AV RECEIVER/AV AMPLIFIER
RX-V563/HTR-6150/ DSP-AX563
SERVICE MANUAL

■ CONTENTS

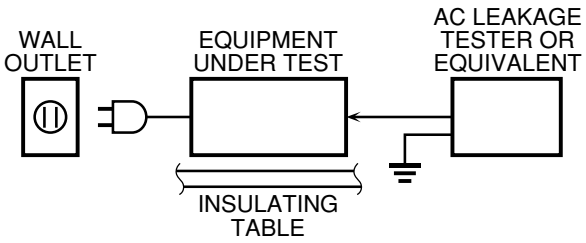
101086

YAMAHA
YAMAHA CORPORATION
P.O.Box 1, Hamamatsu, Japan
'08.03

■ 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 0.15μF.



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

For U model
"CAUTION"
"F3401, F3402: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 6A, 125V FUSE."

For C model
CAUTION
F3401, F3402: REPLACE WITH SAME TYPE 6A, 125V FUSE.

ATTENTION
F3401, F3402: 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 WHAT SO EVER!

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.

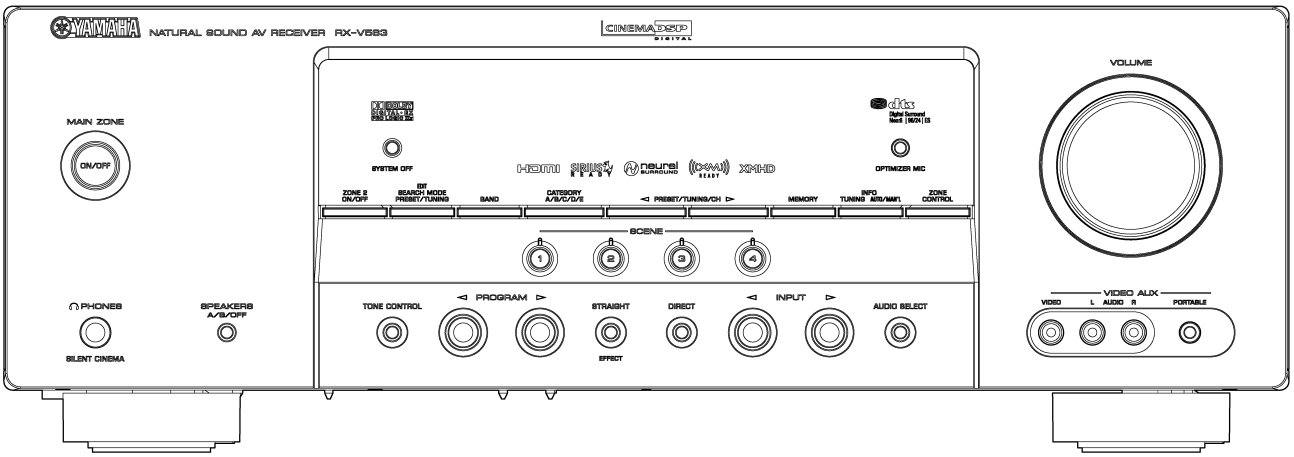
- Sn + Ag + Cu (tin + silver + copper)
- Sn + Cu (tin + copper)
- Sn + Zn + Bi (tin + zinc + bismuth)

Caution:

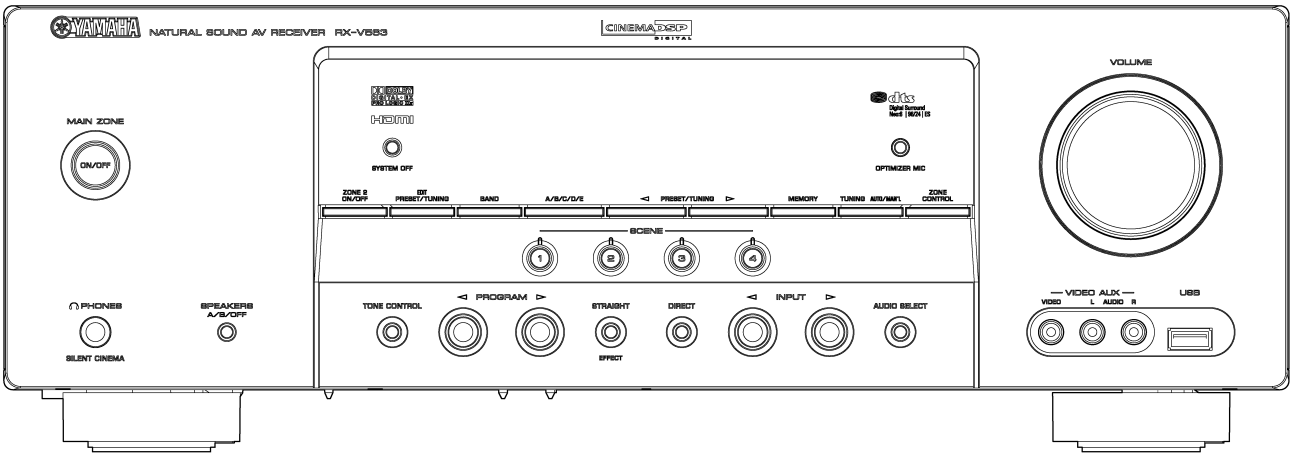
As the melting point temperature of the lead free solder is about 30°C to 40°C (50°F to 70°F) higher than that of the lead solder, be sure to use a soldering iron suitable to each solder.

■ FRONT PANELS

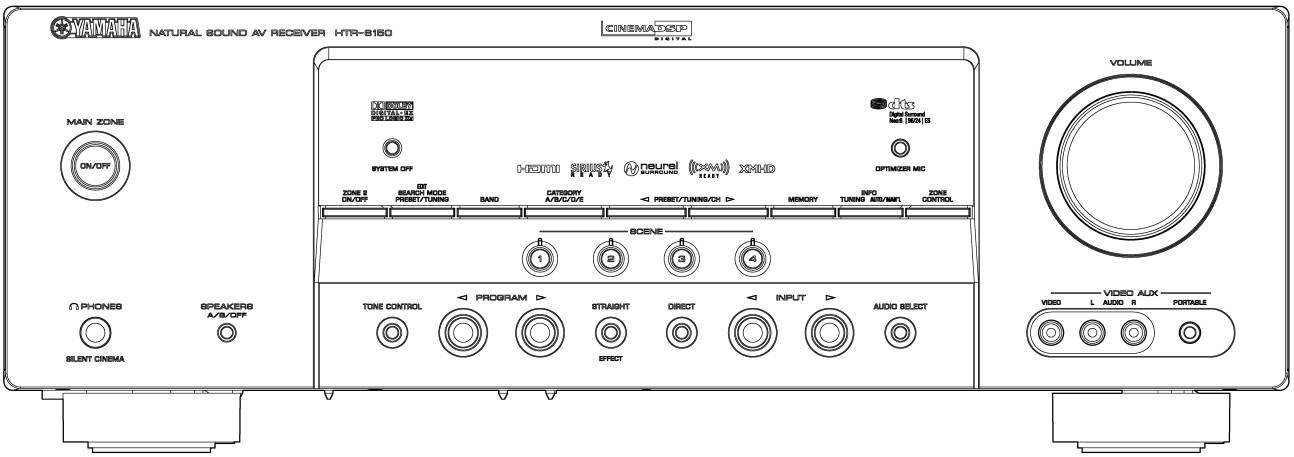
RX-V563 (U, C models)



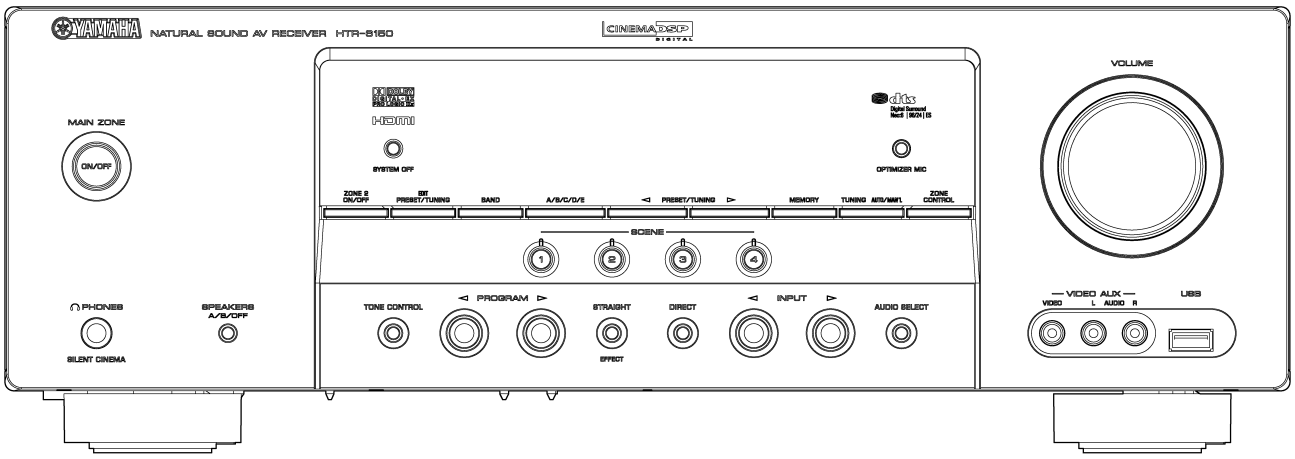
RX-V563 (R, T, K, A, G, E, F, L models)



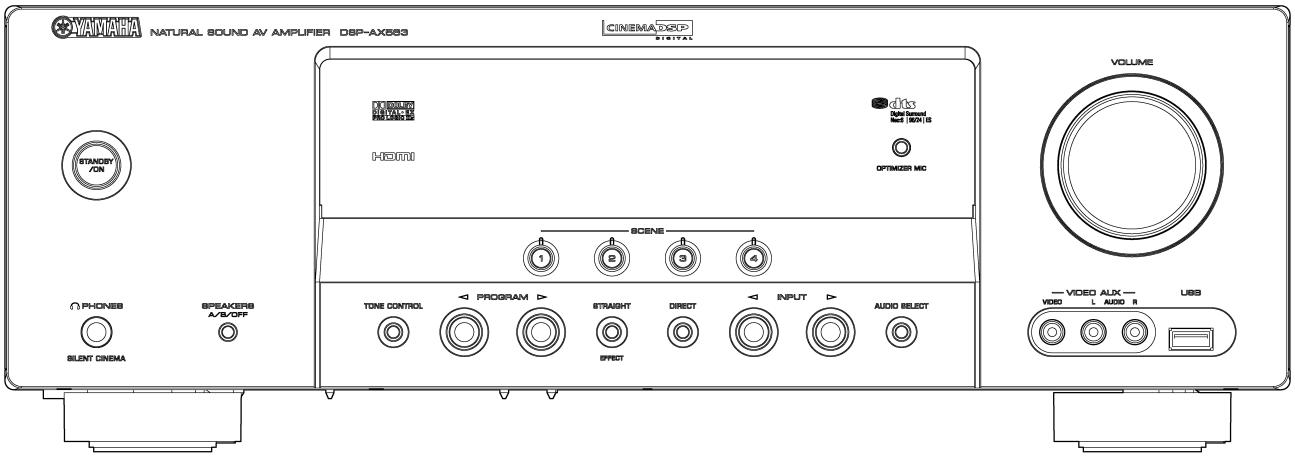
HTR-6150 (U, C models)



HTR-6150 (F model)

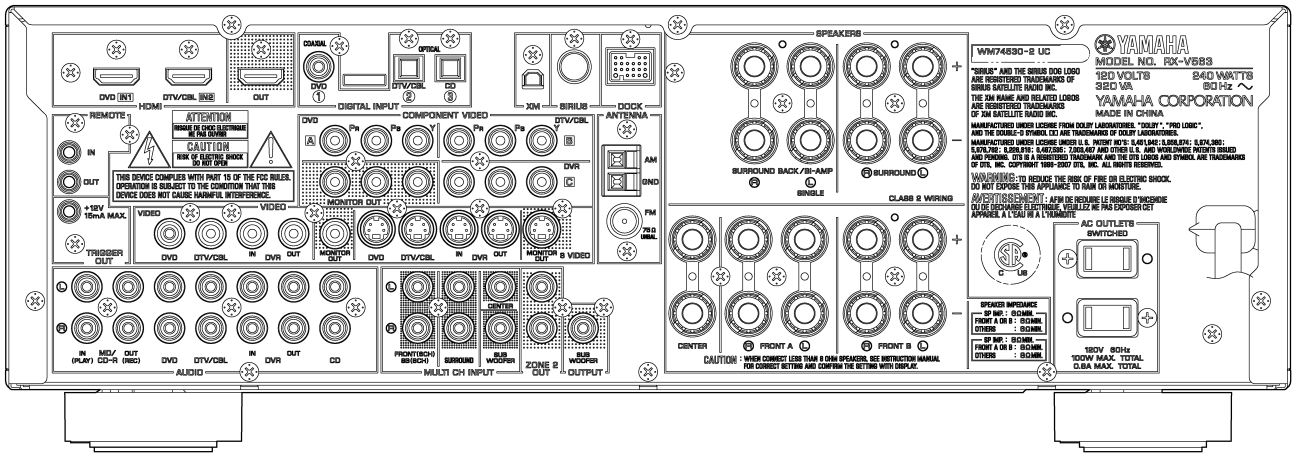


DSP-AX563 (B model)

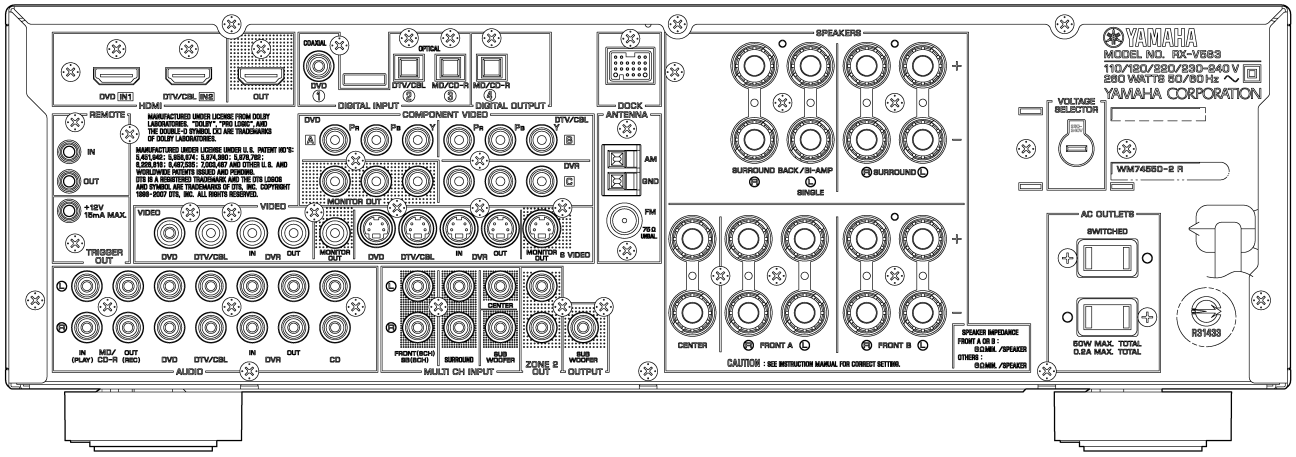


■ REAR PANELS

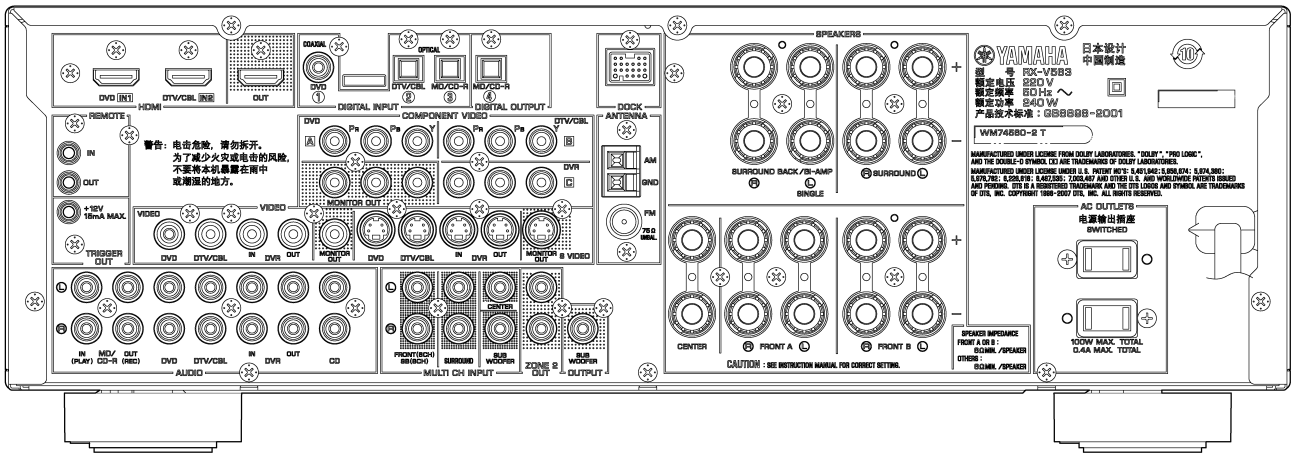
RX-V563 (U, C models)



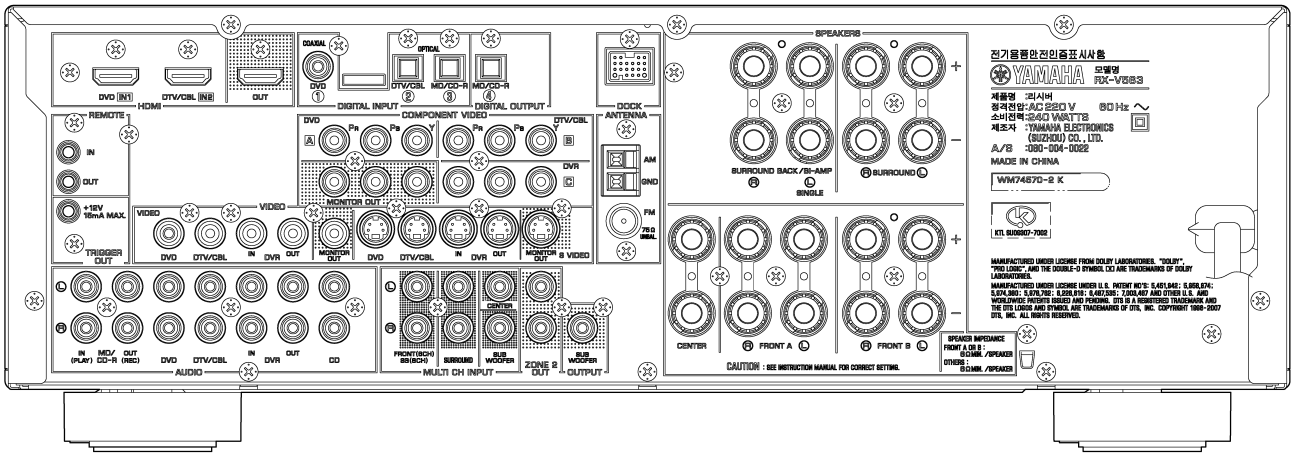
RX-V563 (R model)



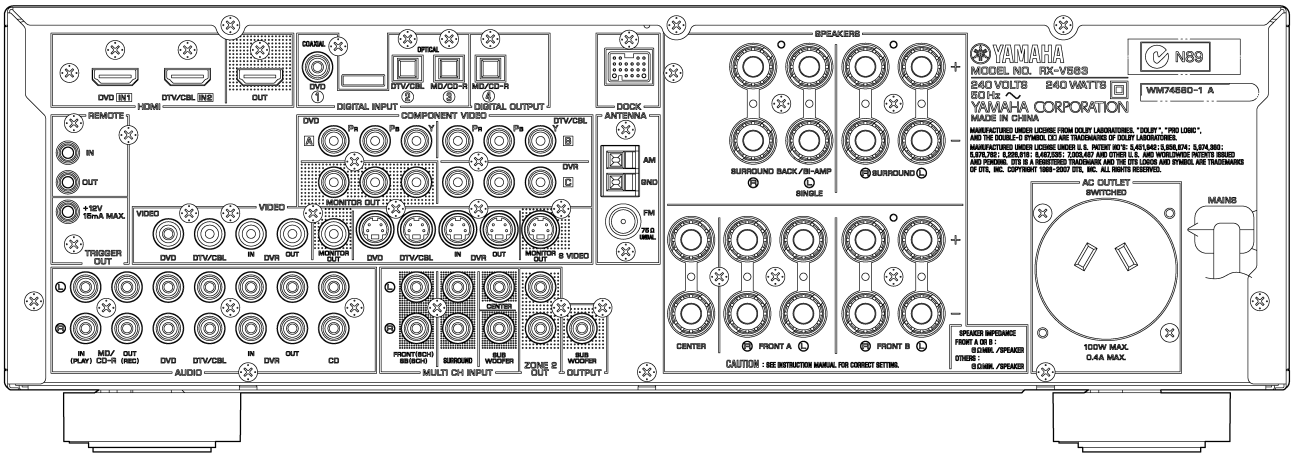
RX-V563 (T model)



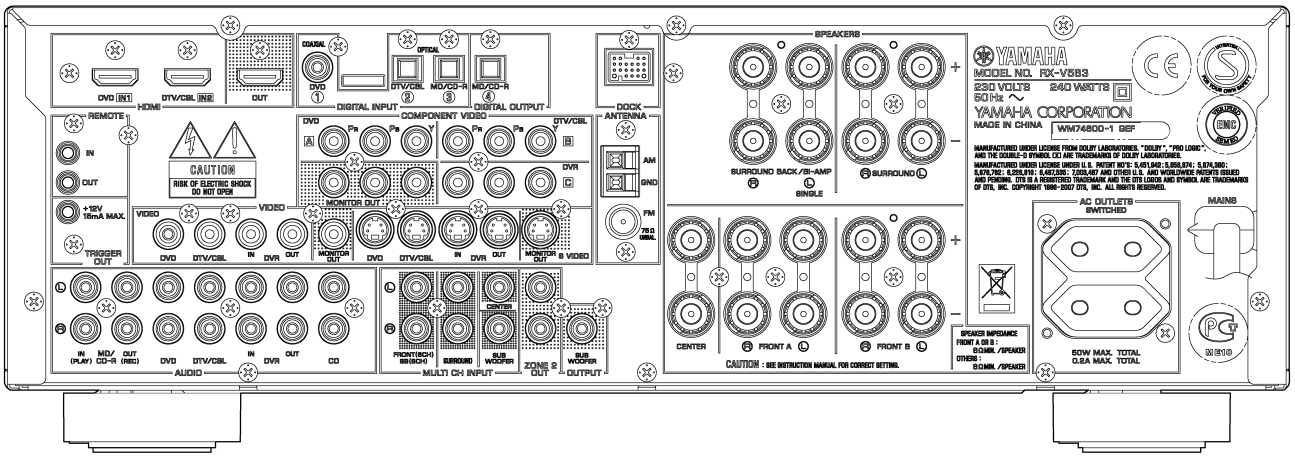
RX-V563 (K model)



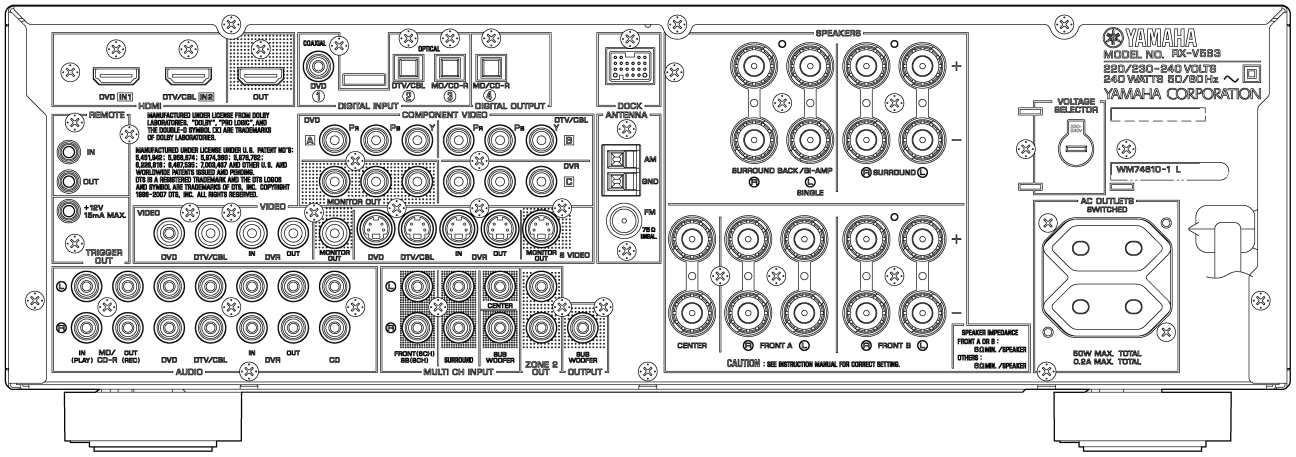
RX-V563 (A model)



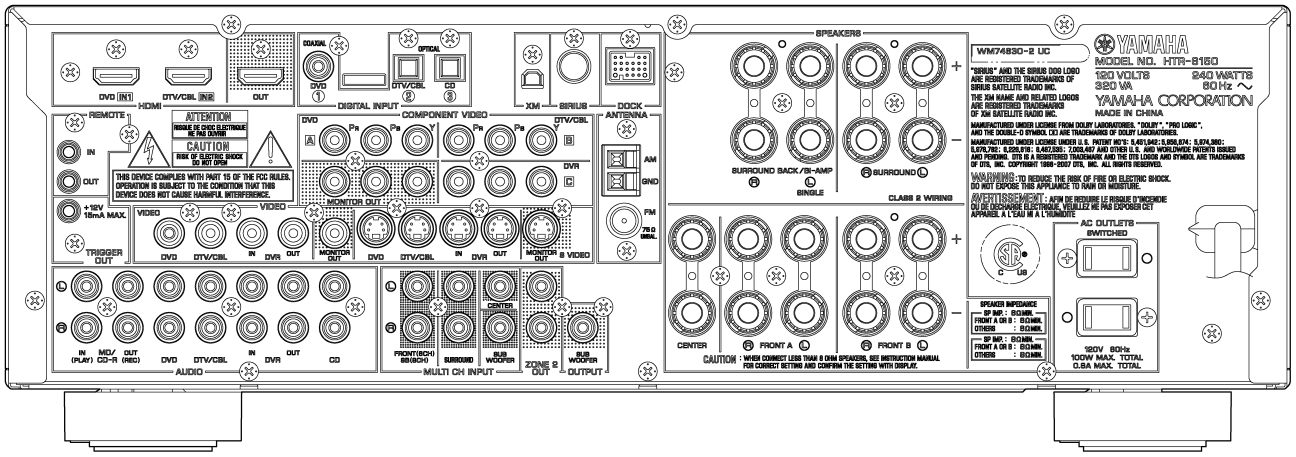
RX-V563 (G, E, F models)



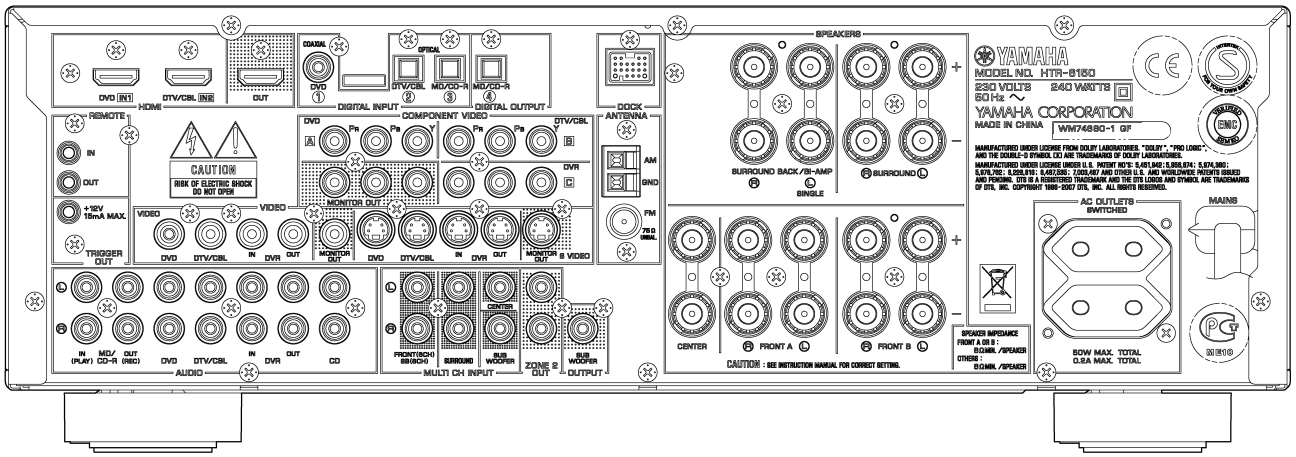
RX-V563 (L model)



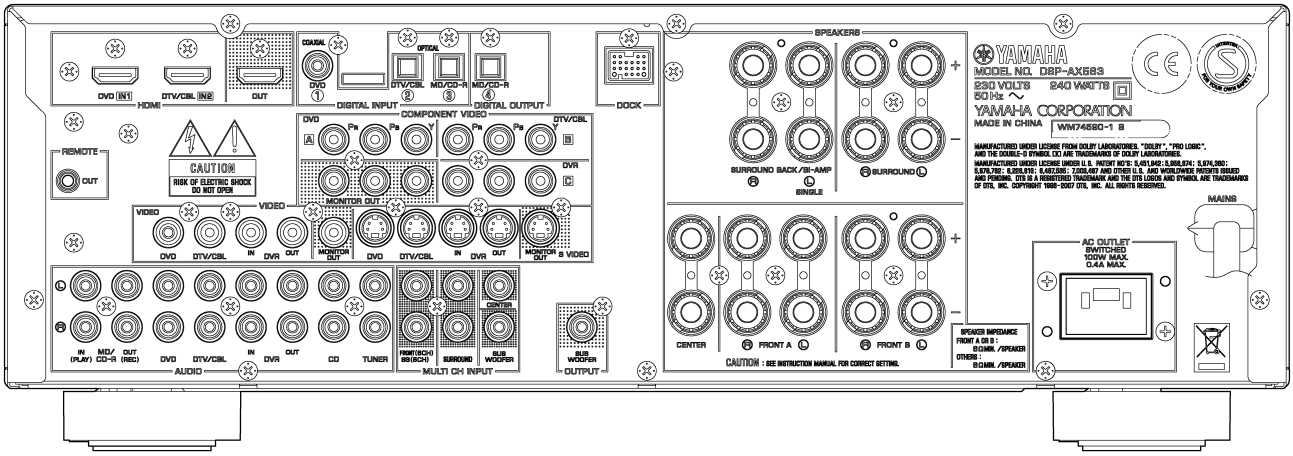
HTR-6150 (U, C models)



HTR-6150 (F model)

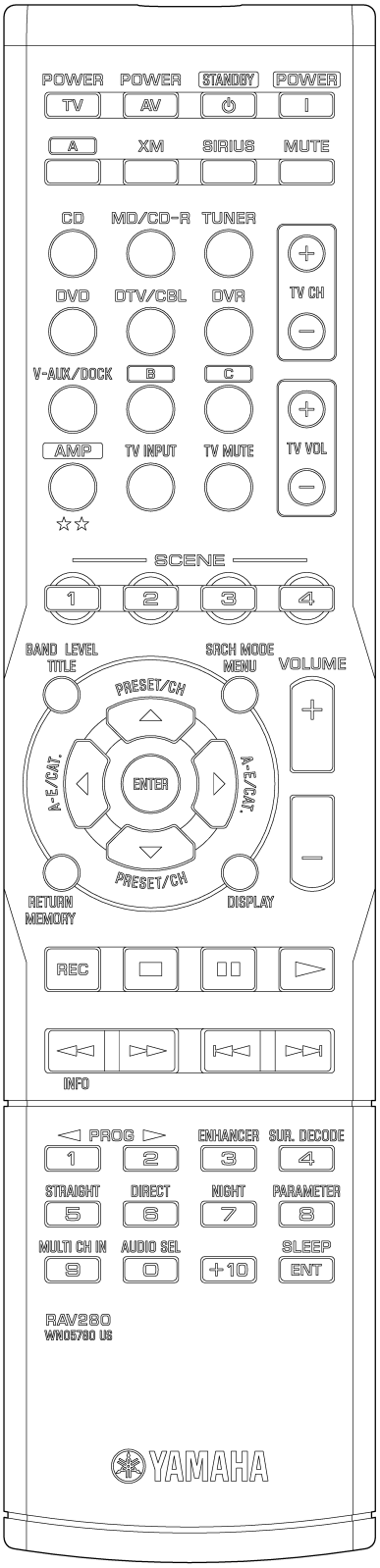


DSP-AX563 (B model)

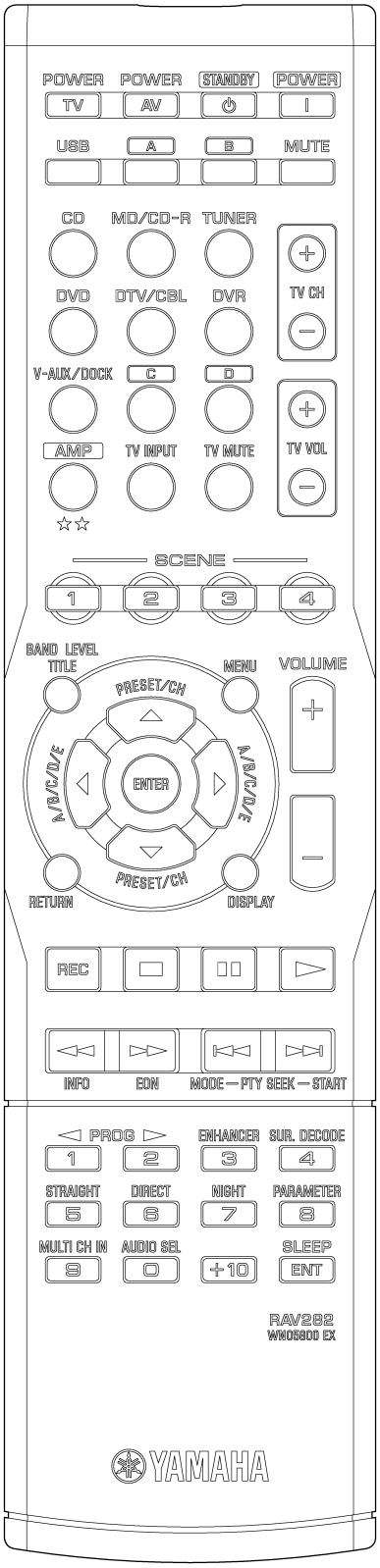


■ REMOTE CONTROL PANEL

- **RAV280**
  RX-V563 (U, C models)
  HTR-6150 (U, C models)



- **RAV282**
  RX-V563 (R, T, K, A, G, E, F, L models)
  HTR-6150 (F model)
  DSP-AX563 (B model)



■ SPECIFICATIONS

■ Audio Section

Minimum RMS Output Power (Power Amp. Section)
(1 kHz, 0.9 % THD)
FRONT L/R, CENTER, SURROUND L/R, SURROUND BACK L/R
U, C models (8 ohms) ..... 90 W/ch
R, T, K, A, B, G, E, F, L models (6 ohms) ..... 90 W/ch

Maximum Power (JEITA) (1 kHz, 0.9 % THD, 6 ohms)
FRONT L/R, CENTER, SURROUND L/R, SURROUND BACK L/R
R, T, K, L models ..... 115 W/ch

Dynamic Power Per Channel (IHF) (FRONT L/R drive)
U, C models
(8/6/4/2 ohms) ..... 90/110/130/150 W
R, T, K, A, B, G, E, F, L models
(6/4/2 ohms) ..... 100/110/125 W

Dynamic Headroom
U, C models (8 ohms) ..... 0.18 dB

Input Sensitivity/Input Impedance (1 kHz, 100 W / 8 ohms)
CD, etc. ..... 200 mV / 47 k-ohms
MULTI CH INPUT
FRONT L/R, CENTER, SURROUND L/R, SUBWOOFER
..... 200 mV / 47 k-ohms

Maximum Input Signal (1 kHz, 0.5 % THD, Effect on)
CD, etc. ..... 2.0 V or more

Output Level/Output Impedance
REC OUT ..... 200 mV / 1.2 k-ohms
SUBWOOFER (2ch STEREO and FRONT SP: Small)
..... 4 V / 1.2 k-ohms

Headphone Jack Rated Output/Impedance
CD, etc. (1 kHz, 200 mV, 8 ohms) ..... 400 mV / 470 ohms

Frequency Response (10 Hz to 100 kHz)
CD, etc. to FRONT L/R ..... 0 / -3 dB

Total Harmonic Distortion (1 kHz, 50 W)
Direct to FRONT L/R SP OUT
U, C models (8 ohms) ..... 0.06 % or less
R, T, K, A, B, G, E, F, L models (6 ohms) .. 0.06 % or less

Signal to Noise Ratio (IHF-A Network)
Direct STEREO to Input shorted SP OUT
200 mV ..... 98 dB or more
250 mV ..... 100 dB or more

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

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

Tone Control Characteristics
BASS
Boost/Cut ..... ±10 dB (100 Hz)
TREBLE
Boost/Cut ..... ±10 dB (20 kHz)

Filter Characteristics
FRONT, CENTER, SURROUND, SURROUND BACK small (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

Video Signal Type
Gray back
U, C, R, K models ..... NTSC
T, A, B, G, E, F, L models ..... PAL
Video conversion
..... NTSC/PAL

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

S-Video Signal Level
Y ..... 1 Vp-p / 75 ohms
C ..... 0.286 Vp-p / 75 ohms

Component Signal Level
Y ..... 1 Vp-p / 75 ohms
Pb/Pr ..... 0.7 Vp-p / 75 ohms

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

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

Monitor Out Frequency Response
Component video signal ..... 5 Hz to 60 MHz, -3 dB
HDMI ..... Ver. 1.2a

■ FM Section [U, C, R, T, K, A, G, E, F, L models]

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, G, E, F models ..... 87.50 to 108.00 MHz

50dB Quieting Sensitivity (IHF) (1 kHz, 100 % Mod.)
Mono ..... 2.8 µV (20.2 dBf)

Signal to Noise Ratio (IHF)
Mono / Stereo ..... 73 dB / 70 dB

Harmonic Distortion (1 kHz)
Mono / Stereo ..... 0.5 % / 0.5 %

Antenna Input ..... 75 ohms unbalanced

■ AM Section [U, C, R, T, K, A, G, E, F, L models]

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, G, E, 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, 230-240 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, E, F models ..... AC 230 V, 50 Hz
L model ..... AC 220, 230-240 V, 50/60 Hz

Power Consumption
U, C models ..... 240 W / 320 VA
R model ..... 260 W
T, K, A, B, G, E, F, L models ..... 240 W

Standby Power Consumption (reference data)
U, C, T, K, A, B, G, E, F models ..... 0.8 W

Maximum Power Consumption (5ch drive, 10 % THD)
R, L models ..... 490 W

AC Outlets
2 switched outlets
U, C models ..... 100 W max. total
R, T, G, E, F, L models ..... 50 W max. total
1 switched outlet
A, B models ..... 100 W max.

Dimensions (W x H x D)
..... 435 x 151 x 351.6 mm (17-1/8" x 5-15/16" x 13-13/16")

Weight ..... 9.0 kg (19 lbs. 13 oz.)

Finish
[RX-V563]
Gold color ..... R, T models
Black color ..... U, C, R, A, G, E, F models
Titanium color ..... K, G, E, F, L models
Silver color ..... A, L models
[HTR-6150]
Black color ..... U, C, F models
Silver color ..... F model
[DSP-AX563]
Black color ..... B model
Titanium color ..... B model

Accessories ..... Remote control x 1
Batteries (R03, AAA, UM-4) x 2
Indoor FM antenna x 1 (U, C, R, T, K, A, G, E, F, L models)
AM loop antenna x 1 (U, C, R, T, K, A, G, E, F, L models)
Optimizer microphone x 1

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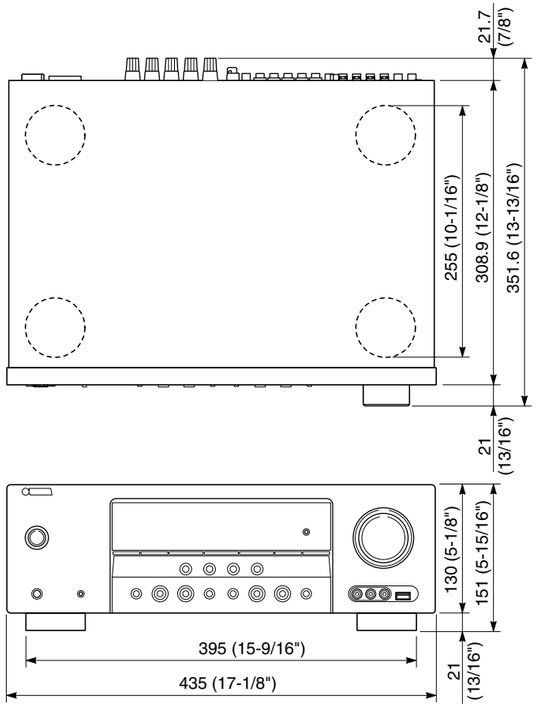
* Specifications are subject to change without notice due to product improvements.

※ 参考仕様および外観は予告なく変更されることがあります。

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
E ..... South European model
F ..... Russian model
L ..... Singapore model

• DIMENSIONS



Unit: mm (inch)

• SCENE TEMPLATE

SCENE name	Contents		Source	Program		NIGHT	Select (Default)	
				Mode	Sub-mode		U, C models	R, T, K, A, B, G, E, F, L models
DVD Viewing	DVD	Movie	DVD	STRAIGHT	–	SYSTEM	O (SCENE 1)	O
DVD Movie Viewing			DVD	MOVIE	Movie Dramatic	SYSTEM	O	O (SCENE 1)
DVD Live Viewing		Music Live	DVD	MUSIC	Pop/Rock	SYSTEM	O	O
DVR Viewing	DVR		DVR	MOVIE	Movie Dramatic	SYSTEM	O	O
Disc Hi-fi Listening	DVD-Audio / SA-CD / CD	Music Disc	DVD	DIRECT STEREO	–	SYSTEM	O	O
Music Disc Listening			DVD	STEREO	2ch Stereo	SYSTEM	O	O (SCENE 2)
Disc Listening			DVD	STEREO	7ch Stereo	SYSTEM	O (SCENE 2)	O
CD Hi-fi Listening	CD	Music Disc	CD	DIRECT STEREO	–	SYSTEM	O	O
CD Listening			CD	STEREO	7ch Stereo	SYSTEM	O	O
CD Music Listening			CD	STEREO	2ch Stereo	SYSTEM	O	O
Radio Listening	TUNER/RADIO	FM/AM	FM/AM (TUNER)	MUSIC ENHANCER	7ch Enhancer	SYSTEM	O (SCENE 4)	O (SCENE 4)
XM Listening		XM	XM	MUSIC ENHANCER	7ch Enhancer	SYSTEM	O	–
SIRIUS Listening		SIRIUS	SIRIUS	MUSIC ENHANCER	7ch Enhancer	SYSTEM	O	–
Dock Listening	DAP	iPod	DOCK (V-AUX)	MUSIC ENHANCER	7ch Enhancer	SYSTEM	O	O
		Bluetooth						
USB Audio Listening		USB	USB	MUSIC ENHANCER	7ch Enhancer	SYSTEM	–	O
TV Viewing	TV		DTV/CBL	STRAIGHT	–	SYSTEM	O (SCENE 3)	O (SCENE 3)
TV Sports Viewing			DTV/CBL	ENTERTAINMENT	TV Sports	SYSTEM	O	O
Game Playing	GAME		V-AUX	ENTERTAINMENT	Game	SYSTEM	O	O

• SOUND/SURROUND SELECT MENU

Sound Field Parameters

		DSP LEVEL MIN, [MID], MAX	MUSIC ENHANCER LOW, [HIGH]
STEREO	2ch Stereo		
	7ch Stereo		
MUSIC	Pop/Rock	O	
	Hall	O	
	Jazz	O	
ENTERTAIN	Game	O	
	TV Sports	O	
MOVIE	Movie Spacious	O	
	Movie Dramatic	O	
MUSIC ENHANCER	Music Enh. 2ch		O
	Music Enh. 7ch		O

Surround Decoders

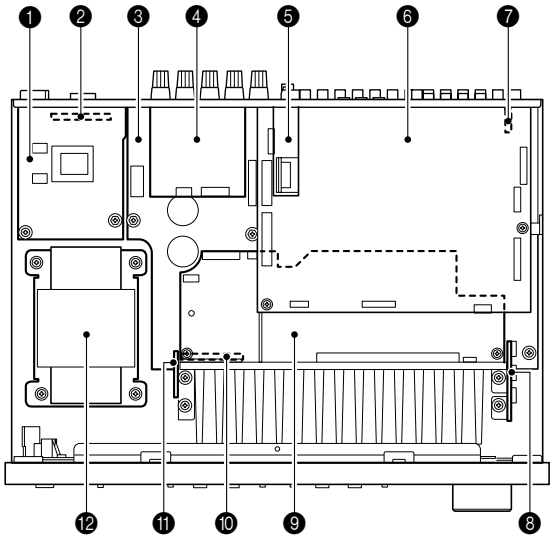
		PANORAMA ON, [OFF]	DIMENSION -3, [STD], +3	CENTER WIDTH 0, 1, 2, [3], 4, 5, 6, 7	CENTER IMAGE 0.0, [0.3], 1.0
DECODING FORMAT	Dolby Digital				
	DTS				
POST DECODING FORMAT	Dolby Pro Logic				
	Dolby Pro Logic IIx, II Music	O	O	O	
	Dolby Pro Logic IIx, II Movie				
	Dolby Pro Logic IIx, II Game				
	Neo:6 Cinema				
	Neo:6 Music				O
	Neural Surround (U, C models)				

- **SET MENU TABLE**

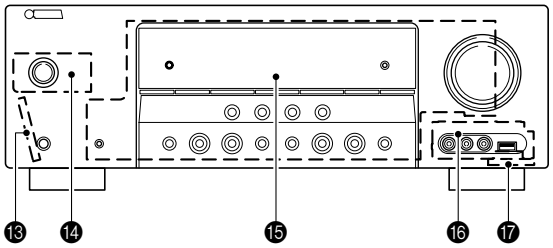
CATEGORY	MAIN MENU	SUB MENU	SELECT MENU		VALUE [INITIAL]
AUTO SETUP	Use this feature to automatically adjust speaker and system parameters.				
MANUAL SETUP	1 SOUND MENU	A) SPEAKER SET	FRONT B	FRONT	[FRONT] / ZONE B
			FRONT	LARGE	SMALL / [LARGE]
			CENTER	SMALL	NONE / [SMALL] / LARGE
			SUR. LR	SMALL	
			SUR. B LR	SMLx2	NONE / SMLx1 / [SMLx2] / LRGx1 / LRGx2
			BASS OUT	BOTH	SWFR / FRONT / [BOTH]
			CROSSOVER	80 Hz	40 / 60 / [80] / 90 / 100 / 110 / 120 / 160 / 200 Hz
			SWFR PHASE	NRM	[NRM (normal)] / REV (reverse)
		B) SP LEVEL	FL	• • • • • || • • • • •	-10 to +10 dB, [0 dB], 1 dB step
			FR	• • • • • || • • • • •	
			C	• • • • • || • • • • •	
			SWFR	• • • • • || • • • • •	
			SUR. L	• • • • • || • • • • •	
			SUR. R	• • • • • || • • • • •	
			SBL	• • • • • || • • • • •	
			SBR	• • • • • || • • • • •	
		C) SP DISTANCE	UNIT	feet	feet / meters
			UNIT: feet — FRONT L	10.0 ft	1.0 to 80.0 ft, [10.0 ft], 0.5 ft step
			FRONT R	10.0 ft	
			CENTER	8.5 ft	1.0 to 80.0 ft, [8.5 ft], 0.5 ft step
			SWFR	10.0 ft	1.0 to 80.0 ft, [10.0 ft], 0.5 ft step
			SUR. L	8.0 ft	1.0 to 80.0 ft, [8.0 ft], 0.5 ft step
			SUR. R	8.0 ft	
			SB L	8.0 ft	
			SB R	8.0 ft	
			UNIT: meters — FRONT L	3.00 m	0.30 to 24.00 m, [3.00 m], 0.10 m step
			FRONT R	3.00 m	
			CENTER	2.60 m	0.30 to 24.00 m, [2.60 m], 0.10 m step
			SWFR	3.00 m	0.30 to 24.00 m, [3.00 m], 0.10 m step
			SUR. L	2.40 m	0.30 to 24.00 m, [2.40 m], 0.10 m step
			SUR. R	2.40 m	
			SB L	2.40 m	
			SB R	2.40 m	
		D) CENTER GEQ	TEST TONE	OFF	[OFF] / ON
			100 Hz	- - || - - 0 dB	-6.0 dB to +6.0 dB, [0 dB], 0.5 dB step
			300 Hz	- - || - - 0 dB	
			1 kHz	- - || - - 0 dB	
			3 kHz	- - || - - 0 dB	
			10 kHz	- - || - - 0 dB	
		E) LFE LEVEL	SP LFE	0 dB	-20 dB to 0 dB, [0 dB], 1 dB step
			HP LFE	0 dB	
		F) D. RANGE	SP D. R	MAX	MIN / STD / [MAX]
			HP D. R	MAX	
		G) AUDIO SET	MUTE TYP	FULL	[FULL] / -20 dB
			A. DELAY	0 ms	0 to 160 ms, [0 ms], 1 ms step
			MAX VOL.	+16 dB	+16 dB / +10 to -30 dB, [+16 dB], 5 dB step
			INI. VOL.	OFF	OFF / MUTE / -80 to +16 dB, [OFF], 1 dB step
		H) HDMI SET	S. AUDIO		[RX-V563 / HTR-6150 / DSP-AX563] / OTHER
		I) EXTD SUR.	>AUTO LAST		[AUTO] / LAST
			EXTD AUTO		[AUTO] / PLIIxMovie / PLIIxMusic / EX/ES / OFF
	2 INPUT MENU	A) INPUT ASSIGN	IN (1) [COAXIAL]	DVD	CD / MD/CD-R / [DVD] / DTV/CBL / V-AUX / DVR / TUNER (B model)
			IN (2) [OPTICAL]	DTV/CBL	CD / MD/CD-R / DVD / [DTV/CBL] / V-AUX / DVR / TUNER (B model)
			IN (3) [OPTICAL]	CD	[CD] / MD/CD-R / DVD / DTV/CBL / V-AUX / DVR / TUNER (B model)
			HDMI1	DVD	[DVD] / DTV/CBL / V-AUX / DVR
			HDMI2	DTV/CBL	DVD / [DTV/CBL] / V-AUX / DVR
		B) INPUT RENAME			CD / MD/CD-R / DVD / DTV/CBL / V-AUX / DVR
					Input is possible to 8 characters Input possible Character type: Capital/ A to Z, Small/ a to z, Figure/ 0 to 9, Space, Marks/ # * + , - . / : < > ?
		C) VOLUME TRIM			CD / MD/CD-R / TUNER / DVD / DTV/CBL / V-AUX / DVR / DOCK / USB (X, X models) / MULTI CH / XM (U, C models) / SIRIUS (U, C models)
					-6.0 to +6.0 dB, [0.0 dB], 1.0 dB step
		D) DECODER MODE	CD / DTV/CBL / V-AUX		[AUTO] / LAST
					[AUTO] / DTS
		E) MULTI CH SET	BGV	LAST	DVD / DTV/CBL / V-AUX / DVR / [LAST]
			INPUT CH	6CH	[6CH] / 8CH
			FRONT	DVD	[DVD] / DTV/CBL / DVR / V-AUX * Setting is possible only when 8ch is selected using “INPUT CH”.
	3 OPTION MENU	A) DISPLAY SET	DIMMER	0	-4 to 0, [0], 1 step
			VIDEO CONV.	ON	[ON] / OFF
			FL SCROLL	CONT	[CONT] / ONCE
			OSD SHIFT	0	-5 (upward) to +5 (downward), [0], 1step
			OSD-SOURCE	30s	ON / 10s / [30s]
			OSD-AMP	30s	ON / 10s / [30s]
		B) MEMORY GUARD	MEMORY GUARD	OFF	[OFF] / ON
		C) AUDIO SELECT	>AUTO LAST		[AUTO] / LAST
		D) PARAM. INI			[NO] / YES
		E) BLUETOOTH SET			
	(U, C models)	F) XM RADIO SET	XM ANT.		NONE / 0 to 100 %
	(U, C models)	G) SIRIUS SET	PARENTAL LOCK		
	(R, T, K, A, B, G, E, F, L models)	F) USB PLAY STYLE	REPEAT	OFF	[OFF] / SINGLE / ALL
			SHUFFLE	OFF	[OFF] / ON
SIGNAL INFO	AUDIO	FORMAT (Signal format)			Analog / – – – / – – – / – – – / – – – / – – – / – – – / – – –
		SAMPLING			
		CHANNEL			
		BITRATE			3/2/0.1 (front/surround/LFE)
		FLAG			DTS, Dolby Digital, or PCM
	VIDEO	HDMI SIGNAL			(HDMI –> DVI)
		HDMI RES.			(1080p –> 1080p)
		HDMI ERROR (HDMI MESSAGE)			DEVICE OVER / HDCP ERROR / OUT OF RES.

■ INTERNAL VIEW

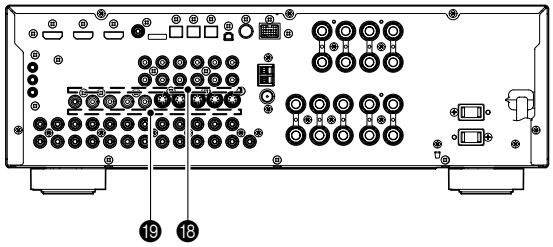
- **Top view**



- **Front view**



- **Rear view**



❶ VIDEO (3) P.C.B.
❷ VIDEO (5) P.C.B. (R, L models)
❸ MAIN (1) P.C.B.
❹ VIDEO (4) P.C.B.
❺ Tuner
❻ DSP P.C.B.
❼ VIDEO (6) P.C.B.
❽ OPERATION (8) P.C.B.
❾ OPERATION (2) P.C.B.
❿ MAIN (2) P.C.B.
⓫ OPERATION (9) P.C.B.
⓬ Power Transformer
⓭ OPERATION (3) P.C.B.
⓮ OPERATION (7) P.C.B.
⓯ OPERATION (1) P.C.B.
⓰ OPERATION (5) P.C.B. (U, C models)
OPERATION (4) P.C.B. (R, T, K, A, B, G, E, F, L models)
⓱ OPERATION (6) P.C.B. (R, T, K, A, B, G, E, F, L models)
⓲ VIDEO (2) P.C.B.
⓳ VIDEO (1) 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), 4 screws (②) and 1 screw (③). (Fig. 1)
b. Slide the top cover rearward to remove it. (Fig. 1)

2. Removal of Front Panel Unit

a. Remove 6 screws (④). (Fig. 1)
b. Remove CB71 (R, T, K, A, B, G, E, F, L models), CB83, CB366, CB601, CB602, CB608 and CB703. (Fig. 1)
c. Release hook and then remove the front panel unit. (Fig. 1)

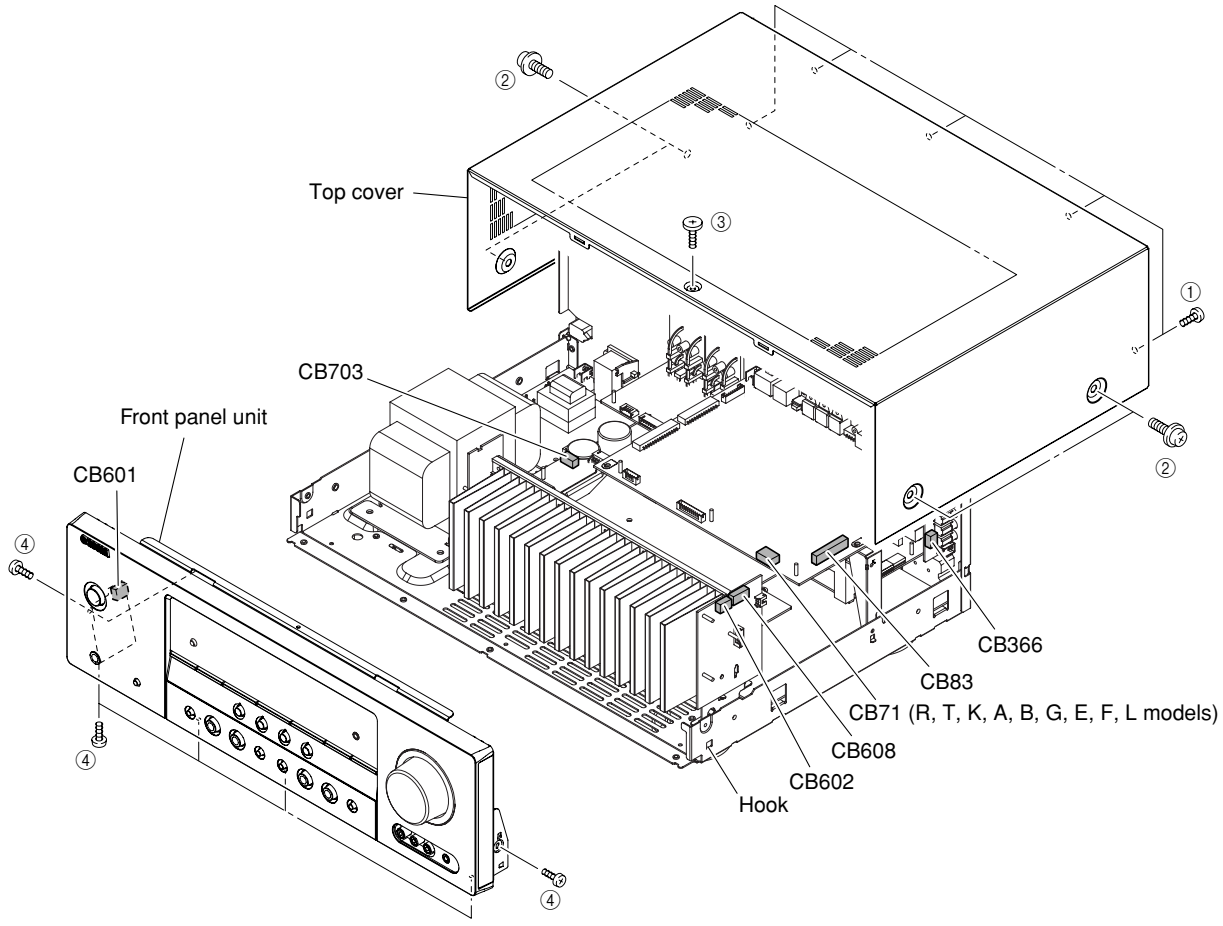


Fig. 1

3. Removal of DSP P.C.B.

Note: U, C, F models
After replacement of DSP P.C.B. or writing of the firmware, make sure to activate the self-diagnostic function and change the “M6 Model ID” setting to the same model name as this unit (RX-V563 or HTR-6150).

a. Remove 2 screws (⑤). (Fig. 2)
b. Remove 11 screws (U, C models) / 10 scrwes (R, T, K, A, B, G, E, F, L models) (⑥). (Fig. 3)
c. Remove CB21, CB22, CB31, CB32, CB81, CB82 and CB84. (Fig. 2)
d. Remove DSP P.C.B. (Fig. 2)

4. Removal of VIDEO (1), (2) and (6) P.C.B.s

a. Remove 2 screws (⑦). (Fig. 3)
b. Remove VIDEO (6) P.C.B. (Fig. 2)
c. Remove 9 screws (⑧). (Fig. 3)
d. Remove CB301 and CB609. (Fig. 2)
e. Remove VIDEO (1) and (2) P.C.B.s. (Fig. 2)

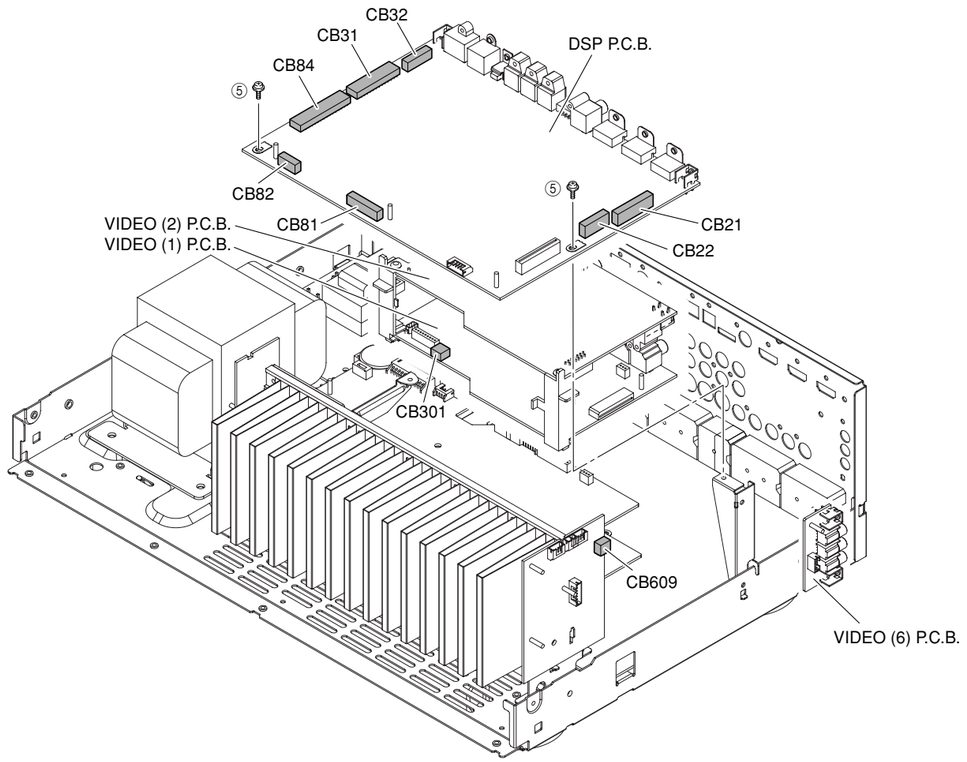


Fig. 2

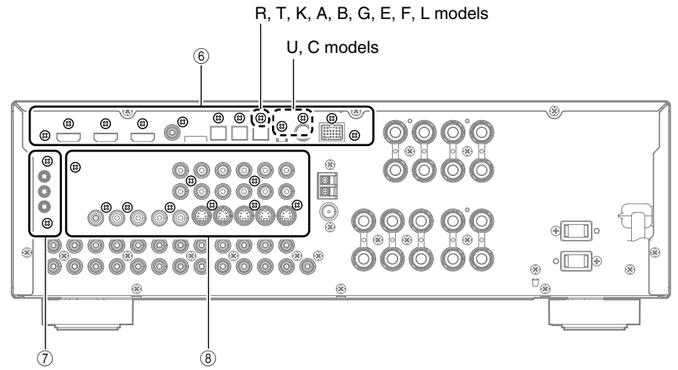


Fig. 3

5. Removal of VIDEO (4) P.C.B.

a. Remove 2 screws (⑨). (Fig. 4)
b. Remove CB351 and CB353. (Fig. 4)
g. Remove VIDEO (4) P.C.B. (Fig. 4)

6. Removal of FM/AM Tuner

a. Remove 2 screws (⑩). (Fig. 4)
b. Remove CB403. (Fig. 4)
c. Remove FM/AM tuner. (Fig. 4)

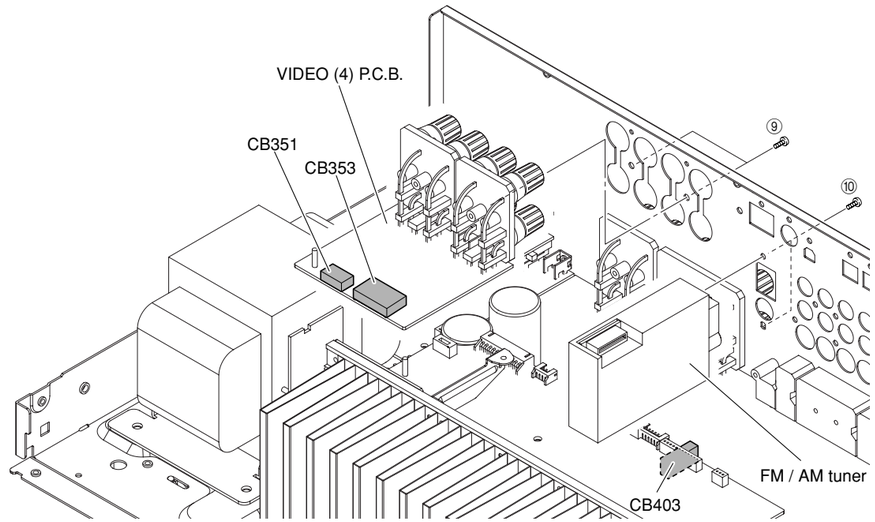


Fig. 4

When checking the P.C.B.:

a. Remove the top cover. (Fig. 1)
b. Remove DSP P.C.B.. (Fig. 2)
c. Remove 6 screws (⑪). (Fig. 5)
d. Remove 2 screws (⑫). (Fig. 5)
e. Remove 3 screws (⑬). (Fig. 6)
f. Remove 2 screws (⑭). (Fig. 5)
g. Remove 4 screws (⑮). (Fig. 5)
h. Place the P.C.B. upright. (Fig. 7)
i. The P.C.B. removed from the chassis does not work because its grounding is loose.
Be sure to connect the ground of rear panel and MAIN (1) P.C.B. (G5004, G5005, G5006 and G3401) and DSP P.C.B. (G801 and G802) to the chassis with a ground lead or the like. (Fig. 7)

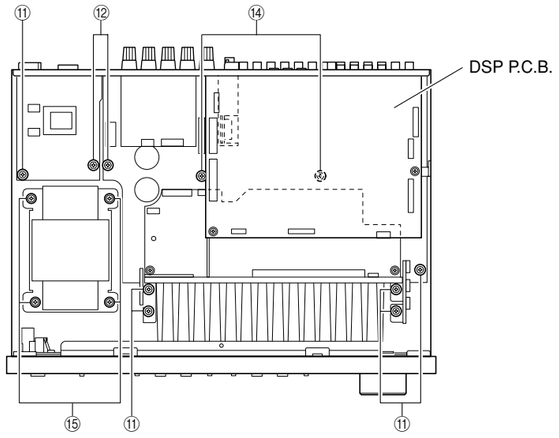


Fig. 5

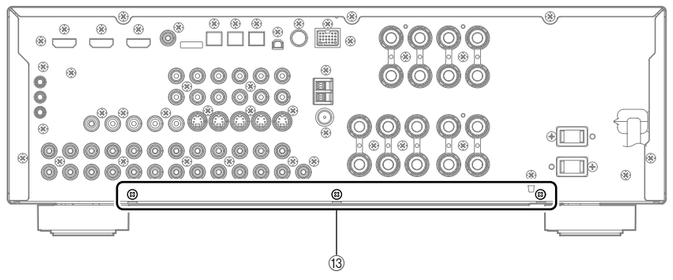
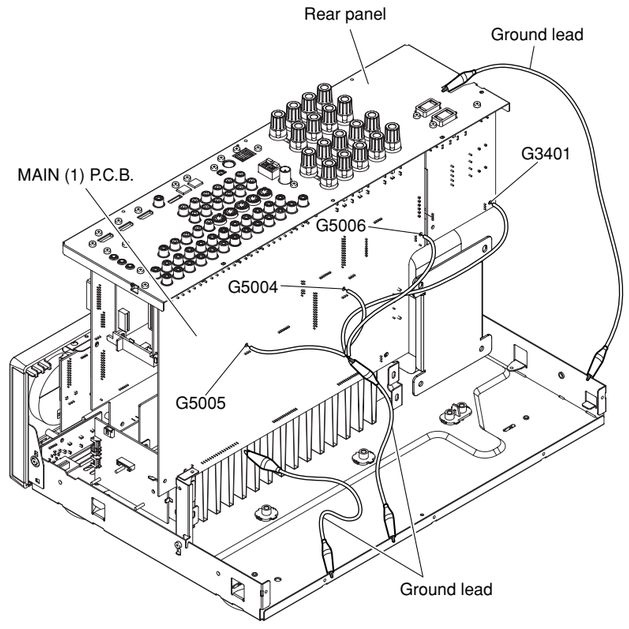


Fig. 6



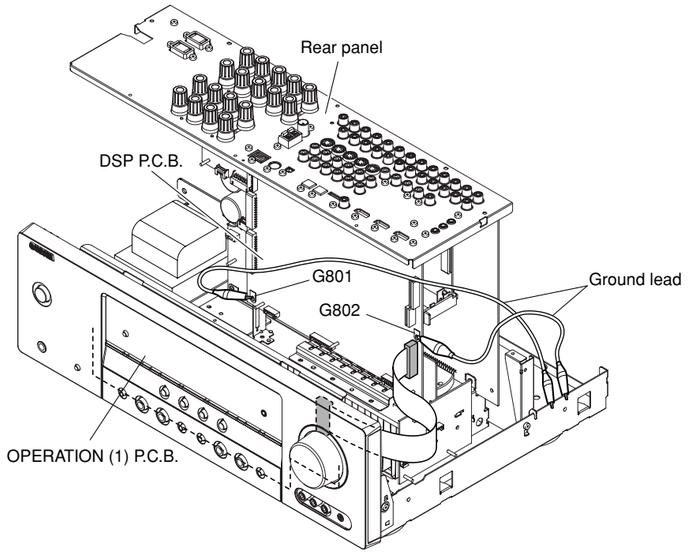


Fig. 7

■ UPDATING FIRMWARE

Note: U, C, F models
After replacement of DSP P.C.B. or writing of the firmware, make sure to activate the self-diagnostic function and change the “M6 Model ID” setting to the same model name as this unit (RX-V563 or HTR-6150).

After replacing the following parts, be sure to write the latest firmware.

- P.C.B. ass’y DSP P.C.B.
- IC52 FLASH ROM of DSP P.C.B.

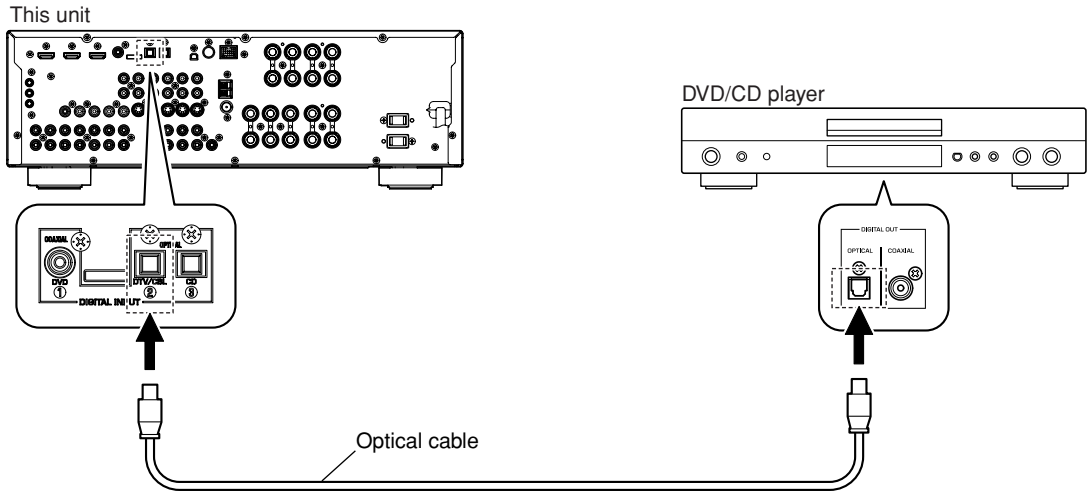
● Required Tools

- 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
  * To make the firmware CD, download the latest firmware from the specified download source to PC.

● Operation Procedures

1. 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

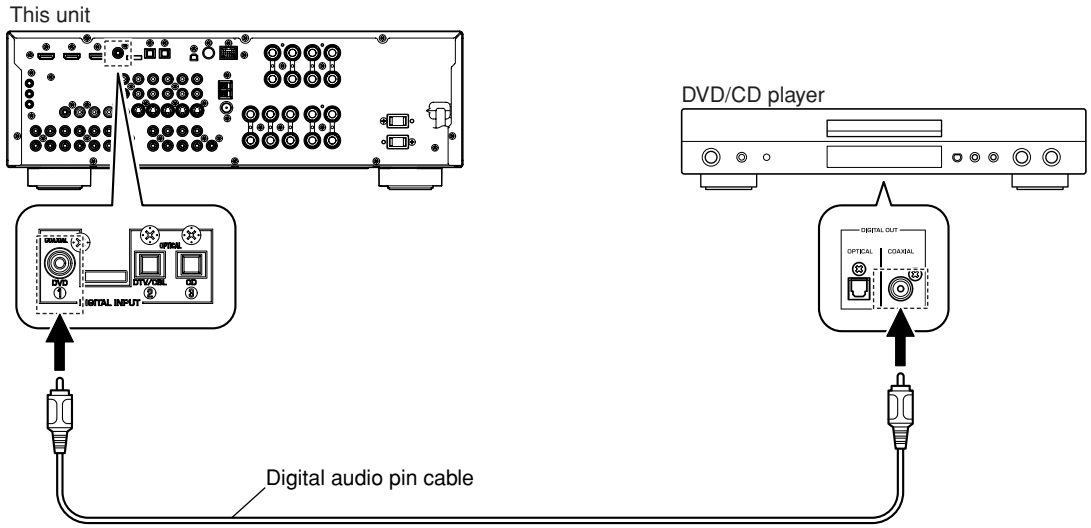


Fig. 1

2. While simultaneously pressing the “MAIN ZONE ON/OFF” (RX-V563, HTR-6150) / “STANDBY/ON” (DSP-AX563) and “SPEAKERS A/B/OFF” keys of this unit, connect the power cable of this unit to the AC outlet. (Fig. 2)
   The FIRMWARE UPDATE mode is activated and “SPDIF Upgrade” is displayed. (Fig. 2)

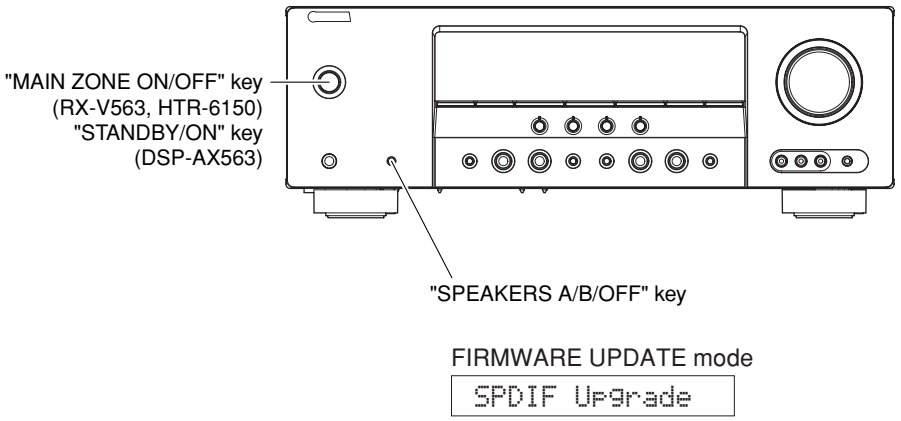


Fig. 2

3. Connect the power cable of DVD/CD player to the AC outlet.
4. Press the “STANDBY/ON” key of the DVD/CD player.
5. Press the “EJECT” key of the DVD/CD player to open the disc tray.
6. Place the firmware CD in the disc tray and close the disc tray.
7. Press the “PLAY” key of the DVD/CD player.
   Then writing of the firmware is started. (Fig. 3)
8. When writing of the firmware is completed, “Upgrade OK”, “Please...” and “Turn off!!” are displayed repeatedly. (Fig. 3)

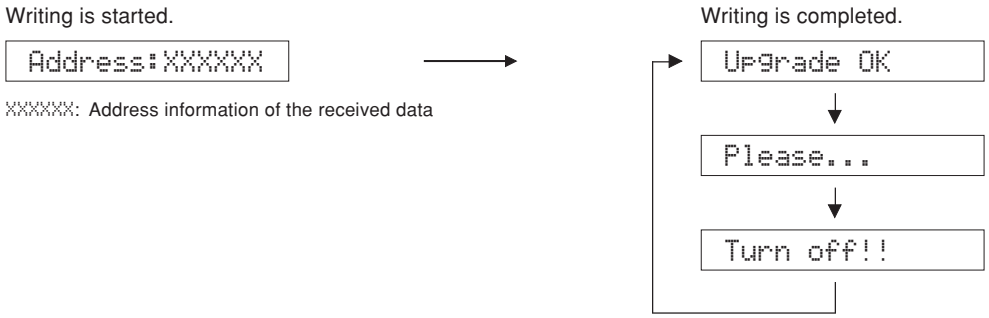


Fig. 3

* When the version of the firmware to be written is the same as the one existing in this unit, “Same Version”, “Please...” and “Turn off!!” are displayed repeatedly. (Upgrading 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 firmware CD is not corrupted and perform steps 1 to 8 of “Operation Procedures” again.

If “Upgrade Failed” is displayed, perform Steps 1 to 8 of “Operation Procedures” again.

9. Press the “STOP” key of the DVD/CD player.
10. Press the “EJECT” key of the DVD/CD player to open the disc tray.
11. Remove the firmware CD from the disc tray and close the disc tray.
12. Turn off the power of the DVD/CD player and disconnect the power cable from the AC outlet.
13. Turn off the power by pressing the “MAIN ZONE ON/OFF” (RX-V563, HTR-6150) / “STANDBY/ON” (DSP-AX563) key of this unit.

● Initializing of this unit

* After updating the firmware, be sure to initialize this unit.

1. Connect the power cable of this unit to the AC outlet.
2. Press the “MAIN ZONE ON/OFF” (RX-V563, HTR-6150) / “STANDBY/ON” (DSP-AX563) key while simultaneously pressing the “STRAIGHT” and “AUDIO SELECT” keys. (Fig. 4)
   The self-diagnostic function is activated.

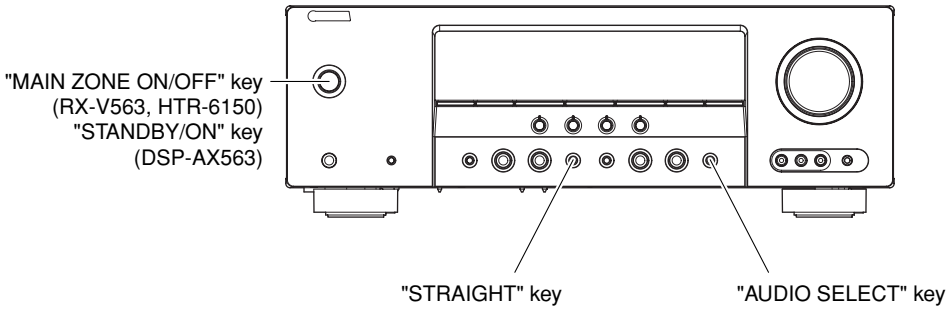


Fig. 4

3. Select the main menu “R. FACTORY PRESET”.
4. Select the “PRESET RSRV”.

PRESET INHIBIT (Initialization inhibited)

R1.PRESET INHI

PRESET RESERVED (Initialization reserved)

R2.PRESET RSRV

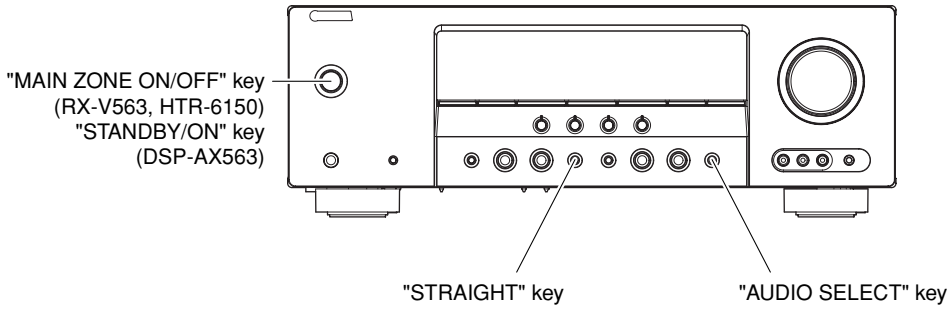
5. Turn off the power of this unit and disconnect the power cable from the AC outlet.

● Confirmation of firmware version and checksum

To confirm that the firmware is updated successfully, check the firmware version and checksum value by using the self-diagnostic function menu “S. ROM VER/SUM”.
For more information, refer to “SELF-DIAGNOSTIC FUNCTION”.

* When the displayed firmware version and checksum are different from written firmware version and checksum, follow the steps from 1 to 13 of “Operation Procedures” again.

1. Reconnect the power cable of this unit to the AC outlet.
2. Press the “MAIN ZONE ON/OFF” (RX-V563, HTR-6150) / “STANDBY/ON” (DSP-AX563) key while simultaneously pressing the “STRAIGHT” and “AUDIO SELECT” keys. (Fig. 5)
   Then the self-diagnostic function is activated.
3. Select the self-diagnostic function menu “S1. Version”.
   Confirm the displayed firmware version is the same as the written firmware version. (Fig. 5)



Example:

```
S1. VER. E048
```

Fig. 5

4. Select the self-diagnostic function menu “S2. All checksum/S3. Program checksum”.
   Confirm the displayed checksum is the same as the written firmware checksum. (Fig. 6)
   (The checksum value is found where downloading is specified to.)

Example:

```
S2.A.SUM:EDA1
```

```
S3.P.SUM:FE77
```

Fig. 6

5. Turn off the power of this unit and disconnect the power cable from the AC outlet.

● Confirmation of model name (U, C, F models)

After replacement of DSP P.C.B. or writing of the firmware, make sure to activate the self-diagnostic function and change the “M6 Model ID” setting to the same model name as this unit (RX-V563 or HTR-6150).

1. Connect the power cable of this unit to the AC outlet.
2. Press the “MAIN ZONE ON/OFF” (RX-V563, HTR-6150) / “STANDBY/ON” (DSP-AX563) key while simultaneously pressing the “STRAIGHT” and “AUDIO SELECT” keys. (Fig. 7)
   The self-diagnostic function is activated.
3. Select the self-diagnostic function menu “M6. Model ID”.

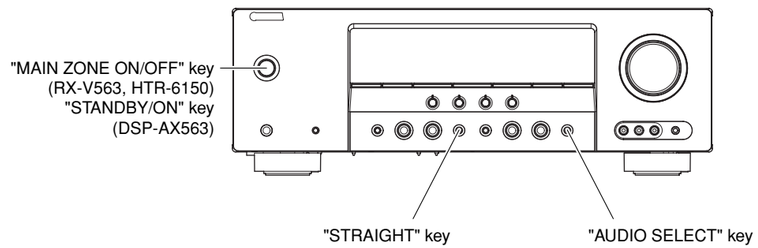


Fig. 7

4. Press “PRESET/TUNING<” or “PRESET/TUNING>”key and select the model name.

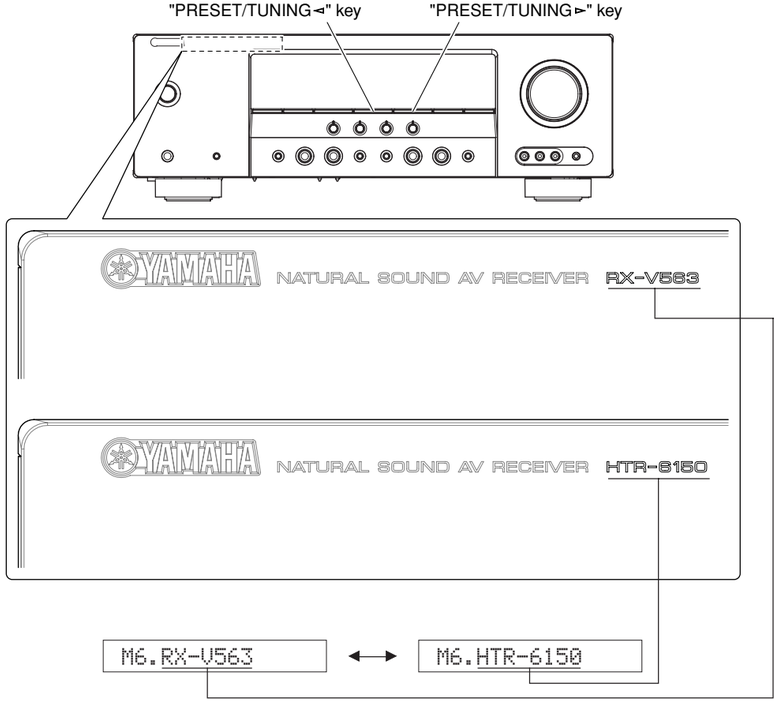


Fig. 8

■ SELF-DIAGNOSTIC FUNCTION

This unit has self diagnosis functions that are intended for inspection, measurement and location of faulty point.
There are 19 main menu items, each of which has sub-menu items.
Listed in the table below are 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		
A	BYPASS	1	ANLOG BYPAS	
		2	DSP BYPASS	
B	AUDIO CHECK	1	AUDIO CHECK	
		2	ANALOG AUDIO PLAYBACK	
		3	MUTE ALL	
		4	MUTE SYS IC	
		5	MUTE TR	
C	SPEAKERS SET	1	FRNT : SML0dB	
		2	CENTER : NONE	
		3	LFE/B : FRNT	
		4	TONE : MAX	
		5	TONE : MIN	
D	XCH-INPUT	1	6chINPUT 6Ω	
		2	8chINPUT 6Ω	
		3	6chINPUT 8Ω	
		4	8chINPUT 8Ω	
		5	LIM : PLDET : THM	(ex. D5.255:255: 64)
E	MIC CHECK	1	MIC CHECK	
F	FL/OSD CHECK	1	VFD CHECK	
		2	VFD DISP OFF	
		3	VFD DISP ALL	
		4	VFD DIMMER	
		5	CHECK PATTERN	
G	TEST TONE	1	TEST ALL	
		2	TEST FRNT L	
		3	TEST CENTER	
		4	TEST FRNT R	
		5	TEST SURR R	
		6	TEST SURB R	
		7	TEST SURB L	
		8	TEST SURR L	
		9	TEST LFE	
H	XM STATUS (U, C models)	1	1k – 1dB/44	
		2	1k –61dB/44	
		3	MUTE /44	
		4	XM TONE/44	
		5	ISO TONE/44	
		6	1k – 1dB/32	
		7	1k –61dB/32	
		8	MUTE /32	
		9	XM TONE/32	
		10	ISOTONE/32	
		11	BUSPWR (BUS power) : OFF	
I	iPod	1	DOCK : xx xxx	
		2	DOCK IGNORE	
		3	Bluetooth version	
		4	Clear Bluetooth pairing info.	
J	USB (R, T, K, A, B, G, E, F, L models)	1	USBFile1/xx	
		2	USBFile2/xx	
		3	High Speed TEST_PACKET mode	
		4	High Speed TEST_SE0_NAK mode	
K	SIRIUS (U, C models)	1	SIRIUS connection check	
		2	SIRIUS antenna status	
		3	SIRIUS loop back test	
		4	SIRIUS SSP version display	(only for SIRIUS certification engineer)
		5	SIRIUS firmware #1 version display	(only for SIRIUS certification engineer)
		6	SIRIUS Firmware #2 version display	(only for SIRIUS certification engineer)
		7	SIRIUS FW product_id version display	(only for SIRIUS certification engineer)
		8	SIRIUS FW sequence_id version display	(only for SIRIUS certification engineer)

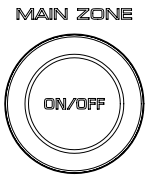
No.	Main menu	Sub-menu		
L	VIDEO CONVERSION	1	V–IN (Video info.)	
		2	V–CONV S–V (Conversion S-video)	
		3	V–CONV CVBS (Conversion CVBS)	
		4	V–CONV OFF (Conversion OFF)	
		5	V–TestPttrn (Video test pattern)	
M	HDMI Check	1	HDMI SPDIF (SPDIF audio playback)	
		2	HDMI NONE	
		3	HDMI IN1	
		4	HDMI IN2	
		5	I2C : xx xxx (I2C access check)	
		6	Model ID for EDID setting	
N	AD DATA CHECK	1	PD : xxx DI : xxx	(ex. N1PD: 45DI: 0)
		2	V1 : xxx V2 : xxx	(ex. N2V1: 94V2:128)
		3	TH : xxx PL : xxx	(ex. N3TH: 64PL:255)
		4	PI : xxx DE : xxx	(ex. N4PI: 0DE: 0)
		5	K0 : xxx K1 : xxx	(ex. N5K0:254K1:254)
O	PROTECTION	1	PRD : xxx/xxx	(ex. O1.PRD: 23/ 70)
		2	PV1 : xxx/xxx	(ex. O2.PV1: 68/161)
		3	PV2 : xxx/xxx	(ex. O3.PV2:104/181)
		4	THM : xxx/xxx	(ex. O4.THM: 0/131)
		5	L66 : xxx/xxx (PLDET 6ch 6ohms : xxx/xxx)	(ex. O5.L66: 0/ 0)
		6	L86 : xxx/xxx (PLDET 8ch 6ohms : xxx/xxx)	(ex. O6.L86: 0/ 0)
		7	L68 : xxx/xxx (PLDET 6ch 8ohms : xxx/xxx)	(ex. O7.L68: 0/ 0)
		8	L88 : xxx/xxx (PLDET 8ch 8ohms : xxx/xxx)	(ex. O8.L88: 0/ 0)
		9	PRI : xxx/xxx (PRI : xxx/xxx)	(ex. O9.PRI: 0/100)
		10	PDE : xxx/xxx (PDET : xxx/xxx)	(ex. O10PDE: 0/255)
P	PROTECTION HIST.	1	History 1	(ex. PRU:xxx)
		2	History 2	(ex. THM:xxx)
		3	History 3	(ex. PRI:xxx)
		4	History 4	
Q	RESERVED			
R	FACTORY PRESET	1	PRESET INHI	
		2	PRESET RSRV	
S	ROM VER/SUM	1	Microprocessor version	
		2	All checksum	
		3	Program checksum	
		4	SPI checksum	
		5	SPD checksum	
		6	XM version (U, C models)	
		7	SIRIUS version (U, C models)	
		8	FlashROM test	
		9	SDRAM test	
		10	EEPROM test	

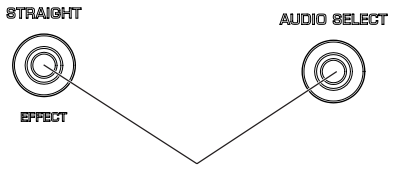
• Starting Self-diagnostic Function

Press the “MAIN ZONE ON/OFF” (RX-V563, HTR-6150) / “STANDBY/ON” (DSP-AX563) key while simultaneously pressing those two keys of this unit as indicated in the figure below.

Keys of this unit

RX-V563 / HTR-6150





Turn on the power while pressing these keys.

DSP-AX563

• Starting Self-diagnostic Function in the protection cancel mode

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

Press the “MAIN ZONE ON/OFF” (RX-V563, HTR-6150) / “STANDBY/ON” (DSP-AX563) key while simultaneously pressing those two keys indicated in the figure above. At this time, keep pressing those two keys for 3 seconds or longer. In this mode, the [SLEEP] segment of the FL display of 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 damage to this unit. Use special care for this point when using this mode.

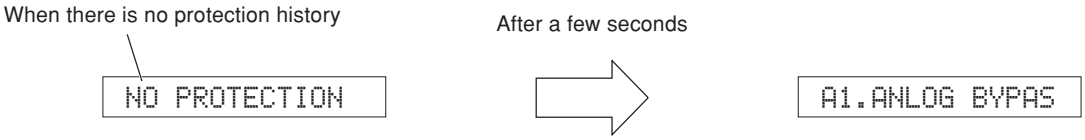
• Canceling Self-diagnostic Function

1. Before canceling self-diagnostic function, execute setting for FACTORY PRESET of main menu No.R (Memory initialization inhibited or Memory initialized).
   * In order to keep the user memory stored, be sure to select PRESET INHIBITED (Memory initialization inhibited).
2. Turn off the power by pressing the “MAIN ZONE ON/OFF” (RX-V563, HTR-6150) / “STANDBY/ON” (DSP-AX563) key of this unit.

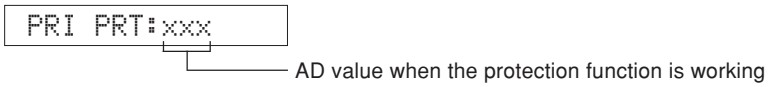
• Display provided when Self-diagnostic Function started

On the FL display of this unit, an opening message (including the protection history) appears for a few seconds followed by the self-diagnostic function menu display (1. ANALOG BYPASS).

When there is no history of protection function:



When there is a history of protection function due to excess current



Cause: An excessive current flowed through the power amplifier.

Supplementary information:

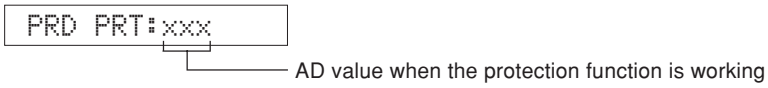
As current of the power amplifier is detected, the abnormal channel can be identified by checking the current detect transistor.

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.

Note)

- **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 "STANDBY/ON" 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 power amplifier channel should be checked for damage before applying power to this unit.**
- **Power amplifier current should be monitored by measuring DC voltage across the emitter resistors for each channel.**

When there is a history of protection function due to abnormal DC output



Cause: DC output of the power amplifier is abnormal.

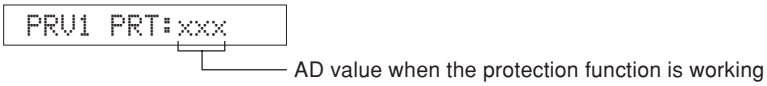
Supplementary information:

The protection function worked due to a DC voltage appearing at the speaker terminal.

A cause could be a defect in the amplifier.

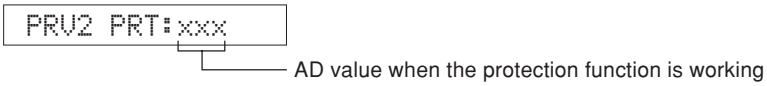
If the power is turned on with the abnormality unsolved, the protection function works in 3 seconds to turn off the power.

When there is a history of protection function due to abnormal voltage in the power supply section



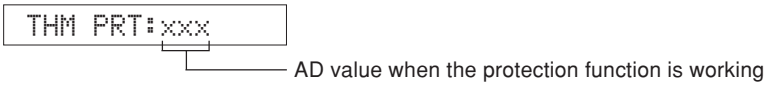
Cause: The voltage in the power supply section is abnormal.
Supplementary information:
The protection function worked due to a defect or overload in the power supply.
If the power is turned on with the abnormality unsolved, the protection function works in 1 second to turn off the power.

When there is a history of protection function 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.
If the power is turned on with the abnormality unsolved, the protection function works in 1 second to turn off the power.

When there is a history of protection function due to excessive heat sink temperature



Cause: The temperature of the heat sink 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.

If the power is turned on with the abnormality unsolved, the protection function works in 1 second to turn off the power.
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 is cleared when self-diagnostic function is cancelled by selecting PRESET RESERVED (Memory initialized) of main menu No. R or when the backup data is erased.

• Operation procedure of Main menu and Sub-menu

There are 19 main menu items, each of having sub-menu items.

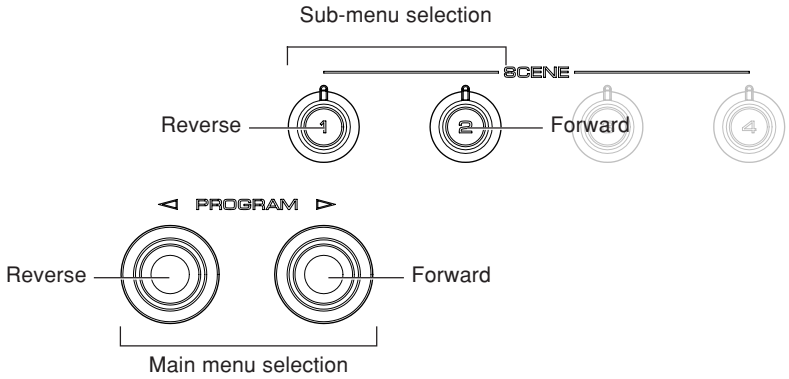
Main menu selection:

Select the main menu using " ⊳ " (forward) and " ⊲ " (reverse) keys of PROGRAM.

Sub-menu selection:

Select the sub-menu using "SCENE 2" (forward) and "SCENE 1" (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
- Speakers A/B/OFF
- Input selection
- Audio select
- Tone control

* 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: DVD (MULTI CHANNEL INPUT OFF)
- Effect level: 0 dB
- Main menu: 1. ANALOG BYPASS

• Details of Self-Diagnostic Function menu

A. BYPASS

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

ANALOG BYPASS

The analog input sound signal is output to FRONT L/R with EFFECT OFF.

A1.ANLOG BYPAS

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

Input level	Volume	SPEAKER OUT			SUBWOOFER OUTPUT
		FRONT	CENTER	SURROUND	
Both ch, -20 dBm	+6.0 dB	+11.5 dBm	-∞	-∞	-∞

DSP BYPASS

The digital input sound signal is output to FRONT L/R with EFFECT OFF.

A2.DSP BYPASS

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

Input level	Volume	SPEAKER OUT			SUBWOOFER OUTPUT
		FRONT	CENTER	SURROUND	
Both ch, -20 dBm	+6.0 dB	+11.5 dBm	-∞	-∞	-∞

B. AUDIO CHECK

AUDIO CHECK

The input sound signal is output.

* When the inputted sound signal is 2 ch L/R, it is distributed as follows when output.

L ch: FRONT L, CENTER, SURROUND L, LFE (L ch +10 dB)
R ch: SURROUND R

B1.AUDIO CHECK

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

Input level	Volume	SPEAKER OUT			SUBWOOFER OUTPUT
		FRONT	CENTER	SURROUND	
Both ch, -20 dBm	+6.0 dB	+11.5 dBm	+11.5 dBm	+11.5 dBm	0 dBm

ANALOG AUDIO PLAYBACK

The input sound signal is output.

B2.ANALOG PLAY

MUTE SYSTEM IC

Sound signals of all channels are muted by System IC (MAIN P.C.B.).

B4.MUTE SYS IC

MUTE ALL

Sound signals of all channels are muted by System IC (MAIN P.C.B.) and Transistor (Q5008-5011 MAIN P.C.B.).

B3.MUTE ALL

MUTE TRANSISTOR

Sound signals of all channels are muted by Transistor (Q5008-5011 MAIN P.C.B.).

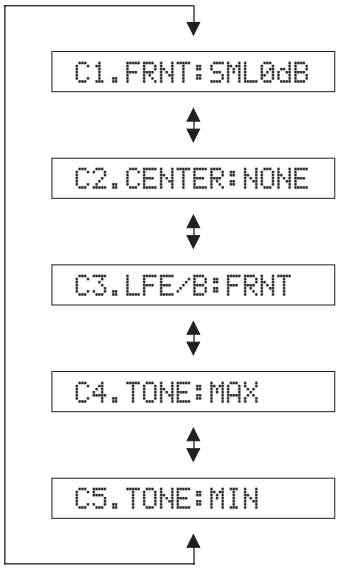
B5.MUTE TR

C. SPEAKER SET

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

FRONT : SML 0dB	SMALL	LARGE	LARGE	SWFR
CENTER : NONE	LARGE	NONE	LARGE	SWFR
LFE/B : FRNT	LARGE	SMALL	SMALL	FRONT
TONE : MAX	LARGE	LARGE	LARGE	SWFR
TONE : MIN	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 ch signal or LFE/BASS lower than 90 Hz is output through SUBWOOFER OUT.
FRONT: LFE of 5.1 ch signal or LFE/BASS lower than 90 Hz is distributed to FRONT L/R.



FRONT: SML 0dB
The FRONT L/R signal, when 90 Hz or lower, is mixed to the channel specified by LFE/BASS.

CENTER: NONE
The CENTER signal is distributed to FRONT L/R.

LFE / BASS: FRONT
The LFE (SUBWOOFER) signal is distributed to FRONT L/R.

TONE: MAX
The signal is output with the tone control [BASS +10 dB, TREBLE +10 dB].

TONE: MIN
The signal is output with the tone control [BASS -10 dB, TREBLE -10 dB].

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

Sub-menu	Input level	Volume	SPEAKER OUT			SUBWOOFER OUTPUT
			FRONT	CENTER	SURROUND	
FRONT : SML 0dB	Both ch, -20 dBm	+6.0 dB	+11.5 dBm	-∞	-∞	-3.5 dBm
CENTER : NONE	Both ch, -20 dBm	+6.0 dB	+11.5 dBm	-∞	-∞	-∞
LFE/B : FRNT	Both ch, -20 dBm	+6.0 dB	+11.5 dBm	-∞	-∞	-∞
TONE : MAX	Both ch, -20 dBm	+6.0 dB	+14.5 dBm	-∞	-∞	-∞
TONE : MIN	Both ch, -20 dBm	+6.0 dB	+8.5 dBm	-∞	-∞	-∞

D. XCH INPUT

The input source [MULTI CHANNEL INPUT] is selected.
It is possible to select the 6-ohm/8-ohm by using the sub-menu.

6 ch INPUT 6-ohm

D1.6chINPUT 6Ω

INPUT: MULTI CH INPUT
SPEAKER OUT: 1 kHz, SUBWOOFER OUTPUT: 50 Hz

Sub-menu	Input level	Volume	SPEAKER OUT			SUBWOOFER OUTPUT
			FRONT	CENTER	SURROUND	
6 ch INPUT 6-ohm	Both ch, -20 dBm	+6.0 dB	+11.5 dBm	+11.5 dBm	+11.5 dBm	-3.5 dBm

8 ch INPUT 6-ohm

D2.8chINPUT 6Ω

INPUT: MULTI CH INPUT
SPEAKER OUT: 1 kHz, SUBWOOFER OUTPUT: 50 Hz

Sub-menu	Input level	Volume	SPEAKER OUT			SUBWOOFER OUTPUT
			FRONT	CENTER	SURROUND	
6 ch INPUT 8-ohm	Both ch, -20 dBm	+6.0 dB	+11.5 dBm	+11.5 dBm	+11.5 dBm	-3.5 dBm

6 ch INPUT 8-ohm

D3.6chINPUT 8Ω

INPUT: MULTI CH INPUT
SPEAKER OUT: 1 kHz, SUBWOOFER OUTPUT: 50 Hz

Sub-menu	Input level	Volume	SPEAKER OUT			SUBWOOFER OUTPUT
			FRONT	CENTER	SURROUND	
6 ch INPUT 8-ohm	Both ch, -20 dBm	+6.0 dB	+11.5 dBm	+11.5 dBm	+11.5 dBm	-3.5 dBm

8 ch INPUT 8-ohm

D4.8chINPUT 8Ω

INPUT: MULTI CH INPUT
SPEAKER OUT: 1 kHz, SUBWOOFER OUTPUT: 50 Hz

Sub-menu	Input level	Volume	SPEAKER OUT			SUBWOOFER OUTPUT
			FRONT	CENTER	SURROUND	
6 ch INPUT 8-ohm	Both ch, -20 dBm	+6.0 dB	+11.5 dBm	+11.5 dBm	+11.5 dBm	-3.5 dBm

LIM/PLDET/THM

LIM: Setting value of LIM (Limiter control)

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

PLDET: Power limiter detection
The A/D conversion value during operation is displayed.

THM: Thermo protection detection
The A/D conversion value during operation is displayed.
(Reference voltage: 3.3 V=255)

D5.255:255: 64

- THM (Thermo protection detection)
- PLDET (Power limiter detection)
- LIM (Limiter control)

E. MIC CHECK

The signals input through the microphone are output of FRONT L/R via A/D and D/A.

E1.MIC CHECK

F. FL CHECK

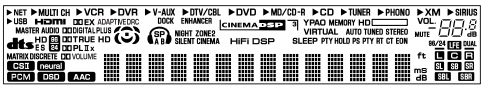
Use this program to check the FL display section and video control section. When checking the video control section, connect a TV monitor to this unit with a component video cable, S video cable and video pin cable.
Selection of the FL display section or video control section varies according to the submenu operation as shown below.
For audio signal processing, use STRAIGHT.

Checking FL display section

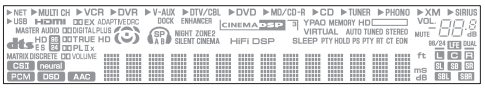
Initial display

All segments OFF

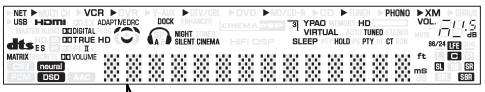
All segments ON (dimmer 100 %)



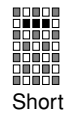
All segments ON (dimmer 50 %)



Lighting of segments in lattice



Lighting in lattice



Short

Normal

Check of the Video control section. (Monitor out)

Initial display (OSD OFF)

OSD OFF

OSD characters ON

OSD characters ON

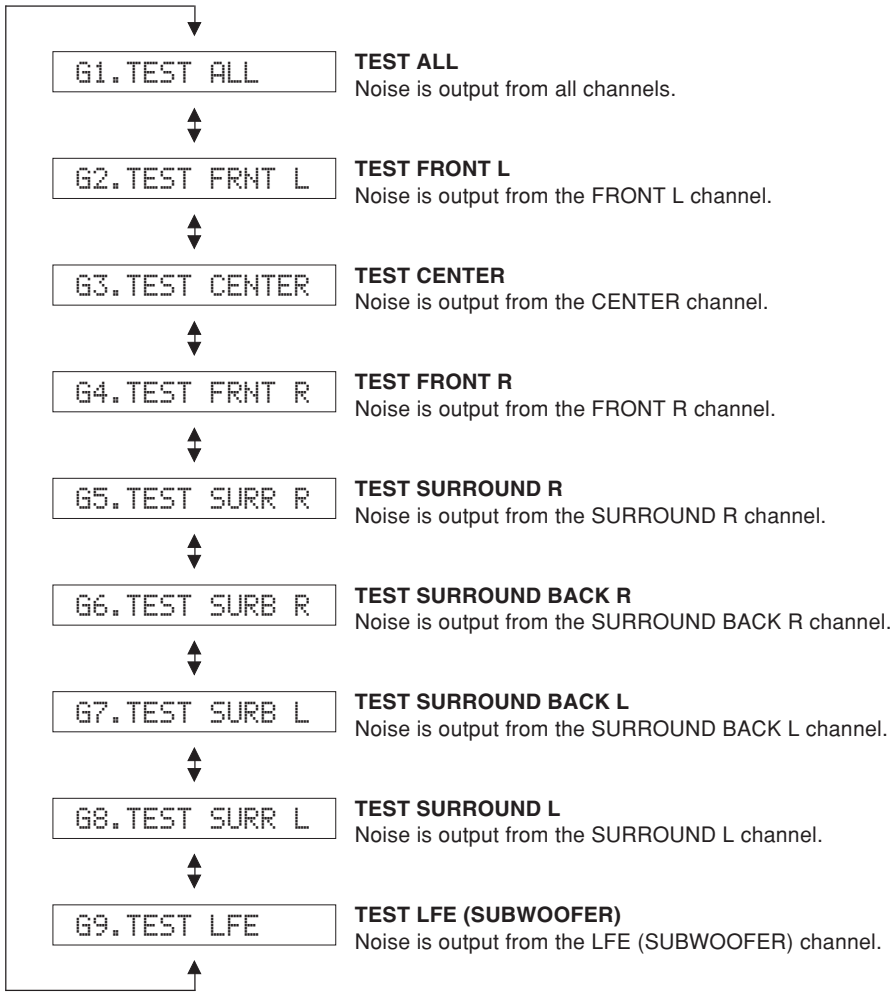
OSD characters ON

OSD characters

OSD 128 CHAR PATTERN

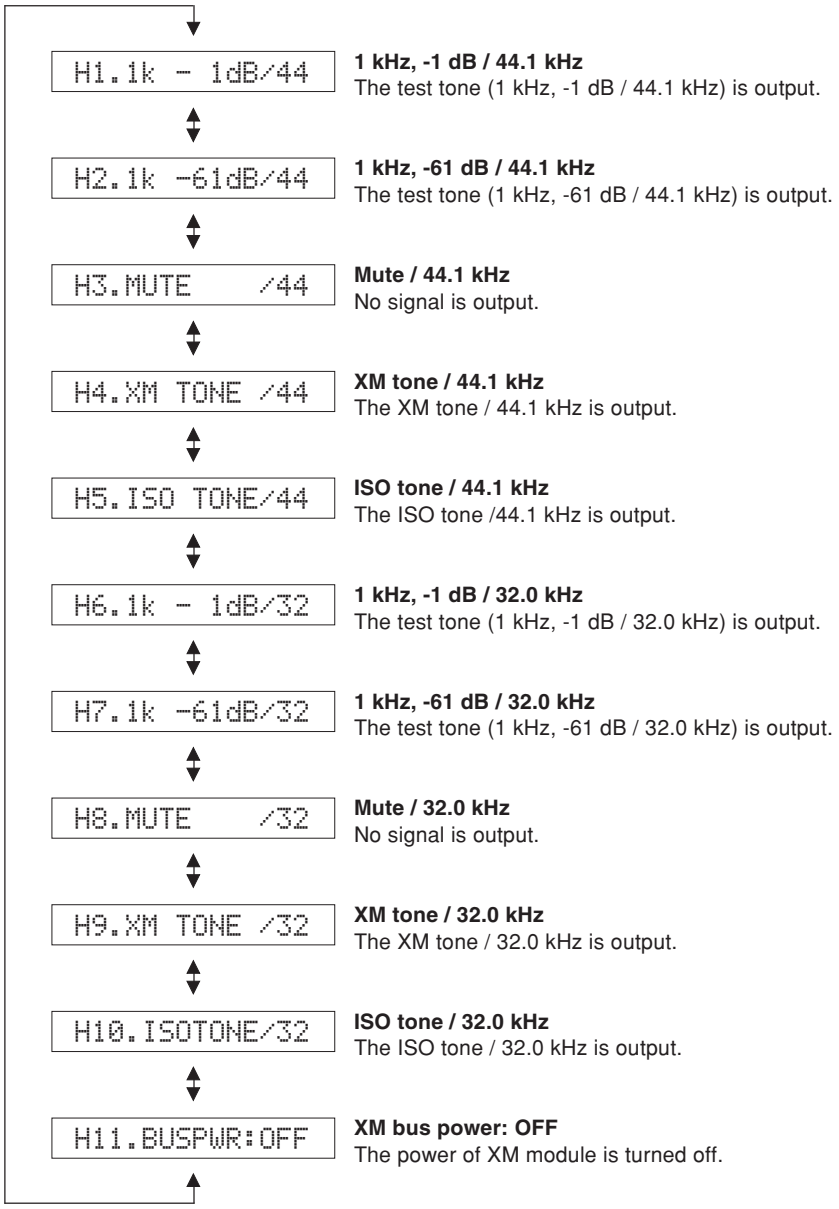
G. TEST TONE

The outputs the noise through the channels specified by the submenu.
The noise frequency for LFE (SUBWOOFER) is 35 to 80 Hz.
Other than that, the noise frequency is 500 to 2 kHz.



H. XM STATUS (U, C models)

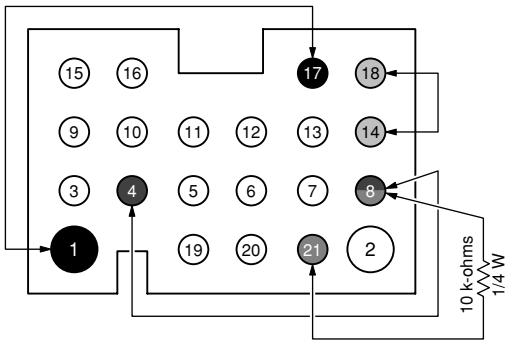
The output check of XM radio is executed.
(Connect XM radio antenna module to this unit before executing.)



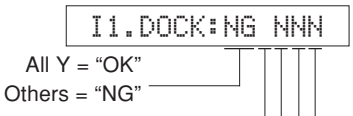
I. iPod

This menu is used to test the DOCK connector without the iPod itself. After turning off the power to this unit short between pins No. 14 (TX) and No. 18 (RX), between pins No. 1 (PWR) and No. 17 (ACCPOW), between pins No. 4 (iPDET) and No. 8 (DGND) and between pins No. 21 (DKID) and No. 8 (DGND) of the DOCK connector. (Make sure that the power is turned off when shorting pins.)
Start 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.



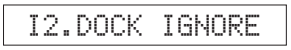
DOCK CONNECTOR



Check item	Result		Display
UART loop back test	OK		Y
	NG		N
iPAP (iPod accessory power) detection	IC83 pin No.5	High	Y
		Low	N
iPDET (iPod installation to DOCK) detection	IC82 pin No.5	Low (iPod universal dock)	Y
		High (Bluetooth adapter)	N
DKID (DOCK ID) detection	IC82 pin No.4	10 k-ohms, 1/4 W pull down	Y
		Other	N

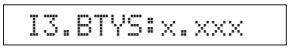
DOCK ignore

When DOCK and iPod are connected, the input source [DOCK (iPod)] is made ineffective and [V-AUX] is selected.



Bluetooth version

When the Bluetooth DOCK is connected, the firmware version of that Bluetooth module is displayed.



Clear Bluetooth pairing information

While the Bluetooth DOCK is connected, initialization of the Bluetooth DOCK pairing information is inhibited/reserved. Use “PRESET/TUNING<” and “PRESET TUNING>” keys for operation.

Initialization inhibited

I4.BT CLR:INHI

Initialization reserved

I4.BT CLR:RSRV

Initialization inhibited

User memory initialization is not executed. Select this sub-menu to protect the user memory.

Initialization reserved

Initialization of the use memory is reserved. (Actually, initialization is executed the next time that the power is turned on.) Select this sub-menu to reset to the original factory settings or to reset the use memory.
Any protection history will be cleared.

J. USB (R, T, K, A, B, G, E, F, L models)

The music file recorded in the USB flash memory is reproduced.

a. Copy the 2 music files from PC into the roof folder of the USB flash memory.
b. Insert the USB flash memory to the USB terminal of this unit.

USB FILE1

Reproduced at this time is the first piece of the music file in the USB flash memory connected to the USB terminal on the front panel.

J1.USBFile1/OK

OK: Connected/Playback
NG: No music file

USB FILE2

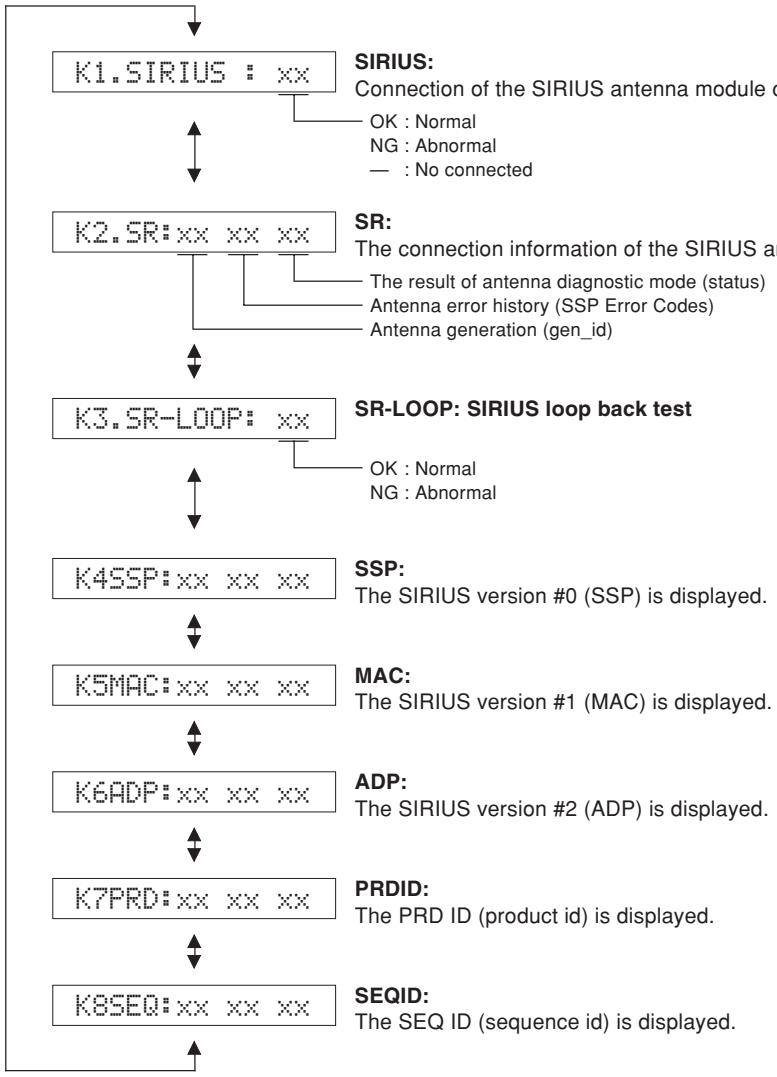
Reproduced at this time is the second piece of the music file in the USB flash memory connected to the USB terminal on the front panel.

J2.USBFile2/OK

OK: Connected/Playback
NG: No music file

K. SIRIUS (U, C models)

The SIRIUS antenna module is checked.
(Connect SIRIUS antenna module to this unit before executing.)



L. VIDEO CONVERSION

The video circuit is checked by the sub-menu operation.

Video INFO.

The information of video signal is displayed.

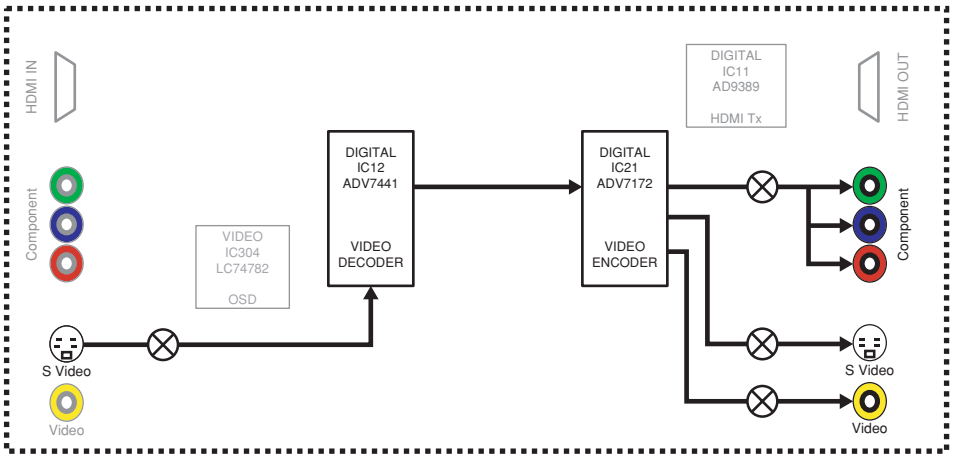
```
L1. V-IN:
```

CONVERSION S-Video

The signal passage as shown below is checked.

```
L2.V-CONV S-V
```

S-Video

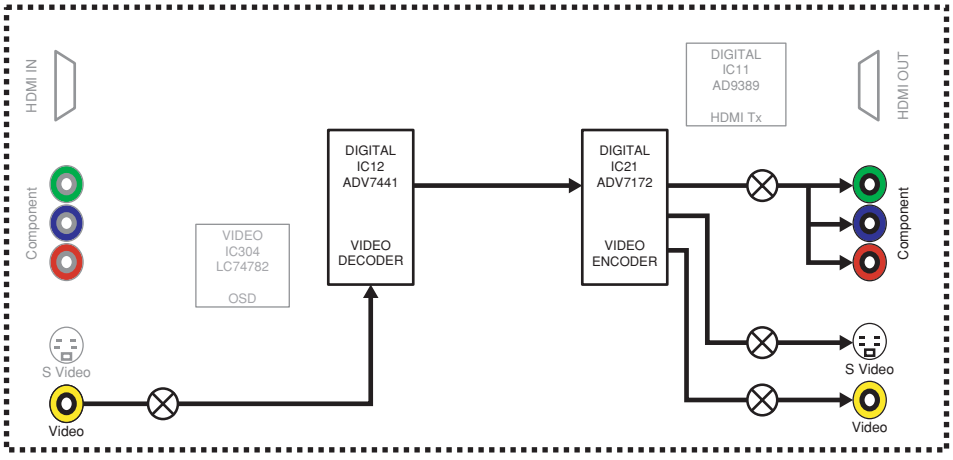


CONVERSION CVBS

The signal passage as shown below is checked.

```
L3.V-CONV CVBS
```

CVBS

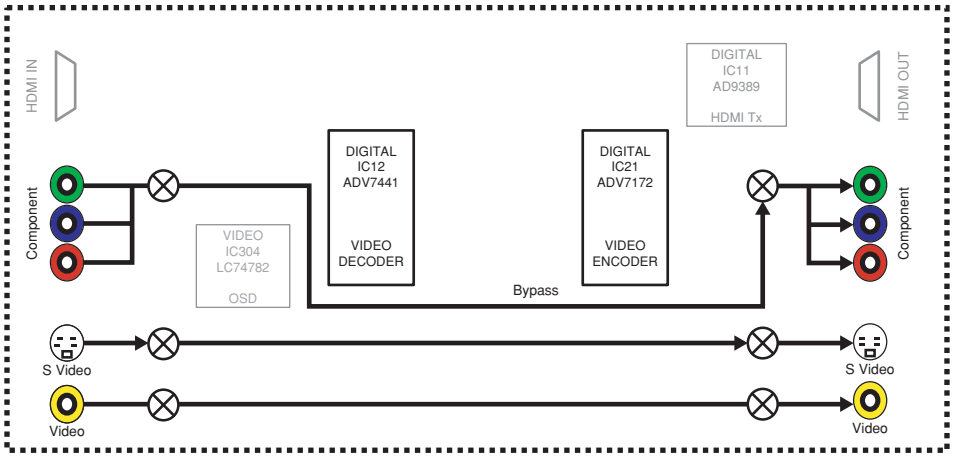


CONVERSION OFF

The signal passage as shown below is checked.

L4.V-CONV OFF

Conversion OFF

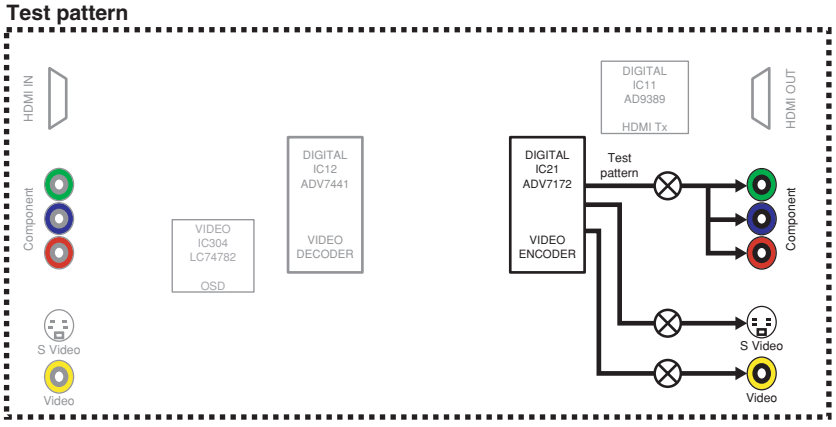


Test pattern

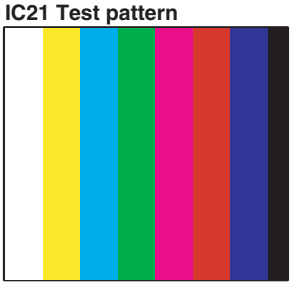
The test pattern is output from IC84 (DIGITAL P.C.B.).

L5.V-TestPttrn

Test pattern



IC21 Test pattern



M. HDMI SELECT

The audio signals input to HDMI IN are selected by the sub-menu and output.

HDMI SPDIF (SPDIF audio playback)

SPDIF signal is output.

```
M1.HDMI SPDIF
```

HDMI NONE

No signal is output.

```
M2.HDMI NONE
```

HDMI IN1

HDMI “IN 1” is output.

```
M3.HDMI IN1
```

HDMI IN2

HDMI “IN 2” is output.

```
M4.HDMI IN2
```

I2C : xx xxx (I2C access check)

```
M5.I2C:NG NYY
```

All Y = “OK”
Others = “NG”

Check item	Result	Display
HDMI Rx	OK	Y
(IC12 DSP P.C.B.)	NG	N
HDMI Tx	OK	Y
(IC11 DSP P.C.B.)	NG	N
VIDEO ENCODER	OK	Y
(IC21 DSP P.C.B.)	NG	N

Model ID for EDID setting (U, C, F models)

After replacement of DSP P.C.B or writing of the firmware, make sure to change the “M6 Model ID” setting to the same model name as this unit (RX-V563 or HTR-6150).
Press “PRESET/TUNING<” or “PRESET TUNING>” key for selection.

```
M6.RX-V563   ◄►   M6.HTR-6150
```

R, T, K, A, G, E, L models

```
M6.RX-V563
```

B model

```
M6.DSP-AX563
```

N. A/D DATA CHECK

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

When K0/K1 menu is selected, keys become non-operable due to detection of the values of all keys. However, it is possible to advance to the next sub-menu by turning the VOLUME of the main unit. When using this function, note that turning the VOLUME more than 1 click would cause the volume value to change.

During signal processing, the condition before execution is maintained.

* The figures in the diagram are given as reference only.

PD/DI

PD: PRD (Power amplifier DC protection detection)
The output of power amplifier DC (DC voltage) is detected.
Normal value: 27 to 70 (Reference voltage: 3.3 V=255)

* If PRD is out of the normal value range, the protection function works to turn off the power.

DI: DOCK ID (DOCK ID detection)
(Reference voltage: 3.3 V=255)

DOCK detection for AD port (IC82 AD converter pin no. 4)
Pull-up resistance 10 k-ohms

DOCK type	DOCK (Bluetooth)	Reserved	Reserved	DOCK (iPod)	Reserved	(Develop-ment)	No connect
Ohm	0.56k	2.7k	5.6k	10.0k	18.0k	39.0k	–
DKID (Pin no. 21)	5-25	50-60	85-100	120-140	150-170	195-210	245-255

```
N1PD: 45DI:  0
```

V1/V2

V1: PRV1 (Voltage protection detection)
Voltage detects: ACL, 10V, VP, +6.3H and +3.3H
Normal value: 68 to 161 (Reference voltage: 3.3 V=255)

V2: PRV1 (Voltage protection detection)
Voltage detects: AC2, +12, -12, +5D, +5I, +5V and -5V
Normal value: 104 to 181 (Reference voltage: 3.3 V=255)

* If PRD and PRV are out of the normal value range, the protection function works to turn off the power.

```
N2V1: 94V2:128
```

TH/PL

TH: THM (Thermo protection detection)
The temperature of the heat sink is detected.
Normal value: 0 to 136 (Reference voltage: 3.3 V=255)

* If THM is out of the normal value range, the protection function works to turn off the power.

PL: PLDET (Power limiter detection)
The output voltage of power amplifier is detected.

```
N3TH: 64PL:255
```

U, C models (Reference voltage: 3.3 V=255)

	During normal operation	Value for starting limiter operation	Value for canceling limiter operation
PLDET	255	77	108
LIM H: 255 / L: 102	H	L	H

(LIM: Limiter control)

R, T, K, A, B, G, E, F, L models (Reference voltage: 3.3V=255)

	During normal operation	Value for starting limiter operation	Value for canceling limiter operation
PLDET	255	108	139
LIM H: 255 / L: 90	H	L	H

(LIM: Limiter control)

PI/DE

PI: PRI (Current protection detection)
The current of the power amplifier is detected.
Normal value: 0 to 100 (Reference voltage: 3.3 V=255)

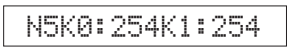
DE: PDET (Sub-trans power detection)
Normal value: 0 to 255 (Reference voltage: 3.3 V=255)

* If PRI and PDET are out of the normal value range, the protection function works to turn off the power.

```
N4PI:  0DE:  0
```

K0/K1

K0/K1: KEY0/KEY1 (Panel key of main unit)
A/D value of the key fails to function properly when the standard value is deviated by ± 4.
In this case, check the constant of partial pressure resistor, solder condition, etc. Refer to table.
(Reference voltage: 3.3 V=255)



U, C, R, T, K, A, G, E, F, L models

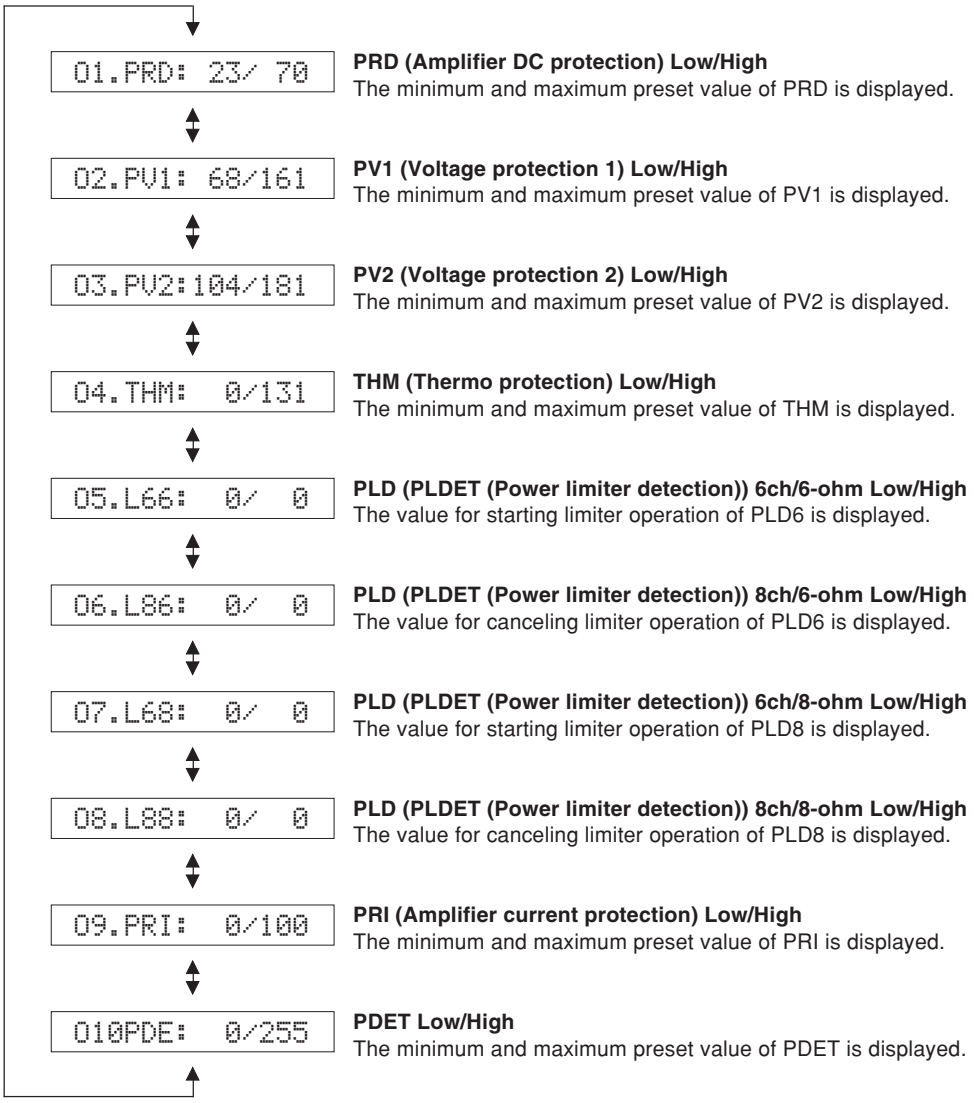
Displayed	K0	K1
0 + 4	–	–
23 ± 4	SPEAKERS A/B/OFF	–
42 ± 4	TONE CONTROL	AUDIO SELECT
66 ± 4	PROGRAM <	INPUT >
92 ± 4	PROGRAM >	INPUT <
112 ± 4	STRAIGTH EFFECT	DIRECT
134 ± 4	A/B/C/D/E	PRESET/TUNING <
156 ± 4	BAND	PRESET/TUNING >
176 ± 4	ZONE2 ON/OFF	MEMORY
195 ± 4	EDIT PRESET/TUNING	INFO TUNING AUTO/MAN'L
215 ± 4	SYSTEM OFF	ZONE CONTROL

B model

Displayed	K0	K1
0 + 4	–	–
23 ± 4	SPEAKERS A/B/OFF	–
42 ± 4	TONE CONTROL	AUDIO SELECT
66 ± 4	PROGRAM <	INPUT >
92 ± 4	PROGRAM >	INPUT <
112 ± 4	STRAIGTH EFFECT	DIRECT
134 ± 4	–	–
156 ± 4	–	–
176 ± 4	–	–
195 ± 4	–	–
215 ± 4	–	–

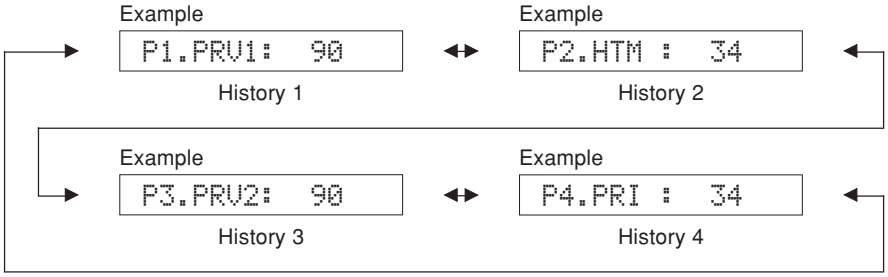
O. PROTECTION

The A/D setting value of each protection is displayed.
(Reference voltage: 3.3 V=255)



P. PROTECTION HISTORY

Four protection histories are displayed.



Q. RESERVED

R. FACTORY PRESET

This menu is used to reserve/inhibit initialization of the user memory (Parameters and set menu contents, etc. of the sound field program).

The signals are processed using EFFECT OFF (The L/R signal is output using ANALOG BYPASS).

R1.PRESET INHI

PRESET INHIBIT (Initialization inhibited)
User memory initialization is not executed. Select this sub-menu to protect the user memory.

R2.PRESET RSRV

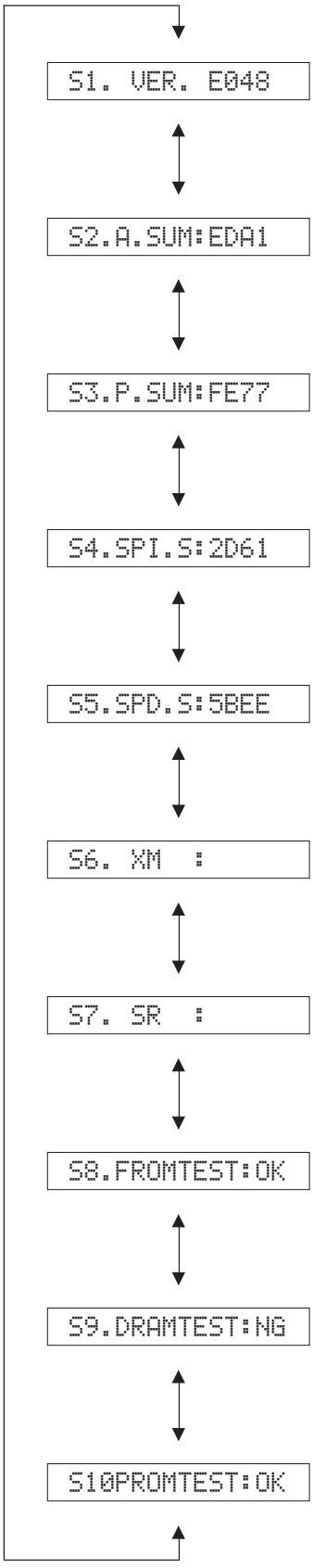
PRESET RESERVED (Initialization reserved)
Initialization of the use memory is reserved. (Actually, initialization is executed the next time that the power is turned on.)
Select this sub-menu to reset to the original factory settings or to reset the use memory.
Any protection history will be cleared.

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

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

S. ROM VER/SUM

The version and checksum are displayed. The signal is processed using EFFECT OFF.
The checksum is obtained by adding the data at every 8-bit for each program area and expressing the result as a 4-figure hexadecimal data.



Microprocessor version
Firmware version of microprocessor is displayed.

All checksum
Checksum value of microprocessor is displayed.

Program checksum
Checksum value of application and standby code program is displayed.

SPI (Serial Peripheral Interface) checksum
Checksum value of SPI firmware update code is displayed.

SPD (S/PDIF) checksum
Checksum value of SPD firmware update code is displayed.

XM version (U, C models)
Firmware version of XM is displayed.

SIRIUS version (U, C models)
Firmware version of SIRIUS is displayed.

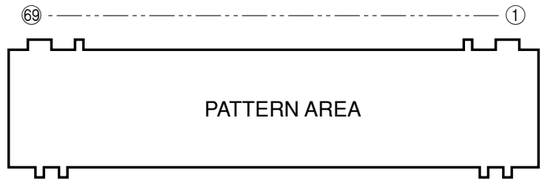
FlashROM test
The read/write test of microprocessor (IC41 DSP P.C.B.) and flash ROM (IC52 DSP P.C.B.).
OK: No error detected **NG:** An error is detected

SDRAM test
The read/write test of microprocessor (IC41 DSP P.C.B.) and SDRAM (IC51 DSP P.C.B.).
OK: No error detected **NG:** An error is detected

EEPROM test
The read/write test of microprocessor (IC41 DSP P.C.B.) and EEPROM (IC42 DSP P.C.B.).
OK: No error detected **NG:** An error is detected

■ DISPLAY DATA

● V6001: 17-BT-32GNK (OPERATION P.C.B.)



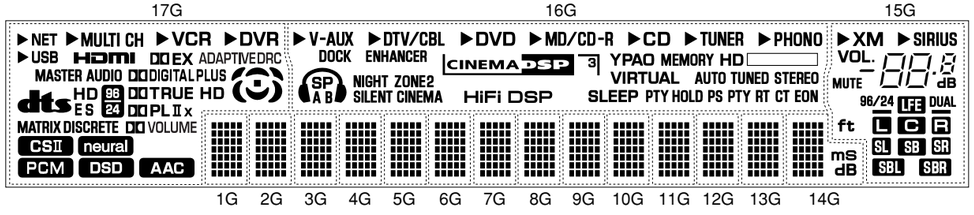
● PIN CONNECTION

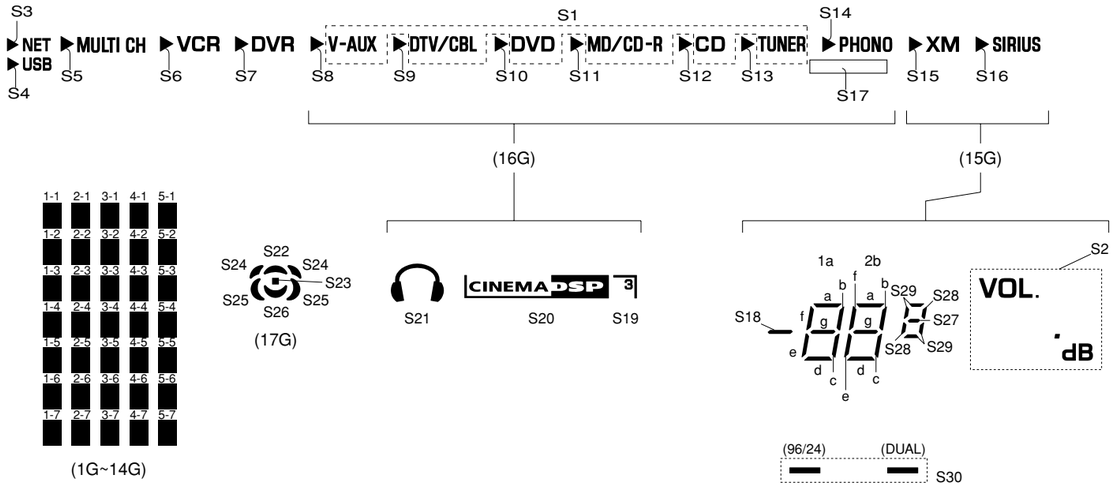
Pin No.	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35
Connection	F2	NX	NP	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25	P26	P27	P28	P29	P30	P31

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	P37	NX	NX	NX	NX	NX	NX	NX	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~17G ..... Grid pin

● GRID ASSIGNMENT



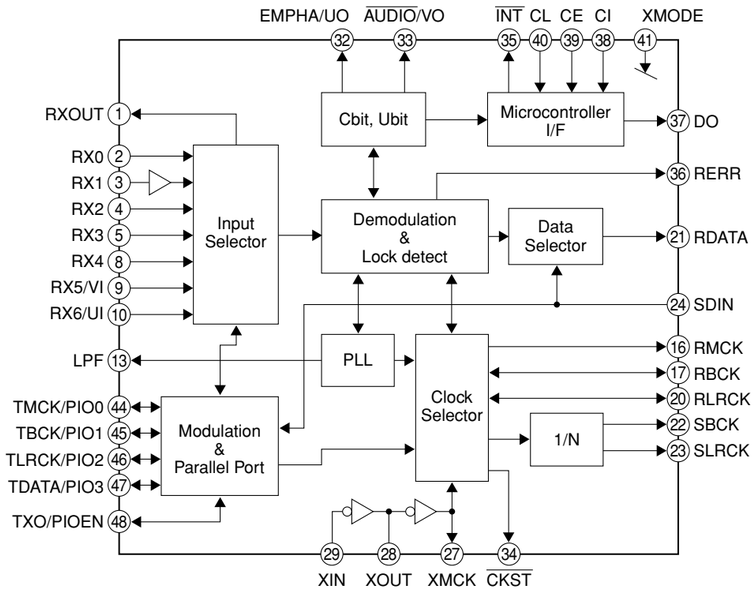


● ANODE CONNECTION

	17G	16G	15G	14G	13G~1G
1P	NET	S1	XM	1-1	1-1
2P	MULTI CH	PHONO	SIRIUS	2-1	2-1
3P	VCR	S8	S15	3-1	3-1
4P	DVR	S9	S16	4-1	4-1
5P	USB	S10	S2	5-1	5-1
6P	S3	S11	S18	1-2	1-2
7P	S5	S12	1a	2-2	2-2
8P	S6	S13	1b	3-2	3-2
9P	S7	S14	1c	4-2	4-2
10P	S4	DOCK	1d	5-2	5-2
11P	HDMI	ENHANCER	1e	1-3	1-3
12P	EX	S21	1f	2-3	2-3
13P	ADAPTIVE DRC	SP	1g	3-3	3-3
14P	MASTER AUDIO	A	2a	4-3	4-3
15P	dts	B	2b	5-3	5-3
16P	HD (ES)	NIGHT	2c	1-4	1-4
17P	ES	ZONE2	2d	2-4	2-4
18P	96/24	SILENT CINEMA	2e	3-4	3-4
19P	DIGITAL	S20	2f	4-4	4-4
20P	PLUS	S19	2g	5-4	5-4
21P	TRUE HD	HiFi DSP	S27	1-5	1-5
22P	PL	YPAO	S28	2-5	2-5
23P	II	MEMORY	S29	3-5	3-5
24P	x	HD	MUTE	4-5	4-5
25P	MATRIX	S17	96/24	5-5	5-5
26P	DISCRETE	VIRTUAL	DUAL	1-6	1-6
27P	VOLUME	AUTO	ft	2-6	2-6
28P	CS II	TUNED	S30	3-6	3-6
29P	neural	STEREO	LFE	4-6	4-6
30P	PCM	SLEEP	L	5-6	5-6
31P	DSD	PTY (HOLD)	C	1-7	1-7
32P	AAC	HOLD	R	2-7	2-7
33P	S22	PS	SL	3-7	3-7
34P	S23	PTY (RT)	SB	4-7	4-7
35P	S24	RT	SR	5-7	5-7
36P	S25	CT	SBL	mS	–
37P	S26	EON	SBR	dB	–

■ IC DATA

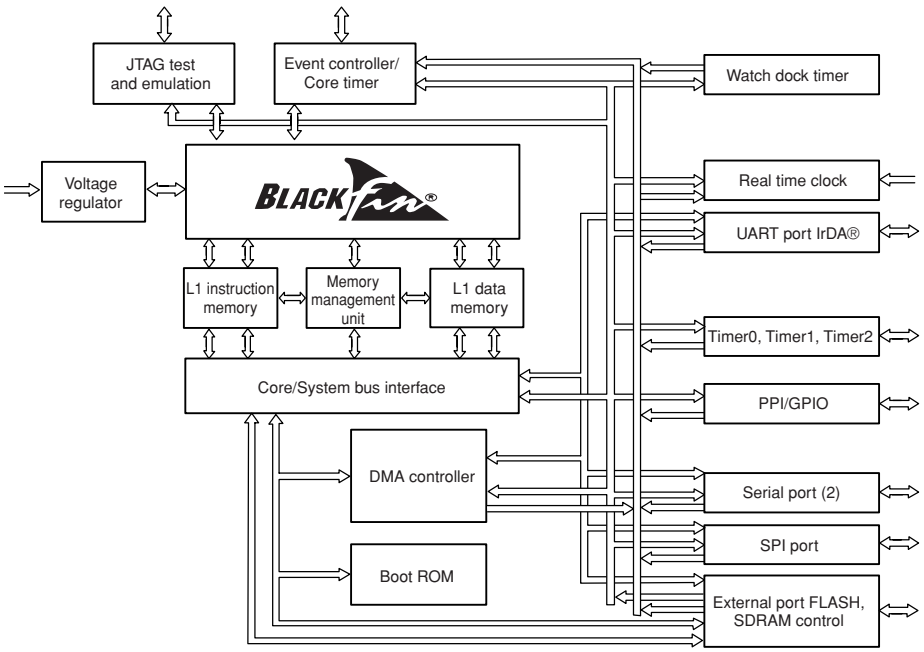
IC31: LC89057W-VF4AD-E (DSP P.C.B.)
Digital audio interface transceiver

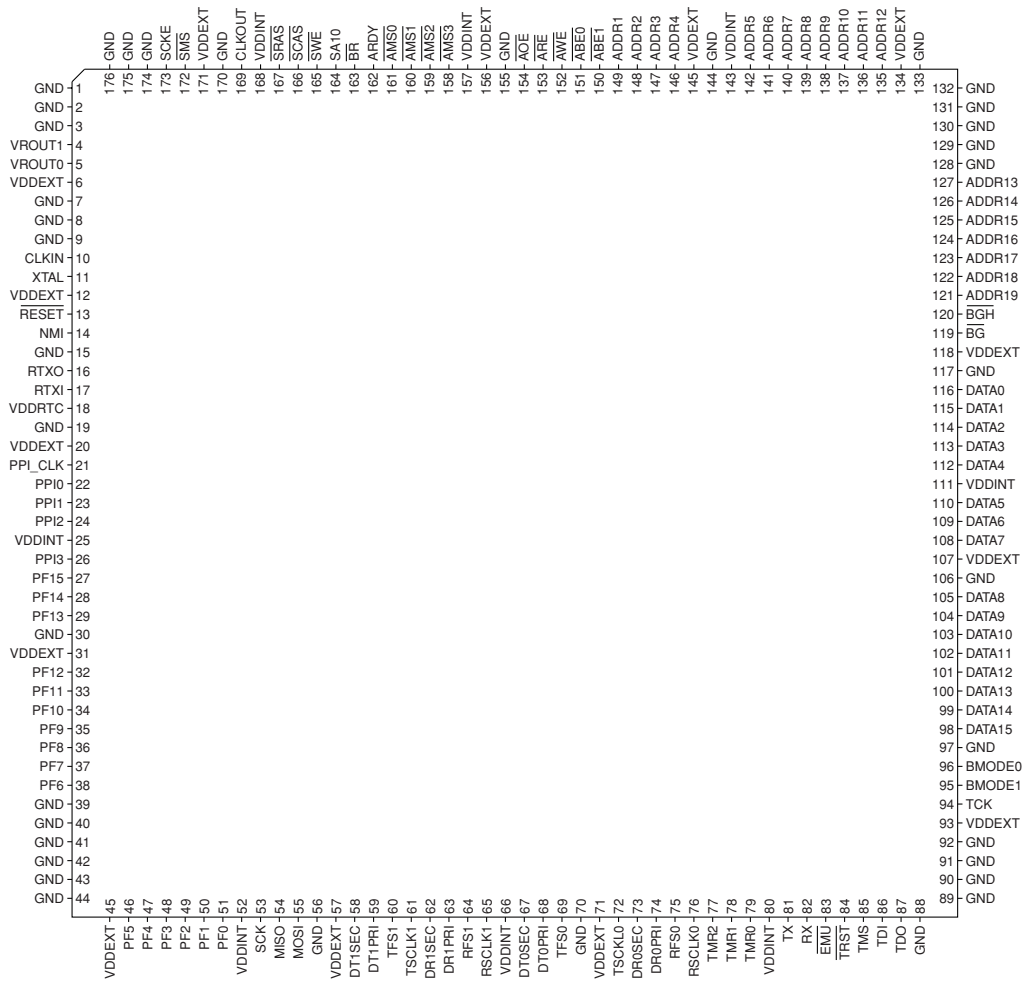


Pin No.	Function Name	I/O	Detail of Function
1	RXOUT	O	Output pin of input bi-phase selection data
2	RX0	Is	Input pin of TTL-compatible digital data
3	RX1	I	Digital data input pin with built-in amplifier that supports coaxial
4	RX2	Is	Input pin of TTL-compatible digital data
5	RX3	Is	Input pin of TTL-compatible digital data
6	DGND		Digital GND
7	DVDD		Digital power supply (3.3 V)
8	RX4	Is	Input pin of TTL-compatible digital data
9	RX5	Is	TTL-compatible digital data / Validity flag input pin for modulation
10	RX6	Is	TTL-compatible digital data / User data input pin for modulation
11	DVDD		Digital power supply for PLL
12	DGND		Digital GND for PLL
13	LPF	O	PLL loop filter connection pin
14	AVDD		Analog power supply for PLL (3.3 V)
15	AGND		Analog GND for PLL
16	RMCK	O	R system clock output pin (256 fs, 512 fs, XIN, VCO)
17	RBCK	O/I	R bit clock input/output pin (64 fs)
18	DGND		Digital GND
19	DVDD		Digital power supply (3.3 V)
20	RLRCK	O/I	R LR clock input/output pin (fs)
21	RDATA	O	Output pin of serial audio data
22	SBCK	O	S bit clock output pin (32 fs, 64 fs, 128 fs) (No connected.)
23	SLRCK	O	S LR clock output pin (fs/2, fs, 2 fs) (No connected.)
24	SDIN	Is	Input pin of serial audio data
25	DGND		Digital GND
26	DVDD		Digital power supply (3.3 V)
27	XMCK	O	Oscillation amplifier output pin
28	XOUT	O	Quartz resonator connection output pin
29	XIN	I	Quartz resonator connection, input pin of external supply clock (24.576 MHz or 12.288 MHz)
30	DVDD		Digital power supply (3.3 V)
31	DGND		Digital GND
32	EMPHA/UO/CD	I/O	Emphasis information / U data output / C data output / Chip address setting pin
33	AUDIO/VO	I/O	Non-PCM detection / V flag output / Chip address setting pin
34	CKST/PT	I/O	Output of clock switch transitional period signal / Preamble B output / Demodulation master or slave function switch pin
35	INT	I/O	Interrupt output for microprocessor (Possible to select an interrupt factor.) / Modulation or general-purpose I/O switch pin
36	RERR	O	PLL clock error, data error flag output
37	DO	O	Microprocessor I/F, read data output pin (3-state)
38	DI	Is	Microprocessor I/F, write data input pin
39	CE	Is	Microprocessor I/F, chip enable input pin
40	CL	Is	Microprocessor I/F, clock input pin"
41	XMODE	Is	System reset input pin
42	DGND		Digital GND
43	DVDD		Digital power supply (3.3 V)
44	PIO0	O	Sport input select
45	PIO1	O	
46	PIO2	O	Audio direct stereo ON
47	PIO3	O	Audio clock select
48	PIOEN	I/O	Modulation data output / General-purpose I/O enable output pin

1) Withstand voltage input/output: I or O = -0.3 to 3.6 V, Is = -0.3 to 5.5 V
2) Pins 32 and 33 are input pins for chip address setting, when pin 41 = "L".
3) Pin 34 is a demodulation function master or an input pin for slave setting, when pin 41 = "L".
4) Pin 35 is a modulation function or an input pin for general-purpose I/O function switch setting, when pin 41 = "L".
5) ON/OFF for all power supplies must be done at the same timing as a latch-up countermeasure.

IC41: AD91089SKBC CPU (DSP P.C.B.)
Microprocessor





Memory Interface

Pin No.	Function Name	I/O	Detail of Function
121	ADDR19	O	Address bus for async/Sync access
122	ADDR18		
123	ADDR17		
124	ADDR16		
125	ADDR15		
126	ADDR14		
127	ADDR13		
135	ADDR12	O	Address bus for async/Sync access
136	ADDR11		
137	ADDR10		
138	ADDR9		
139	ADDR8		
140	ADDR7		
141	ADDR6		
142	ADDR5		
146	ADDR4	O	Address bus for async/Sync access
147	ADDR3		
148	ADDR2		
149	ADDR1		
98	DATA15	I/O	Daea bus for async access
99	DATA14		
100	DATA13		
101	DATA12		
102	DATA11		
103	DATA10		
104	DATA9		
105	DATA8		
108	DATA7	I/O	Daea bus for async access
109	DATA6		
110	DATA5		
112	DATA4	I/O	Daea bus for async access
113	DATA3		
114	DATA2		
115	DATA1		
116	DATA0		
150	ABE1	O	Byte enables/Data masks for async/ Sync access
151	ABE0		
163	BR	I	Bus request (This pin should be pulled HIGH if not used.)
119	BG	O	Bus grant
120	BGH	O	Bus grant hang

Asynchronous memory control

Pin No.	Function Name	I/O	Detail of Function
158	AMS3	O	Banks select
159	AMS2		
160	AMS1		
161	AMS0		
162	ARDY	I	hardware ready control (This pin should be pulled HIGH if not used.)
154	AOE	O	Output enable
153	ARE	O	Read enable
152	AWE	O	Write enable

Synchronous memory control

Pin No.	Function Name	I/O	Detail of Function
167	SRAS	O	Row address strobe
166	SCAS	O	Column address strobe
165	SWE	O	Write enable
173	SCKE	O	Clock enable
169	CLKOUT	O	Clock output
164	SA10	O	A10 pin
172	SMS	O	Bank select

Timers

Pin No.	Function Name	I/O	Detail of Function
79	TMR0	I/O	Timer0
78	TMR1	I/O	Timer1/PPI frame sync1
77	TMR2	I/O	Timer2/PPI frame sync2

PPI port

Pin No.	Function Name	I/O	Detail of Function
22	PPI0	I/O	PPI3-0
23	PPI1		
24	PPI2		
26	PPI3		
21	PPI_CLK	I	PPI clock/External timer reference

Port F: GPOI/Parallel peripheral interface port/SPI/Timers

Pin No.	Function Name	I/O	Detail of Function
51	PF0	I/O	GPIO/SPI slave select input
50	PF1	I/O	GPIO/SPI slave select enable 1/ Timer alternate clock input
49	PF2	I/O	GPIO/SPI slave select enable 2
48	PF3	I/O	GPIO/SPI slave select enable 3/ PPI frame sync 3
47	PF4	I/O	GPIO/SPI slave select enable 4/ PPI 15
46	PF5	I/O	GPIO/SPI slave select enable 5/ PPI 14
38	PF6	I/O	GPIO/SPI slave select enable 6/ PPI 13
37	PF7	I/O	GPIO/SPI slave select enable 7/ PPI 12
36	PF8	I/O	GPIO/PPI 11
35	PF9	I/O	GPIO/PPI 10
34	PF10	I/O	GPIO/PPI 9
33	PF11	I/O	GPIO/PPI 8
32	PF12	I/O	GPIO/PPI 7
29	PF13	I/O	GPIO/PPI 6
28	PF14	I/O	GPIO/PPI 5
27	PF15	I/O	GPIO/PPI 4

JTAG port

Pin No.	Function Name	I/O	Detail of Function
94	TCK	I	JTAG clock
87	TDO	O	JTAG serial data out
86	TDI	I	JTAG serial data in
85	TMS	I	JTAG mode select
84	TRST	I	JTAG reset (This pin is should be pulled LOW if JTAG is not used.)
83	EMU	O	Emulation output

SPI port

Pin No.	Function Name	I/O	Detail of Function
55	MOSI	I/O	Master out slave in
54	MISO	I/O	Master in slave out (This pin is should be pulled HIGH throug a 4.7 k-ohms resistor if booting via the SPI port.)
53	SCK	I/O	SPI clock

Serial ports

Pin No.	Function Name	I/O	Detail of Function
76	RSCLK0	I/O	SPORT0 receive serial clock
75	RFS0	I/O	SPORT0 receive frame sync
74	DR0PRI	I	SPORT0 receive data primary
73	DR0SEC	I	SPORT0 receive data secondry
72	TSCLKO	I/O	SPORT0 transmit serial clock
69	TFSO	I/O	SPORT0 transmit frame sync
68	DTOPRI	O	SPORT0 transmit data primary
67	DTOSEC	O	SPORT0 transmit data secondary
65	RSCLK1	I/O	SPORT1 receive serial clock
64	RFS1	I/O	SPORT1 receive frame sync
63	DR1PRI	I	SPORT1 receive data primary
62	DR1SEC	I	SPORT1 receive data secondary
61	TSCLK1	I/O	SPORT1 transmit serial clock
60	TFS1	I/O	SPORT1 transmit frame sync
59	DT1PRI	O	SPORT1 transmit data primary
58	DT1SEC	O	SPORT1 transmit data secondary

UART port

Pin No.	Function Name	I/O	Detail of Function
82	RX	I	UART receive
81	TX	O	UART transmit

Real-time clock

Pin No.	Function Name	I/O	Detail of Function
17	RTXI	I	RTC crystal input (This pin should be pulled LOW when not used.)
16	RTXO	O	RTC crystal output

Clock

Pin No.	Function Name	I/O	Detail of Function
10	CLKIN	I	Clock/Crystal input (This pin needs to be at a level or clocking.)
11	XTAL	O	Crystal output

Mode controls

Pin No.	Function Name	I/O	Detail of Function
13	RESET	I	Reset (This pin is always active during core power-on.)
14	NMI	I	Nonmaskable interrypt (This pin should be pulled LOW when not used.)
95	BMODE1	I	Boot mode strap (These pins must be pulled to the state required for the desired boot mode.)
96	BMODE0		

Voltage regulator

Pin No.	Function Name	I/O	Detail of Function
4	VROUT1	O	Extarnal FET drive
5	VROUT0		

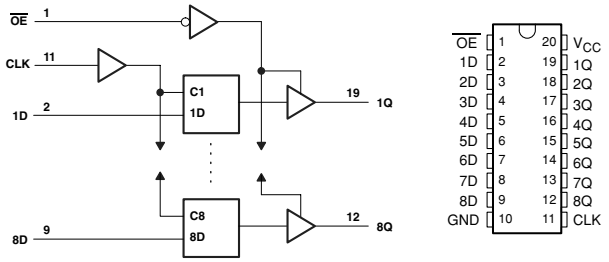
Supplies

Pin No.	Function Name	I/O	Detail of Function
6	VDDEXT	P	I/O power supply
12			
20			
31			
45			
57			
71			
93			
107			
118			
134			
145			
156			
171			
25	VDDINT	P	Core power supply
52			
66			
80			
111			
143			
157			
168			
18	VDDRTC	P	Real-time clock power supply

Pin No.	Function Name	I/O	Detail of Function
1	GND	G	External ground
2			
3			
7			
8			
9			
15			
19			
30			
39			
40			
41			
42			
43			
44			
56			
70			
88			
89			
90			
91			
92			
97			
106			
117			
128			
133			
144			
155			
170			
171			
172			
173			
174			
175			
176			

- **Microprocessor extended port**

IC57-IC59: SN74LV574APWR (DSP P.C.B.)
Octal edge-triggered D-type flip-flops with 3-state outputs



IC57

Pin No.	Port Name	Function Name	Detail of Function
1	/OE	/EXPE	Extended port enable
2	1D	D00	Data bus 00
3	2D	D01	Data bus 01
4	3D	D02	Data bus 02
5	4D	D03	Data bus 03
6	5D	D04	Data bus 04
7	6D	D05	Data bus 05
8	7D	D06	Data bus 06
9	8D	D07	Data bus 07
10	GND	DGND	Ground of external
11	LCK	NPGA_EXSTB	Bank select 1
12	8Q	–	–
13	7Q	R2A_CLK	E-Vol control clock
14	6Q	R2A_DATA	E-Vol control data
15	5Q	VIDEO_MTVR1	DVR REC output inhibit
16	4Q	/DAC_CS	DA converter chip select
17	3Q	/ADC_CS	AD converter chip select
18	2Q	/VFD_CS	VFD (Front display) chip select
19	1Q	/DIR_CS	Audio CODEC chip select
20	VCC	VCC	Power supply +3.3V

IC58

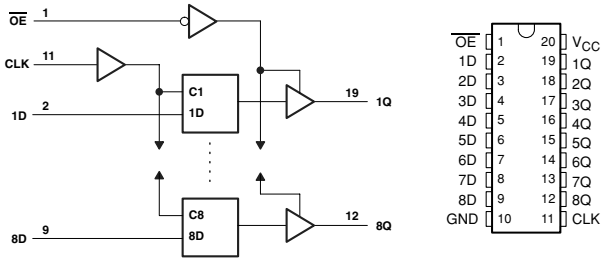
Pin No.	Port Name	Function Name	Detail of Function
1	/OE	/EXPE	Extended port enable
2	1D	D00	Data bus 00
3	2D	D01	Data bus 01
4	3D	D02	Data bus 02
5	4D	D03	Data bus 03
6	5D	D04	Data bus 04
7	6D	D05	Data bus 05
8	7D	D06	Data bus 06
9	8D	D07	Data bus 07
10	GND	DGND	Ground of external
11	CLK	NPGA_EXSTB	Bank select 1
12	8Q	PRY	Power relay control
13	7Q	XM_POWER	XM power enable
14	6Q	/Z2MT	Zone2 L/R mute
15	5Q	/SBMT	Surround back L/R mute
16	4Q	/SWMT	Subwoofer mute
17	3Q	/CMT	Center mute
18	2Q	/SMT	Surround L/R mute
19	1Q	/FMT	Front L/R mute
20	VCC	VCC	Power supply +3.3V

IC59

Pin No.	Port Name	Function Name	Detail of Function
1	/OE	/EXPE	Extended port enable
2	1D	D00	Data bus 00
3	2D	D01	Data bus 01
4	3D	D02	Data bus 02
5	4D	D03	Data bus 03
6	5D	D04	Data bus 04
7	6D	D05	Data bus 05
8	7D	D06	Data bus 06
9	8D	D07	Data bus 07
10	GND	DGND	Ground of external
11	CLK	NPGA_EXSTB	Bank select 0
12	8Q	ADC_SELECT_C	Selector C
13	7Q	ADC_SELECT_B	Selector B
14	6Q	ADC_SELECT_A	Selector A
15	5Q	SBRY	Speaker relay SB
16	4Q	HPRY	Headphone relay
17	3Q	CSRY	Speaker relay C/SW
18	2Q	MRYB	Speaker relay F/B
19	1Q	MRYA	Speaker relay F/A
20	VCC	VCC	Power supply +3.3V

IC56: SN74AHCT574AWR (DSP P.C.B.)

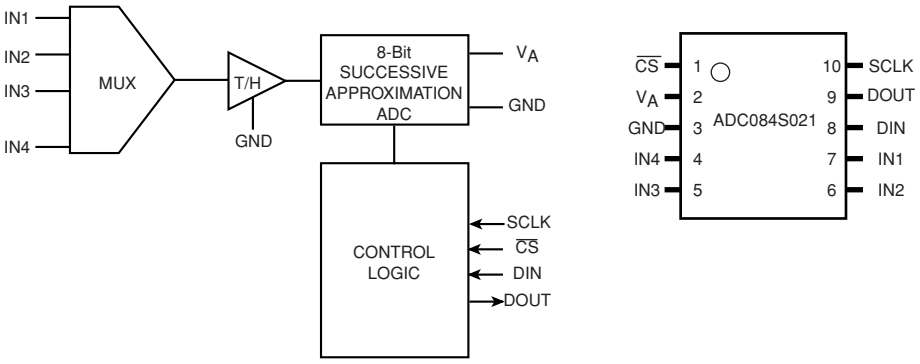
Octal edge-triggered D-type flip-flops with 3-state outputs



Pin No.	Port Name	Function Name	Detail of Function
1	/OE	/EXPE	Extended port enable
2	1D	D00	Data bus 00
3	2D	D01	Data bus 01
4	3D	D02	Data bus 02
5	4D	D03	Data bus 03
6	5D	D04	Data bus 04
7	6D	D05	Data bus 05
8	7D	D06	Data bus 06
9	8D	D07	Data bus 07
10	GND	DGND	Ground of external
11	CLK	NPGA_EXSTB	Bank select 0
12	8Q	5VIDEO_VIA	Video input selector A
13	7Q	5VIDEO_VIB	Video input selector B
14	6Q	5VIDEO_VIC	Video input selector C
15	5Q	/5VIDEO_MTMON	Monitor output inhibit
16	4Q	/5VIDEO_CMON	Component output inhibit
17	3Q	5VIDEO_CBYPASS	Component bypass
18	2Q	5VIDEO_CMP1	Component select 1
19	1Q	5VIDEO_CMP0	Component select 2
20	VCC	VCC	Power supply +5V

- **Microprocessor ADC select port**

IC81: ADC084S021CIMM (DSP P.C.B.)
4-channel, 200 kSPS, 8-bit A/D converter



Pin No.	Port Name	Function Name	Detail of Function
1	/CS	/ADC_CS	CS for microprocessor
2	VA	+3.3S	Power supply +3.3V
3	GND	DGND	Ground of external
4	IN4	ADC_COM2	SPI bus COM (IC83)
5	IN3	ADC_COM1	SPI bus COM (IC82)
6	IN2	KEY1	Key input 1
7	IN1	KEY0	Key input 0
8	DIN	SPIMI	Master output/slave input
9	DOUT	SPIMO	Master input/slave output
10	SCLK	SPISCK	SPI clock

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

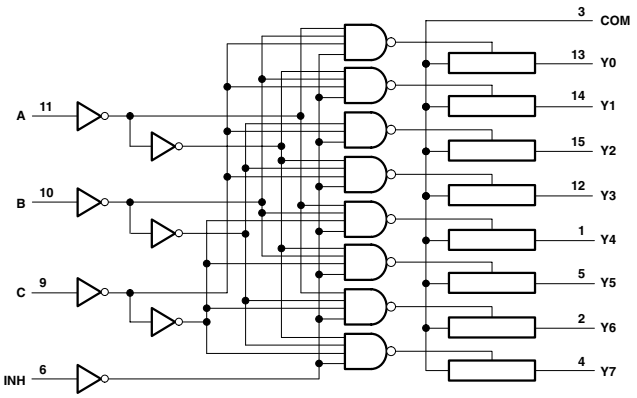
U, C, R, T, K, A, G, E, F, L models

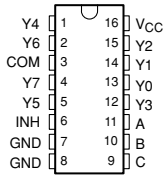
Ohm	0	+ 1.0 k	+ 1.0 k	+ 1.5 k	+ 2.2 k	+ 2.2 k	+ 3.3 k	+ 4.7 k	+ 6.8 k	+ 10.0 k	+ 22.0 k
V	0–0.2	0.2–0.4	0.4–0.7	0.7–1.0	1.0–1.3	1.3–1.6	1.6–1.9	1.9–2.1	2.1–2.4	2.4–2.7	2.7–3.0
KEY INPUT 0 (7 pin)	–	SPEAKERS A/B/OFF	TONE CONTROL	PROGRAM <	PROGRAM >	STRAIGTH EFFECT	A/B/C/D/E	BAND	ZONE2 ON/OFF	EDIT PRESET/ TUNING	SYSTEM OFF
KEY INPUT 1 (6 pin)	–	–	AUDIO SELECT	INPUT >	INPUT <	DIRECT	PRESET/ TUNING <	PRESET/ TUNING >	MEMORY	INFO TUNING AUTO/ MAN'L	ZONE CONTROL

B model

Ohm	0	+ 1.0 k	+ 1.0 k	+ 1.5 k	+ 2.2 k	+ 2.2 k	+ 3.3 k	+ 4.7 k	+ 6.8 k	+ 10.0 k	+ 22.0 k
V	0–0.2	0.2–0.4	0.4–0.7	0.7–1.0	1.1–1.3	1.3–1.6	1.6–1.9	1.9–2.1	2.1–2.4	2.4–2.7	2.7–2.9
KEY INPUT 0 (7 pin)	–	SPEAKERS A/B/OFF	TONE CONTROL	PROGRAM <	PROGRAM >	STRAIGTH EFFECT	–	–	–	–	–
KEY INPUT 1 (6 pin)	–	–	AUDIO SELECT	INPUT >	INPUT <	DIRECT	–	–	–	–	–

IC82, IC83: SN74LV4051APWR (DSP P.C.B.)
8-channel analog multiplexers/demultiplexers





INPUTS				ON CHANNEL
INH	C	B	A	
L	L	L	L	Y0
L	L	L	H	Y1
L	L	H	L	Y2
L	L	H	H	Y3
L	H	L	L	Y4
L	H	L	H	Y5
L	H	H	L	Y6
L	H	H	H	Y7
H	X	X	X	None

IC82

Pin No.	Port Name	Function Name	Detail of Function
1	Y4	/TUNER_TUNED	Tuner tuned detection
2	Y6	XM_ANT	XM antenna
3	COM	ADC_COM1	SPI bus COM (IC81)
4	Y7	DOCK_ID	DOCK detection (Normal DOCK or Bluetooth adapter)
5	Y5	IP_DET	iPod detection
6	INH	DGND	Ground of external
7	GND	DGND	Ground of external
8	GND	DGND	Ground of external
9	C	SELECT C	ADC selecter C
10	B	SELECT B	ADC selecter B
11	A	SELECT A	ADC selecter A
12	Y3	THM	Temperature detection
13	Y0	DEST1	Destination detection
14	Y1	PRV1	Power supply protection 1
15	Y2	PRD	AMP DC protecton
16	Vcc	+3.3S	Power supply +3.3V

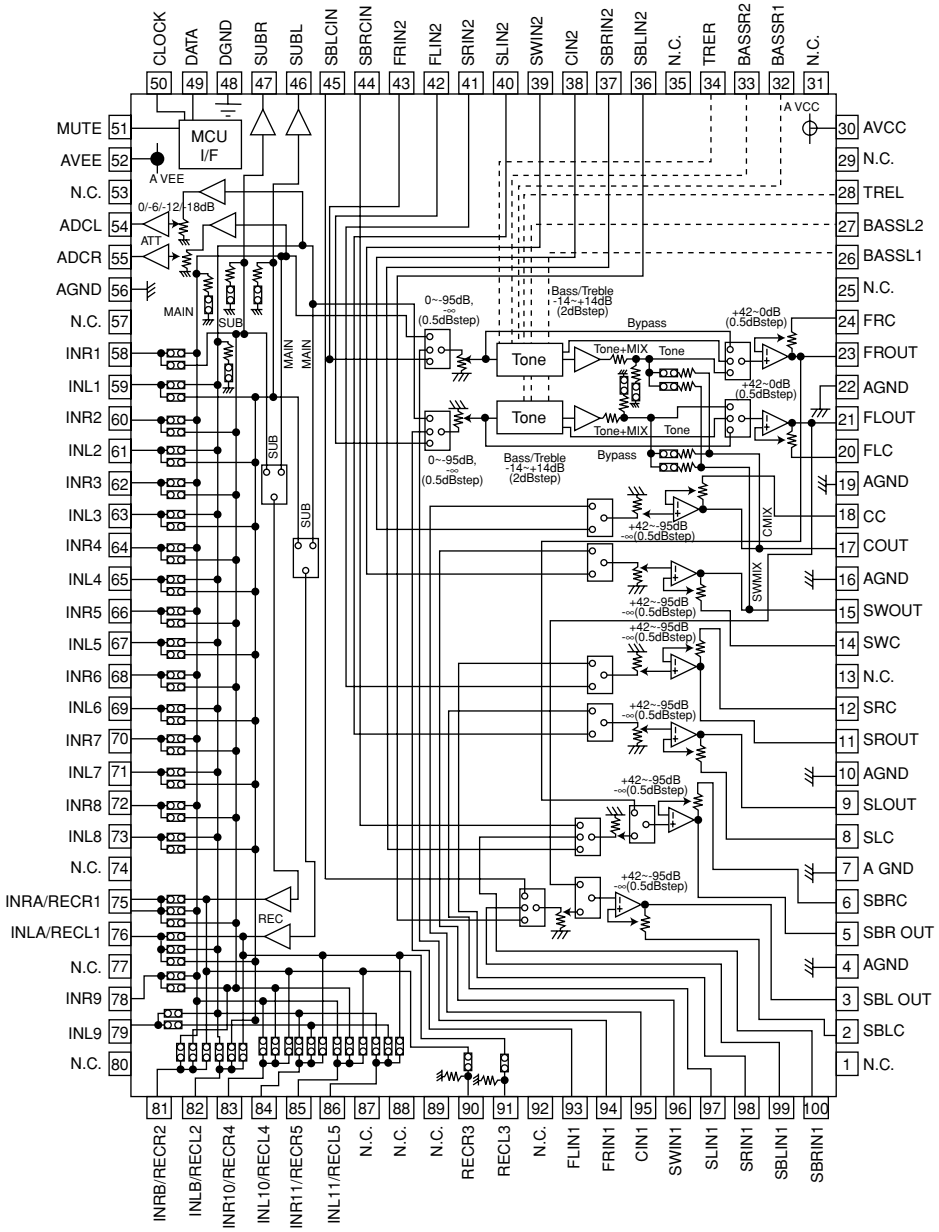
DOCK detection for AD port (IC82 AD converter pin no. 4)
Pull-up resistance 10 k-ohms

DOCK connector	DOCK (Bluetooth)	Reserved	Reserved	DOCK (iPod)	Reserved	(Develop-ment)	No connect
Ohm	0.56k	2.7k	5.6k	10.0k	18.0k	39.0k	–
DKID (Pin no. 21)	5-25	50-60	85-100	120-140	150-170	195-210	245-255

IC83

	Port Name	Function Name	Detail of Function
1	Y4	/TUNER_STEREO	Tuner stereo detection
2	Y6	XM_LINK	XM link
3	COM	ADC_COM2	SPI bus COM (IC81)
4	Y7	/HP_DET	Headphone detect
5	Y5	IP_AP	iPod
6	INH	DGND	Ground of external
7	GND	DGND	Ground of external
8	GND	DGND	Ground of external
9	C	SELECT C	ADC selector C
10	B	SELECT B	ADC selector B
11	A	SELECT A	ADC selector A
12	Y3	PRI	AMP curent protection
13	Y0	DEST2	–
14	Y1	PRV2	Power supply protection 2
15	Y2	PLDET	Output voltage of power amplifier detection
16	Vcc	+3.3S	Power supply +3.3V

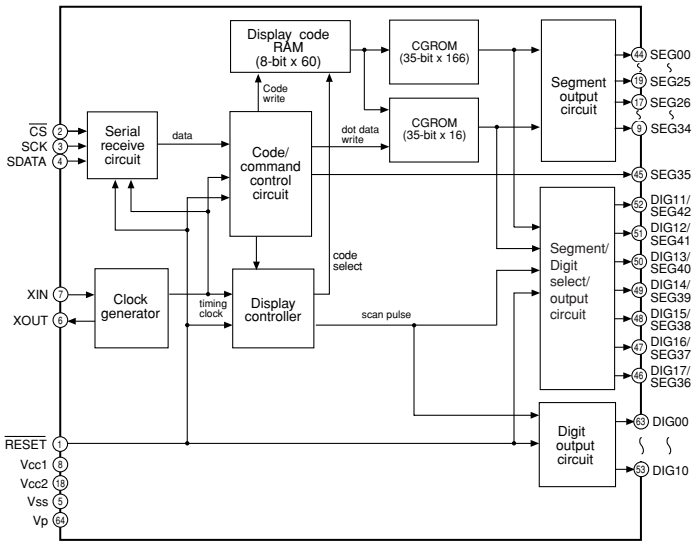
IC401 : R2A15218FP (MAIN P.C.B.)
8 ch electronic volume with 11 input selector and tone control

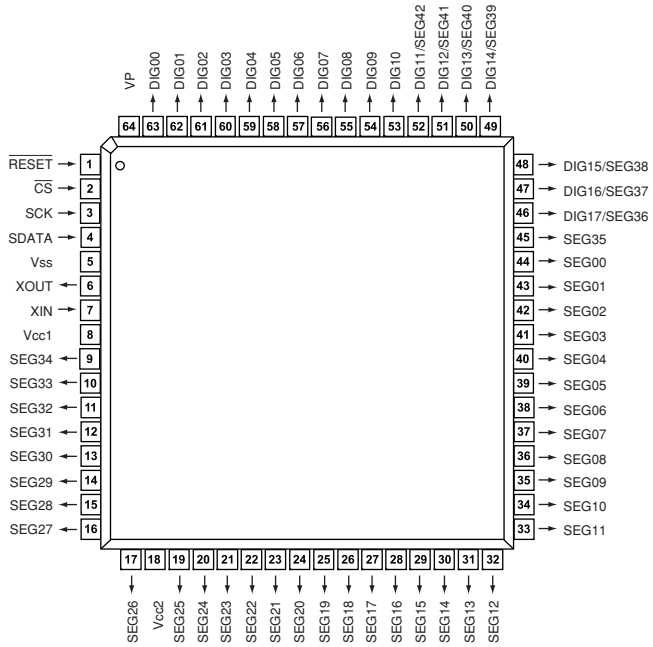


Pin No.	Function Name	Detail of Function
1	NC	
2	SBLC	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
3	SBL OUT	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
4	AGND	Analog ground of internal circuit
5	SBR OUT	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
6	SBRC	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
7	AGND	Analog ground of internal circuit
8	SLC	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
9	SLOUT	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
10	AGND	Analog ground of internal circuit
11	SROUT	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
12	SRC	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
13	NC	
14	SWC	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
15	SWOUT	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
16	AGND	Analog ground of internal circuit
17	COUT	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
18	CC	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
19	AGND	Analog ground of internal circuit
20	FLC	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
21	FLOUT	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
22	AGND	Analog ground of internal circuit
23	FROUT	Output pin of FL/FR/C/SW/SL/SR/SBL/SBR channel
24	FRC	Connects capacitor for reducing click noise of L/R/C/SW/SL/SR/SBL/SBR channel volume
25	NC	
26	BASSL1	Frequency characteristic setting pin of L/R channel tone control (Bass)
27	BASSL2	
28	TREL	Frequency characteristic setting pin of L/R channel tone control (Treble)
29	NC	
30	AVCC	Positive power supply to internal circuit
31	NC	
32	BASSR1	Frequency characteristic setting pin of L/R channel tone control (Bass)
33	BASSR2	
34	TRER	Frequency characteristic setting pin of L/R channel tone control (Treble)
35	NC	
36	SBLIN2	Input pin of L/R/C/SW/SL/SR/SBL/SBR channel (Multi IN 1/2)
37	SBRIN2	
38	CIN2	
39	SWIN2	
40	SLIN2	
41	SRIN2	
42	FLIN2	
43	FRIN2	
44	SBRCIN	Input pin for SBL/SBR channel volume
45	SBLCIN	
46	SUBL	Output pin for L/R channel SUB output
47	SUBR	
48	DGND	Digital ground of internal circuit
49	DATA	Input pin of control data
50	CLOCK	Input pin of control clock

Pin No.	Function Name	Detail of Function
51	MUTE	Outside mute control pin
52	AVEE	Negative power supply to internal circuit
53	NC	
54	ADCL	Output pin for L/R channel ADC
55	ADCR	
56	AGND	Analog ground of internal circuit
57	NC	
58	INR1	Input pin of L/R channel (Input selector)
59	INL1	
60	INR2	
61	INL2	
62	INR3	
63	INL3	
64	INR4	
65	INL4	
66	INR5	
67	INL5	
68	INR6	
69	INL6	
70	INR7	
71	INL7	
72	INR8	
73	INL8	
74	NC	
75	INRA/RECR1	Input pin of L/R channel (Input selector) / Output pin for L/R channel REC output
76	INLA/RECL1	
77	NC	
78	INR9	Input pin of L/R channel (Input selector)
79	INL9	
80	NC	
81	INRB/RECR2	Input pin of L/R channel (Input selector) / Output pin for L/R channel REC output
82	INLB/RECL2	
83	INR10/RECR4	
84	INL10/RECL4	
85	INR11/RECR5	
86	INL11/RECL5	
87	NC	
88	NC	
89	NC	
90	RECR3	Output pin for L/R channel REC output
91	RECL3	
92	NC	
93	FLIN1	Input pin of L/R/C/SW/SL/SR/SBL/SBR channel (Multi IN 1/2)
94	FRIN1	
95	CIN1	
96	SWIN1	
97	SLIN1	
98	SRIN1	
99	SBLIN1	
100	SBRIN1	

IC603: M66003-0131FP-R (OPERATION P.C.B.)
18 digit 5x7 segment VFD controller/driver



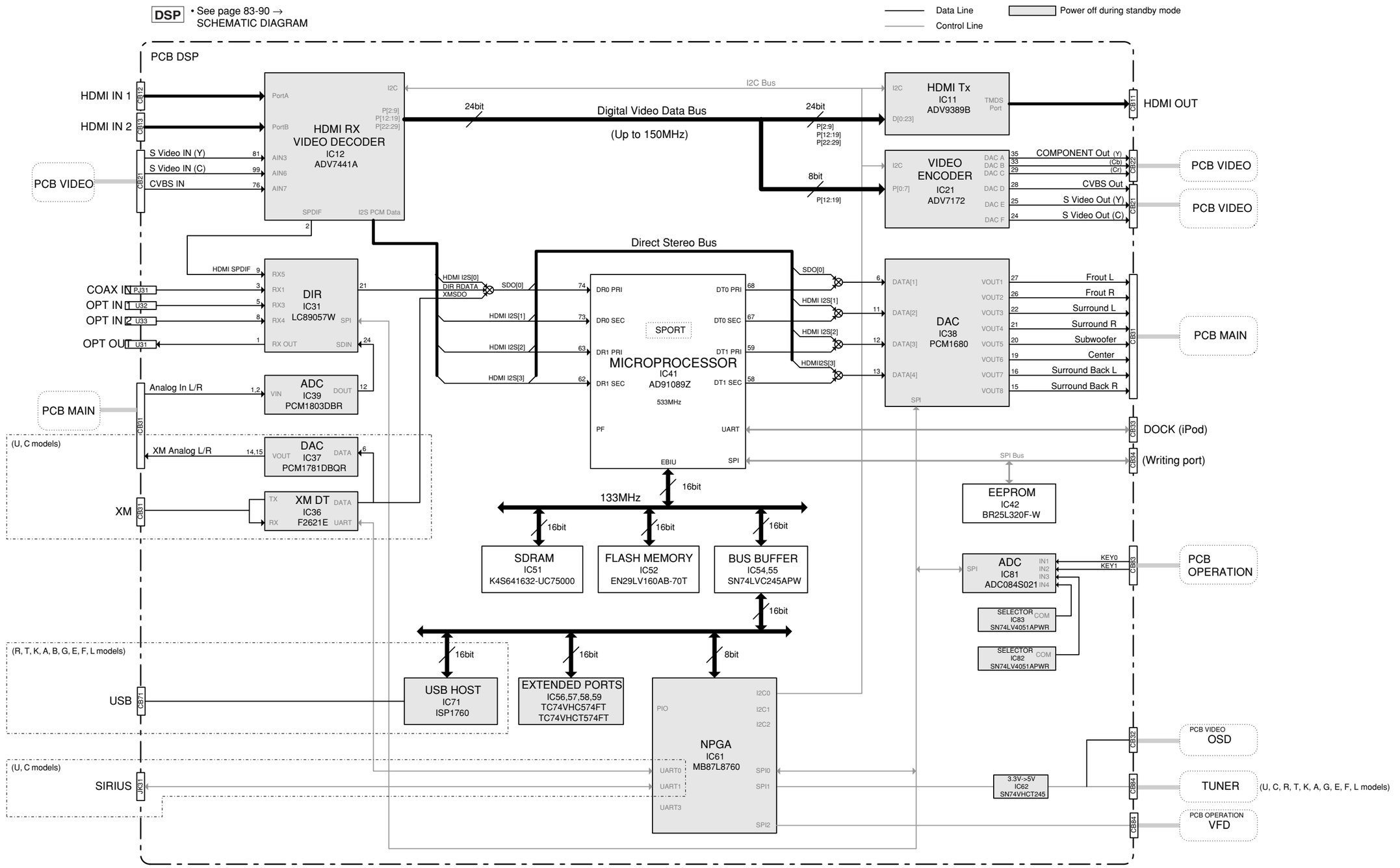


Pin No.	Port Name	Function Name	I/O	Detail of Function
1	/RESET	$\overline{\text{Reset}}$	Reset input	When "L", M66003 is initialized
2	/CEFL	$\overline{\text{CS}}$	Chip select input	When "L", communication with the MCU is possible When "H", any instruction from the MCU is neglected
3	CKFL	SCK	Shift clock input	Serial input data is taken and shifted by the positive edge of SCK
4	DTFL	SDATA	Serial data input	
5	VSS	Vss		GND (0V)
6	XOUT	XOUT	Clock output	When use as a CR oscillator, connect external resistor and capacitor / When use an external clock, input external clock to XIN, and XOUT must be opened
7	XIN	XIN	Clock input	
8	VDD	Vcc1		Positive power supply for internal logic
9	P1I	SEG34	Segment output	Positive power supply for DIG and SEG outputs
10	P2	SEG33	Segment output	
11	P3	SEG32	Segment output	
12	P4	SEG31	Segment output	
13	P5	SEG30	Segment output	
14	P6	SEG29	Segment output	
15	P7	SEG28	Segment output	
16	P8	SEG27	Segment output	
17	P9	SEG26	Segment output	
18	VDD	Vcc2		
19	P10	SEG25	Segment output	Connect to segment (anode) pins of VFD
20	P11	SEG24	Segment output	
21	P12	SEG23	Segment output	
22	P13	SEG22	Segment output	
23	P14	SEG21	Segment output	
24	P15	SEG20	Segment output	
25	P16	SEG19	Segment output	
26	P17	SEG18	Segment output	
27	P18I	SEG17	Segment output	
28	P19	SEG16	Segment output	
29	P20	SEG15	Segment output	
30	P21	SEG14	Segment output	
31	P22	SEG13	Segment output	
32	P23	SEG12	Segment output	
33	P24	SEG11	Segment output	
34	P25	SEG10	Segment output	
35	P26	SEG09	Segment output	
36	P27	SEG08	Segment output	
37	P28	SEG07	Segment output	
38	P29	SEG06	Segment output	
39	P30	SEG05	Segment output	
40	P31	SEG04	Segment output	
41	P32	SEG03	Segment output	
42	P33	SEG02	Segment output	
43	P34	SEG01	Segment output	
44	P35	SEG00	Segment output	
45	P36	SEG35	Segment output	
46	P37	DIG17/SEG36	Segment output	
47	G17I	DIG16/SEG37	Digit output	Connect to digit (grid) pins of VFD
48	G16I	DIG15/SEG38	Digit output	
49	G15I	DIG14/SEG39	Digit output	
50	G14	DIG13/SEG40	Digit output	
51	G13	DIG12/SEG41	Digit output	
52	G12	DIG11/SEG42	Digit output	
53	G11	DIG10	Digit output	
54	G10	DIG09	Digit output	
55	G9	DIG08	Digit output	
56	G8	DIG07	Digit output	
57	G7	DIG06	Digit output	
58	G6	DIG05	Digit output	
59	G5	DIG04	Digit output	
60	G4	DIG03	Digit output	
61	G3	DIG02	Digit output	
62	G2	DIG01	Digit output	
63	G1	DIG00	Digit output	
64	VP	Vp		Negative power supply to pull down

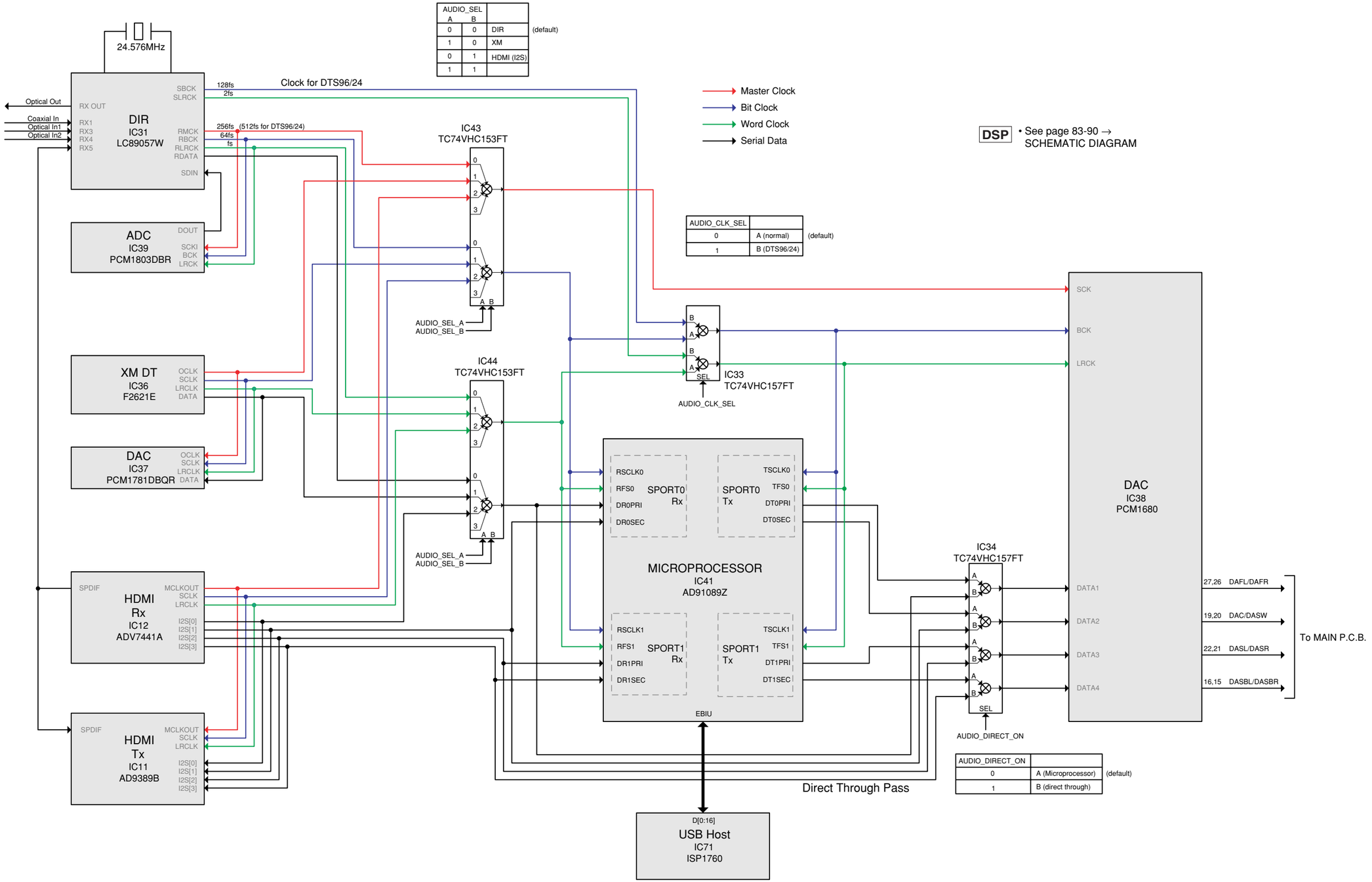
MEMO

■ BLOCK DIAGRAMS

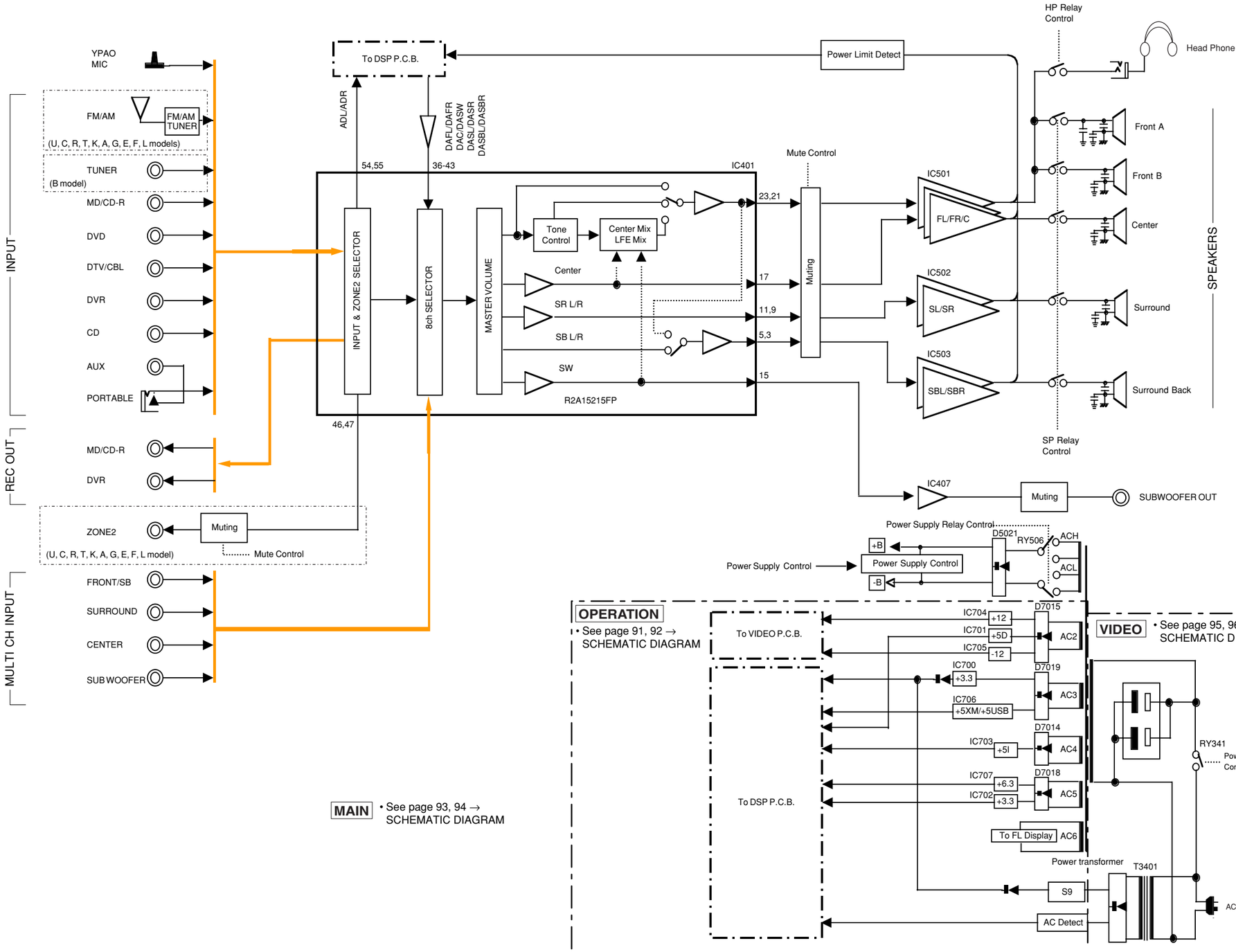
AUDIO (DIGITAL) SECTION BLOCK DIAGRAM



DSP CONTROL SECTION BLOCK DIAGRAM



AUDIO (ANALOG) / POWER SUPPLY SECTION BLOCK DIAGRAM



VIDEO SECTION BLOCK DIAGRAM

CVBS & YC INPUT SELECTOR

(4051)

INPUT	VIA	VIB	VIC
MUTE	L	L	L
DVD	H	L	L
DVR	L	H	L
DTV	H	H	L
V-AUX	L	L	H
iPod	H	L	H
MUTE	L	H	H
MUTE	H	H	H

PCB DSP

IC12 HDMI Rx/ VIDEO DECODER ADV7441A

IC21 VIDEO ENCODER ADV7172

IC41 MICROPROCESSOR

VIDEO: SVDET, CPNTD, VIA, VIB, VIC, BYPASS, Vconv, CMP0, CMP1, CBYPASS, OSD_CE, OSD_CK, OSD_DT, /MTMON, /MTVR1, /CNON

DSP • See page 83-90 → SCHEMATIC DIAGRAM

VIDEO

DVD, DTV/CBL, DVR, V-AUX, iPod

INPUT SELECTOR (VIA, VIB, VIC) — CVBS — IC301

MM74HC4051 x3

Q3001 0dB — RECOUT

Y — IC302 — Q3002 0dB — SEL Y

C — IC303 — Q3003 0dB — SEL C

IC305 S-DETECTOR TC74HCU04 — SVDET

CVBS & YC Monitor SELECTOR

OUT	YPASS	conv
OSD	L	L
BYPASS	H	L
Vconv	L	H
MUTE	H	H

OUTPUT AMP LA73050 IC307 — 6dB — DVR OUT

BYPASS SWITCH TC74HC4052 x2 IC310,311 — CVBS, Conv V, Conv, Conv C

OUTPUT AMP LA73050 IC307 — 6dB — MONITOR OUT

BYPASS

IC304 OSD LC74782 — OSD_CE, OSD_CK, OSD_DT — Q3005 0dB — OSD

CONVERSION

COMPONENT INPUT SELECTOR

(4052)

INPUT	CMP0	CMP1
MUTE	L	L
DVD	H	L
DVR	L	H
DTV/CBL	H	H

COMPONENT VIDEO

DVD, DTV/CBL, DVR — Y, Pb/Cb, Pr/Cr

COMPONENT OSD SELECTOR

	Vconv
OSD	L
V conv	H

Vconv — Conv/OSD SELECTOR 74HC4053 — OSD

Q3201 - 3203 0dB

CMP0, CMP1, CBYPASS

Y/Cb/Cr IN — INPUT SELECTOR TC74HC4052 x2 — IC322, IC323 — Y/Cb/Cr OUT

IC389

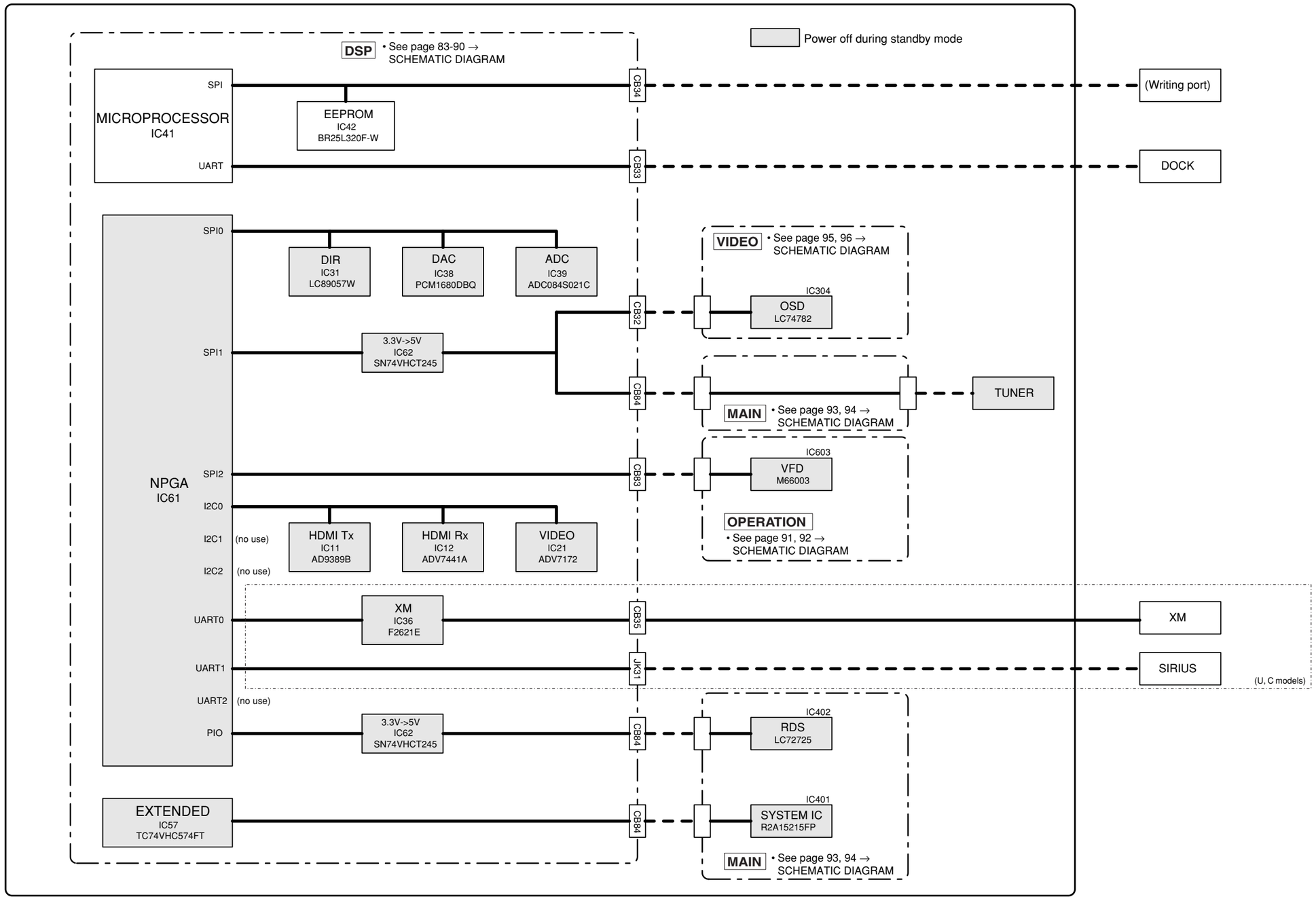
OUTPUT AMP NJM2581 — 6dB — IC325 — /MTMON, /CNON

INPUT SELECTOR TC74HC4052 — Y IN — IC321 — CMP0, CMP1

IC326 Y-DETECTOR TC74HCU04 — CPNTD

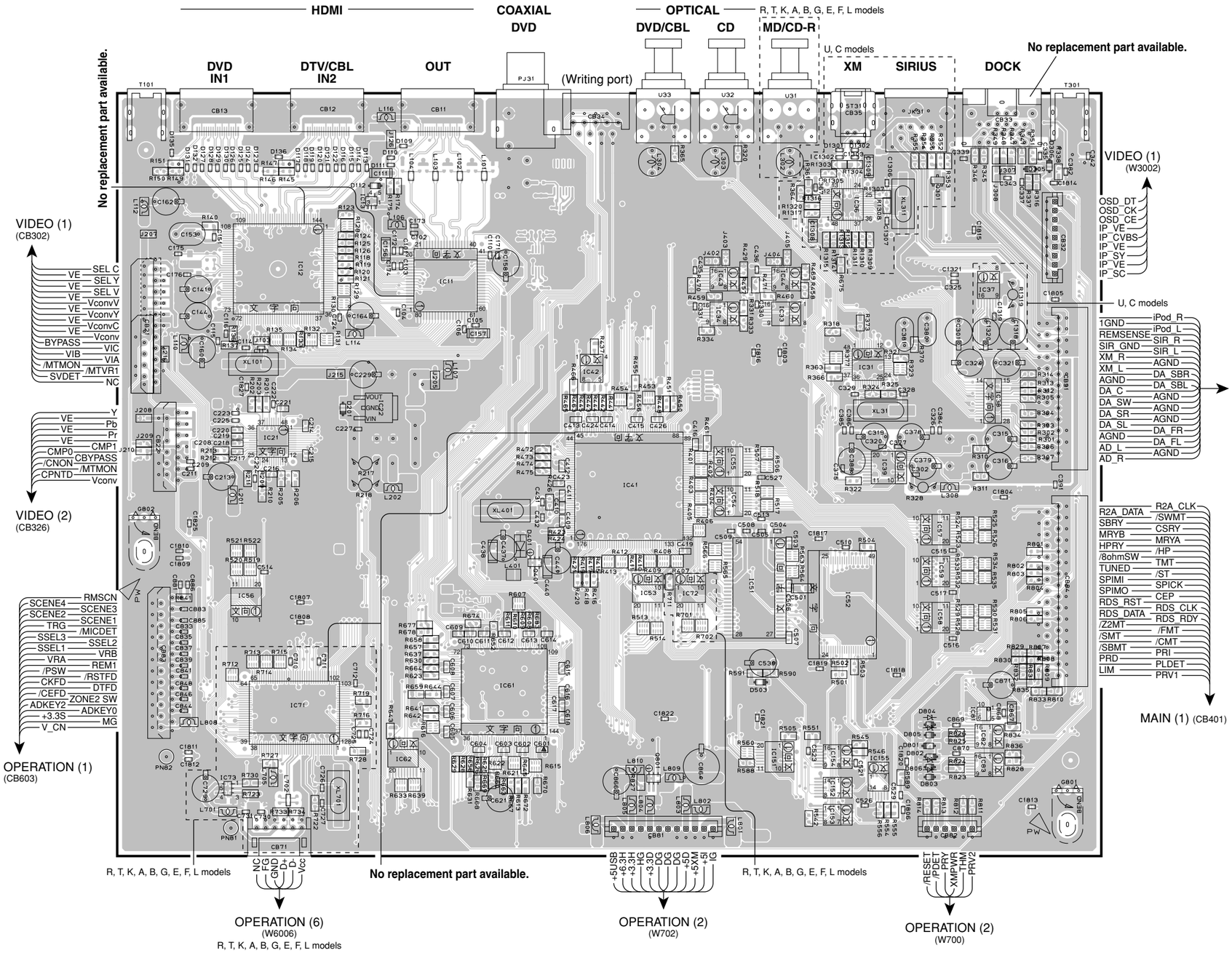
VIDEO • See page 95, 96 → SCHEMATIC DIAGRAM

CONTROL SECTION BLOCK DIAGRAM



■ PRINTED CIRCUIT BOARDS

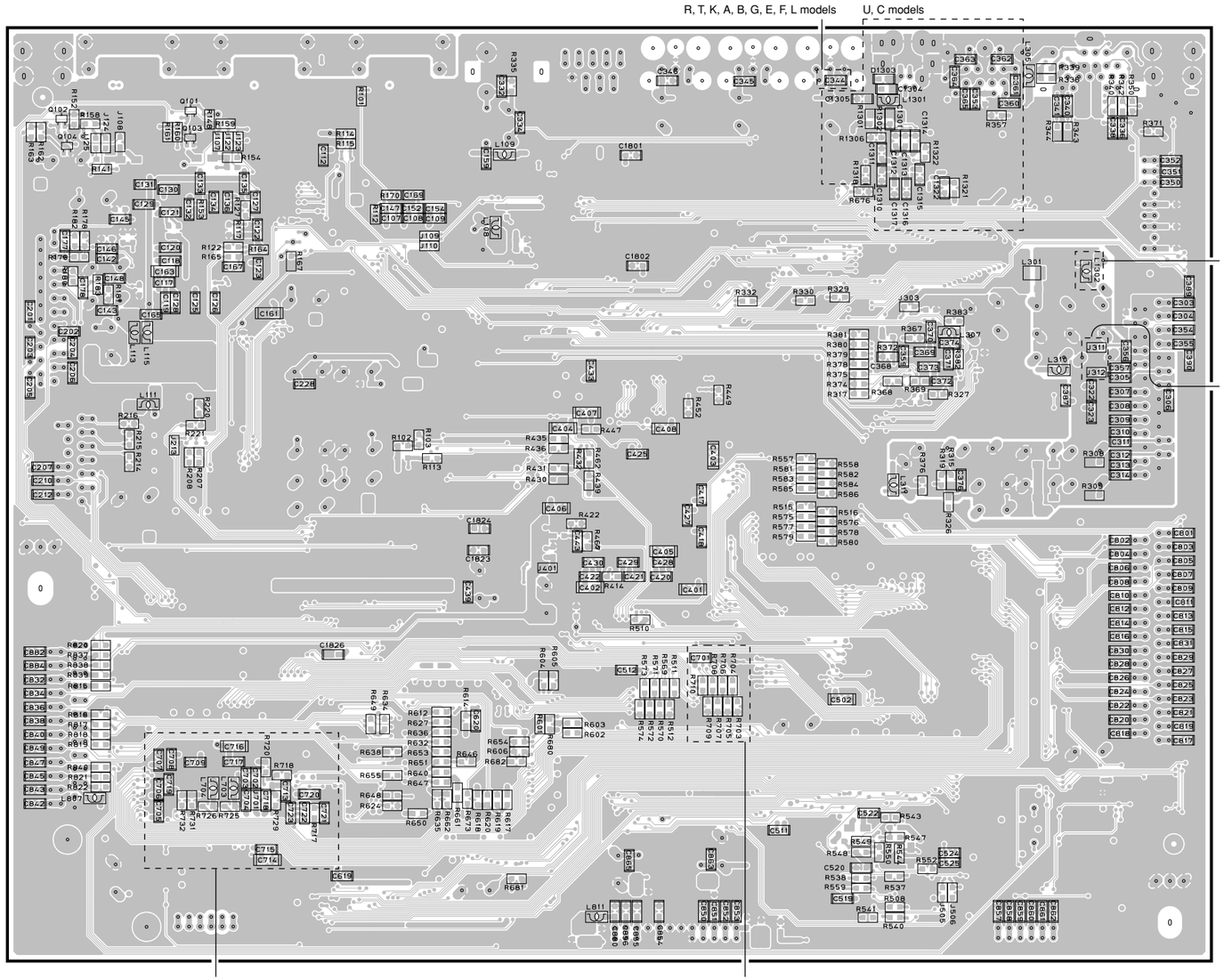
DSP P.C.B. (Side A)



- **Semiconductor Location**

Ref no.	Location	Ref no.	Location
D109	E2	IC12	D3
D110	D2	IC13	D3
D111	D2	IC21	D4
D112	D2	IC22	D4
D113	D2	IC31	G3
D114	D2	IC33	G3
D115	D2	IC34	F3
D116	D2	IC36	G3
D117	D2	IC37	H3
D118	D2	IC38	H4
D119	D2	IC39	G4
D120	D2	IC41	F4
D121	D2	IC42	F3
D122	D2	IC43	F3
D123	D2	IC44	G3
D124	D2	IC51	G5
D125	D2	IC52	G5
D126	D2	IC53	F5
D127	C2	IC54	F4
D128	C2	IC55	F4
D129	C2	IC56	D5
D130	D2	IC57	H4
D131	C2	IC58	H5
D132	C2	IC59	H5
D135	C2	IC61	E5
D136	D2	IC62	E6
D201	D4	IC71	D5
D305	H2	IC72	F5
D306	H2	IC73	D6
D401	E4	IC81	H5
D503	G5	IC82	H6
D801	H6	IC83	H6
D802	H6	IC151	G6
D803	H6	IC152	G6
D804	H6	IC153	G6
D805	H6	IC154	G6
D806	H6	IC155	G6
D1301	G2	Q301	H2
D1302	G2	Q401	E5
IC11	E3	Q801	F6

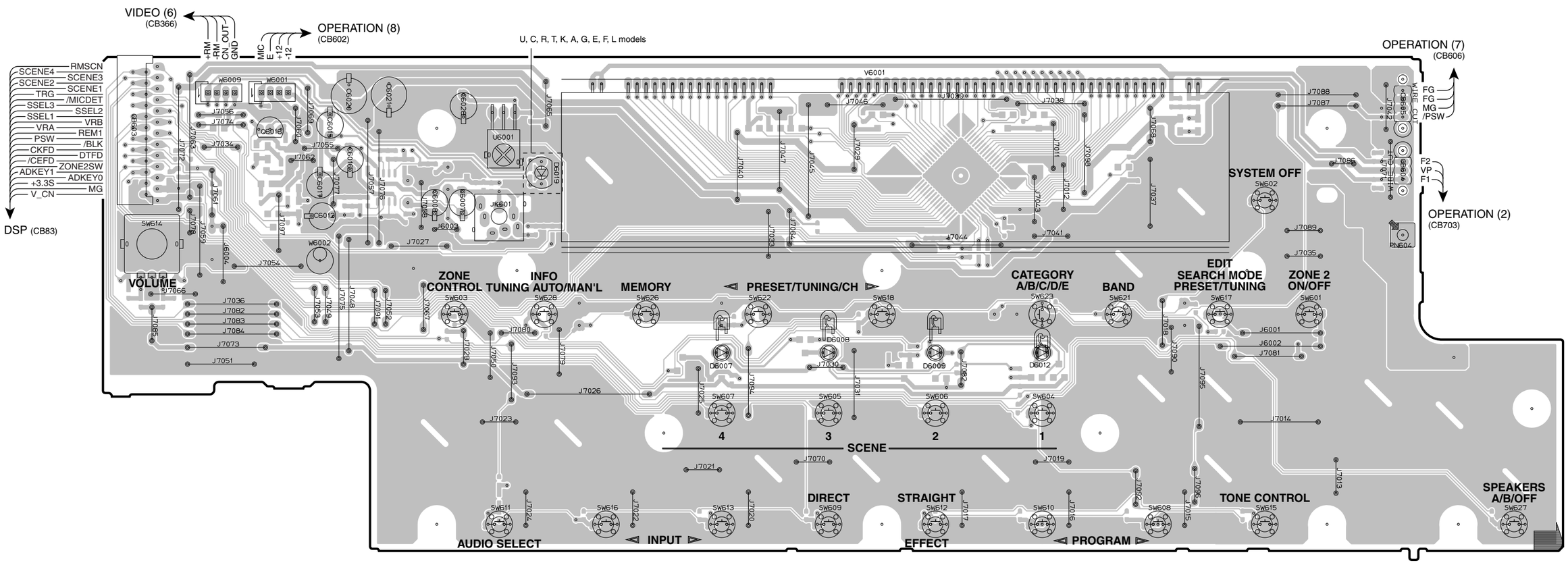
DSP P.C.B. (Side B)



- **Semiconductor Location**

Ref no.	Location
D1303	G2
Q101	D2
Q102	C2
Q103	D2
Q104	C2

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

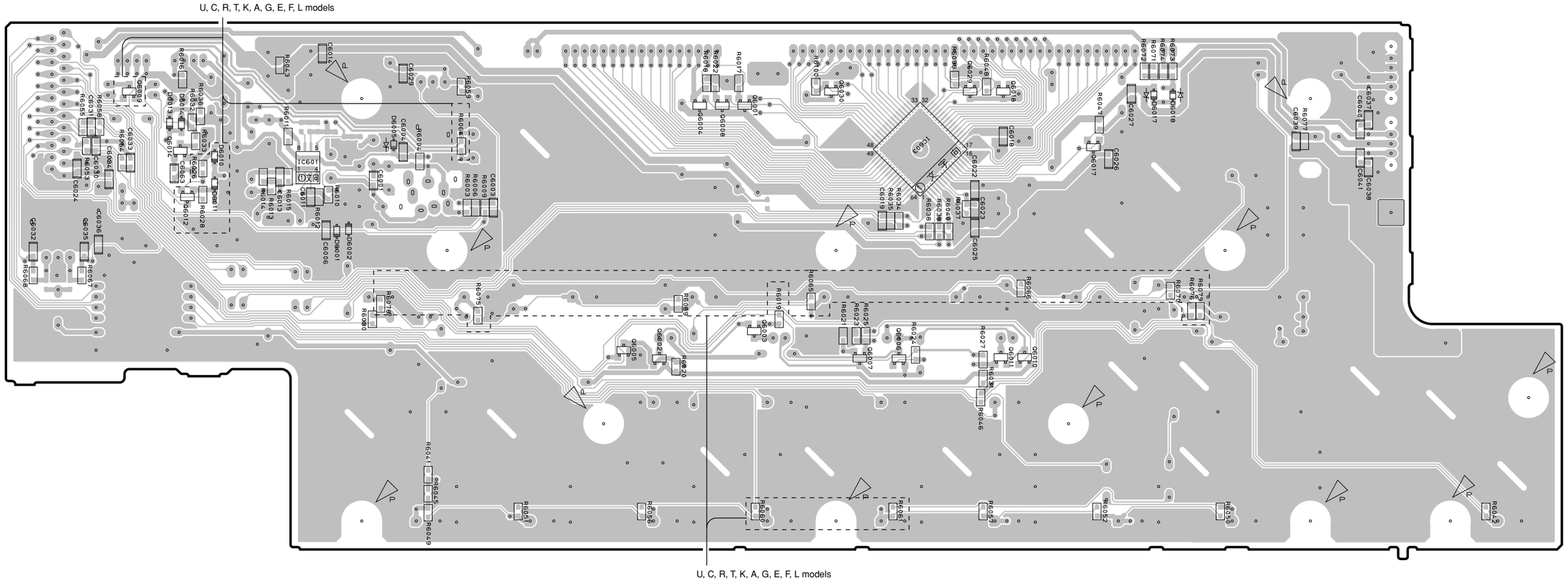


Circuit No.	U, C, R, T, K, A, G, E, F, L	B
SW601-603, 617, 618, 621, 622, 625, 626, 628	O	X
J6002	O	X

- **Semiconductor Location**

Ref no.	Location
D6007	E4
D6008	F4
D6009	G4
D6012	G4
D6019	D3
Q6016	B3

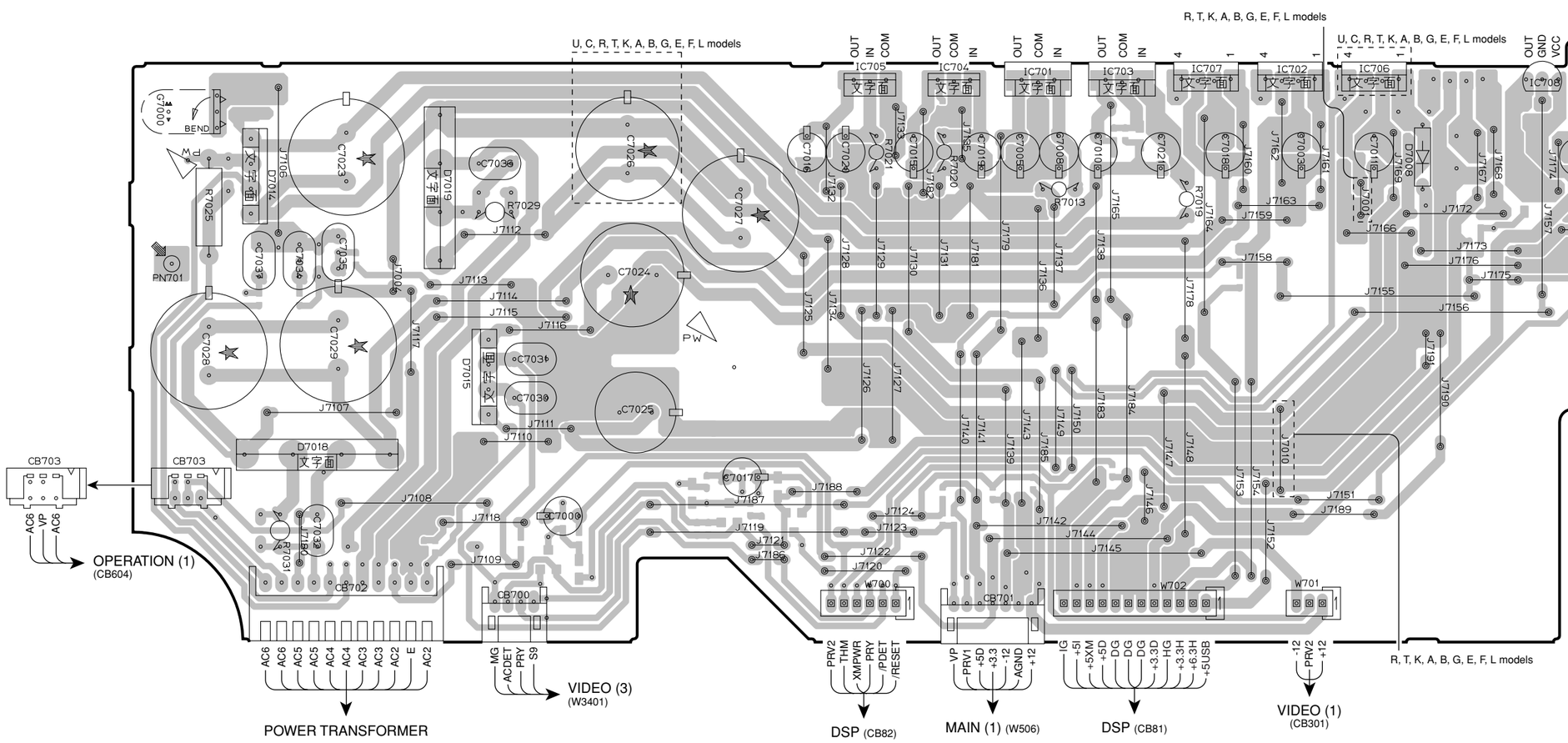
OPERATION (1) P.C.B. (Side B)



- **Semiconductor Location**

Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location
D6001	C4	IC601	C3	Q6008	E3	Q6030	F3
D6002	C4	IC603	G3	Q6009	B3		
D6005	D3	Q6001	F3	Q6010	G4		
D6010	C3	Q6002	E4	Q6011	G4		
D6011	C3	Q6003	F4	Q6012	B4		
D6013	B3	Q6004	E3	Q6014	B3		
D6014	B3	Q6005	E4	Q6017	H3		
D6017	H3	Q6006	G4	Q6018	G3		
D6018	H3	Q6007	F4	Q6029	G3		

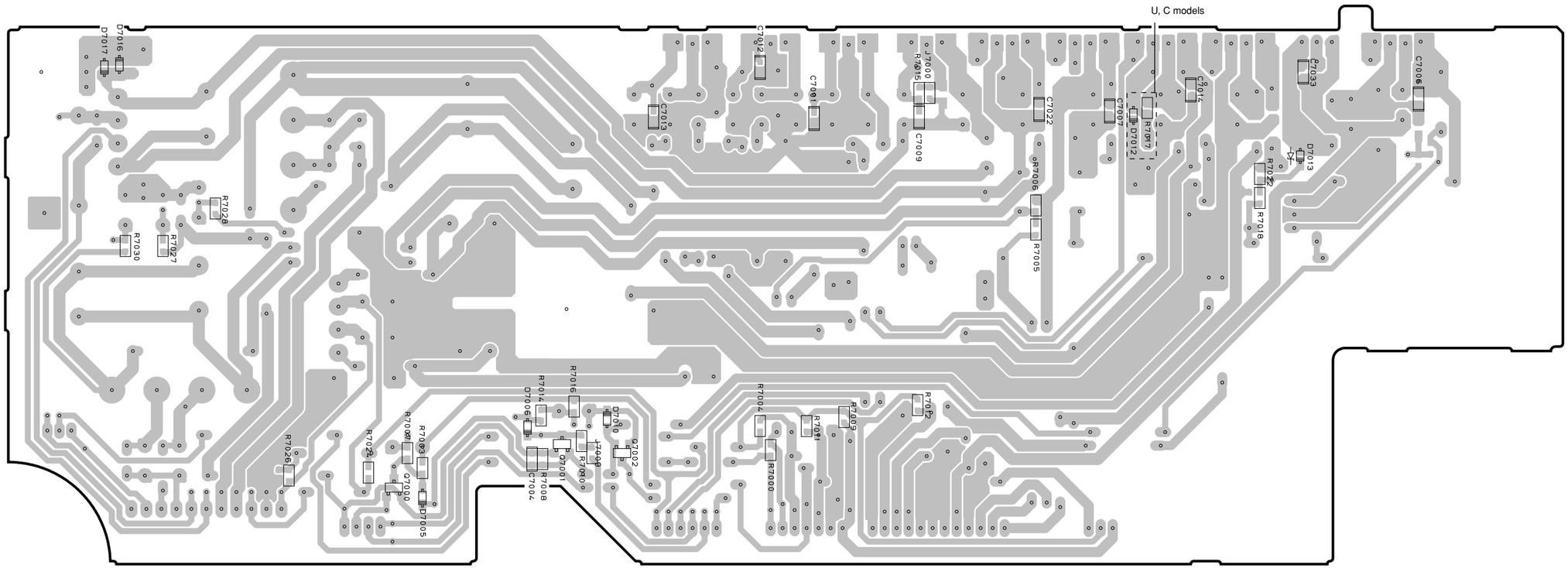
OPERATION (2) P.C.B. (Side A)



- **Semiconductor Location**

Ref no.	Location	Ref no.	Location
D7004	I3	IC702	H2
D7008	H3	IC703	G2
D7014	B3	IC704	F2
D7015	C4	IC705	E2
D7018	C4	IC706	H2
D7019	C3	IC707	G2
IC700	I2	IC708	I2
IC701	F2		

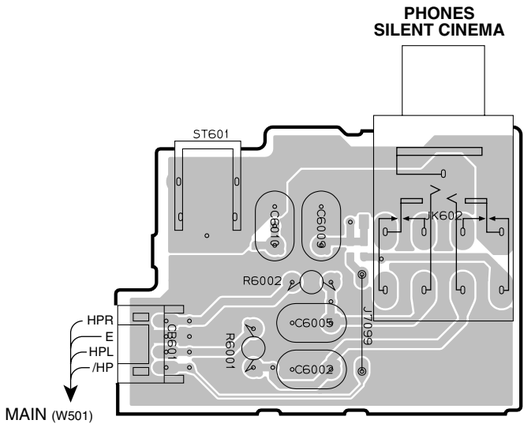
OPERATION (2) P.C.B. (Side B)



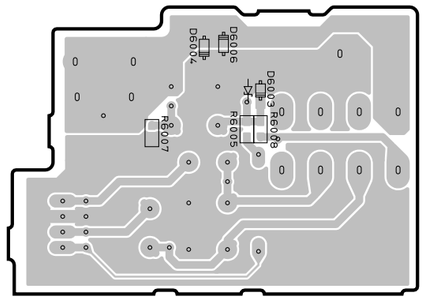
- **Semiconductor Location**

Ref no.	Location	Ref no.	Location
D7005	D5	D7016	B3
D7006	D4	D7017	B3
D7010	E4	Q7000	D5
D7012	H3	Q7001	E5
D7013	I3	Q7002	E5

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

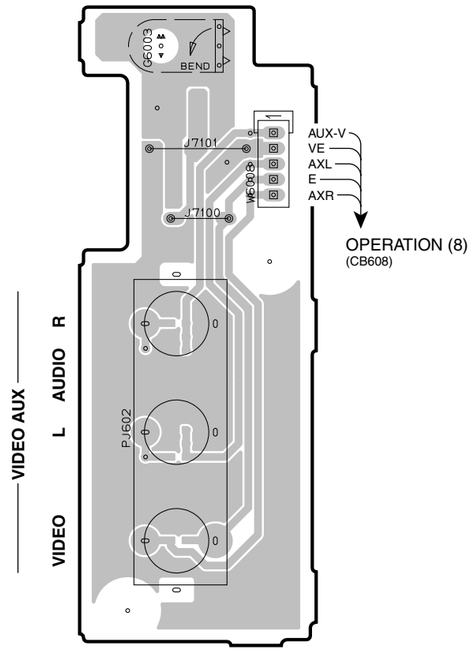


OPERATION (3) P.C.B. (Side B)



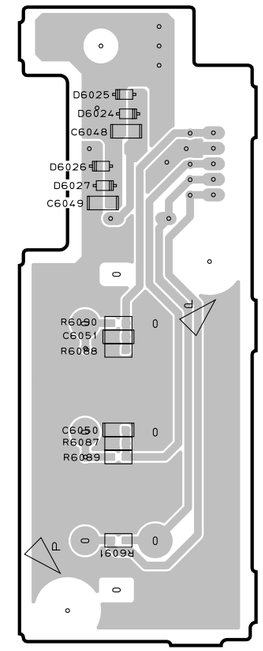
OPERATION (4) P.C.B. (Side A)

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



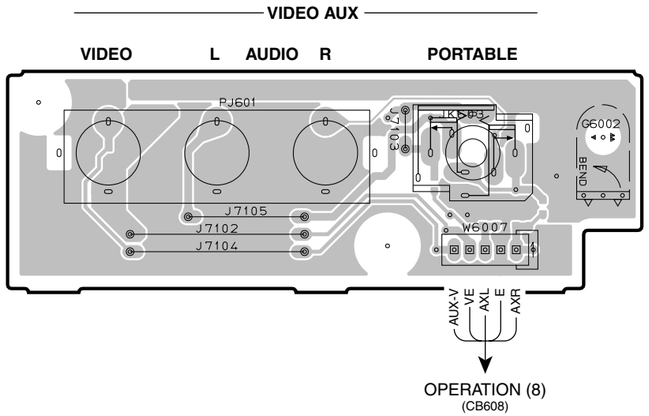
OPERATION (4) P.C.B. (Side B)

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



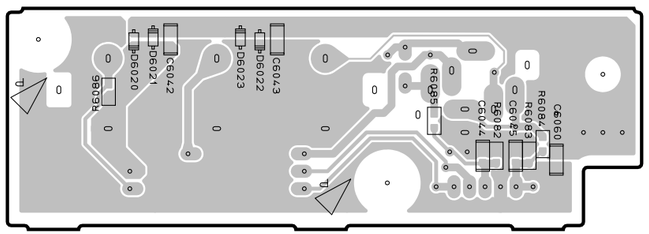
OPERATION (5) P.C.B. (Side A)

U, C models



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

U, C models

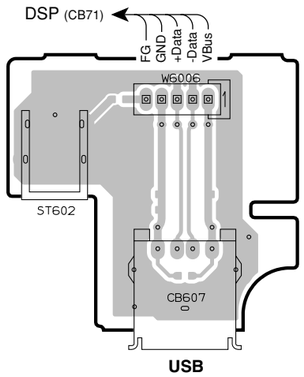


- **Semiconductor Location**

Ref no.	Location	Ref no.	Location
D6003	E2	D6023	F5
D6004	E2	D6024	I2
D6006	E2	D6025	I2
D6020	F5	D6026	I2
D6021	F5	D6027	I2
D6022	F5		

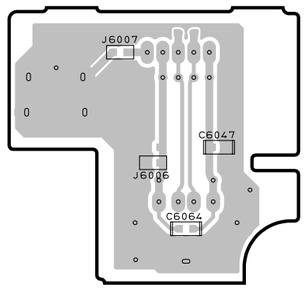
OPERATION (6) P.C.B. (Side A)

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

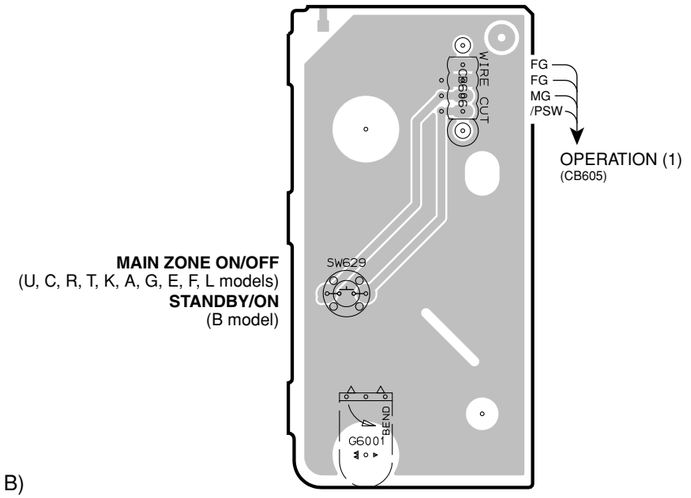


OPERATION (6) P.C.B. (Side B)

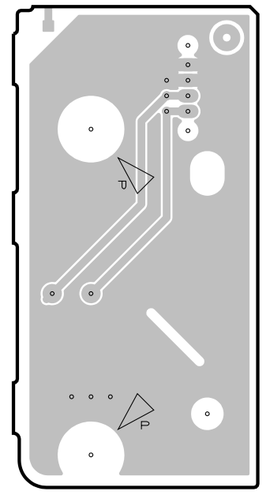
R, T, K, A, B, G, E, F, L models



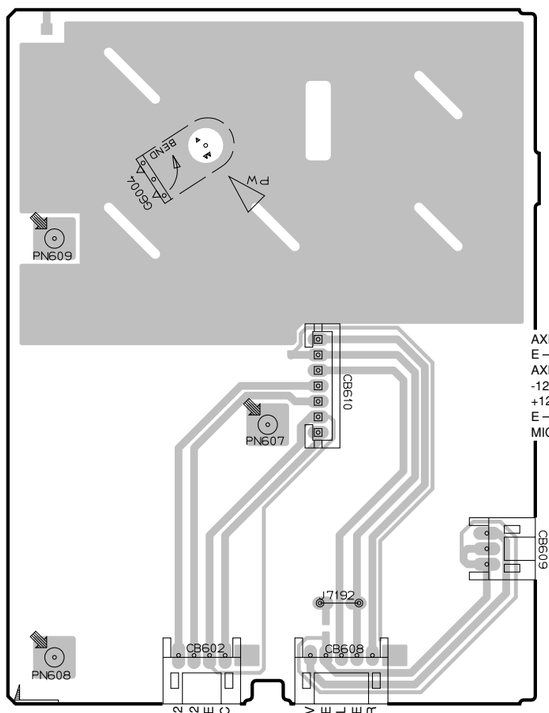
OPERATION (7) P.C.B. (Side A)



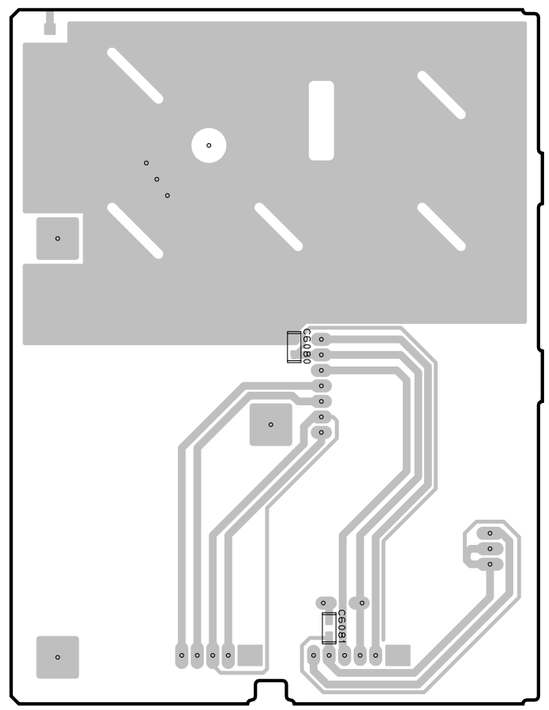
OPERATION (7) P.C.B. (Side B)



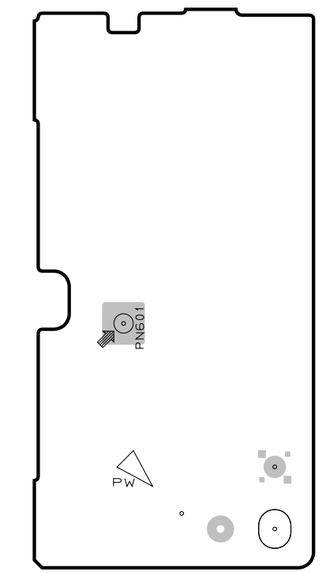
OPERATION (8) P.C.B. (Side A)



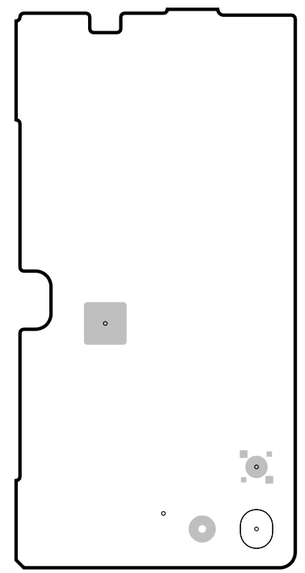
OPERATION (8) P.C.B. (Side B)



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



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

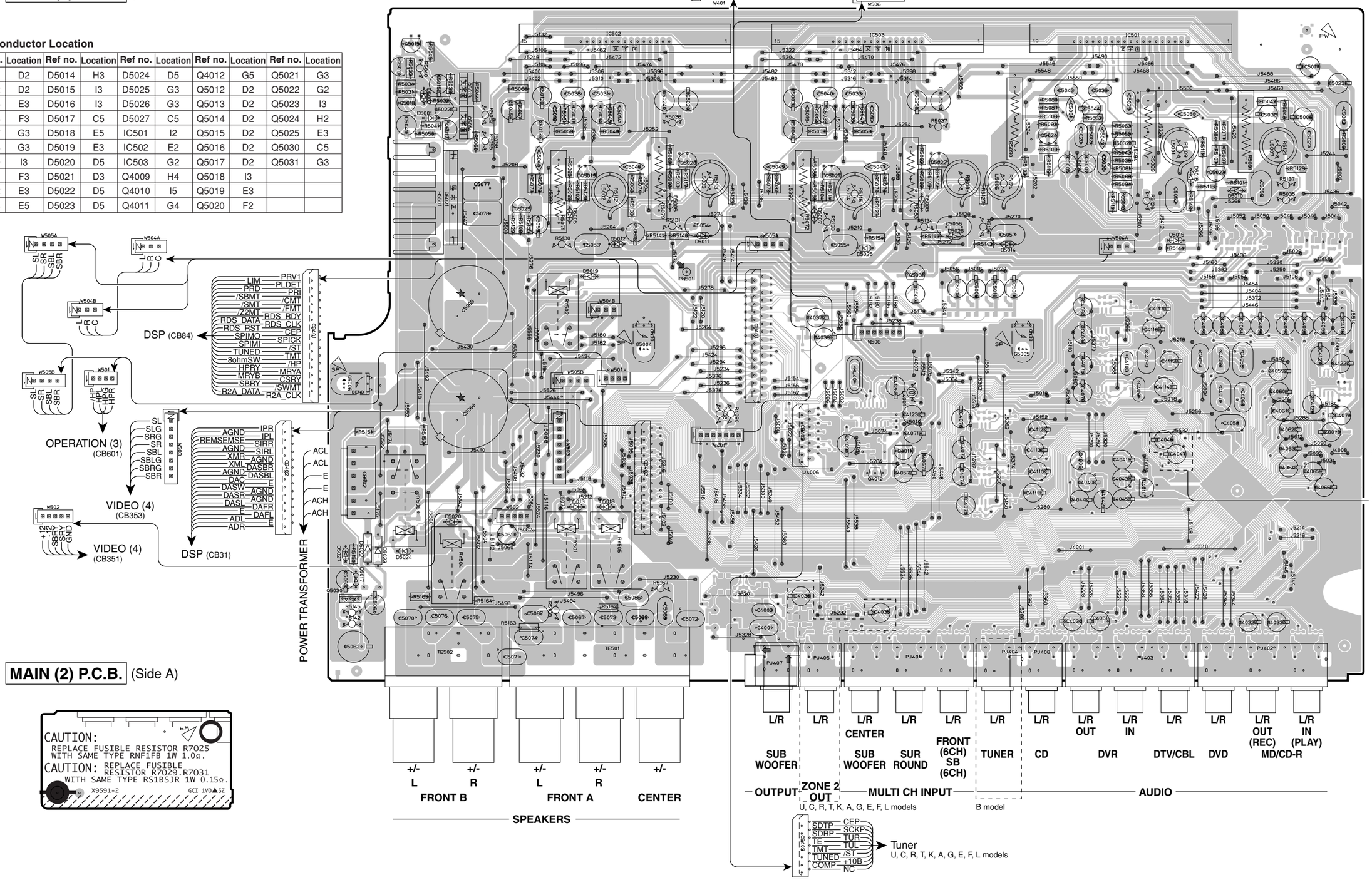


Circuit No.	U, C, R, T, K, A, L	G, E, F	B
C4037	O	O	X
C4109, 4123, 4126	X	O	X
Q4012	X	O	X
L4001	X	O	X
XL401	X	O	X

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

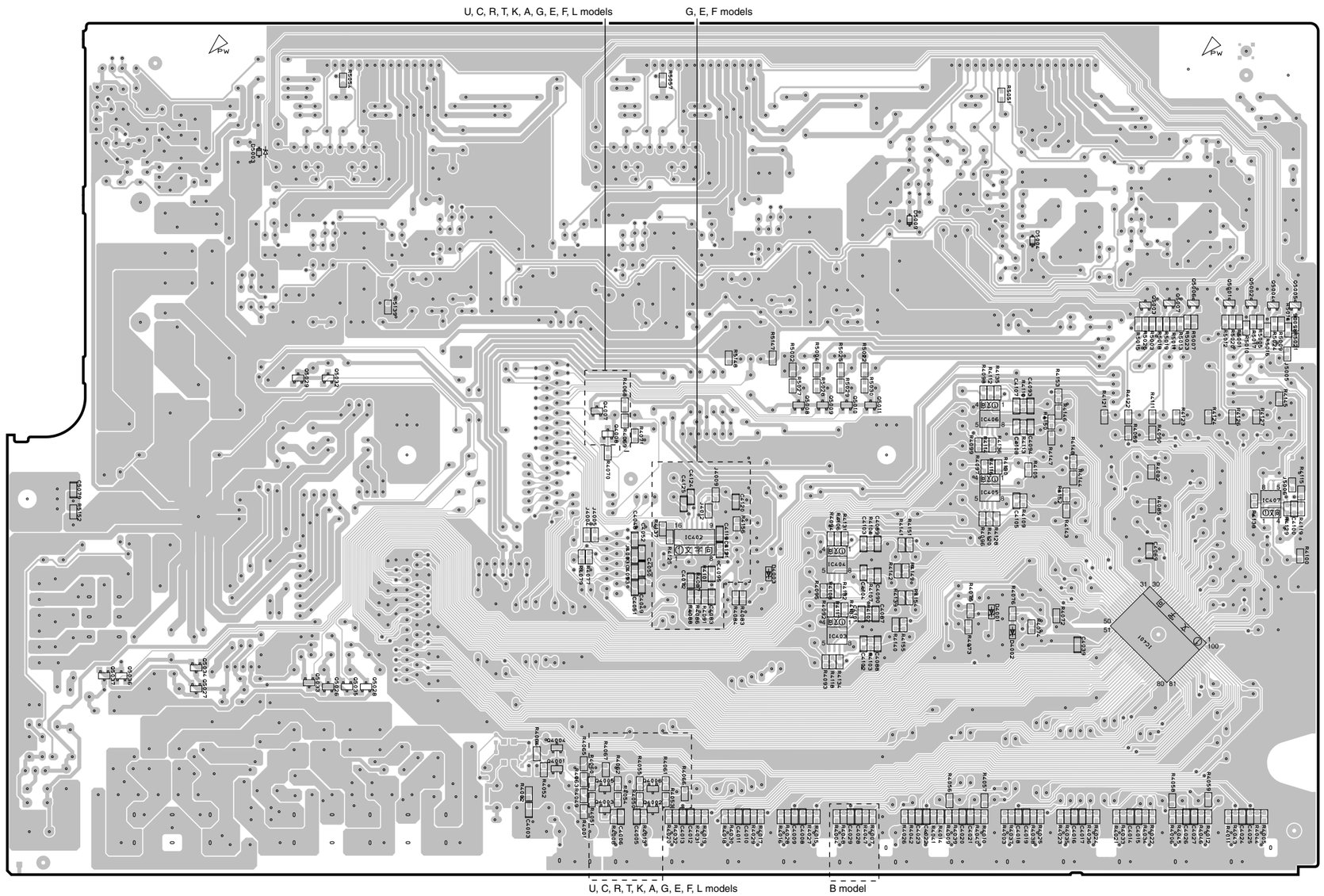
- **Semiconductor Location**

Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location
D5001	D2	D5014	H3	D5024	D5	Q4012	G5	Q5021	G3
D5002	D2	D5015	I3	D5025	G3	Q5012	D2	Q5022	G2
D5005	E3	D5016	I3	D5026	G3	Q5013	D2	Q5023	I3
D5006	F3	D5017	C5	D5027	C5	Q5014	D2	Q5024	H2
D5007	G3	D5018	E5	IC501	I2	Q5015	D2	Q5025	E3
D5008	G3	D5019	E3	IC502	E2	Q5016	D2	Q5030	C5
D5010	I3	D5020	D5	IC503	G2	Q5017	D2	Q5031	G3
D5011	F3	D5021	D3	Q4009	H4	Q5018	I3		
D5012	E3	D5022	D5	Q4010	I5	Q5019	E3		
D5013	E5	D5023	D5	Q4011	G4	Q5020	F2		



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

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

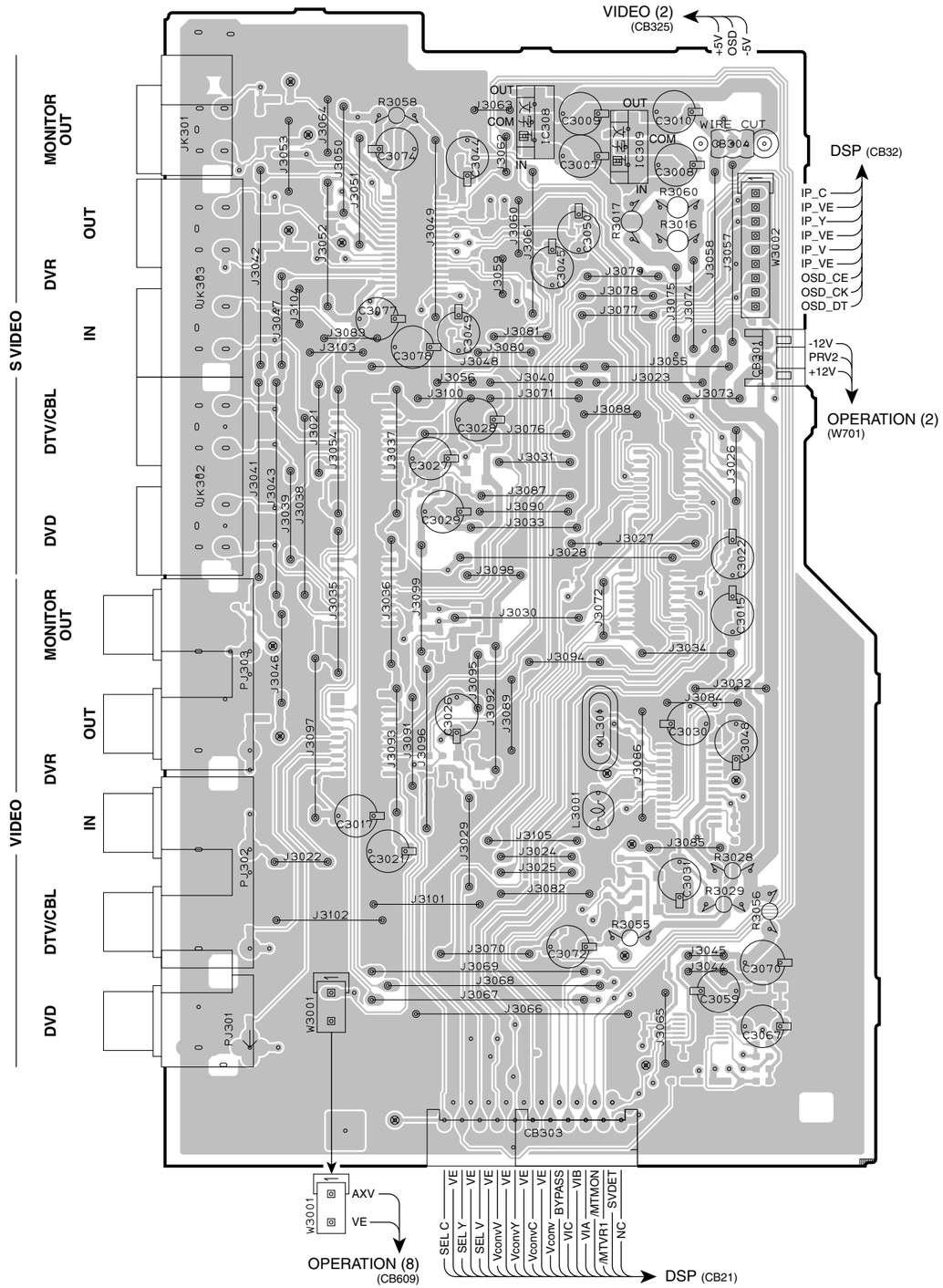


MAIN (2) P.C.B. (Side B)

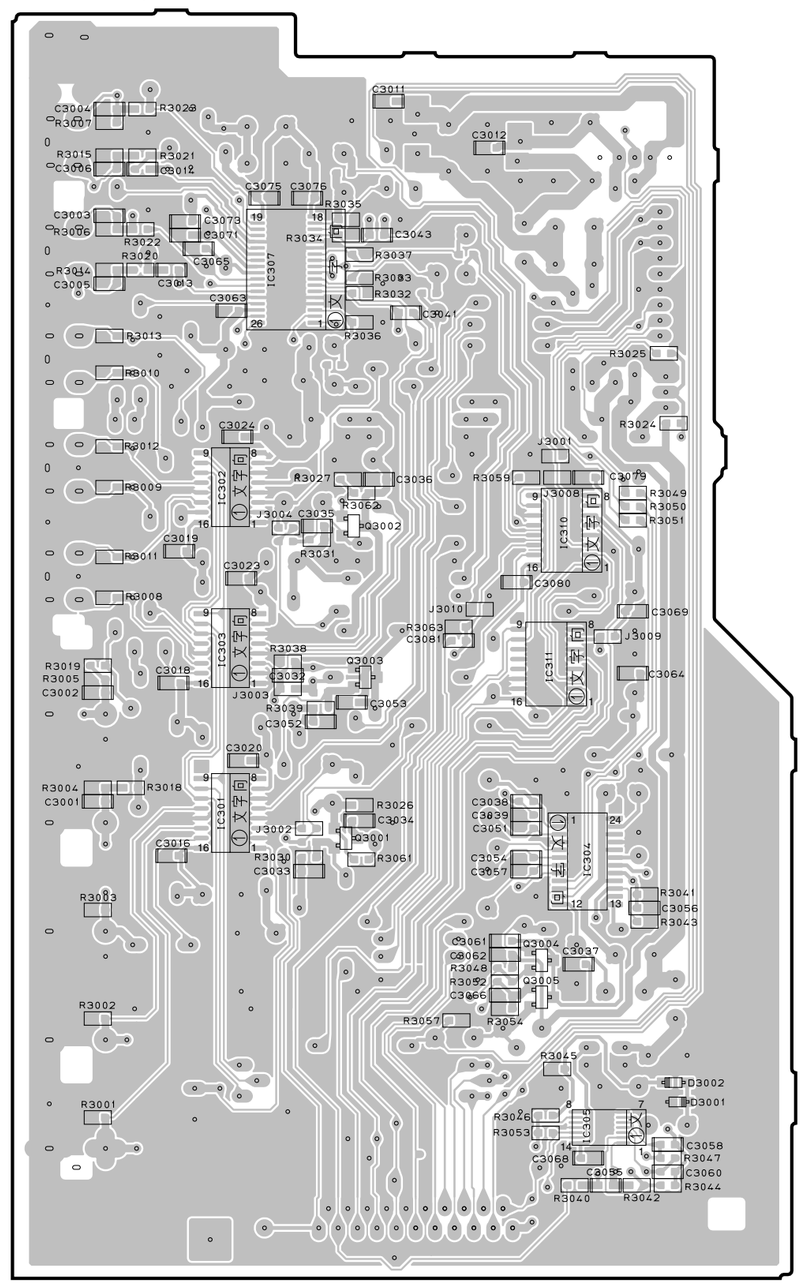
- **Semiconductor Location**

Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location
D4001	H5	IC404	G4	Q4006	F5	Q5007	H3	Q5032	D3
D4002	H5	IC405	H4	Q4007	E3	Q5008	G3	Q5033	D5
D4003	F4	IC406	H3	Q4008	E4	Q5009	G3	Q5034	C5
D5003	D2	IC407	I4	Q5001	I3	Q5010	G3	Q5035	D5
D5004	H3	Q4001	E5	Q5002	I3	Q5011	G3	Q5036	C5
D5009	G2	Q4002	F6	Q5003	H3	Q5026	D5	Q5037	C5
IC401	H5	Q4003	E6	Q5004	I3	Q5027	C5		
IC402	F4	Q4004	E5	Q5005	I3	Q5028	D5		
IC403	G5	Q4005	E5	Q5006	I3	Q5029	D3		

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



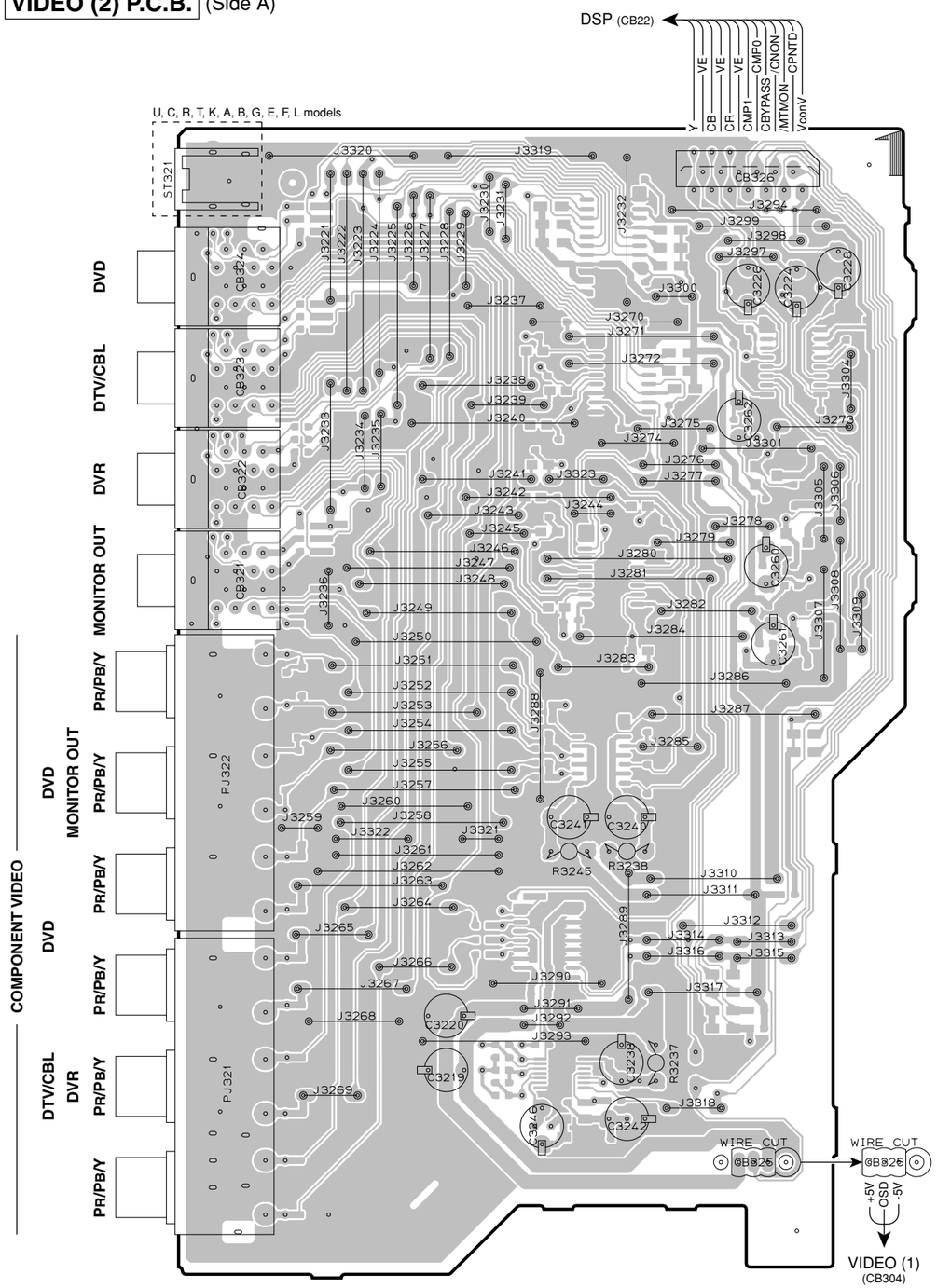
VIDEO (1) P.C.B. (Side B)



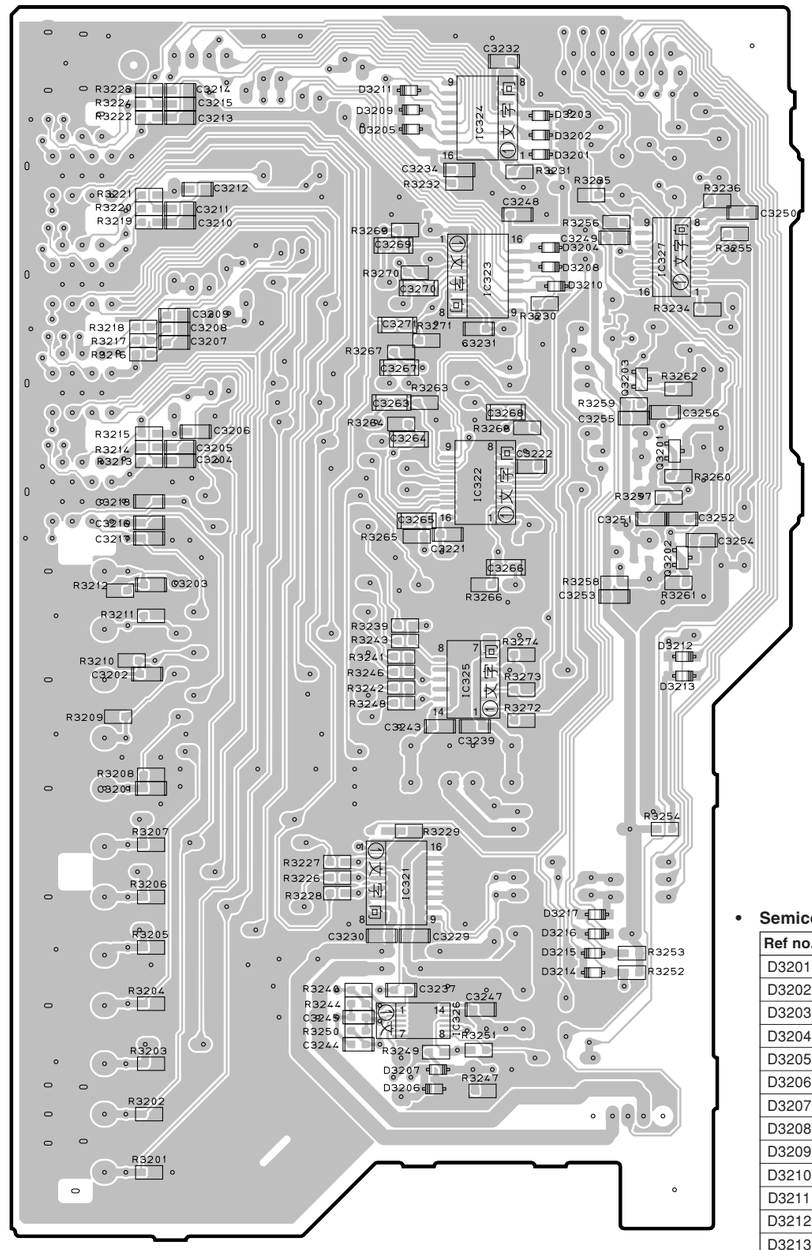
- **Semiconductor Location**

Ref no.	Location
D3001	I6
D3002	I6
IC301	G5
IC302	G3
IC303	G4
IC304	H5
IC305	I6
IC307	G2
IC308	D2
IC309	D2
IC310	H4
IC311	H4
Q3001	G5
Q3002	G3
Q3003	H4
Q3004	H5
Q3005	H5

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



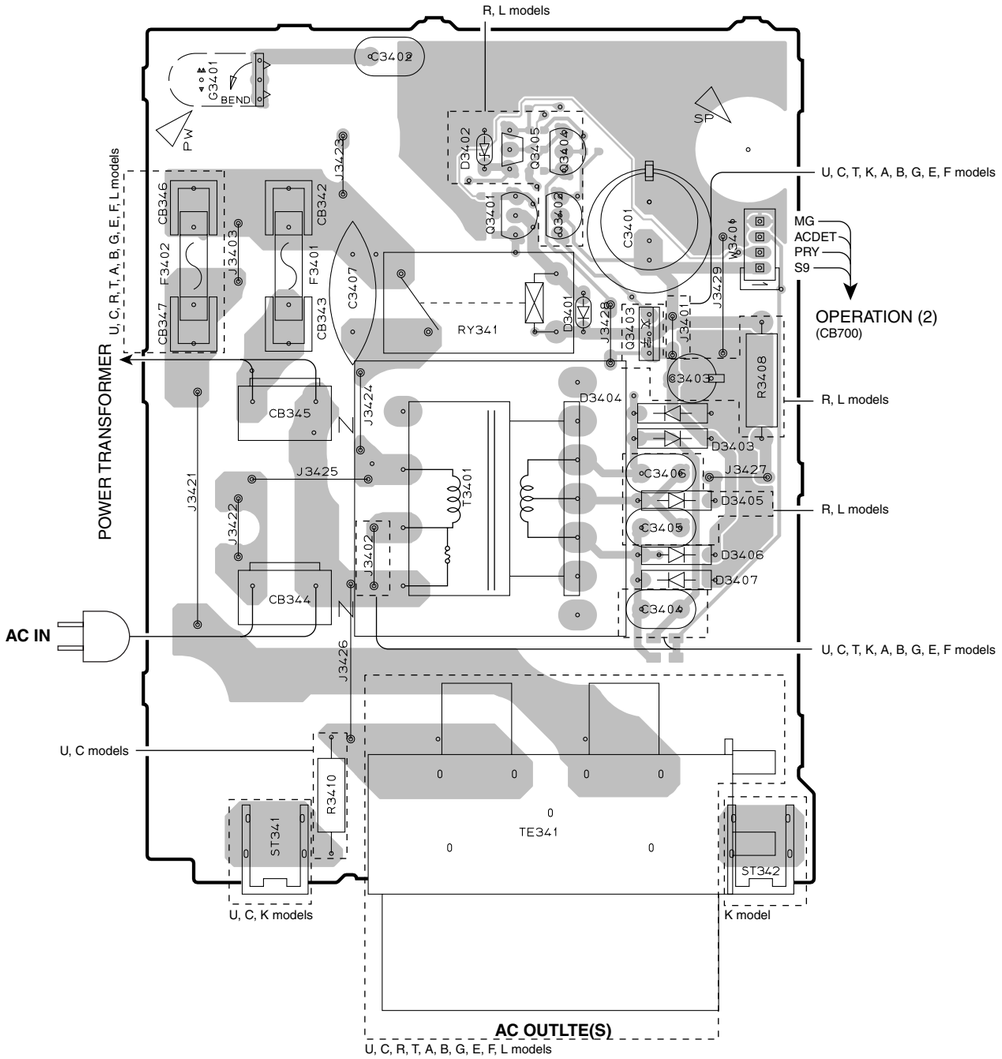
VIDEO (2) P.C.B. (Side B)



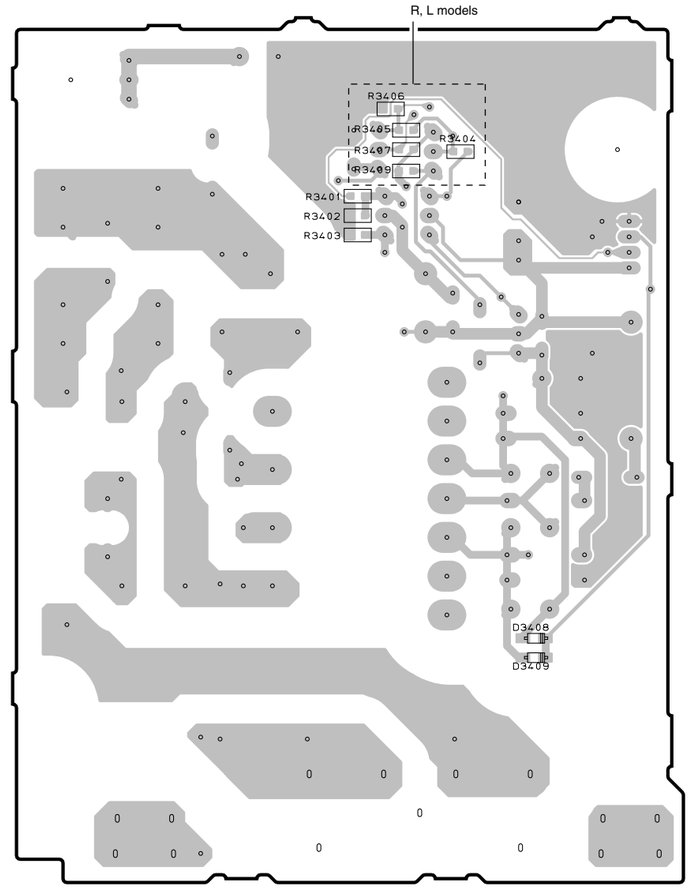
- **Semiconductor Location**

Ref no.	Location	Ref no.	Location
D3201	H2	D3215	I6
D3202	H2	D3216	I6
D3203	H2	D3217	I6
D3204	H3	IC321	H6
D3205	H2	IC322	H4
D3206	H6	IC323	H3
D3207	H6	IC324	H2
D3208	H3	IC325	H5
D3209	H2	IC326	H6
D3210	H3	IC327	I3
D3211	H2	Q3201	I4
D3212	I5	Q3202	I4
D3213	I5	Q3203	I3
D3214	I6		

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



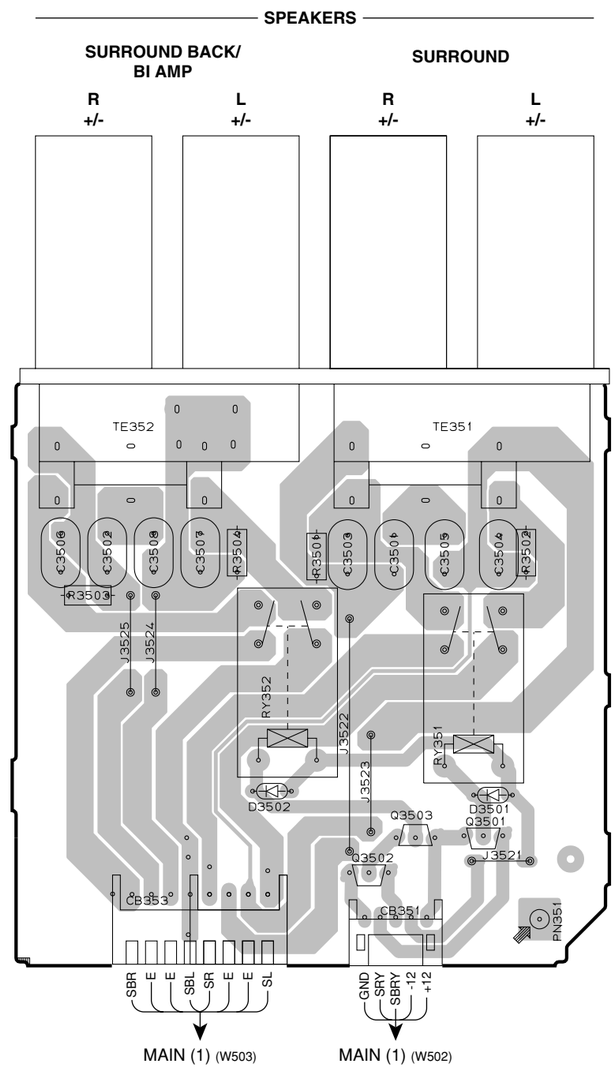
VIDEO (3) P.C.B. (Side B)



- **Semiconductor Location**

Ref no.	Location	Ref no.	Location
D3401	D3	D3408	H5
D3402	C2	D3409	H5
D3403	D4	Q3401	C3
D3404	D4	Q3402	D3
D3405	D4	Q3403	D3
D3406	D4	Q3404	D2
D3407	D4	Q3405	C2

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

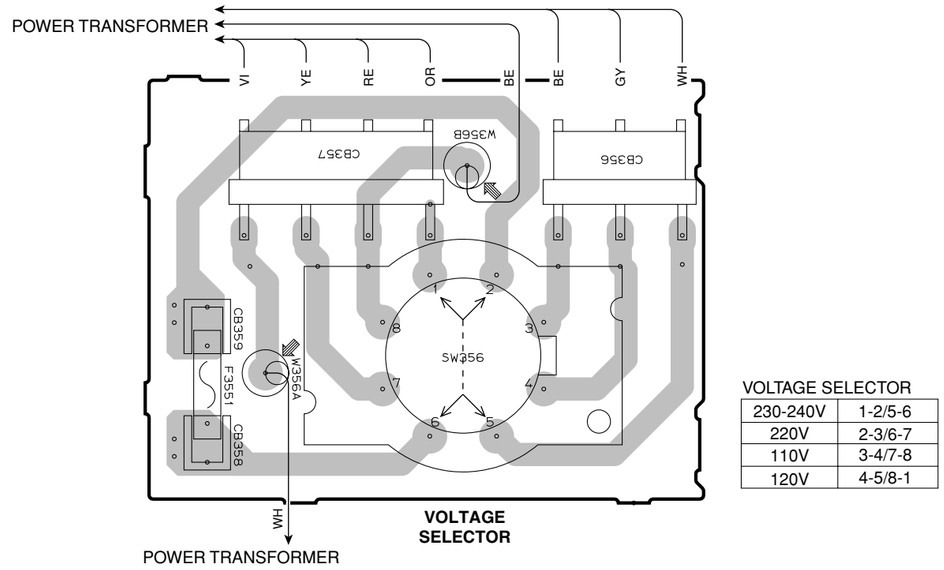


- **Semiconductor Location**

Ref no.	Location
D3501	D5
D3502	C5
D3651	H5
D3652	I5
Q3501	D5
Q3502	C6
Q3503	C5

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

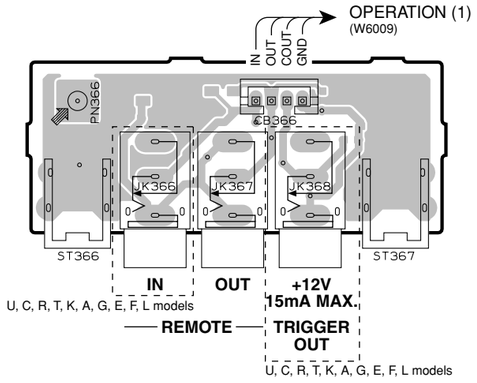
R, L models



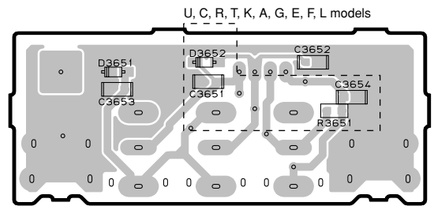
VOLTAGE SELECTOR

230-240V	1-2/5-6
220V	2-3/6-7
110V	3-4/7-8
120V	4-5/8-1

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



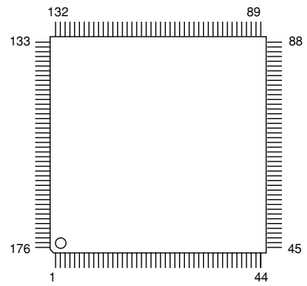
VIDEO (6) P.C.B. (Side B)



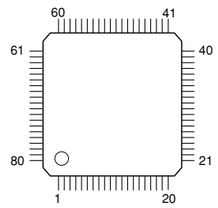
■ PIN CONNECTION DIAGRAMS

ICs

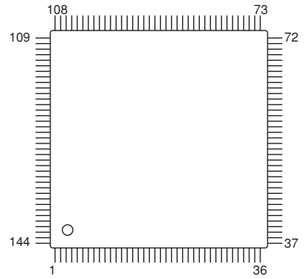
AD91089ZSKBC



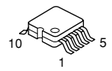
AD9389BBSTZ-165



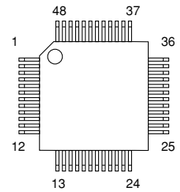
ADV7441ABSTZ-170



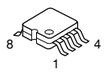
ADC084S021 CIMM



ADV7172KST



BR25L320F-W EEPROM



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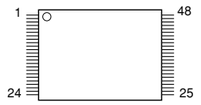

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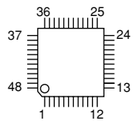

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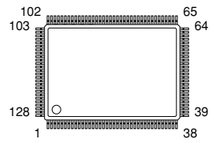

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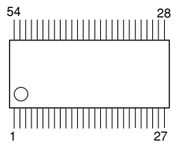

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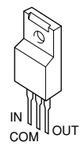
KIA7812API



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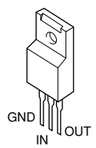

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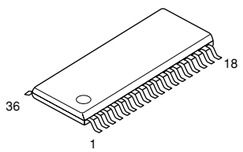

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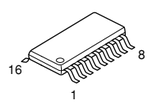
MM74HC4053SJX
SN74LV123APWR
PCM1781DBQR



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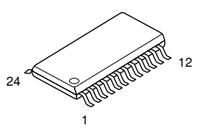

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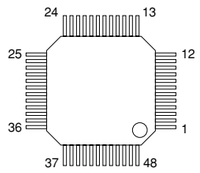
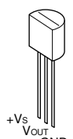


LM61CIZ



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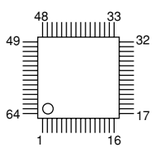

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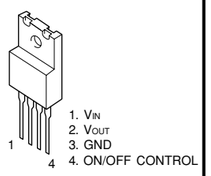

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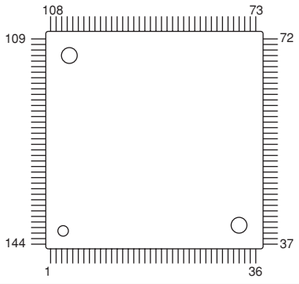
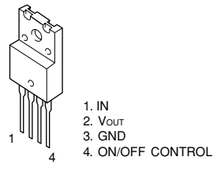
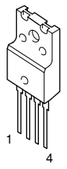


NJM2388F63



NJM2396F33



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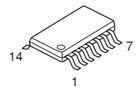

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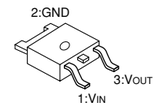

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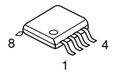

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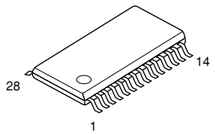

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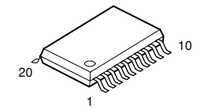

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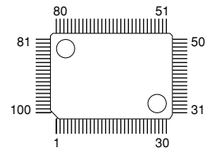

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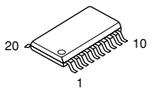
SN74LV574APWR 8D-F



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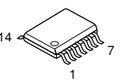
SN74LVC32APW



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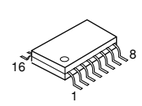

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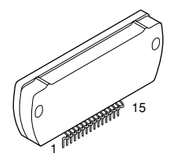

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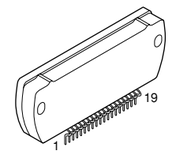

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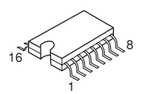
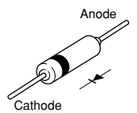
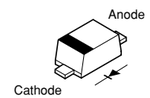


Diodes

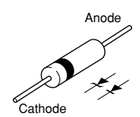
1SS133
1SS176
1SS270A
MTZJ4.7A
MTZJ16A



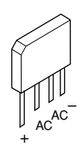
1SS355
MA8075-H 7.7V
MA8100-H 10.3V
RB500V-40
UDZ3.6BTE-17 3.6V
UDZ5.1B
UDZS3.3BTE-17 3.3V
UDZS9.1B



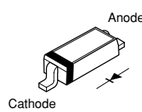
1T2



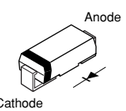
KBP103G 1.0A 200V



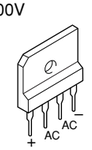
KDS160-RTK



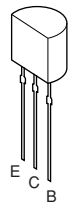
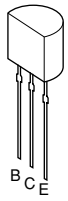
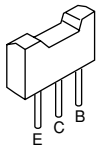
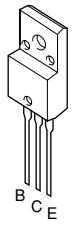
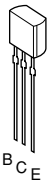
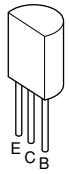
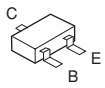
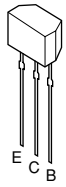
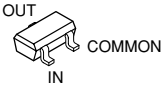
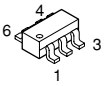
RB160L-40 TE25



RS403M
TS6P03G 6.0A 200V



Transistors

2N5401C-AT/P 2SA1015-Y 2SC2705 	2N5551C-AT 	2SA1037K 	2SA1708 	2SB1274 	2SC1740S 	2SC1815 Y 
2SC2412K 	2SC3326-A (TE85R, F) 2SC3326-B (TE85R, F) 2SC4081 T106 2SD1938F 	DTA143EKA DTC114EKA  1: GND 2: IN 3: OUT	KRA102M-AT/P KRC102M-AT 	KRA102S-RTK/P KRA104S-RTK KRC102S-RTK KRC104S-RTK 	RTQ040P02  1. Drain 2. Drain 3. Gate 4. Source 5. Drain 6. Drain	

MEMO

■ SCHEMATIC DIAGRAMS
DSP 1/8

HDMI

OUT | DTX/CBL | DVD

HDMI Tx | HDMI Rx2 | HDMI Rx1

IC12: ADV7441ABSTZ-170
10-bit, integrated, multiformat SDTV/HDTV video decoder, RGB graphic digitizer, and 2:1 multiplexed HDMI/DVI interface

IC11: AD9389BBSTZ-165
High performance HDMI/DVI transmitter

IC13: NJM2867F3-05
Low dropout voltage regulator

HDMI TX

HDMI Tx

IC11

AD9389BBSTZ-165

No replacement part available.

HDMI RX VIDEO DECODER

HDMI Rx
Video Decoder

IC12

ADV7441ABSTZ-17

No replacement part available.

Interchangeable Parts at Manufacturer-Stage

Mark	Reference Parts Number	Parts Name
k2	D112	1SS355
		MA2J1110GL

RESISTOR

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

CAPACITOR

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

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

POINT (A-1) XL101 (Pin 65 of IC12)

★ 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.

DSP 2/8

	RX-V563	RX-V463
J216	mount	no mount
J217	no mount	mount

to DSP 6/8 (Sht.6 NPGA)/HDMI_RX_INT2
to DSP 6/8 (Sht.6 NPGA) /ENC_RST
to DSP 1/8 (Sht.1 HDMI RX) HDMI_RX_LLC
to DSP 1/8 (Sht.1 HDMI RX) ADV_P[12-19]

VIDEO ENCODER
Video Encoder
IC21
ADV7172KSTZ

to DSP 1/8 (Sht.1 HDMI RX) HDMI_HSYNC, HDMI_VSYNC

to DSP 1/8 (Sht.1 HDMI RX) AD_IN_SC, AD_IN_SY, AD_IN_CVBS

to DSP 6/8 (Sht.6 NPGA) 5VIDEO_VCONV
to DSP 6/8 (Sht.6 LogicIC) 5VIDEO_BYPASS
to DSP 5/8 (Sht.5 EXT PORT) 5VIDEO_VIC
to DSP 5/8 (Sht.5 EXT PORT) 5VIDEO_VIB
to DSP 5/8 (Sht.5 EXT PORT) 5VIDEO_VIA
to DSP 5/8 (Sht.5 EXT PORT) /5VIDEO_MTMON
to DSP 5/8 (Sht.5 EXT PORT) /VIDEO_MTVR1
to DSP 6/8 (Sht.6 NPGA) 5VIDEO_SVDET

PCB CVBS
CB21
52045
SEL_C, SEL_Y, SEL_V, Vconvv, Vconvy, Vconvc, Vconv, BYPASS, VIC, VIB, VIA, /MTMON, /MTVR1, SVDET, NC

Page 95 K4
to VIDEO (1)_CB303

to DSP 5/8 (Sht.5 EXT PORT) 5VIDEO_CMP1
to DSP 5/8 (Sht.5 EXT PORT) 5VIDEO_CMP0
to DSP 5/8 (Sht.5 EXT PORT) 5VIDEO_CBYPASS
to DSP 5/8 (Sht.5 EXT PORT) /5VIDEO_CNON
to DSP 6/8 (Sht.6 NPGA) 5VIDEO_CPNTD

PCB COMP
CB22
52045
Y, Pb, Pr, CMP1, CMP0, CBYPASS, /CNON, /MTMON, CPNTD, Vconv

Page 96 D1
to VIDEO (2)_CB326

NPGA_I2C0_SDA, NPGA_I2C0_SCL (Sht.6 NPGA) to DSP 6/8

to DSP 1/8 (Sht.1 HDMI RX) +3.3H, ENC_3.3V
L201 PZ2012U600-3R0T
ENC_3.3V (1005 size)

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
&2	D201	1SS355
		MA2J1110GL

to DSP 1/8 (Sht.1 HDMI RX) +3.3H
L202 PZ2012U600-3R0T
D201 1SS355
IC22 NJM2845DL1-18(T
J215 (2125) RX_1.8V (Sht.1) to DSP 1/8 (233mA)
D203 no_use
IC23 no_use
J205 (2125)
J206 no_use (2125) TX_1.8V (Sht.1) to DSP 1/8 (284mA)

RESISTOR

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

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⫷
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	⫴
◉	CERAMIC TUBULAR CAPACITOR	
◎	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
Ⓘ	MICA CAPACITOR	
ⓟ	POLYPROPYLENE FILM CAPACITOR	
ⓒ	SEMICONDUCTIVE CERAMIC CAPACITOR	

NOTICE (mode)
(J)····· JAPAN
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(A)····· AUSTRALIA
(B)····· BRITISH
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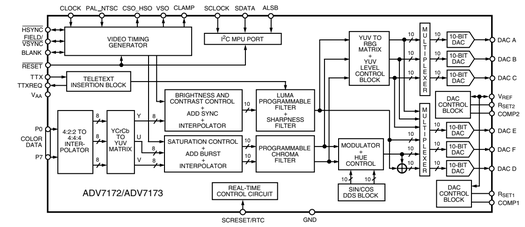
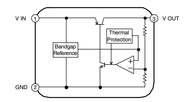
(L)····· SINGAPORE
(E)····· SOUTH EUROPE
(V)····· TAIWAN
(F)····· RUSSIAN

★ 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.

IC21: ADV7172KSTZ
Digital PAL/NTSC video encoder



IC22: NJM2845DL1-18
Low dropout voltage regulator



DSP 3/8

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
⊗	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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(G)..... EUROPE
(L)..... SINGAPORE
(E)..... SOUTH EUROPE
(V)..... TAIWAN
(F)..... RUSSIAN

No replacement part available.

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
k2	0305-306	1SS355
		MA2J1110GL

Destination Part List

SAX	LOC	J	UC	R	TA	X	B	GEF	L
s301	C353	x	US06316 1000P(B)	x	x	x	x	x	x
s302	C350 C351 C352 C361 C362 C363 C364 C365	x	US06222 220P(SL)	x	x	x	x	x	x
s303	C1313 C1314 C1312 C1311 C1310 C1317 C1318 C1304 C1316 C1315	x	US13510 0.1/16	x	x	x	x	x	x
s304	C1302 C1303 C1301	x	US03510 0.1/16	x	x	x	x	x	x
s305	C1305	x	US06310 1000P(B)	x	x	x	x	x	x
s306	C1306 C1307	x	US06110 10P(CH)	x	x	x	x	x	x
s307	C1309 C1308	x	UB44610 1/16	x	x	x	x	x	x
s308	C835	x	WJ45870 CAM-C960544024B	x	x	x	x	x	x
s309	D1303 D1302 D1301	x	WJ58630 SDV160B+100C050	x	x	x	x	x	x
s310	IC36	x	XB192A0 F2621E-01-TR	x	x	x	x	x	x
s311	JK31	x	YV26950 MD-SB130-90	x	x	x	x	x	x
s312	L1301	x	WD53720 PZ2012U600-3R0T	x	x	x	x	x	x
s313	Q301	x	YV8520 DTA143EKA	x	x	x	x	x	x
s314	R1312 R1313 R353 R354 R1316 R1311 R1310 R1305 R1317 R1309	x	RD35433 33	x	x	x	x	x	x
s315	R364 R1307 R354 R1303 R356 R1304	x	RD35610 100	x	x	x	x	x	x
s316	R356	x	RD35410 10	x	x	x	x	x	x
s317	R357 R1305 R1318	x	RD35810 100K	x	x	x	x	x	x
s318	R1322 R361 R1321	x	RD35647 4.7K	x	x	x	x	x	x
s319	R1302 R1301	x	RD35610 1K	x	x	x	x	x	x
s320	R1308	x	RD35633 3.3K	x	x	x	x	x	x
s321	R1315 R1314	x	RD35847 470K	x	x	x	x	x	x
s322	ST31	x	WJ56800	x	x	x	x	x	x
s323	XL311	x	WH45530 45.1584MHZ	x	x	x	x	x	x
s331	R1319	x	HV75310 1	x	x	x	x	x	x
s332	L1302	x	WD53720 PZ2012U600-3R0T	x	x	x	x	x	x
s333	IC37	x	YJ37540 PCM1781DBQR	x	x	x	x	x	x
s334	C1318	x	UB23747 47/16	x	x	x	x	x	x
s335	C1319	x	US13510 0.1/16	x	x	x	x	x	x
s336	C1320	x	UR83710 10/16	x	x	x	x	x	x
s337	J312 J311	RD35000 0	x	RD35000 0	RD35000 0	RD35000 0	RD35000 0	RD35000 0	RD35000 0
s341	C344	US13510 0.1/16	x	US13510 0.1/16	US13510 0.1/16	US13510 0.1/16	US13510 0.1/16	US13510 0.1/16	US13510 0.1/16
s342	L302	WL62570 68UH	x	WL62570 68UH	WL62570 68UH	WL62570 68UH	WL62570 68UH	WL62570 68UH	WL62570 68UH
s343	U31	WH53690 GP1FAV51TK0F	x	WH53690 GP1FAV51TK0F	WH53690 GP1FAV51TK0F	WH53690 GP1FAV51TK0F	WH53690 GP1FAV51TK0F	WH53690 GP1FAV51TK0F	WH53690 GP1FAV51TK0F

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to VIDEO (1)_W3002

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to MAIN_CB402

DOCK
iPod

SIRIUS
Sirius

XM
XM

— DIGITAL OUTPUT —
MD/CD-R

— DIGITAL INPUT —
MD/CD-R
CD
DTV/CBL
(Writing port)
DVD

OPT OUT
OPT IN
SDCARD
COAX IN

XM DT
XM
IC36
F2621E-01-TR

DAC(XM)DAC
IC37

DAC
DAC

ADC
ADC
IC39

DIR
DIR
LC89057W-VF4AD-
IC31

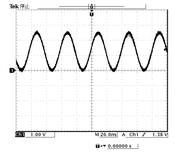
DIGITAL IN

Audio Clock Selector

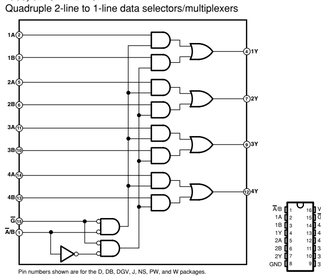
Direct Stereo Selector

SL/SR
FL/FR
SBL/SBR
SW/C

POINT (A-2) XL301 (Pin 29 of IC31)

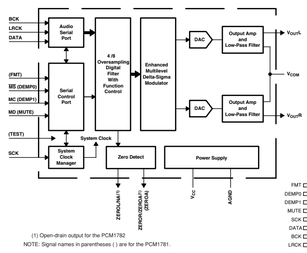


IC33, 34: SN74LV157APWR
Quadruple 2-line to 1-line data selectors/multiplexers



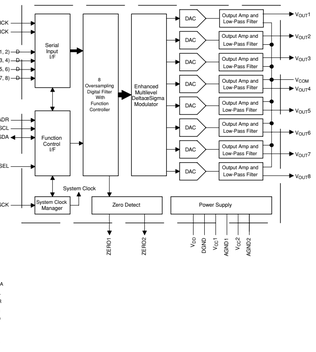
Pin numbers shown are for the D, DB, DGV, J, NS, PW, and W packages.

IC37: PCM1781DBQR
Audio digital-to-analog converter

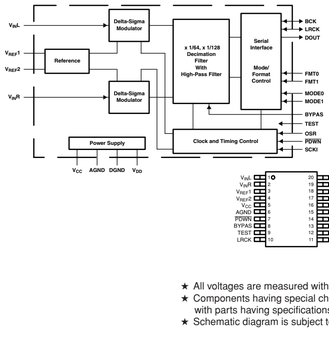


(1) Open-drain output for the PCM1782
NOTE: Signal names in parentheses ( ) are for the PCM1781.

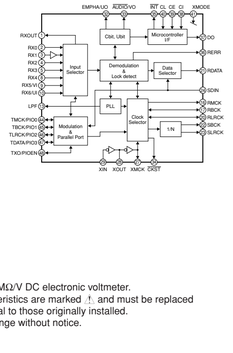
IC38 : PCM1680DBQR
Audio digital-to-analog converter



IC39: PCM1803DBR
Stereo A/D converter



IC31: LC89057W-VF4AD-E
Digital audio interface transceiver



★ 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.

DSP 4/8

Destination Part List

sXX	LOC	J	UC	R	TA	K	B	GEF	L	
s401	J404 J405 J402 J403	RD35000 0	X	RD35000 0	RD35000 0	RD35000 0	RD35000 0	RD35000 0	RD35000 0	XM
s402	R448	X	X	RD35433 33	RD35433 33	RD35433 33	RD35433 33	RD35433 33	RD35433 33	USB

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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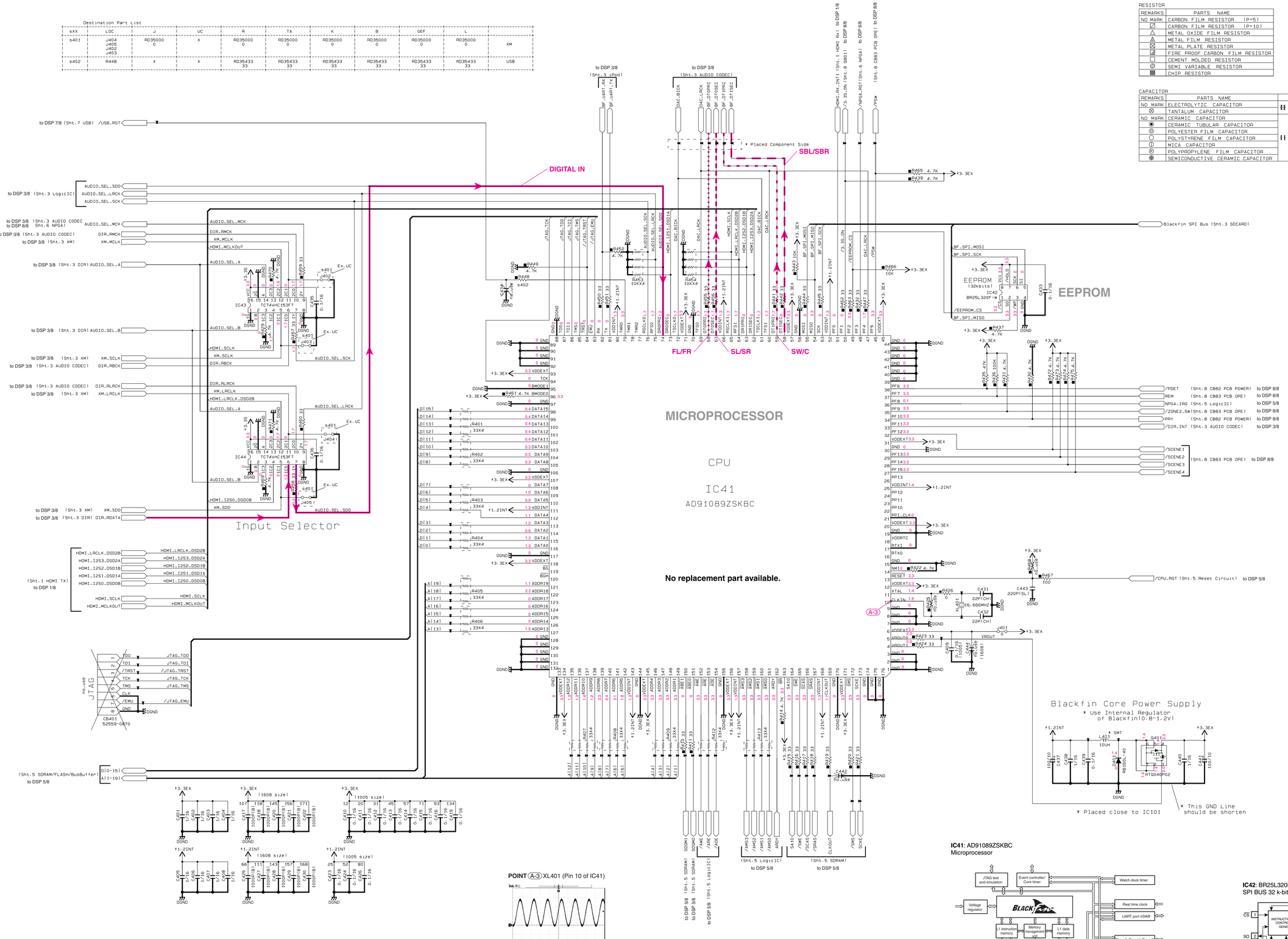
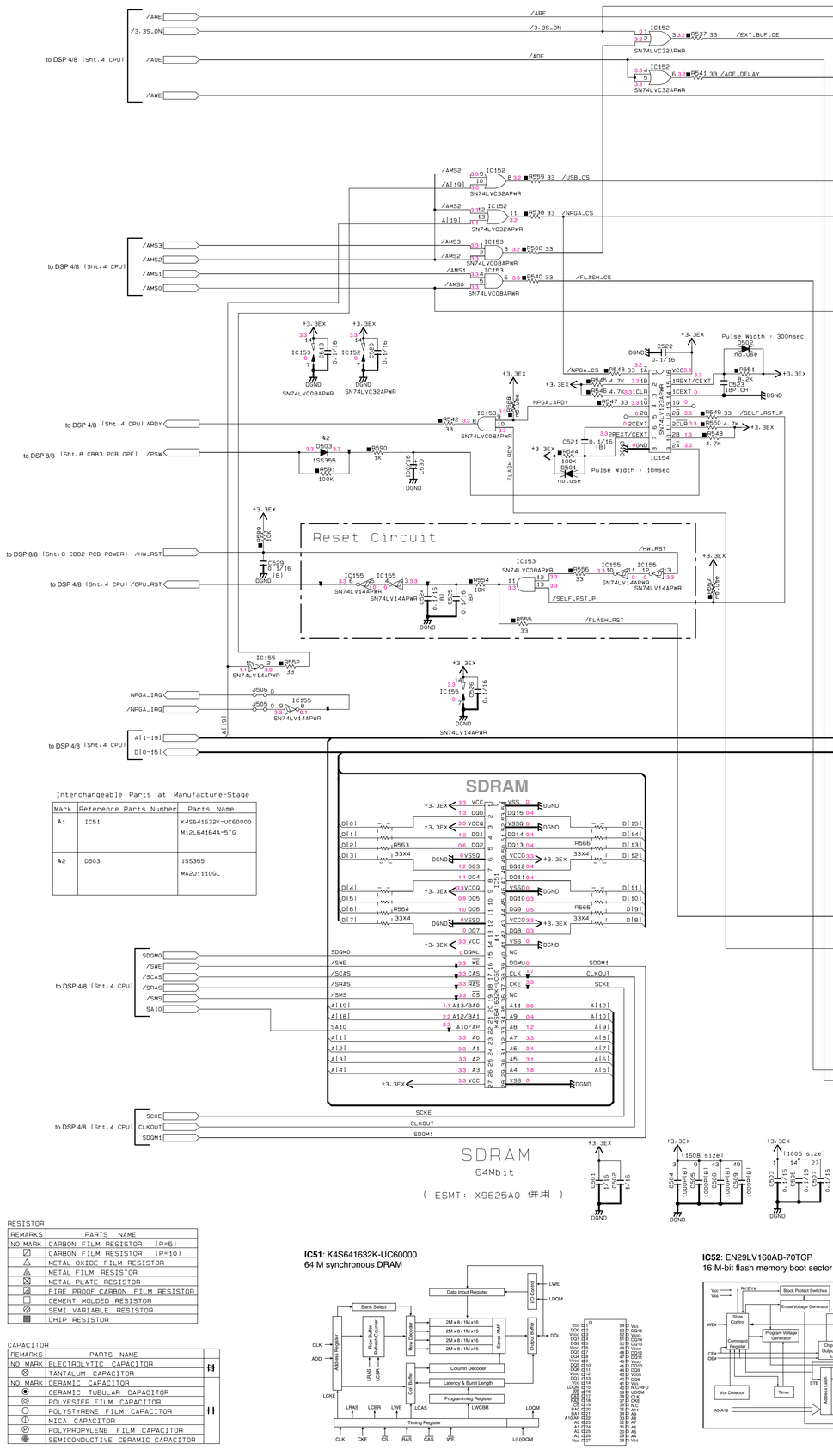


★ All voltages are measured with a 10MΩ/V DC electronic voltmeter.
★ Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
★ Schematic diagram is subject to change without notice.

DSP 5/8



NOTICE (model)
(J)····· JAPAN
(U)····· U.S.A
(C)····· CANADA
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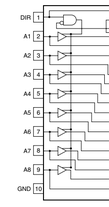
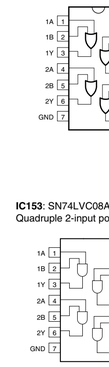
(V)····· TAIWAN
(F)····· RUSSIAN

IC53-55, 151: SN74LVC245APWR
Octal bus transceivers with 3-state outputs

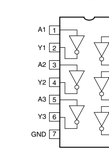


IC152: SN74LVC32APW
Quadruple 2-input positive-OR gates



IC153: SN74LVC08APWR
Quadruple 2-input positive-AND gate

IC155: SN74LV14APWR
Hex schmitt trigger inverters



RESISTOR

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

CAPACITOR

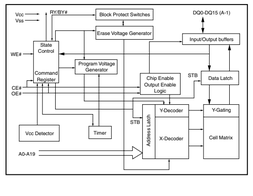
REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⊟
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	⊣⊢
◈	CERAMIC TUBULAR CAPACITOR	
◎	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
ⓘ	MICA CAPACITOR	
ⓟ	POLYPROPYLENE FILM CAPACITOR	
◉	SEMICONDUCTIVE CERAMIC CAPACITOR	

Interchangeable Parts at Manufacture-Stage

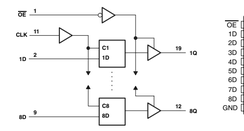
Mark	Reference Parts Number	Parts Name
&1	IC51	K4S641632K-UC60000 M12L64164A-5TG
&2	D503	1SS355 MA2J1110GL

IC51: K4S641632K-UC60000
64 M synchronous DRAM

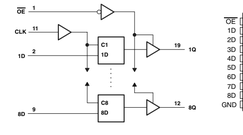
IC52: EN29LV160AB-70TCP
16 M-bit flash memory boot sector flash memory, CMOS 3.0 V-only



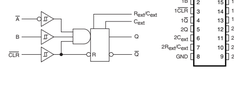
IC56: SN74AHCT574PWR
Octal edge-triggered D-type flip-flops with 3-state outputs



IC57-59: SN74LV574APWR 8D-F
Octal edge-triggered D-type flip-flops with 3-state outputs



IC154: SN74LV123APWR
Dual retriggerable monostable multivibrators with schmitt-trigger inputs



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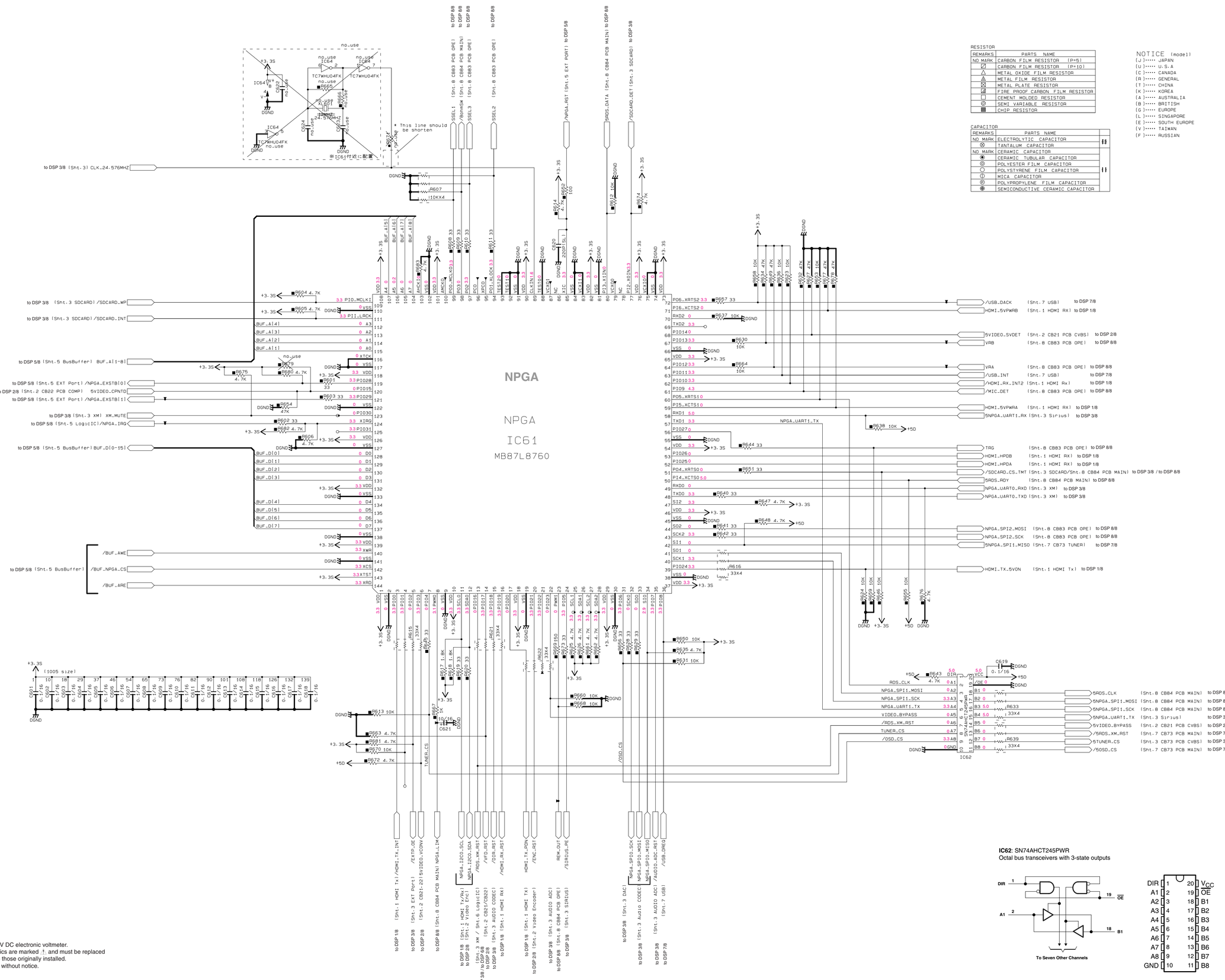
★ Components having special characteristics are marked ! and must be replaced with parts having specifications equal to those originally installed.
★ Schematic diagram is subject to change without notice.

DSP 6/8



★ 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.

DSP 7/8

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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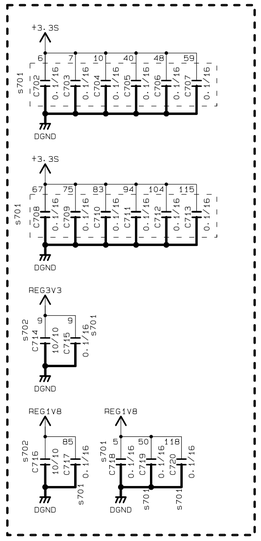
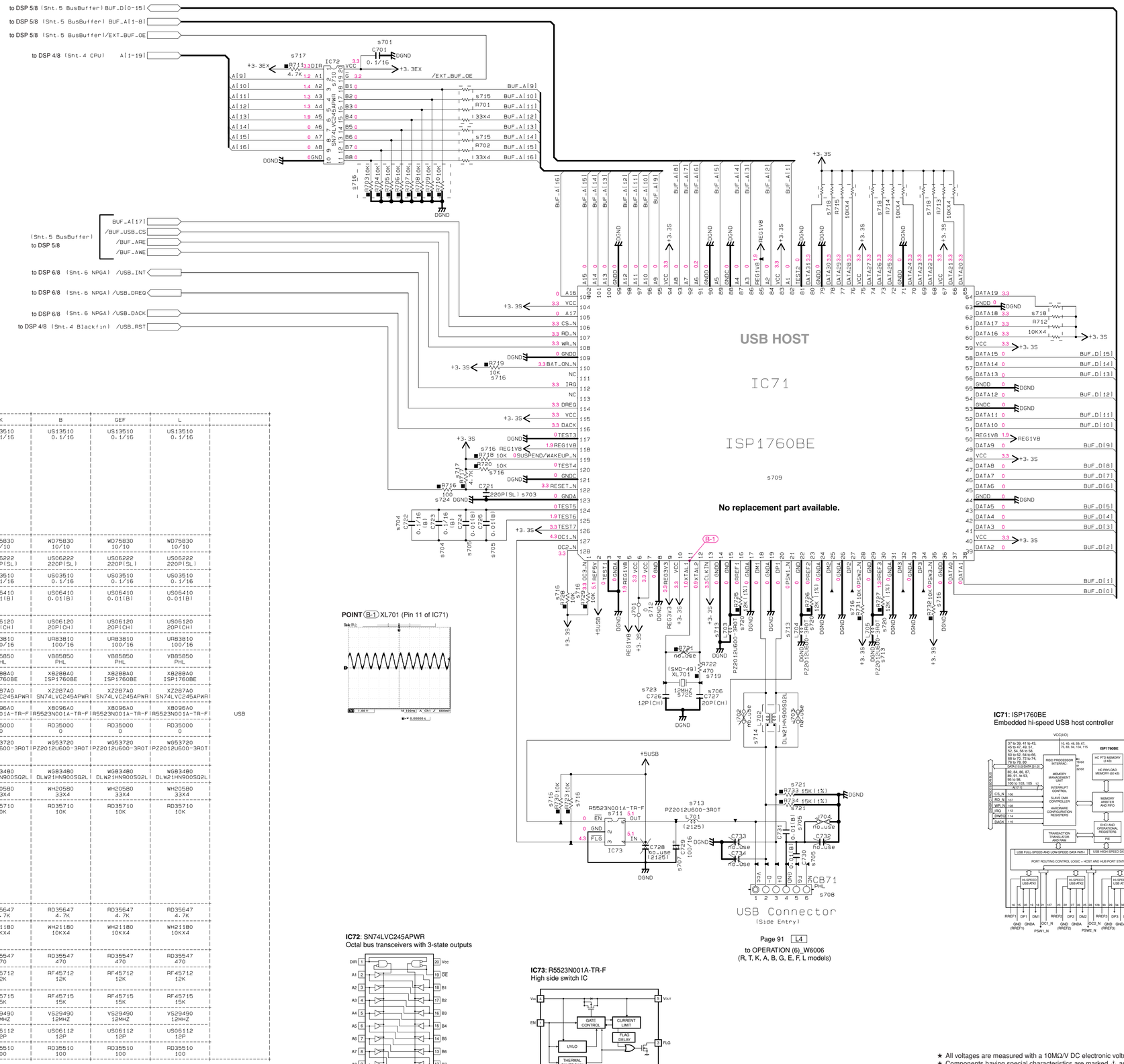


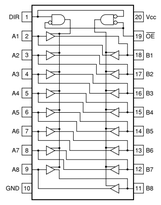
Destination Part List

sXX	LOC	J	UC	R	TA	K	B	GEF	L	
s701	C705 C707 C710 C711 C712 C713 C709 C706 C708 C703 C704 C701 C702 C717 C715 C718 C720 C719	X	X	US13510 0.1/16	US13510 0.1/16	US13510 0.1/16	US13510 0.1/16	US13510 0.1/16	US13510 0.1/16	
s702	C714 C716	X	X	WD75830 10/10	WD75830 10/10	WD75830 10/10	WD75830 10/10	WD75830 10/10	WD75830 10/10	
s703	C721	X	X	US06222 220P(SL)	US06222 220P(SL)	US06222 220P(SL)	US06222 220P(SL)	US06222 220P(SL)	US06222 220P(SL)	
s704	C722 C723	X	X	US03510 0.1/16	US03510 0.1/16	US03510 0.1/16	US03510 0.1/16	US03510 0.1/16	US03510 0.1/16	
s705	C731 C730 C725 C724	X	X	US06410 0.01(B)	US06410 0.01(B)	US06410 0.01(B)	US06410 0.01(B)	US06410 0.01(B)	US06410 0.01(B)	
s706	C727	X	X	US06120 20P(CH)	US06120 20P(CH)	US06120 20P(CH)	US06120 20P(CH)	US06120 20P(CH)	US06120 20P(CH)	
s707	C729	X	X	UR83810 100/16	UR83810 100/16	UR83810 100/16	UR83810 100/16	UR83810 100/16	UR83810 100/16	
s708	CB71	X	X	VB85850 PHL	VB85850 PHL	VB85850 PHL	VB85850 PHL	VB85850 PHL	VB85850 PHL	
s709	IC71	X	X	XB288A0 ISP1760BE	XB288A0 ISP1760BE	XB288A0 ISP1760BE	XB288A0 ISP1760BE	XB288A0 ISP1760BE	XB288A0 ISP1760BE	
s710	IC72	X	X	XZ287A0 SN74LVC245APWR	XZ287A0 SN74LVC245APWR	XZ287A0 SN74LVC245APWR	XZ287A0 SN74LVC245APWR	XZ287A0 SN74LVC245APWR	XZ287A0 SN74LVC245APWR	
s711	IC73	X	X	XB096A0 R5523N001A-TR-F	XB096A0 R5523N001A-TR-F	XB096A0 R5523N001A-TR-F	XB096A0 R5523N001A-TR-F	XB096A0 R5523N001A-TR-F	XB096A0 R5523N001A-TR-F	USB
s712	J701	X	X	RD35000 0	RD35000 0	RD35000 0	RD35000 0	RD35000 0	RD35000 0	
s713	L704 L703 L701 L705	X	X	WG53720 PZ2012U600-3R0T	WG53720 PZ2012U600-3R0T	WG53720 PZ2012U600-3R0T	WG53720 PZ2012U600-3R0T	WG53720 PZ2012U600-3R0T	WG53720 PZ2012U600-3R0T	
s714	L702	X	X	WG83480 DLW21HN900SQ2L	WG83480 DLW21HN900SQ2L	WG83480 DLW21HN900SQ2L	WG83480 DLW21HN900SQ2L	WG83480 DLW21HN900SQ2L	WG83480 DLW21HN900SQ2L	
s715	R702 R701	X	X	WH20580 33X4	WH20580 33X4	WH20580 33X4	WH20580 33X4	WH20580 33X4	WH20580 33X4	
s716	R718 R723 R720 R719 R728 R730 R706 R705 R704 R707 R729 R708 R732 R731 R709 R703 R710	X	X	RD35710 10K	RD35710 10K	RD35710 10K	RD35710 10K	RD35710 10K	RD35710 10K	
s717	R717 R711	X	X	RD35647 4.7K	RD35647 4.7K	RD35647 4.7K	RD35647 4.7K	RD35647 4.7K	RD35647 4.7K	
s718	R713 R715 R712 R714	X	X	WH21180 10KX4	WH21180 10KX4	WH21180 10KX4	WH21180 10KX4	WH21180 10KX4	WH21180 10KX4	
s719	R722	X	X	RD35547 470	RD35547 470	RD35547 470	RD35547 470	RD35547 470	RD35547 470	
s720	R727 R725 R726	X	X	RF45712 12K	RF45712 12K	RF45712 12K	RF45712 12K	RF45712 12K	RF45712 12K	
s721	R734 R733	X	X	RF45715 15K	RF45715 15K	RF45715 15K	RF45715 15K	RF45715 15K	RF45715 15K	
s722	XL701	X	X	VS29490 12MHZ	VS29490 12MHZ	VS29490 12MHZ	VS29490 12MHZ	VS29490 12MHZ	VS29490 12MHZ	
s723	C726	X	X	US06112 12P	US06112 12P	US06112 12P	US06112 12P	US06112 12P	US06112 12P	
s724	R716	X	X	RD35510 100	RD35510 100	RD35510 100	RD35510 100	RD35510 100	RD35510 100	

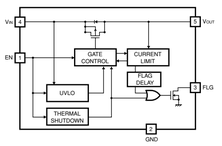


POINT (B-1) XL701 (Pin 11 of IC71)

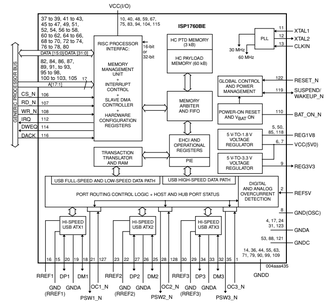
IC72: SN74LVC245APWR
Octal bus transceivers with 3-state outputs



IC73: R5523N001A-TR-F
High side switch IC



IC71: ISP1760BE
Embedded hi-speed USB host controller



★ 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.

DSP 8/8

Destination Part List

sXX	LOC	J	UC	R	TA	K	B	GEF	L	
s801	R825	RD35682 8.2K	RD35682 8.2K	RD35668 6.8K	RD35656 5.6K	RD35647 4.7K	RD35633 3.3K	RD35618 1.8K	RD35668 6.8K	DESTINATION DETECTION
s802	R826	RD35610 1K	RD35622 2.2K	RD35633 3.3K	RD35656 5.6K	RD35668 6.8K	RD35682 8.2K	RD35682 8.2K	RD35647 4.7K	

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
&2	D801,802	1SS355 MA2J1110GL

RESISTOR

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

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	
⦿	CERAMIC TUBULAR CAPACITOR	
◎	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	
⦶	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
⊜	SEMICONDUCTIVE CERAMIC CAPACITOR	

NOTICE (model)
(J)····· JAPAN
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(G)····· EUROPE
(L)····· SINGAPORE
(E)····· SOUTH EUROPE
(V)····· TAIWAN
(F)····· RUSSIAN

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

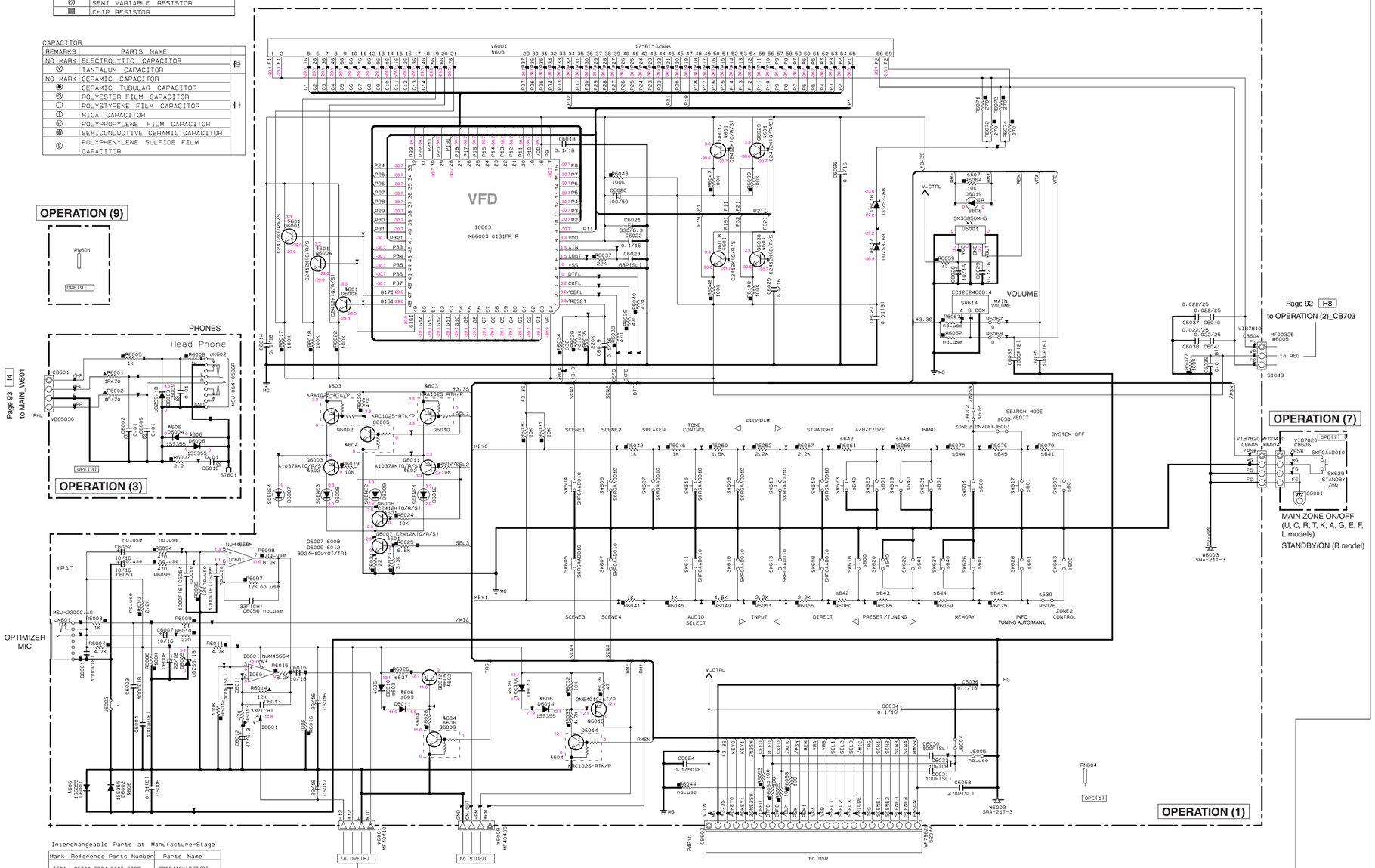
OPERATION 1/2

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	‖
	POLYPHENYLENE SULFIDE FILM CAPACITOR	‖



Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
¥601	Q601-604, 606-6008 6017, 6018, 6029, 6030	2SC2412K(Q/R/S) 2SD601AL/AQ(Q/R/S) KTC3875S-Y, GR-RTK/P
¥602	Q603, 611, 6012	2SA1037AK(Q/R/S) KTA1504S-Y, GR-RTK/P
¥603	Q6002, 6010	KRA102S-RTK/P DTA114EKA
¥604	Q6005, 6009, 6014	KRC102S-RTK/P DTC114EKA
¥605	V6001	17-BT-32GNK HNA-17MM06T
¥606	D6001, 6002, 6004, 6006 6010, 6011, 6013, 6014 6020, 6027	1SS355 MA2J111OGL

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(E)····· SOUTH EUROPE
(V)····· TAIWAN
(F)····· RUSSIAN

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

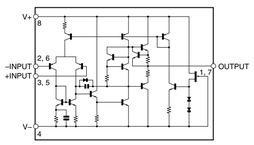
U, C, R, T, K, A, G, E, F, L models

Ohm	0	+ 1.0 k	+ 1.0 k	+ 1.5 k	+ 2.2 k	+ 2.2 k	+ 3.3 k	+ 4.7 k	+ 6.8 k	+ 10.0 k	+ 22.0 k
V	0-0.2	0.2-0.4	0.4-0.7	0.7-1.0	1.0-1.3	1.3-1.6	1.6-1.9	1.9-2.1	2.1-2.4	2.4-2.7	2.7-3.0
KEY INPUT 0 (7 pin)	–	SPEAKERS A/B/OFF	TONE CONTROL	PROGRAM <	PROGRAM >	STRAIGTH EFFECT	A/B/C/D/E	BAND	ZONE2 ON/OFF	EDIT PRESET/ TUNING	SYSTEM OFF
KEY INPUT 1 (6 pin)	–	–	AUDIO SELECT	INPUT >	INPUT <	DIRECT	PRESET/ TUNING <	PRESET/ TUNING >	MEMORY	INFO TUNING AUTO/ MANL	ZONE CONTROL

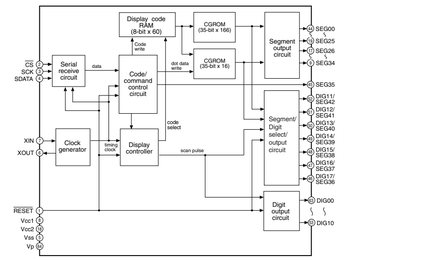
B model

Ohm	0	+ 1.0 k	+ 1.0 k	+ 1.5 k	+ 2.2 k	+ 2.2 k	+ 3.3 k	+ 4.7 k	+ 6.8 k	+ 10.0 k	+ 22.0 k
V	0-0.2	0.2-0.4	0.4-0.7	0.7-1.0	1.1-1.3	1.3-1.6	1.6-1.9	1.9-2.1	2.1-2.4	2.4-2.7	2.7-2.9
KEY INPUT 0 (7 pin)	–	SPEAKERS A/B/OFF	TONE CONTROL	PROGRAM <	PROGRAM >	STRAIGTH EFFECT	–	–	–	–	–
KEY INPUT 1 (6 pin)	–	–	AUDIO SELECT	INPUT >	INPUT <	DIRECT	–	–	–	–	–

IC601: NJM4565M
Dual operational amplifier



IC603: M66003-0131FP-R
18 digit 5 x 7 segment VFD controller/driver



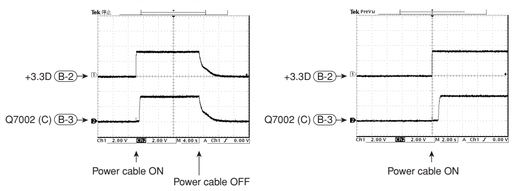
★ All voltages are measured with a 10MΩ/V DC electronic voltmeter.
★ Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
★ Schematic diagram is subject to change without notice.

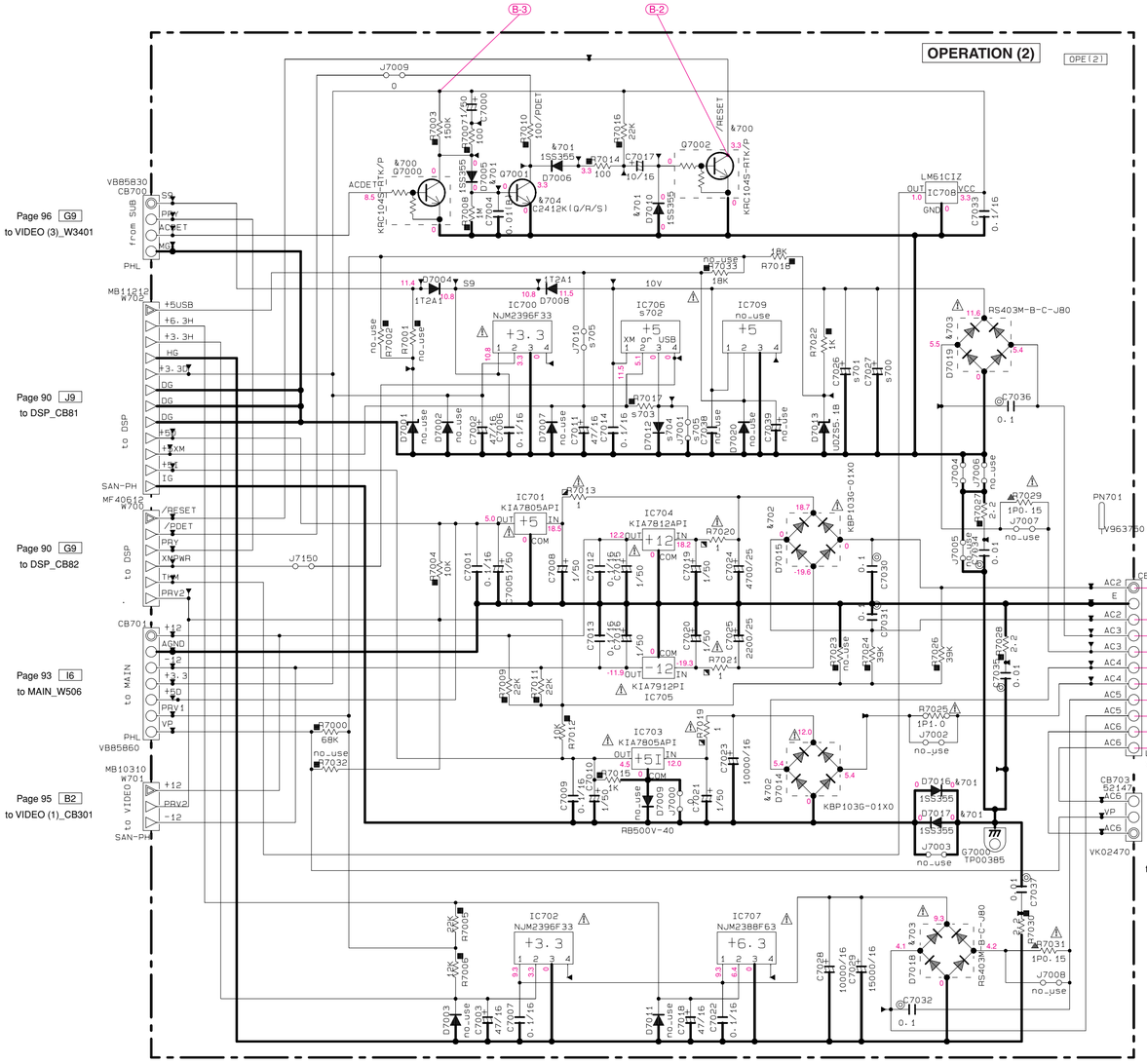
OPERATION 2/2

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
&700	Q7000, 7002	DTC114EKA KRC104S-RTK/P
&701	D7005, 7006, 7010, 7016 7017	1SS355 MA2J1110GL
&702	D7014, 7015	KBP103G RS103
&703	D7018, 7019	RS403M-B-C-J80 TS4B03G-07
&704	Q7001	2SC2412K(Q/R/S) KTC3875S-Y, GR-RTK/P 2SD601ARL/AQL(Q/R/S)

POINT (B-2) / +3.3D, (B-3) / Q7002 (C)





RESISTOR

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

CAPACITOR

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

NOTICE (model)
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(C)····· CANADA
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(K)····· KOREA
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(L)····· SINGAPORE
(E)····· SOUTH EUROPE
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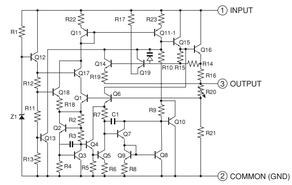
(F)····· RUSSIAN

★ 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.

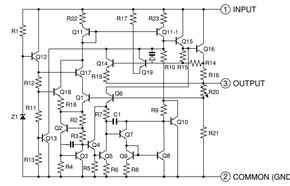
Destination Part List

sXX	LOC	UC	RTKAGEFL	B
s600	SW601 SW618 SW603	WD48310 SKRGAAD010	WD48310 SKRGAAD010	X
s601	SW602 SW617 SW621 SW626 SW628 SW625 SW622	WD48310 SKRGAAD010	WD48310 SKRGAAD010	X
s602	J6002	VN50000 0	VN50000 0	X
s603	D6010 D6011	VT33290 1SS355	VT33290 1SS355	X
s604	R6028	RD35647 4.7K	RD35647 4.7K	X
s605	Q6012	VV55650 A1037AK(Q/R/S)	VV55650 A1037AK(Q/R/S)	X
s606	Q6009	VV65540 DTC114EKA	VV65540 DTC114EKA	X
s607	R6064	RD35710 10K	RD35710 10K	X
s608	D6019	V259820 SIR-505ST447	V259820 SIR-505ST447	X
s609	W6006	X	WN02170 -	WN02170 -
s612	J6007 J6006	X	RD35000 0	RD35000 0
s613	C6047	X	US06210 100P(SL)	US06210 100P(SL)
s614	ST602	X	WA78970 -	WA78970 -
s615	CB607	X	WG66810 UBA-4R-D14T-4D	WG66810 UBA-4R-D14T-4D
s616	W6008	X	WJ62450 SAN-PH	WJ62450 SAN-PH
s617	D6026 D6025 D6027 D6024	X	VT33290 1SS355	VT33290 1SS355
s618	C6049 C6048	X	US13510 0.1/16	US13510 0.1/16
s619	G6003	X	VR46340 TP00385	VR46340 TP00385
s620	C6050 C6051	X	US06222 220P(SL)	US06222 220P(SL)
s621	R6088 R6087	X	RD35847 470K	RD35847 470K
s622	R6090 R6089	X	RD35547 470	RD35547 470
s623	R6091	X	RD35475 75	RD35475 75
s624	PJ602	X	WJ11750 MSP-303H-BBB-11	WJ11750 MSP-303H-BBB-11
s625	W6007	WJ62450 SAN-PH	X	X
s626	D6020 D6021 D6022 D6023	VT33290 1SS355	X	X
s627	C6043 C6042 C6060	US13510 0.1/16	X	X
s628	G6002	VR46340 TP00385	X	X
s629	C6045 C6044	US06368 6800P(B)	X	X
s630	R6082 R6083	RD35847 470K	X	X
s631	R6085 R6084	RD35547 470	X	X
s632	R6086	RD35475 75	X	X
s633	PJ601	WJ11750 MSP-303H-BBB-11	X	X
s634	JK603	WJ11740 MSJ-035-05A	X	X
s636	C6064	X	US12610 1/10	US12610 1/10
s637	R6026	RD35427 27	RD35427 27	X
s638	J6001	X	X	X
s639	R6078	RD35722 22K	RD35722 22K	X
s640	SW619 SW624 SW620 SW623	X	X	X
s641	R6079	RD35722 22K	RD35722 22K	X
s642	R6060 R6061	RD35633 3.3K	RD35633 3.3K	X
s643	R6065 R6066	RD35647 4.7K	RD35647 4.7K	X
s644	R6069 R6070	RD35668 6.8K	RD35668 6.8K	X
s645	R6076 R6075	RD35710 10K	RD35710 10K	X
s700	C7027	WG60200 15000/16	WG60200 15000/16	WG60200 15000/16
s701	C7026	UR03947 4700/16	UR03947 4700/16	UR03947 4700/16
s702	IC706	X6143A0 NJM2388F05	X6143A0 NJM2388F05	X6143A0 NJM2388F05
s703	R7017	RD35610 1K	X	X
s704	D7012	V237660 RB500V-40	X	X
s705	J7001 J7010	X	VN50000 .	VN50000 .

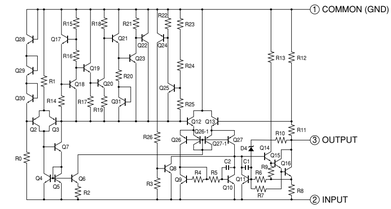
IC701, 703: KIA7805API
Voltage regulator



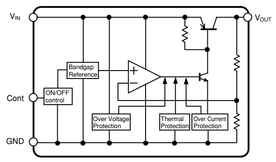
IC704: KIA7812API
Voltage regulator



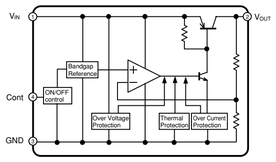
IC705: KIA7912PI
Voltage regulator



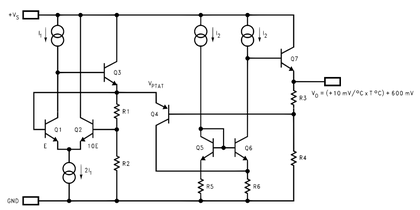
IC706: NJM2388F05
Low dropout voltage regulator with ON/OFF control



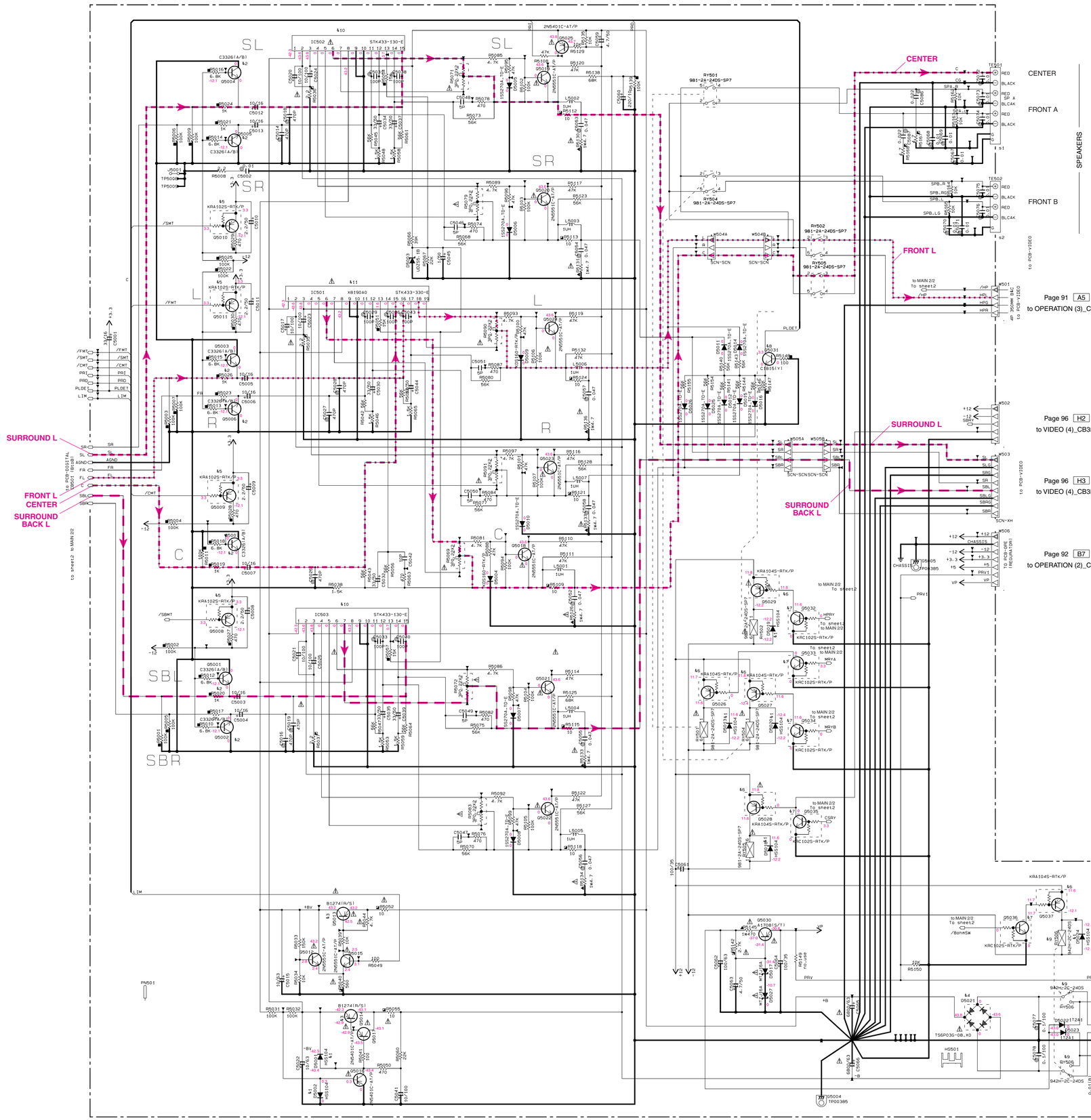
IC707: NJM2388F63
Low dropout voltage regulator with ON/OFF control



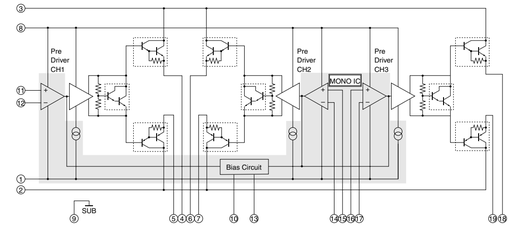
IC708: LM61CIZ
Temperature sensor



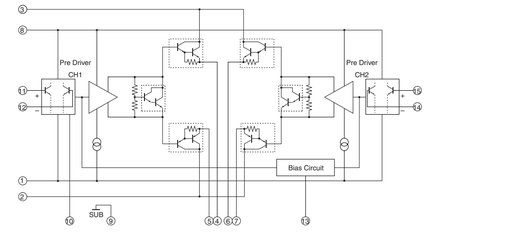
MAIN 1/2



IC501: STK433-330-E
3-channel AF power amplifier, stand-by circuit built-in



IC502, 503: STK433-130-E
2-channel AF power amplifier, stand-by circuit built-in



CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	‖
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	‖
⊙	CERAMIC TUBULAR CAPACITOR	
Ⓜ	POLYESTER FILM CAPACITOR	
Ⓒ	POLYSTYRENE FILM CAPACITOR	
Ⓣ	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
◉	SEMICONDUCTIVE CERAMIC CAPACITOR	
Ⓢ	POLYPHENYLENE SULFIDE FILM CAPACITOR	

RESISTOR

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

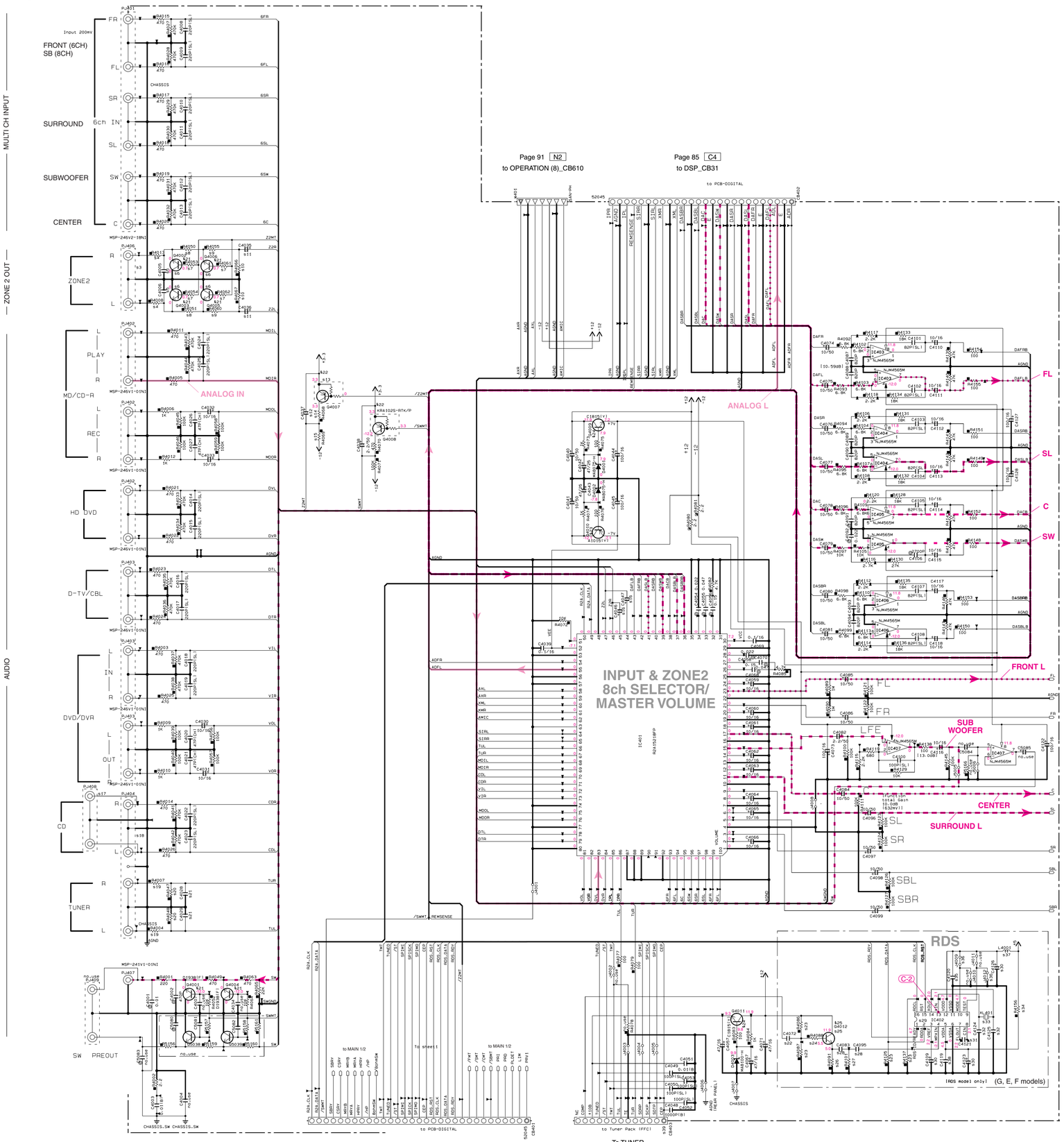
NOTICE (mode1)
(J)····· JAPAN
(U)····· U.S.A
(C)····· CANADA
(R)····· GENERAL
(T)····· CHINA
(K)····· KOREA
(A)····· AUSTRALIA
(B)····· BRITISH
(G)····· EUROPE
(L)····· SINGAPORE
(E)····· SOUTH EUROPE
(V)····· TAIWAN
(F)····· RUSSIAN

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
&1	D5001-5002-5013 5018-5020-5024	HSS104 1SS133 1SS176
&2	Q5001-5007	2SC3326(A/B) 2SC3326(B) 2SC5938A(A/B) 2SD1938(F/S/T 2SD2704K
&3	Q5013-5014	2SB1274(R/S) 2SB1565(E/F) KTA1046-Y-U/P
&4	D5021	TS6P03G-08-XO RS603M-B-C-JB0
&5	Q5008-5011	KRA102S-RTK/P DTA114EKA
&6	Q5026-5029-5037	KRA104S-RTK/P DTA144EKA
&7	Q5032-5036	KRC102S-RTK/P DTC114EKA
&8	Q5031	2SC1815(Y) KTC3198 Y-AT
&9	RY506	942H-2C-24DS DH24D2-D-Q
&10	IC502-503	STK-433-130-E (X7427A0) STK-433-130-E (X7427B0)
&11	IC501	STK-433-330-E (X8190A0) STK-433-330-E (X8190B0)

★ 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.

MAIN 2/2



Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
k21	G4001-4006	2SD1938[F] 2SC5938A[A/B] 2SD2704K
k22	G4007.4008	KRA102S-RTK/P DTA114EKA
k23	G4010	2SA1015[Y] KTA1266 Y-AT
k24	G4009-4011	2SC1815[Y] KTC3198 Y-AT
k25	G4012	2SC1740S[R/S] 2SC3311A[RA[Q/R/S]

Destination Part List

sxx	LOC	J	UCRTA	KL	B	GEF
s1	TE501	WK56100 MST-207V1-01	WK56100 MST-207V1-01	WK56110 MST-207V1-01	WK56110 MST-207V1-01	WK56110 MST-207V1-01
s2	TE502	WK56080 MST-204V1-01	WK56080 MST-204V1-01	WK56090 MST-204V1-01	WK56090 MST-204V1-01	WK56090 MST-204V1-01
s3	PJ406	x	WC61270 MSP-242V-01N1	WC61270 MSP-242V-01N1	x	WC61270 MSP-242V-01N1
s4	R4028 R4033	x	RD35522 220	RD35522 220	x	RD35522 220
s5	C4006 C4025	x	US06147 47P(CH)	US06147 47P(CH)	x	US06147 47P(CH)
s6	G4002 G4005 G4003 G4006	x	VZ72590 D1938[F]	VZ72590 D1938[F]	x	VZ72590 D1938[F]
s7	R4054 R4062 R4063 R4053	x	RD35710 10K	RD35710 10K	x	RD35710 10K
s8	R4051 R4060	x	RD35533 330	RD35533 330	x	RD35533 330
s9	R4059 R4060	x	RD35568 680	RD35568 680	x	RD35568 680
s10	R4056 R4067	x	RD35810 100K	RD35810 100K	x	RD35810 100K
s11	C4035 C4036	x	UR83710 10/16	UR83710 10/16	x	UR83710 10/16
s12	C4037	x	UR86622 2.2/50	UR86622 2.2/50	x	UR86622 2.2/50
s13	G4007	x	KC43480 KRA102S-RTK/P	KC43480 KRA102S-RTK/P	x	KC43480 KRA102S-RTK/P
s14	R4068	x	RD35547 470	RD35547 470	x	RD35547 470
s15	R4069	x	RD35810 100K	RD35810 100K	x	RD35810 100K
s16	C4046 C4047	x	UR83710 10/16	UR83710 10/16	x	UR83710 10/16
s17	PJ408	KC61270 MSP-242V-01N1	KC61270 MSP-242V-01N1	KC61270 MSP-242V-01N1	x	KC61270 MSP-242V-01N1
s18	PJ404	x	x	x	Y704670 MSP-244V1-01N1	x
s19	R4007	x	x	x	RD35547 470	x
s20	R4048 R4047	x	x	x	RD35647 470K	x
s21	C4028 C4029	x	x	x	US06222 220P(SL	x
s22	C4072	x	x	x	x	US13510 0.1/16
s23	R4137 R4087 R4125 R4086	x	x	x	x	RD35810 100K
s24	R4088	x	x	x	x	RD35610 1K
s25	G4012	x	x	x	x	IC17402 C1740S[R/S]
s26	R4091	x	x	x	x	RD35633 3.3K
s27	R4101	x	x	x	x	RD35722 22K
s28	C4095 C4083	x	x	x	x	US06233 330P(SL
s29	C4402	x	x	x	x	X82540 LC72725KM-UY-TL
s30	C4109 C4123 C4126	x	x	x	x	UR83747 47/16
s31	C4121	x	x	x	x	US06256 560P(SL
s32	C4125	x	x	x	x	US06127 27P(CH
s33	XL401	x	x	x	x	WJ58800 4.332MHZ
s34	R4156	x	x	x	x	RD35510 100
s35	C4120	x	x	x	x	US13510 0.1/16
s36	J4012 J4009	x	x	x	x	RD35000 0
s37	L4001	x	x	x	x	WJ78730 CVDNF-221K
s38	C4119	x	x	x	x	US13510 0.1/16
s39	C8403	VW52360 52045	VW52360 52045	VW52360 52045	x	VW52360 52045

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

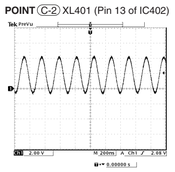
RESISTOR

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

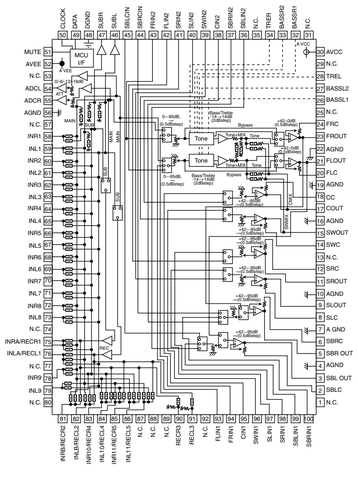
NOTICE (model)

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

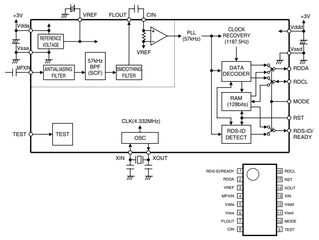
POINT (C-2) XL401 (Pin 13 of IC402)



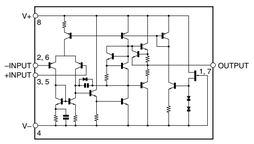
IC401: R2A15218FP
8-channel electronic volume with 11 input selector and tone control



IC402: LC72725KM-UY-TLM-E
RDS signal demodulation IC



IC403-407: NJM4565M
Dual operational amplifier



★ 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.

VIDEO 1/2

Page 92 B8
to OPERATION (2)_W701

Page 91 M2
to OPERATION (8)_CB609

Page 85 B3
to DSP_CB32

Page 84 M3
to DSP_CB21

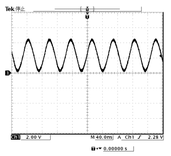
Page 96 C1
to VIDEO (2)_CB325

VIDEO (1)

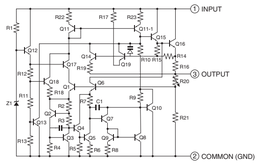
Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
&301	D3001・3002・3201~3217 D3651・3652	1SS355 MA2J111GL
&302	Q3004・3005	2SC2412K[Q/R/S] 2SD601ARL/AQL[Q/R/S] KTC3875S-Y・GR-RTK/P
&303	IC301~303	MM74HC4051SJ×.NL TC74HC4051AF[EL・F]
&304	IC327	MM74HC4053SJ×.NL TC74HC4053AF[EL・F]
&305	Q3001~3003・3201~3203	2SA1037AK[Q/R/S] KTA1504S-Y・GR-RTK/P
&306	IC310・311・321~324	TC74HC4052AF[EL・F] MM74HC4052SJ×.NL
&307	D3401・3501・3502	HSS104 1SS133 1SS176
&308	Q3402・3404	2SA1015[Y] KTA1266[Y]
&309		
&310	Q3501・3503	DTA114ESA KRA102M-AT

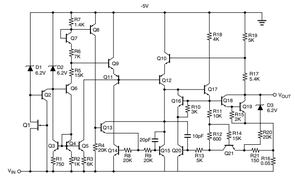
POINT (C-1) XL301 (Pin 3 of IC304)



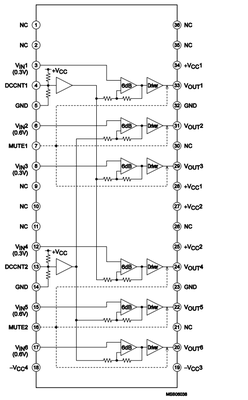
IC308: KIA7805API
Voltage regulator



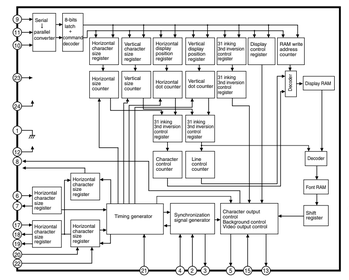
IC309: KIA79M05PI-U
Voltage regulator

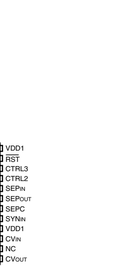


IC307: LA73050-TLM-E
6-channel 75-ohm video driver

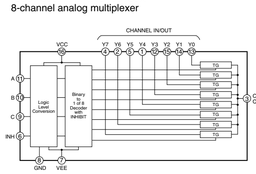


IC304: LC74782JM-8A16-TLMC
The on-screen display controller LSI

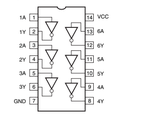




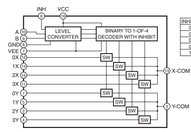
IC301-303: MM74HC4051SJX
8-channel analog multiplexer



IC305: TC74VHCU04FT
Hex inverters



IC310, 311: TC74HC4052AF
Analog multiplexer/demultiplexer



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

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

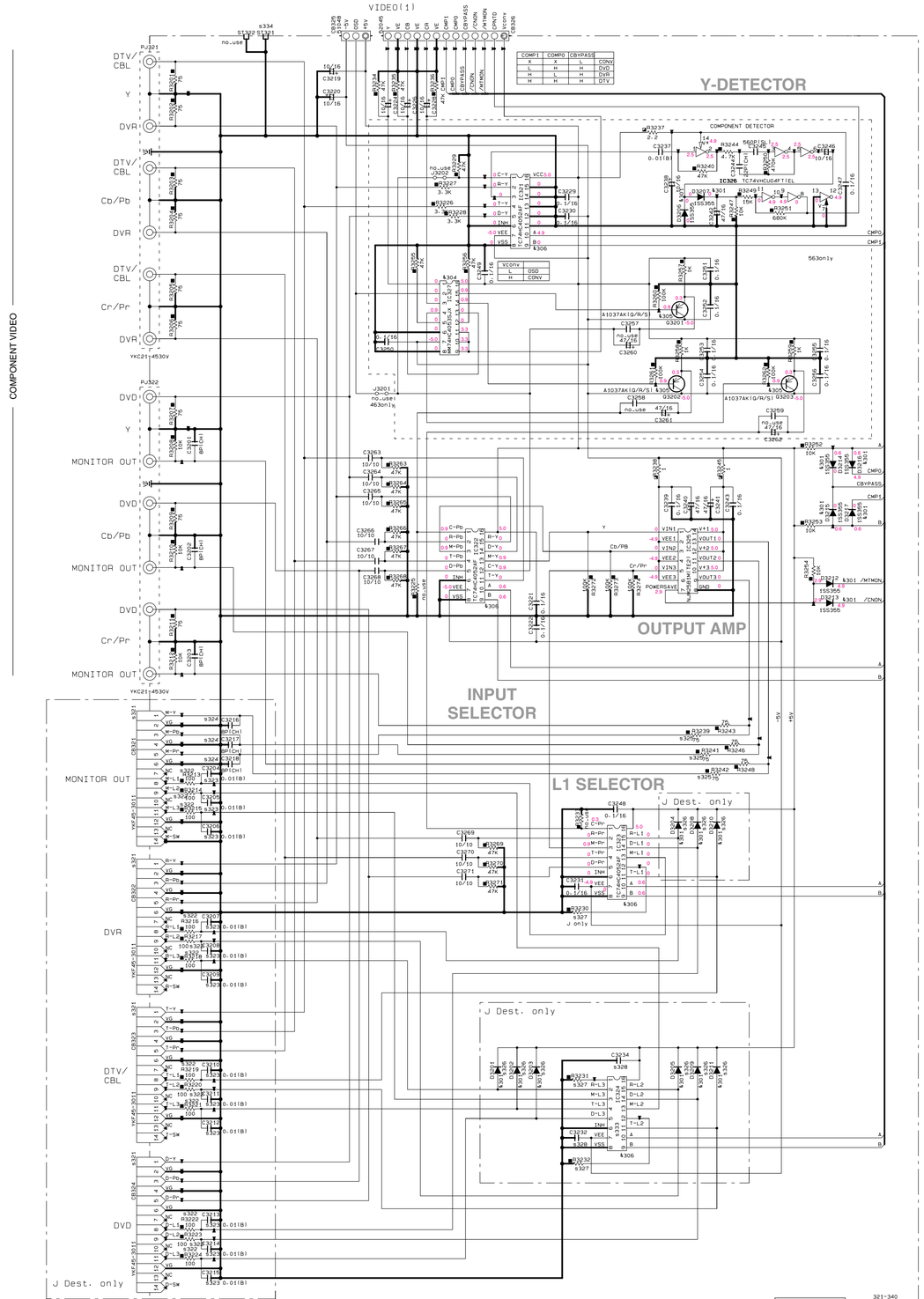
REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	‖
⊗	TANTALUM CAPACITOR	‖
NO MARK	CERAMIC CAPACITOR	‖
◉	CERAMIC TUBULAR CAPACITOR	‖
◎	POLYESTER FILM CAPACITOR	‖
○	POLYSTYRENE FILM CAPACITOR	‖
ⓘ	MICA CAPACITOR	‖
Ⓟ	POLYPROPYLENE FILM CAPACITOR	‖
◉	SEMICONDUCTIVE CERAMIC CAPACITOR	‖

★ 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.

VIDEO 2/2

Page 95 K5
to VIDEO (1)_CB304

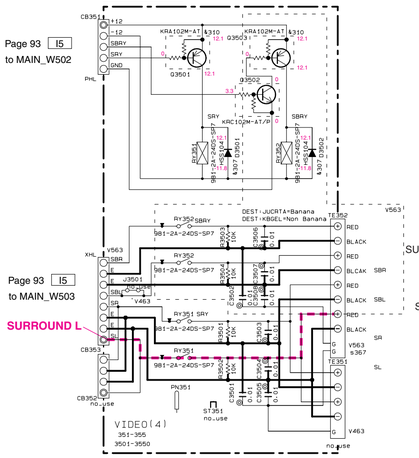
Page 84 M5
to DSP_CB22



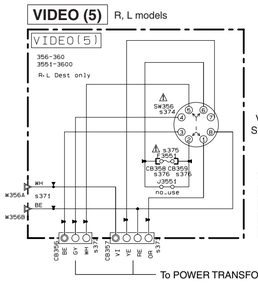
Page 93 I5
to MAIN_W502

Page 93 I5
to MAIN_W503

VIDEO (4)



VIDEO (5) R, L models

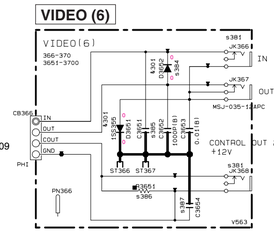


VOLTAGE SELECTOR

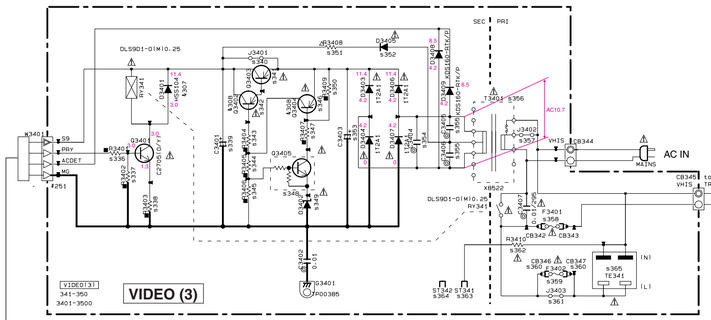
230-240V	1-2/5-6
220V	2-3/6-7
110V	3-4/7-8
120V	4-5/8-1

To POWER TRANSFORMER

VIDEO (6)



Page 91 D8
to OPERATION (1)_W6009



Page 92 B5
to OPERATION (2)_CB700

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

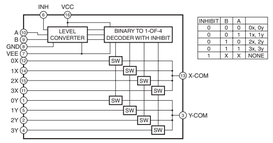
CAPACITOR

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	

Destination Part List

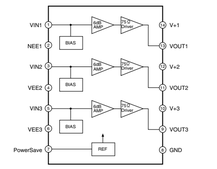
SYX	LOC	J	UC	R	T	K	A	B	GEF	L
s301	XL301	WN38040 14.31818MHZ	WN38040 14.31818MHZ	WN38040 14.31818MHZ	WN38050 17.734475MHZ	WN38040 14.31818MHZ	WN38050 17.734475MHZ	WN38050 17.734475MHZ	WN38050 17.734475MHZ	WN38050 17.734475MHZ
s302	C3038	US06122 22P(CH)	US06122 22P(CH)	US06122 22P(CH)	US06050 5P(CH)	US06122 22P(CH)	US06050 5P(CH)	US06050 5P(CH)	US06050 5P(CH)	US06050 5P(CH)
s303	C3039	US06133 33P(CH)	US06133 33P(CH)	US06133 33P(CH)	US06050 5P(CH)	US06133 33P(CH)	US06050 5P(CH)	US06050 5P(CH)	US06050 5P(CH)	US06050 5P(CH)
s304	C3051	US06030 3P(CH)	US06030 3P(CH)	US06030 3P(CH)	US06040 4P(CH)	US06030 3P(CH)	US06040 4P(CH)	US06040 4P(CH)	US06040 4P(CH)	US06040 4P(CH)
s321	CB321-CB324	WD38840 YKF45-3011	x	x	x	x	x	x	x	x
s322	R3213-R3224	RD35610 100	x	x	x	x	x	x	x	x
s323	C3204-C3215	US06410 0.01(B)	x	x	x	x	x	x	x	x
s324	C3216-C3218	US06080 8P(CH)	x	x	x	x	x	x	x	x
s325	R3239-R3241 R3242	RD35475 75	x	x	x	x	x	x	x	x
s326	D3201-D3205 D3208-D3211	VT33290 1SS355	x	x	x	x	x	x	x	x
s327	R3230-R3232	RD35710 10K	x	x	x	x	x	x	x	x
s328	C3232 C3234	US13510 0.1/16	x	x	x	x	x	x	x	x
s333	IC324	X57904O TC74HC4052AF	x	x	x	x	x	x	x	x
s334	ST321	x	WA78960	WA78960	WA78960	WA78960	WA78960	WA78960	WA78960	WA78960
s336	R3401	RD35647 4.7K	RD35647 4.7K	RD35610 1K	RD35647 4.7K	RD35647 4.7K	RD35647 4.7K	RD35647 4.7K	RD35647 4.7K	RD35610 1K
s337	R3402	RD35810 100K	RD35810 100K	RD35647 470	RD35810 100K	RD35810 100K	RD35810 100K	RD35810 100K	RD35810 100K	RD35647 470
s338	R3403	RD35447 47	RD35433 33	RD35368 6.8	RD35447 47	RD35447 47	RD35447 47	RD35447 47	RD35447 47	RD35368 6.8
s339	C3401	UR74922 2200/25	UR74922 2200/25	UR75922 2200/35	UR74922 2200/25	UR74922 2200/25	UR74922 2200/25	UR74922 2200/25	UR74922 2200/25	UR75922 2200/35
s340	J3401	VN50000	VN50000	X	VN50000	VN50000	VN50000	VN50000	VN50000	X
s341	Q3403	x	x	VP87260 A1708IS/T1	x	x	x	x	x	VP87260 A1708IS/T1
s342	Q3402	x	x	IA10151 A1015(Y)	x	x	x	x	x	IA10151 A1015(Y)
s343	R3404	x	x	RD35610 1K	x	x	x	x	x	RD35610 1K
s344	R3405	x	x	RD35733 33K	x	x	x	x	x	RD35733 33K
s345	R3406	x	x	RD35656 5.6K	x	x	x	x	x	RD35656 5.6K
s346	Q3404	x	x	IA10151 A1015(Y)	x	x	x	x	x	IA10151 A1015(Y)
s347	R3407	x	x	RD35747 47K	x	x	x	x	x	RD35747 47K
s348	Q3405	x	x	MC52920 KRC102M-AT/P	x	x	x	x	x	MC52920 KRC102M-AT/P
s349	Q3402	x	x	VG43700 MTZJ4.7A	x	x	x	x	x	VG43700 MTZJ4.7A
s350	R3409	x	x	RD35610 100K	x	x	x	x	x	RD35610 100K
s351	R3408	x	x	VC75790 2P47	x	x	x	x	x	VC75790 2P47
s352	D3405	x	x	VS99780 1T241	x	x	x	x	x	VS99780 1T241
s353	C3403	x	x	UR89710 10/100	x	x	x	x	x	UR89710 10/100
s354	C3404	WJ60500 0.01	WJ60500 0.01	x	WJ60500 0.01	WJ60500 0.01	WJ60500 0.01	WJ60500 0.01	WJ60500 0.01	x
s355	C3406 C3405	x	x	WJ60500 0.01	x	x	x	x	x	WJ60500 0.01
s356	T3401	XB52040 X8520	XB52140 X8521	XB52340 X8522	XB52340 X8523	XB52340 X8523	XB52340 X8523	XB52340 X8523	XB52340 X8523	XB52340 X8522
s357	J3402	VN50000	VN50000	X	VN50000	VN50000	VN50000	VN50000	VN50000	X
s358	F3401	WB22120 6.00A125V	WB22120 6.00A125V	WB22120 6.00A125V	VY07170 3.15A250V	VY07170 3.15A250V	VY07170 3.15A250V	VY07170 3.15A250V	VY07170 3.15A250V	WB22120 6.00A125V
s359	F3402	x	WB22120 6.00A125V	VT84290 2.5A250V	x	VT84290 2.5A250V	x	VT84290 2.5A250V	VT84290 2.5A250V	VT84290 2.5A250V
s360	CB347 CB346	x	WN07770 PFC5000-0202F	WN07770 PFC5000-0202F	WN07770 PFC5000-0202F	x	WN07770 PFC5000-0202F	WN07770 PFC5000-0202F	WN07770 PFC5000-0202F	WN07770 PFC5000-0202F
s361	J3403	VN50000	x	x	x	x	x	x	x	x
s362	R3410	x	VG73000 1/2P2.2M	x	x	x	x	x	x	x
s363	ST341	x	WA78960	x	x	WA78960	x	x	x	x
s364	ST342	x	x	x	x	WA78960	x	x	x	x
s365	TE341	WJ58300 AC-182-UL	WJ58300 AC-182-UL	VS86740 AC-182-GB-11VGY	AC-182-GB-11VGY	x	VT91500 S2-773T-210	VU54330 S2-772T-210	VU54340 S2-762T-214	VU54340 S2-762T-214
s367	TE352	WN04590 MST-208V1-01	WN04590 MST-208V1-01	WN04590 MST-208V1-01	WN04590 MST-208V1-01	WN04630 MST-208V1-01	WN04590 MST-208V1-01	WN04630 MST-208V1-01	WN04630 MST-208V1-01	WN04630 MST-208V1-01
s371	W356B W356A	x	x	WA76540 VH-5298T	x	x	x	x	x	WA76540 VH-5298T
s372	CB356	x	x	V937780 B3P55-VH	x	x	x	x	x	V937780 B3P55-VH
s373	CB357	x	x	V937790 B4P75-VH	x	x	x	x	x	V937790 B4P75-VH
s374	SW356	x	x	WB49370 RB140246	x	x	x	x	x	WD07370 RB140254
s375	F3551	x	x	VY07170 3.15A250V	x	x	x	x	x	VY07170 3.15A250V
s376	CB358 CB359	x	x	WN07770 PFC5000-0202F	x	x	x	x	x	WN07770 PFC5000-0202F
s381	JK368 JK366	x	V943570 MSJ-035-124PC	V943570 MSJ-035-124PC	V943570 MSJ-035-124PC	V943570 MSJ-035-124PC	V943570 MSJ-035-124PC	x	V943570 MSJ-035-124PC	V943570 MSJ-035-124PC
s384	D3652	x	VT33290 1SS355	VT33290 1SS355	VT33290 1SS355	VT33290 1SS355	VT33290 1SS355	x	VT33290 1SS355	VT33290 1SS355
s385	C3651	x	US06310 1000P(B)	US06310 1000P(B)	US06310 1000P(B)	US06310 1000P(B)	US06310 1000P(B)	x	US06310 1000P(B)	US06310 1000P(B)
s386	R3651	x	RD35810 100K	RD35810 100K	RD35810 100K	RD35810 100K	RD35810 100K	x	RD35810 100K	RD35810 100K
s387	C3654	x	US06410 0.01(B)	US06410 0.01(B)	US06410 0.01(B)	US06410 0.01(B)	US06410 0.01(B)	x	US06410 0.01(B)	US06410 0.01(B)

IC321-323: TC74HC4052AF
Analog multiplexer/demultiplexer

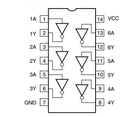


INHIBIT	B	A	
0	0	0	0X, 0Y
0	0	1	1X, 1Y
0	1	0	2X, 2Y
0	1	1	3X, 3Y
1	X	X	NONE

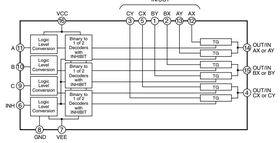
IC325: NJM2581M
Video amplifier



IC326: TC74VHCU04FT
Hex inverters



IC327: MM74HC4053SJX
Triple 2-channel analog multiplexer



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

★ 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.

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

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS:

C.A.EL.CHP	: CHIP ALUMI.ELECTROLYTIC CAP
C.CE	: CERAMIC CAP
C.CE.ARRAY	: CERAMIC CAP ARRAY
C.CE.CHP	: CHIP CERAMIC CAP
C.CE.ML	: MULTILAYER CERAMIC CAP
C.CE.M.CHP	: CHIP MULTILAYER CERAMIC CAP
C.CE.SAFTY	: RECOGNIZED CERAMIC CAP
C.CE.TUBLR	: CERAMIC TUBULAR CAP
C.CE.SMI	: SEMI CONDUCTIVE CERAMIC CAP
C.EL	: ELECTROLYTIC CAP
C.MICA	: MICA CAP
C.ML.FLM	: MULTILAYER FILM CAP
C.MP	: METALLIZED PAPER CAP
C.MYLAR	: MYLAR FILM CAP
C.MYLAR.ML	: MULTILAYER MYLAR FILM CAP
C.PAPER	: PAPER CAPACITOR
C.PLS	: POLYSTYRENE FILM CAP
C.POL	: POLYESTER FILM CAP
C.POLY	: POLYETHYLENE FILM CAP
C.PP	: POLYPROPYLENE FILM CAP
C.TNTL	: TANTALUM CAP
C.TNTL.CHP	: CHIP TANTALUM CAP
C.TRIM	: TRIMMER CAP
CN	: CONNECTOR
CN.BS.PIN	: CONNECTOR,BASE PIN
CN.CANNON	: CONNECTOR,CANNON
CN.DIN	: CONNECTOR,DIN
CN.FLAT	: CONNECTOR,FLAT CABLE
CN.POST	: CONNECTOR,BASE POST
COIL.MX.AM	: COIL,AM MIX
COIL.AT.FM	: COIL,FM ANTENNA
COIL.DT.FM	: COIL,FM DETECT
COIL.MX.FM	: COIL,FM MIX
COIL,OUTPT	: OUTPUT COIL
DIOD.ARRAY	: DIODE ARRAY
DIODE.BRG	: DIODE BRIDGE
DIODE.CHP	: CHIP DIODE
DIODE.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. DSP

	Ref. No.	Part No.	Description	Markets
*		WN276000	P.C.B. DSP	UC
*		WN276100	P.C.B. DSP	R
*		WN276200	P.C.B. DSP	TA
*		WN276300	P.C.B. DSP	K
*		WN276400	P.C.B. DSP	B
*		WN276500	P.C.B. DSP	GEF
*		WN276600	P.C.B. DSP	L
*	CB11-13	WM462600	CN.HDMI 19P SE	
	CB21	VQ047600	CN.BS.PIN 21P	
	CB22	VM923600	CN.BS.PIN 13P	
	CB31	VQ045500	CN.BS.PIN 26P	
	CB32	VB390500	CN.BS.PIN 9P	
	CB34	VQ044400	CN.BS.PIN 9P	
	CB35	WJ458700	CN.XM 4P CAM-D96	UC
	CB71	VB858500	CN.BS.PIN 6P	RTKABGEFL
	CB81	VB390800	CN.BS.PIN 12P	
	CB82	VB390200	CN.BS.PIN 6P	
	CB83	VP127700	CN 24P	
	CB84	VQ046000	CN.BS.PIN 31P	
	C101-110	US135100	C.CE.CHP 0.1uF 16V	
	C111	WD758300	C.CE.CHP 10uF 10V	
	C112	US135100	C.CE.CHP 0.1uF 16V	
	C113	US060900	C.CE.CHP 9pF 50V D	
	C114	US060800	C.CE.CHP 8pF 50V B	
	C115	US034820	C.CE.CHP 0.082uF 16V K	
	C116	US064100	C.CE.CHP 0.01uF 50V B	
	C117-136	US135100	C.CE.CHP 0.1uF 16V	
	C141	UR837100	C.EL 10uF 16V	
	C142-143	US135100	C.CE.CHP 0.1uF 16V	
	C144	UR837100	C.EL 10uF 16V	
	C145-146	US035100	C.CE.CHP 0.1uF 16V B	
	C147	US064100	C.CE.CHP 0.01uF 50V B	
	C148	US035100	C.CE.CHP 0.1uF 16V B	
	C151	US063820	C.CE.CHP 8200pF 50V B	
	C152	US064100	C.CE.CHP 0.01uF 50V B	
	C153	WJ606100	C.MYLAR 0.082uF 50V	
	C154	US064100	C.CE.CHP 0.01uF 50V B	
	C156-157	WD758300	C.CE.CHP 10uF 10V	
	C158	UR037100	C.EL 10uF 16V	
	C159	US135100	C.CE.CHP 0.1uF 16V	
	C160	UR037100	C.EL 10uF 16V	
	C161	WD758300	C.CE.CHP 10uF 10V	
	C162	UR037100	C.EL 10uF 16V	
	C163	WD758300	C.CE.CHP 10uF 10V	
	C164	UR037100	C.EL 10uF 16V	
	C165	US135100	C.CE.CHP 0.1uF 16V	
	C167	US062220	C.CE.CHP 220pF 50V B	
	C169	US062220	C.CE.CHP 220pF 50V B	
	C171-174	US064100	C.CE.CHP 0.01uF 50V B	
	C175-176	US035100	C.CE.CHP 0.1uF 16V B	
	C177	US061100	C.CE.CHP 10pF 50V B	
	C178	US061150	C.CE.CHP 15pF 50V B	
	C201-212	US062220	C.CE.CHP 220pF 50V B	
	C213	UR037100	C.EL 10uF 16V	
	C214-221	US635100	C.CE.CHP 0.1uF 16V	
	C222	US062100	C.CE.CHP 100pF 50V B	
	C223-225	US035100	C.CE.CHP 0.1uF 16V B	
	C227-228	US135100	C.CE.CHP 0.1uF 16V	
	C229	UR237220	C.EL 22uF 16V	
	C301	UR038100	C.EL 100uF 16V	

* New Parts

Ref. No.	Part No.	Description	Markets
C302	US135100	C.CE.CHP 0.1uF 16V	
C303-314	US062220	C.CE.CHP 220pF 50V B	
C315-316	UR037100	C.EL 10uF 16V	
C319	UR037100	C.EL 10uF 16V	
C320	US035100	C.CE.CHP 0.1uF 16V B	
C321	UR067100	C.EL 10uF 50V	
C322-323	US126100	C.CE.CHP 1uF 10V	
C324	UU238100	C.EL 100uF 16V	
C325	US135100	C.CE.CHP 0.1uF 16V	
C326	US064100	C.CE.CHP 0.01uF 50V B	
C328-329	US061200	C.CE.CHP 20pF 50V B	
C330-331	US135100	C.CE.CHP 0.1uF 16V	
C332	US061220	C.CE.CHP 22pF 50V B	
C334	US035100	C.CE.CHP 0.1uF 16V B	
C335-338	US062220	C.CE.CHP 220pF 50V B	
C339	US064100	C.CE.CHP 0.01uF 50V B	
C340-341	US062220	C.CE.CHP 220pF 50V B	
C342	US063100	C.CE.CHP 1000pF 50V B	
C343	US135100	C.CE.CHP 0.1uF 16V	
C344	US135100	C.CE.CHP 0.1uF 16V	RTKABGEFL
C345-346	US135100	C.CE.CHP 0.1uF 16V	
C350-352	US062220	C.CE.CHP 220pF 50V B	
C353	US063100	C.CE.CHP 1000pF 50V B	UC
C354-357	US062220	C.CE.CHP 220pF 50V B	
C359	US135100	C.CE.CHP 0.1uF 16V	
C360-365	US062220	C.CE.CHP 220pF 50V B	UC
C367	US062220	C.CE.CHP 220pF 50V B	UC
C368	US062220	C.CE.CHP 220pF 50V B	
C369-375	US135100	C.CE.CHP 0.1uF 16V	
C376	US062220	C.CE.CHP 220pF 50V B	
C377	US035100	C.CE.CHP 0.1uF 16V B	
C378	UR037100	C.EL 10uF 16V	
C379	UR237470	C.EL 47uF 16V	
C380	WJ606200	C.MYLAR 0.1uF 50V	
C381	WJ605400	C.MYLAR 0.022uF 50V J	
C382	US062220	C.CE.CHP 220pF 50V B	
C384	US135100	C.CE.CHP 0.1uF 16V	
C385	US064100	C.CE.CHP 0.01uF 50V B	
C386	US135100	C.CE.CHP 0.1uF 16V	
C387	US126100	C.CE.CHP 1uF 10V	
C388	UR037100	C.EL 10uF 16V	
C389-391	US064100	C.CE.CHP 0.01uF 50V B	
C401-408	UB446100	C.CE.CHP 1uF 16V	
C409-416	US635100	C.CE.CHP 0.1uF 16V	
C417-418	US063100	C.CE.CHP 1000pF 50V B	
C419	US635100	C.CE.CHP 0.1uF 16V	
C420-422	US063100	C.CE.CHP 1000pF 50V B	
C423-424	US635100	C.CE.CHP 0.1uF 16V	
C425	US063100	C.CE.CHP 1000pF 50V B	
C426	US635100	C.CE.CHP 0.1uF 16V	
C427-430	US063100	C.CE.CHP 1000pF 50V B	
C431-432	US061220	C.CE.CHP 22pF 50V B	
C433	US135100	C.CE.CHP 0.1uF 16V	
C435-436	US135100	C.CE.CHP 0.1uF 16V	
C437	WH771300	C.EL 100uF 10V	
C438	UB446100	C.CE.CHP 1uF 16V	
C439	US135100	C.CE.CHP 0.1uF 16V	
C440	UB446100	C.CE.CHP 1uF 16V	
C441	WH771300	C.EL 100uF 10V	
C443	US062220	C.CE.CHP 220pF 50V B	

* New Parts

P.C.B. DSP

Ref. No.	Part No.	Description			Markets
C501-502	UB446100	C.CE.CHP	1uF	16V	
C503	US635100	C.CE.CHP	0.1uF	16V	
C504-505	US063100	C.CE.CHP	1000pF	50V B	
C506-507	US635100	C.CE.CHP	0.1uF	16V	
C508-509	US063100	C.CE.CHP	1000pF	50V B	
C510-517	US135100	C.CE.CHP	0.1uF	16V	
C519-520	US135100	C.CE.CHP	0.1uF	16V	
C521	US035100	C.CE.CHP	0.1uF	16V B	
C522	US135100	C.CE.CHP	0.1uF	16V	
C523	US061180	C.CE.CHP	18pF	50V B	
C524-525	US035100	C.CE.CHP	0.1uF	16V B	
C526-527	US135100	C.CE.CHP	0.1uF	16V	
C529	US035100	C.CE.CHP	0.1uF	16V B	
C530	UR038100	C.EL	100uF	16V	
C601-618	US635100	C.CE.CHP	0.1uF	16V	
C619	US135100	C.CE.CHP	0.1uF	16V	
C620	US062220	C.CE.CHP	220pF	50V B	
C621	UR837100	C.EL	10uF	16V	
C701-713	US135100	C.CE.CHP	0.1uF	16V	RTKABGEFL
C714	WD758300	C.CE.CHP	10uF	10V	RTKABGEFL
C715	US135100	C.CE.CHP	0.1uF	16V	RTKABGEFL
C716	WD758300	C.CE.CHP	10uF	10V	RTKABGEFL
C717-720	US135100	C.CE.CHP	0.1uF	16V	RTKABGEFL
C721	US062220	C.CE.CHP	220pF	50V B	RTKABGEFL
C722-723	US035100	C.CE.CHP	0.1uF	16V B	RTKABGEFL
C724-725	US064100	C.CE.CHP	0.01uF	50V B	RTKABGEFL
C726	US061120	C.CE.CHP	12pF	50V B	RTKABGEFL
C727	US061200	C.CE.CHP	20pF	50V B	RTKABGEFL
C729	UR838100	C.EL	100uF	16V	RTKABGEFL
C730-731	US064100	C.CE.CHP	0.01uF	50V B	RTKABGEFL
C801-862	US062220	C.CE.CHP	220pF	50V B	
C863	US063100	C.CE.CHP	1000pF	50V B	
C864	UR038470	C.EL	470uF	16V	
C865	US063100	C.CE.CHP	1000pF	50V B	
C866	UR238100	C.EL	100uF	16V	
C867	UB446100	C.CE.CHP	1uF	16V	
C868-870	US135100	C.CE.CHP	0.1uF	16V	
C871	UR038100	C.EL	100uF	16V	
C880	US062220	C.CE.CHP	220pF	50V B	
C881	US062100	C.CE.CHP	100pF	50V B	
C882-885	US062220	C.CE.CHP	220pF	50V B	
C886	US062470	C.CE.CHP	470pF	50V B	
C1301	US135100	C.CE.CHP	0.1uF	16V	UC
C1302-1303	US035100	C.CE.CHP	0.1uF	16V B	UC
C1304	US135100	C.CE.CHP	0.1uF	16V	UC
C1305	US063100	C.CE.CHP	1000pF	50V B	UC
C1306-1307	US061100	C.CE.CHP	10pF	50V B	UC
C1308-1309	UB446100	C.CE.CHP	1uF	16V	UC
C1310-1317	US135100	C.CE.CHP	0.1uF	16V	UC
C1318	UR237470	C.EL	47uF	16V	UC
C1319	US135100	C.CE.CHP	0.1uF	16V	UC
C1320	UR837100	C.EL	10uF	16V	UC
C1321	US064100	C.CE.CHP	0.01uF	50V B	
C1322	US035100	C.CE.CHP	0.1uF	16V B	UC
C1801-1827	US063100	C.CE.CHP	1000pF	50V B	
D109-111	WJ586300	VARISTOR	SDV1608H100C050YPT		
D112	VT332900	DIODE	1SS355		
D113-116	WH641900	ESD	PESD0603-140		
D117-118	WJ586300	VARISTOR	SDV1608H100C050YPT		
D119-130	WH641900	ESD	PESD0603-140		

Ref. No.	Part No.	Description		Markets
D131-132	WJ586300	VARISTOR	SDV1608H100C050YPT	
D135-136	WJ586300	VARISTOR	SDV1608H100C050YPT	
D201	VT332900	DIODE	1SS355	
D305-306	VT332900	DIODE	1SS355	
D401	VS597600	DIODE.CHP	RB160L-40 TE25	
D503	VT332900	DIODE	1SS355	
D801-802	VT332900	DIODE	1SS355	
D803-806	VU171400	DIODE.ZENR	UDZS3.3BTE-17 3.3V	
D1301-1303	WJ586300	VARISTOR	SDV1608H100C050YPT	UC
IC13	X7741A00	IC	NJM2867F3-05(TE1)	
IC21	X6671A00	IC	ADV7172KSTZ	
IC22	X7907A00	IC	NJM2845DL1-18	
IC31	X7746A00	IC	LC89057W-VF4AD-E	
IC33-34	X6123A00	IC	SN74LV157APWR	
IC36	X8192A00	IC	F2621E-01-TR	UC
IC37	X7375A00	IC	PCM1781DBQR	UC
IC38	X7355A00	IC	PCM1680DBQR	
IC39	X7357A00	IC	PCM1803DBR	
IC42	X8653A00	IC	BR25L320F-W EEPROM	
IC43-44	XV894A00	IC	TC74VHC153FT MULTI	
IC51	X9626A00	IC.MEMORY	K4S641632K-UC60000	
IC52	X9636A00	IC.MEMORY	EN29LV160AB-70TCP	(written)
IC53-55	XZ287A00	IC	SN74LVC245APWR	
IC56	X9439A00	IC	SN74AHCT574PWR	
IC57-59	X5135A00	IC	SN74LV574APWR 8D-F	
IC61	X8813A00	IC	MB87L8760	
IC62	X2709A00	IC	SN74AHCT245PWR	
IC72	XZ287A00	IC	SN74LVC245APWR	RTKABGEFL
IC73	X8096A00	IC	R5523N001A-TR-F	RTKABGEFL
IC81	X6905A00	IC	ADC084S021CIMM	
IC82-83	X5875A00	IC	SN74LV4051APWR	
IC151	XZ287A00	IC	SN74LVC245APWR	
IC152	X5405A00	IC	SN74LVC32APWR OR	
IC153	X5404A00	IC	SN74LVC08APWR AND	
IC154	X6611A00	IC	SN74LV123APWR	
IC155	X6688A00	IC	SN74LV14APWR INV	
JK31	VV269500	CN	8P DIN	UC
PJ31	V8795700	JACK.PIN	1P	
PN81-82	V9637500	PIN	L=70 #18	
Q101-104	VQ986700	TR	2SC4081 T106	
Q301	VV655200	TR.DGT	DTA143EKA	UC
Q401	WE736300	FET	RTQ040P02	
Q801	WE736300	FET	RTQ040P02	
R217-218	WJ682800	R.MTL.FLM	2.2Ω 1W	
R328	HV753100	R.CAR.FP	1Ω 1/4W	
R1319	HV753100	R.CAR.FP	1Ω 1/4W	UC
T101	WA789600	SCR.TERM	M3	
T301	WA789600	SCR.TERM	M3	
U31	WH536900	CN.PHOTO.T	1P GP1FAV51TK0F	RTKABGEFL
U32-33	WH169900	CN.PHOTO.R	1P GP1FAV51RK0F	
XL31	WJ625200	RSNR.CRYS	24.576MHz	
XL101	VZ772700	RSNR.CRYS	28.63636MHz	
XL311	WH455300	RSNR.CRYS	45.1584MHz	UC
XL401	WB551700	RSNR.CRYS	16.666MHz SMD-49	
XL701	VS294900	RSNR.CRYS	12MHz SMD-49	RTKABGEFL

* New Parts

* New Parts

P.C.B. OPERATION

	Ref. No.	Part No.	Description			Markets
*		WN278000	P.C.B.	OPERATION		UC
*		WN278100	P.C.B.	OPERATION		RTKAGEFL
*		WN278200	P.C.B.	OPERATION		B
	CB601-602	VB858300	CN.BS.PIN	4P		
	CB603	VP798200	CN.BS.PIN	24P		
	CB607	WG668100	CN.USB	USB 4P SE		RTKABGEFL
	CB608	VB858400	CN.BS.PIN	5P		
	CB609	VB858200	CN.BS.PIN	3P		
	CB610	VB390300	CN.BS.PIN	7P		
	CB700	VB858300	CN.BS.PIN	4P		
	CB701	VB858600	CN.BS.PIN	7P		
	CB702	LB919110	CN.BS.PIN	11P SE		
	CB703	VK024700	CN.BS.PIN	3P		
	C6001	US063100	C.CE.CHP	1000pF	50V B	
	C6002	WJ605000	C.MYLAR	0.01uF	50V J	
	C6003-6004	US063100	C.CE.CHP	1000pF	50V B	
	C6005	WJ605000	C.MYLAR	0.01uF	50V J	
	C6006	US064100	C.CE.CHP	0.01uF	50V B	
	C6007	UM397100	C.EL	10uF	16V	
	C6008	UM397220	C.EL	22uF	25V	
	C6009-6010	WJ605000	C.MYLAR	0.01uF	50V J	
	C6011	US062100	C.CE.CHP	100pF	50V B	
	C6012	UM387470	C.EL	47uF	16V	
	C6013	US061330	C.CE.CHP	33pF	50V B	
	C6014	US135100	C.CE.CHP	0.1uF	16V	
	C6015	UM397100	C.EL	10uF	16V	
	C6016-6017	UM397220	C.EL	22uF	25V	
	C6018-6019	US135100	C.CE.CHP	0.1uF	16V	
	C6020	UR868100	C.EL	100uF	50V	
	C6021	UM388330	C.EL	330uF	6.3V	
	C6022	US135100	C.CE.CHP	0.1uF	16V	
	C6023	US061680	C.CE.CHP	68pF	50V B	
	C6024	US065100	C.CE.CHP	0.1uF	50V B	
	C6025-6026	US135100	C.CE.CHP	0.1uF	16V	
	C6027	US064100	C.CE.CHP	0.01uF	50V B	
	C6028	UM397100	C.EL	10uF	16V	
	C6029	US135100	C.CE.CHP	0.1uF	16V	
	C6030-6031	US062100	C.CE.CHP	100pF	50V B	
	C6032	US063100	C.CE.CHP	1000pF	50V B	
	C6033	US061100	C.CE.CHP	10pF	50V B	
	C6034	US135100	C.CE.CHP	0.1uF	16V	
	C6035	US063100	C.CE.CHP	1000pF	50V B	
	C6036	US135100	C.CE.CHP	0.1uF	16V	
	C6037-6038	US044220	C.CE.CHP	0.022uF	25V B	
	C6039	US064100	C.CE.CHP	0.01uF	50V B	
	C6040-6041	US044220	C.CE.CHP	0.022uF	25V B	
	C6042-6043	US135100	C.CE.CHP	0.1uF	16V	UC
	C6044-6045	US063680	C.CE.CHP	6800pF	50V B	UC
	C6047	US062100	C.CE.CHP	100pF	50V B	RTKABGEFL
	C6048-6049	US135100	C.CE.CHP	0.1uF	16V	RTKABGEFL
	C6050-6051	US062220	C.CE.CHP	220pF	50V B	RTKABGEFL
	C6060	US135100	C.CE.CHP	0.1uF	16V	UC
	C6063	US062470	C.CE.CHP	470pF	50V B	
	C6064	US126100	C.CE.CHP	1uF	10V	RTKABGEFL
	C6080-6081	US063100	C.CE.CHP	1000pF	50V B	
	C6082	US135100	C.CE.CHP	0.1uF	16V	
	C7000	UR866100	C.EL	1uF	50V	
	C7001	US135100	C.CE.CHP	0.1uF	16V	
	C7002-7003	UR837470	C.EL	47uF	16V	
	C7004	US064100	C.CE.CHP	0.01uF	50V B	

	Ref. No.	Part No.	Description			Markets
	C7005	UR866100	C.EL	1uF	50V	
	C7006-7007	US135100	C.CE.CHP	0.1uF	16V	
	C7008	UR866100	C.EL	1uF	50V	
	C7009	US135100	C.CE.CHP	0.1uF	16V	
	C7010	UR866100	C.EL	1uF	50V	
	C7011	UR837470	C.EL	47uF	16V	
	C7012-7014	US135100	C.CE.CHP	0.1uF	16V	
	C7015-7016	UR866100	C.EL	1uF	50V	
	C7017	UR837100	C.EL	10uF	16V	
	C7018	UR837470	C.EL	47uF	16V	
	C7019-7021	UR866100	C.EL	1uF	50V	
	C7022	US135100	C.CE.CHP	0.1uF	16V	
	C7023	UR73A100	C.EL	10000uF	16V	
	C7024	UR749470	C.EL	4700uF	25V	
	C7025	UR749220	C.EL	2200uF	25V	
	C7026	UR039470	C.EL	4700uF	16V	
	C7027	WG602000	C.EL	15000uF	16V	
	C7028	UR73A100	C.EL	10000uF	16V	
	C7029	WG602000	C.EL	15000uF	16V	
	C7030-7032	VE326000	C.MYLAR	0.1uF	50V	
	C7033	US135100	C.CE.CHP	0.1uF	16V	
	C7034-7035	WJ605000	C.MYLAR	0.01uF	50V J	
	C7036	VE326000	C.MYLAR	0.1uF	50V	
	C7037	WJ605000	C.MYLAR	0.01uF	50V J	
	D6001-6002	VT332900	DIODE	1SS355		
	D6003	VU172500	DIODE.ZENR	UDZS9.1B		
	D6004	VT332900	DIODE	1SS355		
	D6005	VU171900	DIODE.ZENR	UDZ5.1B	5.1V	
	D6006	VT332900	DIODE	1SS355		
	D6007-6009	WJ249600	LED	ORANGE		
	D6010-6011	VT332900	DIODE	1SS355		UCRTKAGEFL
	D6011	VT332900	DIODE	1SS355		
	D6012	WJ249600	LED	ORANGE		
	D6013-6014	VT332900	DIODE	1SS355		
	D6017-6018	VU171500	DIODE.ZENR	UDZ 3.6BTE-17 3.6V		
⚠	D6019	V2598200	LED	SIR-505ST		UCRTKAGEFL
	D6020-6023	VT332900	DIODE	1SS355		UC
	D6024-6027	VT332900	DIODE	1SS355		RTKABGEFL
	D7004	VS997800	DIODE	1T2		
	D7005-7006	VT332900	DIODE	1SS355		
	D7008	VS997800	DIODE	1T2		
	D7010	VT332900	DIODE	1SS355		
	D7012	V2376600	DIODE.SHOT	RB500V-40		UC
	D7013	VU171900	DIODE.ZENR	UDZ5.1B	5.1V	
⚠	D7014-7015	WA653100	DIODE.BRG	KBP103G	1A 200V	
	D7016-7017	VT332900	DIODE	1SS355		
⚠	D7018-7019	WJ286700	DIODE.BRG	RS403M	4A 140V	
	IC601	X7378A00	IC	NJM4565M(TE1)		
	IC603	X6386A00	IC	M66003-0131FP		
⚠	IC700	X4419A00	IC	NJM2396F33 3.3V		
⚠	IC701	X4928A00	IC	KIA7805API 5V		
⚠	IC702	X4419A00	IC	NJM2396F33 3.3V		
⚠	IC703	X4928A00	IC	KIA7805API 5V		
⚠	IC704	X4153A00	IC	KIA7812API		
⚠	IC705	X4154A00	IC	KIA7912PI		
⚠	IC706	X6143A00	IC	NJM2388F05 5.0V		
⚠	IC707	X7976A00	IC	NJM2388F63		
	IC708	X0515A00	IC	LM61CIZ THERMAL		
	JK601	WJ117300	JACK.PHONE	PHONES		
	JK602	V9408200	JACK.PHONE	MSJ-064-05B GR		

* New Parts

* New Parts

P.C.B. OPERATION and P.C.B. MAIN

	Ref. No.	Part No.	Description		Markets
	JK603	WJ117400	JACK.MNI	OPTIMIZER MIC	UC
	PJ601	WJ117500	JACK.PIN	3P	UC
	PJ602	WJ117500	JACK.PIN	3P	
	PJ602	WJ117500	JACK.PIN	3P	RTKABGEFL
	PN601	V9637500	PIN	L=70 ♯18	
	PN604	V9637500	PIN	L=70 ♯18	
	PN607-609	V9637500	PIN	L=70 ♯18	
	PN701	V9637500	PIN	L=70 ♯18	
	Q6001	VV556400	TR	2SC2412K Q,R,S	
	Q6002	WC434800	TR.DGT	KRA102S-RTK/P	
	Q6003	VV556500	TR	2SA1037K Q,R,S	
	Q6004	VV556400	TR	2SC2412K Q,R,S	
	Q6005	WC435000	TR.DGT	KRC102S-RTK	
	Q6006-6008	VV556400	TR	2SC2412K Q,R,S	
	Q6009	VV655400	TR.DGT	DTC114EKA	UCRTKAGEFL
	Q6010	WC434800	TR.DGT	KRA102S-RTK/P	
	Q6011	VV556500	TR	2SA1037K Q,R,S	
	Q6012	VV556500	TR	2SA1037K Q,R,S	UCRTKAGEFL
	Q6012	VV556500	TR	2SA1037K Q,R,S	
	Q6014	WC435000	TR.DGT	KRC102S-RTK	
	Q6016	WC397700	TR	2N5401C-AT	
	Q6017-6018	VV556400	TR	2SC2412K Q,R,S	
	Q6029-6030	VV556400	TR	2SC2412K Q,R,S	
	Q7000	WC435100	TR.DGT	KRC104S-RTK	
	Q7001	VV556400	TR	2SC2412K Q,R,S	
	Q7002	WC435100	TR.DGT	KRC104S-RTK	
	R6001-6002	WJ685600	R.MTL.FLM	470Ω 1W J	
⚠	R7013	HV753100	R.CAR.FP	1Ω 1/4W	
⚠	R7019-7021	HV753100	R.CAR.FP	1Ω 1/4W	
⚠	R7025	WH820300	R.FUSE	1Ω 1W J	
⚠	R7029	WJ681400	R.MTL.FLM	0.15Ω 1W	
⚠	R7031	WJ681400	R.MTL.FLM	0.15Ω 1W	
	ST601	WA789700	SCR.TERM	D3.5	
	ST602	WA789700	SCR.TERM	D3.5	RTKABGEFL
	SW601-603	WD483100	SW.TACT	SKRGAAD010	UCRTKAGEFL
	SW604-613	WD483100	SW.TACT	SKRGAAD010	
	SW614	V9597100	SW.RT.ENC	EC12E2460802	
	SW615-616	WD483100	SW.TACT	SKRGAAD010	
	SW617-618	WD483100	SW.TACT	SKRGAAD010	UCRTKAGEFL
	SW621-622	WD483100	SW.TACT	SKRGAAD010	UCRTKAGEFL
	SW625-626	WD483100	SW.TACT	SKRGAAD010	UCRTKAGEFL
	SW627	WD483100	SW.TACT	SKRGAAD010	
	SW628	WD483100	SW.TACT	SKRGAAD010	UCRTKAGEFL
	SW629	WD483100	SW.TACT	SKRGAAD010	
	U6001	WJ645300	L.DTCT	SM3385UMH6	
*	V6001	WN049000	FL.DSPLY	17-BT-32GNK	
		WA790900	SPACER	4.6/10/32	
*		WN272300	P.C.B.	MAIN	UCRTA
*		WN272400	P.C.B.	MAIN	KL
*		WN272500	P.C.B.	MAIN	B
*		WN272600	P.C.B.	MAIN	GEF
	CB401	VQ048000	CN.BS.PIN	31P	
	CB402	VN520900	CN.BS.PIN	52045 26P TE	
	CB403	VM923600	CN.BS.PIN	13P	UCRTKAGEFL
	CB502	LB932060	CN.BS.PIN	6P	
	C4001	WJ605000	C.MYLAR	0.01uF 50V J	
	C4002	WJ603300	C.MYLAR	470pF 50V J	

⁎ New Parts

Ref. No.	Part No.	Description			Markets
C4003	US064100	C.CE.CHP	0.01uF	50V B	
C4005-4006	US061470	C.CE.CHP	47pF	50V B	UCRTKAGEFL
C4008-4019	US062220	C.CE.CHP	220pF	50V B	
C4020-4021	US061470	C.CE.CHP	47pF	50V B	
C4022-4025	US062220	C.CE.CHP	220pF	50V B	
C4026-4027	US061470	C.CE.CHP	47pF	50V B	
C4028-4029	US062220	C.CE.CHP	220pF	50V B	B
C4030-4033	UR837100	C.EL	10uF	16V	
C4035-4036	UR837100	C.EL	10uF	16V	UCRTKAGEFL
C4037	UR866220	C.EL	2.2uF	50V	UCRTKAGEFL
C4038	UR866220	C.EL	2.2uF	50V	
C4039	US135100	C.CE.CHP	0.1uF	16V	
C4040-4041	UR067100	C.EL	10uF	50V	
C4042-4043	UR847470	C.EL	47uF	25V	
C4044-4045	UR038100	C.EL	100uF	16V	
C4046-4047	UR837100	C.EL	10uF	16V	UCRTKAGEFL
C4048	US063100	C.CE.CHP	1000pF	50V B	
C4049-4050	US062100	C.CE.CHP	100pF	50V B	
C4051	US064100	C.CE.CHP	0.01uF	50V B	
C4052-4053	US062100	C.CE.CHP	100pF	50V B	
C4054	WJ605400	C.MYLAR	0.022uF	50V J	
C4055	WJ605800	C.MYLAR	0.047uF	50V J	
C4056	VE326200	C.MYLAR	0.15uF	50V	
C4057	UR837470	C.EL	47uF	16V	
C4058	WJ605400	C.MYLAR	0.022uF	50V J	
C4059-4066	UR837100	C.EL	10uF	16V	
C4067	UR837470	C.EL	47uF	16V	
C4068	VE326200	C.MYLAR	0.15uF	50V	
C4069	US135100	C.CE.CHP	0.1uF	16V	
C4070	WJ605800	C.MYLAR	0.047uF	50V J	
C4071	UR837470	C.EL	47uF	16V	
C4072	US135100	C.CE.CHP	0.1uF	16V	GEF
C4073	UR038100	C.EL	100uF	16V	
C4074-4081	UR067100	C.EL	10uF	50V	
C4082	UR866220	C.EL	2.2uF	50V	
C4083	US062330	C.CE.CHP	330pF	50V B	GEF
C4084-4086	UR067100	C.EL	10uF	50V	
C4087-4090	US162820	C.CE.CHP	820pF	50V J	
C4091	WJ603600	C.MYLAR	820pF	50V J	
C4092	WJ605400	C.MYLAR	0.022uF	50V J	
C4093-4094	US162820	C.CE.CHP	820pF	50V J	
C4095	US062330	C.CE.CHP	330pF	50V B	GEF
C4096-4099	UR067100	C.EL	10uF	50V	
C4100	US062100	C.CE.CHP	100pF	50V B	
C4101-4105	US061820	C.CE.CHP	82pF	50V B	
C4106	WJ604200	C.MYLAR	2700pF	50V	
C4107-4108	US061820	C.CE.CHP	82pF	50V B	
C4109	UR837470	C.EL	47uF	16V	GEF
C4110-4118	UR837100	C.EL	10uF	16V	
C4119-4120	US135100	C.CE.CHP	0.1uF	16V	GEF
C4121	US062560	C.CE.CHP	560pF	50V B	GEF
C4122	UR038100	C.EL	100uF	16V	
C4123	UR837470	C.EL	47uF	16V	GEF
C4124-4125	US061270	C.CE.CHP	27pF	50V B	GEF
C4126	UR837470	C.EL	47uF	16V	GEF
C4127-4128	UR038100	C.EL	100uF	16V	
C5001	UR837330	C.EL	33uF	16V	
C5002	WJ605000	C.MYLAR	0.01uF	50V J	
C5003-5007	UR037100	C.EL	10uF	16V	
C5008-5011	UR866220	C.EL	2.2uF	50V	

⁎ New Parts

P.C.B. MAIN

	Ref. No.	Part No.	Description			Markets
	C5012-5013	UR037100	C.EL	10uF	16V	
	C5014	WJ603300	C.MYLAR	470pF	50V J	
	C5015	UR277220	C.EL	22uF	63V	
	C5016	WJ603300	C.MYLAR	470pF	50V J	
	C5017	UR297100	C.EL	10uF	100V	
⚠	C5018-5019	WJ603300	C.MYLAR	470pF	50V J	
	C5020-5021	UR297100	C.EL	10uF	100V	
	C5022	UR277220	C.EL	22uF	63V	
	C5023-5025	UR297100	C.EL	10uF	100V	
	C5026-5028	WJ603300	C.MYLAR	470pF	50V J	
	C5029	WJ602900	C.MYLAR	100pF	50V K	
	C5030	UR067330	C.EL	33uF	50V	
	C5031	WJ602900	C.MYLAR	100pF	50V K	
	C5032	UR067330	C.EL	33uF	50V	
	C5033	WJ602900	C.MYLAR	100pF	50V K	
	C5034-5035	UR067330	C.EL	33uF	50V	
	C5036	WJ602900	C.MYLAR	100pF	50V K	
	C5037	UR067330	C.EL	33uF	50V	
	C5038	WJ602900	C.MYLAR	100pF	50V K	
	C5039	UR067330	C.EL	33uF	50V	
	C5040	WJ602900	C.MYLAR	100pF	50V K	
	C5041	UR897100	C.EL	10uF	100V	
	C5042	FG651100	C.CE	10pF	50V	
	C5043	WJ602900	C.MYLAR	100pF	50V K	
	C5044	UR067330	C.EL	33uF	50V	
	C5045	UR866100	C.EL	1uF	50V	
	C5046-5051	FG650500	C.CE	5pF	50V	
	C5052-5058	WJ605800	C.MYLAR	0.047uF	50V J	
	C5059	UR866470	C.EL	4.7uF	50V	
	C5060	UR828220	C.EL	220uF	10V	
	C5061	UR858100	C.EL	100uF	35V	
	C5062	UR278100	C.EL	100uF	63V	
	C5063	UR866470	C.EL	4.7uF	50V	
	C5064	UR058100	C.EL	100uF	35V	
* ⚠	C5065-5066	WN524400	C.EL	6800uF	63V	
	C5067-5076	WJ605000	C.MYLAR	0.01uF	50V J	
	C5077-5078	WJ611400	C.MYLAR	0.1uF	100V J	
	C5079	US064100	C.CE.CHP	0.01uF	50V B	
	C5086-5087	WJ605400	C.MYLAR	0.022uF	50V J	
	C5088-5089	UR837100	C.EL	10uF	16V	UCRTA
	D4001-4002	VU994300	DIODE.ZENR	MA8075-H	7.7V	
	D4003	VU995500	DIODE.ZENR	MA8100-H	10.3V	
	D5001-5002	VD631600	DIODE	1SS133,176		
	D5003	VU171900	DIODE.ZENR	UDZ5.1B	5.1V	
	D5004	WC398800	DIODE	KDS160-RTK		
	D5005-5008	VN008700	DIODE	1SS270A		
	D5009	WC398800	DIODE	KDS160-RTK		
	D5010-5012	VN008700	DIODE	1SS270A		
	D5013	VD631600	DIODE	1SS133,176		
	D5014-5016	VN008700	DIODE	1SS270A		
⚠	D5017	VG441000	DIODE.ZENR	MTZJ16A	16V	
	D5018-5020	VD631600	DIODE	1SS133,176		
⚠	D5021	WA653200	DIODE.BRG	TS6P03G	6A 200V	
	D5022-5023	VS997800	DIODE	1T2		
	D5024	VD631600	DIODE	1SS133,176		
	D5025-5026	VN008700	DIODE	1SS270A		
⚠	D5027	VG441000	DIODE.ZENR	MTZJ16A	16V	
	IC401	X8155B00	IC	R2A15218FP		
	IC402	X8235A00	IC	LC72725KM		GEF
	IC403-407	X7378A00	IC	NJM4565M(TE1)		

	Ref. No.	Part No.	Description			Markets
⚠	IC501	X8190A00	IC	STK433-330-E		
⚠	IC502-503	X7427A00	IC	STK433-130-E		
	PJ401	V7190400	JACK.PIN	6P		
	PJ402-403	V7046800	JACK.PIN	6P MSP-246V1-01NI		
	PJ404	V7046700	JACK.PIN	4P MSP-244V1-01NI		B
	PJ406	WC612700	JACK.PIN	2P		UCRTKAGEFL
	PJ407	V7189700	JACK.PIN	1P		
	PJ408	WC612700	JACK.PIN	2P		UCRTKAGEFL
	PN501	V9637500	PIN	L=70 #18		
	Q4001	VZ725900	TR	2SD1938F S,T		
	Q4002-4003	VZ725900	TR	2SD1938F S,T		UCRTKAGEFL
	Q4004	VZ725900	TR	2SD1938F S,T		
	Q4005-4006	VZ725900	TR	2SD1938F S,T		UCRTKAGEFL
	Q4007	WC434800	TR.DGT	KRA102S-RTK/P		UCRTKAGEFL
	Q4008	WC434800	TR.DGT	KRA102S-RTK/P		
	Q4009	iC181510	TR	2SC1815 Y		
	Q4010	iA101510	TR	2SA1015 Y		
	Q4011	iC181510	TR	2SC1815 Y		
	Q4012	iC174020	TR	2SC1740S QRS		GEF
	Q5001-5007	VD303700	TR	2SC3326 A,B		
	Q5008-5011	WC434800	TR.DGT	KRA102S-RTK/P		
⚠	Q5012	WC398400	TR	2N5551C-AT		
⚠	Q5013-5014	VC614000	TR	2SB1274 Q,R,S		
⚠	Q5015	WC398400	TR	2N5551C-AT		
⚠	Q5016-5017	WC397700	TR	2N5401C-AT		
⚠	Q5018-5024	WC398400	TR	2N5551C-AT		
⚠	Q5025	WC397700	TR	2N5401C-AT		
⚠	Q5026-5029	WC434900	TR.DGT	KRA104S-RTK		
⚠	Q5030	VP872600	TR	2SA1708 S,T		
	Q5031	iC181510	TR	2SC1815 Y		
	Q5032-5036	WC435000	TR.DGT	KRC102S-RTK		
	Q5037	WC434900	TR.DGT	KRA104S-RTK		
	R4080-4081	HV753220	R.CAR.FP	2.2Ω	1/4W	
⚠	R5035-5037	HV753220	R.CAR.FP	2.2Ω	1/4W	
⚠	R5040	HV755560	R.CAR.FP	560Ω	1/4W	
⚠	R5052	HV754100	R.CAR.FP	10Ω	1/4W	
⚠	R5055	HV754100	R.CAR.FP	10Ω	1/4W	
* ⚠	R5069	WM216400	R.WW	0.22Ω	3W	(RF-3EGKR22)
* ⚠	R5071-5072	WM216400	R.WW	0.22Ω	3W	(RF-3EGKR22)
* ⚠	R5079	WM216400	R.WW	0.22Ω	3W	(RF-3EGKR22)
* ⚠	R5083	WM216400	R.WW	0.22Ω	3W	(RF-3EGKR22)
* ⚠	R5090-5091	WM216400	R.WW	0.22Ω	3W	(RF-3EGKR22)
	R5109	HV754100	R.CAR.FP	10Ω	1/4W	
	R5112-5113	HV754100	R.CAR.FP	10Ω	1/4W	
	R5115	HV754100	R.CAR.FP	10Ω	1/4W	
	R5118	HV754100	R.CAR.FP	10Ω	1/4W	
	R5121	HV754100	R.CAR.FP	10Ω	1/4W	
	R5124	HV754100	R.CAR.FP	10Ω	1/4W	
⚠	R5126	WB625100	R.MTL.FLM	4.7Ω	1W J	
⚠	R5130-5131	WB625100	R.MTL.FLM	4.7Ω	1W J	
⚠	R5133-5134	WB625100	R.MTL.FLM	4.7Ω	1W J	
	R5136-5137	WB625100	R.MTL.FLM	4.7Ω	1W J	
⚠	R5142	HV756270	R.CAR.FP	2.7KΩ	1/4W	
⚠	R5145	WB627300	R.MTL.OXD	470Ω	1W	
	R5167-5168	HV753470	R.CAR.FP	4.7Ω	1/4W	
⚠	RY501-502	WJ122400	RELAY	981-2A-24DS-SP7		
⚠	RY504-505	WJ122400	RELAY	981-2A-24DS-SP7		
* ⚠	RY506	WJ117200	RELAY	DC24V 942H-2C-24DS		
*	TE501	WK561000	TERM.SP	6P MST-207V1-01 NC		UCRTA
*	TE501	WK561100	TERM.SP	6P MST-207V1-01 WC		KBGEFL

* New Parts

* New Parts

P.C.B. MAIN and P.C.B. VIDEO

	Ref. No.	Part No.	Description		Markets
*	TE502	WK560800	TERM.SP	4P MST-204V1-01 NC	UCRTA
*	TE502	WK560900	TERM.SP	4P MST-204V1-01 WC	KBGEFL
*	XL401	WJ588000	RSNR.CRYS	4.332MHz	GEF
		WE774200	SCR.BND.HD	3x10 MFZN2W3	
*		WN273300	P.C.B.	VIDEO	UC
*		WN273400	P.C.B.	VIDEO	R
*		WN273500	P.C.B.	VIDEO	T
*		WN273600	P.C.B.	VIDEO	K
*		WN273700	P.C.B.	VIDEO	A
*		WN273800	P.C.B.	VIDEO	B
*		WN273900	P.C.B.	VIDEO	GEF
*		WN274000	P.C.B.	VIDEO	L
	CB301	VB858200	CN.BS.PIN	3P	
	CB303	VQ045100	CN.BS.PIN	21P	
	CB326	VM923600	CN.BS.PIN	13P	
*	CB342-343	WN077700	CLIP.FUSE	CLIP PFC5000-0202F	
	CB344-345	VG879900	CN.BS.PIN	2P	
*	CB346-347	WN077700	CLIP.FUSE	CLIP PFC5000-0202F	UCRTABGEFL
	CB351	VB858400	CN.BS.PIN	5P	
	CB353	LB919080	CN.BS.PIN	8P	
	CB356	V9377800	CN.BS.PIN	3P	RL
	CB357	V9377900	CN.BS.PIN	4P	RL
*	CB358-359	WN077700	CLIP.FUSE	CLIP PFC5000-0202F	RL
	CB366	VB390000	CN.BS.PIN	4P	
	C3001-3006	US062100	C.CE.CHP	100pF 50V B	
⚠	C3007-3008	WG218100	C.EL	100uF 16V	
	C3009-3010	V7887800	C.EL	1uF 50V	
	C3011-3014	US135100	C.CE.CHP	0.1uF 16V	
	C3015	UR837100	C.EL	10uF 16V	
	C3016	US135100	C.CE.CHP	0.1uF 16V	
	C3017	UR837470	C.EL	47uF 16V	
	C3018-3020	US135100	C.CE.CHP	0.1uF 16V	
	C3021	UR837470	C.EL	47uF 16V	
	C3022	UR837100	C.EL	10uF 16V	
	C3023-3024	US135100	C.CE.CHP	0.1uF 16V	
	C3026-3029	UR837470	C.EL	47uF 16V	
	C3030-3031	UR838100	C.EL	100uF 16V	
	C3032-3037	US135100	C.CE.CHP	0.1uF 16V	
	C3038	US061220	C.CE.CHP	22pF 50V B	UCRK
	C3038	US060500	C.CE.CHP	5pF 50V B	TABGEFL
	C3039	US061330	C.CE.CHP	33pF 50V B	UCRK
	C3039	US060500	C.CE.CHP	5pF 50V B	TABGEFL
	C3041	US135100	C.CE.CHP	0.1uF 16V	
	C3043	US135100	C.CE.CHP	0.1uF 16V	
	C3044-3045	UR837470	C.EL	47uF 16V	
	C3048	UR866100	C.EL	1uF 50V	
	C3049-3050	UR837470	C.EL	47uF 16V	
	C3051	US060300	C.CE.CHP	3pF 50V B	UCRK
	C3051	US060400	C.CE.CHP	4pF 50V B	TABGEFL
	C3052-3053	US135100	C.CE.CHP	0.1uF 16V	
	C3054	US061240	C.CE.CHP	24pF 50V B	
	C3055	US064100	C.CE.CHP	0.01uF 50V B	
	C3056	US135100	C.CE.CHP	0.1uF 16V	
	C3057	US061240	C.CE.CHP	24pF 50V B	
	C3058	US062120	C.CE.CHP	120pF 50V B	
	C3059	UR837470	C.EL	47uF 16V	
	C3060	US062220	C.CE.CHP	220pF 50V B	

※ New Parts

	Ref. No.	Part No.	Description		Markets
	C3061-3065	US135100	C.CE.CHP	0.1uF 16V	
	C3066	US061100	C.CE.CHP	10pF 50V B	
	C3067	UR837100	C.EL	10uF 16V	
	C3068-3069	US135100	C.CE.CHP	0.1uF 16V	
	C3070	UR818470	C.EL	470uF 6.3V	
	C3071	US135100	C.CE.CHP	0.1uF 16V	
	C3072	UR837100	C.EL	10uF 16V	
	C3073	US135100	C.CE.CHP	0.1uF 16V	
	C3074	UR837470	C.EL	47uF 16V	
	C3075-3076	US135100	C.CE.CHP	0.1uF 16V	
	C3077-3078	UR837470	C.EL	47uF 16V	
	C3079-3081	US135100	C.CE.CHP	0.1uF 16V	
	C3201-3203	US060800	C.CE.CHP	8pF 50V B	
	C3219-3220	UR837100	C.EL	10uF 16V	
	C3221-3222	US135100	C.CE.CHP	0.1uF 16V	
	C3224	UR837100	C.EL	10uF 16V	
	C3226	UR837100	C.EL	10uF 16V	
	C3228	UR837100	C.EL	10uF 16V	
	C3229-3231	US135100	C.CE.CHP	0.1uF 16V	
	C3237	US064100	C.CE.CHP	0.01uF 50V B	
	C3238	UR837100	C.EL	10uF 16V	
	C3239	US135100	C.CE.CHP	0.1uF 16V	
	C3240-3242	UR837470	C.EL	47uF 16V	
	C3243	US135100	C.CE.CHP	0.1uF 16V	
	C3244	US061220	C.CE.CHP	22pF 50V B	
	C3245	US062560	C.CE.CHP	560pF 50V B	
	C3246	UR837100	C.EL	10uF 16V	
	C3247-3256	US135100	C.CE.CHP	0.1uF 16V	
	C3260-3262	UR837470	C.EL	47uF 16V	
	C3263-3271	WD758300	C.CE.CHP	10uF 10V	
	C3401	UR749220	C.EL	2200uF 25V	UCTKABGEF
	C3401	UR759220	C.EL	2200uF 35V	RL
	C3402	WJ605000	C.MYLAR	0.01uF 50V J	
	C3403	UR897100	C.EL	10uF 100V	RL
	C3404	WJ605000	C.MYLAR	0.01uF 50V J	UCTKABGEF
	C3405-3406	WJ605000	C.MYLAR	0.01uF 50V J	RL
⚠	C3407	WB121400	C.CE.SAFTY	0.01uF 295V	
	C3501-3508	WJ605000	C.MYLAR	0.01uF 50V J	
	C3651	US063100	C.CE.CHP	1000pF 50V B	UCRTKAGEFL
	C3652	US063100	C.CE.CHP	1000pF 50V B	
	C3653	US064100	C.CE.CHP	0.01uF 50V B	
	C3654	US064100	C.CE.CHP	0.01uF 50V B	UCRTKAGEFL
	D3001-3002	VT332900	DIODE	1SS355	
	D3206-3207	VT332900	DIODE	1SS355	
	D3212-3217	VT332900	DIODE	1SS355	
	D3401	VD631600	DIODE	1SS133,176	
⚠	D3402	VG437000	DIODE.ZENR	MTZJ4.7A 4.7V	RL
⚠	D3403-3404	VS997800	DIODE	1T2	
⚠	D3405	VS997800	DIODE	1T2	RL
⚠	D3406-3407	VS997800	DIODE	1T2	
	D3408-3409	WC398800	DIODE	KDS160-RTK	
	D3501-3502	VD631600	DIODE	1SS133,176	
	D3651	VT332900	DIODE	1SS355	
	D3652	VT332900	DIODE	1SS355	UCRTKAGEFL
⚠	F3401	WB221200	FUSE	T6A 125V	UCRL
⚠	F3401	VV071700	FUSE	3.15A 250V	TKABGEF
⚠	F3402	WB221200	FUSE	T6A 125V	UC
⚠	F3402	VT942900	FUSE	T2.5A 250V	RTABGEFL
⚠	F3551	VV071700	FUSE	3.15A 250V	RL
	IC301-303	XY550A00	IC	MM74HC4051SJX	

※ New Parts

P.C.B. VIDEO

	Ref. No.	Part No.	Description		Markets
	IC304	X7818A00	IC	LC74782JM-8A16-TLM	
	IC305	XZ509A00	IC	TC74VHCU04FT INVER	
	IC307	X6742A00	IC	LA73050-TLM-E	
⚠	IC308	X4928A00	IC	KIA7805API 5V	
⚠	IC309	X7973A00	IC	KIA79M05PI-U	
	IC310-311	XS790A00	IC	TC74HC4052AF MPX	
	IC321-323	XS790A00	IC	TC74HC4052AF MPX	
	IC325	X2904A00	IC	NJM2581M VIDEO AMP	
	IC326	XZ509A00	IC	TC74VHCU04FT INVER	
	IC327	XY877A00	IC	MM74HC4053SJX	
	JK301	VS867300	CN.DIN	4P YKF51-5501	
	JK302-303	V9273500	CN.DIN	2P YKF51-5605	
	JK366	V9435700	JACK.MNI	MSJ-035-12APC	UCRTKAGEFL
	JK367	V9435700	JACK.MNI	MSJ-035-12APC	
	JK368	V9435700	JACK.MNI	MSJ-035-12APC	UCRTKAGEFL
	PJ301	V7189800	JACK.PIN	1P	
	PJ302-303	V7190000	JACK.PIN	2P	
	PJ321-322	WG471900	JACK.PIN	6P	
	PN351	V9637500	PIN	L=70 #18	
	PN366	V9637500	PIN	L=70 #18	
	Q3001-3003	VV556500	TR	2SA1037K Q,R,S	
	Q3004-3005	VV556400	TR	2SC2412K Q,R,S	
	Q3201-3203	VV556500	TR	2SA1037K Q,R,S	
⚠	Q3401	VE198800	TR	2SC2705 O,Y	
⚠	Q3402	iA10151O	TR	2SA1015 Y	RL
⚠	Q3403	VP872600	TR	2SA1708 S,T	RL
⚠	Q3404	iA10151O	TR	2SA1015 Y	RL
⚠	Q3405	WC529200	TR.DGT	KRC102M-AT	RL
	Q3501	WC398500	TR.DGT	KRA102M-AT	
	Q3502	WC529200	TR.DGT	KRC102M-AT	
	Q3503	WC398500	TR.DGT	KRA102M-AT	
	R3016	WB625900	R.MTL.OXD	33Ω 1W	
⚠	R3017	WB625800	R.MTL.OXD	27Ω 1W	
	R3028-3029	HV753100	R.CAR.FP	1Ω 1/4W	
	R3055	HV755470	R.CAR.FP	470Ω 1/4W	
	R3056	HV753220	R.CAR.FP	2.2Ω 1/4W	
	R3058	HV753100	R.CAR.FP	1Ω 1/4W	
	R3060	WB625900	R.MTL.OXD	33Ω 1W	
	R3237	HV753220	R.CAR.FP	2.2Ω 1/4W	
	R3238	HV753100	R.CAR.FP	1Ω 1/4W	
	R3245	HV753100	R.CAR.FP	1Ω 1/4W	
	R3408	VC757900	R.MTL.OXD	47Ω 2W	RL
⚠	R3410	V6730000	R.CAR.	2.2MΩ 1/2W	UC
⚠	RY341	V9366900	RELAY	DLS9D1-0(M)0.25W	
	RY351-352	WJ122400	RELAY	981-2A-24DS-SP7	
	ST321	WA789600	SCR.TERM	M3	UCRTKABGEFL
	ST341	WA789600	SCR.TERM	M3	UCK
	ST342	WA789600	SCR.TERM	M3	K
	ST366-367	WA789600	SCR.TERM	M3	
⚠	SW356	WB493700	VOLT.SELCT	R8140246	R
⚠	SW356	WD073700	VOLT.SELCT	R8140254	L
⚠	T3401	X8521A00	TRANS.PWR		UC
⚠	T3401	X8522A00	TRANS.PWR		RL
⚠	T3401	X8523A00	TRANS.PWR		T
⚠	T3401	X8523A00	TRANS.PWR		TKABGEF
⚠	TE341	WJ583000	AC.OUTLET	2P AC-182-UL	UC
⚠	TE341	V5867400	OUTLET.AC	2P	RT
⚠	TE341	VT915000	OUTLET.AC	1P	A
⚠	TE341	VU543300	OUTLET.AC	1P	B
⚠	TE341	VU543400	OUTLET.AC	2P	GEFL

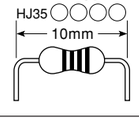
	Ref. No.	Part No.	Description		Markets
*	TE352	WN045900	TERM.SCR	8P	UCRTA
*	TE352	WN046300	TERM.SCR	8P	KBGEFL
*	XL301	WN380400	RSNR.CRYS	14.3181MHz AT-49	UCRK
*	XL301	WN380500	RSNR.CRYS	17.7344MHz AT-49	TABGEFL

* New Parts

* New Parts

Chip Resistors

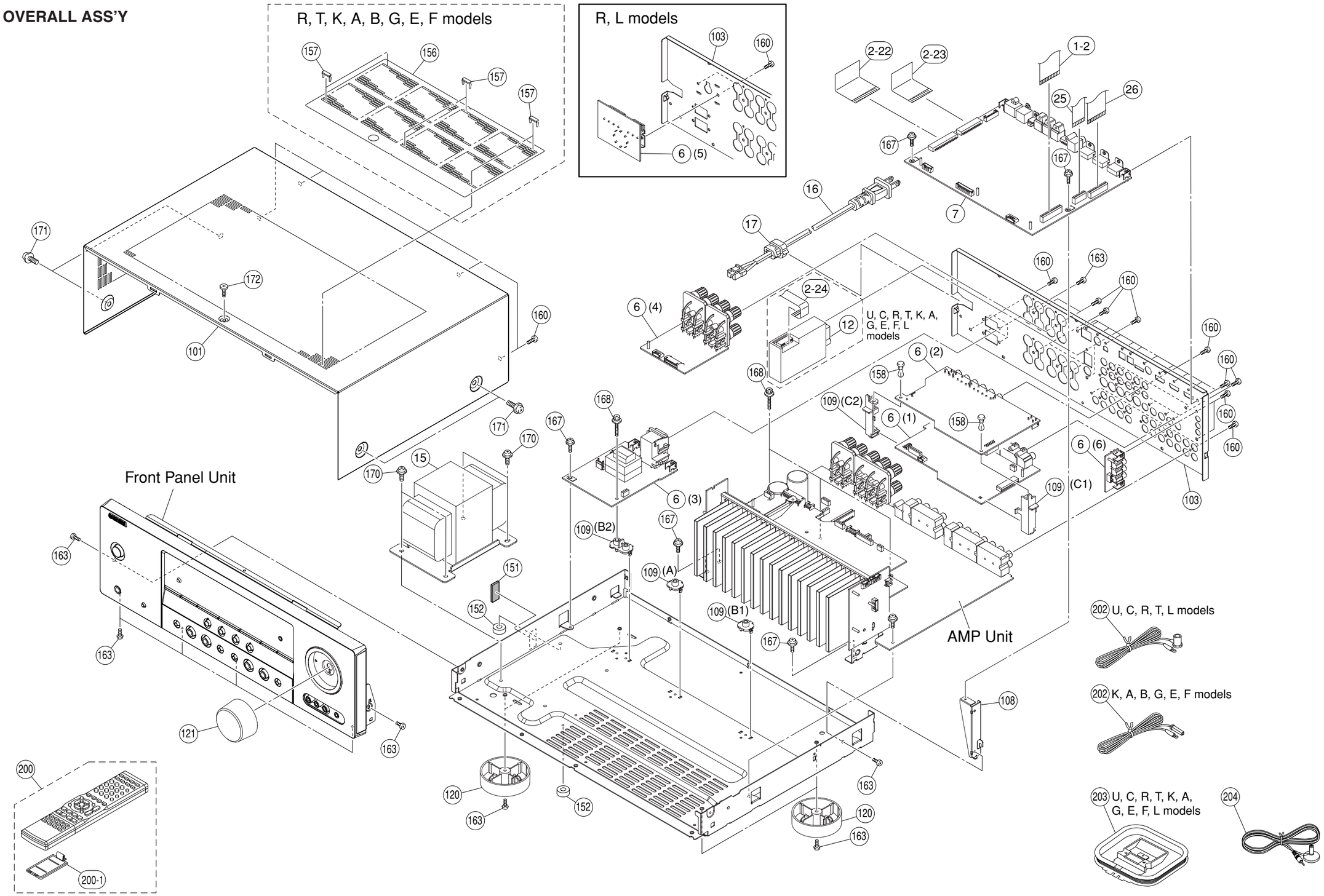
Value	**1/4W** Type Part No.	**1/6W** Type Part No.	Value	**1/4W** Type Part No.	**1/6W** Type Part No.
1.0 Ω	HJ35 3100	HF85 3100	10 kΩ	HF45 7100	HF45 7100
1.8 Ω	HJ35 3180	※	11 kΩ	HF45 7110	HF45 7110
2.2 Ω	HJ35 3220	HF85 3220	12 kΩ	HJ35 7120	HF85 7120
3.3 Ω	HJ35 3330	HF85 3330	13 kΩ	HF45 7130	HF45 7130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

1/4W Type
HJ35○○○○


1/4W Type
HF45○○○○
1/6W Type
HF85○○○○


※ : Not available

- **OVERALL ASS'Y**



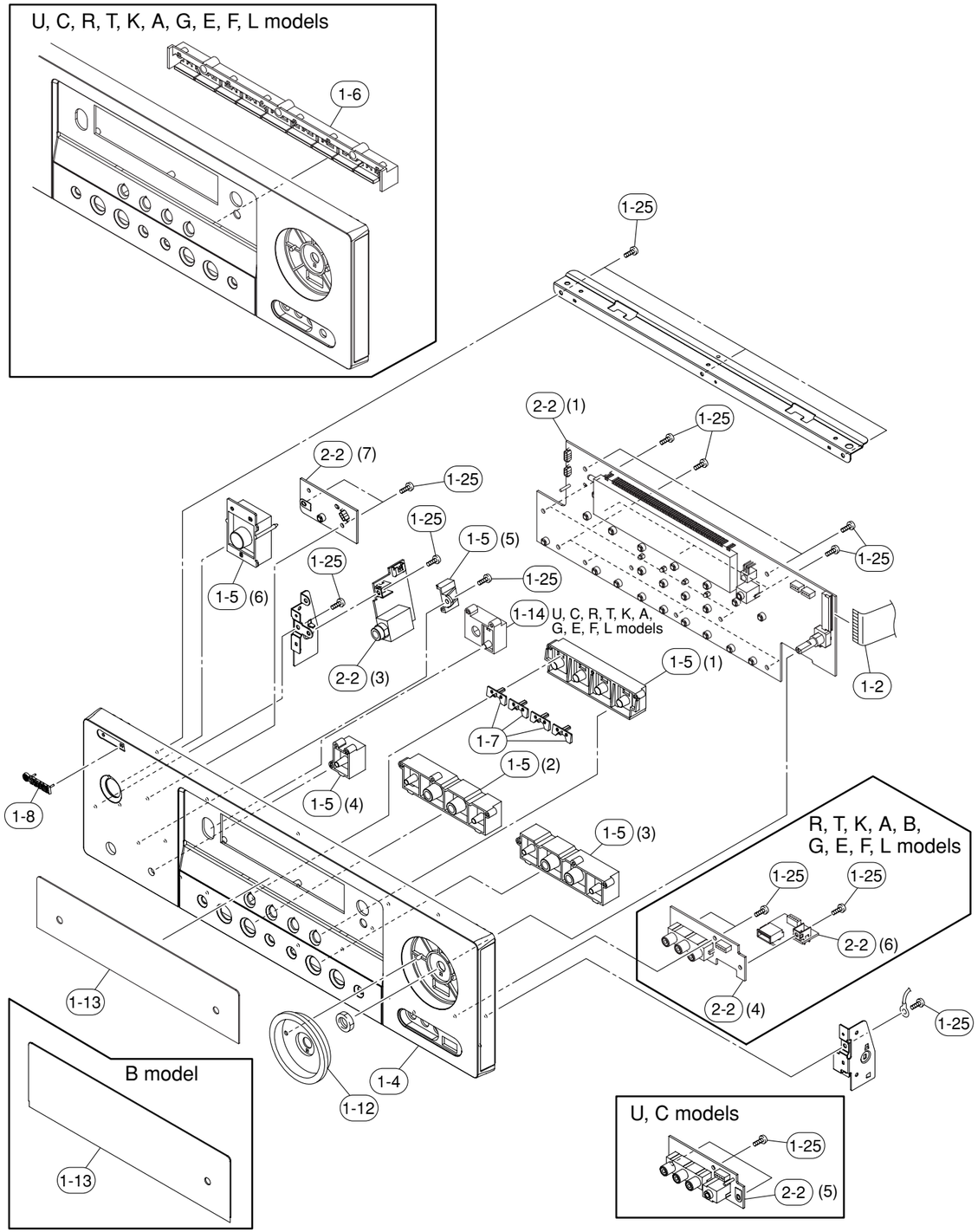
	Ref. No.	Part No.	Description		Remarks	Markets
	1-2	MF124250	FLEXIBLE FLAT CABLE	24P 250mm P=1.25		
	2-22	MF131120	FLEXIBLE FLAT CABLE	31P 120mm P=1.25		
	2-23	MF126100	FLEXIBLE FLAT CABLE	26P 100mm P=1.25		
	2-24	MF113160	FLEXIBLE FLAT CABLE	13P 160mm P=1.25		
*	6	WN273300	P.C.B. ASS'Y	VIDEO		UC
*	6	WN273400	P.C.B. ASS'Y	VIDEO		R
*	6	WN273500	P.C.B. ASS'Y	VIDEO		T
*	6	WN273600	P.C.B. ASS'Y	VIDEO		K
*	6	WN273700	P.C.B. ASS'Y	VIDEO		A
*	6	WN273800	P.C.B. ASS'Y	VIDEO		B
*	6	WN273900	P.C.B. ASS'Y	VIDEO		GEF
*	6	WN274000	P.C.B. ASS'Y	VIDEO		L
*	7	WN276000	P.C.B. ASS'Y	DSP		UC
*	7	WN276100	P.C.B. ASS'Y	DSP		R
*	7	WN276200	P.C.B. ASS'Y	DSP		TA
*	7	WN276300	P.C.B. ASS'Y	DSP		K
*	7	WN276400	P.C.B. ASS'Y	DSP		B
*	7	WN276500	P.C.B. ASS'Y	DSP		GEF
*	7	WN276600	P.C.B. ASS'Y	DSP		L
	12	WB424000	AM/FM TUNER	ENG06709Q		UCRL
	12	WB877300	AM/FM TUNER	FAE381-A07F		T
	12	WB424100	AM/FM TUNER	ENG07711Q		KA
	12	WB877400	AM/FM TUNER	FAE481-E07F		GEF
* ⚠	15	X9539A00	POWER TRANSFORMER			UC
* ⚠	15	X9540A00	POWER TRANSFORMER			RL
* ⚠	15	X9541A00	POWER TRANSFORMER			TK
* ⚠	15	X9542A00	POWER TRANSFORMER			A
* ⚠	15	X9543A00	POWER TRANSFORMER			BGEF
⚠	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		GEFL
	17	V2438700	CORD STOPPER	10P1		
	25	MF113100	FLEXIBLE FLAT CABLE	13P 100mm P=1.25		
	26	MF121120	FLEXIBLE FLAT CABLE	21P 120mm P=1.25		
*	101	WM744900	TOP COVER		GD	
*	101	WM744800	TOP COVER		BL	
*	101	WM745000	TOP COVER		TI	
*	101	WM745100	TOP COVER		SI	
*	103	WM745300	REAR PANEL		V563	UC
*	103	WM745500	REAR PANEL		V563	R
*	103	WM745600	REAR PANEL		V563	T
*	103	WM745700	REAR PANEL		V563	K
*	103	WM745800	REAR PANEL		V563	A
*	103	WM745900	REAR PANEL		AX563	B
*	103	WM746000	REAR PANEL		V563	GEF
*	103	WM746100	REAR PANEL		V563	L
*	103	WM746300	REAR PANEL		6150	UC
*	103	WM746800	REAR PANEL		6150	F
*	109	WM749300	SUPPORT PCB			
	120	WA790600	LEG	D60/H21 GD	GD	
	120	WA790500	LEG	D60/H21 HS	BL, TI, SI	
*	121	WM749500	KNOB D48		GD	
*	121	WM749400	KNOB D48		BL	
*	121	WM749600	KNOB D48		TI	
*	121	WM749700	KNOB D48		SI	

* New Parts

	Ref. No.	Part No.	Description		Remarks	Markets
	151	WB408400	DAMPER	10x30 t=4		
	152	WB484700	DAMPER	SCREW MASK		
	156	WJ589800	SHEET TOP			RTKABGEF
	157	WJ323900	RIVET TOP			RTKABGEF
	158	VQ368600	PUSH RIVET	P3555-B		
	160	WE774100	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2B3		
	163	WE774300	BIND HEAD B-TIGHT SCREW	3x8 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	
	172	WE200400	DISH HEAD B-TIGHT SCREW	3x6 MFNI33	GD, TI, SI	
	172	WE200500	DISH HEAD B-TIGHT SCREW	3x6 MFNI3BL	BL	
			ACCESSORIES			
*	200	WN057800	REMOTE CONTROL	RAV280		UC
*	200	WN058000	REMOTE CONTROL	RAV282		RTKABGEFL
	200-1	AAX82380	BATTERY COVER		CG-2209	
	202	WB212500	INDOOR FM ANTENNA	1.4m 1pc		UCRTL
	202	WB212400	INDOOR FM ANTENNA	1.4m 1pc		KAGEF
	203	WB212600	AM LOOP ANTENNA	1.0m 1pc		UCRTKAGEFL
*	204	WN649600	OPTIMIZER MICROPHONE	6.0m 1pc	EM6022L-HN1700	
			BATTERY	R03,AAA,UM-4 2pcs		
			SERVICE TOOLS			

* New Parts

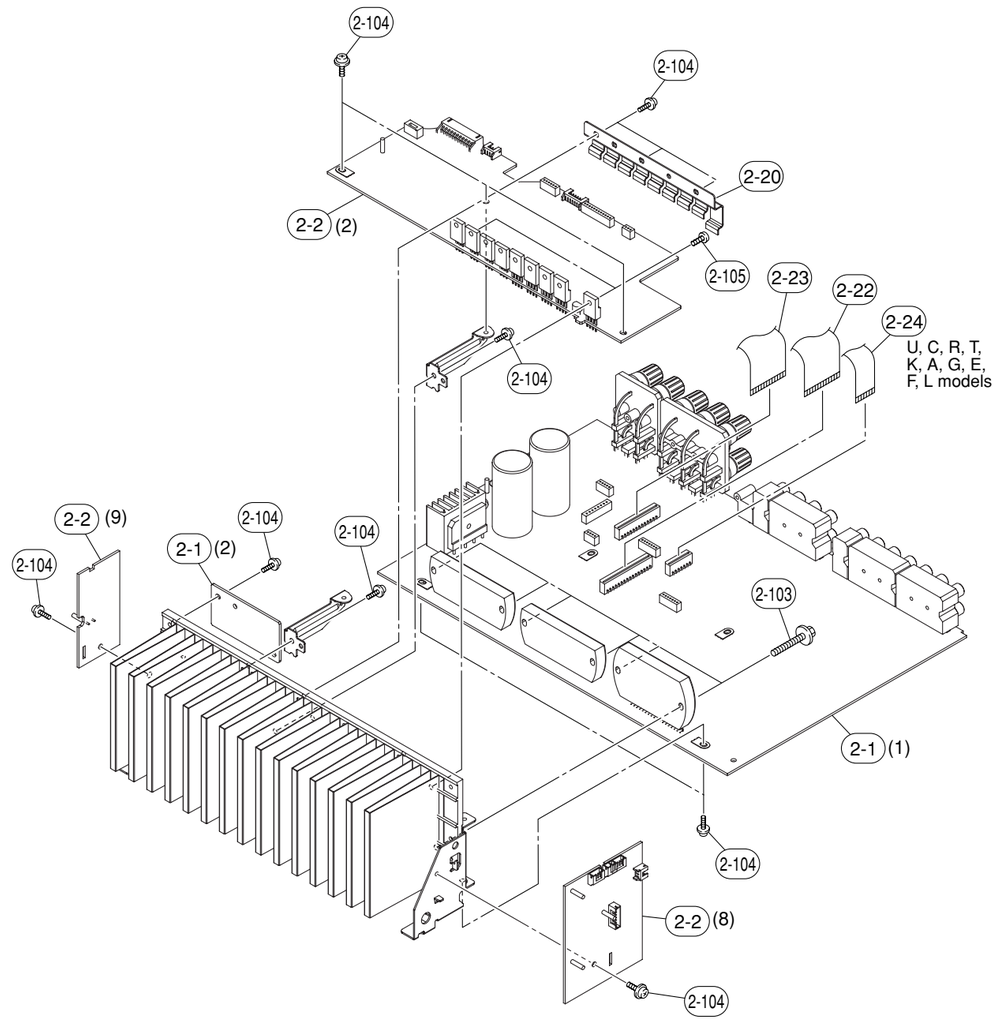
• FRONT PANEL UNIT



	Ref. No.	Part No.	Description		Remarks	Markets
	1-2	MF124250	FLEXIBLE FLAT CABLE	24P 250mm P=1.25		
*	1-4	WM752400	FRONT PANEL		GD	
*	1-4	WM751100	FRONT PANEL		V563BL	UC
*	1-4	WM751200	FRONT PANEL		V563BL	RAGEF
*	1-4	WM994500	FRONT PANEL		AX563BL	B
*	1-4	WM753600	FRONT PANEL		TI	KGEFL
*	1-4	WM994700	FRONT PANEL		TI	B
*	1-4	WM994800	FRONT PANEL		V563SI	
*	1-4	WM751400	FRONT PANEL		6150BL	UC
*	1-4	WM751500	FRONT PANEL		6150BL	F
*	1-4	WM754300	FRONT PANEL		6150SI	
*	1-5	WM808800	BUTTON CASE		GD	
*	1-5	WM808600	BUTTON CASE		BL	UCRAGEF
	1-5	WJ192300	BUTTON CASE		BL	B
*	1-5	WM809000	BUTTON CASE		TI	KGEFL
	1-5	WJ192700	BUTTON CASE		TI	B
*	1-5	WM808900	BUTTON CASE		SI	
*	1-6	WM749900	BUTTON TUNER			UCRTKAGEFL
	1-7	WJ193200	LENS BUTTON	SCENE		
	1-8	WJ193400	EMBLEM GD		GD	
	1-8	WJ193300	EMBLEM BL		BL, TI, SI	
*	1-12	WM750100	ESCUTCHEON VOL		GD	
*	1-12	WM750000	ESCUTCHEON VOL		BL	
*	1-12	WM750200	ESCUTCHEON VOL		TI	
*	1-12	WM750300	ESCUTCHEON VOL		SI	
*	1-13	WM761200	SHEET WINDOW			UC
*	1-13	WM761300	SHEET WINDOW			RTKAGEFL
*	1-13	WM750400	SHEET WINDOW			B
*	1-14	WM749800	BUTTON SYSTEM OFF			UCRTKAGEFL
	1-22	WA790900	SPACER FL	4.6/10/32		
	1-25	WE774800	BIND HEAD P-TIGHT SCREW	3x8 MFZN2W3		
	1-26	WF268000	BIND HEAD P-TIGHT SCREW	3x10 MFZN2B3		RTKABGEFL
*	2-2	WN278000	P.C.B. ASS'Y	OPERATION		UC
*	2-2	WN278100	P.C.B. ASS'Y	OPERATION		RTKAGEFL
*	2-2	WN278200	P.C.B. ASS'Y	OPERATION		B

* New Parts

• AMP UNIT



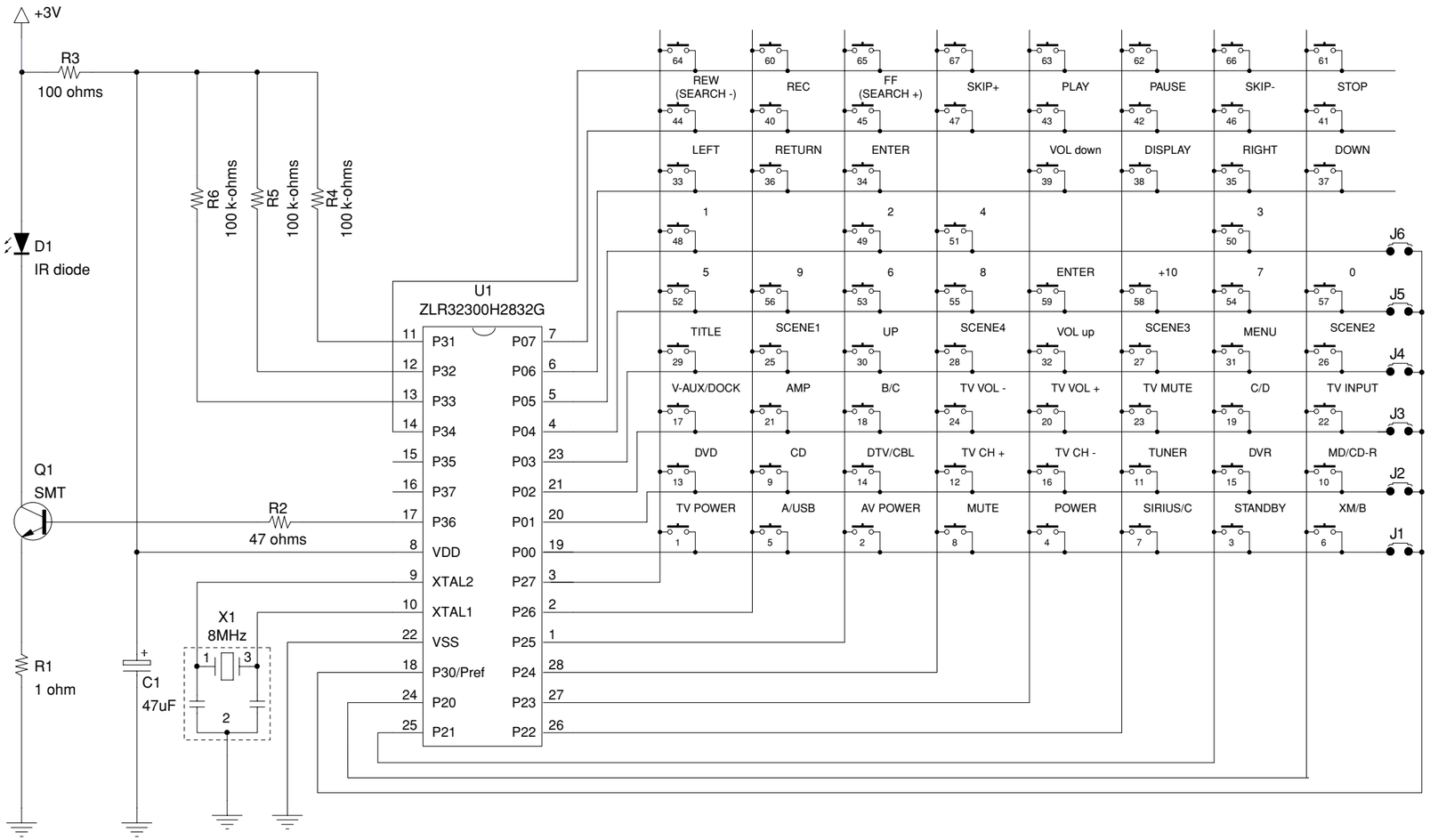
	Ref. No.	Part No.	Description		Remarks	Markets
*	2-1	WN272300	P.C.B. ASS'Y	MAIN		UCRTA
*	2-1	WN272400	P.C.B. ASS'Y	MAIN		KL
*	2-1	WN272500	P.C.B. ASS'Y	MAIN		B
*	2-1	WN272600	P.C.B. ASS'Y	MAIN		GEF
*	2-2	WN278000	P.C.B. ASS'Y	OPERATION		UC
*	2-2	WN278100	P.C.B. ASS'Y	OPERATION		RTKAGEFL
*	2-2	WN278200	P.C.B. ASS'Y	OPERATION		B
*	2-20	WM749200	SUPPORT TR-8P			
	2-22	MF131120	FLEXIBLE FLAT CABLE	31P 120mm P=1.25		
	2-23	MF126100	FLEXIBLE FLAT CABLE	26P 100mm P=1.25		
	2-24	MF113160	FLEXIBLE FLAT CABLE	13P 160mm P=1.25		UCRTKAGEFL
	2-103	WE774600	SCREW IC	3x18 MFZN2W3		
	2-104	WF002600	PW HEAD B-TIGHT SCREW	3x8 MFZN2W3		
	2-105	WE774300	BIND HEAD B-TIGHT SCREW	3x8 MFZN2W3		

* New Parts

■ REMOTE CONTROL

● RAV280 (U, C models), RAV282 (R, T, K, A, B, G, E, F, L models)

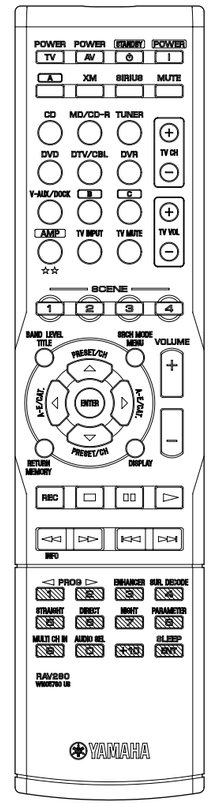
• SCHEMATIC DIAGRAM



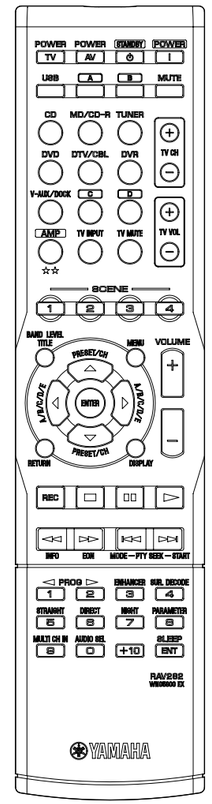
	RAV280	RAV282
J1	O	X
J2	X	X
J3	X	O
J4	X	X
J5	X	X
J6	X	X

• PANELS

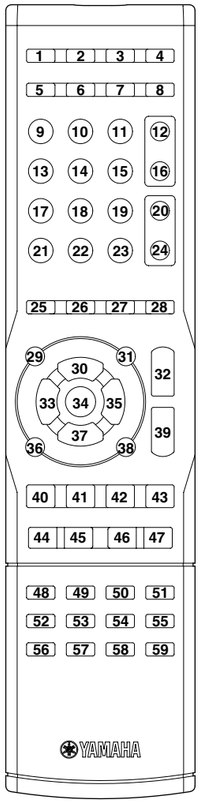
RAV280
(U, C models)



RAV282
(R, T, K, A, B, G, E, F, L models)

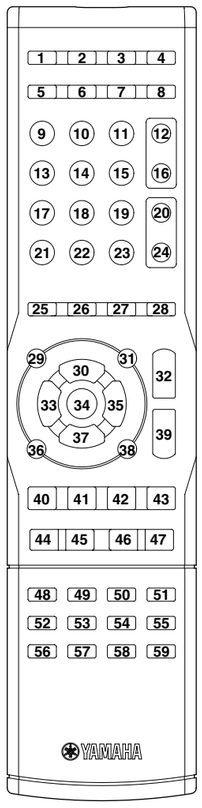


• KEY LAYOUT



• IR CODE

Key no.	Label	Key		K21 [AMP]				K5 [USB] RAV282	K6 [XM] RAV280		K7 [SIRIUS] RAV280		K9 [CD]	K10 [MD/CD-R]	K11 [TUNER]		K13 [DVD]	K14 [DVD/CBL]	K15 [DVR]	K17 [V-AUX]	K18 [VCR]	K19 [PHONO]
		Common	ZONE2 code	ID1 (default)		ID2			ID1 (default)	ID2	ID1 (default)	ID2			ID 1 (default)	ID2						
				MAIN	ZONE2	MAIN	ZONE2															
1	POWER_TV	–	–	(TV POWER)				(TV POWER)	(TV POWER)	(TV POWER)	(TV POWER)	(TV POWER)	(TV POWER)	(TV POWER)	(TV POWER)	(TV POWER)	(TV POWER)	TV POWER	(TV POWER)	(TV POWER)	(TV POWER)	TV POWER
2	POWER_AV	–	–	(device)				7F01-20	–	–	7F01-D0	7F01-D02E	79-60	7F-80	D1-1B	–	7C-80	(DVR POWER)	048.012	7F01-00	–	(DVR POWER)
3	STANDBY	O	O	7E-7F	7E-BB	7E-7F81	7E-BB45	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
4	POWER	O	O	7E-7E	7E-BA	7E-7E80	7E-BA44	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
5	A (RAV280, RAV281) USB (RAV282)	O	O	7F01-3F	7F01-40	7F01-3FC1	7F01-40BE	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
6	XM (RAV280) B (RAV281) A (RAV282)	O	O	7A-B4	7A-B8	7A-B44A	7A-B846	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
7	SIRIUS (RAV280) C (RAV281) B (RAV282)	O	O	7A-39	7A-3A	7A-39C7	7A-3AC4	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
8	MUTE	O	O	7A-1C	7A-DC	7A-1CE2	7A-DC22	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
9	CD	O	O	7A-15	7A-D1	7A-15EB	7A-D12F	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
10	MD/CD-R	O	O	7A-C9	7A-CF	7A-C937	7A-CF31	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
11	TUNER	O	O	7A-16	7A-D2	7A-16E8	7A-D22C	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
12	TV CH +	–	–	(TV CH +)				(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	TV CH +	(TV CH +)	(TV CH +)	TV CH +
13	DVD	O	O	7A-C1	7A-CD	7A-C13F	7A-CD33	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
14	DTV/CBL	O	O	7A-54	7A-D9	7A-54AA	7A-D927	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
15	DVR	O	O	7A-13	7A-D7	7A-13ED	7A-D729	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
16	TV CH –	–	–	(TV CH +)				(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	TV CH -	(TV CH -)	(TV CH -)	TV CH -
17	V-AUX/DOCK	O	O	7A-55	7A-D8	7A-55AB	7A-D826	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
18	B (RAV280) D (RAV281) C (RAV282)	O	O	7A-0F	7A-D6	7A-0FF1	7A-D628	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
19	C (RAV281) E (RAV282) D (RAV283)	O	O	7A-14	7A-D0	7A-14EA	7A-D02E	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
20	TV VOL +	–	–	(TV VOL +)				(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	TV VOL +	(TV VOL +)	(TV VOL +)	(TV VOL +)	TV VOL +
21	AMP / ☆☆	O	–																			
22	TV INPUT	–	–	(TV INPUT)				(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	TV INPUT	(TV INPUT)	(TV INPUT)	(TV INPUT)	TV INPUT
23	TV MUTE	–	–	(TV MUTE)				(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	TV MUTE	(TV MUTE)	(TV MUTE)	(TV MUTE)	TV MUTE
24	TV VOL –	–	–	(TV VOL-)				(TV VOL-)	(TV VOL-)	(TV VOL-)	(TV VOL-)	(TV VOL-)	(TV VOL-)	(TV VOL-)	(TV VOL-)	(TV VOL-)	(TV VOL-)	TV VOL-	(TV VOL-)	(TV VOL-)	(TV VOL-)	TV VOL-
25	SCENE_1	O	O	7A-007F	7A-017E	7A-007E	7A-017F	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
26	SCENE_2	O	O	7A-037C	7A-047B	7A-037D	7A-047A	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
27	SCENE_3	O	O	7A-0679	7A-0778	7A-0678	7A-0779	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
28	SCENE_4	O	O	7A-0976	7A-0A75	7A-0977	7A-0A74	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
29	BAND LEVEL / TITLE			7A-86		7A-8678		7F01-2D	7A-70	7A-708E	7F01-DD	7F01-DD23	–	–	7A-AE	7A-AE50	7C-B1	–	048.200	7F01-0D	–	–
30	PRESET/CH_▲ (UP)			7A-9D		7A-9D63		7F01-2E	7A-6A	7A-6A94	7F01-E1	7F01-E11F	–	–	7A-10	7A-10EE	7C-B4	–	048.088	7F01-0E	–	–
31	SRCH MODE / MENU			7A-84		7A-847A		7F01-2F	7A-6D	7A-6D93	7F01-DE	7F01-DE20	–	–	7A-AB	7A-AB55	7C-B2	–	048.084	7F01-0F	–	–
32	VOLUME +	O	O	7A-1A	7A-DA	7A-1AE4	7A-DA24	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
33	A-E/CAT. / A/B/C/D/E _◄ (LEFT)			7A-9F		7A-9F61		7F01-30	7A-6E	7A-6E90	7F01-E2	7F01-E21C	–	–	7A-AC	7A-AC52	7C-B5	–	048.090	7F01-10	–	–
34	ENTER			7A-DE		7A-DE20		7F01-31	7A-6F	7A-6F91	7F01-E3	7F01-E31D	–	–	7A-AD	7A-AD53	7C-B8	–	048.092	7F01-11	–	–
35	A-E/CAT. / A/B/C/D/E _► (RIGHT)			7A-9E		7A-9E60		7F01-32	7A-6C	7A-6C92	7F01-E4	7F01-E41A	–	–	7A-12	7A-12EC	7C-B6	–	048.091	7F01-12	–	–
36	RETURN / MEMORY			7A-AA		7A-AA54		7F01-33	7A-71	7A-718F	7F01-DF	7F01-DF21	–	–	7A-AF	7A-AF51	7C-B7	–	048.131	7F01-13	–	–
37	PRESET/CH_▼ (DOWN)			7A-9C		7A-9C62		7F01-34	7A-6B	7A-6B95	7F01-E5	7F01-E51B	–	–	7A-11	7A-11EF	7C-B3	–	048.089	7F01-14	–	–
38	DISPLAY			7A-C2		7A-C23C		7F01-35	7A-72	7A-728C	7F01-E0	7F01-E01E	79-0A	7F-9E	7A-B0	7A-B04E	7C-A6	–	048.015	7F01-15	–	–
39	VOLUME –	O	O	7A-1B	7A-DB	7A-1BE5	7A-DB25	←	←	←	←	←	←	←	←	←	←	←	←	←	←	←
40	REC			(device)		(device)		7F01-36	–	–	7F01-E6	7F01-E618	7A-4F	–	–	–	7C-8B	(DVR REC)	048.055	7F01-16	–	(DVR REC)
41	■ (STOP)			(device)		(device)		7F01-3D	–	–	7F01-E9	7F01-E917	7A-09	7F-84	–	–	7C-85	(DVR STOP)	048.049	7F01-1D	–	(DVR STOP)
42	▮▮ (PAUSE)			(device)		(device)		7F01-3A	–	–	7F01-E7	7F01-E719	7A-09	7F-83	–	–	7C-83	(DVR PAUSE)	048.048	7F01-1A	–	(DVR PAUSE)
43	► (PLAY)			(device)		(device)		7F01-3E	–	–	7F01-E8	7F01-E816	7A-08	7F-82	–	–	7C-82	(DVR PLAY)	048.044	7F01-1E	–	(DVR PLAY)
44	◄◄ (REW)_INFO			(device)		(device)		7F01-37	7A-3D	7A-3DC3	7F01-EA	7F01-EA14	7A-0D	7F-88	7A-A4	7A-A45A	7C-86	(DVR REW)	048.041	7F01-17	–	(DVR REW)
45	►► (FF)			(device)		(device)		7F01-38	7A-3E	7A-3EC0	7F01-EB	7F01-EB15	7A-0C	7F-89	7A-A5	7A-A55B	7C-87	(DVR FF)	048.040	7F01-18	–	(DVR FF)
46	I◄◄ (SKIP –) _PTY SEEK–MODE			(device)		(device)		7F01-3B	7A-3F	7A-3FC1	7F01-EC	7F01-EC12	7A-0B	7F-86	7A-A6	7A-A658	7C-B9	(DVR SKIP -)	048.033	7F01-1B	–	(DVR SKIP -)
47	►►I (SKIP +) _PTY SEEK–START			(device)		(device)		7F01-3C	7A-EF	7A-EF11	7F01-ED	7F01-ED13	7A-0A	7F-87	7A-A7	7A-A759	7C-BA	(DVR SKIP +)	048.032	7F01-1C	–	(DVR SKIP +)
48	1_◄ PRG			7A-59		7A-59A7		7F01-21	7A-61	7A-619F	7F01-D1	7F01-D12F	79-11	7F-91	7A-E5	7A-E51B	7C-94	–	048.001	7F01-01	–	–
49	2_PRG ►			7A-58		7A-58A6		7F01-22	7A-62	7A-629C	7F01-D2	7F01-D22C	79-12	7F-92	7A-E6	7A-E618	7C-95	–	048.002	7F01-02	–	–
50	3_ENHANCER			7A-94		7A-946A		7F01-23	7A-63	7A-639D	7F01-D3	7F01-D32D	79-13	7F-93	7A-E7	7A-E719	7C-96	–	048.003	7F01-03	–	–
51	4_SUR. DECODE			7A-8D		7A-8D73		7F01-24	7A-64	7A-649A	7F01-D4	7F01-D42A	79-14	7F-94	7A-E8	7A-E816	7C-97	–	048.004	7F01-04	–	–
52	5_STRAIGHT			7A-56		7A-56A8		7F01-25	7A-65	7A-659B	7F01-D5	7F01-D52B	79-15	7F-95	7A-E9	7A-E917	7C-98	–	048.005	7F01-05	–	–
53	6_DIRECT			7A-DD		7A-DD23		7F01-26	7A-66	7A-6698	7F01-D6	7F01-D628	79-16	7F-96	7A-EA	7A-EA14	7C-99	–	048.006	7F01-06	–	–
54	7_NIGHT			7A-95		7A-956B		7F01-27	7A-67	7A-6799	7F01-D7	7F01-D729	79-17	7F-97	7A-EB	7A-EB15	7C-9A	–	048.007	7F01-07	–	–
55	8_PARAMETER			7A-C4		7A-C43A		7F01-28	7A-68	7A-6896	7F01-D8	7F01-D826	79-18	7F-98	7A-EC	7A-EC12	7C-9B	–	048.008	7F01-08	–	–
56	9_MULTI CH IN			7A-87		7A-8779		7F01-29	7A-69	7A-6997	7F01-D9	7F01-D927	79-19	7F-99	7A-B1	7A-B14F	7C-9C	–	048.009	7F01-09	–	–
57	0_AUDIO SEL			7A-C3		7A-C33D		7F01-2A	7A-60	7A-609E	7F01-DA	7F01-DA24	79-10	7F-90	7A-B2	7A-B24C	7C-93	–	048.000	7F01-0A	–	–
58	+10			–	–	–		7F01-2B	–	–	7F01-DB	7F01-DB25	79-1A	7F-9A	–	–	7C-9D	–	–	7F01-0B	–	–
59	ENT_SLEEP			7A-57		7A-57A9		7F01-2C	7A-BF	7A-BF41	7F01-DC	7F01-DC22	79-0B	7F-8A	7A-B3	7A-B34D	7C-9E	–	–	7F01-0C	–	–
default		Library		AMP	–	AMP	–	TUNER	TUNER	TUNER	TUNER	TUNER	CD	CD-R	TUNER	TUNER	DVD	–	DVR	TUNER	–	–
		Brand		Yamaha-1	–	Yamaha-2	–	Yamaha-8	Yamaha-5	Yamaha-11	Yamaha-9	Yamaha-10	Yamaha-1	Yamaha	Yamaha-3	Yamaha-12	Yamaha-1	–	Yamaha	Yamaha-7	–	–
		Preset number		5019	–	5020	–	5012	5009	5015	5017	5018	5013	5001	5007	5016	2000	–	2011	5011	–	–
		setting		K21 [AMP] + K2 [AV POWER] ↓ [5019]		↓ [5020]			K6[XM] + K2 ↓ [5009]	↓ [5015]	K7 [SIRIUS] + K2 ↓ [5017]	↓ [5018]			K11 [TUNER] + K2 ↓ [5007]	↓ [5016]						



- **FUNCTION CHART**

Key no.	Label	K21 [AMP]	K5 [USB] RAV282	K6 [XM] RAV280	K7 [SIRIUS] RAV280	K9 [CD]	K10 [MD/CD-R]	K11 [TUNER]	K13 [DVD]	K14 [DTV/CBL]	K15 [DVR]	K17 [V-AUX]	K18 [VCR]	K19 [PHONO]
1	POWER_TV	(TV POWER)	(TV POWER)	(TV POWER)	(TV POWER)	(TV POWER)	(TV POWER)	(TV POWER)	(TV POWER)	TV POWER	(TV POWER)	(TV POWER)	(TV POWER)	TV POWER
2	POWER_AV	(device)	POWER	POWER	POWER	POWER	POWER	POWER	POWER	(DVR POWER)	POWER	POWER	POWER	(DVR POWER)
12	TV CH +	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)	(TV CH +)
16	TV CH –	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)	(TV CH -)
20	TV VOL +	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)	(TV VOL +)
22	TV INPUT	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)	(TV INPUT)
23	TV MUTE	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)	(TV MUTE)
24	TV VOL –	(TV VOL -)	(TV VOL -)	(TV VOL -)	(TV VOL -)	(TV VOL -)	(TV VOL -)	(TV VOL -)	(TV VOL -)	(TV VOL -)	(TV VOL -)	(TV VOL -)	(TV VOL -)	(TV VOL -)
25	SCENE_1	SCENE 1												
26	SCENE_2	SCENE 2												
27	SCENE_3	SCENE 3												
28	SCENE_4	SCENE 4												
29	BAND LEVEL / TITLE	LEVEL	TITLE	BAND	TITLE	–	–	BAND	TITLE	TITLE	TITLE	BAND	TITLE	TITLE
30	PRESET/CH_▲ (UP)	MENU UP	UP	PRESET (+)	UP	–	–	PRESET (+)	MENU UP	MENU UP	MENU UP	PRESET (+)	–	MENU UP
31	SRCH MODE / MENU	MENU	MENU	SRCH MODE	SRCH MODE	–	–	SRCH MODE	MENU	MENU	MENU	SRCH MODE	–	MENU
32	VOLUME +	VOLUME (+)												
33	A-E/CAT. / A/B/C/D/E _◄ (LEFT)	MENU LEFT	LEFT	A-E/CAT. (-)	LEFT	–	–	A-E/CAT. (-)	MENU LEFT	MENU LEFT	MENU LEFT	A-E/CAT. (-)	–	MENU LEFT
34	ENTER	MENU SELECT	ENTER	ENTER	ENTER	–	-	ENTER	MENU ENTER	MENU ENTER	MENU ENTER	ENTER	–	MENU ENTER
35	A-E/CAT. / A/B/C/D/E _► (RIGHT)	MENU RIGHT	RIGHT	A-E/CAT. (+)	RIGHT	–	–	A-E/CAT. (+)	MENU RIGHT	MENU RIGHT	MENU RIGHT	A-E/CAT. (+)	–	MENU RIGHT
36	RETURN / MEMORY	RETURN	RETURN	MEMORY	MEMORY	–	–	MEMORY	RETURN	RETURN	RETURN	MEMORY	RETURN	RETURN
37	PRESET/CH_▼ (DOWN)	MENU DOWN	DOWN	PRESET (-)	DOWN	–	–	PRESET (-)	MENU DOWN	MENU DOWN	MENU DOWN	PRESET (-)	–	MENU DOWN
38	DISPLAY	SUB MENU	DISPLAY	DISPLAY	DISPLAY	DISPLAY	DISPLAY	DISPLAY	DISPLAY	DISPLAY	DISPLAY	DISPLAY	–	DISPLAY
39	VOLUME –	VOLUME (-)												
40	REC	(device)	–	–	REC	DISC SKIP	REC	–	DISC SKIP	(DVR REC)	REC	–	REC	(DVR REC)
41	■ (STOP)	(device)	STOP	–	STOP	STOP	STOP	–	STOP	(DVR STOP)	STOP	–	STOP	(DVR STOP)
42	▮▮ (PAUSE)	(device)	PAUSE	–	PAUSE	PAUSE	PAUSE	–	PAUSE	(DVR PAUSE)	PAUSE	–	PAUSE	(DVR PAUSE)
43	► (PLAY)	(device)	PLAY	–	PLAY	PLAY	PLAY	–	PLAY	(DVR PLAY)	PLAY	–	PLAY	(DVR PLAY)
44	◄◄ (REW)_INFO	(device)	–	INFO	REW	REW	REW	INFO	REW	(DVR REW)	REW	INFO	REW	(DVR REW)
45	►► (FF)	(device)	–	EON	FF	FF	FF	EON	FF	(DVR FF)	FF	EON	FF	(DVR FF)
46	⏮ (SKIP –) _PTY SEEK–MODE	(device)	SKIP (-)	PTY MODE	SKIP (-)	SKIP (-)	SKIP (-)	PTY MODE	SKIP (-)	(DVR SKIP -)	SKIP (-)	PTY MODE	–	(DVR SKIP -)
47	⏭ (SKIP +) _PTY SEEK–START	(device)	SKIP (+)	PTY START	SKIP (+)	SKIP (+)	SKIP (+)	PTY START	SKIP (+)	(DVR SKIP +)	SKIP (+)	PTY START	–	(DVR SKIP +)
48	1_◄ PRG	PROG (-)	P1	P1	1	1	1	P1	1	1	1	P1	1	1
49	2_PRG ►	PROG (+)	P2	P2	2	2	2	P2	2	2	2	P2	2	2
50	3_ENHANCER	ENHANCER	P3	P3	3	3	3	P3	3	3	3	P3	3	3
51	4_SUR. DECODE	SUR.DECODE	P4	P4	4	4	4	P4	4	4	4	P4	4	4
52	5_STRAIGHT	STRAIGHT	P5	P5	5	5	5	P5	5	5	5	P5	5	5
53	6_DIRECT	(PURE) DIRECT	P6	P6	6	6	6	P6	6	6	6	P6	6	6
54	7_NIGHT	NIGHT	P7	P7	7	7	7	P7	7	7	7	P7	7	7
55	8_PARAMETER	PARAMENTER	P8	P8	8	8	8	P8	8	8	8	P8	8	8
56	9_MULTI CH IN	MULTI CH IN	P9	P9	9	9	9	P9	9	9	9	P9	9	9
57	0_AUDIO SEL	AUDIO SEL	P10	P0	10	0/10	0/10	P0	0	0/10	0	P0	0/10	0/10
58	+10	–	–	–	11	+10	+10	–	+10	_/_ _,11	+10	–	>10	_/_ _,11
59	ENT_SLEEP	SLEEP	P.ENTER	P.ENTER	12	INDEX	INDEX	P.ENTER	TITLE/INDEX	ENTER/12	TITLE/INDEX	P.ENTER	ENTER	ENTER/12

Advanced setup

This unit has additional menus that are displayed in the front panel display. The advanced setup menu offers additional operations to adjust and customize the way this unit operates. Change the initial settings (indicated in bold under each parameter) to reflect the needs of your listening environment.

Notes

- Only **MAIN ZONE ON/OFF**, **PROGRAM** ⊲/⊳, and **STRAIGHT** are effective while you are using the advanced setup menu.
- No other operations can be made while you are using the advanced setup menu.
- The advanced setup menu is only available in the front panel display.

1 Press SYSTEM OFF to set this unit to the standby mode.

2 Press and hold TONE CONTROL and then press MAIN ZONE ON/OFF to turn on this unit.

This unit turns on, and the advanced setup menu appears in the front panel display.

3 Press PROGRAM ⊲/⊳ to select the parameter you want to adjust.

The name of the selected parameter appears in the front panel display.

4 Press STRAIGHT repeatedly to change the selected parameter setting.

5 Press MAIN ZONE ON/OFF to confirm your selection and set this unit to the standby mode.

☼
The settings you made are reflected next time you turn on this unit.

■ Speaker impedance SP IMP. (U.S.A. and Canada models only)

Use this feature to set the speaker impedance of this unit so that it matches that of your speakers.
Choices: **8Ω MIN**, 6Ω MIN

- Select "8Ω MIN" to set the speaker impedance to 8 Ω .
- Select "6Ω MIN" to set the speaker impedance to 6 Ω .

SP IMP.	Speaker	Impedance level
8Ω MIN	Front (A or B)	The impedance of each speaker must be 8 Ω or higher.
	Center	
	Surround	
6Ω MIN	Front (A or B)	The impedance of each speaker must be 6 Ω or higher.
	Center	
	Surround	

■ SIRIUS Satellite Radio Parental Lock code number reset SSR PIN

Use this feature to set the code number for the SIRIUS Satellite Radio Parental Lock feature to the initial factory setting.
Choices: RESET, **CANCEL**

- Select "RESET" to set the code number to the initial factory setting.
- Select "CANCEL" to set the code number to the initial factory setting.

Note

Even if you set "SSR PIN" to "RESET", this unit does not unlock the locked channels. The initial factory setting of the Parental Lock code number is "0000".

■ Bi-amplifier setting BI-AMP

Use this feature to activate or deactivate the bi-amplifier function.
Choices: ON, **OFF**

- Select "ON" if you want to activate the bi-amplifier function. "SUR.B L/R SP" is set to "NONE" automatically, and this unit outputs the front channel audio signals at the SURROUND BACK/BI-AMP speaker terminals.
- Select "OFF" if you want to deactivate the bi-amplifier function.

■ SCENE IR code setting SCENE IR

Use this feature to output the remote control signals at the REMOTE OUT jack automatically when this unit is in the SCENE mode.
Choices: **ON**, OFF

- Select "ON" when the component connected to the REMOTE OUT jack is the Yamaha component and has the capability of the SCENE control signals. This unit automatically sends the remote control signals to the component.
- Select "OFF" when the component connected to the REMOTE OUT jack is not the Yamaha component and does not have the capability of the SCENE control signals.

Note

If noises are output when you operate the SCENE function, set "SCENE IR" to "OFF".

■ Tuner frequency step TU (Asia and General models only)

Use this feature to set the tuner frequency step according to the frequency spacing in your area.
Choices: AM10/FM100, **AM9/FM50**

- Select "AM10/FM100" for North, Central and South America.
- Select "AM9/FM50" for all other areas.

■ Initializing INIT.

Use this feature to reset all the parameters of this unit to the initial factory settings.
Choices: **CANCEL**, RESET

- Select "CANCEL" not to reset any parameters of this unit.
- Select "RESET" to reset the parameters of this unit.

Notes

- This setting completely resets all the parameters of this unit including the "SET MENU" parameters. However, the advanced setup menu parameters will not be initialized.
- The initial factory settings are activated next time you turn on this unit.

RX-V563/HTR-6150/
DSP-AX563

YAMAHA