

AV RECEIVER RX-V595a/HTR-5150/ RX-V595aRDS SERVICE MANUAL

IMPORTANT NOTICE

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

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

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

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

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

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

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This Service Manual uses recycled paper.



■ TO SERVICE PERSONNEL

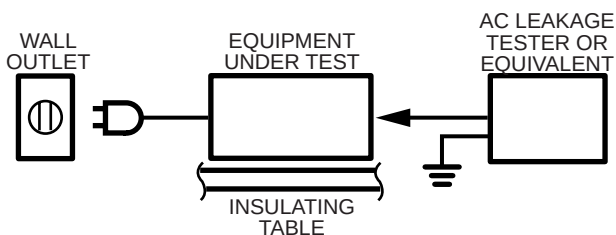
- ### 1. Critical Components information.

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 Model only).

When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.

- Meter impedance should be equivalent to 1500 ohm shunted by 0.15μF.
- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.



"CAUTION"



"F804: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 8.0A, 250V FUSE."

CAUTION

F804: REPLACE WITH SAME TYPE 8.0A, 250V FUSE.

ATTENTION

F804: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE 8.0A, 250V FUSE.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

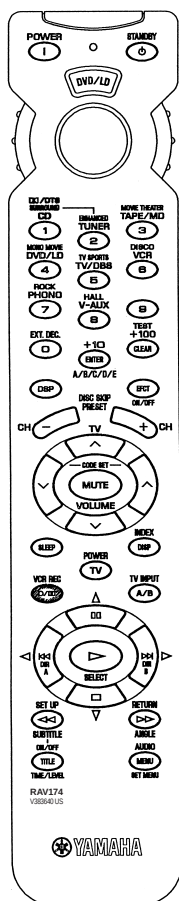
DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHATSOEVER!

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

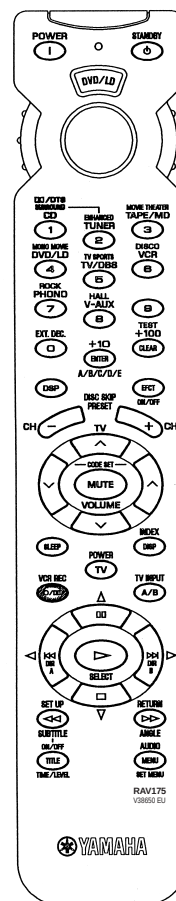
If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

■ REMOTE CONTROL PANELS

▼ U,C,R,T and L models

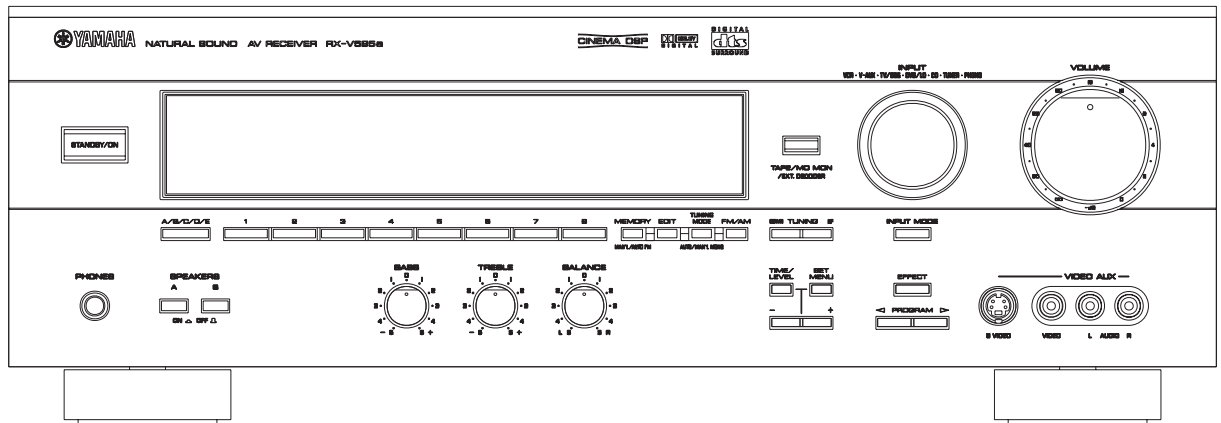


▼ A,B and G models

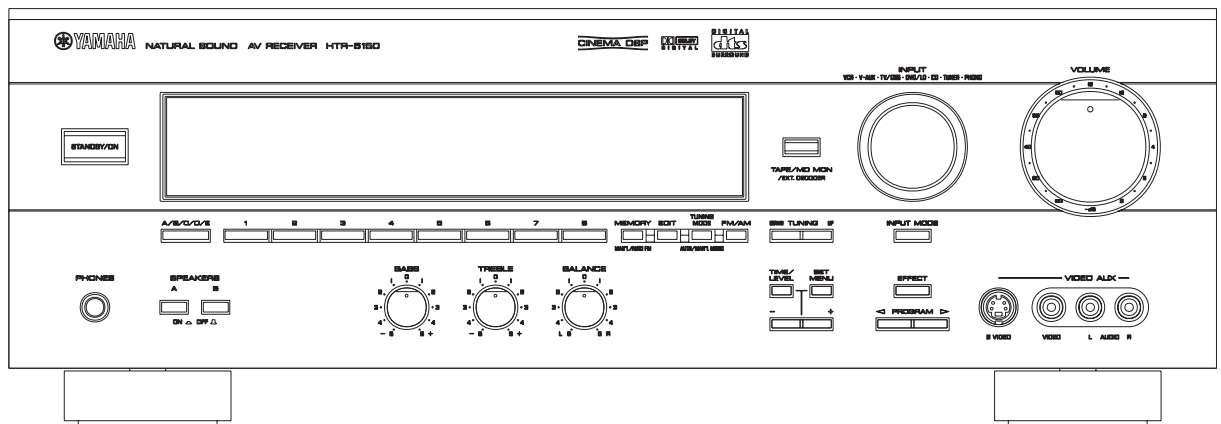


FRONT PANELS

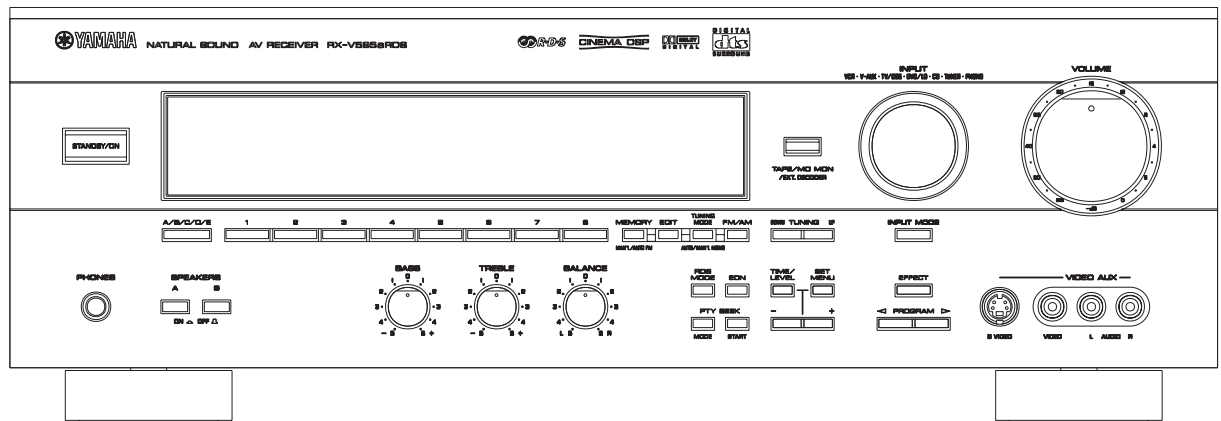
▼ RX-V595a (U, C, R, T, A and L models)



▼ HTR-5150 (U, C, T and A models)

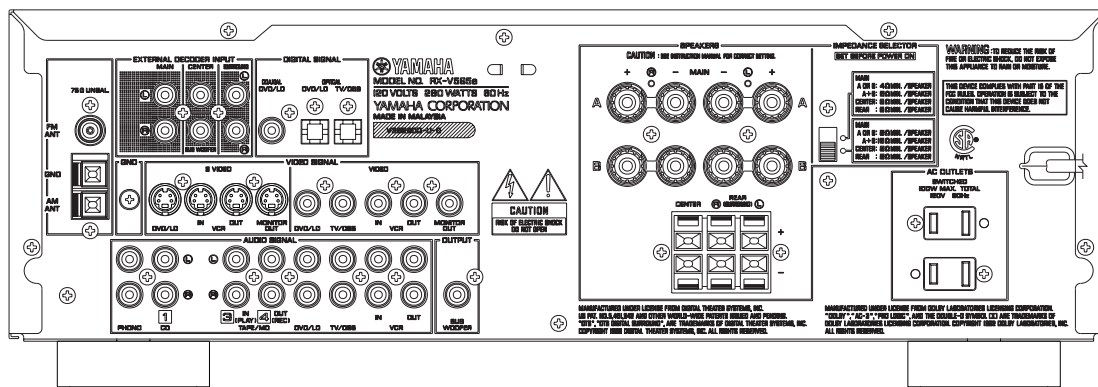


▼ RX-V595aRDS (B and G models)

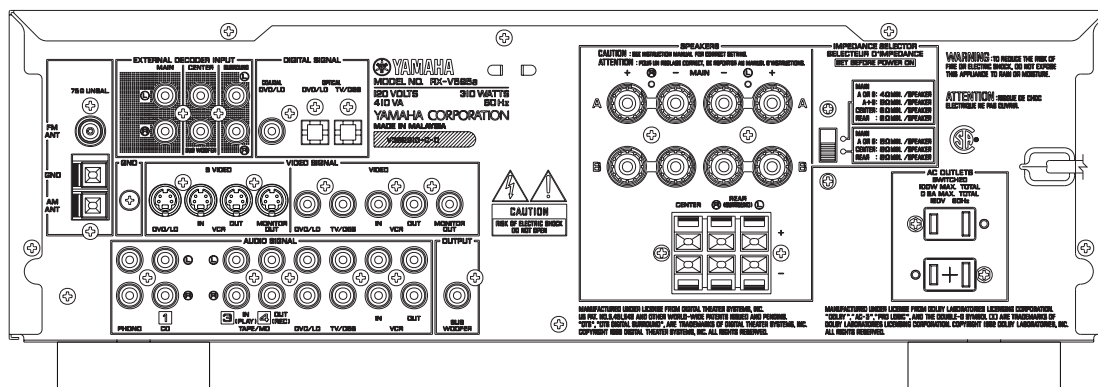


REAR PANELS

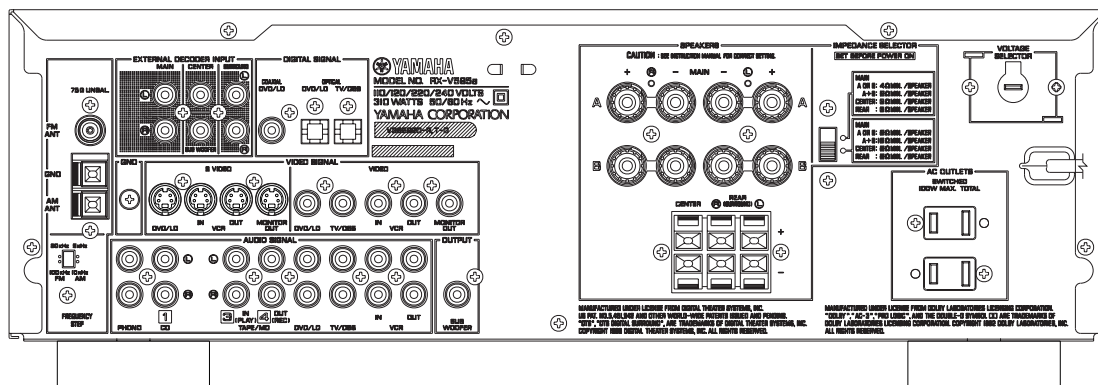
▼ RX-V595a/HTR-5150 U model



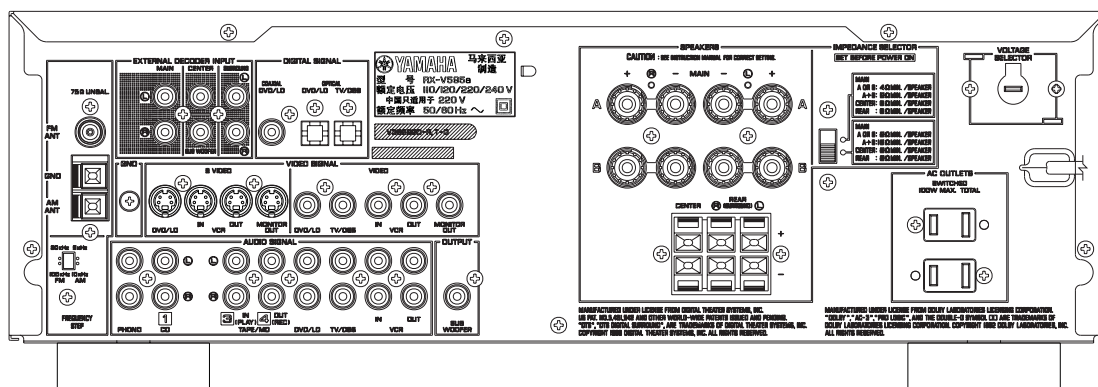
▼ RX-V595a/HTR-5150 C model



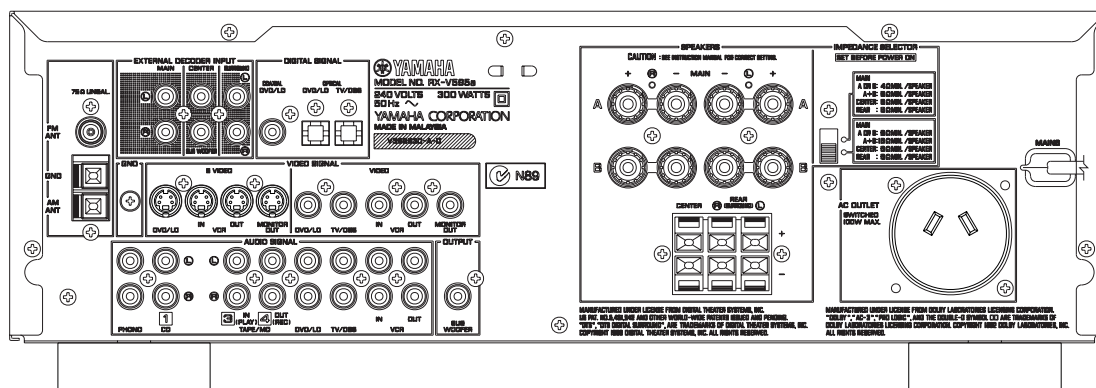
▼ RX-V595a R model



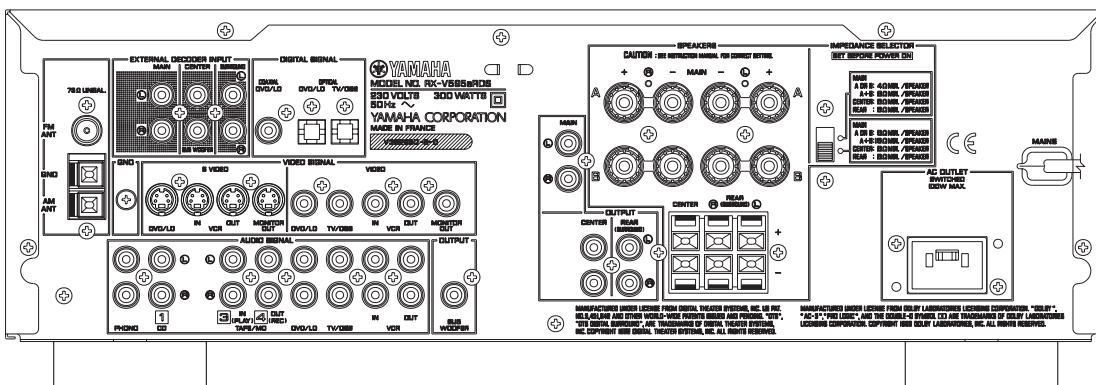
▼ RX-V595a/HTR-5150 T model



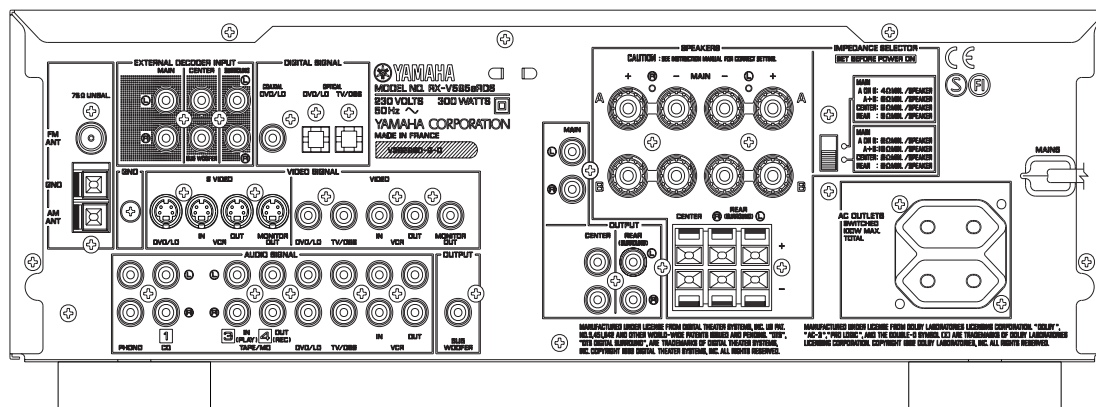
▼ RX-V595a/HTR-5150 A model



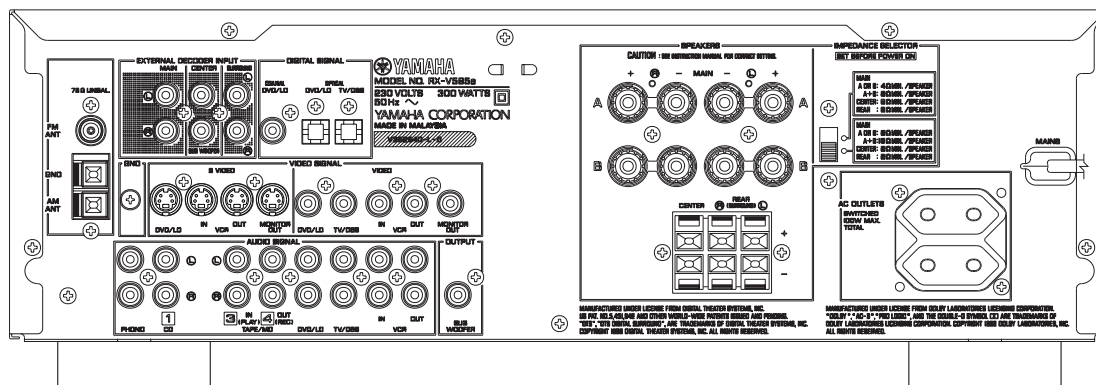
▼ RX-V595aRDS B model



▼ RX-V595aRDS G model



▼ RX-V595a L model



SPECIFICATIONS

AUDIO SECTION

Minimum RMS Output Power Per Channel

(Power Amp. Section)

U, C models		
MAIN L/R, REAR L/R		
20Hz to 20kHz, 0.04% THD, 8Ω		70W+70W
1kHz, 0.07% THD, 8Ω		85W+85W
CENTER		
20Hz to 20kHz, 0.04% THD, 8Ω		70W
1kHz, 0.07% THD, 8Ω		85W
R,T,A,B,G,L models		
MAIN L/R, REAR L/R		
20Hz to 20kHz, 0.04% THD, 8Ω		65W+65W
1kHz, 0.07% THD, 8Ω		80W+80W
CENTER		
20Hz to 20kHz, 0.04% THD, 8Ω		65W
1kHz, 0.07% THD, 8Ω		80W

Maximum Power (EIAJ)

R, T models only		
MAIN L/R, REAR L/R		
1kHz, 10% THD, 8Ω		105W+105W
CENTER, 1kHz, 10% THD, 8Ω		
		105W

Dynamic Power Per Channel (IHF)

MAIN L/R		
U, C models		
8/6/4/2Ω		
		100W+100W/120W+120W/145W+145W/170W+170W
R,T,A,B,G,L models		
8/6/4/2Ω		
		90W+90W/110W+110W/135W+135W/160W+160W

DIN Standard Output Power Per Channel

G model only		
MAIN L/R, 1kHz, 0.7% THD, 4Ω		
		110W+110W

Dynamic Headroom(8Ω)

U, C models only		
		1.55dB

IEC Power

G model only		
MAIN L/R, 1kHz, 0.04% THD, 8Ω		
		75W+75W

Power Band Width

MAIN L/R, 0.1% THD, 35W, 8Ω		
		10Hz to 50kHz

Damping Factor (SPEAKER A)

MAIN L/R, 20Hz to 20kHz, 8Ω		
		60

Input Sensitivity/Input Impedance

PHONO (MM)		2.5mV/47kΩ
CD etc.		150mV/47kΩ
MAIN L/R (EXTERNAL DECODER)		150mV/47kΩ
CENTER		150mV/40kΩ
SURROUND L/R		150mV/40kΩ
SUB WOOFER		150mV/40kΩ

Maximum Input Signal Level (1kHz)

PHONO (MM), 0.1% THD		
		100mV
CD etc. (EFFECT ON), 0.5% THD		
		2.2V

Output Level/Output Impedance

REC OUT		150mV/1.2kΩ
SUB WOOFER (MAIN SP : SMALL)		2.1V/1.2kΩ
B,G models only		
PRE OUT		4V/1.2kΩ

Headphone Jack Rated Output/Impedance

CD etc., Input=1kHz, 150mV, RL=8Ω		0.5V/390Ω
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Frequency Response(20Hz to 20kHz)

CD etc., MAIN		
		0±0.5dB

RIAA Equalization Deviation

PHONO (MM)		0±0.5dB
Total Harmonic Distortion(20Hz to 20kHz)		
PHONO (MM) to REC OUT (1V)		0.02%
CD etc.(EFFECT OFF) to MAIN SP OUT(35W/8Ω)		0.025%

Signal-to-Noise Ratio(IHF-A Network)

PHONO (MM), Input 5mV shorted, REC OUT		
U, C, R, T models		86dB
A, B, G, L models		81dB
CD etc.(EFFECT OFF), Input 150mV shorted, SP OUT		96dB

Residual Noise(IHF-A Network)

MAIN L/R, SP OUT		150μV
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Channel Separation(Vol. -30dB, EFFECT OFF)

PHONO, Input shorted, 1kHz/10kHz		60dB/55dB
CD etc, Input 5.1kΩ terminated, 1kHz/10kHz		60dB/45dB

Tone Control Characteristics

BASS	Boost/Cut	±10dB(50Hz)
	Turnover Frequency	350Hz
TREBLE	Boost/Cut	±10dB(20kHz)
	Turnover Frequency	3.5kHz

Filter Characteristics

MAIN, REAR SP SMALL : H.P.F.		fc=90Hz, 12dB/oct.
SUB WOOFER : L.P.F.		fc=90Hz, 18dB/oct.

FM SECTION

Tuning Range

U, C models		87.5 to 107.9MHz
R, T models (Frequency Step: 100kHz)		
		87.5 to 108.0MHz
(Frequency Step: 50kHz)		
		87.50 to 108.00MHz
A, B, G, L models		87.50 to 108.00MHz

50dB Quieting Sensitivity (IHF)

U, C, R, T models only		
Mono, 1kHz, 100% mod		1.6μV(15.3dBf)
Stereo, 1kHz, 100% mod		23μV(38.5dBf)

Usable Sensitivity (DIN)

A, B, G, L models only		
DIN, Mono(S/N 26dB)		0.9μV
DIN, Stereo(S/N 46dB)		28μV

Alternate Channel Selectivity

U, C, R, T models (±400kHz)		75dB
A, B, G, L models (±300kHz)		
Selectivity(two signals, 40kHz Dev.)		55dB

Signal-to-Noise Ratio

U, C, R, T models (IHF)		
Mono/Stereo		81dB/75dB
A, B, G, L models (DIN-Weighted, 40kHz Dev.)		
Mono/Stereo		75dB/69dB

Harmonic Distortion (1kHz)

Mono/Stereo		0.1%/0.2%
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Stereo Separation (1kHz)

		48dB
--	--	------

Frequency Response (20Hz to 15kHz)

		0±1dB
--	--	-------

Output Level (1kHz)

U, C, R, T models (100% mod.)		550mV
A, B, G, L models (40kHz Dev.)		550mV

Antenna Input		75Ω unbalanced
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■AM SECTION**Tuning Range**

U, C models	530 to 1710kHz
R, T models (Frequency Step : 10kHz)	530 to 1710kHz
(Frequency Step : 9kHz)	531 to 1611kHz
A, B, G, L models	531 to 1611kHz

Usable Sensitivity 300 μ V/m

Signal-to-Noise Ratio 52dB

Output Level (1kHz, 30% mod.) 150mV

Antenna Loop antenna

■VIDEO SECTION**Video Signal Type**

U, C models	NTSC
R model	NTSC/PAL
T, A, B, G, L models	PAL

Video Signal Level 1Vp-p/75 Ω

S-Video Signal Level Y:1Vp-p/75 Ω , C:0.286Vp-p/75 Ω

Maximum Input Level 1.5Vp-p

Signal-to-Noise Ratio 50dB

Monitor Output Frequency Response(-3dB) 5Hz~10MHz

■GENERAL**Power Supply**

U, C, models	AC120V, 60Hz
R model	AC110/120/220/240V, 50/60Hz
T model	AC220V, 50Hz
A model	AC240V, 50Hz
B, G, L models	AC230V, 50Hz

Power Consumption

U model	280W
C model	310W/410VA
R, T models	310W
A, B, G, L models	300W

Maximum Power Consumption

R model only	
5CH Simultaneous output, 10% THD	650W

AC Outlet

U, C, R, T, G, L models, Switched x 2	100W max(Total)
A, B models, Switched x 1	100W max

Dimensions(W x H x D) 435 x 151 x 391mm
(17-1/8" x 5-15/16" x 15-3/8")

Weight 12.5kg(27lbs. 9 oz)

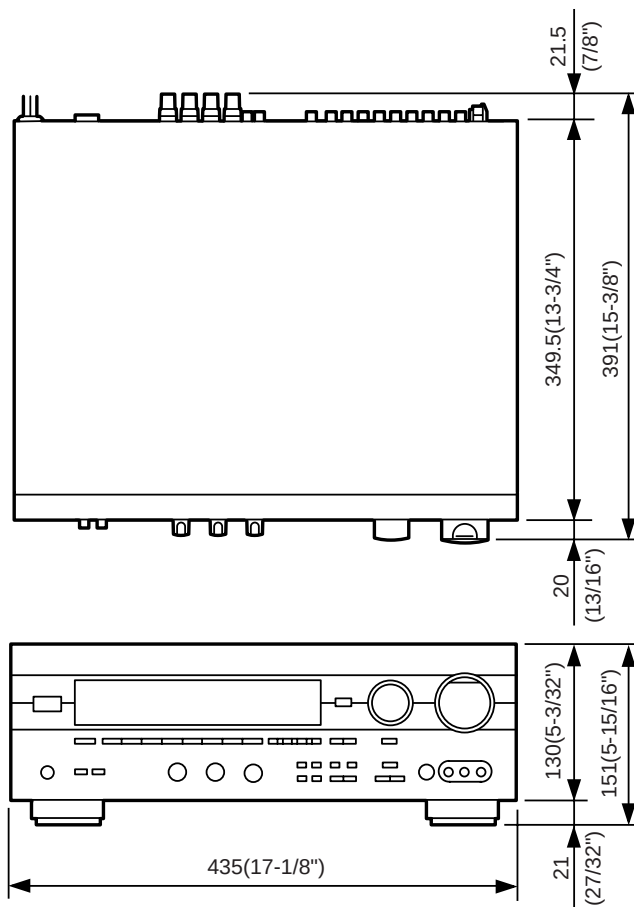
Accessories

AM loop antenna x 1
Indoor FM antenna x 1
Remote Control Transmitter x 1
Battery (size "AA", "R06") x 2

* Specifications subject to change without notice.

U	U. S. A. model	A	Australian model
C	Canadian model	B	British model
R	General model	G	European model
T	China model	L	Singapore model

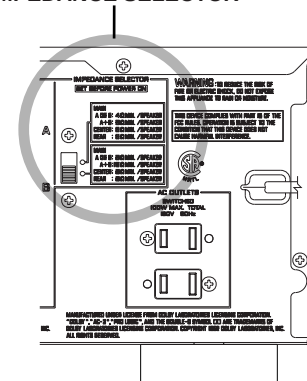
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● DIMENSIONS

Units: mm (inch)

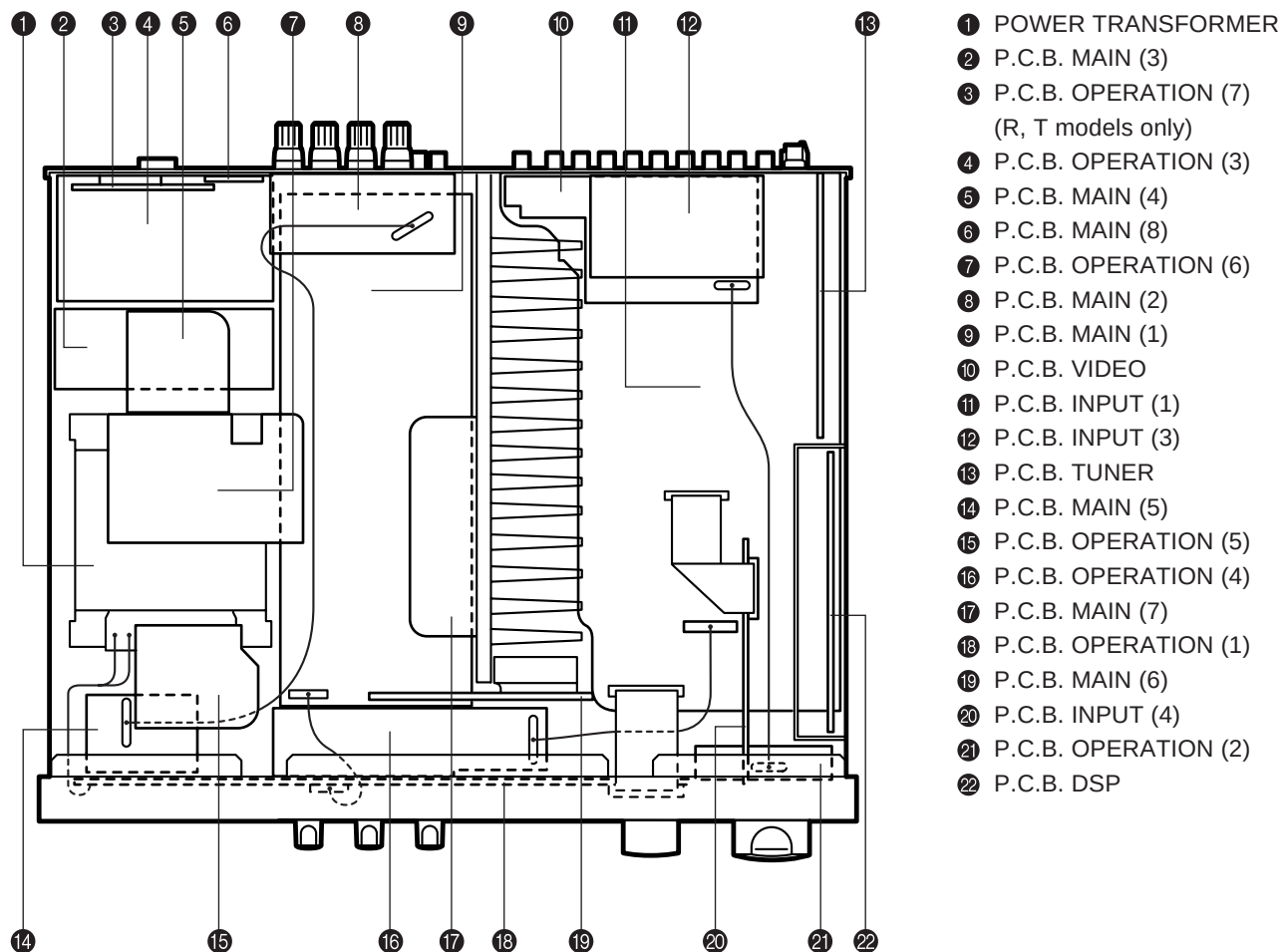
WARNING

Do not change the **IMPEDANCE SELECTOR** switch setting while the power to this unit is on, otherwise this unit may be damaged.

IMPEDANCE SELECTOR

Manufactured under license from Digital Theater Systems, Inc. US Pat. No. 5,451,942 and other worldwide patents issued and pending. "DTS", "DTS Digital Surround", are trademarks of Digital Theater Systems, Inc. Copyright 1996 Digital Theater Systems, inc. All rights reserved.

INTERNAL VIEW



DISASSEMBLY PROCEDURES

(Remove parts in disassembly order as numbered.)

1. Removal of Top Cover

Remove 4 screws (①) and 4 screws (②) in Fig. 1.

2. Removal of Front Panel

- a. Remove 5 knobs.
- b. Remove 6 screws (③) in Fig. 1.

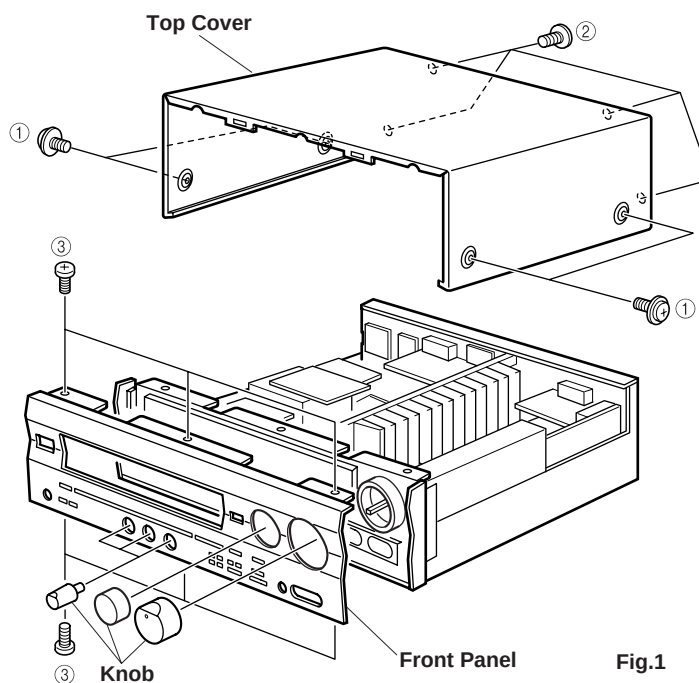


Fig.1

■ SELF DIAGNOSIS FUNCTION

1. PURPOSE AND OPERATION

The RX-V595a/HTR-5150/RX-V595aRDS has a Self Diagnosis Function to locate a faulty part, if any, by inspecting and taking measurements.

There are 11 main items in the diagnostic menu and some of them have sub-menu items as listed below.

No.	MAIN MENU	SUB MENU	REMOTE CONTROL CODE (KEY)
1	ANALOG THROUGH	1. MAIN BYPASS 2. DSP 0dB	7A-88 ("1" [DSP mode]) ----
2	DSP THROUGH	1. YSS918-SRAM 2. YSS918 3. DSP FULL BIT	7A-89 ("2" [DSP mode]) ---- ----
3	AC-3/DTS THROUGH	1. STATUS (BINARY FORM)	----
4	PRO LOGIC	1. CENTER LARGE 2. EFFECT OFF	7A-8A ("3" [DSP mode]) ----
5	SPEAKERS SET	1. MAIN : SMALL 0dB 2. MAIN : LARGE 0dB 3. MAIN : LARGE -10dB 4. LFE/BASS : MAIN CENTER : NONE 5. LFE/BASS : MAIN 6. LFE/BASS : SWFR 7. CENTER : NONE 8. CENTER : SMALL REAR : SMALL 9. FRONT MIX	7A-8B ("4" [DSP mode]) 7A-8C ("5" [DSP mode]) 7A-8D ("6" [DSP mode]) 7A-8E ("7" [DSP mode]) 7A-8F ("8" [DSP mode]) 7A-90 ("9" [DSP mode]) 7A-91 ("0" [DSP mode]) ---- 7A-12 ("ENTER" [DSP mode])
6	EFFECT OFF /DISPLAY CHECK	1. EFFECT OFF 2. VFD DISP OFF 3. VFD DISP ALL 4. CHECKED PATTERN 5. RELEASE DATE	---- ---- ---- ---- ----
7	MANUAL TEST	1. ALL 2. MAIN L 3. CENTER 4. MAIN R 5. REAR R 6. REAR L 7. LFE	---- ---- ---- ---- ---- ---- ----
8	FACTORY PRESET	1. INHIBIT(Inhibit Memory Init) 2. RESERVED (Init. Memory)	---- ----
9	AD DATA CHECK	1. ---- 2. KEY 3. TUNING SIGNAL 4. DC PROTECTION 5. PS PROTECTION	---- ---- ----
10	STATUS	1. DSP CPU STATUS 2. CHANNEL STATUS 3. VERSION INFORMATION 4. CHECK SUM 5. BSI0 (AC3/DTS) 6. BSI1 7. BSI2 8. BSI3 9. BSI4 10. BSI5	---- ---- ---- ---- ---- ---- ---- ---- ---- ----
11	VERSION CHECK /DSP CPU SUM /EXIT	1. MAIN MC CHECK SUM 2. SUB MC CHECK SUM 3. MAIN M.C. VERSION 4. SUB M.C. VERSION 5. PORT INFORMATION 6. EXIT	---- ---- ---- ---- ----

2. BEGINNING AND CANCELLATION

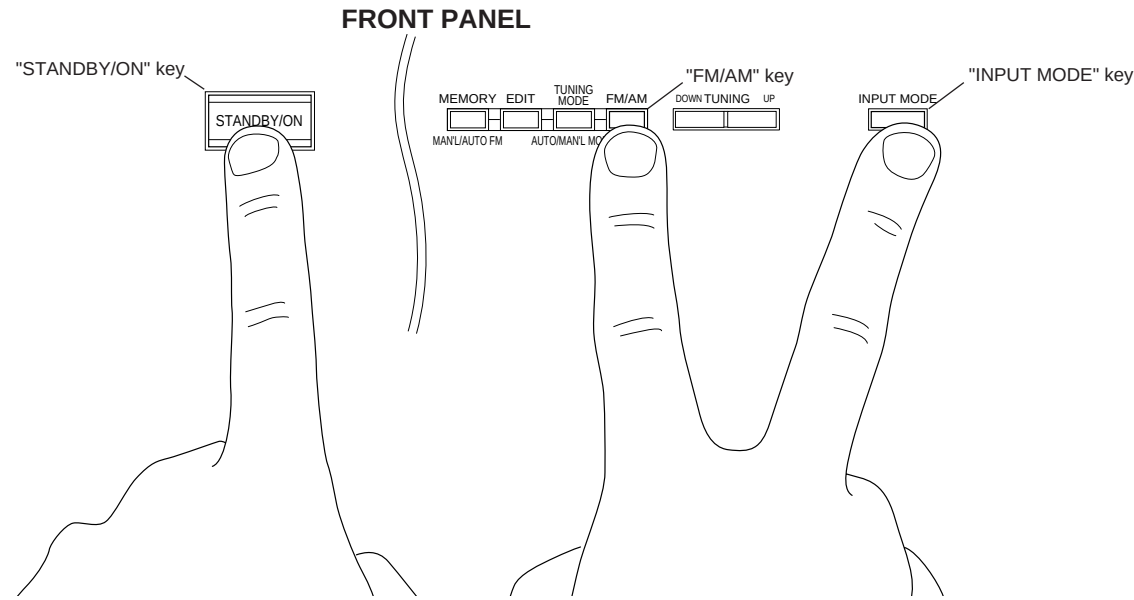
(1) STARTING UP THE FUNCTION AND THE DISPLAY

After starting up, menu No. 1 is selected.

A. How to start diagnostic program

Using the front panel keys of the main unit.

Plug in the AC power cord , and, with Power OFF, hold down the "INPUT MODE" and "FM/AM" keys simultaneously (Step 1), and then press the "STANDBY/ON" key (Step 2). Submenu No. 1 of the Diagnosis Main Menu No. 1 will start.



Step2. Press the "STANDBY/ON" key

Step1. Hold down the "INPUT MODE" and "FM/AM" key simultaneously.

B. Settings for start-up of diagnostic program

The settings used when starting the diagnostic program are as follows.

1. EFFECT LEVEL :

CHANNEL	CENTER	R SUR	L SUR	SWFR
LEVEL (dB)	0	0	0	0

- 2. MUTING : OFF
- 3. INPUT (VIDEO) : DVD/LD (DVD/LD)
- 4. CENTER SPEAKER : LARGE
- 5. REAR SPEAKER : LARGE
- 6. MAIN SPEAKER : LARGE
- 7. LFE/BASS OUT : SWFR

C. Start-up display

The protection function information appears on the front panel display of the main unit.

● FL display at start-up of diagnostic program

When the diagnostic program has started, the history (*2) of the protection function (*1) is displayed. If the protection function has been activated in the past, the type and voltage value are displayed. After a few seconds the diagnosis function menu will appear.

- (*1) If a faulty condition is detected such as excessive current, a bad power supply or excessive amplifier DC offset, the Power will be switched OFF automatically.
- (*2) The protection records will be cleared when "RESERVED" is selected in diagnosis menu No. 8 and FACTORY PRESET is engaged.

● History of protection function

Each case of the history of the protection function is displayed as shown below.

1 DVD/LD NO PROTECT

Appears when the protection function has not been activated.

1 DVD/LD I PROTECT

Appears when the current protection function has been activated. When power is turned on in an abnormal status, the power relay will come on, protection will operate immediately, and power will turn off.

1 DVD/LD PS : 21%

Appears when the power protection function has been activated. For the % value, the voltage at that point is shown by 5V/100%. When power is turned on in an abnormal status, power will turn off after half a second.

1 DVD/LD DC : 19%

Appears when the power amp DC protection function has been activated. For the % value, the voltage at that point is shown by 5V/100%. When power is turned on in an abnormal status, power will turn off after two seconds.

(2) EXITING METHOD

The diagnosis function can be exited by any of the following procedures. Take care with the setting of backup memory initialization menu (diagnosis No. 8) when releasing the diagnosis function:

1. Select diagnosis menu No. 11/submenu No. 6 "EXIT".
2. Press the "STANDBY/ON" key on the main unit or "STANDBY" key on the remote control to turn power off.

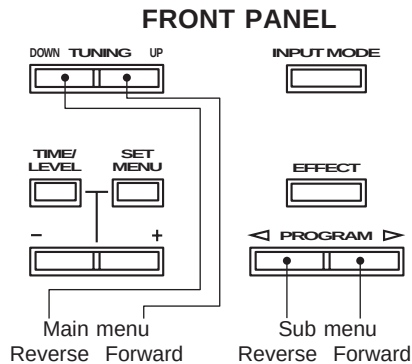
3. OPERATION AND DISPLAY WHEN STARTING DIAGNOSIS FUNCTION

(1) Selection of diagnostic menu

The diagnostic menu and the sub-menu can be selected by using the front panel keys of the main unit or the remote control unit.

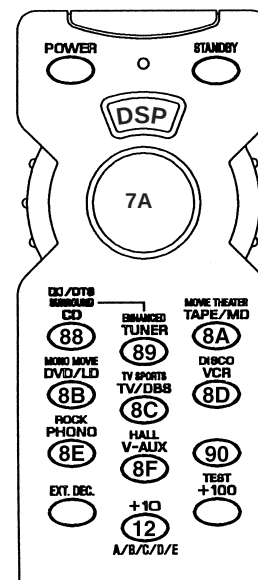
● Selection by using the front panel keys

The main menu can be changed cyclically by using the "TUNING UP/DOWN" keys, and the submenu, by using the "PROGRAM</>" keys. The "UP" or ">" key will increase the main or submenu number.



● Selection by using the remote control unit

The remote control codes in the menu list (see right column on page 8) correspond to the DSP program test and effect keys. See the figure on the right.



(2) Other functions available while diagnosis function is active

Listed below are the other functions available while the diagnosis function is active.

- Selecting input source (Tape monitor/Ext. decoder)
- Adjusting effect level (Center, Rear, Subwoofer)
- Adjusting master volume
- Muting on/off
- Power on/off

(3) Diagnosis default status

When not otherwise specified, default settings and values in each menu are as follows:

- All "SPEAKERS" : LARGE
- ALL electronic VRs : 0dB
- DYNAMIC RANGE : MAX
- LFE LEVEL : 0dB (DOLBY DIGITAL, DTS)
- CENTER DELAY : 0ms

4. CONTENTS OF DIAGNOSIS FUNCTION

This section describes the contents of the self diagnosis function in detail.

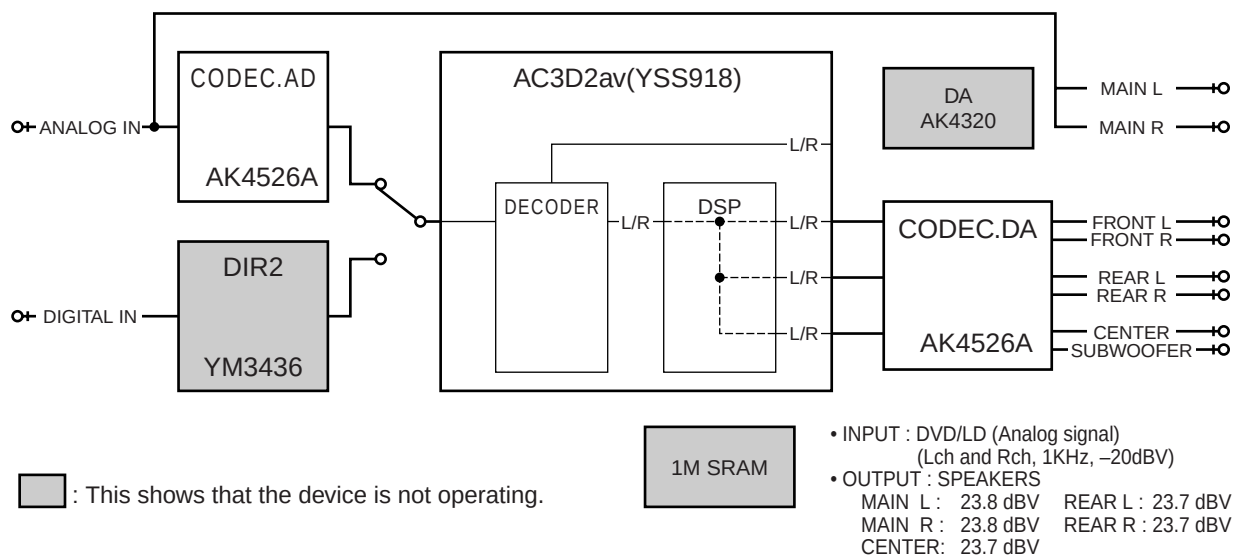
No.1 ANALOG THROUGH

The input is fixed to analog (A/D). There are two submenus.

1. MAIN BYPASS 1 DVD/LD MAIN BYPAS

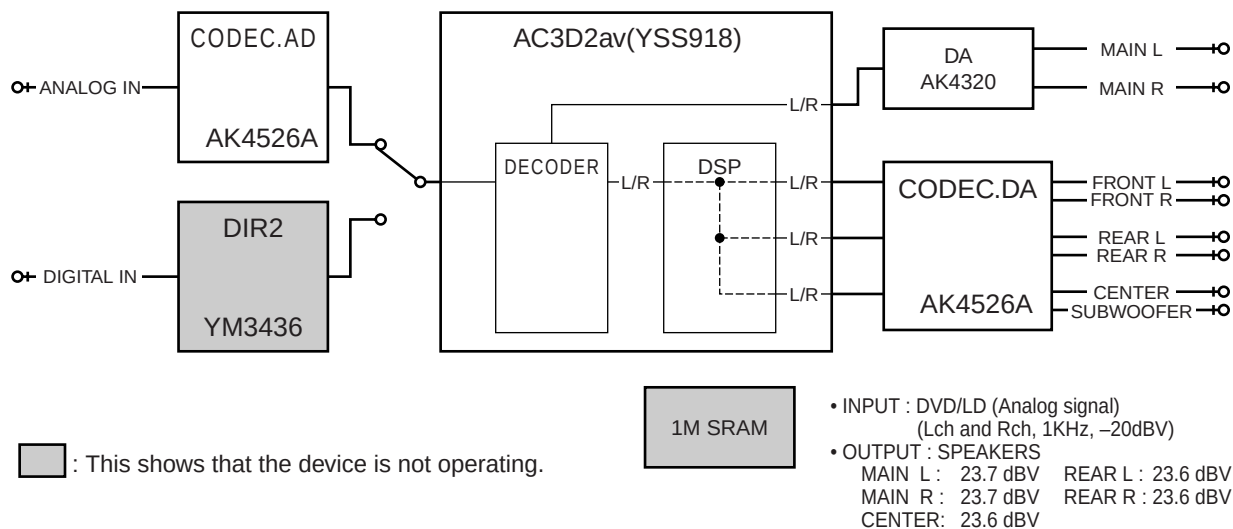
The MAIN L/R signals bypass the analog circuits to be output.

For CENTER/LFE, FRONT L/R and REAR L/R, the MAIN L/R signals via the DSP are output without being processed (through). (Remote control code 7A-88: "1" key [DSP mode])



2. DSP 0dB 1 DVD/LD DSP 0DB

MAIN L/R, CENTER/LFE, FRONT L/R and REAR L/R pass through the DSP without being processed.



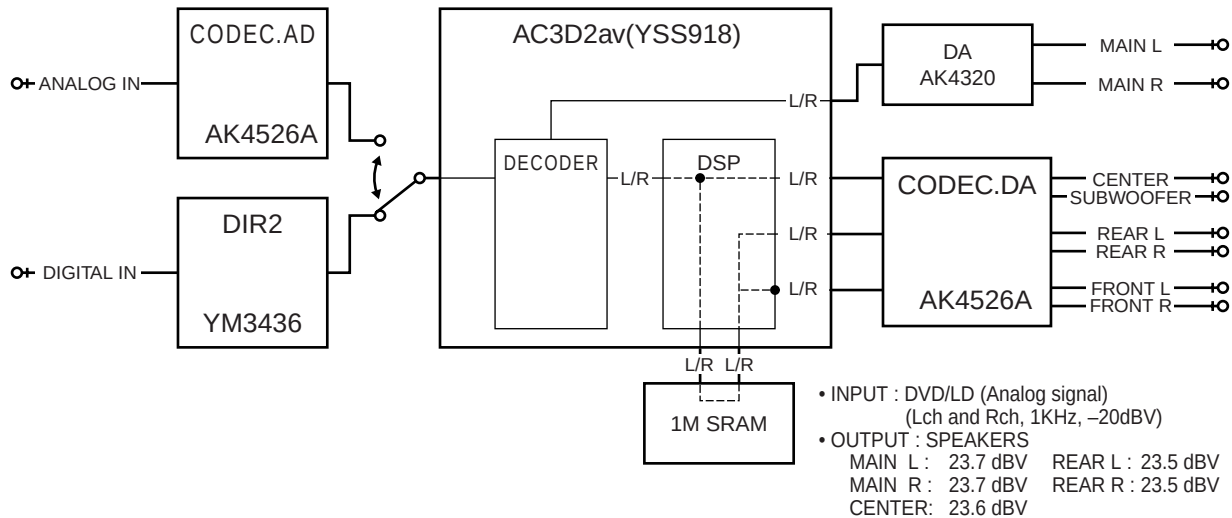
No.2 DSP THROUGH

The input is automatically discriminated by signal detection and switched with priorities AC-3 (DOLBY DIGITAL)>DTS Digital Surround>Audio>analog. There are the following three submenus.

1. YSS918-SRAM

2 DVD/LD YSS918SRAM

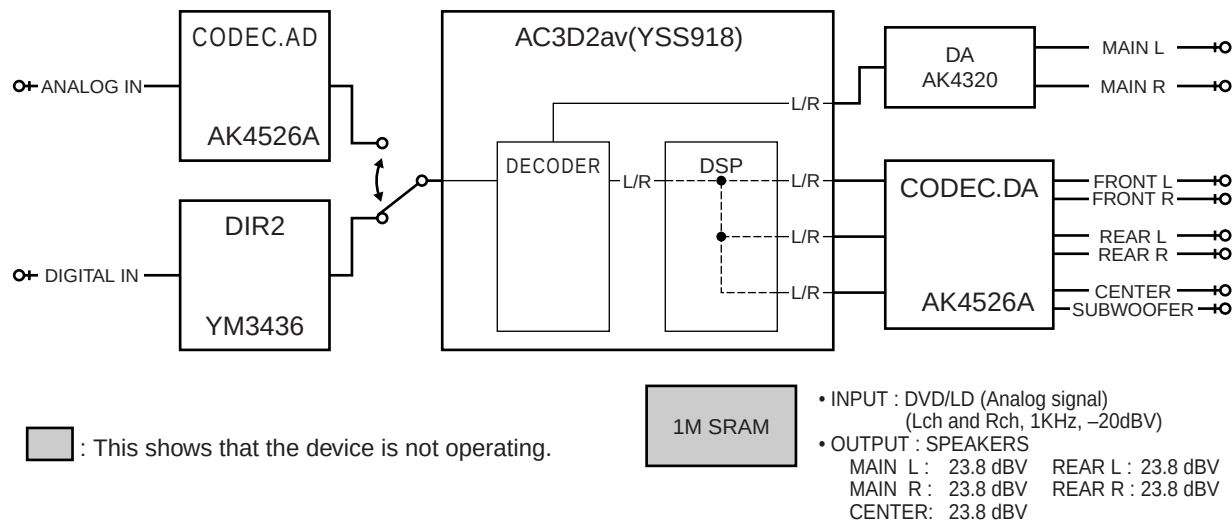
MAIN L/R are input to the DSP via AC3D2av, pass through SRAM, and are then output to all channels without being processed. (Remote control code 7A-89: "2" key [DSP mode])



2. YSS918

2 DVD/LD YSS918

MAIN L/R are input to the DSP via AC3D2av, and then output to all channels without being processed.



3. DSP FULL BIT

2 DVD/LD DSP FULL

MAIN L/R are input to the DSP via AC3D2av, and then output to all channels without being processed. The head margin is disabled, and DSP outputs digital full-bit signals. Same as the above menu, except that the digital data is output to DA with full bits.

- INPUT : DVD/LD (Analog signal)
(Lch and Rch, 1kHz, -20dBV)
- OUTPUT : SPEAKERS
MAIN L : 13.8 dBV REAR L : 22.8 dBV
MAIN R : 13.8 dBV REAR R : 22.8 dBV
CENTER: 16.8 dBV

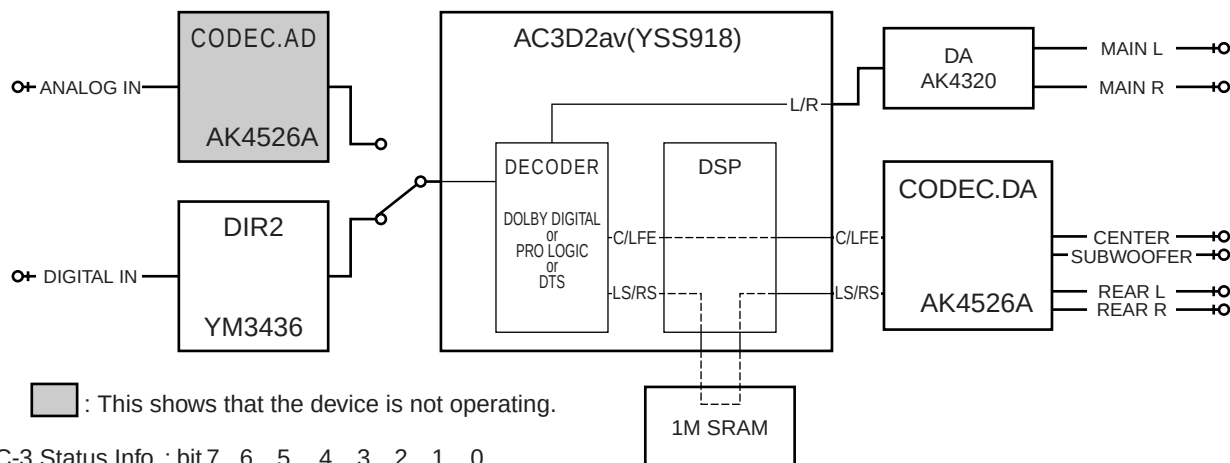
No.3 AC-3/DTS THROUGH

The input is digital signal only. AC-3 (DOLBY DIGITAL) or DTS Digital Surround decoding operation is executed, according to the input source.

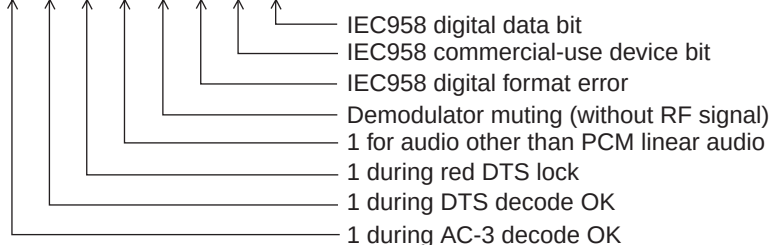
1. STATUS(BINARY FORM)

bit 0 bit 7
3 DVD/LD 3T00000001

AC-3 (DOLBY DIGITAL) decoded signals are output to each channel via AC3D2av.



AC-3 Status Info. : bit 7 6 5 4 3 2 1 0
 (Invalid in DTS) 1 0 0 0 0 0 0 0



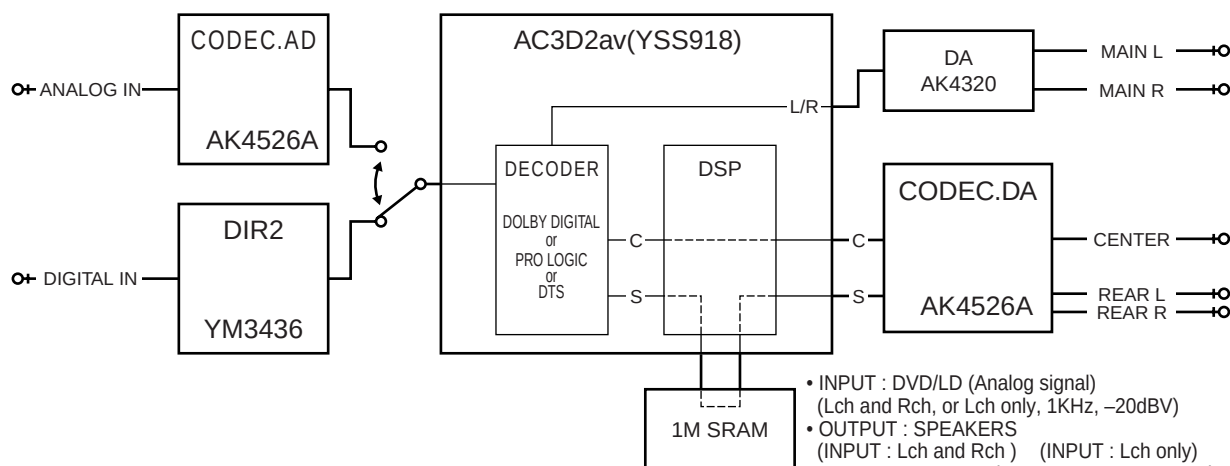
No.4 PRO LOGIC

The input is automatically discriminated by PCM Audio>analog. DTS Digital Surround is disabled. The submenu is switched between PRO LOGIC (AUTO BALANCE OFF) and EFFECT OFF.

1. CENTER LARGE

4 DVD/LD P.LGC C:L

The input is automatically detected whether it is PCM Audio or analog. With analog, PCM Audio or AC-3 (DOLBY DIGITAL) 2/0 input, the L, R, C and S signals are PRO LOGIC decoded and output. With AC-3 (DOLBY DIGITAL) other than 2/0, PRO LOGIC does not operate, and AC-3 (DOLBY DIGITAL) playback is executed. (Remote control code 7A-8A: "3" key [DSP mode])



- INPUT : DVD/LD (Analog signal)
 (Lch and Rch, or Lch only, 1KHz, -20dBV)
 - OUTPUT : SPEAKERS
 (INPUT : Lch and Rch) (INPUT : Lch only)
- | | |
|--------------------|--------------------|
| MAIN L : -15.4 dBV | REAR L : 23.8 dBV |
| MAIN R : -14.2 dBV | REAR R : -25.0 dBV |
| CENTER : 26.6 dBV | CENTER : -12.5 dBV |
| REAR L : -6.0 dBV | REAR L : -6.0 dBV |
| REAR R : -6.5 dBV | REAR R : -6.2 dBV |

2. EFFECT OFF

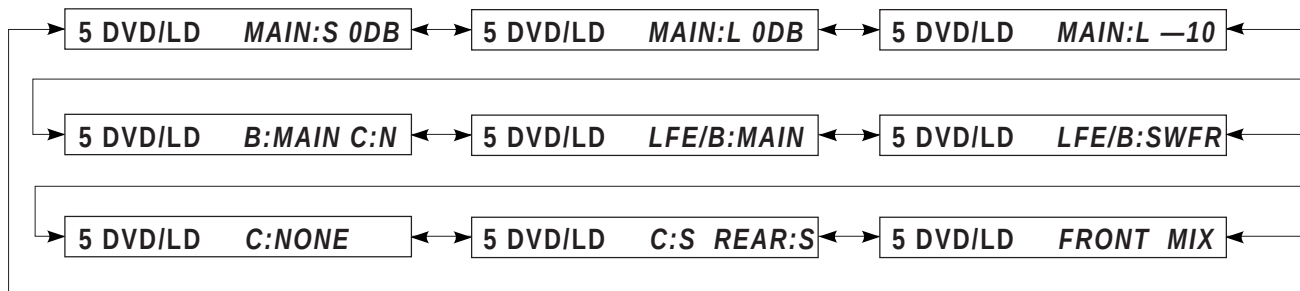
4 DVD/LD EFFECT OFF

MAIN L/R are bypassed and output.

No.5 SPEAKERS SET

The input is automatically discriminated by AC-3(DOLBY DIGITAL)>DTS Digital Surround>PCM Audio>analog.

There are the following 9 submenu items: The signal from the DSP block is normally in the effect off status for menu items 1-4. For other menu items, the same signal as in 2. DSP THROUGH: YSS918 menu is output.



The analog switches in each submenu are set as follows:

	SUB MENU	REMOTE CODE	CENTER SP	REAR SP	MAIN SP	MAIN LEVEL	LFE/BASS	OUTPUT
1	MAIN:S 0DB	7A-8B	LARGE	LARGE	SMALL	0dB	SWFR	MAIN L/R
2	MAIN:L 0DB	7A-8C	LARGE	LARGE	LARGE	0dB	SWFR	MAIN L/R
3	MAIN:L -10	7A-8D	LARGE	LARGE	LARGE	-10dB	SWFR	MAIN L/R
4	B:MAIN C:N	7A-8E	NONE	LARGE	LARGE	0dB	MAIN	MAIN L/R
5	LFE/B:MAIN	7A-8F	LARGE	LARGE	LARGE	0dB	MAIN	LFE -> L/R
6	LFE/B:SWFR	7A-90	LARGE	LARGE	LARGE	0dB	SWFR	LFE -> SWFR
7	C:NONE	7A-91	NONE	LARGE	LARGE	0dB	SWFR	CENTER -> L/R
8	C:S REAR:S		SMALL	SMALL	LARGE	0dB	SWFR	CENTER/REAR
9	FRONT MIX	7A-12	LARGE	LARGE	LARGE	0dB	SWFR	FRONT -> L/R

LARGE: Mode in which speakers with high bass-sound playback capability (large unit) are used. Full frequency band widths is output.

SMALL : Mode in which speakers with low bass-sound playback capability (small unit) are used. Frequencies below 90 Hz are mixed with the channel specified by LFE/BASS.

NONE: Mode in which center speaker is not used. The center audio signal is reduced by 3 dB and mixed into MAIN L/R.

LFE/B: MAIN

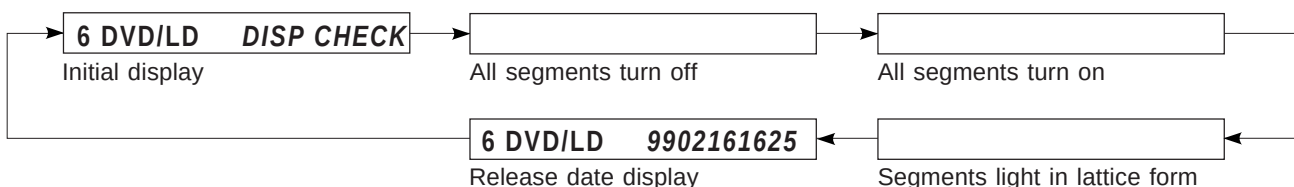
: Mode in which subwoofer speaker is not used. The subwoofer audio signal is reduced by 4.5 dB and mixed into MAIN L/R. But because of the phase difference, the MAIN L/R output is not simply summed.

Purpose of the submenu as follows:

	SUB MENU	PURPOSE
1	MAIN:S 0DB	Verification of the High and low pass filter response and gain in the bass redirection mode.
2	MAIN:L 0DB	Reference of the sub menu No. 1 and 2.
3	MAIN:L -10	Verification of the effect in the main level function.
4	B:MAIN C:N	Verification of the mixing circuit effect to the main channel.
5	LFE/B:MAIN	Verification of the bass mix gain.
6	LFE/B:SWFR	Verification of the LFE maximum output.
7	C:NONE	Verification of the center mix gain.
8	C:S REAR:S	Verification of the high and low pass filter response and gain in the bass redirection mode.
9	FRONT MIX	Verification of the front mix gain.

No.6 DISPLAY CHECK

Check program for FL display. The display status will change as follows with submenu operation. The signal is processed with EFFECT OFF.

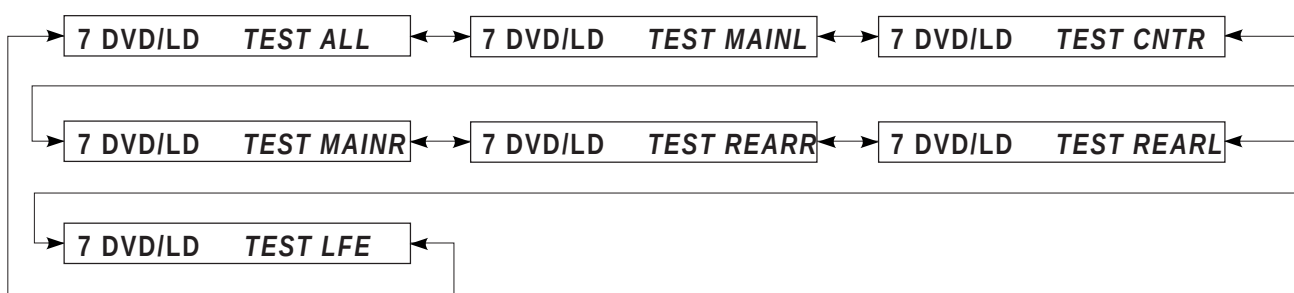


All segments are turned on and off to detect defects in the FL driver and FL display segments. Then the FL driver operation is checked by the dimmer control.

Finally, all segments are turned on and off alternately (in lattice form), to check for a short-circuit between adjacent segments.

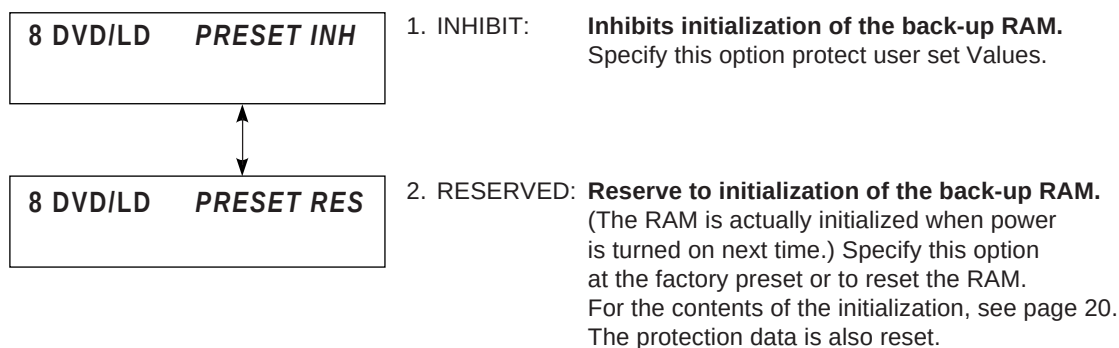
No.7 MANUAL TEST

The noise generator built into the DSP outputs test noise from the channel specified by the submenu.



No.8 FACTORY PRESET

The initialization of the back-up RAM, which contains effect level, DSP program, set menu contents, etc. is reserved or inhibited. The Signal is processed with EFFECT OFF.



Caution : Before setting to the PRESET RESERVED, write down the existing preset memory contents of the Tuner in a table as shown below. (This is because setting to the PRESET RESERVED will cause the memory contents to be as factory set, i.e., all the preset memory by the user will be erased.)

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

No.9 AD DATA CHECK

The A/D conversion values of the main CPU which detects key scan, protection, etc. are displayed in % (100%: 5V). All signal processing before this menu is executed will be held.
The keys on the main unit cannot be operated to detect the values of all keys in the K1/K2/K3/K4 and SI.
Operating the "PROGRAM" key and turning the rotary encoder (input selector on the main unit) will switch the submenu.

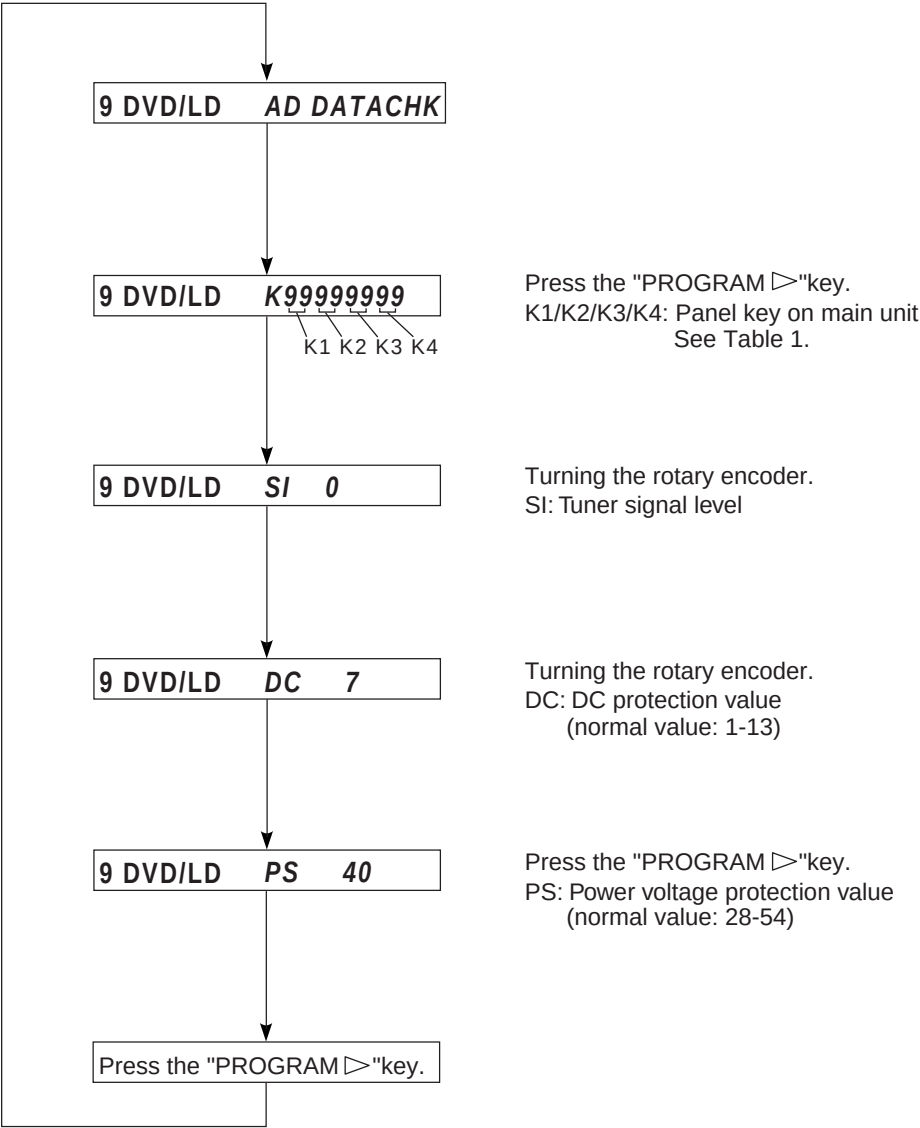


Table 1

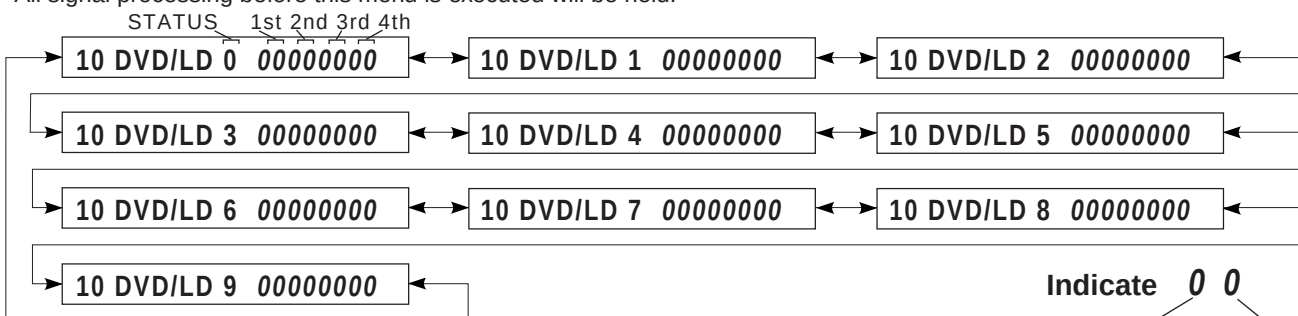
AD Value	0	11	23	36	51	67	84
K1	TIME/ LEVEL	SET MENU	-	+	EON	PTY SEEK MODE	PTY SEEK START
K2	TAPE/MD MON /EXT. DECODER	TUNING DOWN	TUNING UP	INPUT MODE	EFFECT	PROGRAM ◀	PROGRAM ▶
K3	7	8	MEMORY	EDIT	TUNING MODE	FM/AM	RDS MODE
K4	A/B/C/D/E	1	2	3	4	5	6

Cautions:

- 1. If K1/K2/K3/K4 are more than ±4% from the reference values, normal operation will not be executed.
- 2. If DC and PS are outside the normal values, the protection function will operate and power will turn off.

No.10 STATUS FROM DSP MICOM

The status data from the DSP microprocessor is sequentially displayed in a hexadecimal number.
All signal processing before this menu is executed will be held.



[STATUS 0]

<1st Byte>

bit7	Mute request	bit3	acmod	
bit6	fs	bit2	0000B:1+1	0001B:1/0
bit5	000B:Analog 001B:32kHz 010B:44.1kHz 011B:48kHz Others:Don't care	bit1	0010B:2/0	0011B:3/0
bit4		bit0	0100B:2/1	0101B:3/1
			0110B:2/2	0111B:3/2
			1000B:7.1	

acmod: If it is 1000B or more with DTS 7.1 signal, the DSP block will be muted.

<2nd Byte>

bit7	AC-3 decode OK	bit3	Demodulator muting (without RF signal)
bit6	DTS decode OK	bit2	IEC958 digital format error
bit5	Red DTS record (Flashes and lights)	bit1	IEC958 commercial use device bit
bit4	1 for audio other than PCM linear audio	bit0	IEC958 digital data bit

Indicate 0 0
bit 7 6 5 4 3 2 1 0

Indicate	bit			
	3	2	1	0
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
A	1	0	1	0
B	1	0	1	1
C	1	1	0	0
D	1	1	0	1
E	1	1	1	0
F	1	1	1	1

[Note]

IEC958: Standard to identify the PCM bit stream signal. Digital format error refers to a digital signal with the sampling frequency undefined (neither 44.1k, 32k nor 48k). Since the operation of each device cannot be assured at fs outside specifications, the sub-microprocessor handles this status as the forced analog mode (ignored even if decoding is OK from the detection terminal level), and selects the signal from the analog input terminal. Since the sub-microprocessor transmits 000B (analog) for STATUS#0 bits 4-6 to the main microprocessor, the main microprocessor visually operates in the same way as with digital unlocking.

<3rd Byte>

bit7	AC3 KARAOKE	bit3	On-board write mode
bit6	DIR2 LOCKN	bit2	The number of digital inputs is 2 (equivalent to 595)
bit5	DIR2 ERR	bit1	DSP is AC3D2 (DTS present)
bit4	AC3D MUTE	bit0	RF DEM present

<4th Byte> Always "00"

[STATUS 1] IEC958 channel status bits 00-31 available from DIR2

<1st-byte> bits 00-07

<2nd-byte> bits 08-15

<3rd-byte> bits 16-23

<4th-byte> bits 24-31

[STATUS 2] 4-byte ASCII code of sub CPU version data

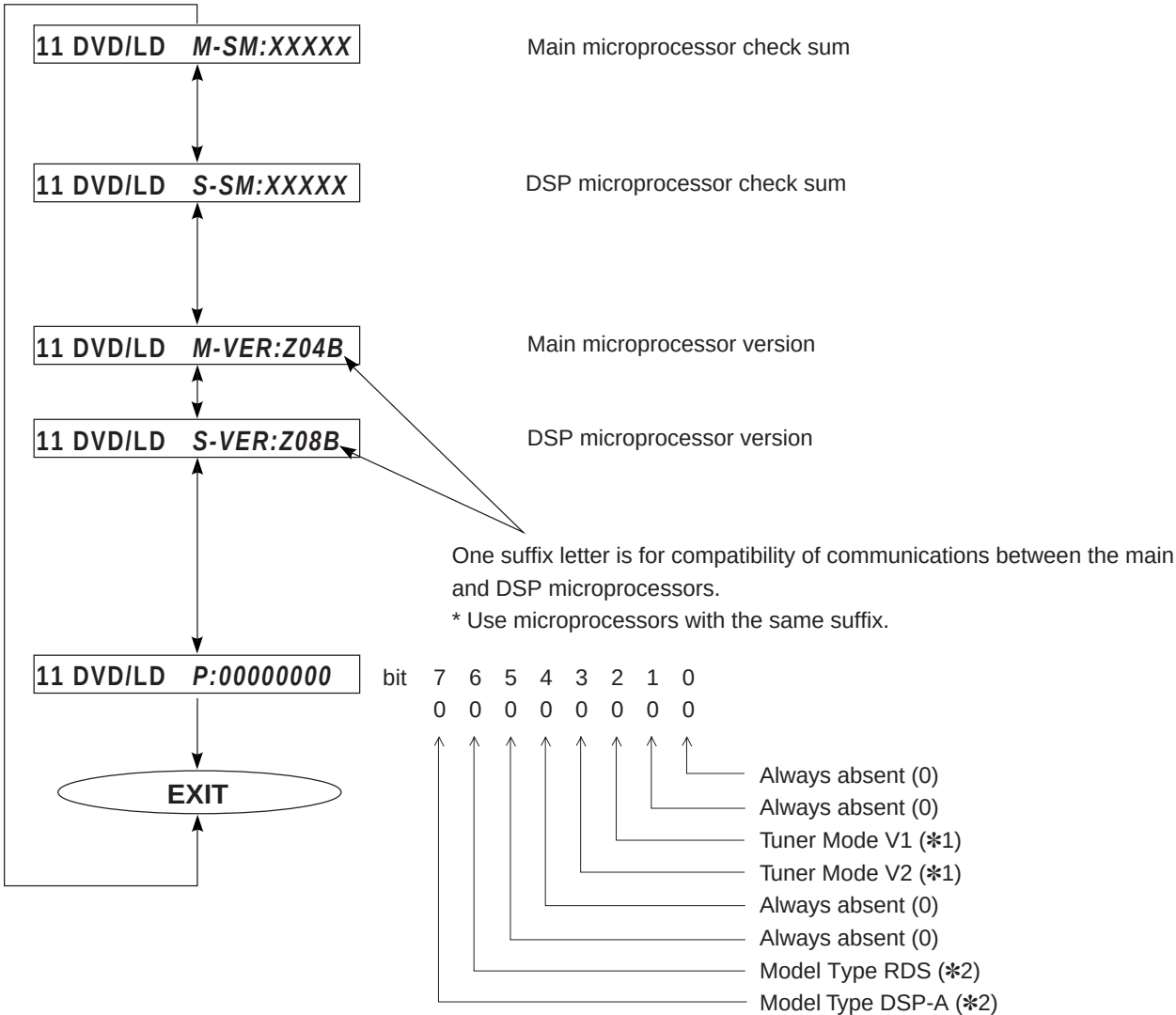
[STATUS 3] Displays the check sum of sub microprocessor program area with ASCII 4 bytes in a hexadecimal number.

[STATUS 4] Displays the bit stream information contained in AC-3(DOLBY DIGITAL)/DTS Digital Surround signal from the first byte.

[STATUS 5-9] Displays the bit stream information contained in AC-3(DOLBY DIGITAL) signal from the first byte.

No.11 CPU VERSION/CHECK SUM/PORT INFO/EXIT DIAG

The check sum, version and port setting of main CPU/DSP CPU are displayed.
The signal is EFFECT OFF.
Operating the submenu will finish self-diagnosis, and ordinary operation mode will be restored.
The suffix letter ("B" in the following) of version indication is for compatibility of communications between the main and DSP microprocessors.
Combining microprocessors with different suffixes will make normal operation impossible.



*1 Hi=1, Low=0

Tuner Mode V2 (Port 96)	0	*1	1	*2	0	*3	1	*4
Tuner Mode V1 (Port 95)	0		0		1		1	

*1 AM:531-1611kHz/9kHz FM: 76.0-90.0MHz/100kHz (J model)
*2 AM:530-1710kHz/10kHz FM: 87.5-107.9MHz/200kHz (U, C models)
*3 AM:531-1611kHz/9kHz FM: 87.5-108.0MHz/50kHz (R, T, A, B, G, L models)
*4 AM: 530-1710kHz/10kHz FM:87.5-108.0 MHz/100kHz (R, T models)

*2 Hi=1, Low=0

Model Type DSP-A(Port 83)	1	DSP-A595a	0	RX-V595aRDS	0	RX-V595a
Model Type RDS(Port 70)	0		1		0	HTR-5150

■ FACTORY PRESET

All of the system settings are initially set from the factory as follows.

● INPUT (VIDEO) DVD/LD (DVD/LD)

● EFFECT LEVEL

EFFECT CHANNEL	PRESET VALUE
CENTER	0 dB
RIGHT SURROUND	0 dB
LEFT SURROUND	0 dB
SUBWOOFER	0 dB

● DSP PROGRAM

INPUT	DSP PROGRAM	DELAY PRESET VALUE
V-AUX	DOLBY PRO LOGIC	20m
VCR	PRO LOGIC ENHANCED	20ms
DVD/LD	70mm MOVIE THEATER	20ms
	DIGITAL/DTS MOVIE THEATER	16ms
TV/DBS	TV SPORTS	9ms
TAPE/MD	ROCK CONCERT	49ms
TUNER	DISCO	40ms
CD	ROCK CONCERT	16ms
PHONO	CONCERT HALL	44ms

● SET MENU

No.	SET MENU	PRESET VALUE
1.	CENTER SPEAKER [CNTR>]	LARGE
2.	REAR SPEAKER [REAR>]	LARGE
3.	MAIN SPEAKER [MAIN>]	LARGE
4.	LFE/BASS OUT [BASS>]	SW (SUBWOOFER)
5.	MAIN LEVEL [M. LVL>]	NRML (NORMAL)
6.	DOLBY DIGITAL LFE LEVEL [D. D. LFE]	0 dB
7.	DYNAMIC RANGE [D. RNG]	MAX
8.	DTS LFE LEVEL [DTS LFE]	0 dB
9.	CENTER DELAY [C. DELAY]	0ms
10.	MEMORY GUARD [GUARD]	OFF
11.	INPUT MODE (TV/DBS) [INPUT]	AUTO

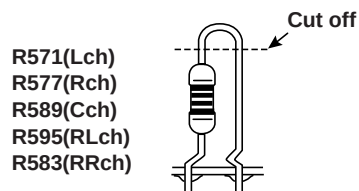
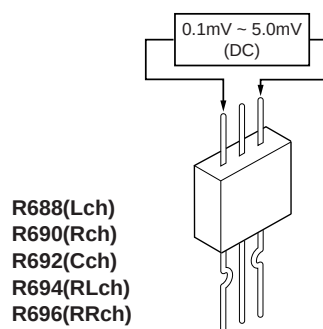
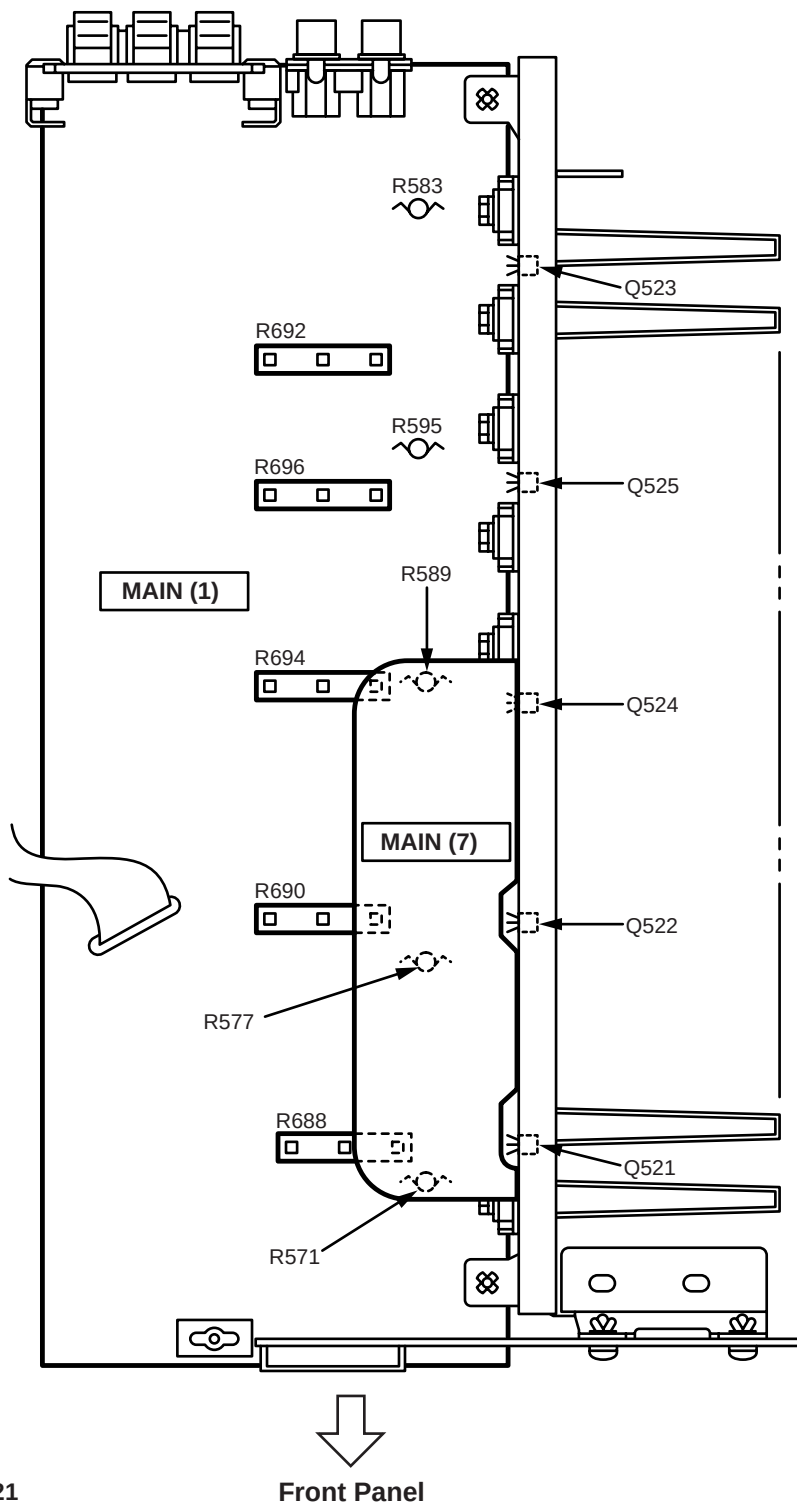
● PRESET STATIONS

STATION		FM FACTORY PRESET DATA (MHz)		STATION		AM FACTORY PRESET DATA (kHz)	
PAGE	NO.	U, C	R, T, A, B, G, L	PAGE	NO.	U, C, R	R, T, A, B, G, L
A/C/E	1	87.5	87.5	B/D	1	630	630
	2	90.1	90.1		2	1080	1080
	3	95.1	95.1		3	1440	1440
	4	98.1	98.1		4	530	531
	5	107.9	108.0		5	1710	1611
	6	88.1	88.1		6	900	900
	7	106.1	106.1		7	1350	1350
	8	107.9	108.0		8	1400	1404

■ AMP ADJUSTMENT

Confirmation of Idling Current of Main Amplifier

- Right after power is turned on, confirm that the voltage across the terminals of R688(Main Lch), R690(Main Rch), R692(Center), R694(Rear Lch), R696(Rear Rch) are between 0.1mV and 5.0mV.
- If it exceeds 5.0mV, open (cut off) R571 (Main Lch), R577 (Main Rch), R589 (Center), R595 (Rear Lch), R583 (Rear Rch) and reconfirm the voltage again.
- Confirm that the voltage is 0.25mV ~ 15.0mV after 60 minutes.



Note)

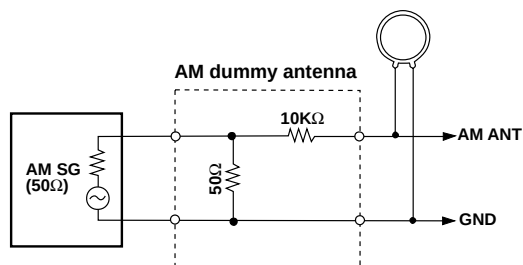
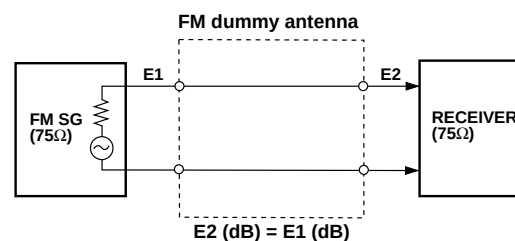
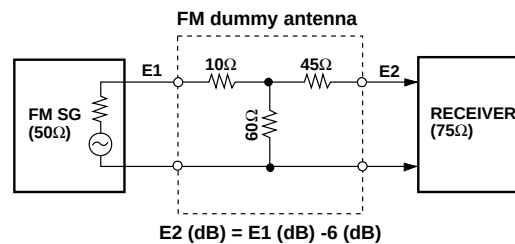
- If R571, R577, R589, R595 and R583 have already been cut off and idling current does not flow, reconnect R571, R577, R589, R595 and R583.
- Q521 ~ Q525 are transistors for temperature correction. Apply silicone grease to contact surface with the heat sink.

■ TUNER ADJUSTMENT

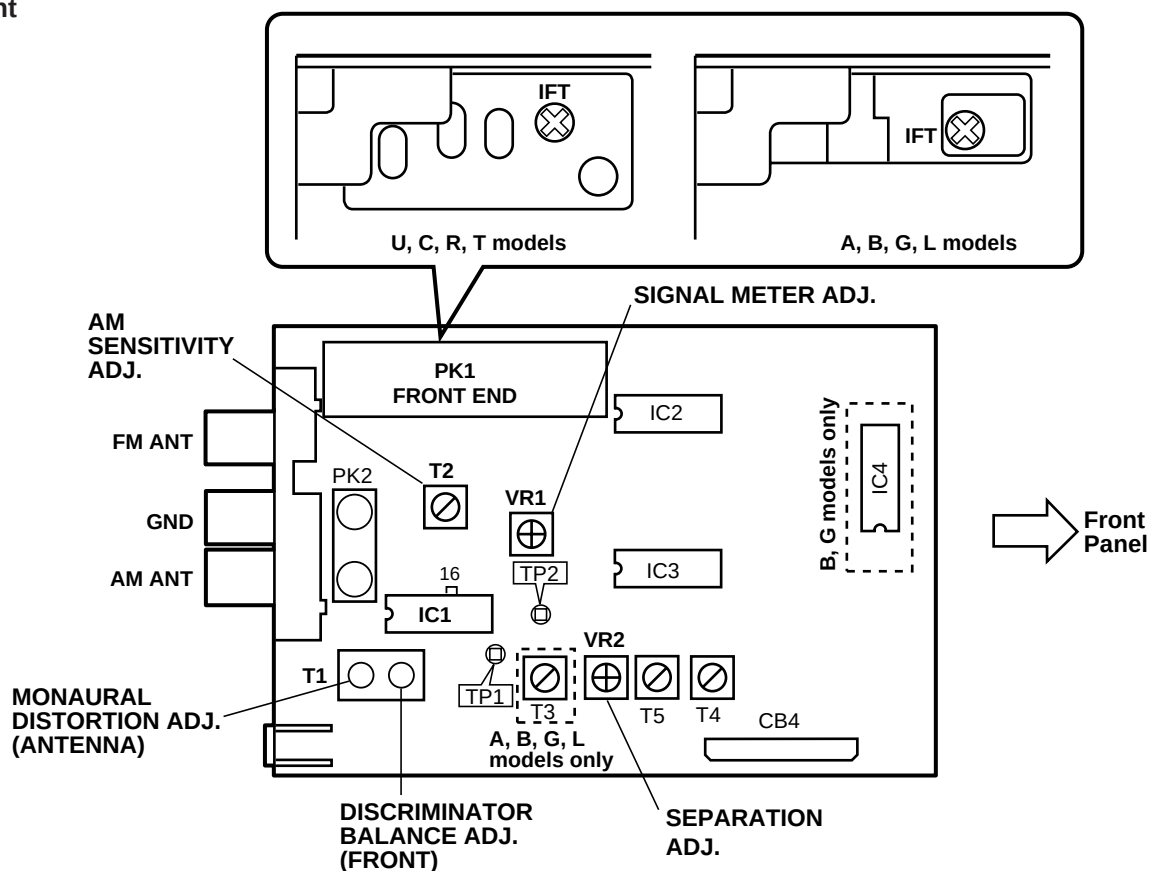
● Measuring Instruments

- 1) FM signal generator (FM SG)
- 2) Stereo signal generator (SSG)
- 3) AM signal generator (AM SG)
- 4) Distortion meter (DIST. M)
- 5) AC Voltmeter (ACVM)
- 6) DC Voltmeter (DCVM)
- 7) Oscilloscope
- 8) Low pass filter (YLF-15, $f_c=15\text{kHz}$)
- 9) Oscillator

● Dummy antenna



● Test point



FM Adjustment

● Before Adjustment

- 1) For dB μ , 1 μ V=0dB μ applies.
Example : 60dB μ =1mV
- 2) 100% modulation means that the frequency deviation is ± 75 kHz.
- 3) Install the Matching Transformer and connect FM SG.

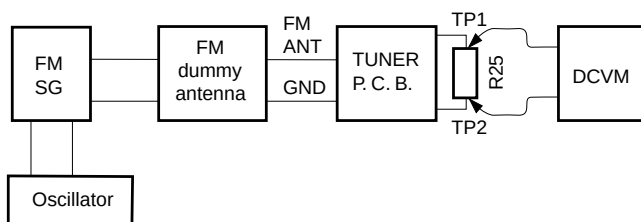
- 4) Set each switch to the following position unless otherwise specified.

INPUT SELECTOR TUNER

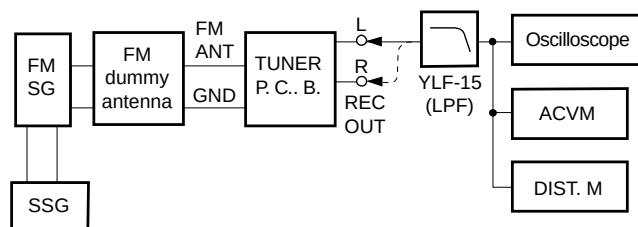
TUNING MODE AUTO

● Connection diagram (Measuring instruments)

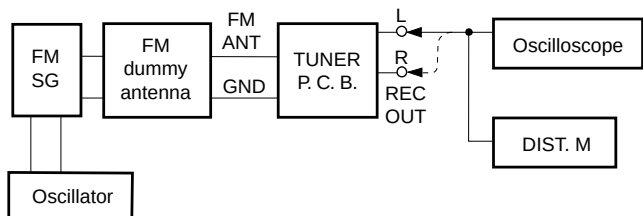
- 1) Discriminator balance adjustment.



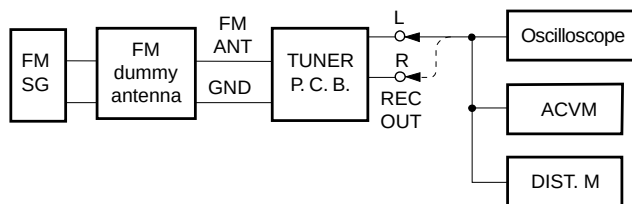
- 2) Stereo distortion adjustment/separation adjustment.



- 3) Monaural distortion adjustment



- 4) Sensitivity Verification



See page 22 for TP locations & adjustment points.

Step	Adjustment item	Signal (ANT IN)	Reception frequency	Adjustment point	Test point	Rating
1	Rough adjustment of discriminator balance	FM ANT (75 Ω) 98.1MHz 70dB μ MONO 100Hz 100% modulation	98.1MHz *(A-4)	T1 (Front side core)	Both ends of R25 (Between TP1 and TP2)	DC 0V $\pm$ 100mV
2	Rough adjustment of monaural distortion	Same as Step 1.	98.1MHz *(A-4)	T1 (Antenna side core)	REC OUT L, R	Minimize the distortion.
3	Fine adjustment of discriminator balance	Same as Step 1.	98.1MHz *(A-4)	T1 (Front side core)	Both ends of R25 (Between TP1 and TP2)	DC 0V $\pm$ 50mV
4	Fine adjustment of monaural distortion	Same as Step 1.	98.1MHz *(A-4)	T1 (Antenna side core)	REC OUT L, R	Minimize the distortion (0.9%/-41dB or less).
5	Verification of discriminator balance	Same as Step 1.	98.1MHz *(A-4)	T1 (Front side core)	Both ends of R25 (Between TP1 and TP2)	DC 0V $\pm$ 50mV

* Execution of FACTORY PRESET (Refer to page 20) will facilitate setting reception frequency for adjustment.

See page 22 for TP locations & adjustment points.

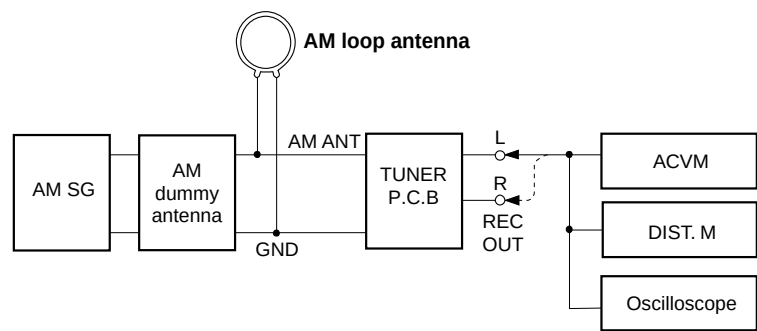
Step	Adjustment item	Signal (ANT IN)	Reception frequency	Adjustment point	Test point	Rating
6	Adjustment of front end IFT	FM ANT (75Ω) 98.1MHz 30dBμ MONO 1kHz 100% modulation	98.1MHz *(A-4)	Front end IFT	Pin 16 of IC1	Adjust so that the meter is maximum. CAUTION: Over-adjustment of the IFT core will reduce the sensitivity. (Maximum±90°)
7	Verification of monaural distortion	FM ANT (75Ω) 98.1MHz 70dBμ MONO 1kHz 100% modulation	98.1MHz *(A-4)		REC OUT L, R	0.1%
8	Verification of stereo distortion	FM ANT (75Ω) 98.1MHz 70dBμ Stereo L or R 1kHz, 100% modulation	98.1MHz *(A-4) *Tuning mode should be AUTO.		REC OUT L, R	0.2% ● STEREO indicator should light.
9	Verification of sensitivity	FM ANT (75Ω) 88.1MHz 98.1MHz 106.1MHz MONO 1kHz Modulation off	88.1MHz *(A-6) 98.1MHz *(A-4) 106.1MHz *(A-7)		ANT (75Ω)	1) Set the tuning mode to MAN'L MONO. 2) S/N should be 30dB at each frequency of 88.1MHz, 98.1MHz, and 106.1MHz. 3) Check to ensure that the voltage at the ANT terminal is 6dBμ or less. (A,B,G,L : 8dBμ or less)
10	Adjustment of separation	FM ANT (75Ω) 98.1MHz 70dBμ Stereo L or R 1kHz, 100% modulation	98.1MHz *(A-4)	VR2	REC OUT L, R	With SSG output at L or R, the signal leakage level at the other channel should be minimized. 48dB
11	Adjustment of signal meter	FM ANT (75Ω) 98.1MHz 45dBμ MONO 1kHz, 30% modulation	98.1MHz *(A-4)	VR1		Adjust so that all signal meters light.
		-10dBμ or less				Check to ensure that signal meters turn OFF.
12	Verification of auto tuning	FM ANT (75Ω) 98.1MHz 23dBμ Stereo L or R 1kHz, 30% modulation	98.1MHz *(A-4)			● Automatic reception should be available when the tuning key is moved UP and DOWN. ● The stereo indicator should light. ● Audio muting should be applied during tuning.

* Execution of FACTORY PRESET (Refer to page 20.) will facilitate setting reception frequency for adjustment.

AM Adjustment (This should be done after FM adjustment.)

● Connection diagram (Measuring instruments)

1) Adjustment of sensitivity.



See page 22 for TP locations & adjustment points.

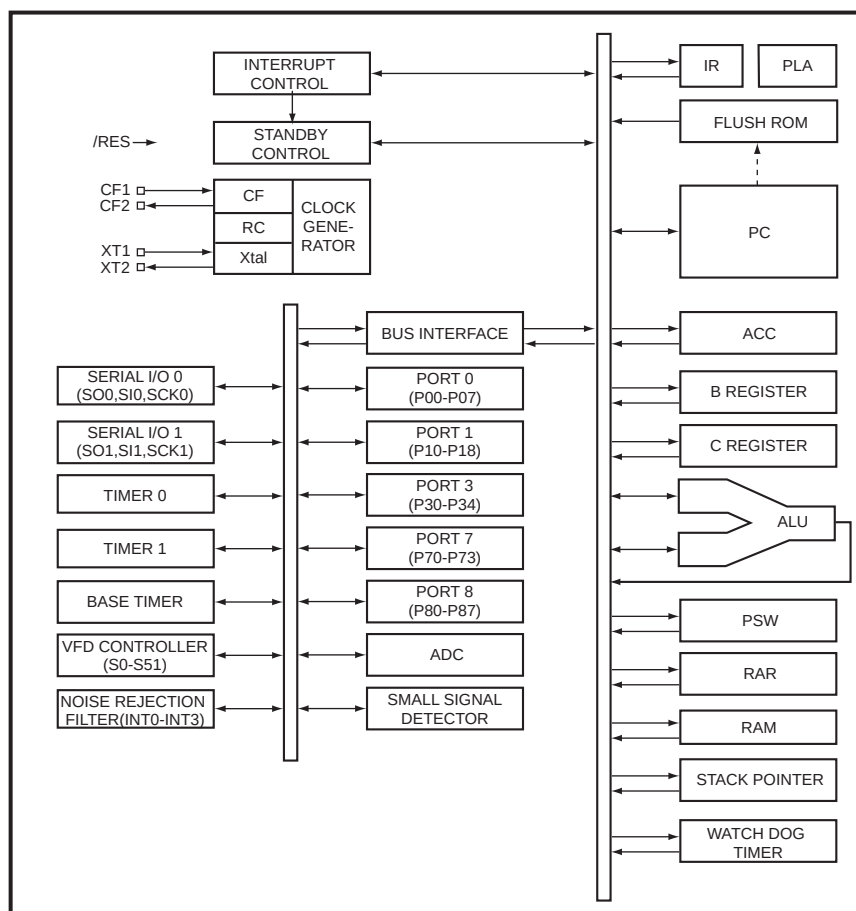
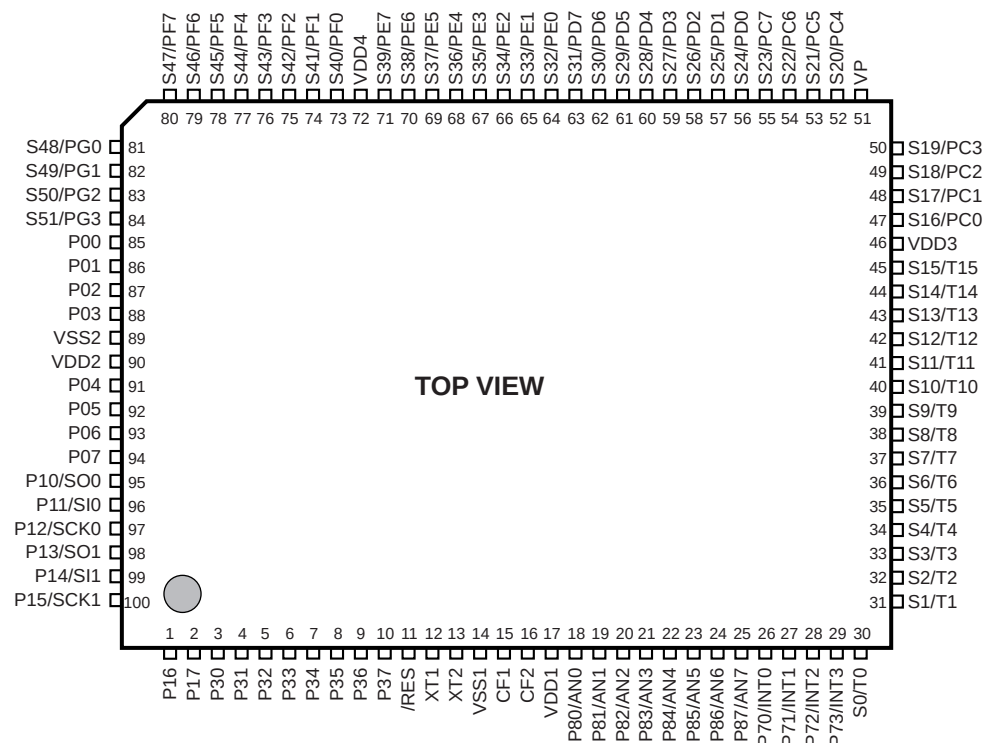
Step	Adjustment item	Signal (ANT IN)	Reception frequency	Adjustment point	Test point	Rating
1	Adjustment of sensitivity (630kHz)	AM ANT 630kHz 50dBμ 1kHz 30% modulation	630kHz *(B-1)	T2	REC OUT	Audio output should be maximized. Repeat steps 1 and 2.
2	Verification of sensitivity	AM ANT 630kHz 1080kHz 1440kHz 30% modulation	630kHz *(B-1) 1080kHz *(B-2) 1440kHz *(B-3)		AM ANT	Distortion should be 10% or less at each frequency. Check to ensure that the voltage at the ANT terminal is 54dBμ or less.
3	Verification of signal meter	AM ANT 1080kHz 90dBμ MONO 1 kHz 30% modulation	1080kHz *(B-2)			All signal meters should light.
		-10dB or less				All signal meters should turn OFF.
4	Verification of auto tuning	AM ANT 60dBμ				Auto reception should be available when the tuning key is moved UP and DOWN. Audio must be muted during search.

* Execution of FACTORY PRESET (Refer to page 20.) will facilitate setting reception frequency for adjustment.

■ IC DATA

IC800 : LC876564A-5M19

8 bit Main μ -COM



IC800 : LC876564A-5M19

8 bit Main μ -COM

Pin No.	Port	Pin Name	I/O	Function	Pin No.	Port	Pin Name	I/O	Function
1	P16	FLA-CLK	I/O	Flash clock	26	P70/INT0	PDT	I	Power down detect
2	P17	FLA-I/O	I/O	Flash input/output	27	P71/INT1	FMT	O	Full mute (L : ON)
3	P30	FLA-SEL	I/O	Flash select	28	P72/INT2		I/O	Unconnected
4	P31	T-MUTE	O	Tuner mute (L: ON)	29	P73/INT3	REMOTE	I	Remote Control signal
5	P32	DSP-MTS	O	Transmit data for Sub μ -COM	30	S0/T0	G1	O	FL Grid 1
6	P33	DSP-STM	I	Receive data from Sub μ -COM	31	S1/T1	G2	O	FL Grid 2
7	P34	DSR-SCK	O	Clock for Sub μ -COM	32	S2/T2	G3	O	FL Grid 3
8	P35	DSP-RTN	I	Clock from Sub μ -COM	33	S3/T3	G4	O	FL Grid 4
9	P36	DSP-TRQ	I	Transmit request from Sub μ -COM	34	S4/T4	G5	O	FL Grid 5
10	P37	DSP-RESET	O	Reset for Sub μ -COM	35	S5/T5	G6	O	FL Grid 6
11	/RES	/RES		System reset	36	S6/T6	G7	O	FL Grid 7
12	XT1	T-/ST	I	Stereo from Tuner	37	S7/T7	G8	O	FL Grid 8
13	XT2			Unconnected	38	S8/T8	G9	O	FL Grid 9
14	Vss1	Vss1		Ground	39	S9/T9	G10	O	FL Grid 10
15	CF1			Ceramic Oscillator Connected (10MHz)	40	S10/T10	G11	O	FL Grid 11
16	CF2			Ceramic Oscillator Connected (10MHz)	41	S11/T11	G12	O	FL Grid 12
17	VDD1	VDD1		Power supply	42	S12/T12	G13	O	FL Grid 13
18	P80/AN0	KEY1	I	Key 1 AD input	43	S13/T13	G14	O	FL Grid 14
19	P81/AN1	KEY2	I	Key 2 AD input	44	S14/T14	G15	O	FL Grid 15
20	P82/AN2	KEY3	I	Key 3 AD input	45	S15/T15	G16	O	FL Grid 16
21	P82/AN3	KEY4	I	Key 4 AD input	46	VDD3	VDD3		Power supply
22	P84/AN4	T-METER	I	Tuner meter AD input	47	S16/PC0	P1	O	FL Segment 1
23	P85/AN5	PRO1	I	Protection 1 detect (PRD) *1	48	S17/PC1	P2	O	FL Segment 2
24	P86/AN6	PRO2	I	Protection 2 detect (PRI) *1	49	S18/PC2	P3	O	FL Segment 3
25	P85/AN5	PRO3	I	Protection 3 detect (PRV1) *1	50	S19/PC3	P4	O	FL Segment 4

*1 Protection 1, 2 and 3 detect

- After a few seconds the Power ON, and protection detect start.

	Detection
Protection 1	Abnormal DC of the amplifier.
Protection 2	Abnormal overcurrent of the amplifier.
Protection 3	Abnormal Voltage of the amplifier.

IC800 : LC876564A-5M19

8 bit Main μ -COM

Pin No.	Port	Pin Name	I/O	Function
51	VP	VP		
52	S20/PC4	P5	O	FL Segment 5
53	S21/PC5	P6	O	FL Segment 6
54	S22/PC6	P7	O	FL Segment 7
55	S23/PC7	P8	O	FL Segment 8
56	S24/PD0	P9	O	FL Segment 9
57	S25/PD1	P10	O	FL Segment 10
58	S26/PD2	P11	O	FL Segment 11
59	S27/PD3	P12	O	FL Segment 12
60	S28/PD4	P13	O	FL Segment 13
61	S29/PD5	P14	O	FL Segment 14
62	S30/PD6	P15	O	FL Segment 15
63	S31/PD7	P16	O	FL Segment 16
64	S32/PE0	P17	O	FL Segment 17
65	S33/PE1	P18	O	FL Segment 18
66	S34/PE2	P19	O	FL Segment 19
67	S35/PE3	P20	O	FL Segment 20
68	S36/PE4	P21	O	FL Segment 21
69	S37/PE5	P22	O	FL Segment 22
70	S38/PE6	RDS SELECT	I	Model Type RDS *2
71	S39/PE7			Unconnected
72	VDD4	VDD4		Power supply
73	S40/PF0			Unconnected
74	S41/PF1	EFFECT-RY	O	Effect relay
75	S42/PF2	SP-RY	O	Speaker relay

Pin No.	Port	Pin Name	I/O	Function
76	S43/PF3	POWER-RY	O	Power relay
77	S44/PF4	-10dB	O	-10 dB select (L : -10dB)
78	S45/PF5	/VCR	O	VCR select inhibit (H : inhibit)
79	S46/PF6			Unconnected
80	S47/PF7	STANDBY-SW	I	Standby / on (H : ON)
81	S48/PG0	ROTARY-A	I	Rotary encoder A
82	S49/PG1	ROTARY-B	I	Rotary encoder B
83	S50/PG2	DSP-A.SEL	I	Model Type DSP-A *2
84	S51/PG3			
85	P00	VOL.DN	O	Volume down
86	P01	VOL.UP	O	Volume up
87	P02	V-SEL1	O	Video selector 1 *3
88	P03	V-SEL2	O	Video selector 2 *3
89	VSS2	VSS2		Ground
90	VDD2	VDD2		Power supply
91	P04	CE-INPUT	O	Chip enable for INPUT
92	P05	CE-VR	O	Chip enable for VOLUME
93	P06	CE-TUNER	O	Chip enable for TUNER
94	P07	/CERDS	O	Chip enable for RDS
95	P10/SO0	V1/RDS-DATA	O	RDS data V1 market *4
96	P11/SI0	V2/RDS-DATA	O	RDS data V2 market *4
97	P12/SCK0	RDS-CLK	O	Clock for RDS
98	P13/SO2	SDT	O	Serial data
99	P14/SI1	TUN-SIN	I	Serial data from Tuner
100	P15/SCK1	SCK	O	Serial clock

*2 Model Type

- Model type select to the order of DSP, RDS, V595a.

Hi = 1, Low = 0

Model Type	DSP	RDS	V595a
DSP-A.SEL	1	0	0
RDS SELECT	0	1	0

*3 Video selector 1 and 2

Hi = 1, Low = 0

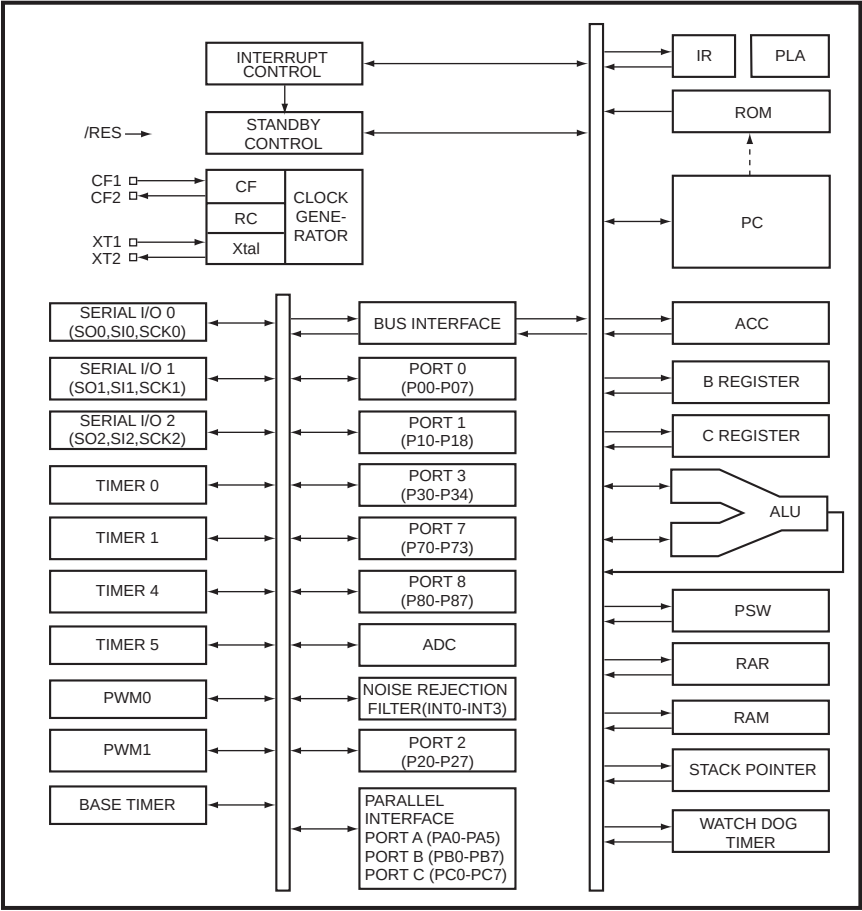
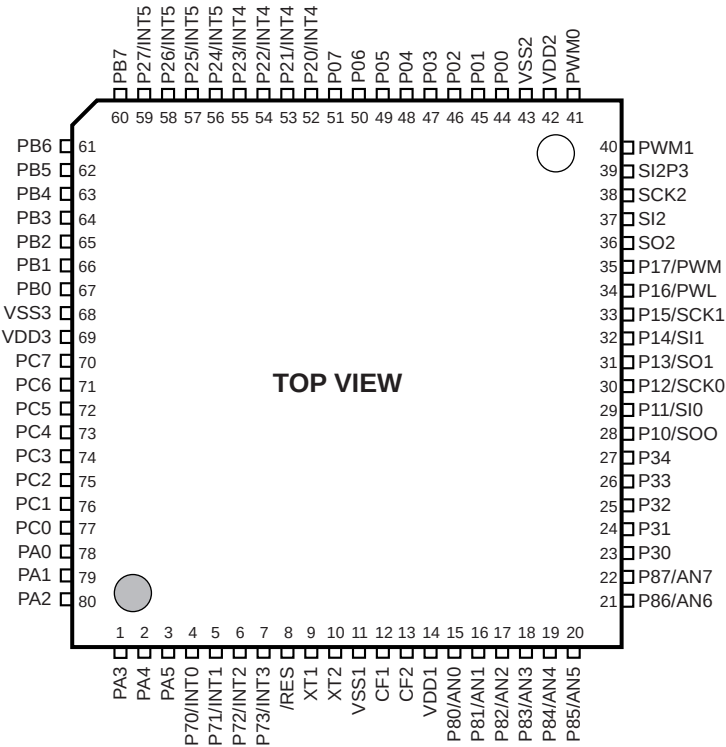
Video Selector	1(VSEL0)	2(VSEL1)
V-AUX	0	0
VCR	1	0
DVD/LD	0	1
TV/DBS	1	1

*4 Markets

Hi = 1, Low = 0

Market	J	U, C	R, T, A, B, G, L	R, T
V2	0	1	0	1
V1	0	0	1	1

IC14 : LC875164A-5K20
8 bit Sub μ -COM



IC14 : LC875164A-5K20

8 bit Sub μ -COM

Pin No.	Port	Pin Name	I/O	Function
1	PA3	CDO	I	Receive data from DIR2
2	PA4	/ICDI	O	Initial clear for DIR2
3	PA5	/KM1	O	Switching DIR2 forced (analog) mode
4	P70/INT0	LOCKN	IRQ	PLL lock flag
5	P71/INT1	ERRD	IRQ	DIR 2 error detect
6	P72/INT2	ERRA	IRQ	AC3D2av mute detect
7	P73/INT3	NONPCM	IRQ	AC3D2av AC-3 data detect
8	/RES	/RES	–	Reset from Main μ -COM
9	XT1	XT1	I	Connected to VDD1
10	XT2	XT2	I	Unconnected
11	VSS1	VSS1	G	Ground
12	CF1	CF1	$\emptyset$	Ceramic Oscillator Connected (10kHz)
13	CF2	CF2	$\emptyset$	Ceramic Oscillator Connected (10kHz)
14	VDD1	VDD1	+5V	+5V power supply
15	P80/AN0	NC	O	Unconnected
16	P81/AN1	NC	O	Unconnected
17	P82/AN2	NC	O	Unconnected
18	P83/AN3	NC	O	Unconnected
19	P84/AN4	NC	O	Unconnected
20	P85/AN5	NC	O	Unconnected
21	P86/AN6	NC	O	Unconnected
22	P87/AN7	NC	O	Unconnected
23	P30	/ICAK	O	Initial clear for CODEC AD/DA
24	P31	CEAK	O	Chip enable for CODEC AD/DA
25	P32	/ICAC	O	Initial clear for AC3D2av
26	P33	CEAC2	O	Chip enable 2 for AC3D2av
27	P34	CEAC1	O	Chip enable 1 for AC3D2av
28	P10/SO0	TXAC	TX	Transmit data for AC3D2av and CODEC AD/DA
29	P11/SI0	RXAC	RX	Receive data from AC3D2av
30	P12/SCK0	CLKAC	CLK	Clock for AC3D2av and CODEC AD/DA
31	P13/SO1	RSRV	Ipu	Not used (Normal)
32	P14/SI1	TRXOB	I/O	Not used (Normal)
33	P15/SCK1	CLKOB	I	Not used (Normal)
34	P16/PWM	NC	I	Unconnected
35	P17/PWM	NC	I/O	Unconnected
36	SO2	STM	TX	Transmit data for Main μ -COM
37	SI2	MTS	RX	Receive data from Main μ -COM
38	SCK2	CKIF	RXCK	Clock from Main μ -COM
39	SI2P3	WCIF	O	Clock for Main μ -COM
40	PWM1	TRQ	O	Transmit request for Main μ -COM

Pin No.	Port	Pin Name	I/O	Function
41	PWM0	NC	OL	Unconnected
42	VDD2	VDD2	+5V	+5V power supply
43	VSS2	VSS2	G	Ground
44	P00	NC	I/O	Unconnected
45	P01	NC	I/O	Unconnected
46	P02	NC	I/O	Unconnected
47	P03	NC	I/O	Unconnected
48	P04	NC	I/O	Unconnected
49	P05	NC	I/O	Unconnected
50	P06	NC	I/O	Unconnected
51	P07	NC	I/O	Unconnected
52	P20/INT4	NC	I/O	Unconnected
53	P21/INT4	NC	I/O	Unconnected
54	P22/INT4	NC	I/O	Unconnected
55	P23/INT4	NC	I/O	Unconnected
56	P24/INT5	NC	I/O	Unconnected
57	P25/INT5	NC	I/O	Unconnected
58	P26/INT5	NC	I/O	Unconnected
59	P27/INT5	NC	I/O	Unconnected
60	PB7	NC	I/O	Unconnected
61	PB6	NC	I/O	Unconnected
62	PB5	NC	I/O	Unconnected
63	PB4	DSP	Ipu	Connected to VSS3
64	PB3	MUTO	Ipu	Unconnected (Fixed H)
65	PB2	LDC/O	I	LD Coaxial/Optical detect
66	PB1	CDC/O	I	Fixed H
67	PB0	RF	Ipu	Connected to VSS3 (Switched L)
68	VSS3	VSS3	G	Ground
69	VDD3	VDD3	+5V	+5V power supply
70	PC7	NC	I/O	Unconnected
71	PC6	NC	I/O	Unconnected
72	PC5	VER	Ipu	Connected to VSS3 (Switched L)
73	PC4	DRB	O	Unconnected
74	PC3	DRA	O	Unconnected
75	PC2	DIC	O	Unconnected
76	PC1	DIB	O	Digital input selector control B *1
77	PC0	DIA	O	Digital input selector control A *1
78	PA0	DMT	O	L/R D/A converter mute
79	PA1	CLD	O	Chip select for DIR2
80	PA2	CCK	O	Serial clock for DIR2

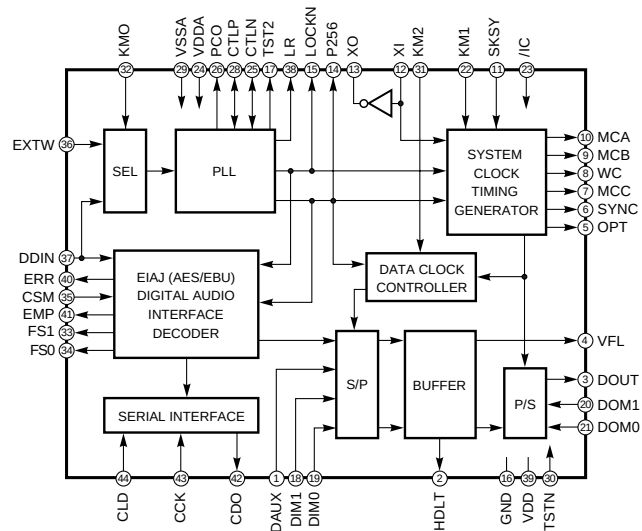
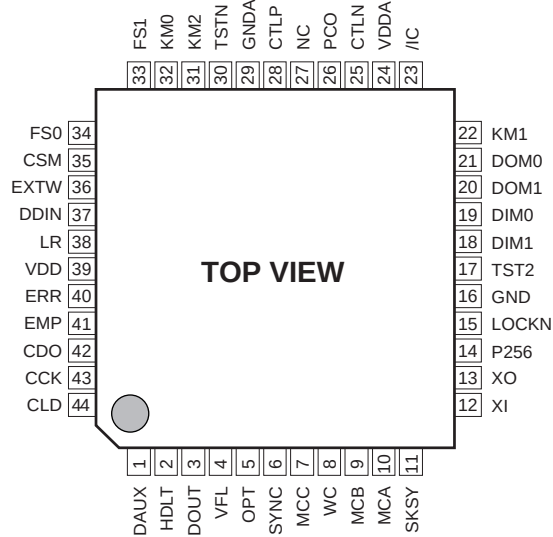
*1 Digital input selector control

Hi = 1, Low = 0

Input	DIB	DIA
DVD/LD	0	0
TV/DBS	1	0

IC3 : YM3436DK (DIR2)

Digital Format Interface Receiver



Pin No.	Pin Name	I/O	Function
1	DAUX	I	Auxiliary input for audio data
2	HDLT	O	Asynchronous buffer operation flag (NC)
3	DOUT	O	Audio data output
4	VFL	O	Parity flag output (NC)
5	OPT	O	Fs x 1 Synchronous output signal for DAC (NC)
6	SYNC	O	Fs x 1 Synchronous output signal for DSP (NC)
7	MCC	O	Fs x 64Bit clock output
8	WC	O	Fs x 1Word clock output
9	MCB	O	Fs x 128Bit clock output
10	MCA	O	Fs x 256Bit clock output
11	SKSY	I	Clock synchronization control input
12	XI	I	Crystal oscillator connection or external clock input
13	XO	O	Crystal oscillator connection
14	P256	O	VCO oscillator clock connection (NC)
15	LOCKN	O	PLL lock flag
16	GND		Logic section power (GND)
17	TST2	O	PLL time constant switching output (NC)
18	DIM1	I	Data input mode selection
19	DIM0	I	Data input mode selection
20	DOM1	I	Data output mode selection (GND)
21	DOM0	I	Data output mode selection (GND)
22	KM1	I	Clock mode switching input 1
23	/IC	I	Initial clear from Sub μ -COM
24	VDDA		VCO section power (+5V)
25	CTLN	I	VCO control input N

Pin No.	Pin Name	I/O	Function
26	PCO	O	PLL phase comparison output
27	NC		
28	CTLP	I	VCO control input P (GND)
29	GNDA		VCO section power (GND)
30	TSTN	I	Test terminal. Open for normal use
31	KM2	I	Clock mode switching input 2 (GND)
32	KM0	I	Clock mode switching input 0 (GND)
33	FS1	O	Channel status sampling frequency display output 1 (NC)
34	FS0	O	Channel status sampling frequency display output 0 (NC)
35	CSM	I	Channel status output method selection(GND)
36	EXTW	I	External synchronous auxiliary input word clock (GND)
37	DDIN	I	EIAJ (AES/EBU) data input
38	LR	O	PLL word clock output (NC)
39	VDD		Logic section power (+5V)
40	ERR	O	Data error flag output
41	EMP	O	Channel status emphasis control code output (NC)
42	CDO	O	3-wire type microcomputer interface data output
43	CCK	I	3-wire type microcomputer interface clock output
44	CLD	I	3-wire type microcomputer interface load input

IC4 : YSS918D-F (AC3D2av)

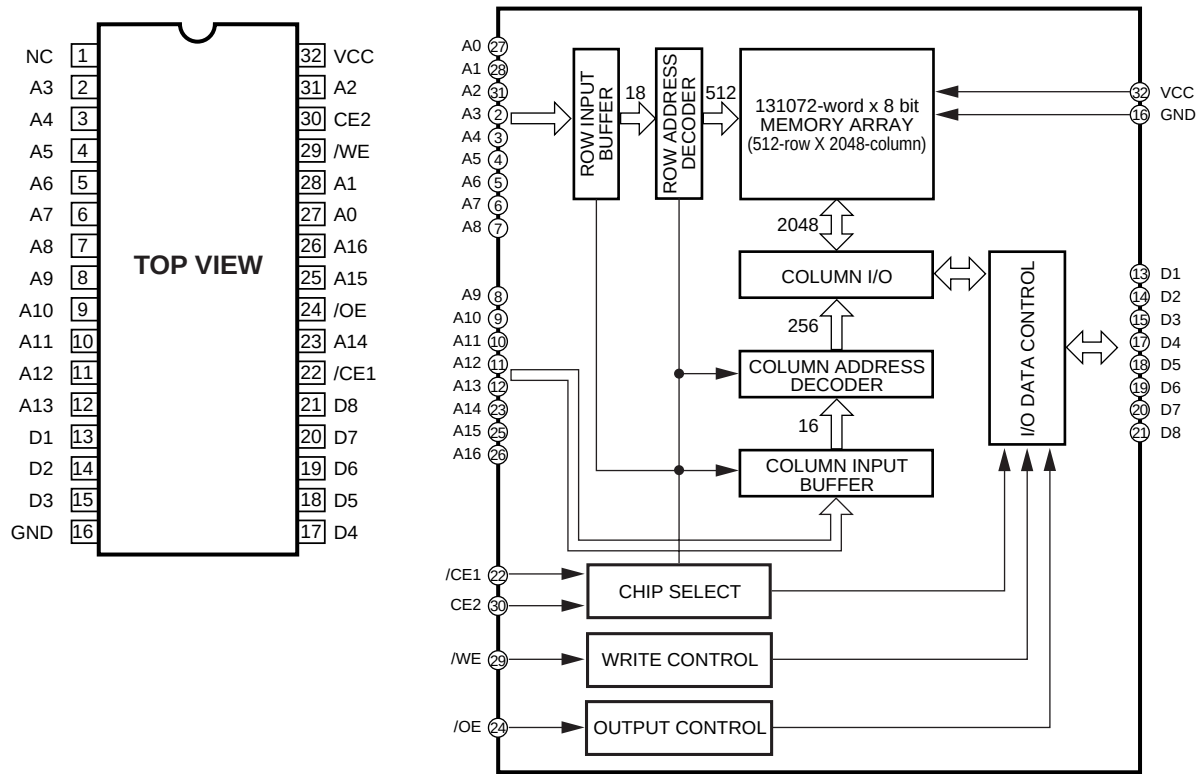
DSP + AC-3(Digital Dolby)/ Pro Logic/ DTS Digital Surround Decoder

No.	Name	I/O	Function
1	VDD1		+5V power supply
2	RAMCEN	O	RAM chip enable output terminal (normally unconnected)
3	RAMA16	O	RAM address output terminal 16, connected to external 1M SRAM address
4	RAMA15	O	RAM address output terminal 15, connected to external 1M SRAM address
5	SDIB0	I	Serial data input B terminal 0 (normally connected to ground)
6	SDIB1	I	Serial data input B terminal 1 (normally connected to ground)
7	SDIB2	I	Serial data input B terminal 2 (normally connected to ground)
8	XI	I	Crystal oscillator connection external clock input terminal
9	XO	O	Crystal oscillator connection (normally unconnected)
10	VSS		Ground
11	AVDD		+3V power supply
12	SDIB3	I	Serial data input B terminal 3 (normally unconnected)
13	TEST		Test terminal (normally unconnected)
14	TEST		Test terminal (normally unconnected)
15	OVFB	O	Overflow detect terminal (normally unconnected)
16	DTSDATA	O	DTS data detect terminal (normally unconnected)
17	AC3DATA	O	AC-3 data detect terminal (normally unconnected)
18	SDOB3	O	Serial data output B terminal 3 (normally unconnected)
19	CPO	O	PLL output terminal (connected to AVSS through external analog filter)
20	AVSS		Ground
21	VDD		+3V power supply
22	SDOA2	O	Serial data output A terminal 2 (normally unconnected)
23	SDOA1	O	Serial data output A terminal 1 (normally unconnected)
24	SDOA0	O	Serial data output A terminal 0, PCM output terminal (AC-3/PRO LOGIC/DTS: L/R output)
25	RAMA14	O	RAM address terminal 14 output terminal, connected to external 1M SRAM address
26	RAMA13	O	RAM address terminal 13 output terminal, connected to external 1M SRAM address
27	RAMA12	O	RAM address terminal 12 output terminal, connected to external 1M SRAM address
28	RAMA11	O	RAM address terminal 11 output terminal, connected to external 1M SRAM address
29	RAMA10	O	RAM address terminal 10 output terminal, connected to external 1M SRAM address
30	VSS		Ground
31	VDD1		+5V power supply
32	OPORT0	O	Output port terminal 0, dolby pro logic signal output
33	OPORT1	O	Output port terminal 1, (normally unconnected)
34	OPORT2	O	Output port terminal 2, (normally unconnected)
35	OPORT3	O	Output port terminal 3, (normally unconnected)
36	OPORT4	O	Output port terminal 4, (normally unconnected)
37	OPORT5	O	Output port terminal 5, (normally unconnected)
38	OPORT6	O	Output port terminal 6, (normally unconnected)
39	OPORT7	O	Output port terminal 7, (normally unconnected)
40	VSS		Ground
41	VDD2		+3V power supply
42	RAMA9	O	RAM address output terminal 9 , connected to external 1M SRAM address
43	RAMA8	O	RAM address output terminal 8 , connected to external 1M SRAM address
44	RAMA7	O	RAM address output terminal 7 , connected to external 1M SRAM address
45	SDOB2	O	Serial data output B terminal 2, PCM output
46	SDOB1	O	Serial data output B terminal 1, PCM output
47	SDOB0	O	Serial data output B terminal 0, PCM output
48	SDBCK1	I	Serial data bit clock input terminal 1
49	SDWCK1	I	Serial data word clock input terminal 1
50	VSS		Ground

IC4 : YSS918D-F (AC3D2av)**DSP + AC-3(Digital Dolby)/ Pro Logic/ DTS Digital Surround Decoder**

No.	Name	I/O	Function
51	VDD2		+3V power supply
52	NONPCM	O	non-PCM data output terminal, non-PCM data detect
53	CRC	O	CRC output terminal (normally unconnected)
54	MUTE	O	Mute output terminal, output data mute detect
55	KARAOKE	O	Karaoke output terminal (normally unconnected)
56	SURENC	O	Surround encoder output terminal (normally unconnected)
57	/SDBCK0	O	Inverted signal of serial data bit clock output terminal 0 (normally unconnected)
58	RAMA6	O	RAM address output terminal 6, connected to external 1M SRAM address
59	RAMA5	O	RAM address output terminal 5, connected to external 1M SRAM address
60	VSS		Ground
61	RAMA4	O	RAM address output terminal 4, connected to external 1M SRAM address
62	/IC	I	Initial clear input terminal
63	TEST		Test terminal (normally unconnected)
64	RAMA3	O	RAM address output terminal 3, connected to external 1M SRAM address
65	/CSB	I	Chip select B input terminal, coefficient and program RAM chip select signal input
66	/CS	I	Chip select input terminal, microprocessor interface chip select signal input
67	SO	O	Serial data output terminal, microprocessor interface serial data output
68	SI	I	Serial data input terminal, microprocessor interface and coefficient and program RAM serial data input
69	SCK	I	Serial clock input terminal, microprocessor interface and coefficient and program RAM serial clock input
70	RAMA2	O	RAM address output terminal 2, connected to external 1M SRAM address
71	VDD1		+5V power supply
72	RAMD0	I/O	RAM data bus terminal 0, connected to external 1M SRAM data
73	RAMD1	I/O	RAM data bus terminal 1, connected to external 1M SRAM data
74	RAMD2	I/O	RAM data bus terminal 2, connected to external 1M SRAM data
75	RAMD3	I/O	RAM data bus terminal 3, connected to external 1M SRAM data
76	RAMD4	I/O	RAM data bus terminal 4, connected to external 1M SRAM data
77	RAMD5	I/O	RAM data bus terminal 5, connected to external 1M SRAM data
78	RAMD6	I/O	RAM data bus terminal 6, connected to external 1M SRAM data
79	RAMD7	I/O	RAM data bus terminal 7, connected to external 1M SRAM data
80	VSS		Ground
81	VDD2		+3V power supply
82	SDWCK0	I	Serial data word clock input terminal 0
83	SDBCK0	I	Serial data bit clock input terminal 0
84	SDIA0	I	Serial data input A terminal 0, AC-3/DTS bit stream (or PCM) data input
85	SDIA1	I	Serial data input A terminal 1 (normally connected to ground)
86	RAMA1	O	RAM address output terminal 1, connected to external 1M SRAM address
87	RAMA0	O	RAM address output terminal 0, connected to external 1M SRAM address
88	RAMWEN	O	RAM write enable output terminal, connected to external 1M SRAM write enable
89	RAMOEN	O	RAM output enable output terminal, connected to external 1M SRAM output enable
90	VSS		Ground
91	VDD		+3V power supply
92	IPO7	I	Input port terminal 7 (normally connected to ground)
93	IPO6	I	Input port terminal 6 (normally connected to ground)
94	IPO5	I	Input port terminal 5 (normally connected to ground)
95	IPO4	I	Input port terminal 4 (normally connected to ground)
96	IPO3	I	Input port terminal 3 (normally connected to ground)
97	IPO2	I	Input port terminal 2 (normally connected to ground)
98	IPO1	I	Input port terminal 1 (normally connected to ground)
99	IPO0	I	Input port terminal 0 (normally connected to ground)
100	VSS		Ground

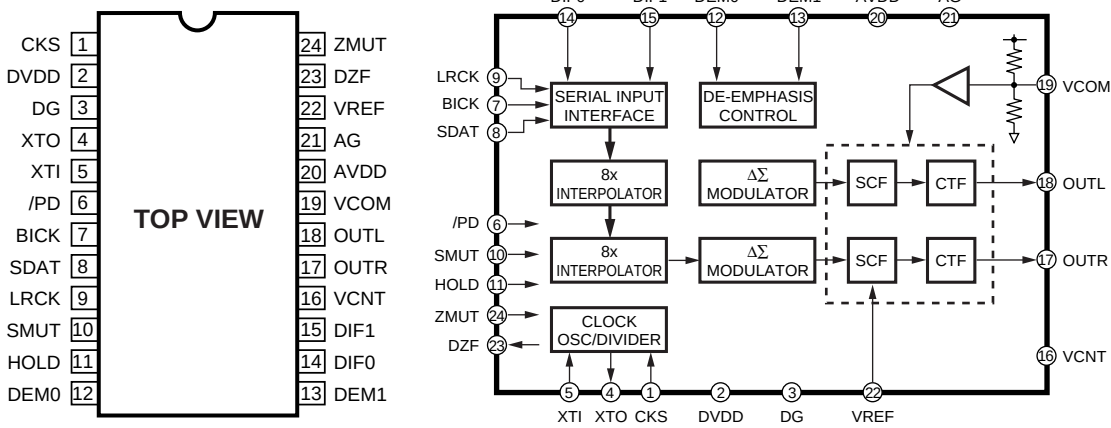
IC5 : M5M51288BKJ-20LTEL (1M SRAM)
131072-word x 8 bit High Speed Static RAM



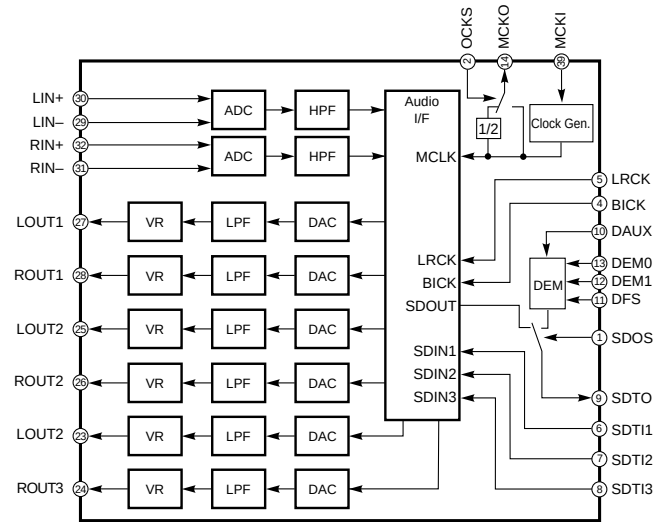
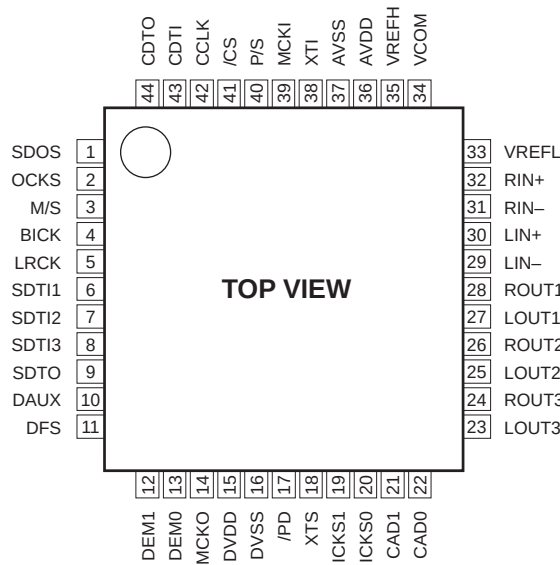
/CE1	CE2	/WE	/OW	Mode	Data I/O	Power
X	L	X	X	Non-selectable	High impedance	On
H	X	X	X	Non-selectable	High impedance	Standby
L	H	L	X	Write mode	Input	On
L	H	H	L	Read mode	Output	On
L	H	H	H		High impedance	On

NOTE) H: High Level L: Low level X: Don't care

IC7 : AK4320 (DA)
1 bit D/A Converter



IC6 : AK4526A-VQ (CODEC AD/DA)
20 bit 6 channel A/D, D/A Converter

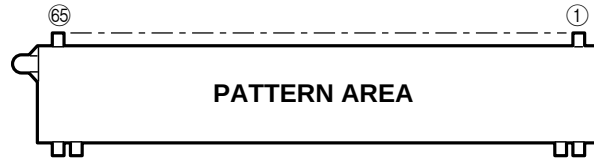


Pin No.	Pin Name	I/O	Function
1	SDOS	I	Connected to ground (digital)
2	OCKS	I	Connected to ground (digital)
3	M/S	I	Connected to ground (digital)
4	BICK	I/O	Audio serial data clock, bit clock input from Main μ -COM
5	LRCK	I/O	Input/Output channel clock, word clock input from Main μ -COM
6	SDTI1	I	DAC Audio serial data input 1-3, PCM input from AC3D2av
7	SDTI2	I	
8	SDTI3	I	
9	SDTO	O	Audio serial data output, audio data for DIR2
10	DAUX	I	Connected to ground (digital)
11	DFS	I	Connected to ground (digital)
12	DEM1	I	Connected to ground (digital)
13	DEM0	I	
14	MCKO	O	Unconnected
15	DVDD		Power supply (digital)
16	DVSS		Ground (digital)
17	/RD	I	Power down and reset, initial clear from Sub μ -COM
18	XTS	I	Connected to ground (analog)
19	ICKS1	I	Connected to ground (analog)
20	ICKS0	I	Connected to ground (analog)
21	CAD1	I	Connected to ground (analog)
22	CAD0	I	Connected to ground (analog)

Pin No.	Pin Name	I/O	Function
23	LOUT3	O	Lch analog output 3, for CENTER
24	ROUT3	O	Rch analog output 3, for LFE
25	LOUT2	O	Lch analog output 2, for REAR
26	ROUT2	O	Rch analog output 2, for REAR
27	LOUT1	O	Lch analog output 1, for FRONT
28	ROUT1	O	Rch analog output 1, for FRONT
29	LIN-	I	Lch analog negative input, from MAIN
30	LIN+	I	Lch analog positive input, from MAIN
31	RIN-	I	Rch analog negative input, from MAIN
32	RIN+	I	Rch analog positive input, from MAIN
33	VREFL	I	Connected to ground (analog)
34	VCOM	O	Common voltage output
35	VREFH	I	Connected to power supply (analog)
36	AVDD		Power supply (analog)
37	AVSS		Ground (analog)
38	XTI		Unconnected
39	MCKI	I	External master clock input, FsX256 Bit clock from DIR2
40	P/S	I	Connected to ground (digital)
41	/CS	I	Chip select in serial mode, chip enable from Sub μ -COM
42	CCLK	I	Control data clock in serial mode, clock from Sub μ -COM
43	CDTI	I	Control data input in serial mode, Transmit data from Sub μ -COM
44	CDTO	O	Unconnected

■ DISPLAY DATA

● V800 : 16-BT-59GK (V2421800)



• PIN CONNECTION

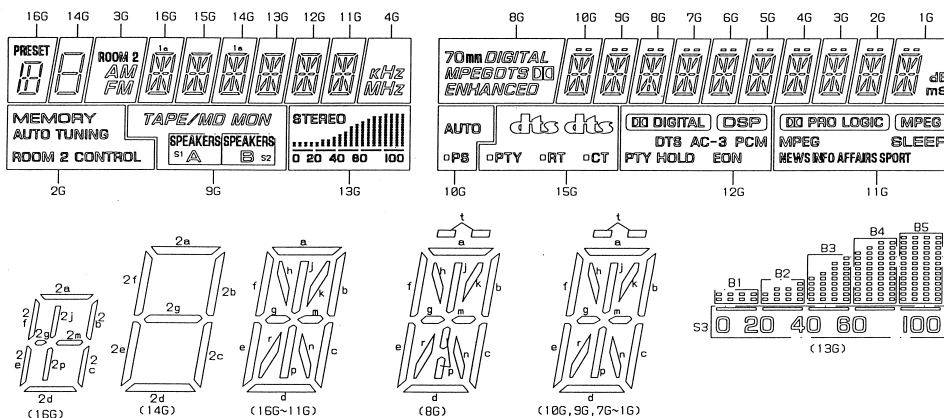
Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
CONNECTION	F1	F1	NP	NP	NC	NC	NC	NC	NC	NC	P22	P21	P20	P19	P18	P17	P16	P15	P14	P13	P12	P11	P10	P9	

Pin No.	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
CONNECTION	P8	P7	P6	P5	P4	P3	P2	P1	IC	NP	Fd	Fd	NP	IC	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G	6G

Pin No.	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	NOTE	1) F1, F2 Filament 2) NP No pin 3) NC No connection 4) D1 Datum Line
CONNECTION	5G	4G	3G	2G	1G	NC	NC	NC	NC	NC	NP	NP	F2	F2			

NOTE 1) F1, F2 Filament
 2) NP No pin
 3) NC No connection
 4) DL Datum Line
 5) 1G~16G Grid
 6) IC Internal connection
 7) Fd terminals are to be supplied through 51kΩ from Ec.

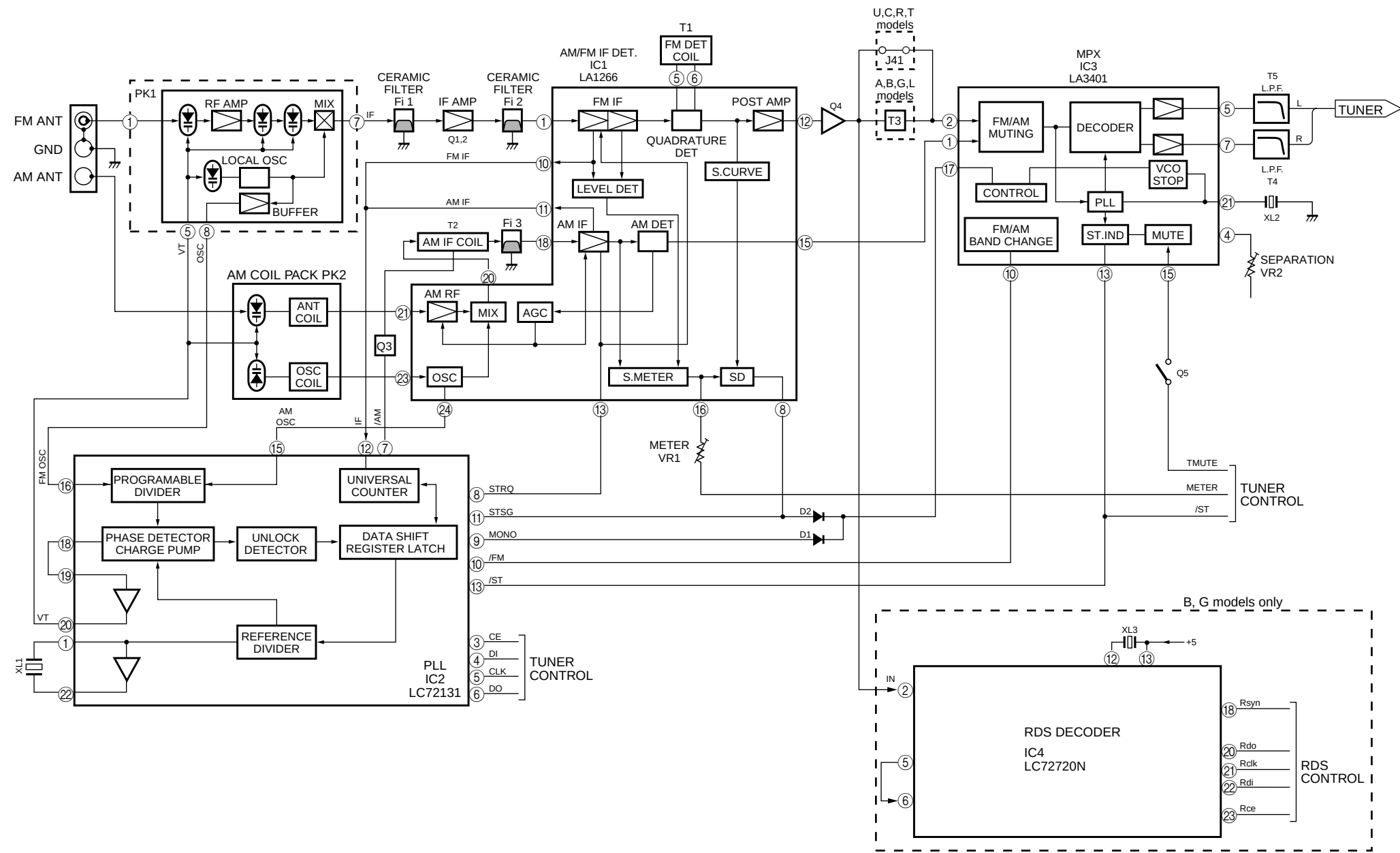
• GRID ASSIGNMENT



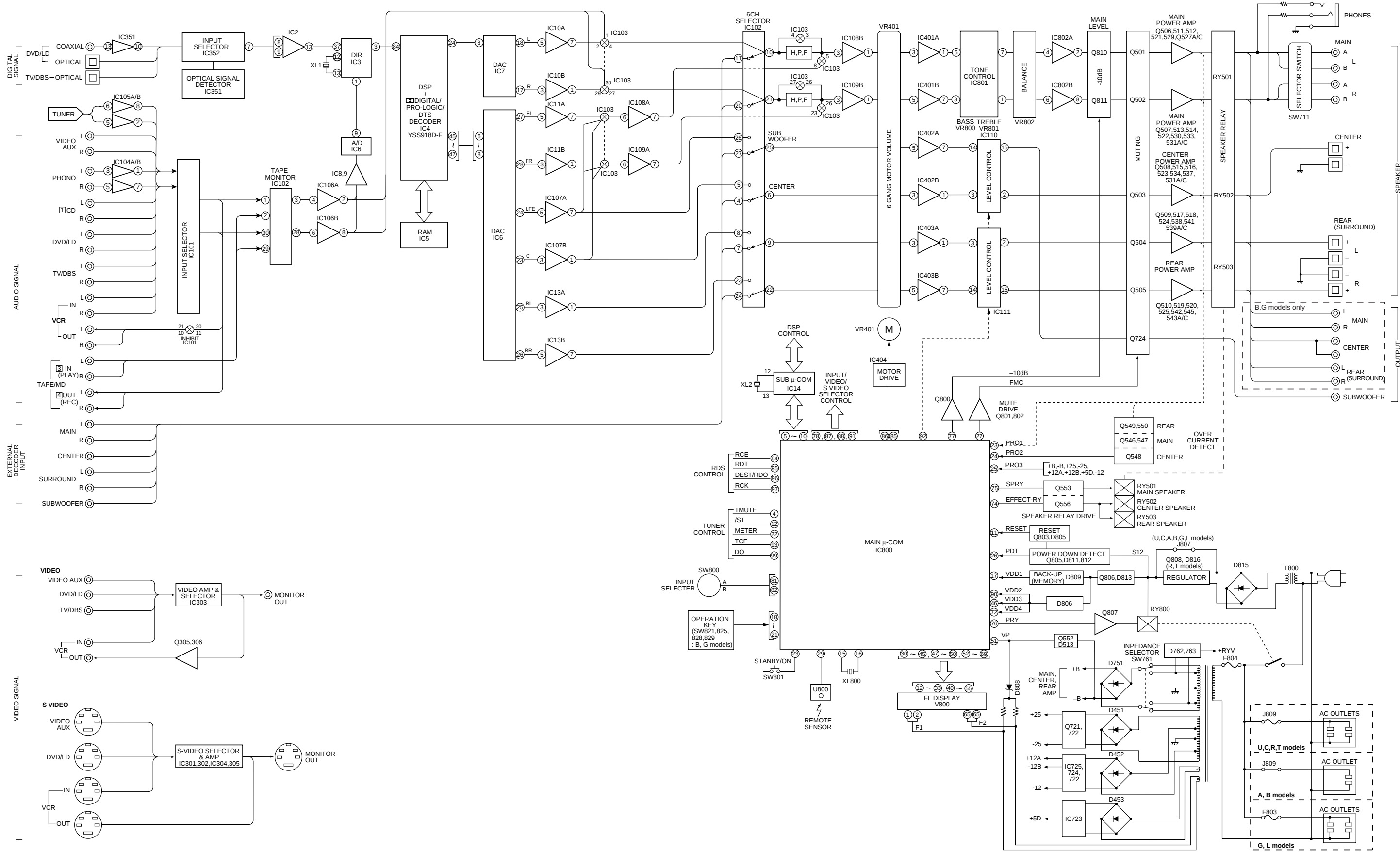
• ANODE CONNECTION

	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G -5G	4G	3G	2G	1G
P1	1a	a	1a	a	a	a	a	a	a	a	a	a	a	a
P2	1b	b	1b	b	b	b	b	b	b	b	b	b	b	b
P3	1c	c	1c	c	c	c	c	c	c	c	c	c	c	c
P4	1d	d	1d	d	d	d	d	d	d	d	d	d	d	d
P5	1e	e	1e	e	e	e	e	e	e	e	e	e	e	e
P6	1f	f	1f	f	f	f	f	f	f	f	f	f	f	f
P7	1g	g	1g	g	g	g	g	g	g	g	g	g	g	g
P8	1h	h	1h	h	h	h	h	h	h	h	h	h	h	h
P9	1j	j	1j	j	j	j	j	j	j	j	j	j	j	j
P10	1k	k	1k	k	k	k	k	k	k	k	k	k	k	k
P11	1m	m	1m	m	m	m	m	m	m	m	m	m	m	m
P12	1n	n	1n	n	n	n	n	n	n	n	n	n	n	n
P13	1p	p	1p	p	p	p	p	p	p	p	p	p	p	p
P14	1r	r	1r	r	r	r	r	r	r	r	r	r	r	r
P15	PRESET		—	—			t	t	t	t	t	t	t	t
P16	2a		2a	STEREO			—	—	—	—	—	—	—	—
P17	2b,2c		2b	B1	DTS	MPEG	—	TAPE/MO	70mm	—	KHz	ROOM 2	MEMORY	dB
P18	2d	PTY	2c	B2	AC-3	SLEEP	—	MON	DIGITAL	—	MHz	AM	AUTO TUNING	ms
P19	2e,2f		2d	B3	PCM	NEWS	—	S1	MPEG	—	—	FM	ROOM 2 CONTROL	—
P20	2g	RT	2e	B4	PTY HOLD	INFO	AUTO	S2	DTS	—	—	—	—	—
P21	2j,2p		2f	B5	EON	AFFAIRS		—		—	—	—	—	—
P22	2m	CT	2g	S3	—	SPORT	PS	—	ENHANCED	—	—	—	—	—

■ BLOCK DIAGRAM (1/2)



BLOCK DIAGRAM (2/2)



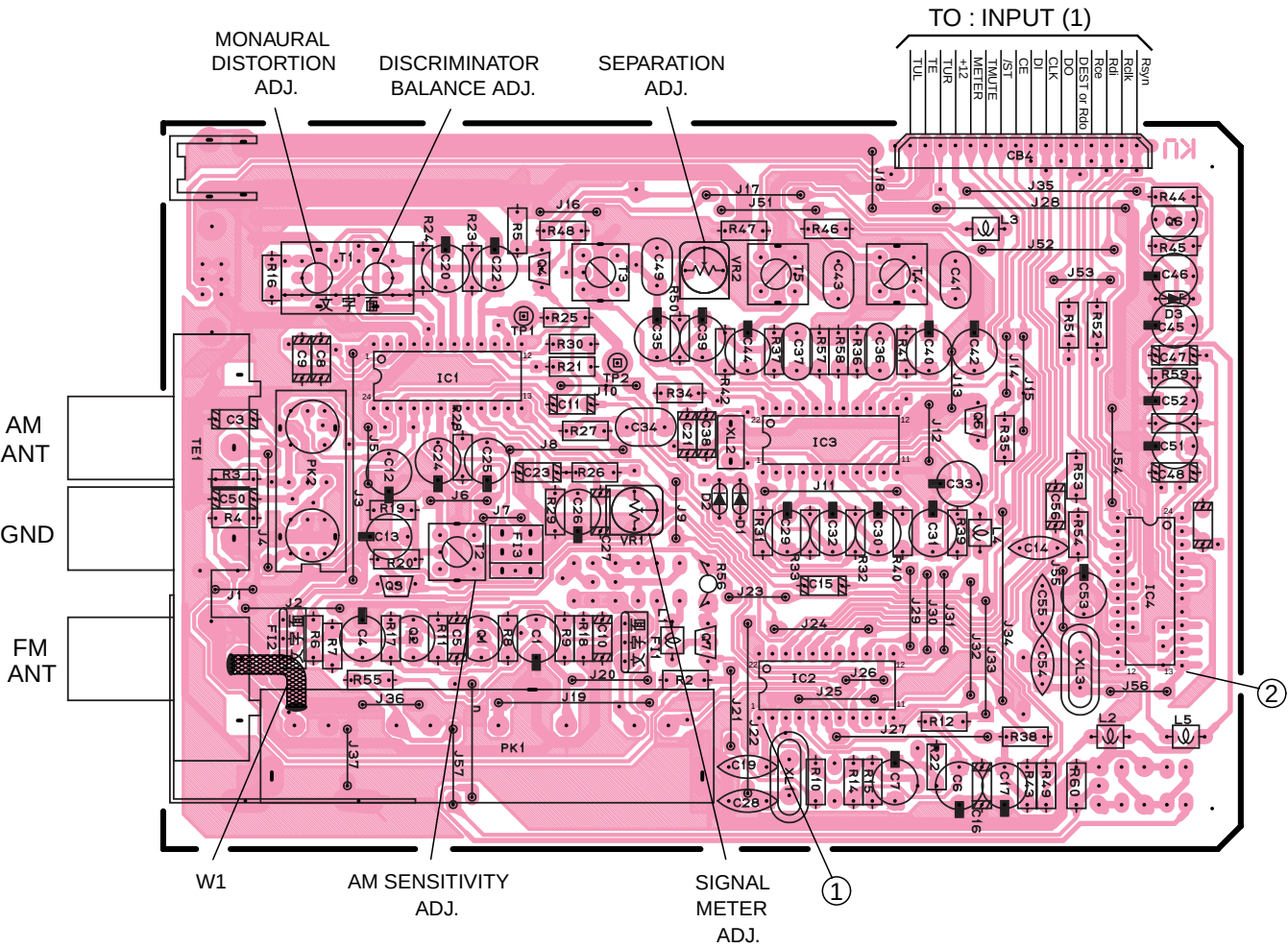
PRINTED CIRCUIT BOARD (Foil side)

There are two types of the Tuner P. C. B. assembly in this model:
One has only lead-type devices and the other has lead-type and surface-mount (SMD) devices. These two P. C. B. assemblies are compatible.

P. C. B. ASS'Y TUNER LIST

Model	Markets	Lead Type	Lead & SMD
RX-V595aRDS	B, G	V2518900	V2519600

B and G models
P. C. B. TUNER (Lead Type)



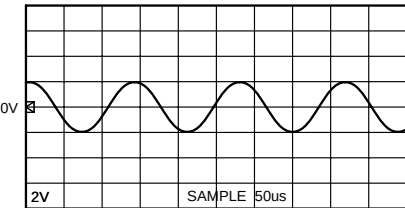
Lead Type

Semiconductor Location

Ref. No.	Location
D1	C3
D2	C3
D3	D3
IC1	B3
IC2	C4
IC3	C3
IC4	D3
Q1	B4
Q2	B4
Q3	B3
Q4	B3
Q5	C3
Q6	D2
Q7	C4

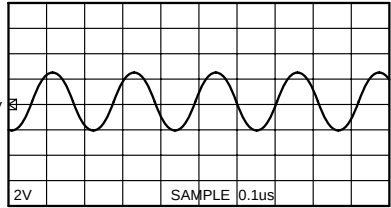
Point ① (Pin22 of IC2)

V : 2V/div H : 50nsec/div DC range 1 : 1 probe



Point ② (Pin12 of IC4)

V : 2V/div H : 0.1µsec/div DC range 1 : 1 probe

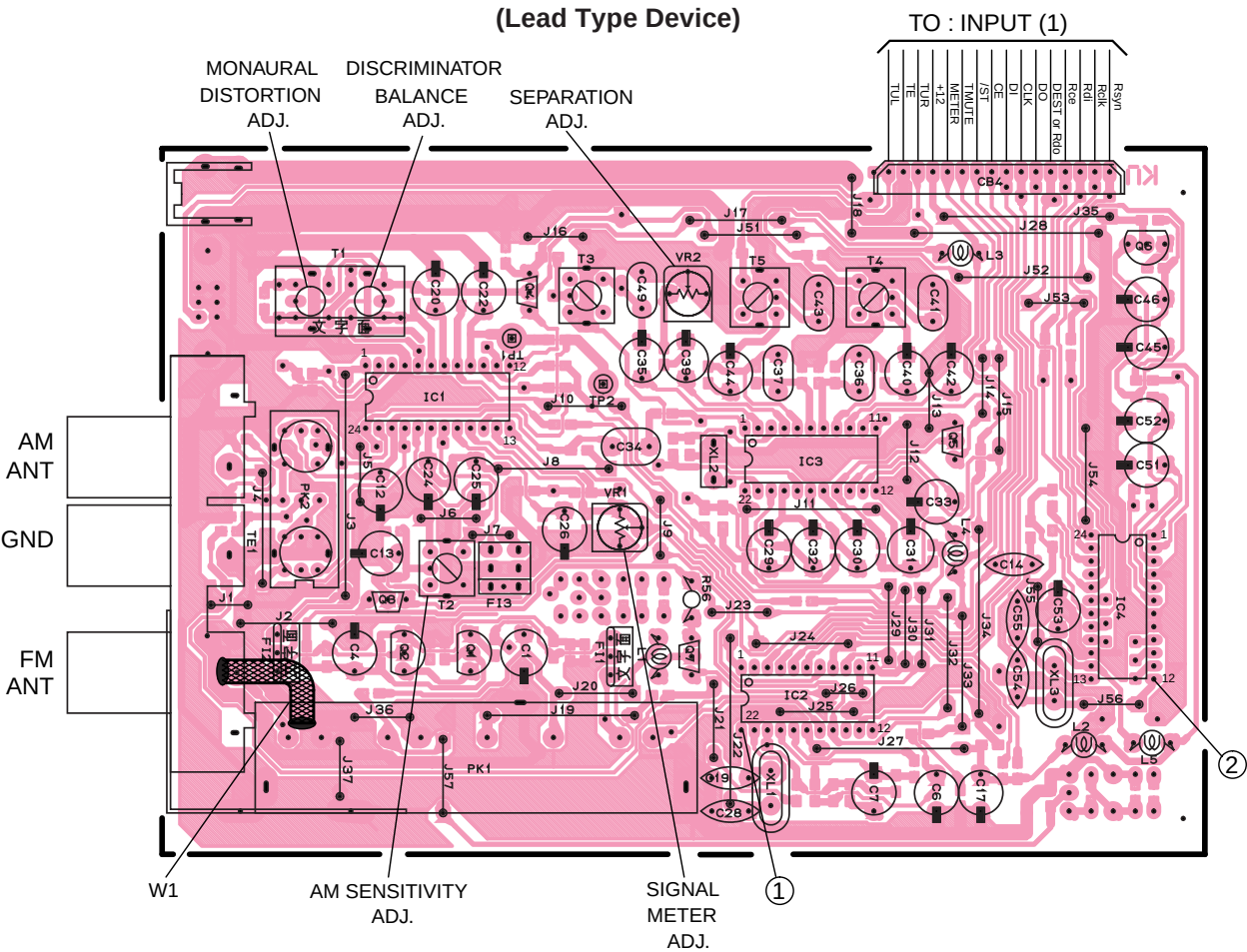


Lead Type & SMD

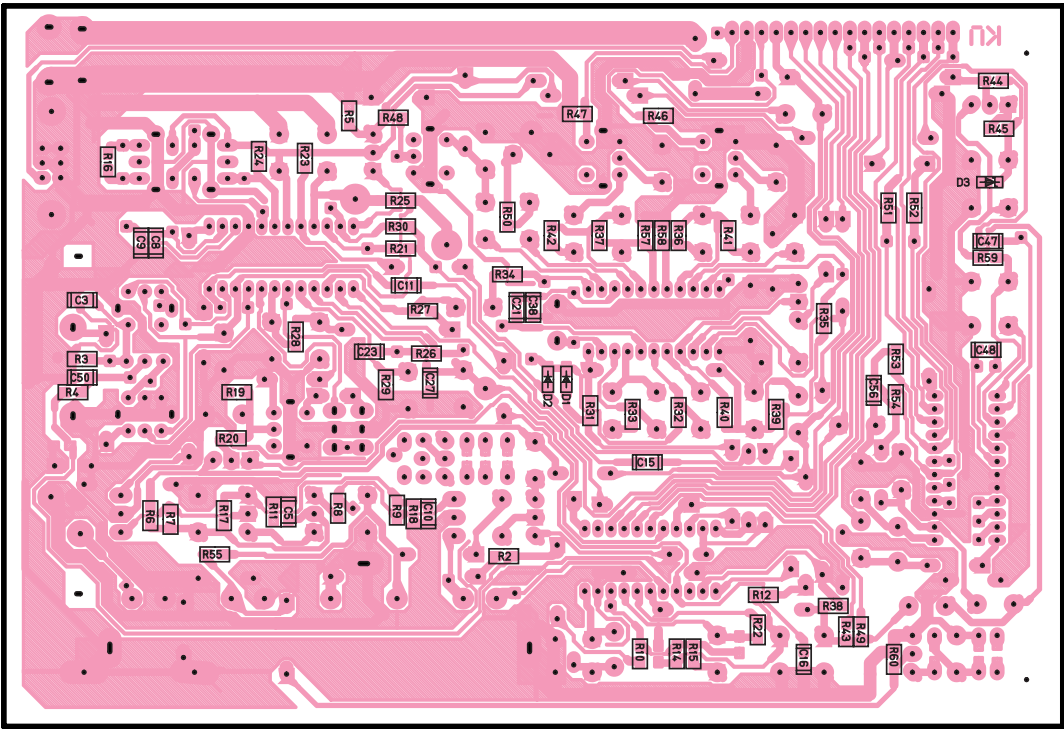
Semiconductor Location

Ref. No.	Location
D1	G5
D2	G5
D3	H4
IC1	F2
IC2	G3
IC3	G2
IC4	H3
Q1	F3
Q2	F3
Q3	F3
Q4	F2
Q5	G2
Q6	H2
Q7	G3

B and G models
P. C. B. TUNER (Lead Type & SMD)



(Surface Mount Device)



PRINTED CIRCUIT BOARD (Foil side)

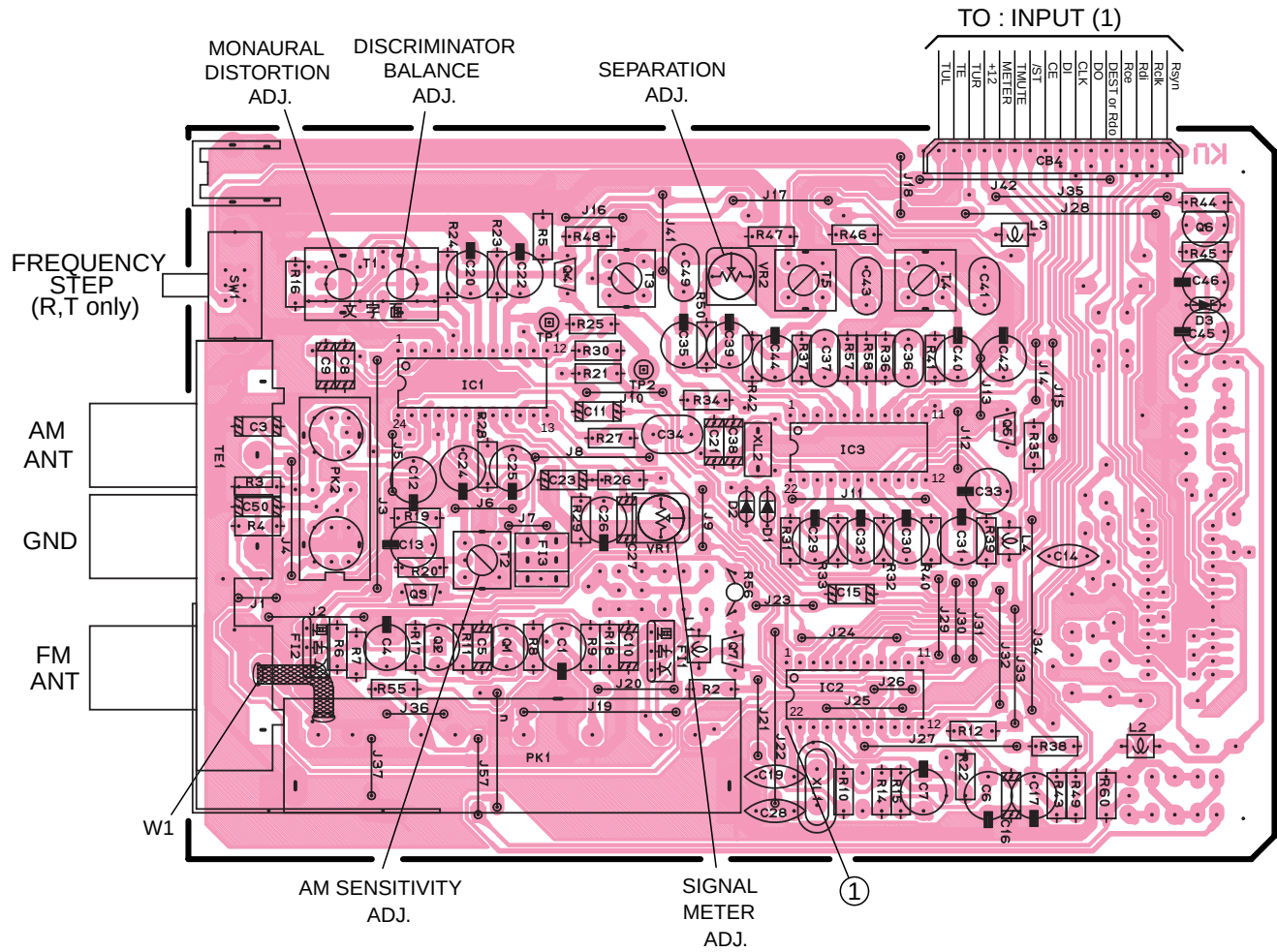
There are two types of the Tuner P. C. B. assembly in this model: One has only lead-type devices and the other has lead-type and surface-mount (SMD) devices. These two P. C. B. assemblies are compatible.

P. C. B. ASS'Y TUNER LIST

Model	Markets	Lead Type	Lead & SMD
RX-V595a/HTR-5150	U, C	V2518600	V2519300
RX-V595a/HTR-5150	R, T/T	V2518700	V2519400
RX-V595a/HTR-5150	A, L/A	V2518800	V2519500

U, C, R, T, A and L models

P. C. B. TUNER (Lead Type)



Lead Type Semiconductor Location

Ref. No.	Location
D1	C3
D2	C3
D3	D3
IC1	B3
IC2	C4
IC3	C3
Q1	B4
Q2	B4
Q3	B4
Q4	B3
Q5	C3
Q6	D3
Q7	C4

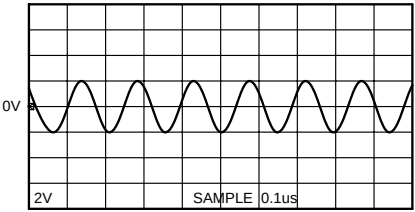
CIRCUIT CHANGES BY MARKET.

	J	U,C	R,T	A,L
R48	X	X	X	○
T3	X	X	X	○
J41	○	○	○	X
SW1	X	X	○	X
J42	X	X	○	X
R55	X	X	X	○
R57	X	X	X	○
R58	X	X	X	○
R60	X	X	X	○

○:USED X:NOT USED

Point ① (Pin22 of IC2)

V : 2V/div H : 0.1μsec/div DC range 1 : 1 probe



Lead Type & SMD

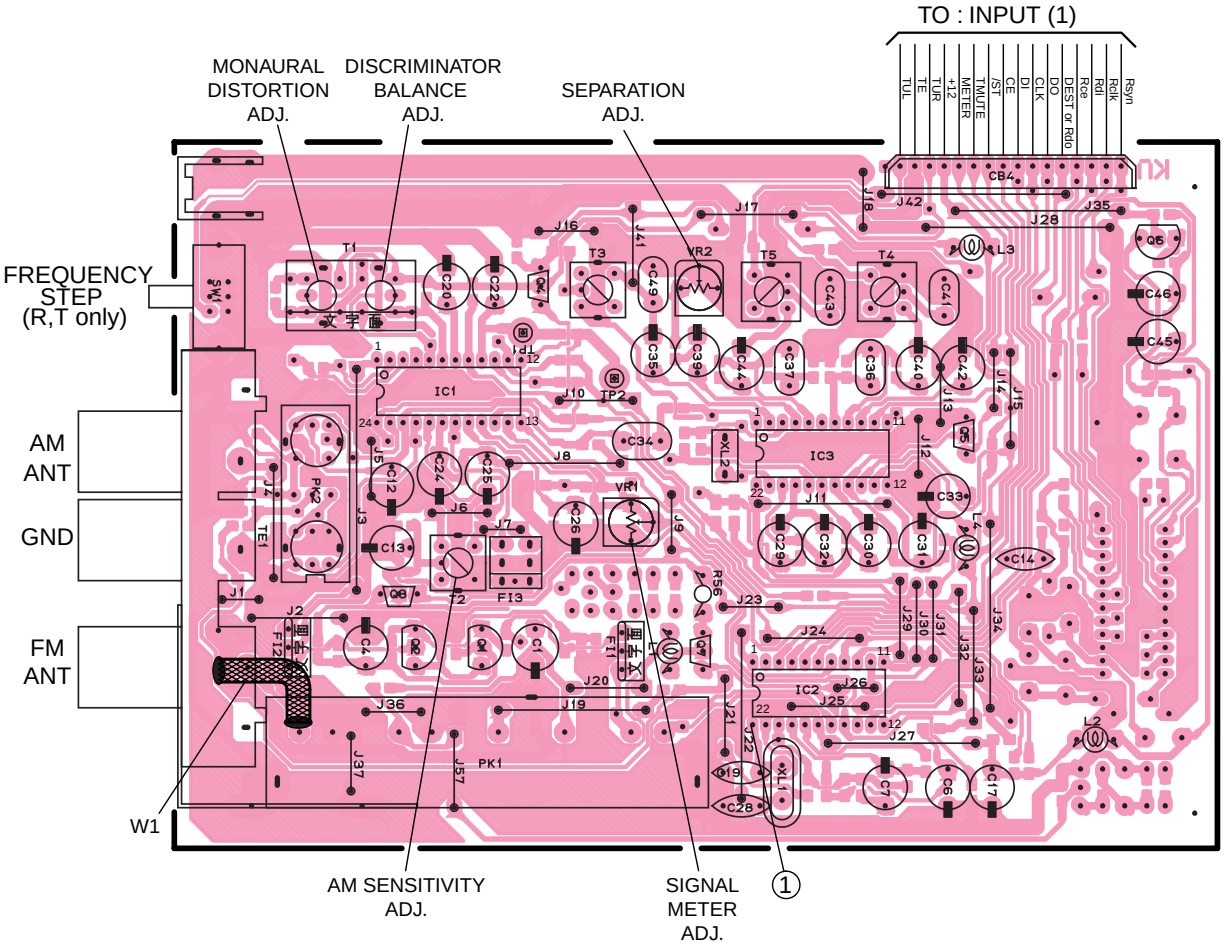
Semiconductor Location

Ref. No.	Location
D1	G5
D2	G5
D3	H4
IC1	F2
IC2	G3
IC3	G2
Q1	F3
Q2	F3
Q3	F3
Q4	F2
Q5	G2
Q6	H2
Q7	G3

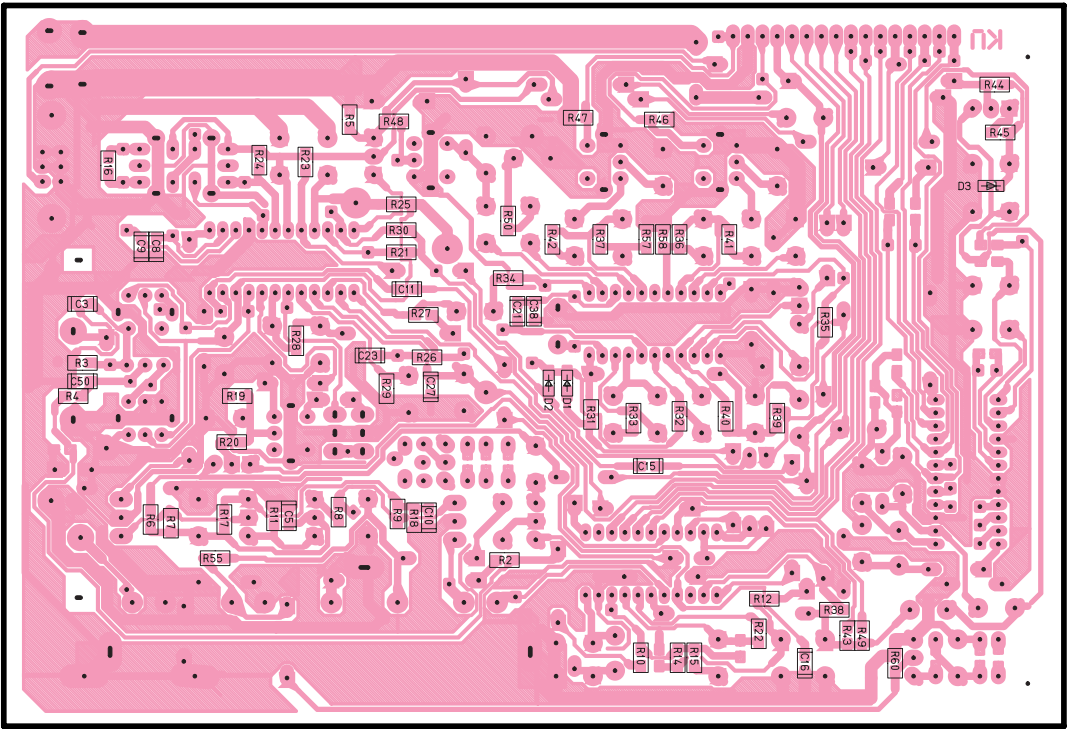
U, C, R, T, A and L models

P. C. B. TUNER (Lead Type & SMD)

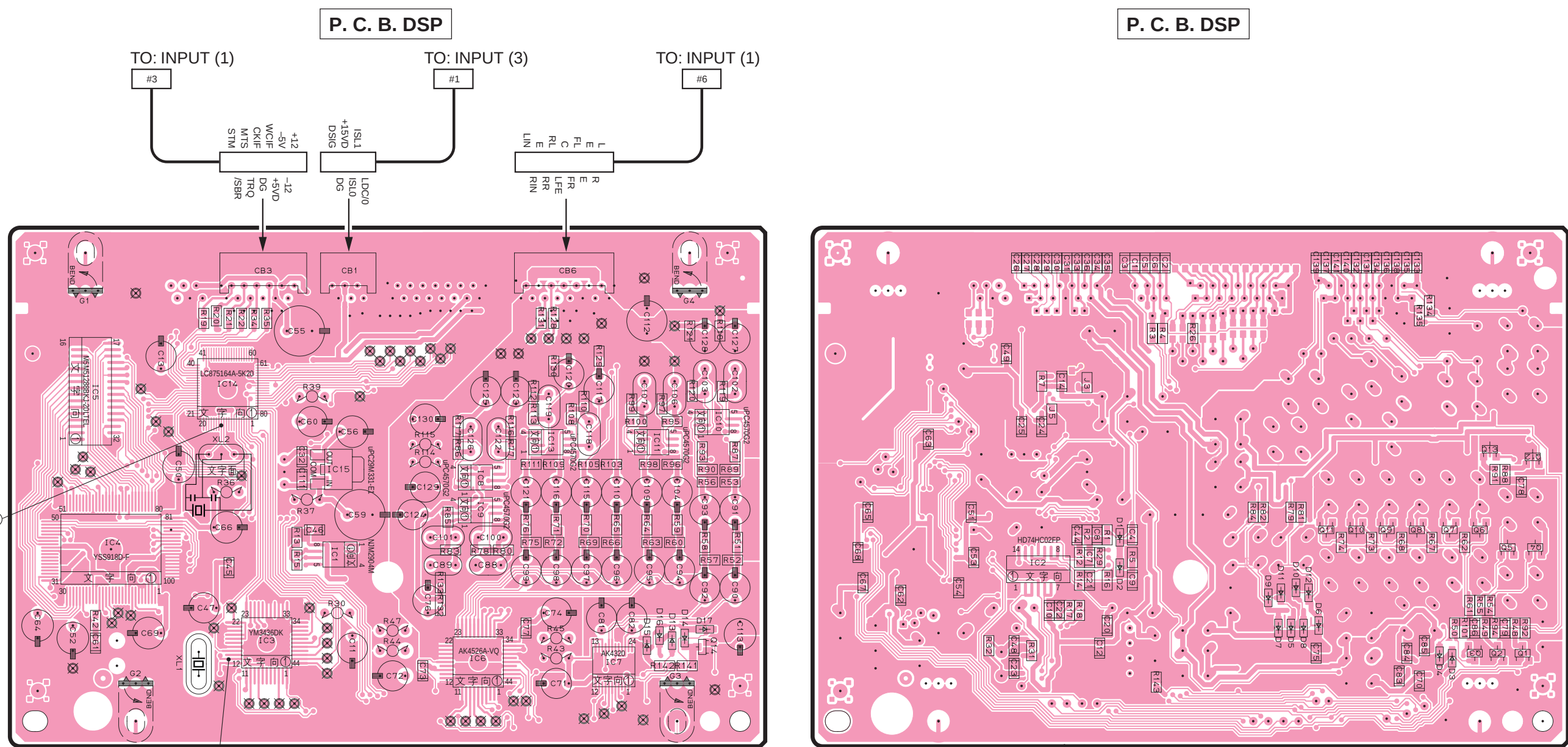
(Lead Type Device)



(Surface Mount Device)

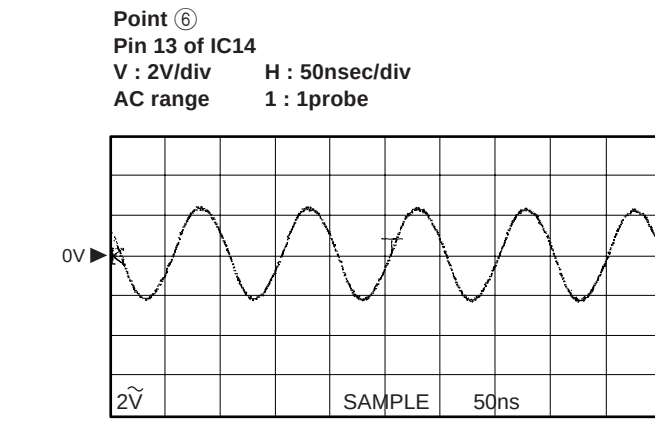
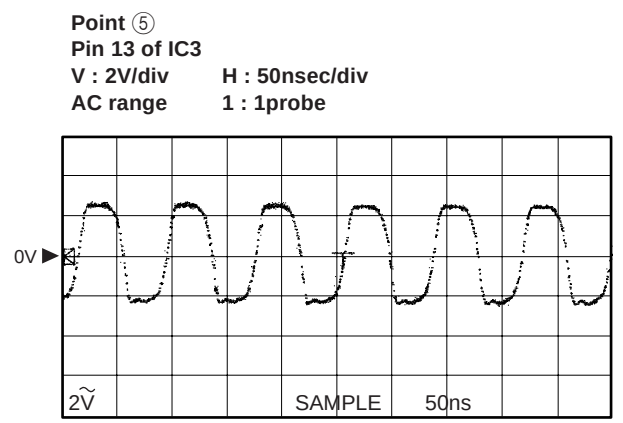


PRINTED CIRCUIT BOARD (Foil side)



● Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D1	F3	IC1	B3	Q1	H4
D2	F3	IC2	E3	Q2	G4
D3	G4	IC3	B4	Q3	G4
D4	G4	IC4	A3	Q4	H3
D5	G4	IC5	A3	Q5	G3
D6	G4	IC6	C4	Q6	G3
D7	G4	IC7	D4	Q7	G3
D8	G4	IC8	C3	Q8	G3
D9	F4	IC9	C3	Q9	G3
D10	G4	IC10	D3	Q10	G3
D11	G4	IC11	D3	Q11	G3
D12	G4	IC13	C3	Q12	H3
D13	D4	IC14	B3	Q13	G3
D14	D4	IC15	B3	Q14	D4
D15	D4				
D16	D4				
D17	D4				

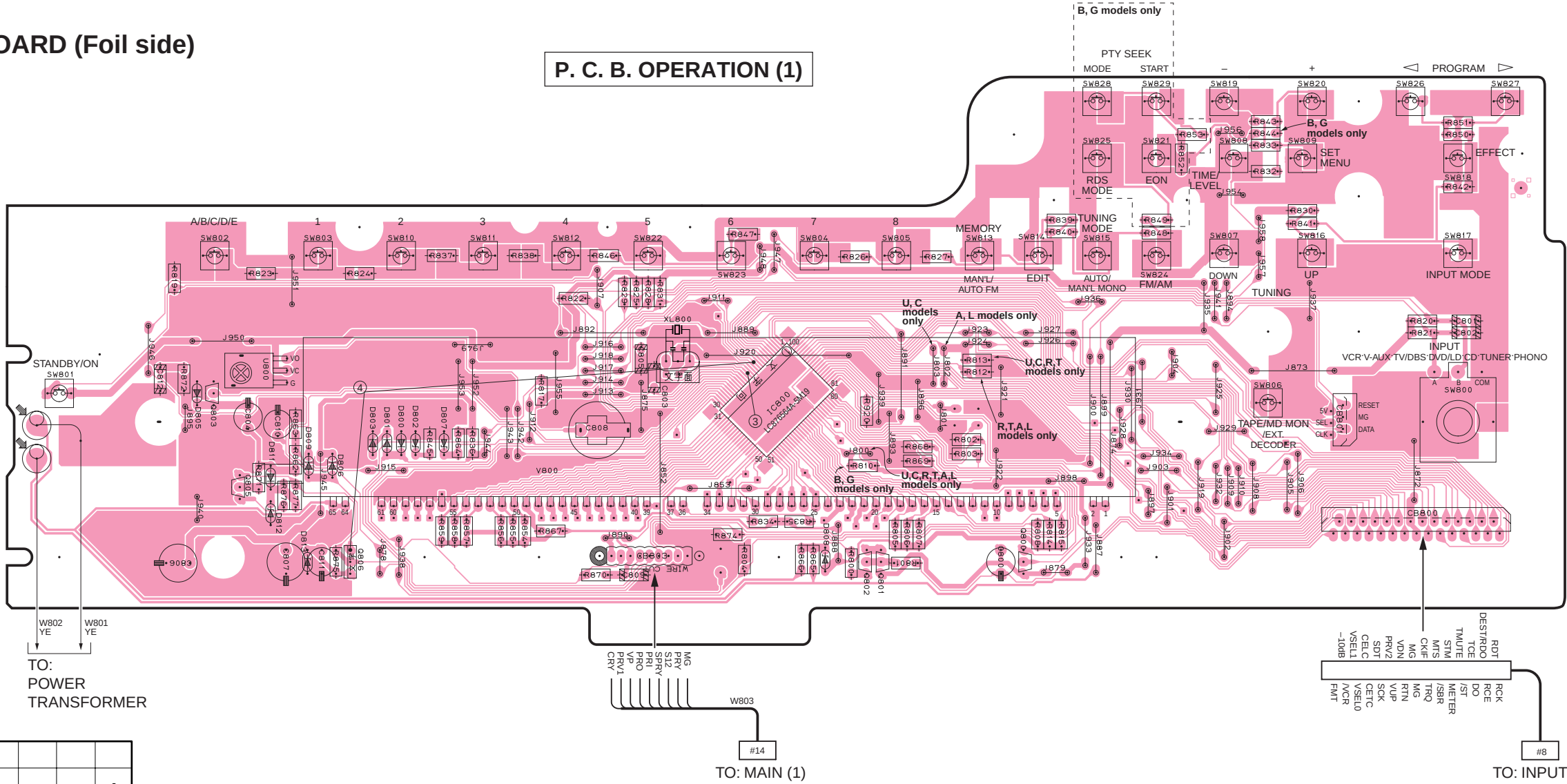


PRINTED CIRCUIT BOARD (Foil side)

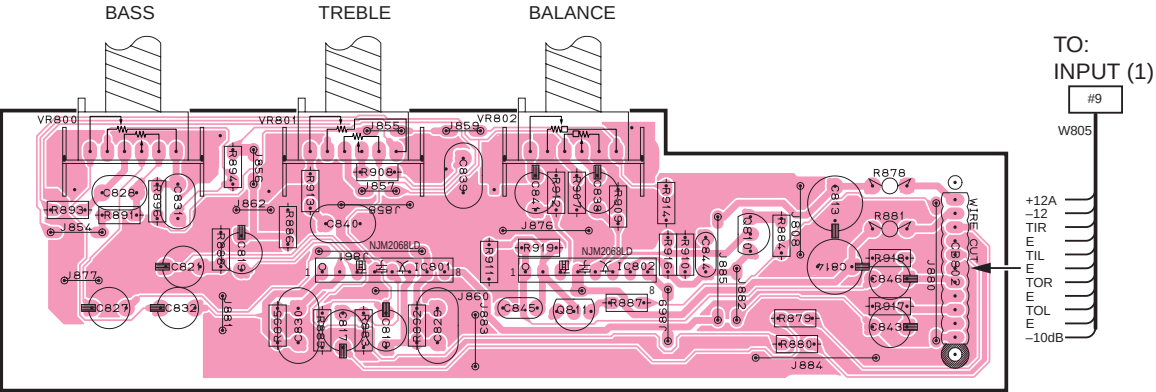
Semiconductor Location

Ref. No.	Location
D800	C2
D801	C2
D802	C2
D803	C2
D805	C2
D806	C3
D807	C2
D808	E3
D809	C3
D811	C3
D812	C3
D813	C3
IC800	E2
IC801	D5
IC802	E5
Q800	F3
Q801	E3
Q802	E3
Q803	C2
Q805	C3
Q806	C3
Q810	E5
Q811	E5

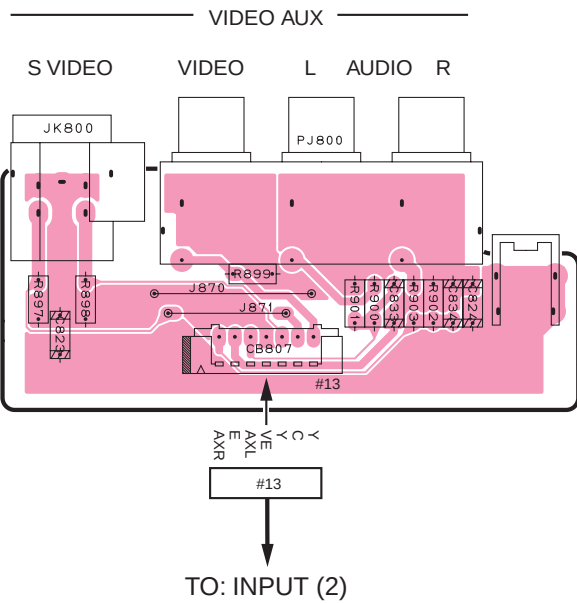
P. C. B. OPERATION (1)



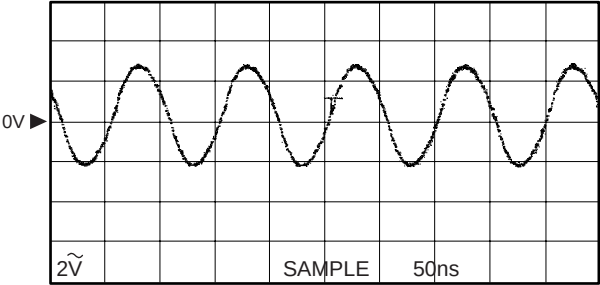
P. C. B. OPERATION (4)



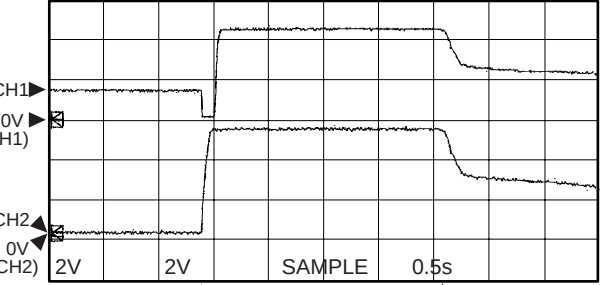
P. C. B. OPERATION (2)



Point ③
(Pin 16 of IC800)
V : 2V/div H : 50nsec/div
AC range 1 : 1 probe



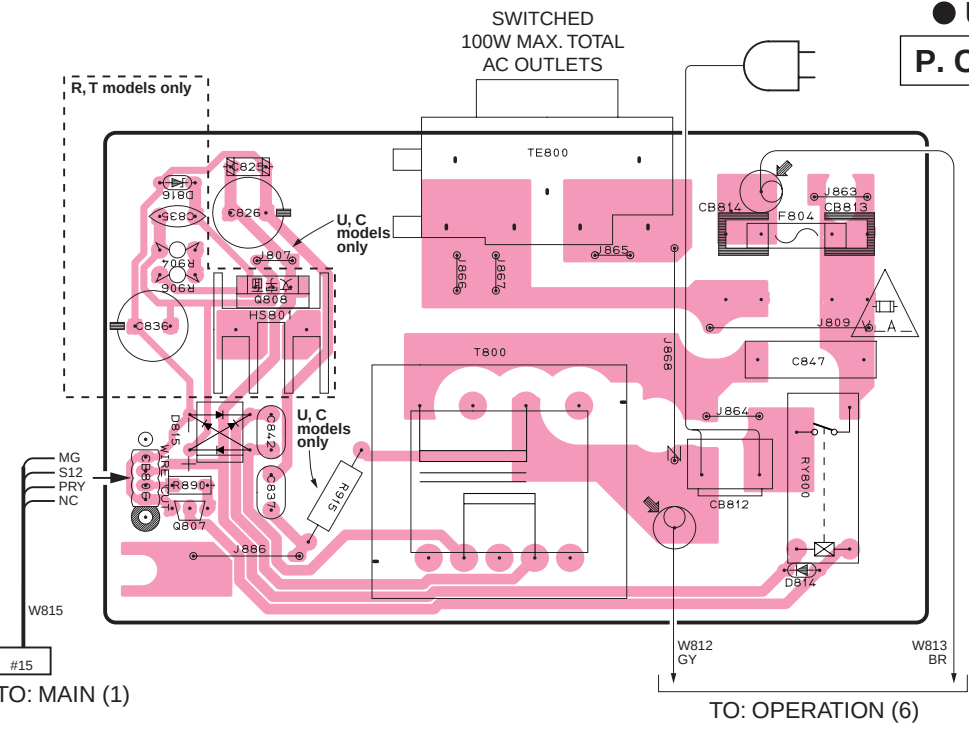
Point ④
(CH1 : Pin 11 of IC800
CH2 : Emitter of Q806)
V : 2V/div H : 0.5sec/div
DC range 1 : 1 probe



With the POWER switch turned ON, connect the power cord to the AC outlet.
Disconnect the power cord from the AC outlet.

(This waveform is not available by pushing the power switch ON and OFF.)

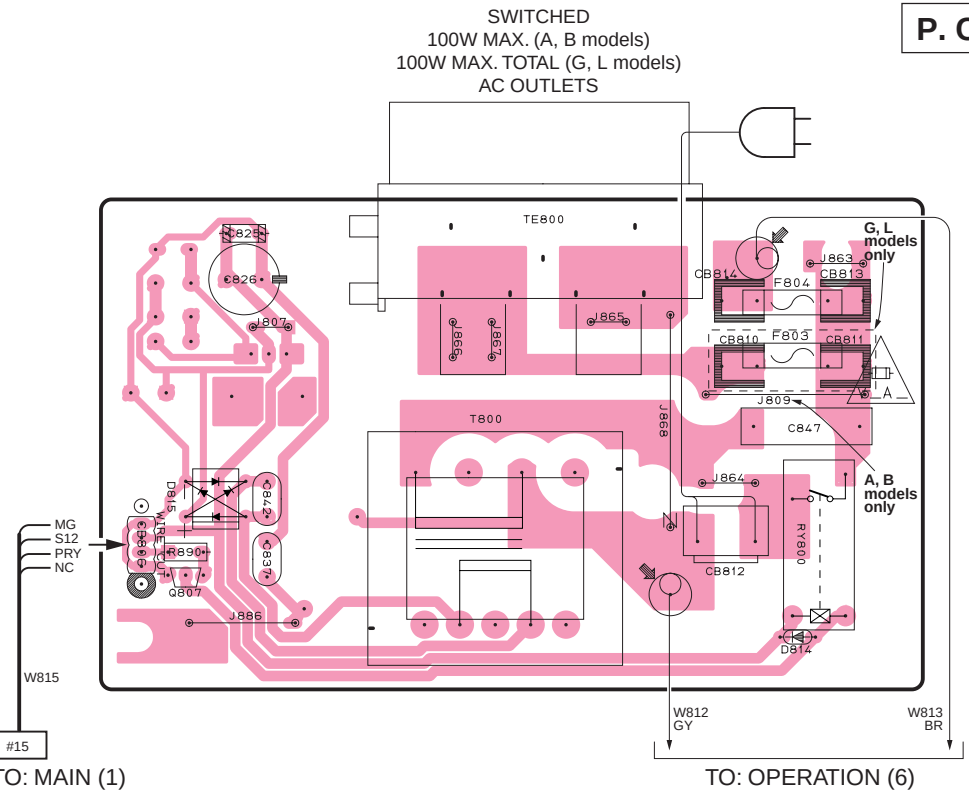
■ PRINTED CIRCUIT BOARD (Foil side)



● U, C, R and T models
P. C. B. OPERATION (3)

U, C, R and T Models
● Semiconductor Location

Ref. No.	Location
D814	C3
D815	A2
D816	A2
Q807	A2
Q808	A2

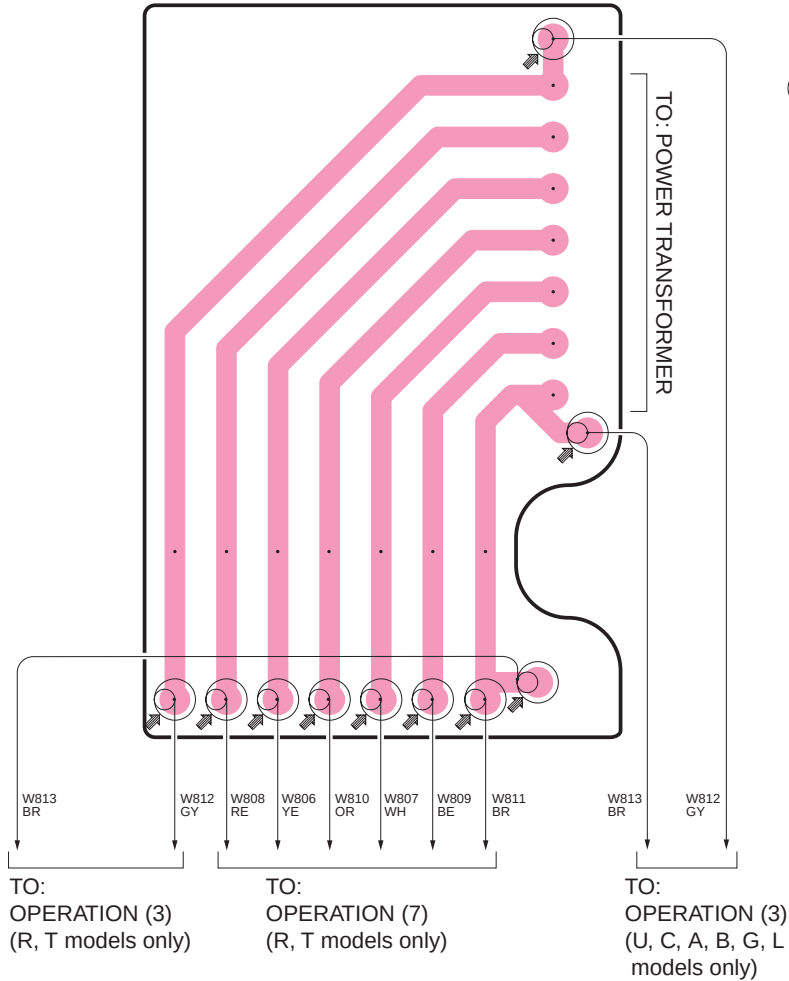


● A, B, G and L models
P. C. B. OPERATION (3)

A, B, G and L Models
● Semiconductor Location

Ref. No.	Location
D814	C5
D815	A5
Q807	A5

P. C. B. OPERATION (6)

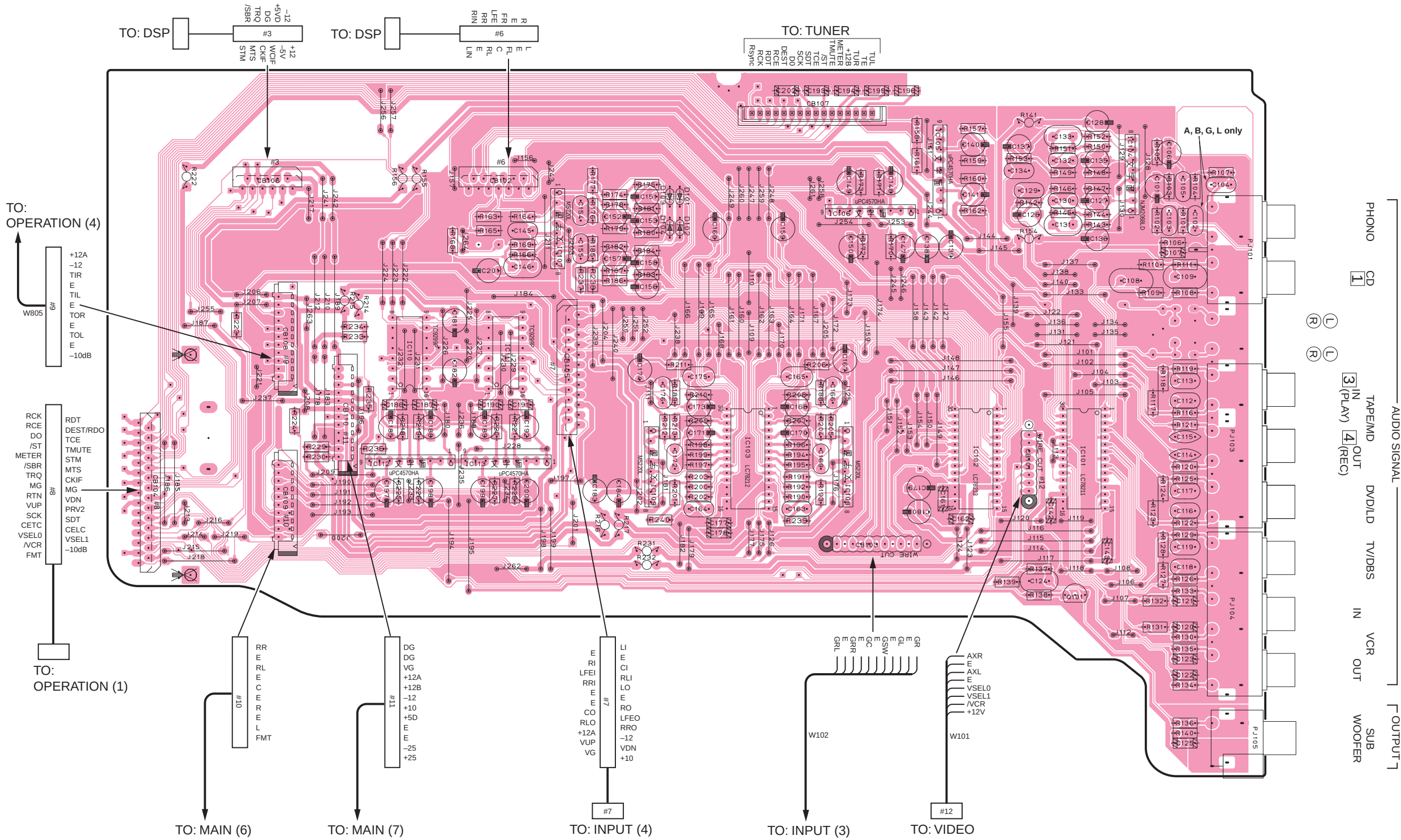


PRINTED CIRCUIT BOARD (Foil side)

P. C. B. INPUT (1)

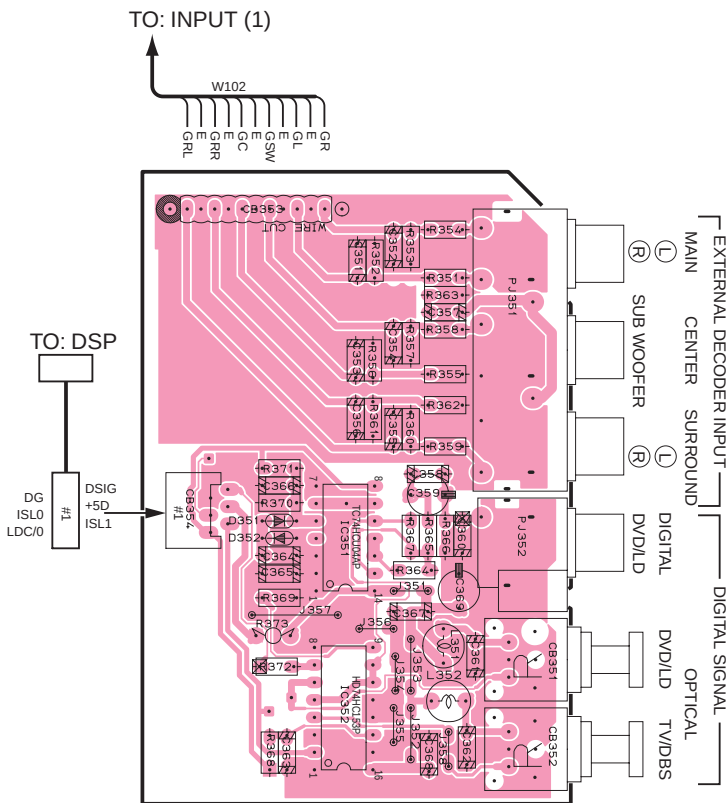
Semiconductor Location

Ref. No.	Location
D101	E2
D102	E3
D103	E2
D104	E3
IC101	F4
IC102	F4
IC103	E4
IC104	G2
IC105	F2
IC106	E2
IC107	D3
IC108	E4
IC109	E4
IC110	C3
IC111	D3
IC112	C4
IC113	D4
Q101	F4



■ PRINTED CIRCUIT BOARD (Foil side)

P. C. B. INPUT (3)



PARTS LIST

■ ELECTRICAL PARTS

■ WARNING

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

- Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS List. For the part Nos. of the carbon resistores, refer to page 81.
- Chip resistors are listed on page 80.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS:

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

Note) Those parts marked with "#" are not included in the P. C. B. Ass'y.

P. C. B. DSP

Schm Ref	PART NO.	Description	
*	V4035900	P.C.B.	DSP
CB1	VQ044200	CN.BS.PIN	6P
CB3	VQ044500	CN.BS.PIN	11P
CB6	VQ044600	CN.BS.PIN	13P
C1	UB245100	C.CE.M.CHP	0.1uF 25V
C2	UB052100	C.CE.M.CHP	100pF 50V
C3	UB052100	C.CE.M.CHP	100pF 50V
C4	UB245100	C.CE.M.CHP	0.1uF 25V
C5	UB052100	C.CE.M.CHP	100pF 50V
C6	UB052100	C.CE.M.CHP	100pF 50V
C7	UB245100	C.CE.M.CHP	0.1uF 25V
C8	VJ900700	C.CE.M.CHP	33pF 50V
C9	UB013100	C.CE.M.CHP	1000pF 50V
C10	UB245100	C.CE.M.CHP	0.1uF 25V
C11	UR818100	C.EL	100uF 6.3V
C12	UB245100	C.CE.M.CHP	0.1uF 25V
C13	UR818100	C.EL	100uF 6.3V
C14	UB245100	C.CE.M.CHP	0.1uF 25V
C20	VJ900700	C.CE.M.CHP	33pF 50V
C21	UB245100	C.CE.M.CHP	0.1uF 25V
C22	UB013470	C.CE.M.CHP	4700pF 50V
C23	VJ900900	C.CE.M.CHP	39pF 50V
C24	UB245100	C.CE.M.CHP	0.1uF 25V
C25	UB245100	C.CE.M.CHP	0.1uF 25V
C26	UB052100	C.CE.M.CHP	100pF 50V
C27	UB052100	C.CE.M.CHP	100pF 50V
C28	UB052100	C.CE.M.CHP	100pF 50V
C29	UB052100	C.CE.M.CHP	100pF 50V
C30	UB052100	C.CE.M.CHP	100pF 50V
C31	UB052100	C.CE.M.CHP	100pF 50V
C32	UB245100	C.CE.M.CHP	0.1uF 25V
C33	UB245100	C.CE.M.CHP	0.1uF 25V
C34	UB245100	C.CE.M.CHP	0.1uF 25V
C35	UB245100	C.CE.M.CHP	0.1uF 25V
C36	UB245100	C.CE.M.CHP	0.1uF 25V
C44	UB245100	C.CE.M.CHP	0.1uF 25V
C45	UB245100	C.CE.M.CHP	0.1uF 25V
C46	UB245100	C.CE.M.CHP	0.1uF 25V
C47	UR818100	C.EL	100uF 6.3V
C48	VJ900700	C.CE.M.CHP	33pF 50V
C49	UB245100	C.CE.M.CHP	0.1uF 25V
C50	UR818330	C.EL	330uF 6.3V
C51	UB245100	C.CE.M.CHP	0.1uF 25V
C52	UR818330	C.EL	330uF 6.3V
C53	UB245100	C.CE.M.CHP	0.1uF 25V
C54	UB245100	C.CE.M.CHP	0.1uF 25V
C55	UR829100	C.EL	1000uF 10V
C56	UR818330	C.EL	330uF 6.3V
C59	UR829100	C.EL	1000uF 10V
C60	UR818100	C.EL	100uF 6.3V
C61	UB012470	C.CE.M.CHP	470pF 50V
C62	UB245100	C.CE.M.CHP	0.1uF 25V
C63	UB245100	C.CE.M.CHP	0.1uF 25V

* New Parts

Schm Ref	PART NO.	Description	
C64	UR818330	C.EL	330uF 6.3V
C65	UB245100	C.CE.M.CHP	0.1uF 25V
C66	UR818330	C.EL	330uF 6.3V
C67	UB245100	C.CE.M.CHP	0.1uF 25V
C68	UB245100	C.CE.M.CHP	0.1uF 25V
C69	UR818330	C.EL	330uF 6.3V
C70	UB245100	C.CE.M.CHP	0.1uF 25V
C71	UR818100	C.EL	100uF 6.3V
C72	UR818100	C.EL	100uF 6.3V
C73	UB245100	C.CE.M.CHP	0.1uF 25V
C74	UR847100	C.EL	10uF 25V
C75	UB245100	C.CE.M.CHP	0.1uF 25V
C76	UR818100	C.EL	100uF 6.3V
C77	UB245100	C.CE.M.CHP	0.1uF 25V
C78	UB245100	C.CE.M.CHP	0.1uF 25V
C79	UB245100	C.CE.M.CHP	0.1uF 25V
C81	UR837470	C.EL	47uF 16V
C82	UR818100	C.EL	100uF 6.3V
C83	UB245100	C.CE.M.CHP	0.1uF 25V
C84	UB245100	C.CE.M.CHP	0.1uF 25V
C85	UB245100	C.CE.M.CHP	0.1uF 25V
C86	UB245100	C.CE.M.CHP	0.1uF 25V
C88	UA953150	C.MYLAR	1500pF 50V
C89	UA953150	C.MYLAR	1500pF 50V
C90	UR847100	C.EL	10uF 25V
C91	UR847100	C.EL	10uF 25V
C92	UR847100	C.EL	10uF 25V
C93	UR847100	C.EL	10uF 25V
C94	UR847100	C.EL	10uF 25V
C95	UR847100	C.EL	10uF 25V
C96	UR847100	C.EL	10uF 25V
C97	UR847100	C.EL	10uF 25V
C98	UR847100	C.EL	10uF 25V
C99	UR847100	C.EL	10uF 25V
C100	UA952100	C.MYLAR	100pF 50V
C101	UA952100	C.MYLAR	100pF 50V
C102	UA952100	C.MYLAR	100pF 50V
C103	UA952100	C.MYLAR	100pF 50V
C104	UR847100	C.EL	10uF 25V
C106	UA952100	C.MYLAR	100pF 50V
C107	UA952100	C.MYLAR	100pF 50V
C109	UR847100	C.EL	10uF 25V
C110	UR847100	C.EL	10uF 25V
C111	UB245100	C.CE.M.CHP	0.1uF 25V
C112	UR818470	C.EL	470uF 6.3V
C113	UR828220	C.EL	220uF 10V
C115	UR847100	C.EL	10uF 25V
C116	UR847100	C.EL	10uF 25V
C117	UR847100	C.EL	10uF 25V
C118	UA952100	C.MYLAR	100pF 50V
C119	UA952100	C.MYLAR	100pF 50V
C120	UR847100	C.EL	10uF 25V
C121	UR847100	C.EL	10uF 25V

* New Parts

P. C. B. DSP & P. C. B. MAIN

Schm Ref	PART NO.	Description		
C122	UA952100	C.MYLAR	100pF	50V
C123	UR837220	C.EL	22uF	25V
C124	UR847100	C.EL	10uF	25V
C125	UR837220	C.EL	22uF	25V
C126	UA952100	C.MYLAR	100pF	50V
C127	UR847100	C.EL	10uF	25V
C128	UR847100	C.EL	10uF	25V
C129	UR837470	C.EL	47uF	16V
C130	UR837470	C.EL	47uF	16V
C131	UB052100	C.CE.M.CHP	100pF	50V
C132	UB052100	C.CE.M.CHP	100pF	50V
C133	UB052100	C.CE.M.CHP	100pF	50V
C134	UB052100	C.CE.M.CHP	100pF	50V
C135	UB052100	C.CE.M.CHP	100pF	50V
C136	UB052100	C.CE.M.CHP	100pF	50V
C137	UB052100	C.CE.M.CHP	100pF	50V
C138	UB245100	C.CE.M.CHP	0.1uF	25V
C139	UB052100	C.CE.M.CHP	100pF	50V
C140	UB052100	C.CE.M.CHP	100pF	50V
C141	UB052100	C.CE.M.CHP	100pF	50V
D1	VT332900	DIODE	1SS355	
D2	VT332900	DIODE	1SS355	
D3	VT332900	DIODE	1SS355	
D4	VT332900	DIODE	1SS355	
D5	VT332900	DIODE	1SS355	
D6	VT332900	DIODE	1SS355	
D7	VT332900	DIODE	1SS355	
D8	VT332900	DIODE	1SS355	
D9	VT332900	DIODE	1SS355	
D10	VT332900	DIODE	1SS355	
D11	VT332900	DIODE	1SS355	
D12	VT332900	DIODE	1SS355	
D13	VT332900	DIODE	1SS355	
D14	VT332900	DIODE	1SS355	
D15	VT332900	DIODE	1SS355	
D16	VT332900	DIODE	1SS355	
D17	VT332900	DIODE	1SS355	
G1	VR463400	TERM.GND	D3.5	TP00385
G2	VR463400	TERM.GND	D3.5	TP00385
G3	VR463400	TERM.GND	D3.5	TP00385
G4	VR463400	TERM.GND	D3.5	TP00385
IC1	XR038A00	IC	NJM2904M OP AMP	
IC2	XL091A00	IC	HD74HC02FPEL NOR	
IC3	XG948E00	IC	YM3436DK	
IC4	XV304B00	IC	YSS918D-F	
IC5	XV457A00	IC	M5M51288BKJ-20LTEL	
IC6	XV951A00	IC	AK4526A-VQ	
IC7	XR361A00	IC	AK4320-VM-E1	
IC8	XF291A00	IC	uPC4570G2	
IC9	XF291A00	IC	uPC4570G2	
IC10	XF291A00	IC	uPC4570G2	
IC11	XF291A00	IC	uPC4570G2	
IC13	XF291A00	IC	uPC4570G2	

* New Parts

Schm Ref	PART NO.	Description		
IC14	XV260E00	IC	LC875164A-5K20 CPU	
IC15	XU965A00	IC	uPC29M33T-E1 3.3V	
Q1	VV655300	TR.DGT	DTA144EKA	
Q2	VV655300	TR.DGT	DTA144EKA	
Q3	VV655300	TR.DGT	DTA144EKA	
Q4	VD303700	TR	2SC3326 A,B	
Q5	VD303700	TR	2SC3326 A,B	
Q6	VD303700	TR	2SC3326 A,B	
Q7	VD303700	TR	2SC3326 A,B	
Q8	VD303700	TR	2SC3326 A,B	
Q9	VD303700	TR	2SC3326 A,B	
Q10	VD303700	TR	2SC3326 A,B	
Q11	VD303700	TR	2SC3326 A,B	
Q12	VD303700	TR	2SC3326 A,B	
Q13	VD303700	TR	2SC3326 A,B	
Q14	VV655700	TR.DGT	DTC144EKA	
R30	HV753220	R.CAR.FP	2.2Ω	1/4W
R36	HV753220	R.CAR.FP	2.2Ω	1/4W
R37	HV753220	R.CAR.FP	2.2Ω	1/4W
R39	HV753100	R.CAR.FP	1Ω	1/4W
R43	HV754100	R.CAR.FP	10Ω	1/4W
R44	HV754100	R.CAR.FP	10Ω	1/4W
R45	HV753100	R.CAR.FP	1Ω	1/4W
R47	HV753100	R.CAR.FP	1Ω	1/4W
R114	HV753220	R.CAR.FP	2.2Ω	1/4W
R115	HV753220	R.CAR.FP	2.2Ω	1/4W
XL1	Vi552000	RSNR.CRYS	12.288MHz	
XL2	VQ791000	RSNR.CE	10MHz	
	V3003000	P.C.B.	MAIN(URT)	
	V3003100	P.C.B.	MAIN(C)	
	V3003200	P.C.B.	MAIN(A)	
	V3003300	P.C.B.	MAIN(BG)	
	V3003400	P.C.B.	MAIN(L)	
CB501	Vi878800	CN.BS.PIN	10P	
CB502	VQ961600	CN	13P	
CB503	VQ963400	CN.BS.PIN	13P	
CB504	VQ585000	CN.BS.PIN	8P	
CB505	VK025300	CN.BS.PIN	9P	
CB506	VK024800	CN.BS.PIN	4P	
CB507	VK024700	CN.BS.PIN	3P	
CB701	VQ585000	CN.BS.PIN	8P	
CB702	VQ585100	CN.BS.PIN	9P	
CB711	VQ585100	CN.BS.PIN	9P	
CB721	Vi879000	CN.BS.PIN	12P	
CB722	Vi878600	CN.BS.PIN	8P	
CB751	Vi878200	CN.BS.PIN	4P	
CB761	Vi878200	CN.BS.PIN	4P	
CB762	Vi878100	CN.BS.PIN	3P	
C501	VJ599100	C.CE.TUBLR	0.1uF	50V
C502	VJ599100	C.CE.TUBLR	0.1uF	50V

* New Parts

P. C. B. MAIN

Schm Ref	PART NO.	Description		
C503	UR847100	C.EL	10uF	25V
C504	UR847100	C.EL	10uF	25V
C505	UR847100	C.EL	10uF	25V
C506	UR847100	C.EL	10uF	25V
C507	UR837470	C.EL	47uF	16V
C508	UR847100	C.EL	10uF	25V
C509	UR847100	C.EL	10uF	25V
C510	FG651330	C.CE	33pF	50V(URTC)
C510	UA952220	C.MYLAR	220pF	50V(ABGL)
C511	VQ645600	C.MYLAR	100pF	50V
C512	FG651330	C.CE	33pF	50V(URTC)
C512	UA952220	C.MYLAR	220pF	50V(ABGL)
C513	VQ645600	C.MYLAR	100pF	50V
C514	FG651330	C.CE	33pF	50V(URTC)
C514	UA952330	C.MYLAR	330pF	50V(ABGL)
C515	UA952100	C.MYLAR	100pF	50V
C516	FG651330	C.CE	33pF	50V(URTC)
C516	UA952330	C.MYLAR	330pF	50V(ABGL)
C517	UA952470	C.MYLAR	470pF	50V
C518	FG651330	C.CE	33pF	50V(URTC)
C518	UA952330	C.MYLAR	330pF	50V(ABGL)
C519	UA952470	C.MYLAR	470pF	50V
C520	VQ245400	C.PP	33pF	200V
C521	UR838100	C.EL	100uF	16V
C522	UA953100	C.MYLAR	1000pF	50V
C523	VQ245400	C.PP	33pF	200V
C524	UR838100	C.EL	100uF	16V
C525	UA953100	C.MYLAR	1000pF	50V
C526	VQ245400	C.PP	33pF	200V
C527	UR837470	C.EL	47uF	16V
C528	UA953100	C.MYLAR	1000pF	50V
C529	VR516400	C.CE	15pF	500V
C530	UR837470	C.EL	47uF	16V
C531	UA953100	C.MYLAR	1000pF	50V
C532	VR516400	C.CE	15pF	500V
C533	UR837470	C.EL	47uF	16V
C534	UA953100	C.MYLAR	1000pF	50V
C535	UR867470	C.EL	47uF	50V
C536	UR867470	C.EL	47uF	50V
C537	UR867470	C.EL	47uF	50V
C538	UR867470	C.EL	47uF	50V
C539	UR867470	C.EL	47uF	50V
C540	VK347900	C.EL	470uF	63V
C541	VQ645600	C.MYLAR	100pF	50V
C542	VK399200	C.MYLAR.ML	0.39uF	50V
C543	UR867470	C.EL	47uF	50V
C544	VQ645600	C.MYLAR	100pF	50V
C545	VQ645600	C.MYLAR	100pF	50V
C546	VK399200	C.MYLAR.ML	0.39uF	50V
C547	UR867470	C.EL	47uF	50V
C548	VQ645600	C.MYLAR	100pF	50V
C549	VR325000	C.MYLAR	100pF	100V
C550	UR867470	C.EL	47uF	50V

* New Parts

Schm Ref	PART NO.	Description		
C551	VR325000	C.MYLAR	100pF	100V
C552	VR325000	C.MYLAR	100pF	100V
C553	UR867470	C.EL	47uF	50V
C554	VR325000	C.MYLAR	100pF	100V
C555	VR325000	C.MYLAR	100pF	100V
C556	UR867470	C.EL	47uF	50V
C557	VR325000	C.MYLAR	100pF	100V
C558	UA954680	C.MYLAR	0.068uF	50V
C559	UA954680	C.MYLAR	0.068uF	50V
C560	UA954680	C.MYLAR	0.068uF	50V
C561	UA954680	C.MYLAR	0.068uF	50V
C562	UA954680	C.MYLAR	0.068uF	50V
C563	UR866470	C.EL	4.7uF	50V
C566	UJ778330	C.EL	330uF	63V
C567	UJ778330	C.EL	330uF	63V
C568	UR866470	C.EL	4.7uF	50V
C569	UR866470	C.EL	4.7uF	50V
C570	UR818100	C.EL	100uF	6.3V
C573	VF466900	C.CE.TUBLR	470pF	50V(BG)
C574	VF466900	C.CE.TUBLR	470pF	50V(BG)
C575	VF466900	C.CE.TUBLR	470pF	50V(BG)
C576	VF466900	C.CE.TUBLR	470pF	50V(BG)
C577	UA954220	C.MYLAR	0.022uF	50V(ABGL)
C578	UA954100	C.MYLAR	0.01uF	50V(ABGL)
C579	UA954100	C.MYLAR	0.01uF	50V(ABGL)
C580	UA954220	C.MYLAR	0.022uF	50V(ABGL)
C581	UA954220	C.MYLAR	0.022uF	50V(ABGL)
C582	UR847100	C.EL	10uF	25V
C701	VF466900	C.CE.TUBLR	470pF	50V(BG)
C702	VF466900	C.CE.TUBLR	470pF	50V(BG)
C703	UA954220	C.MYLAR	0.022uF	50V(ABGL)
C704	UA954220	C.MYLAR	0.022uF	50V(ABGL)
C705	UA954220	C.MYLAR	0.022uF	50V(ABGL)
C706	UA954220	C.MYLAR	0.022uF	50V(ABGL)
C707	UA954100	C.MYLAR	0.01uF	50V(ABGL)
C708	UA954100	C.MYLAR	0.01uF	50V(ABGL)
C711	UA954100	C.MYLAR	0.01uF	50V(ABGL)
C712	UA954100	C.MYLAR	0.01uF	50V(ABGL)
C713	UA954100	C.MYLAR	0.01uF	50V(ABGL)
C722	UR867470	C.EL	47uF	50V
C723	UR867470	C.EL	47uF	50V
C725	UR838100	C.EL	100uF	16V
C726	UR847470	C.EL	47uF	25V
C727	UR838100	C.EL	100uF	16V
C728	UR847470	C.EL	47uF	25V
C729	UR867470	C.EL	47uF	50V
C730	UR867470	C.EL	47uF	50V
C731	UR865470	C.EL	0.47uF	50V
C732	UR865470	C.EL	0.47uF	50V
C733	UR857470	C.EL	47uF	35V
C734	UR857470	C.EL	47uF	35V
C751	VV951800	C.EL	6800uF	56V
C752	VV951800	C.EL	6800uF	56V

* New Parts

P. C. B. MAIN

Schm Ref	PART NO.	Description	
C753	VS745400	C.POL.MTL	0.1uF 100V
C754	VS745400	C.POL.MTL	0.1uF 100V
C761	UR868100	C.EL	100uF 50V
C762	VS745400	C.POL.MTL	0.1uF 100V
C763	VS745400	C.POL.MTL	0.1uF 100V
C764	UA954680	C.MYLAR	0.068uF 50V(ABGL)
C765	UA954680	C.MYLAR	0.068uF 50V(ABGL)
C766	UA952220	C.MYLAR	220pF 50V
D501	VM975700	DIODE.ZENR	HZS12C2TD 12V
D502	VD631600	DIODE	1SS133,176,HSS104
D503	VD631600	DIODE	1SS133,176,HSS104
D507	VN008700	DIODE	1SS270A
D508	VN008700	DIODE	1SS270A
D509	VN008700	DIODE	1SS270A
D510	VN008700	DIODE	1SS270A
D511	VN008700	DIODE	1SS270A
D512	VM976300	DIODE.ZENR	HZS242TD 24V
D513	VM976500	DIODE.ZENR	HZS302TD 30V
D514	VM976300	DIODE.ZENR	HZS242TD 24V
D515	VM976300	DIODE.ZENR	HZS242TD 24V
D721	VM976300	DIODE.ZENR	HZS242TD 24V
D722	VM976300	DIODE.ZENR	HZS242TD 24V
D751	VN011400	DIODE.BRG	D5SB20 5A 200V
D762	VS997800	DIODE	1T2
D763	VS997800	DIODE	1T2
HS501	V2692300	HEAT.SINK	BPUE36-30
IC722	XD343A00	IC	NJM79M12FA
IC723	XJ604A00	IC	NJM78M05FA
IC724	XJ608A00	IC	NJM7812FA
IC725	XJ608A00	IC	NJM7812FA
JK711	V2700900	JACK.PHONE	(URTCAL)
JK711	VS899700	JACK.PHONE	JY-6317-02-030(BG)
L501	VU038200	COIL	0.95uH
L502	VU038200	COIL	0.95uH
L503	V2604200	COIL	1uH
L504	V2604200	COIL	1uH
L505	V2604200	COIL	1uH
PJ501	V2803000	JACK.PIN	4P(BG)
PJ701	V2802800	JACK.PIN	2P(BG)
Q501	iC287820	TR	2SC2878 A,B
Q502	iC287820	TR	2SC2878 A,B
Q503	iC287820	TR	2SC2878 A,B
Q504	iC287820	TR	2SC2878 A,B
Q505	iC287820	TR	2SC2878 A,B
Q506	VP883000	TR	2SA893A D,E
Q507	VP883000	TR	2SA893A D,E
Q508	VP883000	TR	2SA893A D,E
Q509	VP883000	TR	2SA893A D,E
Q510	VP883000	TR	2SA893A D,E
Q511	VP883000	TR	2SA893A D,E
Q512	VR325600	TR	2SC2229 O,Y
Q513	VP883000	TR	2SA893A D,E
Q514	VR325600	TR	2SC2229 O,Y

* New Parts

Schm Ref	PART NO.	Description	
Q515	VP883000	TR	2SA893A D,E
Q516	VR325600	TR	2SC2229 O,Y
Q517	VP883000	TR	2SA893A D,E
Q518	VR325600	TR	2SC2229 O,Y
Q519	VP883000	TR	2SA893A D,E
Q520	VR325600	TR	2SC2229 O,Y
Q521	iC174020	TR	2SC1740S R,S
Q522	iC174020	TR	2SC1740S R,S
Q523	iC174020	TR	2SC1740S R,S
Q524	iC174020	TR	2SC1740S R,S
Q525	iC174020	TR	2SC1740S R,S
Q526	VP872700	TR	2SC4488 S,T
Q527	VR355900	TR.PAIR	A1695/C4468URTABGL
Q527	VY760300	TR.PAIR	2SA1492/C3856(C)
Q529	VP872600	TR	2SA1708 S,T
Q530	VP872700	TR	2SC4488 S,T
Q531	VR355900	TR.PAIR	A1695/C4468URTABGL
Q531	VY760300	TR.PAIR	2SA1492/C3856(C)
Q533	VP872600	TR	2SA1708 S,T
Q534	VP872700	TR	2SC4488 S,T
Q535	VR355900	TR.PAIR	A1695/C4468URTABGL
Q535	VY760300	TR.PAIR	2SA1492/C3856(C)
Q537	VP872600	TR	2SA1708 S,T
Q538	VP872700	TR	2SC4488 S,T
Q539	VR355900	TR.PAIR	A1695/C4468URTABGL
Q539	VY760300	TR.PAIR	2SA1492/C3856(C)
Q541	VP872600	TR	2SA1708 S,T
Q542	VP872700	TR	2SC4488 S,T
Q543	VR355900	TR.PAIR	A1695/C4468URTABGL
Q543	VY760300	TR.PAIR	2SA1492/C3856(C)
Q545	VP872600	TR	2SA1708 S,T
Q546	VP883100	TR	2SC1890A D,E
Q547	VP883100	TR	2SC1890A D,E
Q548	VP883100	TR	2SC1890A D,E
Q549	VP883100	TR	2SC1890A D,E
Q550	VP883100	TR	2SC1890A D,E
Q551	iA097030	TR	2SA970 GR,BL
Q552	VP872600	TR	2SA1708 S,T
Q553	iC224030	TR	2SC2240 GR,BL
Q556	iC224030	TR	2SC2240 GR,BL
Q557	iC224030	TR	2SC2240 GR,BL
Q721	iC181510	TR	2SC1815 Y
Q722	iA101510	TR	2SA1015 Y
R516	HV756180	R.CAR.FP	1.8K Ω 1/4W
R538	HV754470	R.CAR.FP	47 Ω 1/4W
R545	HV754470	R.CAR.FP	47 Ω 1/4W
R552	HV754470	R.CAR.FP	47 Ω 1/4W
R559	HV754470	R.CAR.FP	47 Ω 1/4W
R566	HV754470	R.CAR.FP	47 Ω 1/4W
R567	VP941500	R.MTL.OXD	4.7K Ω 1W
R568	VP941500	R.MTL.OXD	4.7K Ω 1W
R569	HV756270	R.CAR.FP	2.7K Ω 1/4W
R571	HV755820	R.CAR.FP	820 Ω 1/4W

* New Parts

P. C. B. MAIN & P. C. B. VIDEO

Schm Ref	PART NO.	Description
△ R572	HV756100	R.CAR.FP 1KΩ 1/4W
△ R573	VP941500	R.MTL.OXD 4.7KΩ 1W
△ R574	VP941500	R.MTL.OXD 4.7KΩ 1W
△ R575	HV756270	R.CAR.FP 2.7KΩ 1/4W
△ R577	HV755820	R.CAR.FP 820Ω 1/4W
△ R578	HV756100	R.CAR.FP 1KΩ 1/4W
△ R579	VP941500	R.MTL.OXD 4.7KΩ 1W
△ R580	VP941500	R.MTL.OXD 4.7KΩ 1W
△ R581	HV756270	R.CAR.FP 2.7KΩ 1/4W
△ R583	HV755820	R.CAR.FP 820Ω 1/4W
△ R584	HV756100	R.CAR.FP 1KΩ 1/4W
△ R585	VP941500	R.MTL.OXD 4.7KΩ 1W
△ R586	VP941500	R.MTL.OXD 4.7KΩ 1W
△ R587	HV756270	R.CAR.FP 2.7KΩ 1/4W
△ R589	HV755820	R.CAR.FP 820Ω 1/4W
△ R590	HV756100	R.CAR.FP 1KΩ 1/4W
△ R591	VP941500	R.MTL.OXD 4.7KΩ 1W
△ R592	VP941500	R.MTL.OXD 4.7KΩ 1W
△ R593	HV756270	R.CAR.FP 2.7KΩ 1/4W
△ R595	HV755820	R.CAR.FP 820Ω 1/4W
△ R596	HV756100	R.CAR.FP 1KΩ 1/4W
△ R597	VP940100	R.MTL.OXD 33Ω 1W
△ R598	HV753470	R.CAR.FP 4.7Ω 1/4W
△ R599	HV755330	R.CAR.FP 330Ω 1/4W
△ R602	HV753470	R.CAR.FP 4.7Ω 1/4W
△ R603	HV753470	R.CAR.FP 4.7Ω 1/4W
△ R605	HV755330	R.CAR.FP 330Ω 1/4W
△ R607	HV753470	R.CAR.FP 4.7Ω 1/4W
△ R608	HV753470	R.CAR.FP 4.7Ω 1/4W
△ R610	HV755330	R.CAR.FP 330Ω 1/4W
△ R611	HV753470	R.CAR.FP 4.7Ω 1/4W
△ R612	HV753470	R.CAR.FP 4.7Ω 1/4W
△ R614	HV755330	R.CAR.FP 330Ω 1/4W
△ R615	HV753470	R.CAR.FP 4.7Ω 1/4W
△ R616	HV753470	R.CAR.FP 4.7Ω 1/4W
△ R617	HV755330	R.CAR.FP 330Ω 1/4W
△ R619	HV753470	R.CAR.FP 4.7Ω 1/4W
△ R624	VP939800	R.MTL.OXD 10Ω 1W
△ R629	VP939800	R.MTL.OXD 10Ω 1W
△ R634	VP939800	R.MTL.OXD 10Ω 1W
△ R639	VP939800	R.MTL.OXD 10Ω 1W
△ R644	VP939800	R.MTL.OXD 10Ω 1W
△ R649	HV754100	R.CAR.FP 10Ω 1/4W
△ R652	HV754100	R.CAR.FP 10Ω 1/4W
△ R655	HV754100	R.CAR.FP 10Ω 1/4W
△ R657	HV754100	R.CAR.FP 10Ω 1/4W
△ R659	HV754100	R.CAR.FP 10Ω 1/4W
△ R662	VP940700	R.MTL.OXD 330Ω 1W
△ R663	HV755100	R.CAR.FP 100Ω 1/4W
△ R665	VP940700	R.MTL.OXD 330Ω 1W
△ R666	VP940700	R.MTL.OXD 330Ω 1W
△ R688	HZ003780	R.MTL.PLAT 0.22Ω+0.22Ω5W
△ R690	HZ003780	R.MTL.PLAT 0.22Ω+0.22Ω5W

* New Parts

Schm Ref	PART NO.	Description
△ R692	VU981700	R.MTL.PLAT 0.22Ω+0.22Ω3W
△ R694	VU981700	R.MTL.PLAT 0.22Ω+0.22Ω3W
△ R696	VU981700	R.MTL.PLAT 0.22Ω+0.22Ω3W
R711	VP944500	R.MTL.OXD 390Ω 1W
R712	VP944500	R.MTL.OXD 390Ω 1W
R729	HV753100	R.CAR.FP 1Ω 1/4W
R731	VP939600	R.MTL.FLM 2.2Ω 1W
R763	HV753100	R.CAR.FP 1Ω 1/4W
R764	HV753100	R.CAR.FP 1Ω 1/4W
R769	VP939800	R.MTL.OXD 10Ω 1W(ABGL)
R770	VP939800	R.MTL.OXD 10Ω 1W(ABGL)
△ RY501	VK438300	RELAY DH24D2-OT/M2
△ RY502	VU566700	RELAY DG24D2-OS/M
△ RY503	VK438300	RELAY DH24D2-OT/M2
SW711	VV523900	SW.PUSH PBS-YM-001
SW761	VZ361100	SW.SLIDE SL13B-022-AMC1
TE501	V2984800	TERM.SP 6P
TE701	VC313700	TERM.SP 8P(URTC)
TE701	VU819700	TERM.SP 8P(BGL)
	VJ828000	PIN IMSA-6024-03E
	BB071360	SCR.TERM 8.3x13
	VR264300	PLATE.GND
	EP600140	SCR.BND.HD 3x10 MFZN2-BL
* V4035800		P.C.B. VIDEO
CB301	VK026700	CN.BS.PIN 8P
CB302	Vi878500	CN.BS.PIN 7P
C301	VF466800	C.CE.TUBLR 100pF 50V
C302	VF466800	C.CE.TUBLR 100pF 50V
C303	VF466800	C.CE.TUBLR 100pF 50V
C304	VF466800	C.CE.TUBLR 100pF 50V
C305	VF467000	C.CE.TUBLR 1000pF 50V
C306	UR837100	C.EL 10uF 16V
C307	UR829100	C.EL 1000uF 10V
C308	VF467000	C.CE.TUBLR 1000pF 50V
C309	UR837470	C.EL 47uF 16V
C310	UR829100	C.EL 1000uF 10V
C311	VF466800	C.CE.TUBLR 100pF 50V
C312	VF467000	C.CE.TUBLR 1000pF 50V
C313	UR837100	C.EL 10uF 16V
C314	VF466800	C.CE.TUBLR 100pF 50V
C315	UR837330	C.EL 33uF 16V
C316	VF467000	C.CE.TUBLR 1000pF 50V
C317	UR837470	C.EL 47uF 16V
C318	UR837330	C.EL 33uF 16V
C319	UR837100	C.EL 10uF 16V
C320	VF467000	C.CE.TUBLR 1000pF 50V
C321	UR829100	C.EL 1000uF 10V
C322	UR837100	C.EL 10uF 16V
C323	UR837100	C.EL 10uF 16V
C324	UR829100	C.EL 1000uF 10V

* New Parts

P. C. B. VIDEO & P. C. B. INPUT
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Schm Ref	PART NO.	Description		
C325	UR837470	C.EL	47uF	16V
C326	UR837470	C.EL	47uF	16V
C327	UR837470	C.EL	47uF	16V
C328	UR839100	C.EL	1000uF	16V
C329	UR837100	C.EL	10uF	16V
C330	UR837100	C.EL	10uF	16V
C331	UR837100	C.EL	10uF	16V
C332	UR837100	C.EL	10uF	16V
IC301	XH436A00	IC	LA7956	
IC302	XH436A00	IC	LA7956	
IC303	XH436A00	IC	LA7956	
IC304	XH436A00	IC	LA7956	
IC305	XH436A00	IC	LA7956	
JK301	VP113600	CN.DIN	2P	
JK302	VP113600	CN.DIN	2P	
PJ301	VV852500	JACK.PIN	3P	
PJ302	VV325000	JACK.PIN	2P	
Q305	iC1815I0	TR	2SC1815 Y	
Q306	iC1815I0	TR	2SC1815 Y	
Q307	iC174020	TR	2SC1740S R,S	
R334	HV753220	R.CAR.FP	2.2Ω	1/4W
R337	HV754100	R.CAR.FP	10Ω	1/4W
*	V4035000	P.C.B.	INPUT(UCRT)	
	V4035100	P.C.B.	INPUT(ABGL)	
CB101	Vi878600	CN.BS.PIN	8P	
CB102	VM923600	CN.BS.PIN	13P	
CB103	Vi878900	CN.BS.PIN	11P	
CB104	VQ047900	CN	29P	
CB105	VM689000	CN.BS.PIN	23P	
CB106	VM859500	CN.BS.PIN	11P	
CB107	VQ963700	CN.BS.PIN	16P	
CB108	VK025500	CN.BS.PIN	11P	
CB109	VF728200	CN.BS.PIN	10P	
CB110	VK025600	CN.BS.PIN	12P	
CB351	V2508700	CN.PHOT.SN	1P GP1F37R	
CB352	V2508700	CN.PHOT.SN	1P GP1F37R	
CB353	Vi878900	CN.BS.PIN	11P	
CB354	VQ044200	CN.BS.PIN	6P	
CB401	VQ045300	CN.BS.PIN	23P	
C101	UR866220	C.EL	2.2uF	50V
C102	UA952100	C.MYLAR	100pF	50V(ABGL)
C103	UA952220	C.MYLAR	220pF	50V
C104	UA952100	C.MYLAR	100pF	50V(ABGL)
C105	UA952220	C.MYLAR	220pF	50V
C106	UR866220	C.EL	2.2uF	50V
C107	VF467300	C.CE.TUBLR	0.01uF	16V
C108	VK533900	C.PP	100pF	200V
C109	VK533900	C.PP	100pF	200V
C112	UA952100	C.MYLAR	100pF	50V
C113	UA952100	C.MYLAR	100pF	50V

* New Parts

Schm Ref	PART NO.	Description		
C114	FG651470	C.CE	47pF	50V
C115	FG651470	C.CE	47pF	50V
C116	UA952100	C.MYLAR	100pF	50V
C117	UA952100	C.MYLAR	100pF	50V
C118	UA952100	C.MYLAR	100pF	50V
C119	UA952100	C.MYLAR	100pF	50V
C120	VF466800	C.CE.TUBLR	100pF	50V
C121	VF466800	C.CE.TUBLR	100pF	50V
C122	VF466700	C.CE.TUBLR	47pF	50V
C123	VF466700	C.CE.TUBLR	47pF	50V
C124	UA655220	C.MYLAR	0.22uF	50V
C125	VF467300	C.CE.TUBLR	0.01uF	16V
C126	UR866220	C.EL	2.2uF	50V
C127	UR828220	C.EL	220uF	10V
C128	UR837470	C.EL	47uF	16V
C129	UA953100	C.MYLAR	1000pF	50V
C130	UA653910	C.MYLAR	9100pF	50V
C131	UA954330	C.MYLAR	0.033uF	50V
C132	UA653910	C.MYLAR	9100pF	50V
C133	UA954330	C.MYLAR	0.033uF	50V
C134	UA953100	C.MYLAR	1000pF	50V
C135	UR828220	C.EL	220uF	10V
C136	UR837470	C.EL	47uF	16V
C137	UR866220	C.EL	2.2uF	50V
C138	UR837470	C.EL	47uF	16V
C139	UR837470	C.EL	47uF	16V
C140	UR837100	C.EL	10uF	16V
C141	UR837100	C.EL	10uF	16V
C142	VJ599100	C.CE.TUBLR	0.1uF	50V
C143	VJ599100	C.CE.TUBLR	0.1uF	50V
C145	UA954180	C.MYLAR	0.018uF	50V
C146	UA954680	C.MYLAR	0.068uF	50V
C147	UR837220	C.EL	22uF	25V
C148	UR847100	C.EL	10uF	25V
C149	UR847100	C.EL	10uF	25V
C150	UR837220	C.EL	22uF	25V
C151	UR837100	C.EL	10uF	16V
C152	UR847100	C.EL	10uF	25V
C153	UR837100	C.EL	10uF	16V
C154	UA952100	C.MYLAR	100pF	50V
C155	UA952100	C.MYLAR	100pF	50V
C156	UR837100	C.EL	10uF	16V
C157	UR847100	C.EL	10uF	25V
C158	UR837100	C.EL	10uF	16V
C159	UR837100	C.EL	10uF	16V
C160	UR837100	C.EL	10uF	16V
C161	VJ599100	C.CE.TUBLR	0.1uF	50V
C162	VJ599100	C.CE.TUBLR	0.1uF	50V
C163	UA952100	C.MYLAR	100pF	50V
C164	UA952100	C.MYLAR	100pF	50V
C165	UA954270	C.MYLAR	0.027uF	50V
C166	UA954270	C.MYLAR	0.027uF	50V
C167	UR847100	C.EL	10uF	25V

* New Parts

P. C. B. INPUT

Schm Ref	PART NO.	Description		
C168	UR847100	C.EL	10uF	25V
C169	UA952100	C.MYLAR	100pF	50V
C170	UR837470	C.EL	47uF	16V
C171	UR837470	C.EL	47uF	16V
C172	UA952100	C.MYLAR	100pF	50V
C173	UR847100	C.EL	10uF	25V
C174	UR847100	C.EL	10uF	25V
C175	UA954270	C.MYLAR	0.027uF	50V
C176	UA954270	C.MYLAR	0.027uF	50V
C177	VJ599100	C.CE.TUBLR	0.1uF	50V
C178	VJ599100	C.CE.TUBLR	0.1uF	50V
C179	UR837470	C.EL	47uF	16V
C180	UR837470	C.EL	47uF	16V
C181	UR837470	C.EL	47uF	16V
C182	UR837470	C.EL	47uF	16V
C183	UR847470	C.EL	47uF	25V
C184	UR847470	C.EL	47uF	25V
C185	UR866470	C.EL	4.7uF	50V
C186	VJ599100	C.CE.TUBLR	0.1uF	50V
C187	VJ599100	C.CE.TUBLR	0.1uF	50V
C188	UR866470	C.EL	4.7uF	50V
C189	UR866470	C.EL	4.7uF	50V
C190	VJ599100	C.CE.TUBLR	0.1uF	50V
C191	VJ599100	C.CE.TUBLR	0.1uF	50V
C192	UR866470	C.EL	4.7uF	50V
C193	VF466800	C.CE.TUBLR	100pF	50V
C194	VF467000	C.CE.TUBLR	1000pF	50V
C195	VF467300	C.CE.TUBLR	0.01uF	16V
C196	VJ599100	C.CE.TUBLR	0.1uF	50V
C197	UR837100	C.EL	10uF	16V
C198	UR837100	C.EL	10uF	16V
C199	UR837100	C.EL	10uF	16V
C200	UR837100	C.EL	10uF	16V
C201	UR828220	C.EL	220uF	10V
C202	VF467000	C.CE.TUBLR	1000pF	50V
C351	VG278400	C.CE.TUBLR	220pF	50V
C352	VG278400	C.CE.TUBLR	220pF	50V
C353	VG278400	C.CE.TUBLR	220pF	50V
C354	VG278400	C.CE.TUBLR	220pF	50V
C355	VG278400	C.CE.TUBLR	220pF	50V
C356	VG278400	C.CE.TUBLR	220pF	50V
C357	VF467300	C.CE.TUBLR	0.01uF	16V
C358	VJ599100	C.CE.TUBLR	0.1uF	50V
C359	UR847220	C.EL	22uF	25V
C360	VG276600	C.CE.TUBLR	22pF	50V
C361	VJ599100	C.CE.TUBLR	0.1uF	50V
C362	VJ599100	C.CE.TUBLR	0.1uF	50V
C363	VJ599100	C.CE.TUBLR	0.1uF	50V
C364	VG278400	C.CE.TUBLR	220pF	50V
C365	VF466600	C.CE.TUBLR	10pF	50V
C366	VF467000	C.CE.TUBLR	1000pF	50V
C367	VJ599100	C.CE.TUBLR	0.1uF	50V
C368	VJ599100	C.CE.TUBLR	0.1uF	50V

* New Parts

Schm Ref	PART NO.	Description		
C369	UR828100	C.EL	100uF	10V
C401	UR866220	C.EL	2.2uF	50V
C402	VK533900	C.PP	100pF	200V
C403	VK533900	C.PP	100pF	200V
C404	UR866220	C.EL	2.2uF	50V
C405	UR866220	C.EL	2.2uF	50V
C406	UR866220	C.EL	2.2uF	50V
C407	UR866220	C.EL	2.2uF	50V
C408	UR866220	C.EL	2.2uF	50V
C409	UN866100	C.EL	1uF	50V
C410	UR838100	C.EL	100uF	16V
C411	VG277000	C.CE.TUBLR	33pF	50V(ABGL)
C412	UA953100	C.MYLAR	1000pF	50V
C413	UR818100	C.EL	100uF	6.3V
C414	UA953100	C.MYLAR	1000pF	50V
C415	UR818100	C.EL	100uF	6.3V
C416	VG277000	C.CE.TUBLR	33pF	50V(ABGL)
C417	UR838100	C.EL	100uF	16V
C418	UR838100	C.EL	100uF	16V
C419	VG277000	C.CE.TUBLR	33pF	50V(ABGL)
C420	VG287600	C.EL	100uF	25V
C421	UA952100	C.MYLAR	100pF	50V
C422	UR818100	C.EL	100uF	6.3V
C423	UA952100	C.MYLAR	100pF	50V
C424	UR818100	C.EL	100uF	6.3V
C425	VG287600	C.EL	100uF	25V
C426	VG277000	C.CE.TUBLR	33pF	50V(ABGL)
C427	UR838100	C.EL	100uF	16V
C428	UR838100	C.EL	100uF	16V
C429	VG277000	C.CE.TUBLR	33pF	50V(ABGL)
C430	UA952100	C.MYLAR	100pF	50V
C431	UR818100	C.EL	100uF	6.3V
C432	UA952100	C.MYLAR	100pF	50V
C433	UR818100	C.EL	100uF	6.3V
C434	VG277000	C.CE.TUBLR	33pF	50V(ABGL)
C435	UR838100	C.EL	100uF	16V
C436	VJ599100	C.CE.TUBLR	0.1uF	50V
D101	VM975300	DIODE.ZENR	HZS11B2TD	11V
D102	VM975300	DIODE.ZENR	HZS11B2TD	11V
D103	VM975300	DIODE.ZENR	HZS11B2TD	11V
D104	VM975300	DIODE.ZENR	HZS11B2TD	11V
D351	VD631600	DIODE	1SS133,176,HSS104	
D352	VD631600	DIODE	1SS133,176,HSS104	
D401	VM974200	DIODE.ZENR	HZS5C2TD	5.0V
IC101	XP894A00	IC	LC78211	
IC102	XP896A00	IC	LC78213	
IC103	XP895A00	IC	LC78212	
IC104	XM356A00	IC	NJM2068LD	
IC105	XB247A00	IC	uPC4570HA	
IC106	XB247A00	IC	uPC4570HA	
IC107	iG092000	IC	M5220L	
IC108	iG092000	IC	M5220L	
IC109	iG092000	IC	M5220L	

* New Parts

P. C. B. INPUT & P. C. B. OPERATION
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Schm Ref	PART NO.	Description	
IC110	XR040A00	IC	TC9299P
IC111	XR040A00	IC	TC9299P
IC112	XB247A00	IC	uPC4570HA
IC113	XB247A00	IC	uPC4570HA
IC351	iG142200	IC	TC74HCU04AP
IC352	XT208A00	IC	HD74HC153P MPX
IC401	XC520A00	IC	uPC4570C
IC402	XC520A00	IC	uPC4570C
IC403	XC520A00	IC	uPC4570C
IC404	XF494A00	IC	LB1641
L351	GE901970	COIL	68uH
L352	GE901970	COIL	68uH
PJ101	VQ260900	JACK.PIN	4P
PJ103	VU857800	JACK.PIN	6P
PJ104	VU857800	JACK.PIN	6P
PJ105	VK437600	JACK.PIN	1P
PJ351	V2874800	JACK.PIN	6P
PJ352	VY667700	JACK.PIN	1P
Q101	iC287820	TR	2SC2878 A,B
R141	HV755100	R.CAR.FP	100Ω 1/4W
R154	HV755100	R.CAR.FP	100Ω 1/4W
R155	HV753220	R.CAR.FP	2.2Ω 1/4W
R156	HV753220	R.CAR.FP	2.2Ω 1/4W
R214	HV753220	R.CAR.FP	2.2Ω 1/4W
R215	HV753220	R.CAR.FP	2.2Ω 1/4W
R216	HV753220	R.CAR.FP	2.2Ω 1/4W
R217	HV753220	R.CAR.FP	2.2Ω 1/4W
R222	HV753220	R.CAR.FP	2.2Ω 1/4W
R231	HV753220	R.CAR.FP	2.2Ω 1/4W
R232	HV753220	R.CAR.FP	2.2Ω 1/4W
R373	HV753220	R.CAR.FP	2.2Ω 1/4W
R411	HV754100	R.CAR.FP	10Ω 1/4W
R412	HV754100	R.CAR.FP	10Ω 1/4W
R435	HV754100	R.CAR.FP	10Ω 1/4W
VR401	VV613500	VR	A100KΩ
*	V4035200	P.C.B.	OPERATION(UC)
	V4035300	P.C.B.	OPERATION(RT)
	V4035400	P.C.B.	OPERATION(A)
	V4035500	P.C.B.	OPERATION(B)
	V4035600	P.C.B.	OPERATION(G)
	V4035700	P.C.B.	OPERATION(L)
CB451	VK026700	CN.BS.PIN	8P
CB800	VU272900	CN	29P
CB802	Vi878900	CN.BS.PIN	11P
CB803	Vi878700	CN.BS.PIN	9P
CB804	VP206500	HOLDER.FUS	EYF-52BC(RT)
CB805	VP206500	HOLDER.FUS	EYF-52BC(RT)
CB806	Vi878200	CN.BS.PIN	4P
CB807	VK025100	CN.BS.PIN	7P
CB810	VP206500	HOLDER.FUS	EYF-52BC(GL)

* New Parts

Schm Ref	PART NO.	Description	
CB811	VP206500	HOLDER.FUS	EYF-52BC(GL)
CB812	VG879900	CN.BS.PIN	2P
CB813	VP206500	HOLDER.FUS	EYF-52BC
CB814	VP206500	HOLDER.FUS	EYF-52BC
C451	UR868330	C.EL	330uF 50V
C452	UR868330	C.EL	330uF 50V
△ C453	UR749680	C.EL	6800uF 25V
△ C454	VE326400	C.MYLAR.ML	0.22uF 50V
△ C455	UR749220	C.EL	2200uF 25V
C456	VE326400	C.MYLAR.ML	0.22uF 50V
△ C457	VS745400	C.POL.MTL	0.1uF 100V
△ C458	UR73A100	C.EL	10000uF 16V(RTABGL)
△ C458	UR749470	C.EL	4700uF 25V(UC)
C459	VJ599100	C.CE.TUBLR	0.1uF 50V
C460	VJ599100	C.CE.TUBLR	0.1uF 50V
C461	VE326400	C.MYLAR.ML	0.22uF 50V
C462	VE326400	C.MYLAR.ML	0.22uF 50V
C800	UR866220	C.EL	2.2uF 50V
C801	VG278900	C.CE.TUBLR	680pF 50V
C802	VG278900	C.CE.TUBLR	680pF 50V
C803	VJ599100	C.CE.TUBLR	0.1uF 50V
C804	UR866100	C.EL	1uF 50V
C805	VJ599100	C.CE.TUBLR	0.1uF 50V
C806	UR819100	C.EL	1000uF 6.3V
C807	UR819100	C.EL	1000uF 6.3V
C808	VU545000	C.EL	47000uF 5.5V
C809	VJ599100	C.CE.TUBLR	0.1uF 50V
C810	UR837100	C.EL	10uF 16V
C811	UR866220	C.EL	2.2uF 50V
C812	VJ599100	C.CE.TUBLR	0.1uF 50V
C813	UR838330	C.EL	330uF 16V
C814	UR838330	C.EL	330uF 16V
C817	UR866100	C.EL	1uF 50V
C818	UR866220	C.EL	2.2uF 50V
C819	UR866220	C.EL	2.2uF 50V
C821	UR866100	C.EL	1uF 50V
C823	VJ599100	C.CE.TUBLR	0.1uF 50V
C824	VJ599100	C.CE.TUBLR	0.1uF 50V
C825	VJ599100	C.CE.TUBLR	0.1uF 50V
C826	UR848220	C.EL	220uF 25V(RT)
C826	UR848330	C.EL	330uF 25V(UCABGL)
C827	UR837470	C.EL	47uF 16V
C828	UA655120	C.MYLAR	0.12uF 50V
C829	VK533800	C.PP	47pF 200V
C830	VK533800	C.PP	47pF 200V
C831	UA655120	C.MYLAR	0.12uF 50V
C832	UR837470	C.EL	47uF 16V
C833	VF466800	C.CE.TUBLR	100pF 50V
C834	VF466800	C.CE.TUBLR	100pF 50V
C835	FG613100	C.CE	1000pF 50V(RT)
C836	UR896470	C.EL	4.7uF 100V(RT)
C837	Vi716700	C.MYLAR	0.01uF 50V
C838	UR847100	C.EL	10uF 25V

* New Parts

P. C. B. OPERATION

Schm Ref	PART NO.	Description
C839	UA954330	C.MYLAR 0.033uF 50V
C840	UA954330	C.MYLAR 0.033uF 50V
C841	UR847100	C.EL 10uF 25V
C842	UA954100	C.MYLAR 0.01uF 50V
C843	UR847100	C.EL 10uF 25V
C844	VQ645600	C.MYLAR 100pF 50V
C845	VQ645600	C.MYLAR 100pF 50V
C846	UR847100	C.EL 10uF 25V
△ C847	VS741700	C.CE.SAFETY 0.01uF 275V
△ D451	VR253700	DIODE.BRG S1NB20 1.0A 200V
△ D452	VR253700	DIODE.BRG S1NB20 1.0A 200V
△ D453	VR253700	DIODE.BRG S1NB20 1.0A 200V
D800	VD631600	DIODE 1SS133,176,HSS104
D801	VD631600	DIODE 1SS133,176,HSS104
D802	VM974100	DIODE.ZENR HZS5B2TD 5.0V
D803	VD631600	DIODE 1SS133,176,HSS104
D805	VD631600	DIODE 1SS133,176,HSS104
D806	VD631600	DIODE 1SS133,176,HSS104
D807	VM974100	DIODE.ZENR HZS5B2TD 5.0V
D808	VM974700	DIODE.ZENR HZS7B2TD 7.0V
D809	VD631600	DIODE 1SS133,176,HSS104
D811	VD631600	DIODE 1SS133,176,HSS104
D812	VM974400	DIODE.ZENR HZS6B2TD 6.0V(RT)
D812	VM974600	DIODE.ZENR HZS7A2TD 7V(UCABGL)
D813	VM974500	DIODE.ZENR HZS6C2TD 6.0V
D814	VD631600	DIODE 1SS133,176,HSS104
D815	VR253700	DIODE.BRG S1NB20 1.0A 200V
D816	VM975300	DIODE.ZENR HZS11B2TD 11V(RT)
△ F800	KB000790	FUSE T4.0A 250V(RT)
△ F803	VT942900	FUSE TH2.5A 250V(GL)
△ F804	KB000790	FUSE T4.0A 250V(ABGL)
△ F804	VS823300	FUSE T8.0A 125V(UCRT)
HS801	VR506800	HEAT.SINK PUH16-25(RT)
IC800	XW629A00	IC LC876564A-5M19 CPU
IC801	XM356A00	IC NJM2068LD
IC802	XM356A00	IC NJM2068LD
JK800	V2589500	CN 1P(UCRTAL)
JK800	V2982900	CN 1P(BG)
PJ800	VV325100	JACK.PIN 3P(BG)
PJ800	VV852700	JACK.PIN 3P(UCRTAL)
Q800	VG721700	TR.DGT DTA144ES
Q801	IA093320	TR 2SA933S Q,R
Q802	IA093320	TR 2SA933S Q,R
Q803	VG722000	TR.DGT DTC144ES
Q805	IA093320	TR 2SA933S Q,R
Q806	VP872700	TR 2SC4488 S,T
Q807	iC174020	TR 2SC1740S R,S
Q808	VR510800	TR 2SD2396 J,K(RT)
Q810	iC287820	TR 2SC2878 A,B
Q811	iC287820	TR 2SC2878 A,B
R451	HV753100	R.CAR.FP 1Ω 1/4W
R452	HV753100	R.CAR.FP 1Ω 1/4W
R878	VP939800	R.MTL.OXD 10Ω 1W

* New Parts

Schm Ref	PART NO.	Description
R881	VP939800	R.MTL.OXD 10Ω 1W
R904	HV756560	R.CAR.FP 5.6KΩ 1/4W(RT)
R906	HV756560	R.CAR.FP 5.6KΩ 1/4W(RT)
△ RY800	V2712300	RELAY DC SDT-S-112LMR
SW800	VT140300	SW.RT.ENC EC16B12204
SW801	VG392900	SW.TACT SKHVAA
SW802	VG392900	SW.TACT SKHVAA
SW803	VG392900	SW.TACT SKHVAA
SW804	VG392900	SW.TACT SKHVAA
SW805	VG392900	SW.TACT SKHVAA
SW806	VG392900	SW.TACT SKHVAA
SW807	VG392900	SW.TACT SKHVAA
SW808	VG392900	SW.TACT SKHVAA
SW809	VG392900	SW.TACT SKHVAA
SW810	VG392900	SW.TACT SKHVAA
SW811	VG392900	SW.TACT SKHVAA
SW812	VG392900	SW.TACT SKHVAA
SW813	VG392900	SW.TACT SKHVAA
SW814	VG392900	SW.TACT SKHVAA
SW815	VG392900	SW.TACT SKHVAA
SW816	VG392900	SW.TACT SKHVAA
SW817	VG392900	SW.TACT SKHVAA
SW818	VG392900	SW.TACT SKHVAA
SW819	VG392900	SW.TACT SKHVAA
SW820	VG392900	SW.TACT SKHVAA
SW821	VG392900	SW.TACT SKHVAA(BG)
SW822	VG392900	SW.TACT SKHVAA
SW823	VG392900	SW.TACT SKHVAA
SW824	VG392900	SW.TACT SKHVAA
SW825	VG392900	SW.TACT SKHVAA(BG)
SW826	VG392900	SW.TACT SKHVAA
SW827	VG392900	SW.TACT SKHVAA
SW828	VG392900	SW.TACT SKHVAA(BG)
SW829	VG392900	SW.TACT SKHVAA(BG)
△ SW831	VA961800	VOLT.SELCT ESE-37247-F(RT)
△ T800	XC083A00	TRANS.PWR (UC)
△ T800	XC084A00	TRANS.PWR (ABGL)
△ T800	XT331A00	TRANS.PWR (RT)
△ TE800	V4746400	OUTLET.AC S2-764T-214C(RT)
△ TE800	VT915000	OUTLET.AC 2P(A)
△ TE800	VU543100	OUTLET.AC 2P(UC)
△ TE800	VU543300	OUTLET.AC 1P(B)
△ TE800	VU543400	OUTLET.AC 2P(GL)
U800	VU591000	L.DTCT GP1U271X
V800	V2421800	FL.DSPLY 16-BT-59GK
VR800	VP741800	VR B20KΩ
VR801	VP741900	VR G25KΩ
VR802	VP742000	VR MN100KΩ
XL800	VQ791000	RSNR.CE 10MHz
	BB071360	SCR.TERM 8.3x13
	VS588900	SHEET
	V3422300	SPACER FL-WIDE
	EP600140	SCR.BND.HD 3x10 MFZN2-BL

* New Parts

P. C. B. TUNER (Lead Type)

Schm Ref	PART NO.	Description	
	V2518600	P.C.B.	TUNER/TU-01(UC)
	V2518700	P.C.B.	TUNER/TU-01(RT)
	V2518800	P.C.B.	TUNER/TU-01(ABGL)
	V2518900	P.C.B.	TUNER/TU-01RDS(BG)
CB4	VQ961900	CN	16P
C1	VG287600	C.EL	100uF 25V
C3	VG275800	C.CE.TUBLR	8.2pF 50V
C4	UR837470	C.EL	47uF 16V
C5	VF467300	C.CE.TUBLR	0.01uF 16V
C6	UR837470	C.EL	47uF 16V
C7	UM416100	C.EL	1uF 50V
C8	VF467300	C.CE.TUBLR	0.01uF 16V
C9	VF467300	C.CE.TUBLR	0.01uF 16V
C10	VF467300	C.CE.TUBLR	0.01uF 16V
C11	VF467000	C.CE.TUBLR	1000pF 50V
C12	UM397100	C.EL	10uF 16V
C13	UM397100	C.EL	10uF 16V
C14	FG652100	C.CE	100pF 50V
C15	VF467000	C.CE.TUBLR	1000pF 50V
C16	VF466700	C.CE.TUBLR	47pF 50V
C17	UR837470	C.EL	47uF 16V
C19	V4006100	C.CE	10pF 50V
C20	VG287600	C.EL	100uF 25V
C21	VJ599000	C.CE.TUBLR	0.047uF 16V
C22	VG290700	C.EL	3.3uF 50V
C23	VF467300	C.CE.TUBLR	0.01uF 16V
C24	UM406470	C.EL	4.7uF 50V
C25	UM416330	C.EL	3.3uF 50V
C26	UM397100	C.EL	10uF 16V
C27	VF467300	C.CE.TUBLR	0.01uF 16V
C28	VA760600	C.CE	10pF 50V
C29	UM416100	C.EL	1uF 50V
C30	UM416100	C.EL	1uF 50V
C31	VG287600	C.EL	100uF 25V
C32	UM415470	C.EL	0.47uF 50V
C33	UM416100	C.EL	1uF 50V
C34	UA954470	C.MYLAR	0.047uF 50V
C35	VG290700	C.EL	3.3uF 50V
C36	UA952270	C.MYLAR	270pF 50V(ABGL)
C36	UA953100	C.MYLAR	1000pF 50V(UCRT)
C37	UA952270	C.MYLAR	270pF 50V(ABGL)
C37	UA953100	C.MYLAR	1000pF 50V(UCRT)
C38	VF466900	C.CE.TUBLR	470pF 50V
C39	VG287200	C.EL	10uF 50V
C40	VG290700	C.EL	3.3uF 50V
C41	UA953390	C.MYLAR	3900pF 50V
C42	UM397220	C.EL	22uF 25V
C43	UA953390	C.MYLAR	3900pF 50V
C44	VG290700	C.EL	3.3uF 50V
C45	UR837470	C.EL	47uF 16V
C46	UR837470	C.EL	47uF 16V
C47	VG278600	C.CE.TUBLR	330pF 50V
C48	VG278800	C.CE.TUBLR	560pF 50V

* New Parts

Schm Ref	PART NO.	Description	
C49	UA952120	C.MYLAR	120pF 50V(ABGL)
C49	UA953220	C.MYLAR	2200pF 50V(UCRT)
C50	VJ599000	C.CE.TUBLR	0.047uF 16V
C51	UR837470	C.EL	47uF 16V
C52	UR837470	C.EL	47uF 16V
C53	UR837470	C.EL	47uF 16V
C54	VA761100	C.CE	27pF 50V
C55	VA761100	C.CE	27pF 50V
C56	VJ599000	C.CE.TUBLR	0.047uF 16V
C57	VG278600	C.CE.TUBLR	330pF 50V
D1	VD631600	DIODE	1SS133,176,HSS104
D2	VD631600	DIODE	1SS133,176,HSS104
D3	VG437700	DIODE.ZENR	MTZJ5.6B 5.6V
Fi1	GG000560	FLTR.CE	SFE10.7MS3GHY-A
Fi2	GG000560	FLTR.CE	SFE10.7MS3GHY-A
Fi3	VC219000	FLTR.CE	SFZ450JL3
IC1	XB760A00	IC	LA1266
IC2	XQ944A00	IC	LC72131
IC3	iG158100	IC	LA3401
IC4	XU664A00	IC	LC72720N (BG)
L1	Vi546100	COIL	220uH
L2	Vi546100	COIL	220uH
L3	Vi546100	COIL	220uH
L4	Vi546100	COIL	220uH
L5	Vi546100	COIL	220uH
PK1	V2716700	TUNER.PK	ENV-172A4G1(ABGL)
PK1	V2909100	TUNER.PK	ENV-172C8G1R(UCRT)
PK2	VU333700	COIL.RF.AM	940536051A
Q1	iC053540	TR	2SC535 A,B,C
Q2	iC053540	TR	2SC535 A,B,C
Q3	VD678500	TR.DGT	DTA114ES
Q4	iC174020	TR	2SC1740S R,S
Q5	VG722000	TR.DGT	DTC144ES
Q6	iC181510	TR	2SC1815 Y
Q7	VD678500	TR.DGT	DTA114ES
R56	HV754470	R.CAR.FP	47Ω 1/4W
SW1	VS602600	SW.SLIDE	SS070-P022 A(RT)
T1	VC218600	COIL.DT.FM	10.7MHz
T2	VR895700	COIL.IF	450KHz
T3	VT486800	COIL	XYA2(ABGL)
T4	VQ138200	FLTR.LC	19KHz
T5	VQ138200	FLTR.LC	19KHz
TE1	VU477800	TERM.ANT	AJ-2038-040
TP1	VT969000	PIN.TEST	IRS-2049
TP2	VT969000	PIN.TEST	IRS-2049
VR1	VJ694000	VR.TRIM	B47KΩ
VR2	VJ694000	VR.TRIM	B47KΩ
XL1	VY734600	RSNR.CRYS	7.2MHz
XL2	GG000750	RSNR.CE	18.95KHz
XL3	V3930900	RSNR.CRYS	4.332MHz HC-49U
	BB071360	SCR.TERM	8.3x13
	VR282500	PLATE	ANT.

* New Parts

P. C. B. TUNER (Lead Type & SMD)

Schm Ref	PART NO.	Description	
*	V2519300	P.C.B. CHP	TUNER/TU-01(UC)
*	V2519400	P.C.B. CHP	TUNER/TU-01(RT)
*	V2519500	P.C.B. CHP	TUNER/TU-01(ABGL)
*	V2519600	P.C.B. CHP	TUNER/TU-01RDS(BG)
CB4	VQ961900	CN	16P
C1	VG287600	C.EL	100uF 25V
C3	UB050800	C.CE.M.CHP	8pF 50V
C4	UR837470	C.EL	47uF 16V
C5	UB044100	C.CE.M.CHP	0.01uF 50V
C6	UR837470	C.EL	47uF 16V
C7	UM416100	C.EL	1uF 50V
C8	UB044100	C.CE.M.CHP	0.01uF 50V
C9	UB044100	C.CE.M.CHP	0.01uF 50V
C10	UB044100	C.CE.M.CHP	0.01uF 50V
C11	UB013100	C.CE.M.CHP	1000pF 50V
C12	UM397100	C.EL	10uF 16V
C13	UM397100	C.EL	10uF 16V
C14	FG652100	C.CE	100pF 50V
C15	UB013100	C.CE.M.CHP	1000pF 50V
C16	UB051470	C.CE.M.CHP	47pF 50V
C17	UR837470	C.EL	47uF 16V
C19	V4006100	C.CE	10pF 50V
C20	VG287600	C.EL	100uF 25V
C21	UB044470	C.CE.M.CHP	0.047uF 50V
C22	VG290700	C.EL	3.3uF 50V
C23	UB044100	C.CE.M.CHP	0.01uF 50V
C24	UM406470	C.EL	4.7uF 50V
C25	UM416330	C.EL	3.3uF 50V
C26	UM397100	C.EL	10uF 16V
C27	UB044100	C.CE.M.CHP	0.01uF 50V
C28	VA760600	C.CE	10pF 50V
C29	UM416100	C.EL	1uF 50V
C30	UM416100	C.EL	1uF 50V
C31	VG287600	C.EL	100uF 25V
C32	UM415470	C.EL	0.47uF 50V
C33	UM416100	C.EL	1uF 50V
C34	UA954470	C.MYLAR	0.047uF 50V
C35	VG290700	C.EL	3.3uF 50V
C36	UA952270	C.MYLAR	270pF 50V(ABGL)
C36	UA953100	C.MYLAR	1000pF 50V(UCRT)
C37	UA952270	C.MYLAR	270pF 50V(ABGL)
C37	UA953100	C.MYLAR	1000pF 50V(UCRT)
C38	UB012470	C.CE.M.CHP	470pF 50V
C39	VG287200	C.EL	10uF 50V
C40	VG290700	C.EL	3.3uF 50V
C41	UA953390	C.MYLAR	3900pF 50V
C42	UM397220	C.EL	22uF 25V
C43	UA953390	C.MYLAR	3900pF 50V
C44	VG290700	C.EL	3.3uF 50V
C45	UR837470	C.EL	47uF 16V
C46	UR837470	C.EL	47uF 16V
C47	UB012330	C.CE.M.CHP	330pF 50V
C48	UB012560	C.CE.M.CHP	560pF 50V

* New Parts

Schm Ref	PART NO.	Description	
C49	UA952120	C.MYLAR	120pF 50V(ABGL)
C49	UA953220	C.MYLAR	2200pF 50V(UCRT)
C50	UB044470	C.CE.M.CHP	0.047uF 50V
C51	UR837470	C.EL	47uF 16V
C52	UR837470	C.EL	47uF 16V
C53	UR837470	C.EL	47uF 16V
C54	VA761100	C.CE	27pF 50V
C55	VA761100	C.CE	27pF 50V
C56	UB044470	C.CE.M.CHP	0.047uF 50V
C57	UB012330	C.CE.M.CHP	330pF 50V
D1	VT332900	DIODE	1SS355
D2	VT332900	DIODE	1SS355
D3	VU172000	DIODE.ZENR	UDZS5.6BTE-17 5.6V
Fi1	GG000560	FLTR.CE	SFE10.7MS3GHY-A
Fi2	GG000560	FLTR.CE	SFE10.7MS3GHY-A
Fi3	VC219000	FLTR.CE	SFZ450JL3
IC1	XB760A00	IC	LA1266
IC2	XQ944A00	IC	LC72131
IC3	iG158100	IC	LA3401
IC4	XU664A00	IC	LC72720N (BG)
L1	VU889500	COIL	220uH
L2	VU889500	COIL	220uH
L3	VU889500	COIL	220uH
L4	VU889500	COIL	220uH
L5	VU889500	COIL	220uH
PK1	V2716700	TUNER.PK	ENV-172A4G1(ABGL)
PK1	V2909100	TUNER.PK	ENV-172C8G1R(UCRT)
PK2	VU333700	COIL.RF.AM	940536051A
Q1	iC053540	TR	2SC535 A,B,C
Q2	iC053540	TR	2SC535 A,B,C
Q3	VD678500	TR.DGT	DTA114ES
Q4	iC174020	TR	2SC1740S R,S
Q5	VG722000	TR.DGT	DTC144ES
Q6	iC181510	TR	2SC1815 Y
Q7	VD678500	TR.DGT	DTA114ES
R56	HV754470	R.CAR.FP	47Ω 1/4W
SW1	VS602600	SW.SLIDE	SS070-P022 A(RT)
T1	VC218600	COIL.DT.FM	10.7MHz
T2	VR895700	COIL.IF	450KHz
T3	VT486800	COIL	XYA2 (ABGL)
T4	VQ138200	FLTR.LC	19KHz
T5	VQ138200	FLTR.LC	19KHz
TE1	VU477800	TERM.ANT	AJ-2038-040
TP1	VT969000	PIN.TEST	IRS-2049
TP2	VT969000	PIN.TEST	IRS-2049
VR1	VJ694000	VR.TRIM	B47KΩ
VR2	VJ694000	VR.TRIM	B47KΩ
XL1	VY734600	RSNR.CRYS	7.2MHz
XL2	GG000750	RSNR.CE	18.95KHz
XL3	V3930900	RSNR.CRYS	4.332MHz
	BB071360	SCR.TERM	8.3x13
	VR282500	PLATE	ANT.

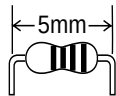
* New Parts

■ Chip Resistors

Schm Ref	PART NO.	Description			
	RD250000	R.CAR.CHP	0Ω	1/10W	
	RD254470	R.CAR.CHP	47Ω	1/10W	
	RD255100	R.CAR.CHP	100Ω	1/10W	
	RD255330	R.CAR.CHP	330Ω	1/10W	
	RD256100	R.CAR.CHP	1KΩ	1/10W	
	RD256120	R.CAR.CHP	1.2KΩ	1/10W	
	RD256150	R.CAR.CHP	1.5KΩ	1/10W	
	RD256220	R.CAR.CHP	2.2KΩ	1/10W	
	RD256330	R.CAR.CHP	3.3KΩ	1/10W	
	RD256470	R.CAR.CHP	4.7KΩ	1/10W	
	RD256680	R.CAR.CHP	6.8KΩ	1/10W	
	RD256820	R.CAR.CHP	8.2KΩ	1/10W	
	RD257100	R.CAR.CHP	10KΩ	1/10W	
	RD257120	R.CAR.CHP	12KΩ	1/10W	
	RD257470	R.CAR.CHP	47KΩ	1/10W	
	RD258100	R.CAR.CHP	100KΩ	1/10W	
	RD258470	R.CAR.CHP	470KΩ	1/10W	
	RD259100	R.CAR.CHP	1MΩ	1/10W	

* New Parts

Parts List for Carbon Resistors

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

※: Not available



	Ref. No.	PART NO.	Description			Remarks	Markets
*	1- 1	V3826300	FRONT PANEL			RX-V595a BL	
*	1- 1	V3826400	FRONT PANEL			RX-V595a GD	
*	1- 1	V3826500	FRONT PANEL			RX-V595aRDS BL	
*	1- 1	V3826600	FRONT PANEL			RX-V595aRDS TI	
*	1- 1	V3826700	FRONT PANEL			HTR-5150 GP	
	1- 4	V2468600	ESCUTCHOEN		3/8		
*	2- 1	V4035200	P.C.B. ASS'Y		OPERATION		(UC)
*	2- 1	V4035300	P.C.B. ASS'Y		OPERATION		(RT)
*	2- 1	V4035400	P.C.B. ASS'Y		OPERATION		(A)
*	2- 1	V4035500	P.C.B. ASS'Y		OPERATION		(B)
*	2- 1	V4035600	P.C.B. ASS'Y		OPERATION		(G)
*	2- 1	V4035700	P.C.B. ASS'Y		OPERATION		(L)
	2- 8	MF229160	S FLEXIBLE FLAT CABLE C&C		29P 160mm		
	2-11	V2460700	SUB CHASSIS				
	2-12	V2465500	BUTTON CASE			BL	
	2-12	V2465600	BUTTON CASE			TI	
	2-12	V2465700	BUTTON CASE			GD	
	2-12	V2633800	BUTTON CASE			GP	
	2-13	V2467000	BUTTON, RDS			BL	
	2-13	V2467100	BUTTON, RDS			TI	
	2-15	V2465800	BUTTON INPUT			BL	
	2-15	V2465900	BUTTON INPUT			TI	
	2-15	V2466000	BUTTON INPUT			GD	
	2-17	V2467900	ESCUTCHEON, VOL			BL	
	2-17	V2468000	ESCUTCHEON, VOL			TI	
	2-17	V2468100	ESCUTCHEON, VOL			GD	
	2-17	V2468200	ESCUTCHEON, VOL			HTR-5150 GP	(UCA)
	2-18	V2468300	ESCUTCHEON, PJ			BL	
	2-18	V2468400	ESCUTCHEON, PJ			TI	
	2-18	V2468500	ESCUTCHEON, PJ			GD	
	2-21	EP600830	BIND HEAD B-TITE SCREW		3x8 FCRM3-BL		
	2-22	VN413300	BIND HEAD BONDING B-T. SCREW		3x8 MFZN2-BL		
	2-23	VT669300	PW HEAD B-TITE SCREW		3x8-8 MFC2		
	2-24	EP630220	BIND HEAD P-TITE SCREW		3x8 ZMC2-BL		
	3- 1	V2463200	HEAT SINK				
	3- 2	V3003000	P.C.B. ASS'Y		MAIN		(URT)
	3- 2	V3003100	P.C.B. ASS'Y		MAIN		(C)
	3- 2	V3003200	P.C.B. ASS'Y		MAIN		(A)
	3- 2	V3003300	P.C.B. ASS'Y		MAIN		(BG)
	3- 2	V3003400	P.C.B. ASS'Y		MAIN		(L)
	3- 3	VV849300	SHEET		19x24		
	3-11	V2461000	SUPPORT, TR				
	3-12	VQ368500	PUSH RIVET		P3545-B		
	3-13	VK173200	SCREW, TRANSISTOR		3x15 SP FCM3		
	3-14	VT669300	PW HEAD B-TITE SCREW		3x8-8 MFC2		
	3-20	VQ368600	PUSH RIVET		P3555-B		
*	6	V4035900	P.C.B. ASS'Y		DSP		
	7	V2518600	P.C.B. ASS'Y		TUNER/TU-01		(UC)
	7	V2518700	P.C.B. ASS'Y		TUNER/TU-01		(RT)
	7	V2518800	P.C.B. ASS'Y		TUNER/TU-01		(AL)
	7	V2518900	P.C.B. ASS'Y		TUNER/TU-01RDS		(BG)
*	8	V4035000	P.C.B. ASS'Y		INPUT		(UCRT)
*	8	V4035100	P.C.B. ASS'Y		INPUT		(ABGL)

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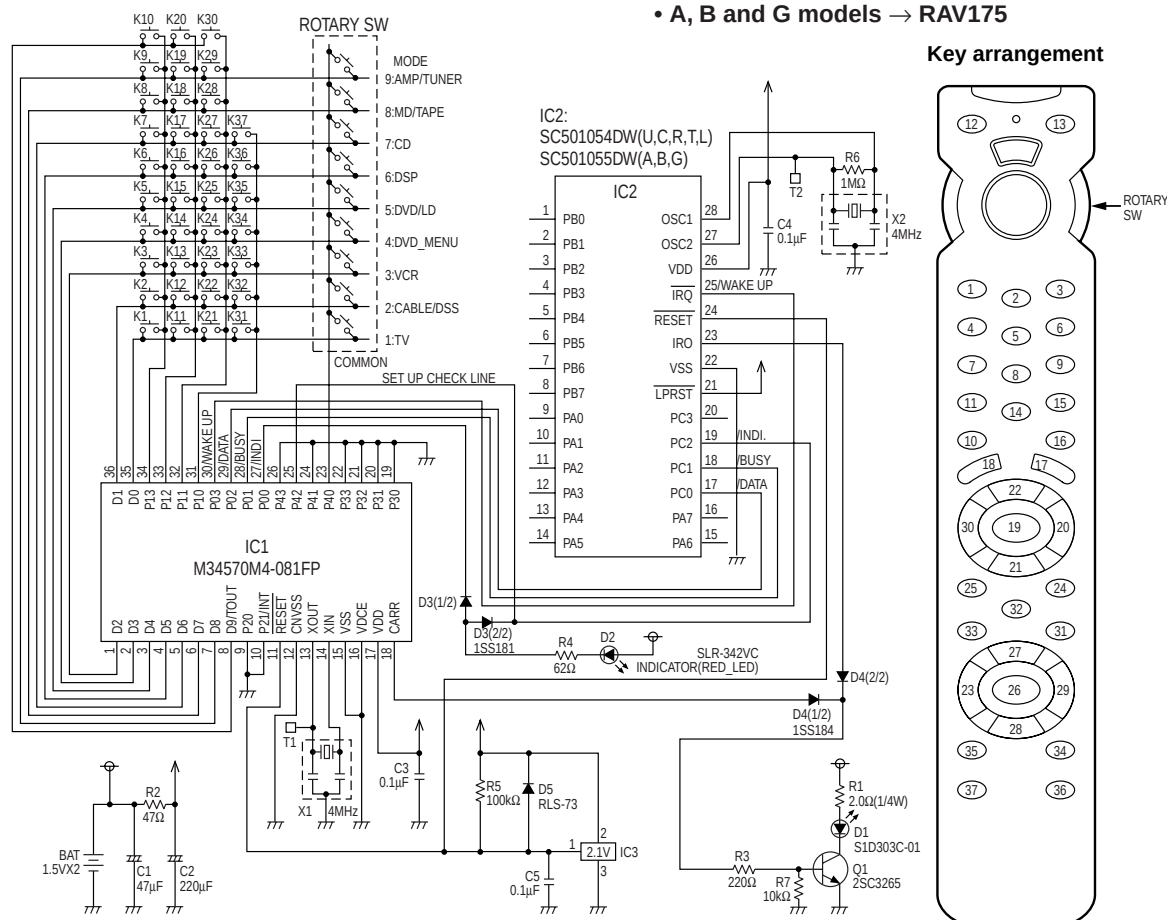
Ref. No.	PART NO.	Description	Remarks	Markets
* 9	V4035800	P.C.B. ASS'Y	VIDEO	
△ 15	XV315A00	POWER TRANSFORMER		(U)
△ 15	XV316A00	POWER TRANSFORMER		(C)
△ 15	XV317A00	POWER TRANSFORMER		(RT)
△ 15	XV318A00	POWER TRANSFORMER		(A)
△ 15	XV319B00	POWER TRANSFORMER		(BGL)
△ 16	V2296800	POWER CORD ASS'Y		(A)
△ 16	V2363800	POWER CORD ASS'Y		(UC)
△ 16	VN363700	POWER CORD ASS'Y		(GL)
△ 16	VV437300	POWER CORD ASS'Y		(B)
△ 16	VZ542500	POWER CORD ASS'Y		(RT)
17	V2438700	CORD STOPPER	10P1	
21	VU590000	BINDING TIE	CBTD001B	
22	VZ625600	BINDING TIE	SE140 L=140	
23	MF106250	FLEXIBLE FLAT CABLE	6P 250mm	
24	MF211140	S FLEXIBLE FLAT CABLE	11P 140mm	
25	MF123180	FLEXIBLE FLAT CABLE	23P 180mm	
26	MF113140	FLEXIBLE FLAT CABLE	13P 140mm	
30	V2126000	DAMPER	T2x10x20	
101	VV121300	TOP COVER	BL	
101	VV121500	TOP COVER	TI	
101	VZ884500	TOP COVER	GD	
102	V2460600	CHASSIS		
* 103	V3829000	REAR PANEL	RX-V595a	(U)
* 103	V3829100	REAR PANEL	RX-V595a	(C)
* 103	V3829200	REAR PANEL	RX-V595a	(RT)
* 103	V3829300	REAR PANEL	RX-V595a	(A)
* 103	V3829400	REAR PANEL	RX-V595a	(L)
* 103	V3829500	REAR PANEL	RX-V595aRDS	(B)
* 103	V3829600	REAR PANEL	RX-V595aRDS	(G)
* 103	V3829900	REAR PANEL	HTR-5150	(U)
* 103	V3830000	REAR PANEL	HTR-5150	(C)
* 103	V3830100	REAR PANEL	HTR-5150	(T)
* 103	V3830200	REAR PANEL	HTR-5150	(A)
105	V2460800	FRAME, TRANSFORMER		
109	V2461100	SHIELD CASE		
110	VZ332800	SHIELD CASE COVER		
112	V2460900	FRAME		
120	V0042500	LEG	D60xH21	
120	V0042500	LEG	D60xH21	
120	VS025000	LEG	D60xH21	
120	VV544300	LEG	D60xH21	
121	V2774200	KNOB	D40	
121	VV148800	KNOB	D40	
121	VV148900	KNOB	D40	
122	V2467600	KNOB, ENC	D30	
122	V2467700	KNOB, ENC	D30	
122	V2467800	KNOB, ENC	D30	
123	V0016700	KNOB	D14	
123	VV311000	KNOB	D14	
123	VV311400	KNOB	D14	
124	V2467300	BUTTON	3/8	
124	V2467400	BUTTON	3/8	

* New Parts

Ref. No.	PART NO.	Description		Remarks	Markets
124	V2467500	BUTTON	3/8	GD	(RABGLT)
128	V2469400	SHEET, WINDOW			
129	V3153900	SHHET			
131	V2468800	PLATE SIDE L	130	BL	
131	V2468900	PLATE SIDE L	130	TI	
131	V2468900	PLATE SIDE L	130	GD	
132	V2469100	PLATE SIDE R	130	BL	
132	V2469200	PLATE SIDE R	130	TI	
132	V2469300	PLATE SIDE R	130	GD	
135	VR264400	SPACER	H8		
136	VQ948200	SPACER	FL		
138	V2879500	SPACER PCB-M			
139	V3198100	DAMPER	GUARD		(G)
155	VQ368600	PUSH RIVET	P3555-B		
160	VN413300	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2-BL		
161	VY731200	BONDING HEAD TAPPING SCREW	3x10 MFNI33		
162	EP600830	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL		
163	EP600250	BIND HEAD B-TITE SCREW	3x8 ZMC2-Y		
166	EG330030	BIND HEAD SCREW	3x6 FCRM3-BL		
167	VT669300	PW HEAD B-TITE SCREW	3x8-8 MFC2		
168	VT669400	PW HEAD B-TITE SCREW	3x15-8 MFC2		
170	21991500	PW HEAD S-TITE SCREW	4x8-10 FCRM3-BL		
171	21991500	PW HEAD S-TITE SCREW	4x8-10 FCRM3-BL	BL	
171	VD069600	PW HEAD S-TITE SCREW	4x8-10 MFNI-33	GD	
171	VH313200	BW HEAD S-TITE SCREW	4x8-10 FNM3-BL	TI	
176	AA627310	GROUND TERMINAL			(UCRLT) (ABG)
178	03700480	HEXAGONAL CAP NUT	4.0 MFNI33		
		ACCESSORIES			
* 200	V3836400	REMOTE CONTROL TRANSMITTER	RAV174		
* 200	V3836500	REMOTE CONTROL TRANSMITTER	RAV175		
200-1	XX702560	LID	SMKSI		
	VQ147100	ANTENNA, FM	1.4m		
	VR248500	ANTENNA, AM LOOP	1.0m		
	VE364900	ANTENNA ADAPTER	PAL 75-300Ω		
	VT948000	ANTENNA ADAPTER			
		BATTERY, MANGANESE	SUM-3,AA,R06		

* New Parts

- U, C, R, T and L models → RAV174
- A, B and G models → RAV175



List of the fixed code

Key No.	Key Name	MODE ID #	TV	Cable/DSS	VCR	DVD Menu	DVD/LD	DSP	CD	Tape/MD	AMP/Tuner
1	1		0047/0037	2566/2455(DSS)	3060/3072	----	4545(DVD)	----	6187	8524(Tape)	----
2	2		CH1	CH1	CH1	7C-94	7A-15	7A-88		7A-15	
3	3		CH2	CH2	CH2	7C-95	7A-16	7A-89		7A-16	
4	4		CH3	CH3	CH3	7C-96	7A-18	7A-8A		7A-18	
5	5		CH4	CH4	CH4	7C-97	7A-17	7A-8B		7A-17	
6	6		CH5	CH5	CH5	7C-98	7A-54	7A-8C		7A-54	
7	7		CH6	CH6	CH6	7C-99	7A-0F	7A-8D		7A-0F	
8	8		CH7	CH7	CH7	7C-9A	7A-14	7A-8E		7A-14	
9	9		CH8	CH8	CH8	7C-9B	7A-55	7A-8F		7A-55	
10	10		CH9	CH9	CH9	7C-9C	7A-13	7A-90		7A-13	
10	DSP		Shift of only Ten key in DSP Mode					----	Shift of only Ten key in DSP Mode		
11	0		CH0	CH0	CH0	7C-93	7A-87	7A-91		7A-87	
12	POWER		7A-1D	Power	Power	7A-1D		7A-1D			
13	STANDBY		7A-1E					7A-1E			
14	ENTER		CH Select	CH Select	CH Select	7C-9D	----	7A-12	----	----	7A-12
15	CLEAR		----	+100	----	7C-9F	----	7A-85	----	----	7A-85
16	EFFECT		Surround			7A-56		7A-56			
17	CH+		CH+	CH+	CH+	7C-8B		7A-10	7A-4F	----	7A-10
18	CH-		CH-	CH-	CH-	7C-8A		7A-11	7A-50	----	7A-11
19	MUTE		Mute			7A-1C		7A-1C			
20	VOL+		7A-1A					7A-1A			
21	TV VOL-		TV VOL-					TV VOL-			
22	TV VOL+		TV VOL+					TV VOL+			
23	SKIP-		----	Left	----	7C-B5	7C-B9	7A-53	7A-0B	7A-07	7A-53
24	DISPLAY		Display	Display	Display	7C-9E	7C-A6	7A-C2	79-0B	----	7A-C2
25	SLEEP		Sleep			7A-57		7A-57			
26	PLAY		VCR Play	Menu Select	Play	7C-B8	7C-82	----	7A-08	7A-00	----
27	PAUSE		VCR Pause	Up	Pause	7C-B4	7C-83	7A-98	7A-09	----	7A-98
28	STOP		VCR Stop	Down	Stop	7C-B3	7C-85	7A-99	7A-09	7A-03	7A-99
29	SKIP+		----	Right	----	7C-B6	7C-BA	7A-52	7A-0A	7A-40	7A-52
30	VOL-		7A-1B					7A-1B			
31	TV INPUT		TV Input					----	TV Input	7A-06	----
32	TV POWER		TV Power					TV Power			
33	REC		VCR REC	----	REC	----	----	----	----	7A-04	----
34	FF		VCR FF	Recall	FF	7C-B7	7C-AE	7A-58	7A-0C	7A-02	7A-58
35	REW		VCR REW	----	REW	7C-AC	7C-AB	7A-59	7A-0D	7A-01	7A-59
36	MENU		----	Menu	----	7C-B2	7C-AD	7A-9C	----	----	7A-9C
37	TITLE		----	----	----	7C-B1	7C-AA	7A-86	----	----	7A-86

--- : No Code ID# : RAV174/RAV175