.1 kΩ	HF45 6510	HF45 6510			
5.6 kΩ	HF45 6560	HF45 6560			
6.8 kΩ	HF45 6680	HF45 6680			
8.2 kΩ	HF45 6820	HF45 6820			
9.1 kΩ	HF45 6910	HF45 6910			
10 kΩ	HF45 7100	HF45 7100			





✻ : Not available

- **OVERALL ASS'Y**



	Ref No.	Part No.	Description		Remarks	Markets
*	1-1	WU124500	P.C.B. ASS'Y	OPERATION		U
*	1-1	WU124600	P.C.B. ASS'Y	OPERATION		C
*	1-1	WU124700	P.C.B. ASS'Y	OPERATION		R
*	1-1	WU124800	P.C.B. ASS'Y	OPERATION		T
*	1-1	WU124900	P.C.B. ASS'Y	OPERATION		KABGFL
*	1-2	WR389500	FLEXIBLE FLAT CABLE	15P 180mm P=1.25		
*	1-3	WR382900	FLEXIBLE FLAT CABLE	9P 180mm P=1.25		
	1-4	WV154300	FRONT PANEL SUB ASS'Y	with WINDOW	V367GD	
	1-4	WV154000	FRONT PANEL SUB ASS'Y	with WINDOW	V367BL	UCT
	1-4	WV154100	FRONT PANEL SUB ASS'Y	with WINDOW	V367BL	RKABGFL
	1-4	WV154200	FRONT PANEL SUB ASS'Y	with WINDOW	V367TI	
	1-4	WV154400	FRONT PANEL SUB ASS'Y	with WINDOW	V367SI	
	1-4	WV154700	FRONT PANEL SUB ASS'Y	with WINDOW	3063GD	
	1-4	WV154500	FRONT PANEL SUB ASS'Y	with WINDOW	3063BL	UCT
	1-4	WV154600	FRONT PANEL SUB ASS'Y	with WINDOW	3063BL	RKAGFL
	1-4	WV154900	FRONT PANEL SUB ASS'Y	with WINDOW	3063SI	R
	1-4	WV154800	FRONT PANEL SUB ASS'Y	with WINDOW	3063SI	G
*	1-5	WT829300	BUTTON CASE		GD	
*	1-5	WT829100	BUTTON CASE		BL	
*	1-5	WT829200	BUTTON CASE		TI	
*	1-5	WT829400	BUTTON CASE		SI	
*	1-6	WT829500	BUTTON	TUNER		
*	1-7	WT829600	BUTTON	POWER		
*	1-12	WU200600	EARTH PLATE			
	1-25	WE774800	BIND HEAD P-TIGHT SCREW	3x8 MFZN2W3		
*	2-1	WU124200	P.C.B. ASS'Y	MAIN		UCTA
*	2-1	WU124300	P.C.B. ASS'Y	MAIN		R
*	2-1	WU124400	P.C.B. ASS'Y	MAIN		KBGFL
	2-103	WE774600	SCREW IC	3x18 MFZN2W3		
	2-104	WF002600	PW HEAD B-TIGHT SCREW	3x8 MFZN2W3		
*	7	WU125000	P.C.B. ASS'Y	DIGITAL		UC
*	7	WU125100	P.C.B. ASS'Y	DIGITAL		RTKAL
*	7	WU125200	P.C.B. ASS'Y	DIGITAL		BGF
*	12	WQ756600	AM/FM TUNER	FAEH06-A		UCRTL
*	12	WQ756700	AM/FM TUNER	FAEH06-E		KABGF
⚠ *	15	YC395A00	POWER TRANSFORMER			UC
⚠ *	15	YC396A00	POWER TRANSFORMER			R
⚠ *	15	YC397A00	POWER TRANSFORMER			TK
⚠ *	15	YC398A00	POWER TRANSFORMER			AL
⚠ *	15	YC399A00	POWER TRANSFORMER			BGF
⚠	16	WB120500	POWER CABLE	2m		UC
⚠	16	WC992700	POWER CABLE	2m		R
⚠	16	WB120600	POWER CABLE	2m		T
⚠	16	WC753000	POWER CABLE	2m		K
⚠	16	WC743700	POWER CABLE	2m		A
⚠	16	WB212200	POWER CABLE	2m		B
⚠	16	WB212300	POWER CABLE	2m		GFL
	17	V2438700	CORD STOPPER	10P1		
*	20	WR384800	FLEXIBLE FLAT CABLE	11P 120mm P=1.25		
*	21	WR395700	FLEXIBLE FLAT CABLE	21P 100mm P=1.25		
*	22	WR386600	FLEXIBLE FLAT CABLE	13P 70mm P=1.25		
*	101	WT825100	TOP COVER		GD	
*	101	WT824900	TOP COVER		BL	
*	101	WT825000	TOP COVER		TI	
*	101	WT825200	TOP COVER		SI	
*	103	WT825300	REAR PANEL		V367	U
*	103	WT826100	REAR PANEL		3063	U
*	103	WT825400	REAR PANEL		V367	C
*	103	WT826200	REAR PANEL		3063	C
*	103	WT825500	REAR PANEL		V367	R

※ New Parts

	Ref No.	Part No.	Description		Remarks	Markets
*	103	WT826300	REAR PANEL		3063	R
*	103	WT825600	REAR PANEL		V367	T
*	103	WT826400	REAR PANEL		3063	T
*	103	WT825700	REAR PANEL		V367	K
*	103	WT826500	REAR PANEL		3063	K
*	103	WT825800	REAR PANEL		V367	A
*	103	WT826600	REAR PANEL		3063	A
*	103	WT825900	REAR PANEL		V367	BGF
*	103	WT826700	REAR PANEL		3063	GF
*	103	WT826000	REAR PANEL		V367	L
*	103	WT826800	REAR PANEL		3063	L
	109	WA796100	P.C.B. SUPPORT			
	120	WA790600	LEG	D60/H21 GD	GD	
	120	WE622000	LEG	D60/H21 HS	BL	
	120	WA790500	LEG	D60/H21 HS	TI, SI	
*	121	WT829900	KNOB	D52 VOLUME	GD	
*	121	WT829700	KNOB	D52 VOLUME	BL	
*	121	WT829800	KNOB	D52 VOLUME	TI	
*	121	WT830000	KNOB	D52 VOLUME	SI	
	151	WB408400	DAMPER	10x30 t=4		
*	152	WP126800	DAMPER	SCREW MASK		
	156	WR306100	SHEET TOP			L
	157	WJ323900	RIVET TOP			L
	160	WE774100	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2B3		
	163	WE774300	BIND HEAD B-TIGHT SCREW	3x8 MFZN2W3		
	165	WE877900	BIND HEAD S-TIGHT SCREW	3x6 MFZN2W3		
	167	WF002600	PW HEAD B-TIGHT SCREW	3x8 MFZN2W3		
	168	WE774600	SCREW IC	3x18 MFZN2W3		
	170	WE774700	BIND HEAD S-TIGHT SCREW	4x10 MFZN2W3		
	171	VD069600	PW HEAD S-TIGHT SCREW	4x8-10 MFNI33	GD, TI, SI	
	171	VH313200	PW HEAD S-TIGHT SCREW	4x8-10 MFNI3BL	BL	
			ACCESSORIES			
*	200	WT926700	REMOTE CONTROL	RAV331		UC
*	200	WT926800	REMOTE CONTROL	RAV332		RTKAL
*	200	WT926900	REMOTE CONTROL	RAV333		BGF
	200-1	AAX82380	BATTERY COVER		CG-2209	
	202	WB212500	INDOOR FM ANTENNA	1.4m 1pc		UCRTL
	202	WB212400	INDOOR FM ANTENNA	1.4m 1pc		KABGF
	203	WB212600	AM LOOP ANTENNA	1.0m 1pc		
	204	WN649600	YPAO MICROPHONE	6.0m 1pc	EM6022L-HN1700	
*	205	WT976200	VIDEO AUX INPUT COVER	1pc	GD	
*	205	WT976000	VIDEO AUX INPUT COVER	1pc	BL	
*	205	WT976100	VIDEO AUX INPUT COVER	1pc	TI	
*	205	WT976300	VIDEO AUX INPUT COVER	1pc	V367SI	
*	205	WU190200	VIDEO AUX INPUT COVER	1pc	3063SI	R
*	205	WT976300	FRONT COVER	1pc	3063SI	G
*	206	WU183100	SHEET	1pc		T
			BATTERY	R03,AAA,UM-4 2pcs		

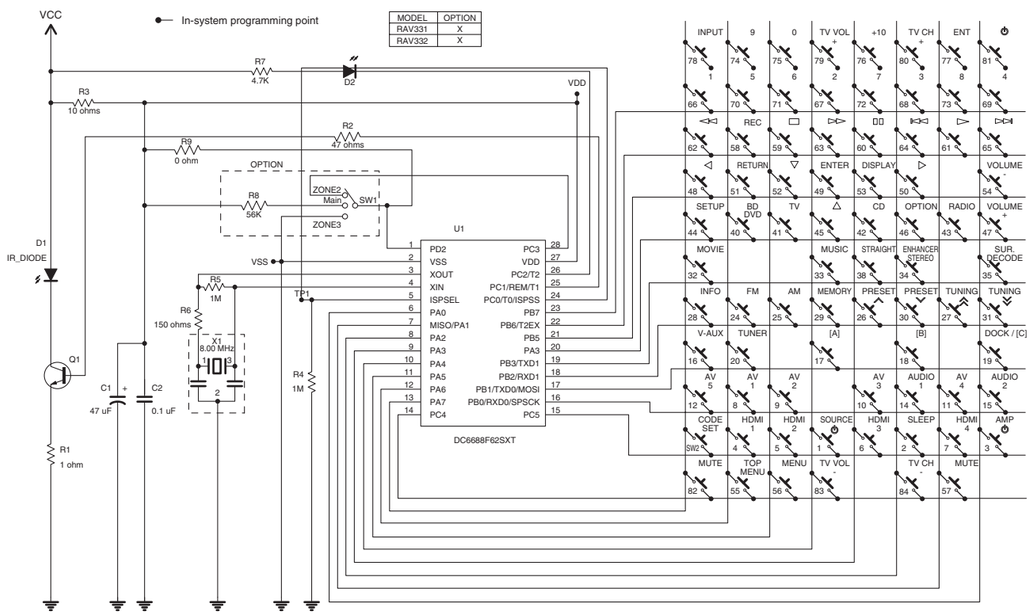
※ New Parts

■ REMOTE CONTROL

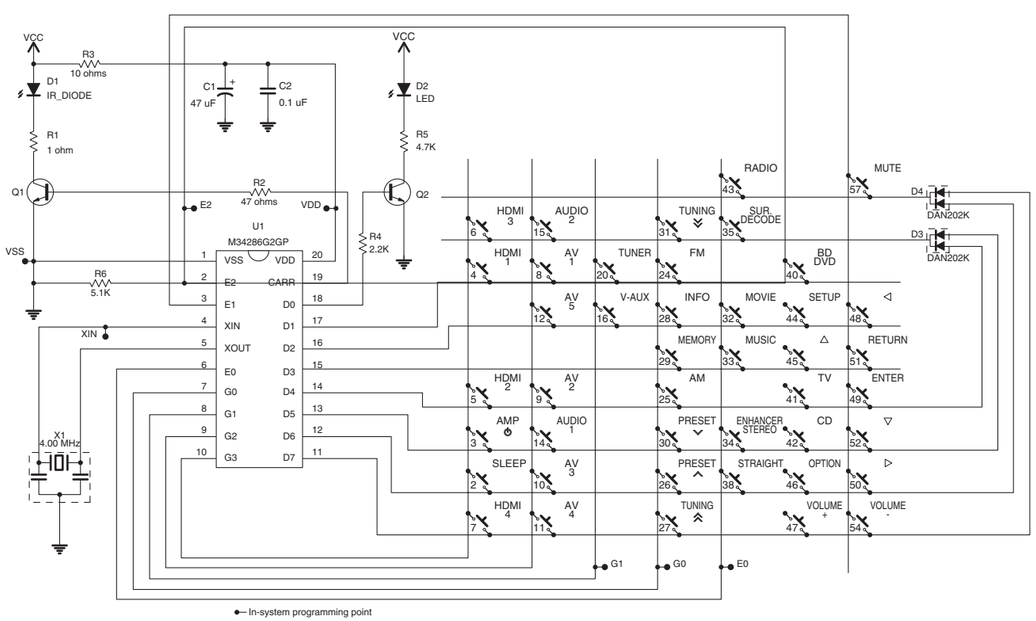
● RAV331: U, C models / RAV332: R, T, K, A, L models / RAV333: B, G, F models

SCHEMATIC DIAGRAMS

RAV331, RAV332

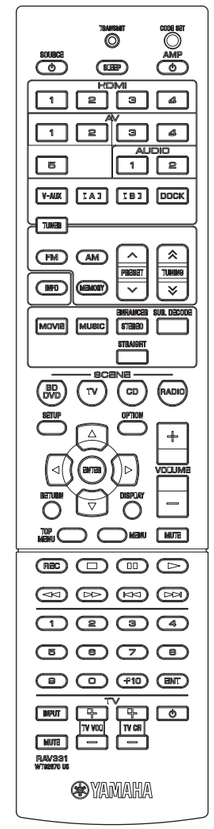


RAV333

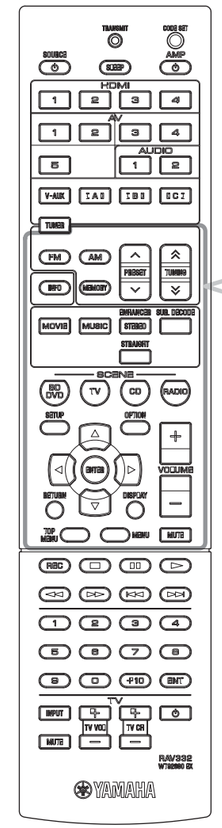


PANELS

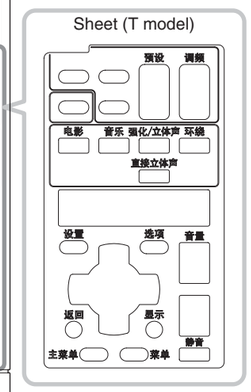
RAV331
(U, C models)



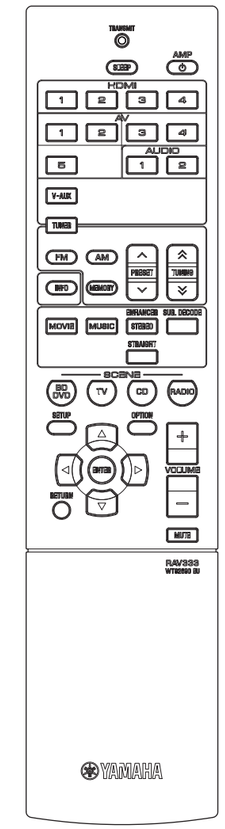
RAV332
(R, T, K, A, L models)



Sheet (T model)

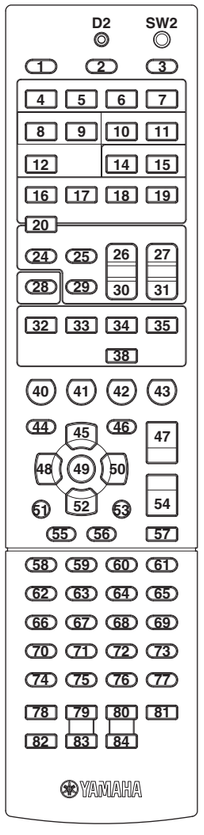


RAV333
(B, G, F models)



KEY NO. LAYOUT

RAV331, RAV332



KEY CODE

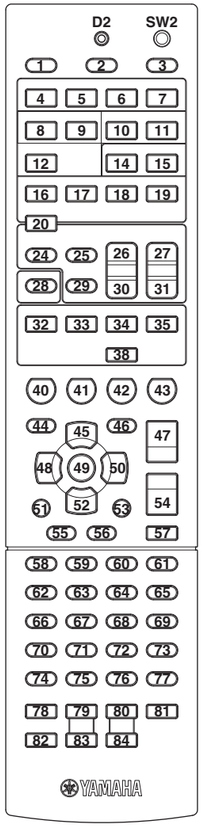
RAV331, RAV332

AMP MODE

GROUP	PRE SET	COM	Key No.	FUNCTION (U, C, R, K, A, L models)	(T model)	ID1 MAIN	ID1 (ZONE2)	ID1 (ZONE3)	ID2 MAIN	ID2 (ZONE2)	ID2 (ZONE3)
	–	–	SW1	MAIN/ZONE2/ZONE3		[MAIN]	[ZONE2]	[ZONE3]	[MAIN]	[ZONE2]	[ZONE3]
	–	–	LED1	TRANSMIT		–	–	–	–	–	–
	–	–	SW2	CODE SET		–	–	–	–	–	–
POWER	–	O	K2	SLEEP		7A-30	7A-31	7A-32	7A-30CE	7A-31CF	7A-32CC
	–	O	K3	AMP ⏻		7E-2A	7A-453A	7A-4639	7E-2AD4	7A-453B	7A-4638
INPUT 1	O	O	K4	HDMI-1 Default setting		7A-4738	7A-4837	7A-4936	7A-4739	7A-4836	7A-4937
						* enter into HDMI-1 MODE					
	O	O	K5	HDMI-2		7A-4A35	7A-4B34	7A-4C33	7A-4A34	7A-4B35	7A-4C32
						* enter into HDMI-2 MODE					
	O	O	K6	HDMI-3		7A-4D32	7A-4E31	7A-4F30	7A-4D33	7A-4E30	7A-4F31
						* enter into HDMI-3 MODE					
	O	O	K7	HDMI-4		7A-502F	7A-512E	7A-522D	7A-502E	7A-512F	7A-522C
						* enter into HDMI-4 MODE					
	O	O	K8	AV-1		7A-532C	7A-542B	7A-552A	7A-532D	7A-542A	7A-552B
						* enter into AV-1 MODE					
	O	O	K9	AV-2		7A-5629	7A-5728	7A-5827	7A-5628	7A-5729	7A-5826
						* enter into AV-2 MODE					
	O	O	K10	AV-3		7A-5926	7A-5A25	7A-5B24	7A-5927	7A-5A24	7A-5B25
						* enter into AV-3 MODE					
	O	O	K11	AV-4		7A-5C23	7A-5D22	7A-5E21	7A-5C22	7A-5D23	7A-5E20
						* enter into AV-4 MODE					
	O	O	K12	AV-5		7A-5F20	7A-601F	7A-611E	7A-5F21	7A-601E	7A-611F
						* enter into AV-5 MODE					
	O	O	K14	AUDIO-1		7A-651A	7A-6619	7A-6718	7A-651B	7A-6618	7A-6719
						* enter into AUDIO-1 MODE					
	O	O	K15	AUDIO-2		7A-6817	7A-6916	7A-6A15	7A-6816	7A-6917	7A-6A14
						* enter into AUDIO-2 MODE					
	O	O	K16	V-AUX		7A-55	7A-D8	7A-F0	7A-55AB	7A-D826	7A-F00E
						* enter into V-AUX MODE					
	O	O	K17	[A]		7A-14	7A-D0	7A-F1	7A-14EA	7A-D02E	7A-F10F
						* enter into PHONO MODE					
INPUT 2	–	O	K18	[B]		7F01-3F	7F01-40	7F01-41	7F01-3FC1	7F01-40BE	7F01-41BF
						* enter into USB MODE					
	–	O	K19	DOCK (U, C models) [C] (R, T, K, A, L models)		7F01-4A	7F01-4B	7F01-4C	7F01-4AB4	7F01-4BB5	7F01-4CB2
						* enter into DOCK MODE					
	–	O	K20	TUNER		7A-16	7A-D2	7A-F3	7A-16E8	7A-D22C	7A-F30D
						* enter into TUNER MODE					
RADIO	–	O	K24	FM		7F01-5827	7F01-5926	7F01-5A25	7F01-5826	7F01-5927	7F01-5A24
	–	O	K25	AM		7F01-552A	7F01-5629	7F01-5728	7F01-552B	7F01-5628	7F01-5729
	–	O	K26	PRESET ⌃	预设	7F01-5B24	7F01-5C23	7F01-5D22	7F01-5B25	7F01-5C22	7F01-5D23
	–	O	K27	TUNING ⌃⌃	调频	7F01-611E	7F01-621D	7F01-631C	7F01-611F	7F01-621C	7F01-631D
	–	O	K28	INFO		7A-2758	7A-2857	7A-2956	7A-2759	7A-2856	7A-2957
	–	O	K29	MEMORY		7F01-6718	7F01-6817	7F01-6916	7F01-6719	7F01-6816	7F01-6917
	–	O	K30	PRESET ⌄		7F01-5E21	7F01-5F20	7F01-601F	7F01-5E20	7F01-5F21	7F01-601E
	–	O	K31	TUNING ⌄⌄		7F01-641B	7F01-651A	7F01-6619	7F01-641A	7F01-651B	7F01-6618
DSP	–	O	K32	MOVIE	电影	7A-88	–	–	7A-8876	–	–
	–	O	K33	MUSIC	音乐	7A-89	–	–	7A-8977	–	–
	–	O	K34	ENHANCER/STEREO	强化/立体声	7A-94	–	–	7A-946A	–	–
	–	O	K35	SUR. DECODE	环绕	7A-8D	–	–	7A-8D73	–	–
	–	O	K38	STRAIGHT	直接立体声	7A-56	–	–	7A-56A8	–	–

GROUP	PRE SET	COM	Key No.	FUNCTION (U, C, R, K, A, L models)	(T model)	ID1 MAIN	ID1 (ZONE2)	ID1 (ZONE3)	ID2 MAIN	ID2 (ZONE2)	ID2 (ZONE3)
SCENE	–	O	K40	BD/DVD (SCENE)		7A-007F	7A-017E	7A-027D	7A-007E	7A-017F	7A-027C
	–	O	K41	TV (SCENE)		7A-037C	7A-047B	7A-057A	7A-037D	7A-047A	7A-057B
	–	O	K42	CD (SCENE)		7A-0679	7A-0778	7A-0877	7A-0678	7A-0779	7A-0876
	–	O	K43	RADIO (SCENE)		7A-0976	7A-0A75	7A-0B74	7A-0977	7A-0A74	7A-0B75
MENU	–	O	K44	SETUP	设置	7A-84	–	–	7A-847A	–	–
						* enter into AMP MODE					
	–	O	K46	OPTION	选项	7A-6B14	–	–	7A-6B15	–	–
						* enter into AMP MODE					
CURSOR	–	–	K45	△ (UP)		7A-9D	–	–	7A-9D63	–	–
	–	–	K48	◁ (LEFT)		7A-9F	–	–	7A-9F61	–	–
	–	–	K49	ENTER		7A-DE	–	–	7A-DE20	–	–
	–	–	K50	▷ (RIGHT)		7A-9E	–	–	7A-9E60	–	–
	–	–	K51	RETURN	返回	7A-AA	–	–	7A-AA54	–	–
	–	–	K52	▽ (DOWN)		7A-9C	–	–	7A-9C62	–	–
	–	–	K53	DISPLAY	显示	7F01-60	7F01-80	7F01-A0	7F01-609E	7F01-807E	7F01-A05E
VOLUME	–	O	K47	VOLUME (+)	音量	7A-1A	7A-DA	7A-FD	7A-1AE4	7A-DA24	7A-FD03
	–	O	K54	VOLUME (-)		7A-1B	7A-DB	7A-FE	7A-1BE5	7A-DB25	7A-FE00
	–	O	K57	MUTE	静音	7A-1C	7A-DC	7A-FF	7A-1CE2	7A-DC22	7A-FF01
SOURCE	–	–	K55	TOP MENU	主菜单	(SOURCE MODE 1/2)					
	–	–	K56	MENU	菜单	* enter into SOURCE MODE					
	–	–	K1	SOURCE ⏻		* SOURCE MODE 1/2					
	–	–	K58	REC							
	–	–	K59	□ (STOP)							
	–	–	K60	▯▯ (PAUSE)							
	–	–	K61	▷ (PLAY)							
	–	–	K62	◁◁ (REW)							
	–	–	K63	▷▷ (FF)							
	–	–	K64	⏮ (SKIP -)							
	–	–	K65	⏭ (SKIP +)							
10 key	–	–	K66	1		* SOURCE MODE 1/2					
	–	–	K67	2							
	–	–	K68	3							
	–	–	K69	4							
	–	–	K70	5							
	–	–	K71	6							
	–	–	K72	7							
	–	–	K73	8							
	–	–	K74	9							
	–	–	K75	0							
	–	–	K76	+10							
	–	–	K77	ENT							
TV	–	–	K78	TV INPUT		* TV MODE					
	–	–	K79	TV VOL (+)							
	–	–	K80	TV CH (+)							
	●	–	K81	TV ⏻							
	–	–	K82	TV MUTE							
	–	–	K83	TV VOL (-)							
	–	–	K84	TV CH (-)							

RAV331, RAV332

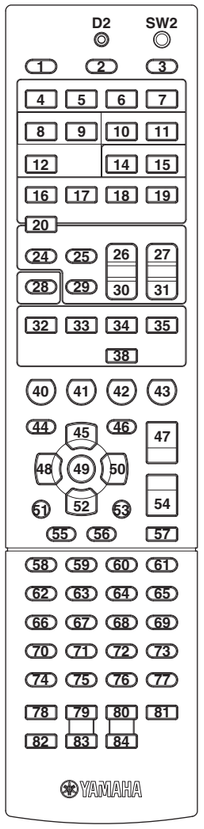


RAV331, RAV332

SOURCE MODE

GROUP	Key No.	FUNCTION (U, C, R, K, A, L models)	FUNCTION (T model)	SOURCE MODE 1 (INPUT1) K4 [HDMI-1]	K5 [HDMI-2]	K6 [HDMI-3]	K7 [HDMI-4]	K8 [AV-1]	K9 [AV-2]	K10 [AV-3]	K11 [AV-4]	K12 [AV-5]	K14 [AUDIO-1]	K15 [AUDIO-1]	K16 [V-AUX]	K17 [A]	SOURCE MODE 2 (INPUT2) K18 [B] ID1	K18 [B] ID2	K19 [DOCK] ID1	K19 [DOCK] ID2	K20 [TUNER] ID1	K20 [TUNER] ID2
				ID1 [MAIN]																		
		Library		BD	–	–	–	–	–	CD	–	–	–	–	–	–	TUNER	TUNER	TUNER	TUNER	TUNER	TUNER
		Brand		Yamaha-1	–	–	–	–	–	Yamaha-1	–	–	–	–	–	–	Yamaha-8	Yamaha-13	Yamaha-7	Yamaha-14	Yamaha-3	Yamaha-12
		Preset No.		2064	–	–	–	–	–	5095	–	–	–	–	–	–	5012	5021	5011	5022	5007	5016
POWER	K2	SLEEP		* AMP MODE													* AMP MODE					
	K3	AMP ⏻																				
INPUT 1	K4	HDMI-1 Default setting		* AMP MODE													* AMP MODE					
	K5	HDMI-2																				
	K6	HDMI-3																				
	K7	HDMI-4																				
	K8	AV-1																				
	K9	AV-2																				
	K10	AV-3																				
	K11	AV-4																				
	K12	AV-5																				
	K14	AUDIO-1																				
	K15	AUDIO-2																				
	K16	V-AUX																				
	K17	[A]																				
INPUT 2	K18	[B]		* AMP MODE													* AMP MODE					
	K19	DOCK (U, C models) [C] (R, T, K, A, L models)																				
	K20	TUNER																				
RADIO	K24	FM		* AMP MODE													* AMP MODE					
	K25	AM																				
	K26	PRESET ⌃	预设																			
	K27	TUNING ⌃⌃	调频																			
	K28	INFO																				
	K29	MEMORY																				
	K30	PRESET ⌄																				
	K31	TUNING ⌄⌄																				
DSP	K32	MOVIE	电影	* AMP MODE													* AMP MODE					
	K33	MUSIC	音乐																			
	K34	ENHANCER/STEREO	强化/立体声																			
	K35	SUR. DECODE	环绕																			
	K38	STRAIGHT	直接立体声																			
SCENE	K40	BD/DVD (SCENE)		* AMP MODE													* AMP MODE					
	K41	TV (SCENE)																				
	K42	CD (SCENE)																				
	K43	RADIO (SCENE)																				
MENU	K44	SETUP	设置	* AMP MODE													* AMP MODE					
	K46	OPTION	选项																			
CURSOR	K45	△ (UP)		7C-B4	–	–	–	–	–	–	–	–	–	–	–	–	7F01-2E	7F01-2ED0	7F01-0E	7F01-0EF0	* AMP MODE	
	K48	◁ (LEFT)		7C-B5	–	–	–	–	–	–	–	–	–	–	–	–	7F01-30	7F01-30CE	7F01-10	7F01-10EE		
	K49	ENTER		7C-B8	–	–	–	–	–	–	–	–	–	–	–	–	7F01-31	7F01-31CF	7F01-11	7F01-11EF		
	K50	▷ (RIGHT)		7C-B6	–	–	–	–	–	–	–	–	–	–	–	–	7F01-32	7F01-32CC	7F01-12	7F01-12EC		
	K51	RETURN	返回	7C-B7	–	–	–	–	–	–	–	–	–	–	–	–	7F01-33	7F01-33CD	7F01-13	7F01-13ED		
	K52	▽ (DOWN)		7C-B3	–	–	–	–	–	–	–	–	–	–	–	–	7F01-34	7F01-34CA	7F01-14	7F01-14EA		
	K53	DISPLAY	显示	7C-A6	–	–	–	–	–	79-0A	–	–	–	–	–	–	7F01-35	7F01-35CB	7F01-15	7F01-15EB		

RAV331, RAV332



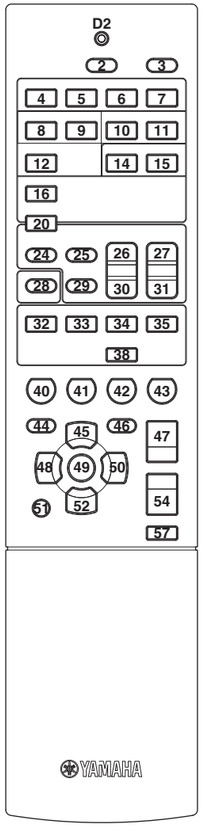
RAV331, RAV332

SOURCE MODE

				SOURCE MODE 1 (INPUT1)													SOURCE MODE 2 (INPUT2)					
				K4	K5	K6	K7	K8	K9	K10	K11	K12	K14	K15	K16	K17	K18		K19		K20	
				[HDMI-1]	[HDMI-2]	[HDMI-3]	[HDMI-4]	[AV-1]	[AV-2]	[AV-3]	[AV-4]	[AV-5]	[AUDIO-1]	[AUDIO-1]	[V-AUX]	[A]	[B]		[DOCK]		[TUNER]	
GROUP	Key No.	FUNCTION (U, C, R, K, A, L models)	(T model)	ID1 [MAIN]													ID1	ID2	ID1	ID2	ID1	ID2
VOLUME	K47	VOLUME (+)	音量	* AMP MODE													* AMP MODE					
	K54	VOLUME (-)																				
	K57	MUTE	静音																			
SOURCE	K55	TOP MENU	主菜单	7C-B1	–	–	–	–	–	–	–	–	–	–	–	–	7F01-2D	7F01-2DD3	7F01-0D	7F01-0DF3	7A-AE	7A-AE50
				* keep on SOURCE MODE													* keep on SOURCE MODE					
	K56	MENU	菜单	7C-CF													7F01-2F	7F01-2FD1	7F01-0F	7F01-0FF1	7A-AB	7A-AB55
				* keep on SOURCE MODE													* keep on SOURCE MODE					
	K1	SOURCE ⏻		7C-80						79-60							7F01-20	7F01-20DE	7F01-00	7F01-00FE	D1-1B	–
	K58	REC		7C-8B	–	–	–	–	–	7A-4F	–	–	–	–	–	–	7F01-36	7F01-36C8	7F01-16	7F01-16E8	–	–
	K59	▭ (STOP)		7C-85	–	–	–	–	–	7A-09	–	–	–	–	–	–	7F01-3D	7F01-3DC3	7F01-1D	7F01-1DE3	–	–
	K60	▯▯ (PAUSE)		7C-83	–	–	–	–	–	7A-09	–	–	–	–	–	–	7F01-3A	7F01-3AC4	7F01-1A	7F01-1AE4	–	–
	K61	▷ (PLAY)		7C-82	–	–	–	–	–	7A-08	–	–	–	–	–	–	7F01-3E	7F01-3EC0	7F01-1E	7F01-1EE0	–	–
	K62	◁◁ (REW)		7C-86	–	–	–	–	–	7A-0D	–	–	–	–	–	–	7F01-37	7F01-37C9	7F01-17	7F01-17E9	–	–
	K63	▷▷ (FF)		7C-87	–	–	–	–	–	7A-0C	–	–	–	–	–	–	7F01-38	7F01-38C6	7F01-18	7F01-18E6	7A-A5	7A-A55B
	K64	⏮ (SKIP -)		7C-B9	–	–	–	–	–	7A-0B	–	–	–	–	–	–	7F01-3B	7F01-3BC5	7F01-1B	7F01-1BE5	7A-A6	7A-A658
	K65	⏭ (SKIP +)		7C-BA	–	–	–	–	–	7A-0A	–	–	–	–	–	–	7F01-3C	7F01-3CC2	7F01-1C	7F01-1CE2	7A-A7	7A-A759
10 key	K66	1		7C-94	–	–	–	–	–	79-11	–	–	–	–	–	–	7F01-21	7F01-21DF	7F01-01	7F01-01FF	7A-E5	7A-E51B
	K67	2		7C-95	–	–	–	–	–	79-12	–	–	–	–	–	–	7F01-22	7F01-22DC	7F01-02	7F01-02FC	7A-E6	7A-E618
	K68	3		7C-96	–	–	–	–	–	79-13	–	–	–	–	–	–	7F01-23	7F01-23DD	7F01-03	7F01-03FD	7A-E7	7A-E719
	K69	4		7C-97	–	–	–	–	–	79-14	–	–	–	–	–	–	7F01-24	7F01-24DA	7F01-04	7F01-04FA	7A-E8	7A-E816
	K70	5		7C-98	–	–	–	–	–	79-15	–	–	–	–	–	–	7F01-25	7F01-25DB	7F01-05	7F01-05FB	7A-E9	7A-E917
	K71	6		7C-99	–	–	–	–	–	79-16	–	–	–	–	–	–	7F01-26	7F01-26D8	7F01-06	7F01-06F8	7A-EA	7A-EA14
	K72	7		7C-9A	–	–	–	–	–	79-17	–	–	–	–	–	–	7F01-27	7F01-27D9	7F01-07	7F01-07F9	7A-EB	7A-EB15
	K73	8		7C-9B	–	–	–	–	–	79-18	–	–	–	–	–	–	7F01-28	7F01-28D6	7F01-08	7F01-08F6	7A-EC	7A-EC12
	K74	9		7C-9C	–	–	–	–	–	79-19	–	–	–	–	–	–	7F01-29	7F01-29D7	7F01-09	7F01-09F7	7A-B1	7A-B14F
	K75	0		7C-93	–	–	–	–	–	79-10	–	–	–	–	–	–	7F01-2A	7F01-2AD4	7F01-0A	7F01-0AF4	7A-B2	7A-B24C
	K76	+10		7C-9D	–	–	–	–	–	79-1A	–	–	–	–	–	–	7F01-2B	7F01-2BD5	7F01-0B	7F01-0BF5	–	–
	K77	ENT		7C-9E	–	–	–	–	–	79-0B	–	–	–	–	–	–	7F01-2C	7F01-2CD2	7F01-0C	7F01-0CF2	7A-B3	7A-B34D
TV	K78	TV INPUT		* TV MODE													* TV MODE					
	K79	TV VOL (+)																				
	K80	TV CH (+)																				
	K81	TV ⏻																				
	K82	TV MUTE																				
	K83	TV VOL (-)																				
	K84	TV CH (-)																				

KEY NO. LAYOUT

RAV333



KEY CODE

RAV333

Key No.	FUNCTION	CODE					
		ID1			ID2		
		MAIN	ZONE2	ZONE3	MAIN	ZONE2	ZONE3
K2	SLEEP	7A-30	7A-31	7A-32	7A-30CE	7A-31CF	7A-32CC
K3	AMP ⏻	7E-2A	7A-453A	7A-4639	7E-2AD4	7A-453B	7A-4638
K4	HDMI-1	7A-4738	7A-4837	7A-4936	7A-4739	7A-4836	7A-4937
K5	HDMI-2	7A-4A35	7A-4B34	7A-4C33	7A-4A34	7A-4B35	7A-4C32
K6	HDMI-3	7A-4D32	7A-4E31	7A-4F30	7A-4D33	7A-4E30	7A-4F31
K7	HDMI-4	7A-502F	7A-512E	7A-522D	7A-502E	7A-512F	7A-522C
K8	AV-1	7A-532C	7A-542B	7A-552A	7A-532D	7A-542A	7A-552B
K9	AV-2	7A-5629	7A-5728	7A-5827	7A-5628	7A-5729	7A-5826
K10	AV-3	7A-5926	7A-5A25	7A-5B24	7A-5927	7A-5A24	7A-5B25
K11	AV-4	7A-5C23	7A-5D22	7A-5E21	7A-5C22	7A-5D23	7A-5E20
K12	AV-5	7A-5F20	7A-601F	7A-611E	7A-5F21	7A-601E	7A-611F
K14	AUDIO-1	7A-651A	7A-6619	7A-6718	7A-651B	7A-6618	7A-6719
K15	AUDIO-2	7A-6817	7A-6916	7A-6A15	7A-6816	7A-6917	7A-6A14
K16	V-AUX	7A-55	7A-D8	7A-F0	7A-55AB	7A-D826	7A-F00E
K20	TUNER	7A-16	7A-D2	7A-F3	7A-16E8	7A-D22C	7A-F30D
K24	FM	7F01-5827	7F01-5926	7F01-5A25	7F01-5826	7F01-5927	7F01-5A24
K25	AM	7F01-552A	7F01-5629	7F01-5728	7F01-552B	7F01-5628	7F01-5729
K26	PRESET ∧	7F01-5B24	7F01-5C23	7F01-5D22	7F01-5B25	7F01-5C22	7F01-5D23
K27	TUNING ⌃	7F01-611E	7F01-621D	7F01-631C	7F01-611F	7F01-621C	7F01-631D
K28	INFO	7A-2758	7A-2857	7A-2956	7A-2759	7A-2856	7A-2957
K29	MEMORY	7F01-6718	7F01-6817	7F01-6916	7F01-6719	7F01-6816	7F01-6917
K30	PRESET ∨	7F01-5E21	7F01-5F20	7F01-601F	7F01-5E20	7F01-5F21	7F01-601E
K31	TUNING ⌄	7F01-641B	7F01-651A	7F01-6619	7F01-641A	7F01-651B	7F01-6618
K32	MOVIE	7A-88	–	–	7A-8876	–	–
K33	MUSIC	7A-89	–	–	7A-8977	–	–
K34	ENHANCER/STEREO	7A-94	–	–	7A-946A	–	–
K35	SUR. DECODE	7A-8D	–	–	7A-8D73	–	–
K38	STRAIGHT	7A-56	–	–	7A-56A8	–	–
K40	BD/DVD (SCENE)	7A-007F	7A-017E	7A-027D	7A-007E	7A-017F	7A-027C
K41	TV (SCENE)	7A-037C	7A-047B	7A-057A	7A-037D	7A-047A	7A-057B
K42	CD (SCENE)	7A-0679	7A-0778	7A-0877	7A-0678	7A-0779	7A-0876
K43	RADIO (SCENE)	7A-0976	7A-0A75	7A-0B74	7A-0977	7A-0A74	7A-0B75
K44	SETUP	7A-84	7A-3B44	7A-443B	7A-847A	7A-3B45	7A-443A
K45	△ (UP)	7A-9D	7A-2B54	7A-304F	7A-9D63	7A-2B55	7A-304E
K46	OPTION	7A-6B14	7A-6C13	7A-6D12	7A-6B15	7A-6C12	7A-6D13
K47	VOLUME (+)	7A-1A	7A-DA	7A-FD	7A-1AE4	7A-DA24	7A-FD03
K48	◁ (LEFT)	7A-9F	7A-2D52	7A-324D	7A-9F61	7A-2D53	7A-324C
K49	ENTER	7A-DE	7A-2F50	7A-344B	7A-DE20	7A-2F51	7A-344A
K50	▷ (RIGHT)	7A-9E	7A-2E51	7A-334C	7A-9E60	7A-2E50	7A-334D
K51	RETURN	7A-AA	7A-3C43	7A-3F40	7A-AA54	7A-3C42	7A-3F41
K52	▽ (DOWN)	7A-9C	7A-2C53	7A-314E	7A-9C62	7A-2C52	7A-314F
K54	VOLUME (-)	7A-1B	7A-DB	7A-FE	7A-1BE5	7A-DB25	7A-FE00
K57	MUTE	7A-1C	7A-DC	7A-FF	7A-1CE2	7A-DC22	7A-FF01

ID setting	K48 [(LEFT)] + K40 [SCENE BD/DVD]			K48 [(LEFT)] + K41 [SCENE TV]		
	= ID1			= ID2		
ZONE setting	K50 + K40	K50 + K41	K50 + K42	K50 + K40	K50 + K41	K50 + K42
	= MAIN	= ZONE2	= ZONE3	= MAIN	= ZONE2	= ZONE3

■ ADVANCED SETUP

U, C models

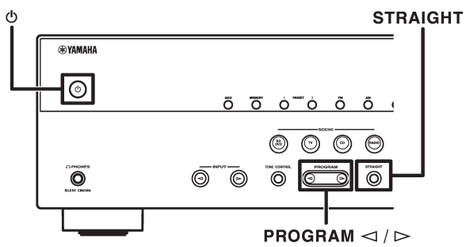
The Advanced Setup menu can be used for unit initialization and other useful extended functions.
The Advanced Setup menu can be operated as follows.

Displaying/Setting the Advanced Setup menu

1 **Set this unit to the standby mode.**

2 **Press ⏻ while pressing and holding STRAIGHT on the front panel.**

Release the keys when "ADVANCED SETUP" is displayed on the front panel display.
After approximately 3 seconds, the top menu items are displayed.



SP IMP. -8ΩMIN

3 **Use PROGRAM to select the item to be set from the following items.**

In the Advanced Setup menu, you can set the following settings.

SP IMP.	Sets the impedance of speakers.
REMOTE ID	Changes the remote control ID of a receiver.
INIT	Initializes various settings for this unit.

4 **Press STRAIGHT a few times to select the value you wish to change.**

5 **Switch this unit to the standby mode, and then switch it on again.**

The settings become effective and the unit is powered on. If initialization is selected, it will be performed when the unit is powered on again.

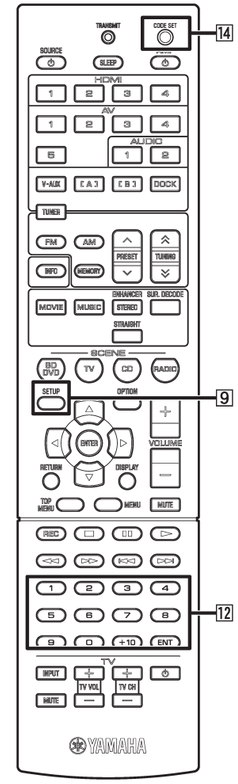
Setting the impedance of speakers

SP IMP. -8ΩMIN

Changes the unit settings depending on the impedance of the speakers connected. 1

6ΩMIN	Select the impedance when 6Ω speakers are connected.
8ΩMIN **(Default)**	Select the impedance when speakers above 8Ω are connected.

1 : For detailed procedures of speaker impedance settings, refer to "Changing speaker impedance".



9 SETUP
12 Numeric keys
14 CODE SET

Avoiding crossing remote control signals when using multiple Yamaha receivers

REMOTE ID -ID1

The remote control of the unit can only receive signals from a receiver which has an identical ID (remote control ID). When using multiple Yamaha AV receivers, you can set each remote control with a unique remote control ID for its corresponding receiver.
On the contrary, if you are setting the same remote control ID for all receivers, you can use one remote control to operate 2 receivers.

ID1 **(Default)**	Receives the remote control signals set in ID1.
ID2	Receives the remote control signals set in ID2.

ID1 is set for both remote control and receiver by default. To avoid crossing remote control, change the remote control ID for both remote control and receiver.

Initializing various settings for this unit

INIT- CANCEL

Initializes various settings stored in this unit and sets it back to default.
Select the items to be initialized from the following.

DSP PARAM	Initializes all parameters for the sound field programs.
ALL	Resets this unit to default factory settings.
CANCEL **(Default)**	Does not initialize.

■ To change the remote control ID

Perform each of the following steps within 1 minute. Settings will be automatically stopped if more than 1 minute passes since the last operation. To reset, repeat from step 1.

1 **Press 14CODE SET on the remote control using a pointed object such as the tip of a ballpoint pen.**

2 **Press 9SETUP on the remote control.**

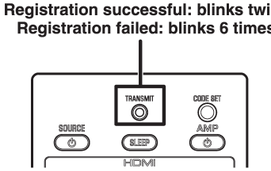
3 **Enter the desired remote control ID code.**

To switch to ID1:
Enter "5019" using 12**Numeric keys**.

To switch to ID2:
Enter "5020" using 12**Numeric keys**.

Once the remote control code is registered successfully the remote control will blink twice.

Registration successful: blinks twice
Registration failed: blinks 6 times



- If setup fails, repeat from step 1.
- Returns to ID1 after the remote control code is initialized.

R, T, K, A, B, G, F, L models

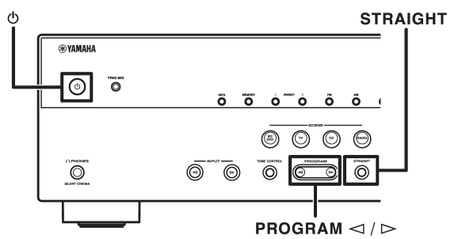
The Advanced Setup menu can be used for unit initialization and other useful extended functions. The Advanced Setup menu can be operated as follows.

Displaying/Setting the Advanced Setup menu

1 **Set this unit to the standby mode.**

2 **Press ⏻ while pressing and holding STRAIGHT on the front panel.**

Release the keys when "ADVANCED SETUP" is displayed on the front panel display.
After approximately 3 seconds, the top menu items are displayed.



REMOTE ID -ID1

3 **Use PROGRAM to select the item to be set from the following items.**

In the Advanced Setup menu, you can set the following settings.

REMOTE ID	Changes the remote control ID of a receiver.
TU **(R, T, K, L models)**	Selects one of the following FM/AM frequency steps.
INIT	Initializes various settings for this unit.

4 **Press STRAIGHT a few times to select the value you wish to change.**

5 **Switch this unit to the standby mode, and then switch it on again.**

The settings become effective and the unit is powered on. If initialization is selected, it will be performed when the unit is powered on again.

Avoiding crossing remote control signals when using multiple Yamaha receivers

REMOTE ID -ID1

The remote control of the unit can only receive signals from a receiver which has an identical ID (remote control ID). When using multiple Yamaha AV receivers, you can set each remote control with a unique remote control ID for its corresponding receiver.
On the contrary, if you are setting the same remote control ID for all receivers, you can use one remote control to operate 2 receivers.

ID1 **(Default)**	Receives the remote control signals set in ID1.
ID2	Receives the remote control signals set in ID2.

ID1 is set for both remote control and receiver by default. To avoid crossing remote control, change the remote control ID for both remote control and receiver. **(R, T, K, A, L models)**

(R, T, K, L models)

Changing FM/AM frequency steps (Asia and General models only)

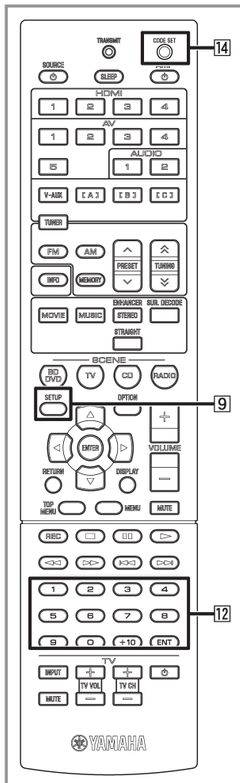
TU - AM9/FM50

You can select one of the following FM/AM frequency steps: ❦1

AM10/FM100	You can adjust the AM frequency by steps of 10kHz and FM by steps of 100kHz.
AM9/FM50 **(Default)**	You can adjust the AM frequency by steps of 9kHz and FM by steps of 50kHz.

❦1 : For details on setting FM/AM frequency steps, refer to "FM/AM tuning".

(R, T, K, A, L models)



9 **SETUP**
12 **Numeric keys**
14 **CODE SET**

■ To change the remote control ID

Perform each of the following steps within 1 minute. Settings will be automatically stopped if more than 1 minute passes since the last operation. To reset, repeat from step 1.

1 **Press 14 CODE SET on the remote control using a pointed object such as the tip of a ballpoint pen.**

2 **Press 9 SETUP on the remote control.**

3 **Enter the desired remote control ID code.**

To switch to ID1:
Enter "5019" using 12 **Numeric keys**.

To switch to ID2:
Enter "5020" using 12 **Numeric keys**.

Once the remote control code is registered successfully the remote control will blink twice.

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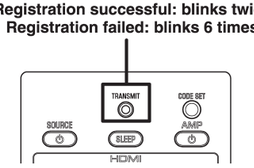
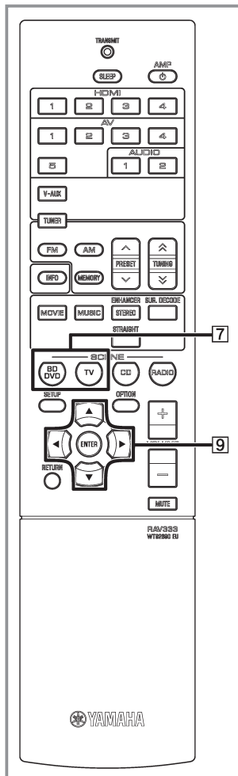


- If setup fails, repeat from step 1.
- Returns to ID1 after the remote control code is initialized.

(B, G, F models)



7 **SCENE**
9 **Cursor ◁**

■ To change the remote control ID

- To set to ID1
  Press 9 **Cursor ◁** and "BD/DVD" under 7 **SCENE** for 3 seconds or longer.
- To set to ID2
  Press 9 **Cursor ◁** and "TV" under 7 **SCENE** for 3 seconds or longer.

Initializing various settings for this unit

INIT- CANCEL

Initializes various settings stored in this unit and sets it back to default.
Select the items to be initialized from the following.

DSP PARAM	Initializes all parameters for the sound field programs.
ALL	Resets this unit to default factory settings.
CANCEL **(Default)**	Does not initialize.

MEMO

RX-V367/HTR-3063

YAMAHA