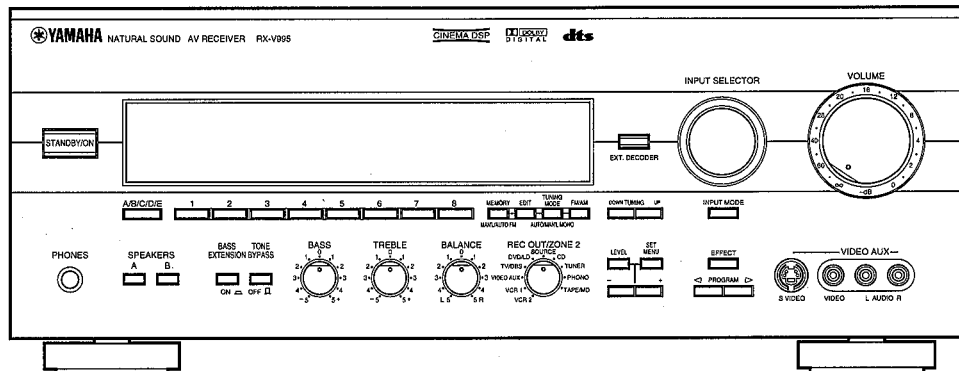
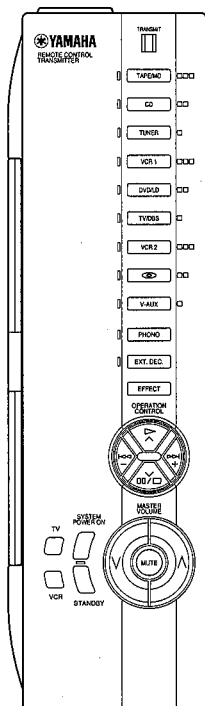


AV RECEIVER

RX-V995

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 or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

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

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

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

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REAR PANELS	1~3	IC DATA	27~38
SPECIFICATIONS	3~5	BLOCK DIAGRAM	39~43
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TUNER ADJUSTMENTS	22~25	REMOTE CONTROL TRANSMITTER	100~104



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This Service Manual uses recycled paper.

100665



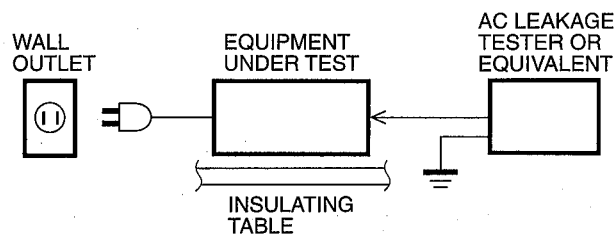
YAMAHA
YAMAHA CORPORATION
P.O.Box 1, Hamamatsu, Japan

1.8K-6921 Printed in Japan '99.1

RX-V995

■ TO SERVICE PERSONNEL

1. Critical Components Information.
Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
2. Leakage Current Measurement (For 120V Models Only).
When service has been completed, it is imperative to verify that all exposed conductive surfaces are properly insulated from supply circuits.
 - Meter impedance should be equivalent to 1500 ohm shunted by 0.15 μ F.
 - Leakage current must not exceed 0.5mA.



- Be sure to test for leakage with the AC plug in both polarities.

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!

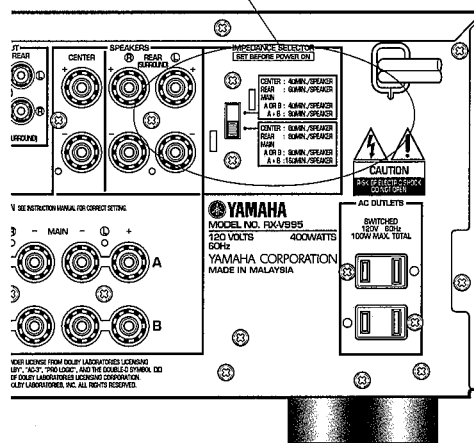
Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

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

WARNING

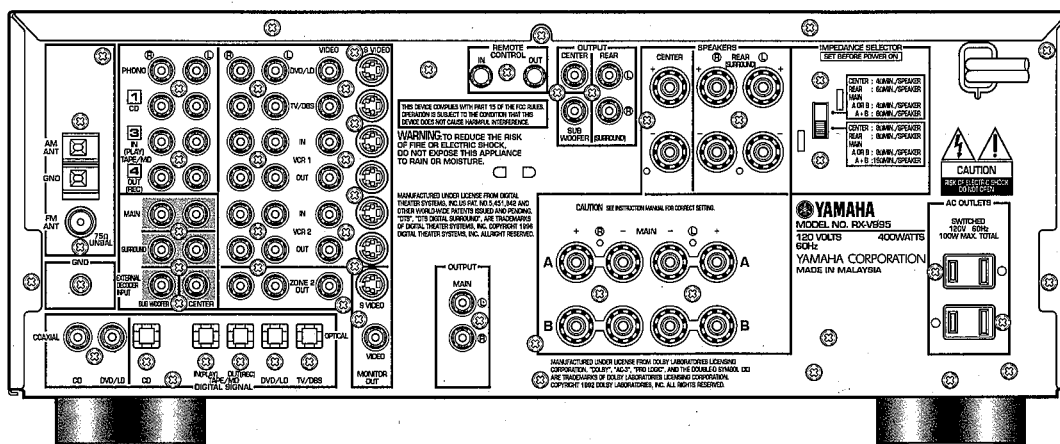
Do not change the IMPEDANCE SELECTOR switch setting while the power to this unit is on, otherwise this unit may be damaged.

IMPEDANCE SELECTOR

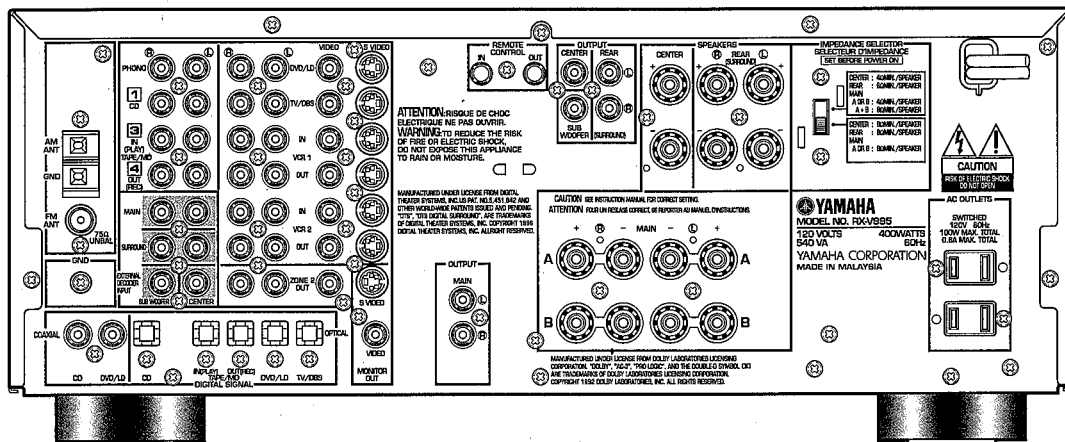


■ REAR PANELS

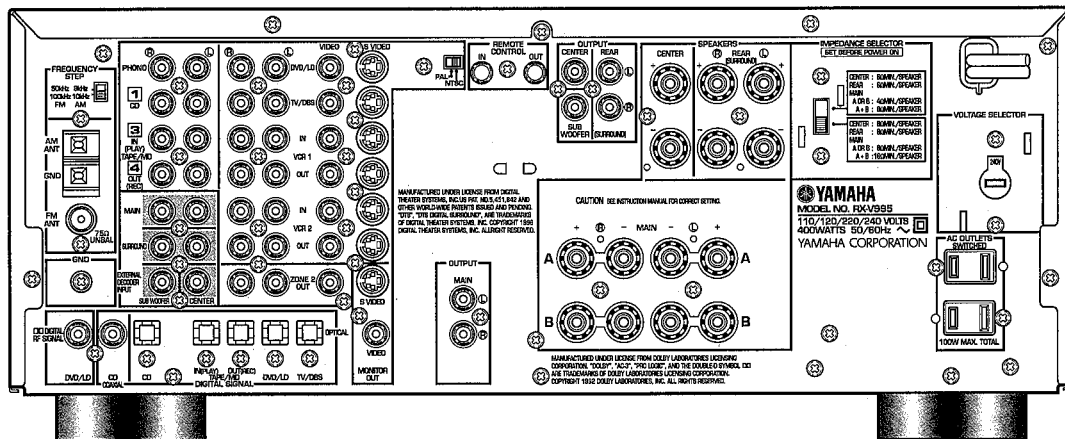
▼ U model



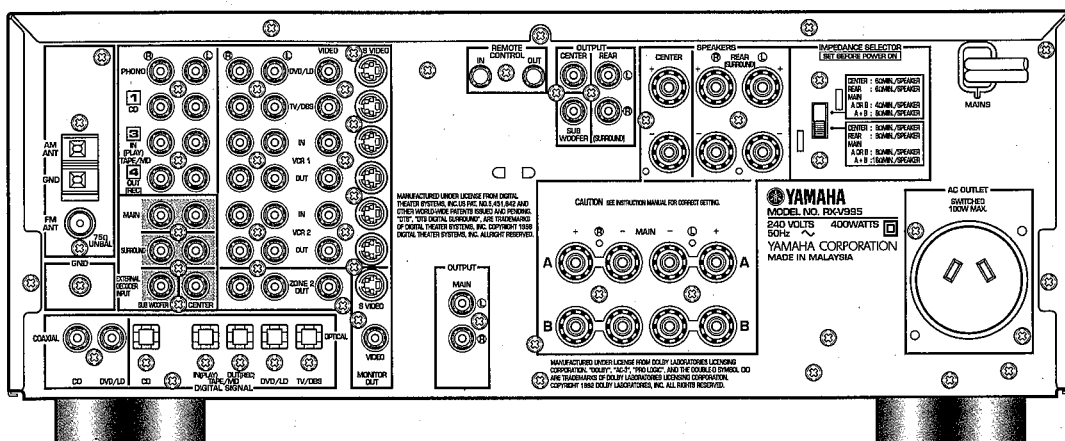
▼ C model



▼ R, T models

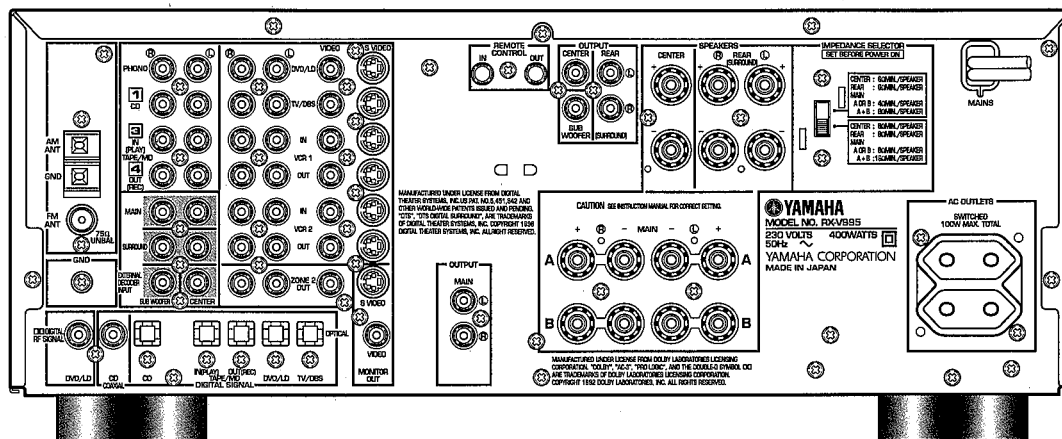


▼ A model



RX-V995

▼ L model



SPECIFICATIONS

AUDIO SECTION

Minimum RMS Output Power per Channel

MAIN, 20Hz to 20kHz, 0.04% THD, 8Ω	100W+100W
CENTER, 20Hz to 20kHz, 0.04% THD, 8Ω	100W
REAR, 20Hz to 20kHz, 0.04% THD, 8Ω	100W+100W

Maximum Power per Channel (R, T models only)

MAIN, 1kHz, EIAJ, 10% THD, 8Ω	135W+135W
CENTER, 1kHz, EIAJ, 10% THD, 8Ω	135W
REAR, 1kHz, EIAJ, 10% THD, 8Ω	135W+135W

Dynamic Power per Channel (U, C, R, T models only)

MAIN, 8/6/4/2Ω	130/160/200/240W
----------------	------------------

Dynamic Headroom (U, C, R, T models only)

8Ω	1.13dB
----	--------

DIN Standard Output Power per Channel (L model only)

MAIN, 1kHz, 0.7% THD, 4Ω	150W
--------------------------	------

IEC Power (L model only)

MAIN, 1kHz, 0.015% THD, 8Ω	105W
----------------------------	------

Power Band Width

MAIN, 0.08% THD, 50W/8Ω	10Hz to 50kHz
-------------------------	---------------

Damping Factor

MAIN, 20Hz to 20kHz, 8Ω	160 or more
-------------------------	-------------

Input Sensitivity/Impedance

PHONO MM	2.5mV/47kΩ
CD, etc	150mV/47kΩ

Maximum Input Signal Level

PHONO MM, 1kHz, 0.05% THD	110mV
CD, etc, (Effect on)	2.2V

Output Level/Impedance

REC OUT	150mV/1.0kΩ
PRE OUT (MAIN)	2.6V/1.1kΩ
SUB WOOFER (EFFECT OFF, MAIN SP : SMALL)	4.0V/1.5kΩ
ZONE 2 OUT	1.0V/1.5kΩ

Headphone Jack Rated Output/Impedance

1kHz	0.5V/440Ω
------	-----------

Frequency Response (20Hz to 20kHz)

CD, etc, MAIN	0±0.5dB
---------------	---------

RIAA Equalization Deviation (20Hz to 20kHz)

PHONO MM	0±0.5dB
----------	---------

Tone Control Characteristics

BASS : Boost/cut	±10dB (50Hz)
Turnover Frequency	350Hz
TREBLE : Boost/cut	±10dB (20kHz)
Turnover Frequency	3.5kHz
Bass Extension	+6dB (50Hz)

Filter Characteristics

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

Total Harmonic Distortion (20Hz to 20kHz)

PHONO MM to REC OUT (3V)	0.01%
CD, etc, (Effect off) to MAIN SP OUT (50W/8Ω)	0.025%

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

PHONO MM, Input Shorted 5mV (Effect off)	86dB
CD, etc, Input Shorted (Effect off)	96dB

Residual Noise (IHF-A-Network)

MAIN, SP OUT	170μV
--------------	-------

Channel Separation (Vol. -30dB, Effect off)

PHONO MM, Input Shorted, 1kHz/10kHz	60dB/55dB
CD, etc, Input 5.1kΩ Shorted, 1kHz/10kHz	60dB/45dB

Gain Tracking Error (0dB to -60dB)

Muting	- ∞
--------	-----

VIDEO SECTION

Video Signal Type

U, C models	NTSC
A, L models	PAL
R, T models	NTSC/PAL

Video Signal Level

S-Video Signal Level	1Vp-p/75Ω
----------------------	-----------

Y	1Vp-p/75Ω
---	-----------

C	0.286Vp-p/75Ω
---	---------------

Maximum Input Level

Signal-to-Noise Ratio	50dB
-----------------------	------

Monitor Output Frequency Response

	5Hz~10MHz, -3dB
--	-----------------

FM SECTION

Tuning Range

U, C models	87.5 to 107.9MHz
A, L models	87.50 to 108.00MHz
R, T models	87.5 to 108.0/87.50 to 108.00MHz

50dB Quieting Sensitivity (IHF, 75 Ω)

U, C, R, T models only	
Mono	1.6 μ V (15.3dBf)
Stereo	23 μ V (38.5dBf)

Usable Sensitivity (DIN, 75 Ω)

A, L models only	
Mono (S/N 26dB)	0.9 μ V
Stereo (S/N 46dB)	28 μ V

Alternate Channel Selectivity (\pm 400Hz)

U, C, R, T models	75dB
-------------------	------

Selectivity (two signals, 40kHz Dev.) (\pm 300Hz)

A, L models	55dB
-------------	------

Signal-to-Noise Ratio

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

Harmonic Distortion

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

Stereo Separation

1kHz	48dB
------	------

Frequency Response

20Hz to 15kHz	0 \pm 1.0dB
---------------	---------------

Output Level

U, C, R, T models	
FM 100% mod. 1kHz	550mV
A, L models	
FM 40kHz Dev. 1kHz	550mV

Antenna Input

75 Ω unbalanced

AM SECTION

Tuning Range

U, C models	530 to 1,710kHz
A, L models	531 to 1,611kHz
R, T models	530 to 1,710/531 to 1,611kHz

Usable Sensitivity

	300 μ V/m
--	---------------

Output Level

AM 30% mod. 1kHz	150mV
------------------	-------

Signal-to-Noise Ratio

	52dB
--	------

Antenna

Loop antenna

SUPERIMPOSING

Input LD, etc.		Output	Superimposing
Terminal	Signal	Monitor connection	
S	O	O	O (On screen)
V	O	—	X
S	O	X	X
V	O	—	O (On screen)
S	O	O	O (On screen)
V	X	—	X
S	O	X	X
V	X	—	O (Blue back)
S	X	—	X
V	O	—	X (On screen)
S	X	—	O (Blue back)
V	X	—	O (Blue back)

S : S video signal
V : Composite video signal
O : YES
X : NO
— : NO CARE

GENERAL

Power Supply

U, C models	AC 120V, 60Hz
A model	AC 240V, 50Hz
L model	AC 230V, 50Hz
R, T models	AC 110/120/220/240V, 50/60Hz

Power Consumption

U model	400W
C model	400W/540VA
A, L, R, T models	400W

Maximum Power Consumption (R, T models only)

750W

AC Outlets

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

Dimensions (W x H x D)

435 x 171 x 391mm

(17-1/8" x 6-3/4" x 15-3/8")

Weight

14.1 kg (31 lbs 1oz)

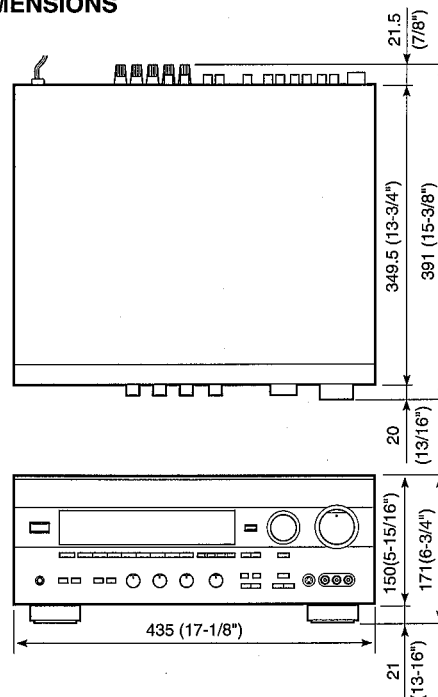
Accessories

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	USA model	L	Singapore model
C	Canadian model	R	General model
A	Australian model	T	Singapore model

DIMENSIONS




Units : mm (inch)

● PARAMETER TABLE

PARAMETER	(P.) INIT. DLY	(P.) ROOM SIZE	LIVENESS	S. DLY	S. INT. DLY			S. ROOM SIZE			S. LIVENESS			REV. TIME	REV. LVL
INPUT SIGNAL					AC-3	DTS		AC-3	2CH	DTS	AC-3	2CH	DTS		
MIN	1ms	0.1	0	15ms	1ms	0ms	1ms	0.1	0.1	0.1	0	0	0	1.0s	0%
MAX	99ms	2.0	10	30ms	49ms	15ms	49ms	2.0	2.0	2.0	10	10	10	5.0s	100%
STEP	1ms	0.1	1	1ms	1ms	1ms	1ms	0.1	0.1	0.1	1	1	1	0.1s	1%
DSP PROGRAM															
CONCERT HALL	44ms	1.0	5			5ms									
CHURCH	95ms					15ms								4.0s	55%
JAZZ CLUB	21ms	1.0	5			5ms									
ROCK CONCERT	16ms	1.0	5			7ms									
DISCO	40ms	1.0	5			12ms									
TV SPORTS	9ms	1.0				8ms	12ms	1.0	1.0	1.0					
MONO MOVIE	49ms	1.0	2			8ms									
MOVIE THEATER1	16ms	1.0		20ms		15ms	2ms	1.0	1.0	1.0					
	15ms	1.0		23ms		15ms	32ms	1.0	1.0	1.0					
MOVIE THEATER2	15ms	1.0		20ms		15ms	12ms	1.0	1.0	1.0					
	15ms	1.0		20ms		15ms	23ms	1.0	1.0	1.0					
DOLBY/DTS SUR.				20ms		5ms									
Normal				20ms		5ms	19ms	1.0	1.0	1.0	4	4	4		
Enhanced				20ms		5ms									

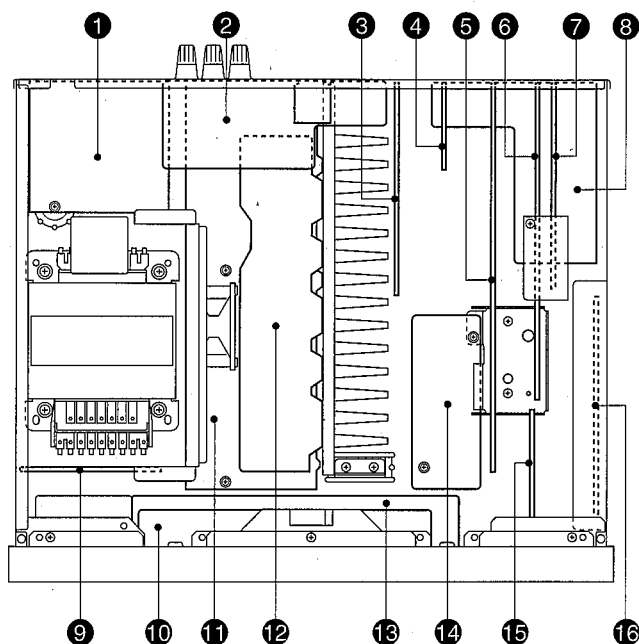
● SET MENU TABLE

No.	SET MENU	PRESET VALUE	SETTING RANGES
1	CENTER SPEAKER	LARGE	LARGE/SMALL/NONE
2	REAR SPEAKER	LARGE	LARGE/SMALL
3	MAIN SPEAKER	LARGE	LARGE/SMALL
4	LFE/BASS OUT	SUBWOOFER	SUBWOOFER/MAIN/BOTH
5	MAIN LEVEL	NORMAL	NORMAL/-10dB
6	DOLBY DIGITAL SET		
	LFE LEVEL	0dB	-20dB — 0dB
7	DOLBY DIGITAL SET		
	DYNAMIC RANGE	MAX	MAX/STD/MIN
8	DTS SET		
	LFE LEVEL	0dB	-10dB — +10dB
9	CENTER DELAY	0ms	0ms — 5ms
10	PARAMETER INITIALIZE	OFF	PROGRAM 1 — 10
11	MEMORY GUARD	OFF	ON/OFF
12	TV/DBS INPUT	AUTO	AUTO/LAST
13	DIMMER	0	-4 — 0

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INTERNAL VIEW



- ① P. C. B. FUNCTION (3)
- ② P. C. B. OPERATION (3)
- ③ P. C. B. VIDEO (1)
- ④ P. C. B. VIDEO (2)
- ⑤ P. C. B. FUNCTION (1)
- ⑥ P. C. B. FUNCTION (2)
- ⑦ P. C. B. TUNER
- ⑧ P. C. B. DIGITAL IN
- ⑨ P. C. B. VIDEO (7)
- ⑩ P. C. B. MAIN (6)
- ⑪ P. C. B. MAIN (1)
- ⑫ P. C. B. MAIN (5)
- ⑬ P. C. B. VIDEO (3)
- ⑭ P. C. B. VIDEO (5)
- ⑮ P. C. B. OPERATION (2)
- ⑯ P. C. B. DSP

DISASSEMBLY PROCEDURES (Remove parts in disassembly order as numbered.)

1. Removal of Top Cover

- a. Remove 4 screws (①), 4 screws (②) and 2 screws (③) in Fig. 1.

2. Removal of Bottom Cover

- a. Remove 6 screws (④) in Fig. 1.

3. Removal of Front Panel

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

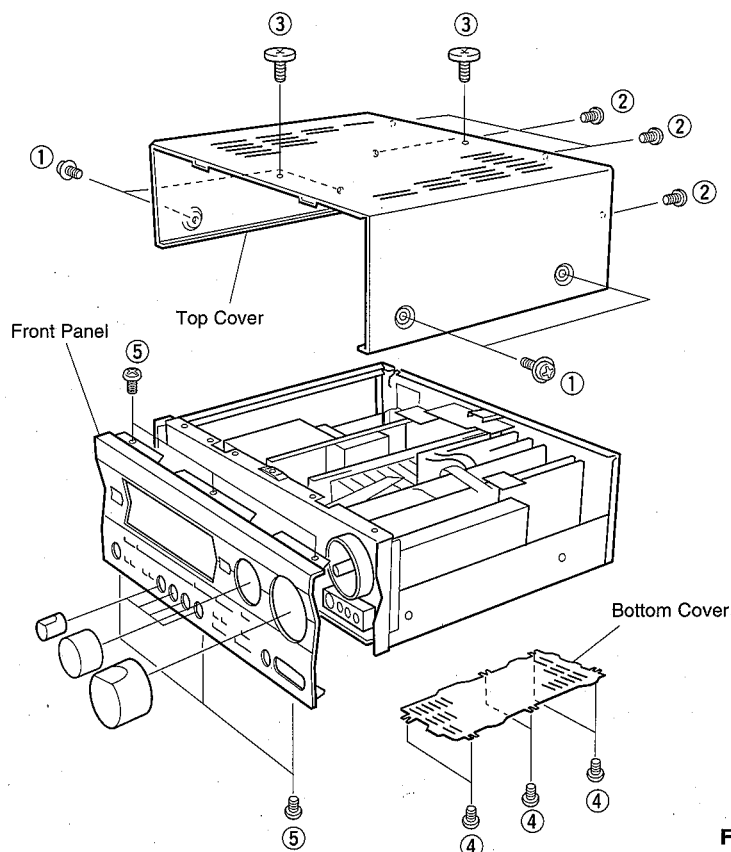


Fig. 1

■ SELF DIAGNOSIS FUNCTION

This product has a built-in self diagnosis function (DIAG) to facilitate inspection, measurement and determination of a faulty item.

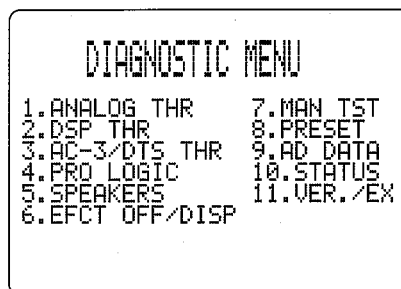
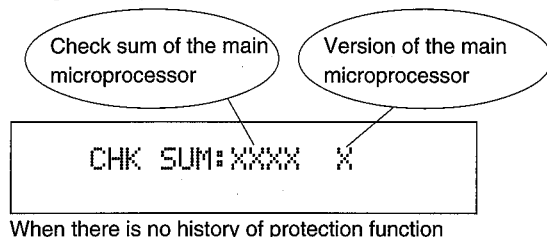
● Starting DIAG

Press the "POWER" (STANDBY/ON) key of the main unit while pressing the "INPUT MODE" key and the "FM/AM" key, and DIAG will start to function.

● Display at the start of DIAG

The diagnostic menu appears on the monitor display. (It remains on display until it's canceled.) On the FL display of the main unit, an opening message (or the history of the protection) appears for 2 seconds before the diagnostic menu No.1 MAIN BYPASS.

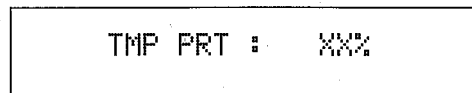
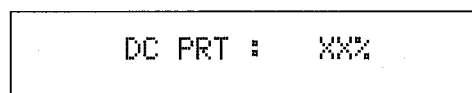
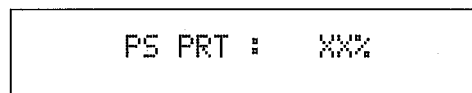
Opening message



If the protection function works after DIAG has been started and the power turns OFF

When the protection function (*1) works, the history of the protection appears on display and the power turns OFF. Repair the faulty parts according to the displayed history.

*1) When an excess current or any other faulty condition is found with the power source, amplifier, etc., the power is forced to turn OFF as a protection function.



I PROTECTION display

(The power turns OFF instantly, display is provided only to show the history.)

Cause: There is an abnormal current flow to the power amplifier.

Supplementary information: As the current of the power transistor is checked in each channel, it is possible to determine the abnormal channel by checking the transistor where a current is detected.

* If a speaker is shorted on purpose while using the DIAG function, I PROTECTION does not appear on display.

The history is stored in memory during the normal use of the unit.

PS PRT display

(The power turns OFF after 0.5 seconds. Display may not be provided, if there is an abnormality with the power supply for the display.)

Cause: There is an abnormality in the power supply section (voltage).

Supplementary information: As the power from following sources is detected, it is possible to determine where an abnormality exists.

Transformer secondary winding
YE X 2(W252/254), BE x 2(W305/307)
Stabilizing power source
±12, ±5V, +10, +5M, VP

DC PRT display (The power turns OFF after about 2 seconds)

Cause: A DC output from the power amplifier is detected in the bad channel.

TMP PRT display

Cause: The temperature of the heat sink in the power amplifier is excessive. When the temperature rises and an abnormality is detected, the power supply will turn OFF.

Besides the above possible causes, the cause may exist in the connector which has come off or around CPU. PS PRT and DC PRT displays include the abnormal A/D value in %. For this value, refer to the DIAG menu No.9 AD DATA CHK (on page 16).

● Protection history

When the protection function works, its history will be stored in memory with a backup. Even when no abnormality is noted while the unit is being serviced, an abnormality which has occurred previously can be defined as long as the backup data has been stored. (For example, with I PROTECTION on display, it is also possible that an abnormality exists in the user's speaker or setting.) The protection history is cleared when DIAG is canceled by selecting "RESERVED" (to initialize the memory) from the setting items of the DIAG menu No.8 PRESET or when the backup data is erased.

● Canceling DIAG

There are two ways to cancel DIAG.

- 1) Turn OFF the power by pressing the "POWER" key of the main unit or the "STANDBY" key of the remote controller.
- 2) Cancel the DIAG function by using the DIAG menu No.11, "EXIT". Then DIAG will end and the normal state will be restored.

CAUTION: When canceling this function, check the DIAG menu No.8 PRESET (for memory initialization inhibit/reserve). (To keep the user memory, be sure to select "INHIBIT" from the No.8 PRESET menu to inhibit initialization before canceling the diagnosis function.)

● Operation procedure of DIAG menu and SUB-MENU

There are No.1 to 11 MENU items and some SUB-MENU items as well.

DIAG menu selection

Main Unit: TUNING UP/DOWN (forward/reverse) key

SUB-MENU selection

Main Unit: PROGRAM UP/DOWN (forward/reverse) key

● Functions during DIAG being set

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

- Input selector, external decoder
- Center / Rear / Sub-woofer level adjustment
- Master volume
- Muting
- Speaker A/B
- Power ON•OFF operation

Settings by the tuner related keys are not accepted.

● Initial settings used to start DIAG function

Following initial settings are used when starting the DIAG function.

When the DIAG function is canceled, the settings before starting DIAG will be restored.

- Input : DVD/LD (external decoder OFF)
- Center /Rear / Sub woofer level: 0dB
- Audio mute: OFF
- Speaker A/B: ON

No. DIAG menu	SUB-MENU
1. ANALOG THR.	MAIN BYPASS DSP 0dB
2. DSP THROUGH	YSS918-SRAM YSS918 DSP FULL BIT
3. AC3/DTS THR.	STATUS (Binary)
4. PRO LOGIC	CENTER LARGE EFFECT OFF
5. SPEAKERS SET	MAIN:SMALL 0dB MAIN:LARGE 0dB MAIN:LARGE -10dB LFE/BASS:MAIN & CENTER:NONE LFE/BASS:MAIN LFE/BASS:SWFR CENTER:NONE CENTER:SMALL & REAR:SMALL FRONT MIX
6. EFFECT OFF DISPLAY CHK	Initial screen (EFFECT OFF) DISPLAY OFF DISPLAY ALL DISPLAY DIMMER CHECKED PATTERN
7. MANUAL TEST	ALL MAIN L CENTER MAIN R REAR R REAR L LFE
8. FACTORY PRESET	INHIBIT (Memory initialization inhibited) RESERVED (Memory initialized)
9. AD DATA CHK	FAN CHECK KEY0, KEY1 KEY2, REC OUT SI, TP PRD, PRV
10. STATUS	SUB CPU status information: (1)(2) Channel status information: (1)(2) SUB CPU Version information: (1)(2) SUB CPU Checksum: (1)(2) BSI information 0: (1)(2) BSI information 1: (1)(2) BSI information 2: (1)(2) BSI information 3: (1)(2) BSI information 4: (1)(2) BSI information 5: (1)(2)
11. VERSION CHECK/ CPU CHECK SUM/ EXIT	MAIN CPU checksum SUB CPU checksum MAIN CPU version SUB CPU version Main CPU port setting information EXIT

Details of DIAG menu

In each menu, "SPEAKERS" is always set to "LARGE", D-RANGE to "MAX", LFE LEVEL to 0dB (-10dB at AC-3) and CENTER DELAY to 0ms unless otherwise specified.

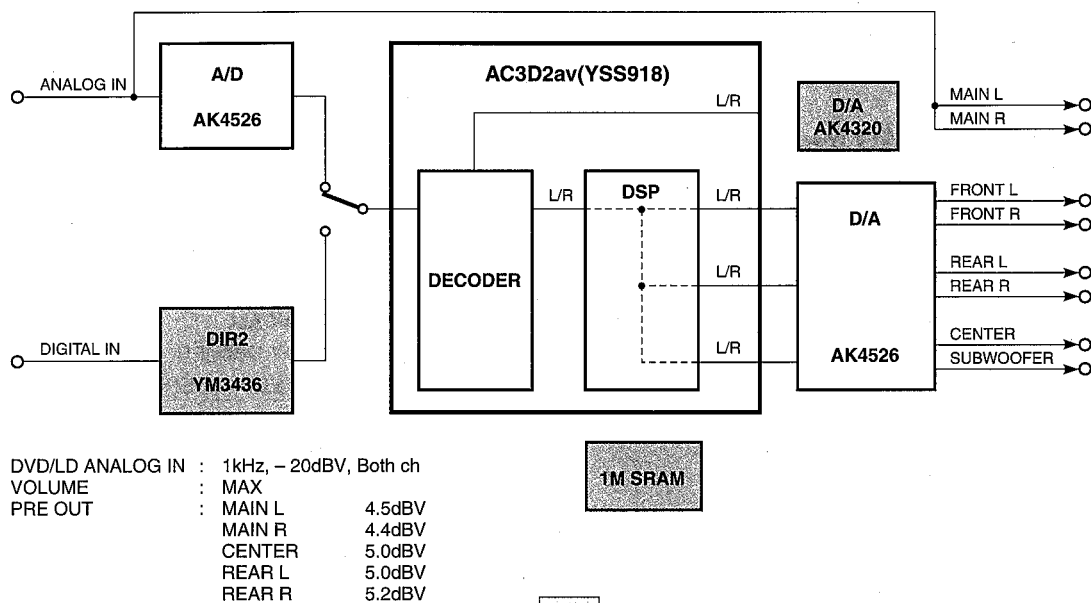
1. ANALOG THR. (Analog through)

The input is fixed to use the analog (A/D) system and has 2 sub-menu items.

1. MAIN BYPASS

MAIN BYPASS

The main L/R signal is output through the analog bypass without passing the DSP section. The main L/R signal passing through the DSP is output through C/LFE, FL/FR and RL/RR.

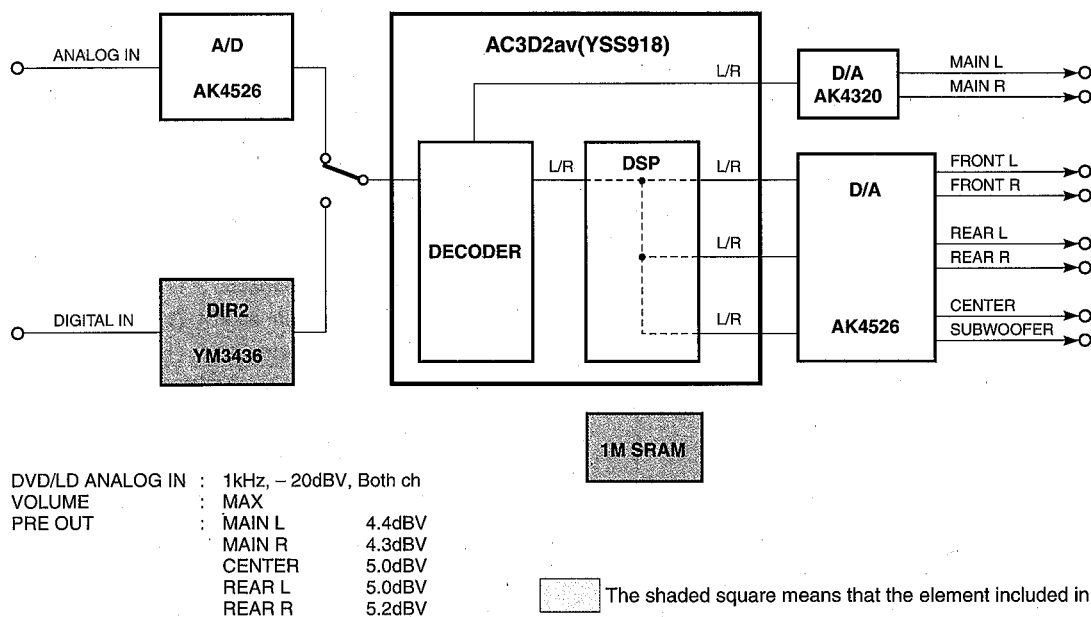


The shaded square means that the element included in it does not operate.

1. DSP 0dB

DSP 0dB

The main L/R, C/LFE, FL/FR, RL/RR signals pass through the DSP section.



The shaded square means that the element included in it does not operate.

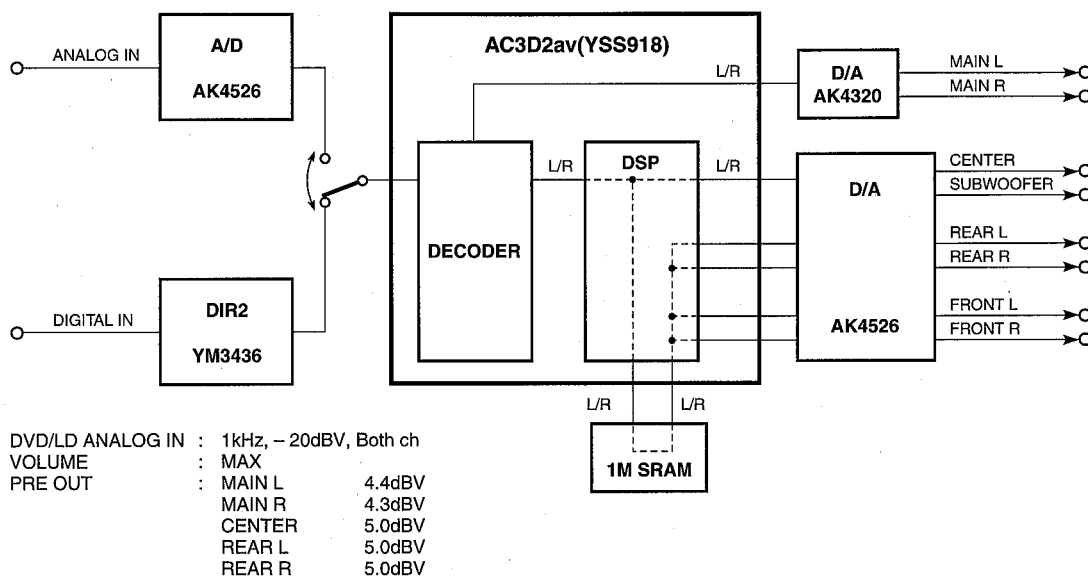
2. DSP THROUGH

The input data is automatically identified and switched in the priority order of AC3 > DTS > PCM AUDIO > ANALOG (A/D) according to the signal detection. There are 3 sub-menu items.

2. YSS918-SRAM

YSS918 - SRAM

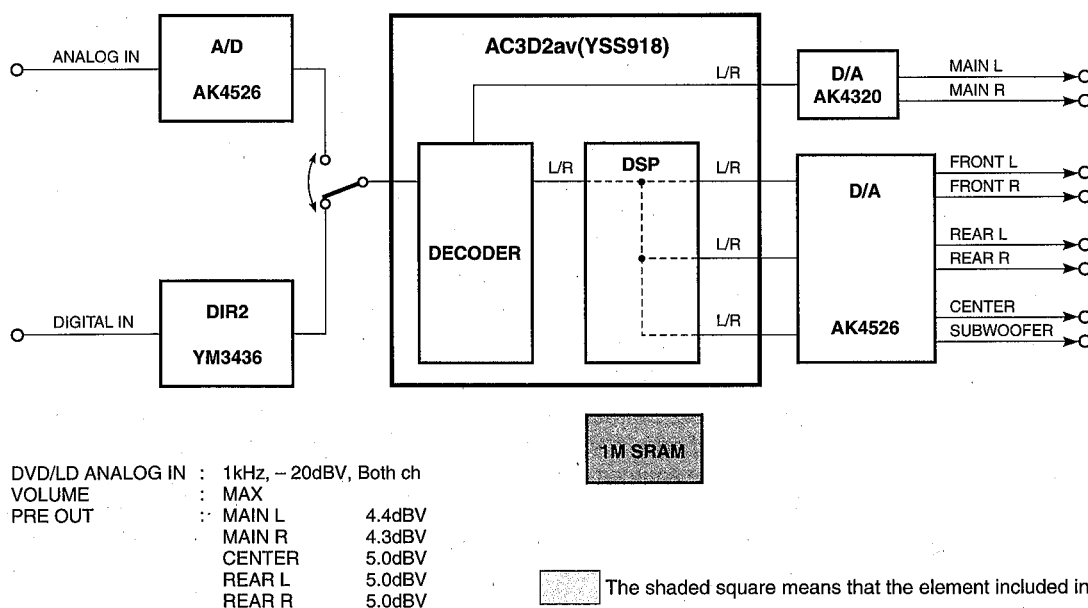
The main L/R signal is sent through AC3D2av into DSP. After passing through SRAM, it is output through all channels. In case of the (L+R)/2 signal (monaural), it passes through SRAM and then output at FL/FR and RL/RR. However, the CENTER (=L)/SWFR(=R) signal undergoes stereo processing. Also, if the signal is inputted into the channel on one side only, a -6dB output is provided.



2. YSS918

YSS918

The main L/R signal is input through AC3D2av to DSP and then output through all channels. SRAM is bypassed.



2.DSP FULL BIT

DSP FULL BIT

The main L/R is input through AC3D2av to DSP and then output through all channels. The head margin is eliminated and the digital data is output in digital full bit.

The same applies as "YSS918" except that the digital data is output in full bit at D/A.

DVD/LD ANALOG IN : 1kHz, -30dBV, Both ch
 VOLUME : MAX
 PRE OUT : MAIN L -5.4dBV
 MAIN R -5.5dBV
 CENTER -1.8dBV
 REAR L 4.2dBV
 REAR R 4.3dBV

Full bit: The digital data is normally output with a head margin of 6dB for each of C, FL/FR and RL/RR channels. In this menu, the head margin is not used and the digital data is output in full bit so as to obtain the A/D and D/A characteristics fully. Note that this means the analog gain after D/A is +6dB for L/R channels. Also, the LFE channel which is normally controlled by LFE MIX LEVEL of the set menu is also output in full bit.

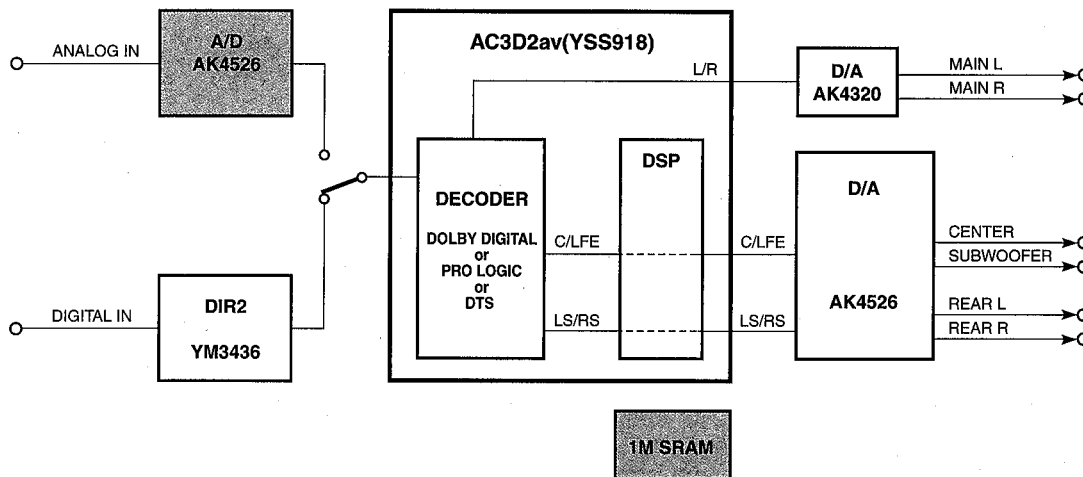
3. AC3/DTS THR.

Only the signal of the digital system is input. The AC3 or DTS signal is decoded and reproduced according to the input source.

3.ST:10001001

STATUS:

The AC-3 signal in each channel is decoded and output through AC3D2av → DSP. The status information of the AC-3 signal is indicated in binary notation on the lower level of the FL display.



AC-3 Status information

The shaded square means that the element included in it does not operate.

bit	7	6	5	4	3	2	1	0	
	1	0	0	0	1	0	0	1	
									When AC3 decode OK: 1
									When DTS decode OK: 1
									When FL red DTS ON: 1
									Other than when PCM linear voice: 1
									Demodulator MUTO (no RF signal)
									IEC958 Digital format error
									IEC958 business equipment bit
									IEC958 digital data bit

As signal identification is executed in normal AC-3 reproduction, the source (DAT, CD-ROM, etc.) without digital data bit of IEC958 cannot be reproduced even when it is AC-3 encoded. On the other hand, as this menu does not execute such digital data bit identification, these sources can be AC-3 reproduced. (To measure characteristics during AC-3 reproduction, use the AC-3 decoded sine wave.) However, note that with the sources that have not been AC-3 or DTS encoded, a decode error occurs and muting is applied. In addition, by displaying the status information indicating the operation of the AC-3 signal on the lower level of the FL display in binary notation, malfunction of the decoder can be detected.

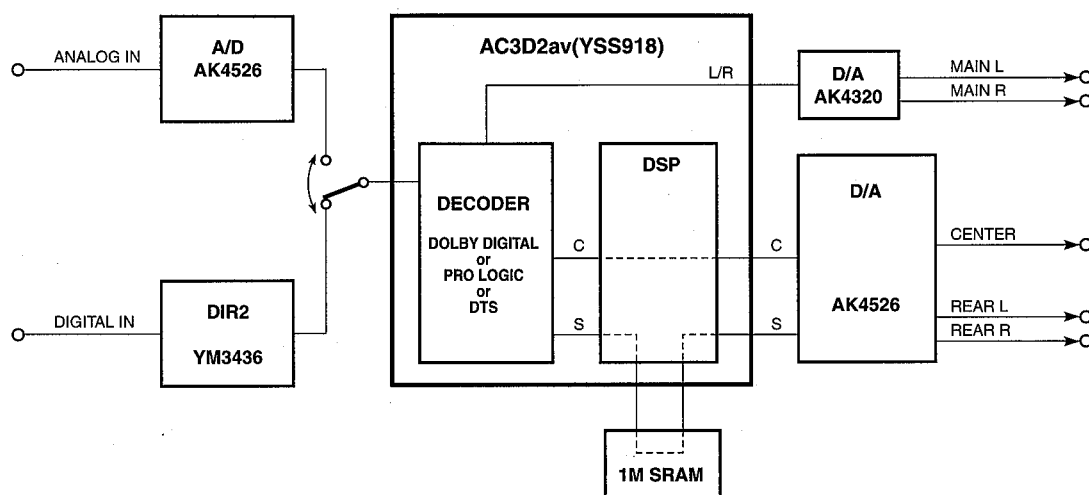
4. PRO LOGIC

The input data is automatically identified in the priority order of AC-3 > PCM > Analog. DTS is inhibited. The sub-menu items include selection of Pro-logic (The auto input balance is OFF) and EFFECT OFF.

4.PRO CNTR:LRG

CENTER LARGE

When the center mode uses the analog, PCM audio or AC-3 2/0 mode, L, R, C, S signals are pro-logic decoded and output. When the AC-3 mode other than 2/0 is used, the pro logic function does not work and the signals are AC-3 reproduced.



DVD/LD ANALOG IN : 1kHz, -20dBV, Both ch
 VOLUME : MAX
 PRE OUT : MAIN L -35.8dBV
 MAIN R -31dBV
 CENTER 7.9dBV
 REAR L -∞dBV (noise only)
 REAR R -∞dBV (noise only)

DVD/LD ANALOG IN : 1kHz, -20dBV, L ch only
 VOLUME : MAX
 PRE OUT : MAIN L 4.3dBV
 MAIN R -46dBV (noise only)
 CENTER -34dBV (noise only)
 REAR L -27dBV (noise only)
 REAR R -27dBV (noise only)

4.PRO EFCT:OFF

EFFECT OFF

The L/R signal is output through ANALOG MAIN BYPASS.

5. SPEAKERS SET

The input signal is automatically identified in the priority order of AC-3 > DTS > PCM > Analog. The input L/R signal is output through the specified channels according to the sub-menu.

5.MAIN:SML 0dB

There are 10 sub-menu items.

The signal output from the DSP section is normally in the EFFECT OFF state in the menus from 1 to 4. In the menus after that, the same signal as in the menu of 2. DSP THROUGH: YSS918. The analog switch settings in each sub-menu are as shown in the following table.

Sub menu		CENTER	REAR	MAIN SP	MAIN LVL	LFE/BASS	Output
1	MAIN : SMALL 0dB	LARGE	LARGE	SMALL	0dB	SWFR	MAIN L/R
2	MAIN : LARGE 0dB	LARGE	LARGE	LARGE	0dB	SWFR	MAIN L/R
3	MAIN : LARGE -10	LARGE	LARGE	LARGE	-10dB	SWFR	MAIN L/R
4	B : M & C : NONE	NONE	LARGE	LARGE	0dB	MAIN	MAIN L/R
5	BASS : MAIN	LARGE	LARGE	LARGE	0dB	MAIN	LFE → L/R
6	BASS : SW	LARGE	LARGE	LARGE	0dB	SWFR	LFE → SWFR
7	CENTER : NONE	NONE	LARGE	LARGE	0dB	SWFR	CENTER → L/R
8	C : SML & R : SML	SMALL	SMALL	LARGE	0dB	SWFR	CENTER/REAR
9	FRONT MIX	LARGE	LARGE	LARGE	0dB	SWFR	FRONT → L/R

* In Sub-menu 1, the lower range content of the MAIN L/R is output at SW as well.

* In Sub-menu 8, the lower range content of LFE, CENTER and REAR is output at SW as well.

LARGE : Signals are output in all bandwidths.

SMALL : Only signals lower than 90Hz are mixed in the channel specified by LFE/BASS.

NONE : The center contents are distributed to the MAIN L/R channels after -3dB.

M : MAIN

C : CENTER

R : REAR

SW : SUBWOOFER

B : BASS

N : NONE

Output : The signal before MASTER VOLUME is indicated.

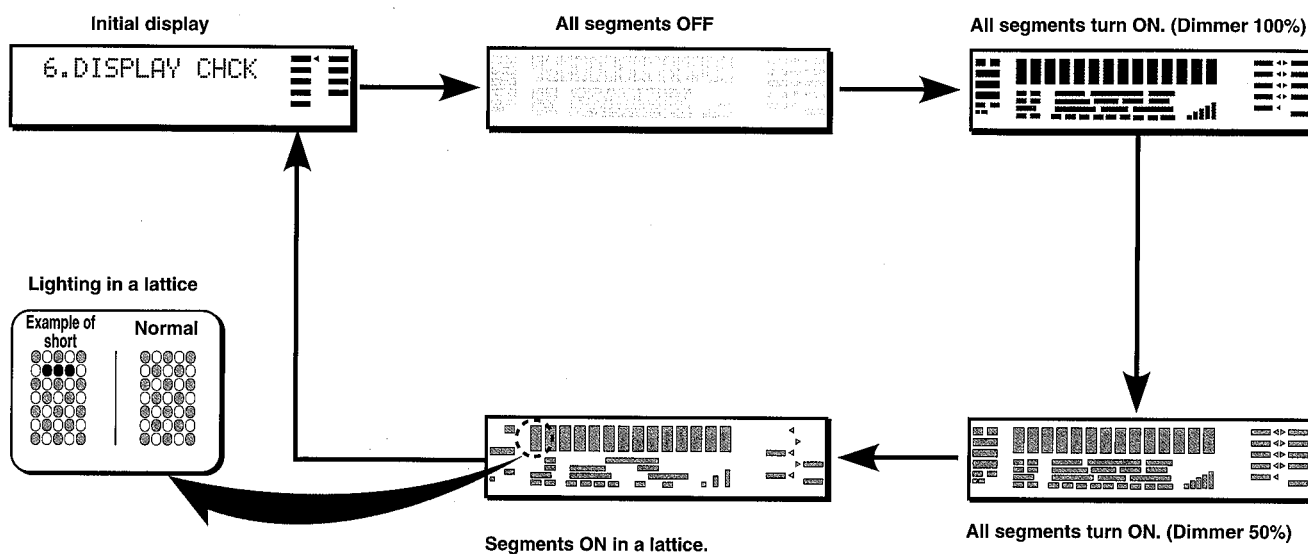
6. DISPLAY CHK

This is a program to check lighting of the FL display section.

The FL display changes as shown below according to operation of the sub-menu.

The input is fixed to use the analog system. The signals are processed in the same way as EFFECT OFF of No.4. (The L/R signal is output through ANALOG MAIN BYPASS.)

As for internal/external synchronization selection of the superimpose signals, forced external synchronization is selected by the microprocessor control.



Segment conditions of the FL driver (IC901) and the FL tube are checked by turning ON and OFF all segments. Next, the operation of the FL driver is checked by using the dimmer control. Then a short between segments next to each other is checked by turning ON and OFF all segments alternately (in a lattice). (In the above example, the center segment in the second row from the top is shorted.)

7. MANUAL TEST

The test noise is output by the noise generator with a built-in DSP through the channels specified by the sub-menu.

7.TEST ALL

- ALL** Noise is output through all channels.
- MAIN L** Noise is output through the MAIN L channel.
- CENTER** Noise is output through the CENTER channel.
- MAIN R** Noise is output through the MAIN R channel.
- REAR R** Noise is output through the REAR R channel.
- REAR L** Noise is output through the REAR L channel.
- LFE** Noise is output through the LFE (sub-woofer) channel.

8. FACTORY PRESET

This menu reserves and inhibits initialization of the back-up RAM (parameter, set menu contents, etc. for the sound field program). The input signals are automatically identified in the priority order of AC-3 > PCM > Analog. The signals are processed in the same way as EFFECT OFF of No.4.

8.PRESET INHI

INHIBIT (Initialization inhibited)

RAM initialization is not executed. Select INHIBIT to protect the values set by the user.

8.PRESET RSRVD

RESERVED

Initialization of the back-up RAM is reserved and it is executed when the power is turned ON after canceling DIAG. RESERVED should be selected when shipping out of the factory or resetting RAM.

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

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

● PRESET STATIONS

STATION		FM FACTORY PRESET DATA (MHz)			STATION		AM FACTORY PRESET DATA (kHz)	
PAGE	NO.	U, C, R, T	R, T, L, A	J	PAGE	NO.	U, C, R, T	R, T, L, A, J
A/C/E	1	87.5	87.5	76.0	B/D	1	630	630
	2	90.1	90.1	83.0		2	1080	1080
	3	95.1	95.1	84.0		3	1440	1440
	4	98.1	98.1	86.0		4	530	531
	5	107.9	108.0	90.0		5	1710	1611
	6	88.1	88.1	78.0		6	900	900
	7	106.1	106.1	88.0		7	1350	1350
	8	107.9	108.0	82.1		8	1400	1404

9. AD DATA CHK

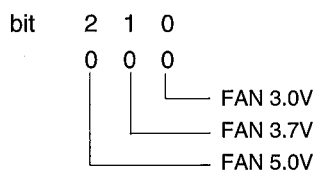
The A/D conversion value of the main CPU (IC3 of the function circuit board) detecting the REC OUT selector, the main unit key, protection, etc. is displayed in % by using the sub-menu. (5V as 100%).

While K0/K1/K2/REC pages are on display, the values of all the keys are detected. This prevents the keys of the main unit from being operated. To cancel this menu, turn the input selector of the main unit, and the next sub-menu will appear. Return to the input data being measured after cancellation. The signal process remains in the state before execution of this menu.

9.AD CHECK:000

FAN control based on detected temperature

With the voltage value detected from the temperature detection circuit read as a temperature data by the A/D function of the microprocessor, the FAN speed is controlled in 3 levels based on that data.



When there is drive history record : 1

* Selecting "RESERVED" from the Diag menu No.8 and using factory presetting will clear the history.

9.K0:100K1:000

Detection of KEY scanning and REC OUT

K0/K1/K2 : Panel keys of main unit (10% step)

REC : Value at REC OUT position (10% step)

9.K2:100RE: 50

Standard value of KEY (main unit panel key)

K0	Standard value
TUNING UP	0
TUNING DOWN	10
FM/AM	20
TUNING MODE	30
EDIT	40
MEMORY	50
SPEAKERS B	60
SPEAKERS A	70
—	80
KEY OFF state	100

K1	Standard value
A/B/C/D/E	0
1	10
2	20
3	30
4	40
5	50
6	60
7	70
8	80
KEY OFF state	100

K2	Standard value
EXT. DECODER	0
INPUT MODE	10
EFFECT	20
PROGRAM UP	30
PROGRAM DOWN	40
+	50
—	60
SET MENU	70
LEVEL	80
KEY OFF state	100

Standard value of REC OUT position

REC OUT	Standard value
TAPE/MD	90
PHONO	80
TUNER	70
CD	60
SOURCE	50
DVD/LD	40
TV/DBS	30
VIDEO AUX	20
VCR 1	10
VCR 2	0

- REC and KEY A/Ds fail to operate properly if they are $\pm 4\%$ off from the standard value. In this case, check the constant of the partial pressure resistor, soldering condition, etc.

9.SI: 0TP: 28

Detection of tuner sensitivity and temperature

SI : Signal sensitivity of tuner

TP : Detection of heat sink temperature (Normal values 6 ~ 40)

- When TP becomes less than 5%, the protection function works to turn off the power. When it exceeds 40%, it is possible that there is an abnormality in the temperature detection system.

9.DC: 7PS: 10

Detection of protection

PRD : Value of amplifier DC detection (Normal value 1 ~ 13)

PRV : Value of power supply voltage (Normal value 5 ~ 15)

Numerical values are examples for reference.

- When the PRD/PRV value becomes abnormal, the protection function works to turn off the power.

10. STATUS FROM SUB CPU

Using this menu, the status data from the sub-microprocessor is displayed in the hexadecimal notation.

During signal processing, the status before execution of this menu is maintained.

As the input mode is fixed to analog in DIAG MENU No.9 before execution, operating the keys on the main unit only will fix this menu to the analog mode.

To change the input mode from analog to digital, use the following procedure.

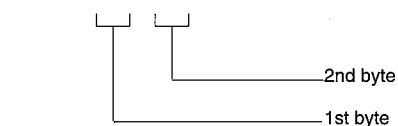
- 1) Select one of DIAG MENU No. from 2 to 5, and enter a digital signal.
- 2) Pressing TAPE PLAY key (7A-00) on the remote controller, select MENU No.10.
Then the input mode is fixed to digital.)
- 3) Using PROGRAM UP/DOWN keys on the main unit, select the sub-menu.
(The digital status data can be checked.)

There are 20 SUB-MENU items.

Operating SUB-MENU causes the following status data to be displayed in the hexadecimal notation.

10.CPU/1 00 00

CPU/1 : Indicates the information communicated between microprocessors.



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

Indicate	bit			
	3	2	1	0
	7	6	5	4
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

1st byte

bit 7	MUTE request		
bit 6	fs	000B : Analog	001B : 32kHz
bit 5		010B : 44.1kHz	011B : 48kHz
bit 4		Others : Undefined	
bit 3	acmod	0000B : 1+1	0001B : 1/0
bit 2		0010B : 2/0	0011B : 3/0
bit 1		0100B : 2/1	0101B : 3/1
bit 0		0110B : 2/2	0111B : 3/2 1000B : 7.1

In the case of acomod 1000B or more, the DSP section is muted at DTS 7.1ch signal.

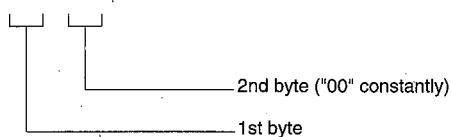
2nd byte

bit 7	AC3 DECODE OK
bit 6	DTS DECODE OK
bit 5	History data of FL red DTS (flashing & lighting)
bit 4	"1" other than PCM linear sound
bit 3	DEM MUTE (no RF signal)
bit 2	IEC958 digital format error
bit 1	IEC958 business equipment bit
bit 0	IEC958 digital data bit

IEC958 : This standard is used to identify what type of signal the PCM bit stream is.

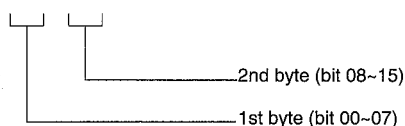
A digital format error means that the format is digital but the sampling frequency is undefined (not 44.1k, 32k or 48k). As operation of each device at an off-specification frequency cannot be assured, the sub-microprocessor handles it as forced analog (even when detected as "decode OK", it is ignored) and selects the signal from the analog input terminal. Thus, bits 4 to 6 in the upper byte transmits 000B (analog) signal to the main microprocessor as they should and the main microprocessor operates seemingly in the same way as in the digital unlock state.

10.CPU/2 00 00

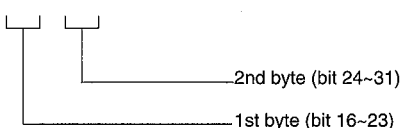
CPU/2 : Indicates the information communicated between microprocessors.**1st byte**

bit 7	AC3 KARAOKE
bit 6	DIR2 LOCKN
bit 5	DIR2 ERR
bit 4	AC3D MUTE
bit 3	On-board write mode
bit 2	Always "0"
bit 1	DSP is AC3D2. (DTS present)
bit 0	RF DEM present

10.CHS/1 00 00

CHS/1 : Indicates the channel status (bit 00~15) of IEC958 obtained from DIR2 by using 1st and 2nd bytes.

10.CHS/2 00 00

CHS/2 : Indicates the channel status (bit 16~31) of IEC958 obtained from DIR2 by using 1st and 2nd bytes.

10.VER/1 00 00

VER/ (1)(2) : Version information of sub-CPU (ASCII code 4 bytes)

10.SUM/1 00 00

SUM/ (1)(2) : Checksum in program area of sub-microprocessor (hexadecimal ASCII code 4 bytes)

10.BI0/1 00 00

BI0/ (1)(2) : Indicates the bit stream information included in AC-3/DTS signal in order starting from the 1st byte.

10.BI1/1 00 00

BI 1~5/ (1)(2) : Indicates the bit stream information included in AC-3 signal in order starting from the 5th byte.

10.BI5/2 00 00

11. CPU CHECK SUM/CPU VERSION/PORT INFO/EXIT

This menu indicates the checksum of the main / sub microprocessor, the software version and interchange version of the main / sub microprocessor and the port setting conditions of the main microprocessor. The signals are processed in the same way as EFFECT OFF of No.4. The self-diagnosis function is completed by using the sub-menu and the normal operation is restored.

When replacing the microprocessor, be sure to check its compatibility. Depending on compatibility of the communication format, the replacing microprocessor may not be suitable. Use of a microprocessor whose communication format is not compatible will result in failure in communication between microprocessors.

11.M-SM:824E A

Checksum of MAIN microprocessor

Checksum of MAIN microprocessor

Software version of MAIN microprocessor

11.S-SM:CB96 C

Checksum of SUB microprocessor

Checksum of sub microprocessor

Software version of sub microprocessor

Checksum : The total of the codes in the entire program added by 1M bit at 1 octet intervals and expressed as a 4-figure hexadecimal data (For the range including no code description or codes other than ROM, 0xff is added.)

11.M-VER:A01B

Version of MAIN microprocessor

11.S-VER:C05B

Version of SUB microprocessor

X X X B

Software version of microprocessor (3 figures of alphabets and numbers)

Compatibility version of microprocessor (1 alphabet)

Software version and compatibility version of main / sub microprocessors

M: Indicates the main microprocessor (IC3 of function circuit board)

S: Indicates the sub microprocessor (IC4 of DSP circuit board)

The alphabet at the end indicates compatibility of the communication format between main/sub microprocessors. If the alphabet is the same, the communication format of the microprocessor is compatible. If the end alphabets differ, the microprocessor will not operate properly.

11.P:10000000

Port settings of main microprocessor

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

- FREQUENCY STEP switch (Note 1)
- ZONE2 present (1) / absent (0)
- Tuner mode 0 (Note 2)
- Tuner mode 1 (Note 2)
- VIDEO format : PAL (1) / NTSC (0)
- RDS present (1) / absent (0)
- Model type 0 (Note 3)
- Model type 1 (Note 3)

(Note 1)

FREQUENCY STEP (R only)

0	AM : 530-1710kHz(10kHz step)	FM : 87.5-108.0MHz(100kHz step)
1	AM : 531-1611kHz(9kHz step)	FM : 87.5-108.0MHz(50kHz step)

(Note 2)

Tuner mode 1	Tuner mode 0	Reception frequency		
0	0	AM : 531-1611kHz(9kHz step)	FM : 76.0-90.0MHz(100kHz step)	J
0	1	AM : 530-1710kHz(10kHz step)	FM : 87.5-107.9MHz(200kHz step)	U, C
1	0	AM : 531-1611kHz(9kHz step)	FM : 87.5-108.0MHz(50kHz step)	A, L
1	1	As set by FREQUENCY STEP switch		
				R, T

(Note 3)

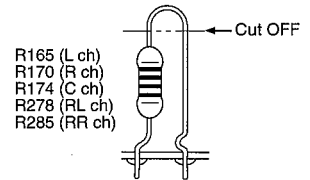
Model type 1	Model type 0	Model name
0	0	RX-V2095
0	1	DSP-A2
1	0	RX-V995
1	1	RX-V795

■ AMP CHECK

● Confirmation of Idling Current

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

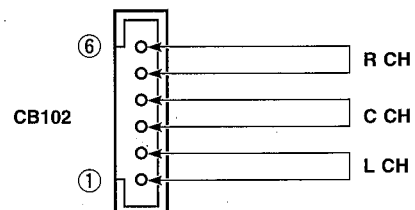
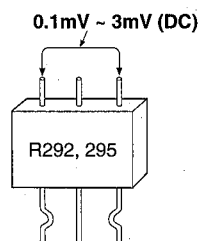
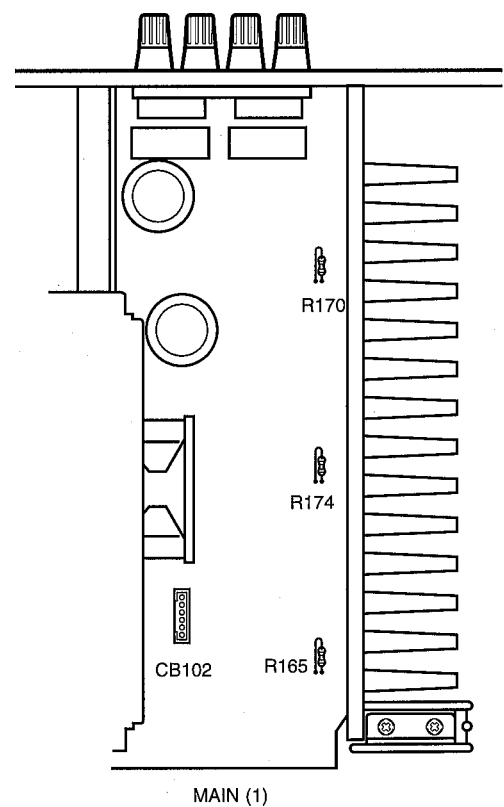
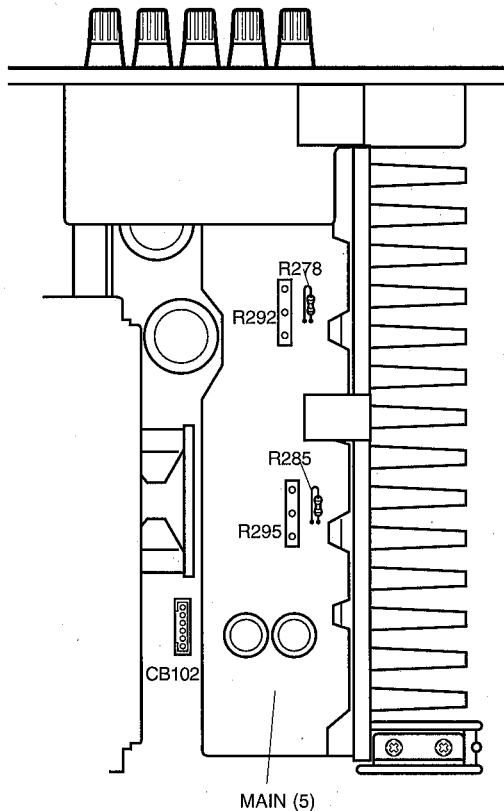
Item	Test Point	Rating (DC)	Note
MAIN L	Pin 1 & 2 of CB102	0.1mV~3mV	If the measured voltage exceeds 3.1mV, cut the lead wire of R165(L ch), R170(R ch), R174(C ch), R278(RL ch) or R285(RR ch) and then check again if each measured value satisfies the rating.
MAIN R	Pin 3 & 4 of CB102		
CENTER	Pin 5 & 6 of CB102		
REAR L	R292		
REAR R	R295		



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

Note)

- If R165(L ch), R170(R ch), R174(C ch), R278(RL ch) or R285(RR ch) have already been cut off and idling current does not flow, reconnect R165(820Ω), R170(820Ω), R174(820Ω), R278(820Ω) or R285(820Ω).
- Q112, Q114, Q116, Q257 and Q260 are transistors for temperature correction. Apply silicone grease to the contact surface with the heat sink.

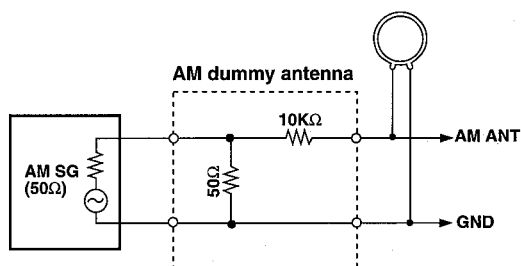
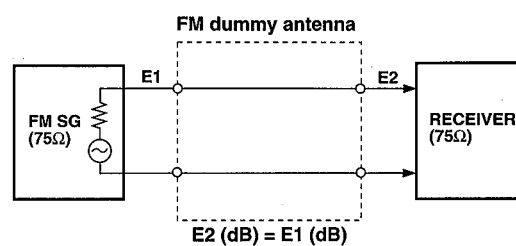
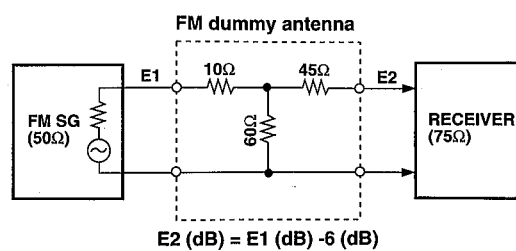


■ TUNER ADJUSTMENTS

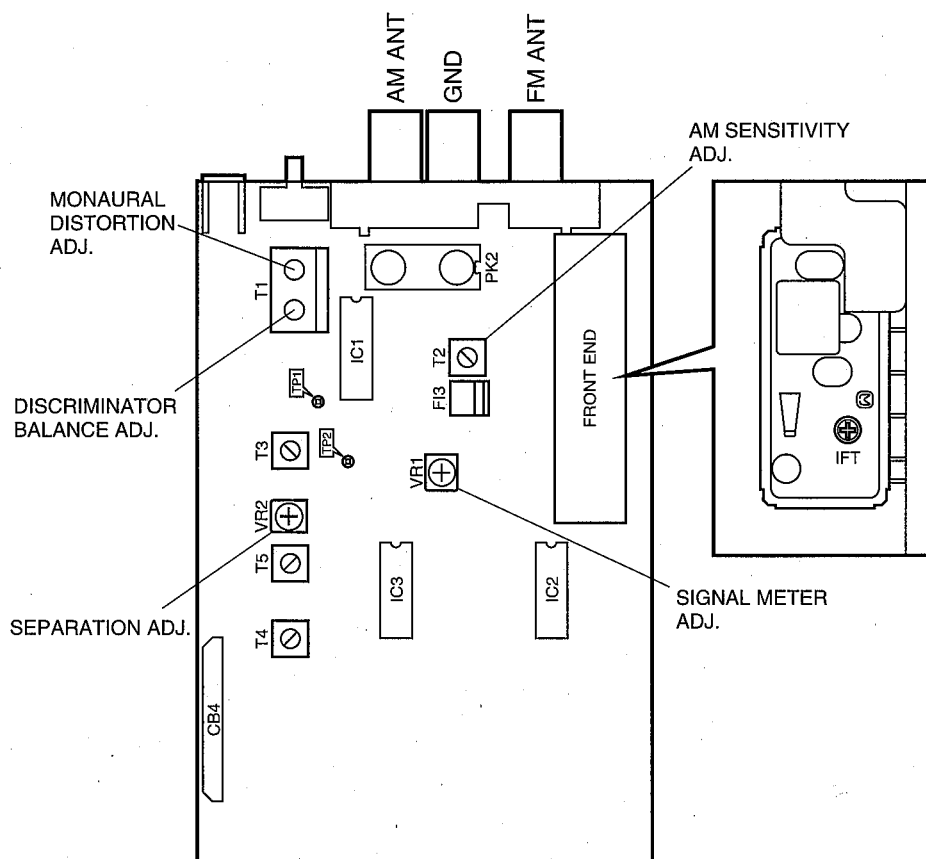
● Measuring Instruments

FM signal generator (FM SG)
 Stereo signal generator (SSG)
 AM signal generator (AM SG)
 Distortion meter (DIST. M)
 AC voltmeter (ACVM)
 DC voltmeter (DCVM)
 Oscilloscope
 Low pass filter (YLF-15, $f_c=15\text{kHz}$)
 Oscillator

● Dummy antenna



● Test point



FM Adjustment

● Before Adjustment

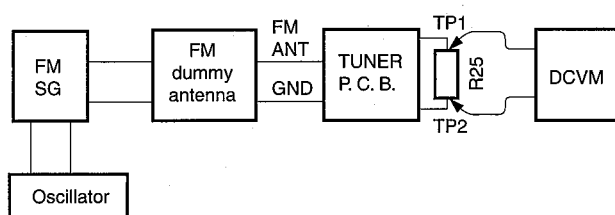
- 1) For dB, $1\mu V=0dB\mu$
Example : $60dB\mu=1mV$
- 2) 100% modulation means that the frequency deviation is $\pm 75kHz$.

- 3) Install the Matching Transformer and connect FM SG.
- 4) Set each switch to the following position unless otherwise specified.

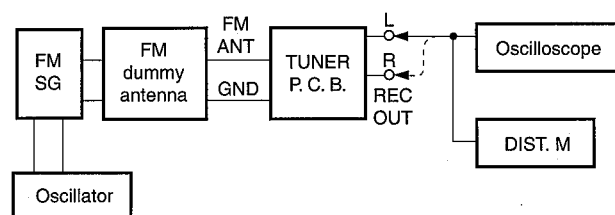
INPUT SELECTOR TUNER
 TUNING MODE AUTO

● Connection diagram (Measuring instruments)

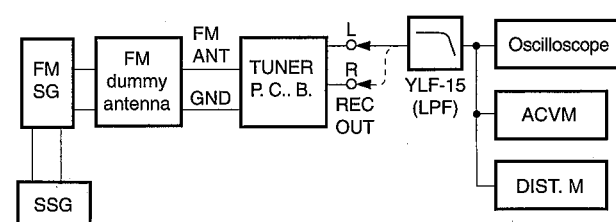
1) Discriminator balance adjustment



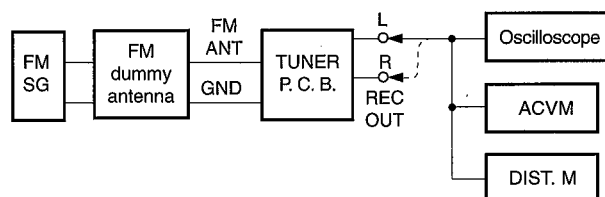
2) Monaural distortion adjustment



3) Stereo distortion adjustment/separation 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 (75Ω) 98.1MHz ** 70dBμ MONO 100Hz 100% modulation	98.1MHz * (A-4)	T1 (IC side core)	Both ends of R25 (Between TP1 and TP2)	DC 0V±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 (IC side core)	Both ends of R25 (Between TP1 and TP2)	DC 0V±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 (to 0.25% or less).
5	Verification of discriminator balance	Same as Step 1.	98.1MHz * (A-4)	T1 (IC side core)	Both ends of R25 (Between TP1 and TP2)	DC 0V±50mV

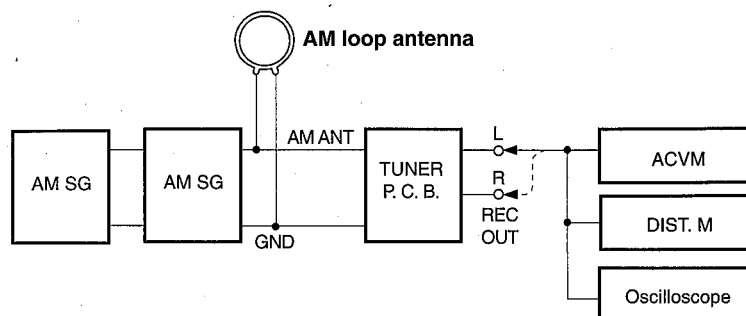
* : Execution of FACTORY PRESET (Refer to page 15.) will facilitate setting reception frequency for adjustment.

** Must be 98.1MHz \pm 5kHz

Step	Adjustment item	Signal (ANT IN)	Reception frequency	Adjusted 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 DC voltage 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	0.4% or less
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	1% or less • STEREO indicator should light.
9	Verification of sensitivity	FM ANT (75Ω) 88.1MHz 98.1MHz 106.1MHz MONO 1kHz 100% modulation	88.1MHz * (A-6) 98.1MHz * (A-4) 106.1MHz * (A-7)		ANT (75Ω)	1) Set the tuning mode to MAN'L MONO. (Muting OFF) 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 5dBμ or less. (A, L only : 7dBμ 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. 35dB or more
11	Adjustment of Signal meter	FM ANT (75Ω) 98.1MHz 45dBμ MONO 1kHz 30% modulation	98.1MHz * (A-4)	VR1		Adjust so that all segments light.
		-10dBμ or less				Check to ensure that signal meters turn OFF.
12	Verification of auto tuning	FM ANT (75Ω) 98.1MHz 26dBμ Stereo L or R 1kHz, 30% modulation	98.1MHz			• 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 15.) will facilitate setting reception frequency for adjustment.

** Must be 98.1MHz ± 5kHz

AM Adjustment (This should be done after FM adjustment.)
● Connection Diagram (Measuring instruments)
1) Adjustment of sensitivity


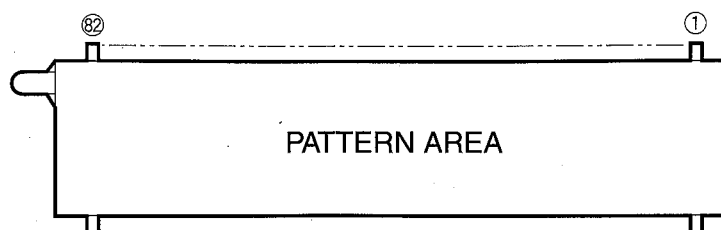
See page 22 for TP locations & adjustment points.

Step	Adjustment item	Signal (ANT IN)	Reception frequency	Adjustment point	Test point	Rating
1	Adjustment of sensitivity (1440Hz)	AM ANT 1440kHz 50dB μ 1kHz 30% modulation	1440kHz * (B-3)	T2	REC OUT	Audio output should be maximized.
2	Verification of sensitivity (630kHz)	AM ANT 630kHz 50dB μ 1kHz 30% modulation	630kHz * (B-1)	T2	REC OUT	Audio output should be maximized. Repeat the Step 1 and 2.
3	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 54dB μ or less.
4	Verification of auto tuning	AM ANT 60dB μ				Auto reception should be available when the tuning key is moved UP and DOWN.

* : Execution of FACTORY PRESET (Refer to page 15.) will facilitate setting reception frequency for adjustment.

■ DISPLAY DATA (V2573800)

● V901 : 16-BT-60GK



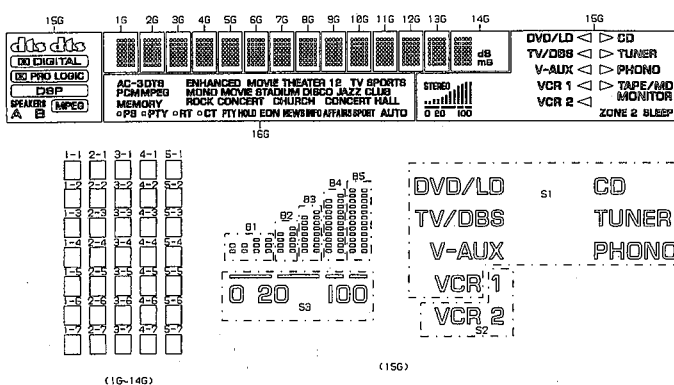
● PIN CONNECTION

[illegible]

PIN NO.	821	810	809	778	777	776	775	774	773	772	771	768	766	765	764	763	762	761	759	757	755	754	753	752	751
CONNECTION	F22	F20	F19	N20	N19	N18	P23	P22	P21	P20	P19	N16	F14	F13	N12	P13	P12	P11	P10	N09	N08	P07	P06	P05	P04

Note 1) F1, F2 Filament 3) NC No Connection 5) 1G~16G Grid
2) NP No Pin 4) P1~P37 Datum Line 6) IC Internal connection

● GRID ASSIGNMENT



● ANODE CONNECTION

	16G	15G	14G	13G-16
P1	AC-3	DTS (LEFT)	1-1	1-1
P2	DTS	DTS (RIGHT)	2-1	2-1
P3	PCM	DD DIGITAL	3-1	3-1
P4	MPEG	DD PRO LOGIC	4-1	4-1
P5	ENHANCED	DBP	5-1	5-1
P6	MOVIE THEATER	MPEG	1-2	1-2
P7	1	SPEAKERS	2-2	2-2
P8	2	A	3-2	3-2
P9	TV SPORTS	B	4-2	4-2
P10	MONO MOVIE	(TAPE/MD)	5-2	5-2
P11	STADIUM	(PHONE)	1-3	1-3
P12	DISCO	(TUNER)	2-3	2-3
P13	JAZZ CLUB	(CD)	3-3	3-3
P14	ROCK CONCERT	(DVD-LD)	4-3	4-3
P15	CHURCH	(TV-OBS)	5-3	5-3
P16	CONCERT HALL	(V-AUX)	1-4	1-4
P17	-	(VCR1)	2-4	2-4
P18	-	(VCR2)	3-4	3-4
P19	-	S1	4-4	4-4
P20	MEMORY	S2	5-4	5-4
P21	□ (PS)	TAPE/MD	1-5	1-5
P22	□ PS	MONITOR	2-5	2-5
P23	□ (PTY)	ZONE 2	3-5	3-5
P24	□ PTY	SLEEP	4-5	4-5
P25	□ (RT)	-	5-5	5-5
P26	□ RT	-	1-6	1-6
P27	□ (CT)	-	2-6	2-6
P28	□ CT	-	3-6	3-6
P29	PTY HOLD	STEREO	4-6	4-6
P30	EON	B1	5-6	5-6
P31	NEWS	B2	1-7	1-7
P32	INFO	B3	2-7	2-7
P33	AFFAIRS	B4	3-7	3-7
P34	SPORT	B5	4-7	4-7
P35	AUTO	S3	5-7	5-7
P36	-	-	B6	-
P37	-	-	MS	-

IC DATA

IC3 : HD64F3337YF16 (P.C.B. FUNCTION)
8 bit μ -COM (Main CPU)

No.	Pin Name	Function	I/O	Detailed Function	Power On	Power Off	Backup
1	/RES	/RES	---	CPU Reset	---	---	---
2	XTAL	XTAL	---	Oscillator : 8MHz	---	---	---
3	EXTAL	EXTAL	---	Oscillator : 8MHz	---	---	---
4	MD1	MD1	---	Mode Set 1, Normal : +5M/Flush Write : +12V	---	---	---
5	MD0	MD0	---	Mode Set 0, Normal : +5M/Flush Write : +5M	---	---	---
6	/NMI	/NMI	---	+ 5V	---	---	---
7	/STBY/FVpp	/FVpp	---	Stand-by or Fvpp, Normal : +5M/Flush Write : +12V	---	---	---
8	Vcc	Vcc	---	Vcc	---	---	---
9	P52/SCK0	SCKN	O	SCK for Non Audio	O	OL	OL
10	P51/RXD0	RDTR/FSW	I	RXD for Non Audio (RDS)/Frequency Switch (Note 1)	I	I	OL
11	P50/TXD0	SDTN	O	SDT for Non Audio	O	OL	OL
12	Vss	GND	---	GND	---	---	---
13	P97	CER	O	CE for Non Audio (RDS)	O	OL	OL
14	P96/ \emptyset	/ST	I	Tuner Stereo	I	I	HiZ
15	P95	CES	O	CE for Non Audio (OSD)	O	OL	OL
16	P94	CEF1	O	CE for Non Audio (FL1)	O	OL	OL
17	P93	CEF0	O	CE for Non Audio (FL0)	O	OL	OL
18	P92//IRQ0	PDT	I	Power Detect (Low Level Detect)	I	I	I
19	P91//IRQ1	REM	I	Remote (Low Edge Detect)	I	I	OL
20	P90//IRQ2	VSY	I	Video Vertical Sync (Low Edge Detect)	I	I	OL
21	P60	SCKP	O	SCK for Tuner PLL	O	OL	OL
22	P61	SDTP	O	SDT for Tuner PLL	O	OL	OL
23	P62	RDTP	I	RDT for Tuner PLL	I	I	OL
24	P63	CEP	O	CE for Tuner PLL	O	OL	OL
25	P64	/TMT	O	Tuner Mute	O	OL	OL
26	P65	/FLR	O	FL Reset	O	OL	OL
27	P66//IRQ6	NC		N.C.	OL	OL	OL
28	P67//IRQ7	PSW	I	Power Switch	I	I	OL
29	Avcc	Avcc	---	Avcc	---	---	---
30	P77/AN7	MTR	I	Tuner Meter	I	I	HiZ
31	P70/AN0	KEY0	I	Key State 0	I	I	HiZ
32	P71/AN1	KEY1	I	Key State 1	I	I	HiZ
33	P72/AN2	KEY2	I	Key State 2	I	I	HiZ
34	P73/AN3	REC	I	Rec out Selector	I	I	HiZ
35	P74/AN4	PRV	I	V Protection	I	I	HiZ
36	P75/AN5	PRD	I	DC Protection	I	I	HiZ
37	P76/AN6	THM	I	Thermal Detect	I	I	HiZ
38	Avss	GND	---	GND	---	---	---
39	P40	VIND	O	Volume Indicator	O	OL	OL
40	P41	VUP	O	Volume Up	O	OL	OL
41	P42	VDN	O	Volume Down	O	OL	OL
42	P43	IPA	I	Input Selector A	I	I	OL
43	P44	IPB	I	Input Selector B	I	I	OL
44	P45	PRI	I	I Protection	I	I	OL
45	P46/PW0	FAN	O	Fan Control (PWM)	O	OL	OL
46	P47/PW1	/FMT	O	Full Mute	O	OL	OL
47	Vcc	Vcc	---	Vcc	---	---	---
48	P27	/MLV	O	Main Level Att.	O	OL	OL
49	P26	SPA	O	Speaker Relay A	O	OL	OL
50	P25	SPB	O	Speaker Relay B	O	OL	OL
51	P24	SPE	O	Speaker Relay Ext	O	OL	OL
52	P23	CEL	O	CE Sanyo for Audio	O	OL	OL
53	P22	CET	O	CE Toshiba for Audio	O	OL	OL

IC3 : HD64F3337YF16 (P.C.B. FUNCTION)
8 bit μ -COM (Main CPU)

No.	Pin Name	Function	I/O	Detailed Function	Power On	Power Off	Backup
54	P21	SDTA	O	SDT for Audio	O	OL	OL
55	P20	SCKA	O	SCK for Audio	O	OL	OL
56	Vss	GND	---	GND	---	---	---
57	P17	/Z2MT	O	Zone 2 Mute	O	OL	OL
58	P16	I/E	O	Video Internal/External	O	OL	OL
59	P15	VRC	O	Video Rec out Select C	O	OL	OL
60	P14	VRB	O	Video Rec out Select B	O	OL	OL
61	P13	VRA	O	Video Rec out Select A	O	OL	OL
62	P12	VIC	O	Video Input Select C	O	OL	OL
63	P11	VIB	O	Video Input Select B	O	OL	OL
64	P10	VIA	O	Video Input Select A	O	OL	OL
65	P30	PRY	O	Power Relay	O	OL	OL
66	P31	Z2DET	I	Zone 2 Detect	I	I	OL
67	P32	TUN0	I	Tuner Mode 0 (Note 2)	I	I	OL
68	P33	TUN1	I	Tuner Mode 1 (Note 2)	I	I	OL
69	P34	VID	I	Video Format (Note 3)	I	I	OL
70	P35	RDS	I	RDS Exist or Not (Note 4)	I	I	OL
71	P36	TYP0	I	Model Type 0 (Note 5)	I	I	OL
72	P37	TYP1	I	Model Type 1 (Note 5)	I	I	OL
73	Vss	GND	---	GND	---	---	---
74	P80	NC	O	Not used	OL	OL	OL
75	P81	/SBR	O	Sub CPU Reset	O	OL	OL
76	P82	TRQ	I	CPU I/F Transfer Request	I	I	OL
77	P83	RTN	I	CPU I/F Word Clock	I	I	OL
78	P84/TXD1	MTS/TXD1	O	Normal : CPU I/F Main to Sub Flush Write : TXD1	O	OL	OL
79	P85/RXD1	STM/RXD1	I	Normal : CPU I/F Sub to Main Flush Write : RXD1	I	I	OL
80	P86/SCK1	CKIF	O	CPU I/F Clock	O	OL	OL

(Note 1) Pin 10 Frequency Switch (R only)

0	AM : 530-1710kHz(10kHz step)	FM : 87.5-108.0MHz(100kHz step)
1	AM : 531-1611kHz(9kHz step)	FM : 87.5-108.0MHz(50kHz step)

(Note 2) Pin 67, 68 Tuner Mode 0 and 1

Tuner Mode 1	Tuner Mode 0	Tuner Frequency		
0	0	AM : 531-1611kHz(9kHz step)	FM : 76.0-90.0MHz(100kHz step)	J
0	1	AM : 530-1710kHz(10kHz step)	FM : 87.5-107.9MHz(200kHz step)	U, C
1	0	AM : 531-1611kHz(9kHz step)	FM : 87.5-108.0MHz(50kHz step)	A, L
1	1	Tuner Frequency is selected by Frequency Switch(Pin 10)		
				R, T

(Note 3) Pin 69 Video Format

0	NTSC
1	PAL

(Note 4) Pin 70 RDS Exist or Not

0	Not Exist
1	Exist

(Note 5) Pin 71, 72 Model Type 0 and 1

Model Type 1	Model Type 0	Model Name
0	0	RX-V2095
0	1	DSP-A2
1	0	RX-V995
1	1	RX-V795

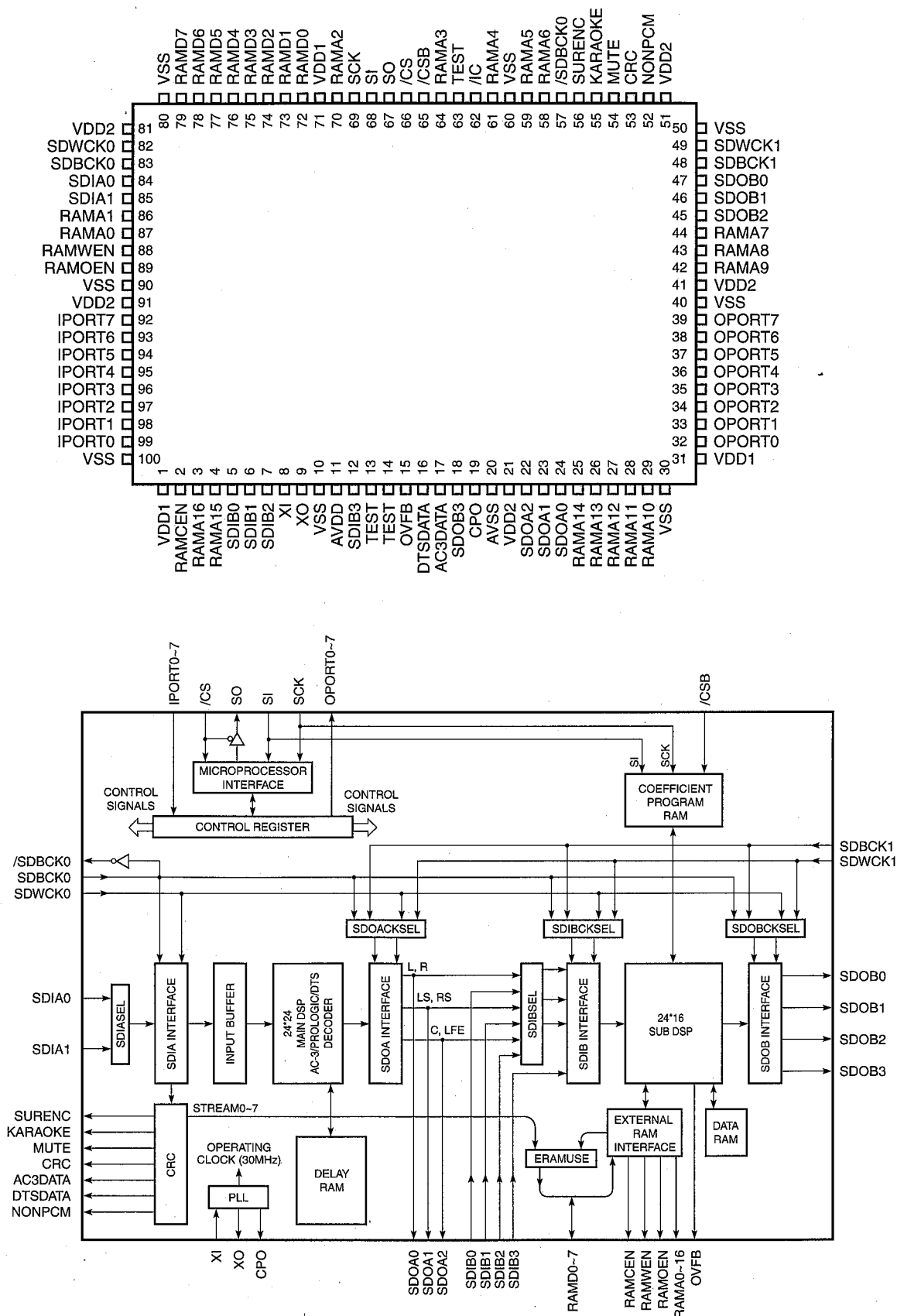
IC14 : LC87F5164 (P.C.B. DSP)
8 bit μ -COM (Sub CPU)

No.	PORT	Name	Function	I/O	No.	PORT	Name	Function	I/O
1	PA3	CDO	DIR2 CDO	I	80	PA2	CCK	DIR2 CCK	O
2	PA4	/ICDI	/IC DIR2	O	79	PA1	CLD	DIR2 CLD	O
3	PA5	/KM1	Compulsion (analog) mode	O	78	PA0	DMT	L/R DAC MUTE	O
4	P70/INT0	LOCKN	DIR LOCKN	IRQ	77	PC0	DIA	DIGITAL INP SEL	O
5	P71/INT1	ERRD	DIR2 ERR	IRQ	76	PC1	DIB	DIGITAL INP SEL	O
6	P72/INT2	ERRA	AC3D MUTE	IRQ	75	PC2	DIC	DIGITAL INP SEL	O
7	P73/INT3	NONPCM	AC3D AC3DATA	IRQ	74	PC3	DRA	DIGITAL REC SEL	O
8	/RES	/RES	CPU RESET	—	73	PC4	DRB	DIGITAL REC SEL	O
9	XT1	XT1	VDD1	I	72	PC5	VER	OPEN	Ipu
10	XT2	XT2	OPEN	I	71	PC6	NC	—	I/O
11	VSS1	VSS1	GND	G	70	PC7	NC	—	I/O
12	CF1	CF1	10MHz	\emptyset	69	VDD3	VDD3	+5V	+5V
13	CF2	CF2	10MHz	\emptyset	68	VSS3	VSS3	GND	G
14	VDD1	VDD1	+5V	+5V	67	PB0	RF	H : present/L : absent	Ipu
15	P80/AN0	NC	—	O	66	PB1	CDC/O	CD OPT/COAX	I
16	P81/AN1	NC	—	O	65	PB2	LDC/O	LD/DVD OPT/COAX	I
17	P82/AN2	NC	—	O	64	PB3	MUTO	AC3RF MUTE OUT	Ipu
18	P83/AN3	NC	—	O	63	PB4	DSP	OPEN	Ipu
19	P84/AN4	NC	—	O	62	PB5	NC	—	I/O
20	P85/AN5	NC	—	O	61	PB6	NC	—	I/O
21	P86/AN6	NC	—	O	60	PB7	NC	—	I/O
22	P87/AN7	NC	—	O	59	P27	NC	—	I/O
23	P30	/ICAK	/IC AK4526	O	58	P26	NC	—	I/O
24	P31	CEAK	CE AK4526	O	57	P25	NC	—	I/O
25	P32	/ICAC	/IC AC3D	O	56	P24/INT5	NC	—	I/O
26	P33	CEAC2	CE2 AC3D	O	55	P23	NC	—	I/O
27	P34	CEAC1	CE1 AC3D	O	54	P22	NC	—	I/O
28	SO0	TXAC	TX AC3D/AK4526	TX	53	P21	NC	—	I/O
29	SI0	RXAC	RXD AC3D	RX	52	P20/INT4	NC	—	I/O
30	SCK0	CLKAC	CLK AC3D/AK4526	CLK	51	P07	NC	—	I/O
31	P13/SO1	RSRV	OPEN : normal/GND : on-board	Ipu	50	P06	NC	—	I/O
32	SI1	TRXOB	TX/RX for on-board	I/O	49	P05	NC	—	I/O
33	SCK1	CLKOB	CLK for on-board	I	48	P04	NC	—	I/O
34	P16/PWM	NC	—	I	47	P03	NC	—	I/O
35	P17/PWM	NC	—	I/O	46	P02	NC	—	I/O
36	SO2	STM	TX CPU I/F	TX	45	P01	NC	—	I/O
37	SI2	MTS	RX CPU I/F	RX	44	P00	NC	—	I/O
38	SCK2	CLKIF	RX CLK CPU I/F	RXCK	43	VSS2	VSS2	GND	G
39	SI2P3	WCIF	RETURN CPU I/F	O	42	VDD2	VDD2	+5V	+5V
40	PWM1	TRQ	TRANS REQUEST	O	41	PWM0	NC	OPEN	OL

● Extension Port (IC4 : YSS918 AC3D2av) (P.C.B. DSP)

No.	Name	I/O	Function	No.	Name	I/O	Function
32	OPORT0	O	L/R ch is shifted by +3dB at Dolby Pro Logic	99	IPOINT0	I	Not used (GND)
33	OPORT1	O	N.C. (OPEN)	98	IPOINT1	I	Not used (GND)
34	OPORT2	O	N.C. (OPEN)	97	IPOINT2	I	Not used (GND)
35	OPORT3	O	N.C. (OPEN)	96	IPOINT3	I	Not used (GND)
36	OPORT4	O	N.C. (OPEN)	95	IPOINT4	I	Not used (GND)
37	OPORT5	O	N.C. (OPEN)	94	IPOINT5	I	Not used (GND)
38	OPORT6	O	N.C. (OPEN)	93	IPOINT6	I	Not used (GND)
39	OPORT7	O	N.C. (OPEN)	92	IPOINT7	I	Not used (GND)

30



IC4 : YSS918 (P.C.B. DSP)
AC3D2av

No.	Name	I/O	Function
1	VDD		+5V power supply (for terminal section)
2	RAMCEN	O	External SRAM chip enable terminal
3	RAMA16	O	External SRAM address terminal 16
4	RAMA15	O	External SRAM address terminal 15
5	SDIB0	Itp	PCM input terminal 0 to Sub DSP
6	SDIB1	Itp	PCM input terminal 1 to Sub DSP
7	SDIB2	Itp	PCM input terminal 2 to Sub DSP
8	XI	Ic	Crystal oscillator connecting terminal (12.288MHz)
9	XO	O	Crystal oscillator connecting terminal
10	VSS		Ground terminal (for terminal section)
11	AVDD		+3.3V power terminal (for PLL circuit)
12	SDIB3	Itp	PCM input terminal 3 to Sub DSP
13	TEST		Test terminal (unconnected)
14	TEST		Test terminal (unconnected)
15	OVFB	O	Sub DSP overflow detect terminal
16	DTSDATA	O	DTS data detect terminal
17	AC3DATA	O	AC-3 data detect terminal
18	SDOB3	O	PCM output terminal from Sub DSP
19	CPO	A	PLL output terminal (connected to external analog filter circuit)
20	AVSS		Ground terminal (for PLL circuit)
21	VDD2		+3.3V power terminal (for internal circuit)
22	SDOA2	O	PCM output terminal from Main DSP (C/LFE output at AC-3/DTS, C/S output at Pro Logic)
23	SDOA1	O	PCM output terminal from Main DSP (LS/RS output at AC-3/DTS, Lt/Rt output at Pro Logic)
24	SDOA0	O	PCM output terminal from Main DSP (L/R output at both AC-3/DTS and Pro Logic)
25	RAMA14	O	External SRAM address terminal 14
26	RAMA13	O	External SRAM address terminal 13
27	RAMA12	O	External SRAM address terminal 12
28	RAMA11	O	External SRAM address terminal 11
29	RAMA10	O	External SRAM address terminal 10
30	VSS		Ground terminal (for internal circuit)
31	VDD1		+5V power terminal (for terminal section)
32	OPORT0	O	General purpose output terminal (L/R ch is shifted by +3dB at Dolby Pro Logic)
33	OPORT1	O	General purpose output terminal (N.C.)
34	OPORT2	O	General purpose output terminal (N.C.)
35	OPORT3	O	General purpose output terminal (N.C.)
36	OPORT4	O	General purpose output terminal (N.C.)
37	OPORT5	O	General purpose output terminal (N.C.)
38	OPORT6	O	General purpose output terminal (N.C.)
39	OPORT7	O	General purpose output terminal (N.C.)
40	VSS		Ground terminal (for internal circuit)
41	VDD2		+3.3V power terminal (for internal circuit)
42	RAMA9	O	External SRAM address terminal 9
43	RAMA8	O	External SRAM address terminal 8
44	RAMA7	O	External SRAM address terminal 7
45	SDOB2	O	PCM output terminal from Sub DSP
46	SDOB1	O	PCM output terminal from Sub DSP
47	SDOB0	O	PCM output terminal from Sub DSP
48	SDBCK1	Itp	Bit clock input terminal for SDOA, SDIB, SDOB signals
49	SDWCK1	Itp	Word clock input terminal for SDOA, SDIB, SDOB signals
50	VSS		Ground terminal (for terminal section)
51	VDD2		+3.3V power terminal (for internal circuit)
52	NONPCM	O	Non-PCM data detect terminal

IC4 : YSS918 (P.C.B. DSP)
AC3D2av

No.	Name	I/O	Function
53	CRC	O	AC-3 CRC error detect terminal
54	MUTE	O	Auto mute detect terminal
55	KARAOKE	O	AC-3 KARAOKE data detect terminal
56	SURENC	O	AC-3 2/0 mode Dolby surround encode input detect terminal
57	/SDBCK0	O	SDBCK0 invert clock output terminal
58	RAMA6	O	External SRAM address terminal 6
59	RAMA5	O	External SRAM address terminal 5
60	VSS		Ground terminal (for internal circuit)
61	RAMA4	O	External SRAM address terminal 4
62	/IC	Ics	Initial clear terminal
63	TEST		Test terminal (unconnected)
64	RAMA3	O	External SRAM address terminal 3
65	/CSB	Itsp	Sub DSP chip select input terminal
66	/CS	Its	Microprocessor interface chip select input terminal
67	SO	O*	Microprocessor interface data output terminal
68	SI	Its	Microprocessor interface and Sub DSP data input terminal
69	SCK	Its	Microprocessor interface and Sub DSP clock input terminal
70	RAMA2	O	External SRAM address terminal 2
71	VDD1		+5V power terminal (for terminal section)
72	RAMD0	Itp/O	External SRAM data terminal (STREAM 0 output when external SRAM is not used)
73	RAMD1	Itp/O	External SRAM data terminal (STREAM 1 output when external SRAM is not used)
74	RAMD2	Itp/O	External SRAM data terminal (STREAM 2 output when external SRAM is not used)
75	RAMD3	Itp/O	External SRAM data terminal (STREAM 3 output when external SRAM is not used)
76	RAMD4	Itp/O	External SRAM data terminal (STREAM 4 output when external SRAM is not used)
77	RAMD5	Itp/O	External SRAM data terminal (STREAM 5 output when external SRAM is not used)
78	RAMD6	Itp/O	External SRAM data terminal (STREAM 6 output when external SRAM is not used)
79	RAMD7	Itp/O	External SRAM data terminal (STREAM 7 output when external SRAM is not used)
80	VSS		Ground terminal (for terminal section)
81	VDD2		+3.3V power terminal (for internal circuit)
82	SDWCK0	It	Word clock input terminal for SDIA, SDOA, SDIB and SDOB signals
83	SDBCK0	It	Bit clock input terminal for SDIA, SDOA, SDIB and SDOB signals
84	SDIA0	It	AC-3/DTS bit stream (or PCM) data input terminal to Main DSP
85	SDIA1	It	AC-3/DTS bit stream (or PCM) data input terminal to Main DSP
86	RAMA1	O	External SRAM address terminal 1
87	RAMA0	O	External SRAM address terminal 0
88	RAMWEN	O	External SRAM write enable terminal
89	RAMOEN	O	External SRAM output enable terminal
90	VSS		Ground terminal
91	VDD2		+3.3V power terminal (for internal circuit)
92	IPORT7	Itp	General purpose input terminal (GND)
93	IPORT6	Itp	General purpose input terminal (GND)
94	IPORT5	Itp	General purpose input terminal (GND)
95	IPORT4	Itp	General purpose input terminal (GND)
96	IPORT3	Itp	General purpose input terminal (GND)
97	IPORT2	Itp	General purpose input terminal (GND)
98	IPORT1	Itp	General purpose input terminal (GND)
99	IPORT0	Itp	General purpose input terminal (GND)
100	VSS		Ground terminal

Note) Listed below are symbols in the I/O column and their meanings.

Ic: CMOS level input terminal

Is: Schmidt trigger input terminal

O: Digital output terminal

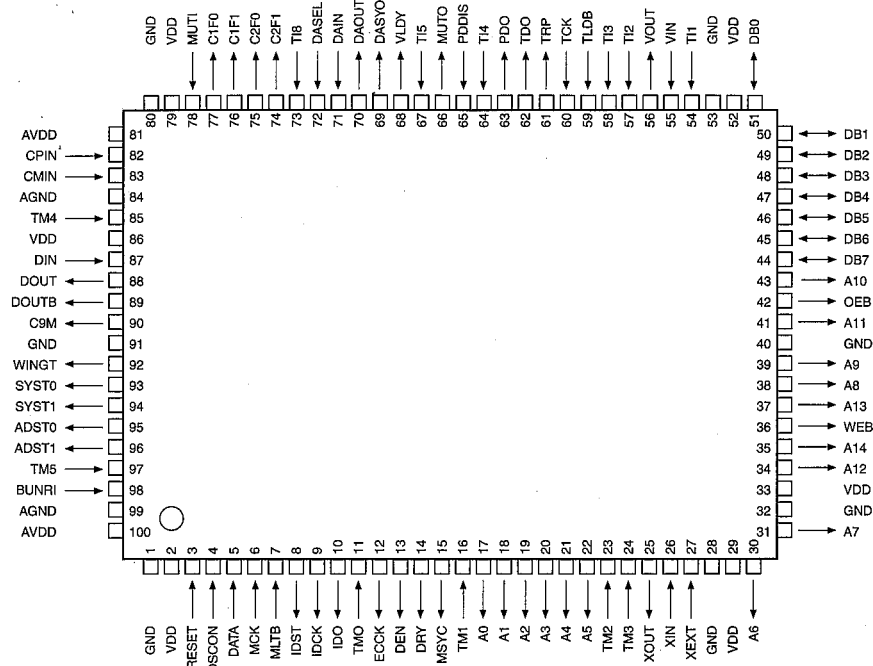
A: Analog input terminal

It: TTL level input terminal

Ip: Input terminal with pull-up resistor

O*: Tri-state digital output terminal

IC10 : PM4007A (P.C.B. DIGITAL IN)
AC-3 RF Demodulator



No.	Name	I/O	Function
1	GND		Ground (0V)
2	VDD		+5V power supply
3	RESET	I	System resetting terminal (reset at "L")
4	OSCON	I	Oscillation control terminal. Oscillation ON at "H", set to "H" normally and to "L" when in standby state
5	DATA	I	IC test terminal, normally connected to ground (or unconnected)
6	MCK	I	IC test terminal, normally connected to ground (or unconnected)
7	MLTB	I	IC test terminal, normally connected to ground (or unconnected)
8	IDST	O	Output terminal for IC test
9	IDCK	O	Output terminal for IC test
10	IDO	O	Output terminal for IC test
11	TM0	I	IC test terminal, normally connected to ground (or unconnected)
12	ECCK	O	Output terminal for IC test
13	DEN	O	Output terminal for IC test
14	DRY	O	Output terminal for IC test
15	MSYC	O	Output terminal for IC test
16	TM1	I	IC test terminal, normally connected to ground (or unconnected)
17	A0	O	External RAM address output. Address 0 (LSB)
18	A1	O	External RAM address output. Address 1
19	A2	O	External RAM address output. Address 2
20	A3	O	External RAM address output. Address 3
21	A4	O	External RAM address output. Address 4
22	A5	O	External RAM address output. Address 5
23	TM2	I	IC test terminal, normally connected to ground (or unconnected)
24	TM3	I	IC test terminal, normally connected to ground (or unconnected)
25	XOUT	O	Output terminal for IC test
26	XIN	I	IC test terminal, normally connected to ground (or unconnected)
27	XEXT	I	IC test terminal, normally connected to ground (or unconnected)
28	GND		Ground terminal (0V)
29	VDD		+5V power supply

IC10 : PM4007A (P.C.B. DIGITAL IN)

AC-3 RF Demodulator

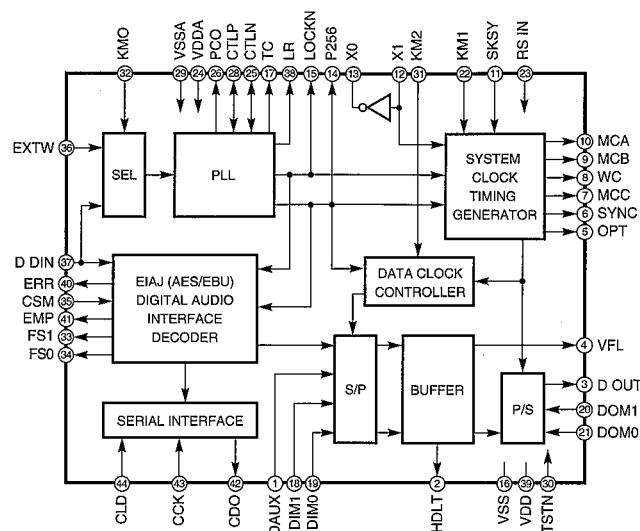
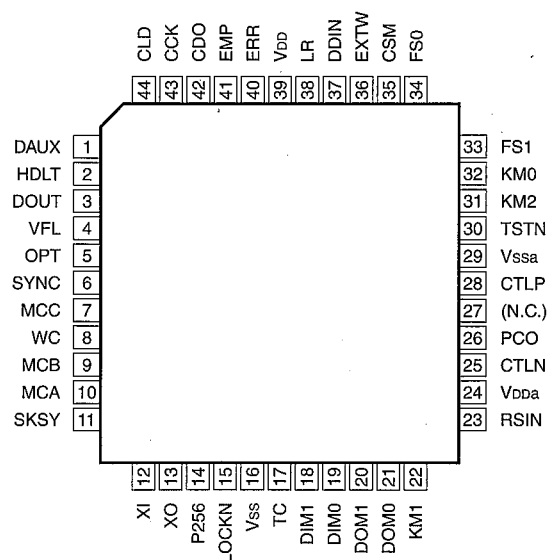
No.	Name	I/O	Function
30	A6	O	External RAM address output. Address 6
31	A7	O	External RAM address output. Address 7
32	GND		Ground terminal (0V)
33	VDD		+5V power supply
34	A12	O	External RAM address output. Address 12
35	A14	O	External RAM address output. Address 14 (MSB)
36	WEB	O	External RAM write enable signal, active at "L"
37	A13	O	External RAM address output. Address 13
38	A8	O	External RAM address output. Address 8
39	A9	O	External RAM address output. Address 9
40	GND		Ground terminal (0V)
41	A11	O	External RAM address output. Address 11
42	OEB	O	External RAM output enable signal, active at "L"
43	A10	O	External RAM address output. Address 10
44	DB7	I/O	External RAM data terminal. Data bus 7
45	DB6	I/O	External RAM data terminal. Data bus 6
46	DB5	I/O	External RAM data terminal. Data bus 5
47	DB4	I/O	External RAM data terminal. Data bus 4
48	DB3	I/O	External RAM data terminal. Data bus 3
49	DB2	I/O	External RAM data terminal. Data bus 2
50	DB1	I/O	External RAM data terminal. Data bus 1
51	DB0	I/O	External RAM data terminal. Data bus 0
52	VDD		+5V power supply
53	GND		Ground terminal (0V)
54	TI1	I	IC test terminal, normally connected to VDD
55	VIN	I	VCXO input
56	VOOUT	O	VCXO output
57	TI2	I	IC test terminal, normally connected to GND (or unconnected)
58	TI3	I	IC test terminal, normally connected to GND (or unconnected)
59	TLDB	I	IC test terminal, normally connected to GND (or unconnected)
60	TCK	I	IC test terminal, normally connected to GND (or unconnected)
61	TRP	O	Output terminal for IC test
62	TDO	O	Output terminal for IC test
63	PDO	O	Output terminal for phase comparator (tri-state)
64	TI4	I	IC test terminal, normally connected to GND (or unconnected)
65	PDDIS	I	Input terminal to control PDO output. Output ON at "L"
66	MUTO	O	Muting output. Muting available at "H". Setting becomes "H" when "MUTI=H" or AC-3 is asynchronous.
67	TI5	I	IC test terminal, normally connected to GND (or unconnected)
68	VLDY	O	Output terminal for IC test
69	DASYO	O	Output terminal for IC test
70	DAOUT	O	Digital out output (serial data stream output)
71	DAIN	I	Digital external input, through to DAOUT when DASEL is "H".
72	DASEL	I	Digital out select
73	TI8	I	IC test terminal, normally connected to GND (or unconnected)
74	C2F1	O	Terminal used to indicate error condition after C2 correction, whether completely corrected or not.
75	C2F0	O	Terminal used to indicate error condition after C2 correction, number of errors at C2.
76	C1F1	O	Terminal used to indicate error condition after C1 correction, whether any error exists at C1 or not.
77	C1F0	O	Terminal used to indicate error condition after C1 correction, number of errors at C1.
78	MUTI	I	Muting input. Muting available at "H"
79	VDD		+5V power supply
80	GND		Ground terminal (0V)

IC10 : PM4007A (P.C.B. DIGITAL IN)
AC-3 RF Demodulator

No.	Name	I/O	Function
81	AVDD		+5V power supply for analog comparator
82	CPIN	I	Analog comparator input, positive side (Non-reverse side: QPSK input)
83	CMIN	I	Analog comparator input, negative side (reverse side)
84	AGND		Ground terminal for analog comparator (0V)
85	TM4	I	IC test terminal, normally connected to GND (or unconnected)
86	VDD		+5V power supply
87	DIN	I	IC test terminal, normally connected to GND (or unconnected)
88	DOUT	O	Analog comparator result output
89	DOUTB	O	Analog comparator result reverse output
90	C9M	O	9.216MHz output, output divided into 2 at VIN (No.55 pin)
91	GND		Ground terminal (0V)
92	WINGT	O	Output for IC test
93	SYST0	O	Output for IC test
94	SYST1	O	Output for IC test
95	ADST0	O	Output for IC test
96	ADST1	O	Output for IC test
97	TM5	I	IC test terminal, normally connected to GND (or unconnected)
98	BUNRI	I	IC test terminal, normally connected to GND (or unconnected)
99	AGND		Ground terminal (0V) for 46.08MHz oscillator
100	AVDD		+5V power supply for 46.08MHz oscillator

IC3 : YM3436DK (P.C.B. DSP)

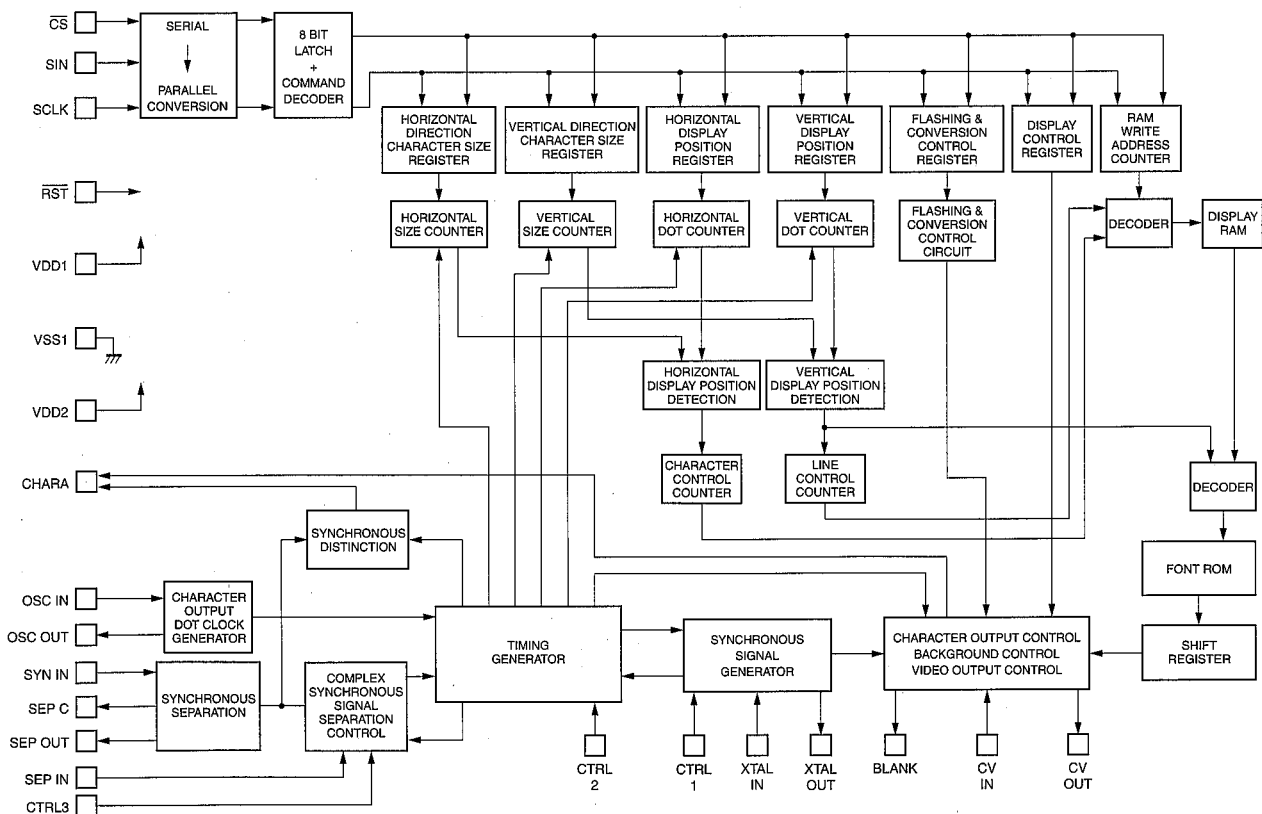
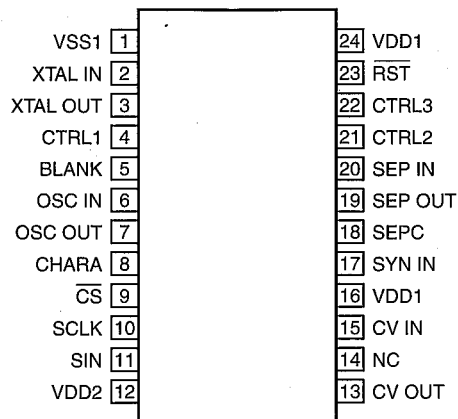
DIR (Digital Format Interface Receiver)



Pin No.	Pin Name	I/O	Function	Pin No.	Pin Name	I/O	Function
1	DAUX	I	Auxiliary input for audio data	26	PCO	O	PLL phase comparison output
2	HDLT	O	Asynchronous buffer operation flag	27	(NC)		
3	DOUT	O	Audio data output	28	CTLP	I	VCO control input P
4	VFL	O	Parity flag output	29	Vssa		VCO section power (GND)
5	OPT	O	Fs x 1 Synchronous output signal for DAC	30	TSTN	I	Test terminal. Open for normal use
6	SYNC	O	Fs x 1 Synchronous output signal for DSP	31	KM2	I	Clock mode switching input 2
7	MCC	O	Fs x 64Bit clock output	32	KM0	I	Clock mode switching input 0
8	WC	O	Fs x 1Word clock output	33	FS1	O	Channel status sampling frequency display output 1
9	MCB	O	Fs x 128Bit clock output	34	FS0	O	Channel status sampling frequency display output 0
10	MCA	O	Fs x 256Bit clock output	35	CSM	I	Channel status output method selection
11	SKSY	I	Clock synchronization control input	36	EXTW	I	External synchronous auxiliary input word clock
12	XI	I	Crystal oscillator connection or external clock input	37	DDIN	I	EIAJ (AES/EBU) data input
13	XO	O	Crystal oscillator connection	38	LR	O	PLL word clock output
14	P256	O	VCO oscillating clock connection	39	Vdd		Logic section power (+5V)
15	LOCK	O	PLL lock flag	40	ERR	O	Data error flag output
16	Vss		Logic section power (GND)	41	EMP	O	Channel status emphasis control code output
17	TC	O	PLL time constant switching output	42	CD0	O	3-wire type microcomputer interface data output
18	DIM1	I	Data input mode selection	43	CCK	I	3-wire type microcomputer interface clock input
19	DIM0	I	Data input mode selection	44	CLD	I	3-wire type microcomputer interface load input
20	DOM1	I	Data output mode selection				
21	DOM0	I	Data output mode selection				
22	KM1	I	Clock mode switching input 1				
23	RSTN	I	System reset input				
24	Vdda		VCO section power (+5V)				
25	CTLN	I	VCO control input N				

IC611 : LC74781-9626 (P.C.B. VIDEO)

Superimpose



IC611 : LC74781-9626 (P.C.B. VIDEO)

Superimpose

Pin No.	Symbol	Terminal name	Function
1	VSS1	Ground terminal	Connection to GND (Digital system ground terminal)
2	XTAL IN	Crystal oscillation terminal	Terminal to connect the crystal of the crystal oscillator for internal synchronous signal generation and a capacitor or to input an external clock. (2fsc or 4fsc)
3	XTAL OUT	terminal	
4	CTRL1	Crystal oscillation input switching terminal	Switching terminal between the mode to input a clock externally and the mode for crystal oscillation. [L] = Crystal oscillation, [H] = External clock input
5	BLANK	Blank output terminal	Terminal to output the blank signal (character and bordering OR signal) (MOD0 : complex synchronous signal output at [H]). When resetting (RST terminal = [L]), a crystal oscillation clock is output (but not when resetting by the command).
6	OSC IN	LC oscillation terminal	Terminal to connect the coil of the oscillator for character output dot clock generation and a capacitor.
7	OSC OUT		
8	CHARA	Character output terminal	Terminal to output a character signal (MOD0 : It becomes an output terminal to judge the external synchronous signal at [H] and outputs the result after judging existence of the external synchronous signal. When a synchronous signal exists, [H] is output.) When resetting (RST terminal = [L]), a dot clock (LC oscillation) is output (but it is not output when reset by the command.)
9	/CS	Enable input terminal	Serial data input enable input terminal. The serial data input becomes enable at [L]. A pull-up resistor is built in (hysteresis input).
10	SCLK	Clock input terminal	Input terminal of clock for serial data input. A pull-up resistor is built in (hysteresis input).
11	SIN	Data input terminal	Serial data input terminal. A pull-up resistor is built in (hysteresis input).
12	VDD2	Power supply terminal	Power supply terminal for complex image signal level adjustment (Power supply for analog system)
13	CV OUT	Video signal output terminal	Output terminal for complex image signal.
14	NC		Connected to GND or unconnected.
15	CV IN	Video signal input terminal	Input terminal for complex image signal.
16	VDD1	Power supply terminal	Power supply terminal (+5V : power supply for digital system)
17	SYN IN	Synchronous separation circuit input terminal	Video signal input terminal of the built-in synchronous separation circuit (When the built-in synchronous separation circuit is not used, it becomes a horizontal synchronous signal input or a complex synchronous signal input.)
18	SEP C	Synchronous separation circuit bias voltage terminal	Terminal to monitor built-in synchronous separation circuit bias voltage.
19	SEP OUT	Complex synchronous signal output terminal	Terminal to output a complex synchronous signal of built-in synchronous separation circuit ([H] when internally synchronized at MOD1 : [H], [L] output when externally synchronized) (When the built-in synchronous separation circuit is not used, SYNIN input signal is output.)
20	SEP IN	Vertical synchronous signal input terminal	Terminal to input a vertical synchronous signal by integrating the output signal of SEPOUT terminal. Connect the integration circuit between SEPOUT terminals. Fix it to VDD1 when not used.
21	CTRL2	NTSC/PAL-M switching input terminal	Pin setting has a priority over switching of NTSC/PAL/PAL-M/PAL-N method. The NTSC method is selected after [L]= reset. NTSC/PAL/PAL-M/PAL-N method setting by a command is effective. [H] = PAL-M method.
22	CTRL3	SEPIN input control terminal	Terminal to control whether or not to input VSYNC signal into SEPIN input terminal. [L] = VSYNC inputted, [H] = VSYNC not inputted.
23	/RST	Reset input terminal	System reset input terminal. A pull-up resistor is built in (hysteresis input).
24	VDD1	Power supply terminal (+5V)	Power supply terminal (+5V : power supply for digital system)

A

B

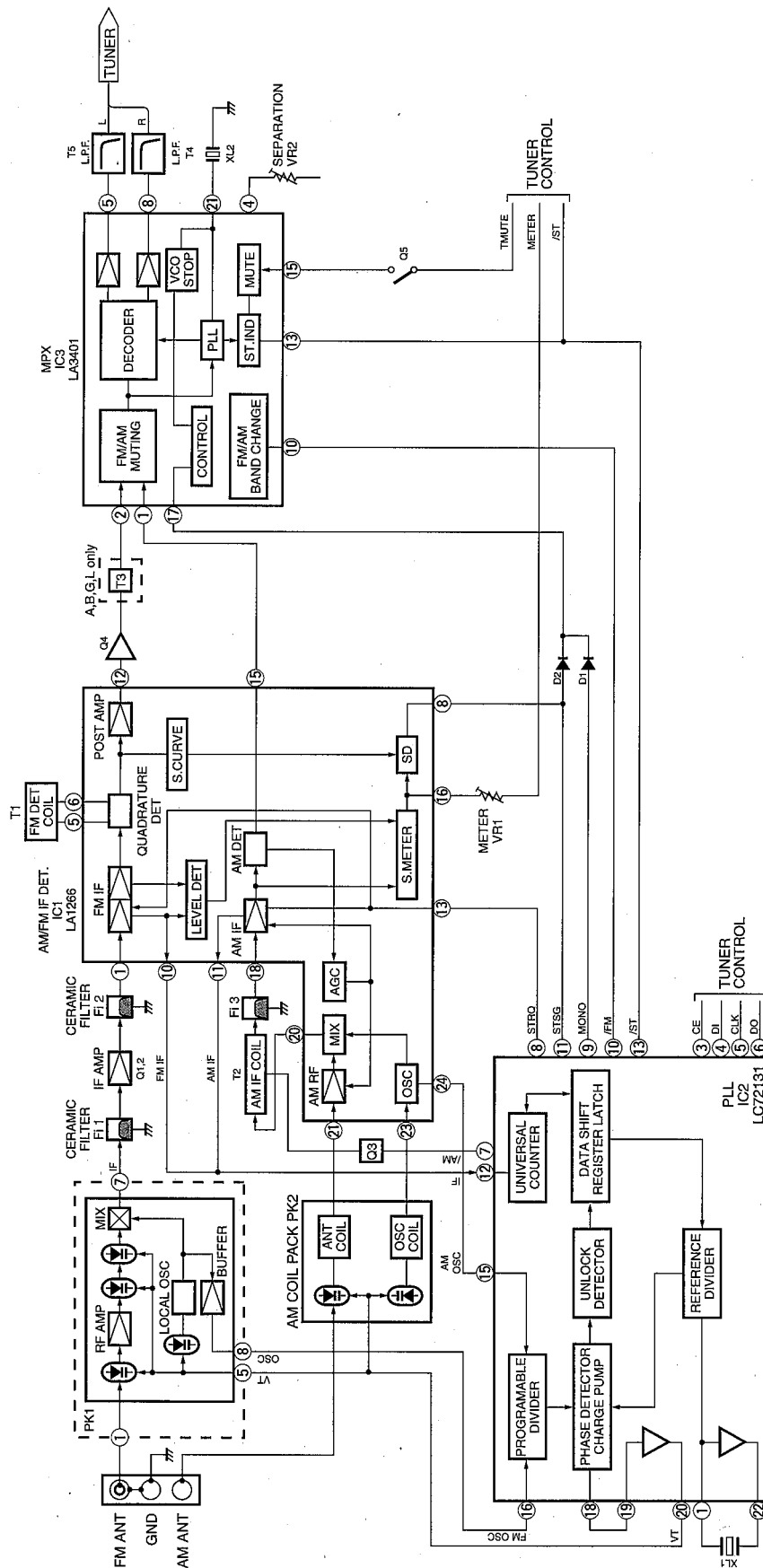
C

D

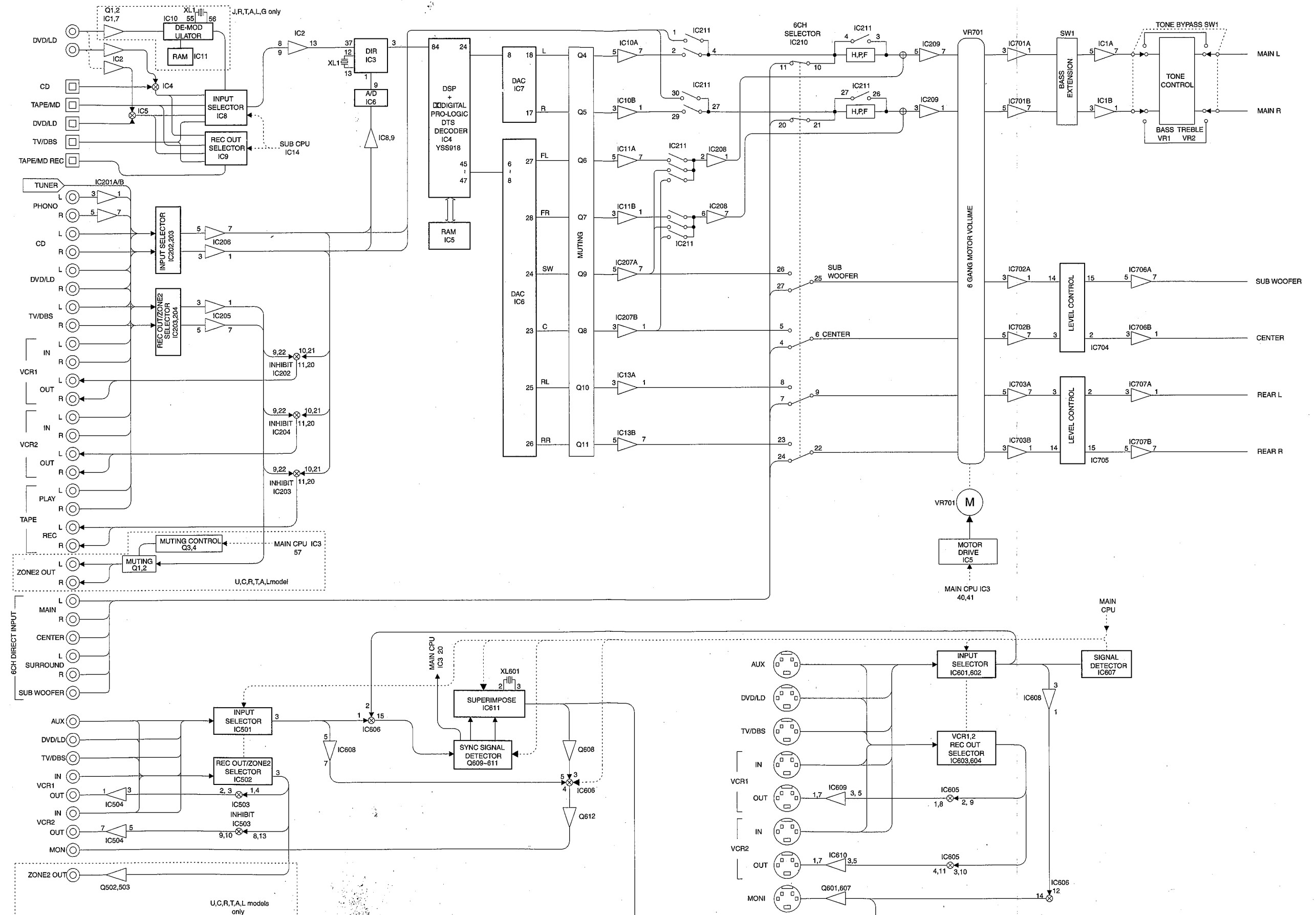
E

RX-V995

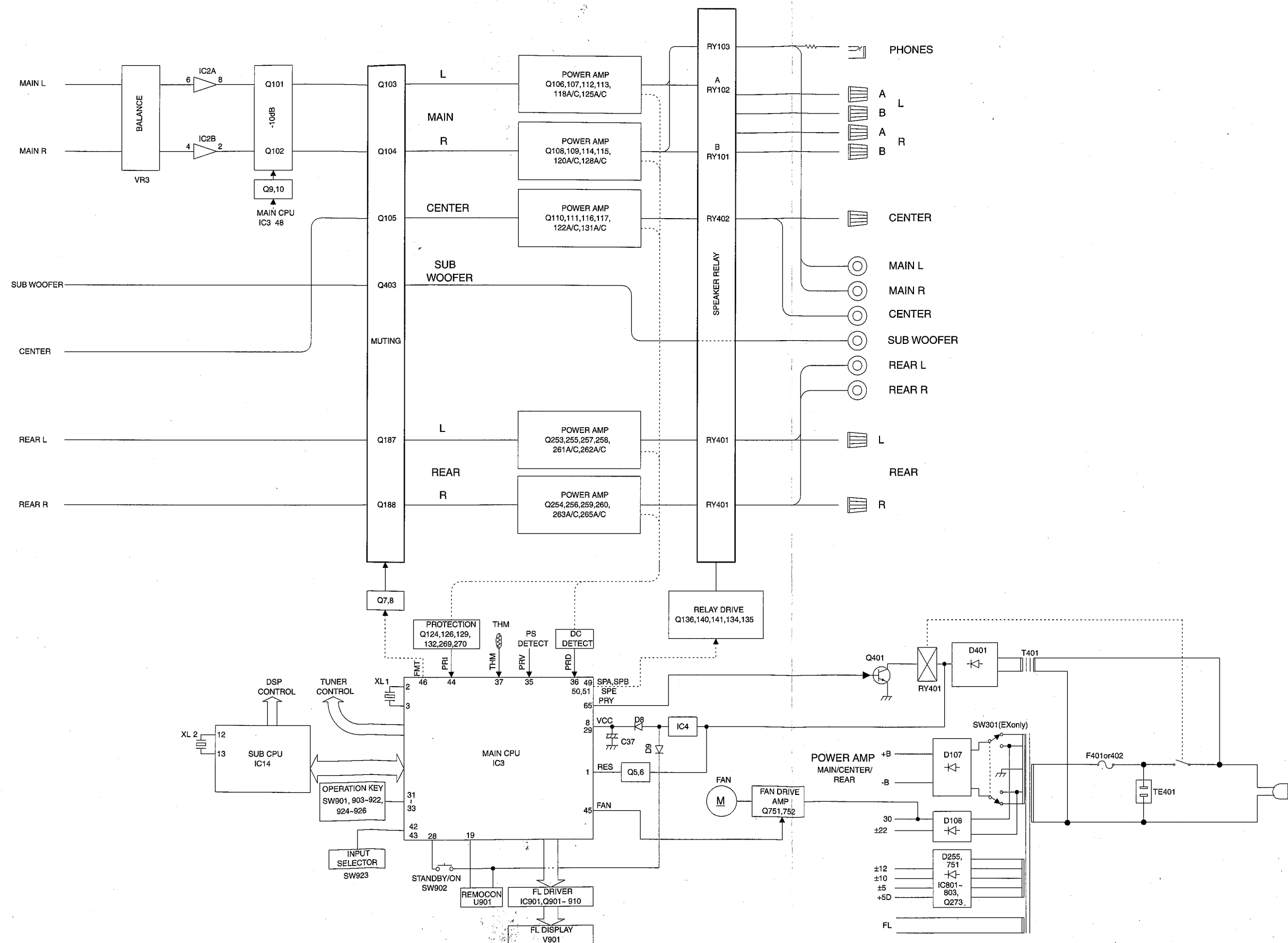
■ BLOCK DIAGRAM (1/3)



■ BLOCK DIAGRAM (2/3) / ブロックダイアグラム



■ BLOCK DIAGRAM (3/3) / ブロックダイアグラム



PRINTED CIRCUIT BOARD(Foil side)／シート図(パターン側)

There are two types of P.C.B. Assembly Tuner for this model in terms of construction of components.
One uses the Lead Type Device only and the other uses the Lead Type device and Surface Mount Device (SMD).
These P.C.B assemblies are interchangeable.

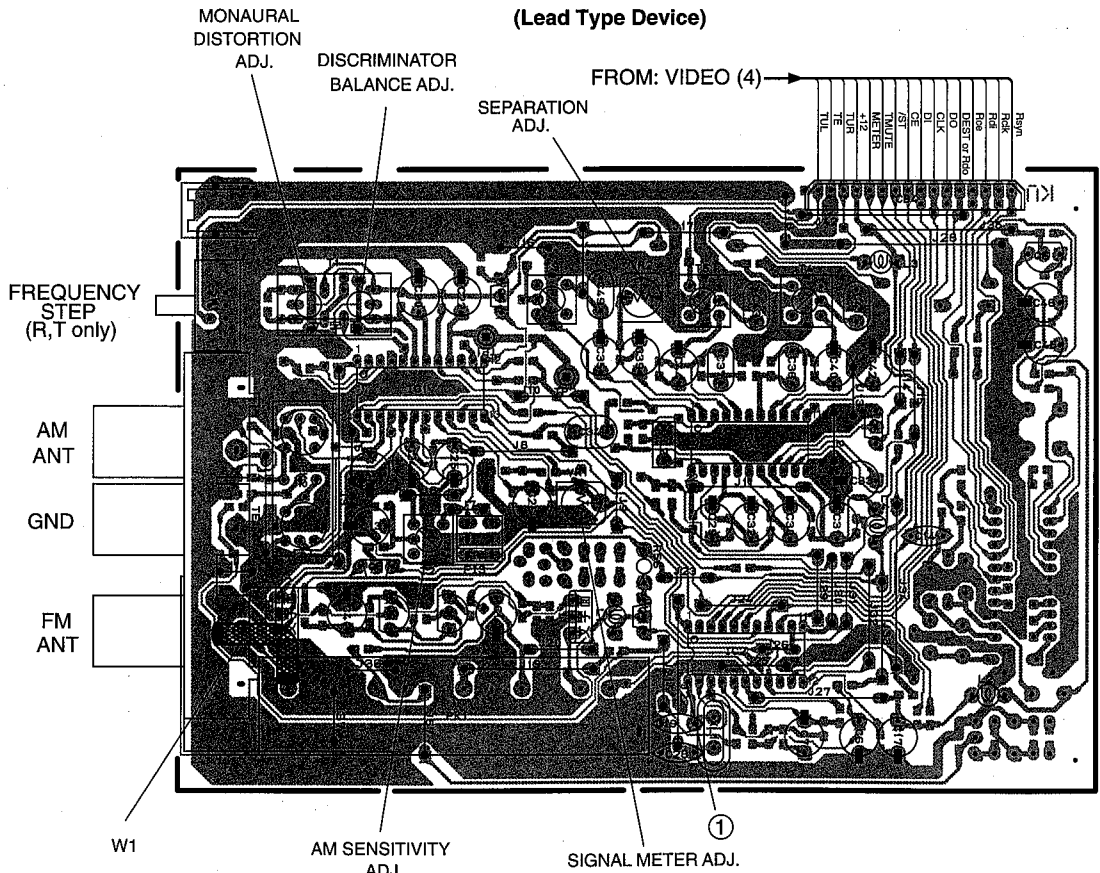
このモデルのP.C.B. ASS'Y TUNERは、部品構成上、二種類あります。
一つはLead Type Device、もう一つはLead Type Device & Surface Mount Device(SMD)です。
両方のP.C.B. ASS'Yは互換性があります。

P.C.B. ASS'Y TUNER LIST

Model	Markets	Lead Type	Lead & SMD
RX-V995	U, C	V2518600	V2519300
RX-V995	R, T	V2518700	V2519400
RX-V995	A, L	V2518800	V2519500
DSP-R995	J	V2518500	V2519200

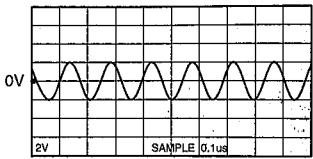
P.C.B. TUNER (Lead Type & SMD)

(Lead Type Device)



Point ① (Pin22 of IC2)

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



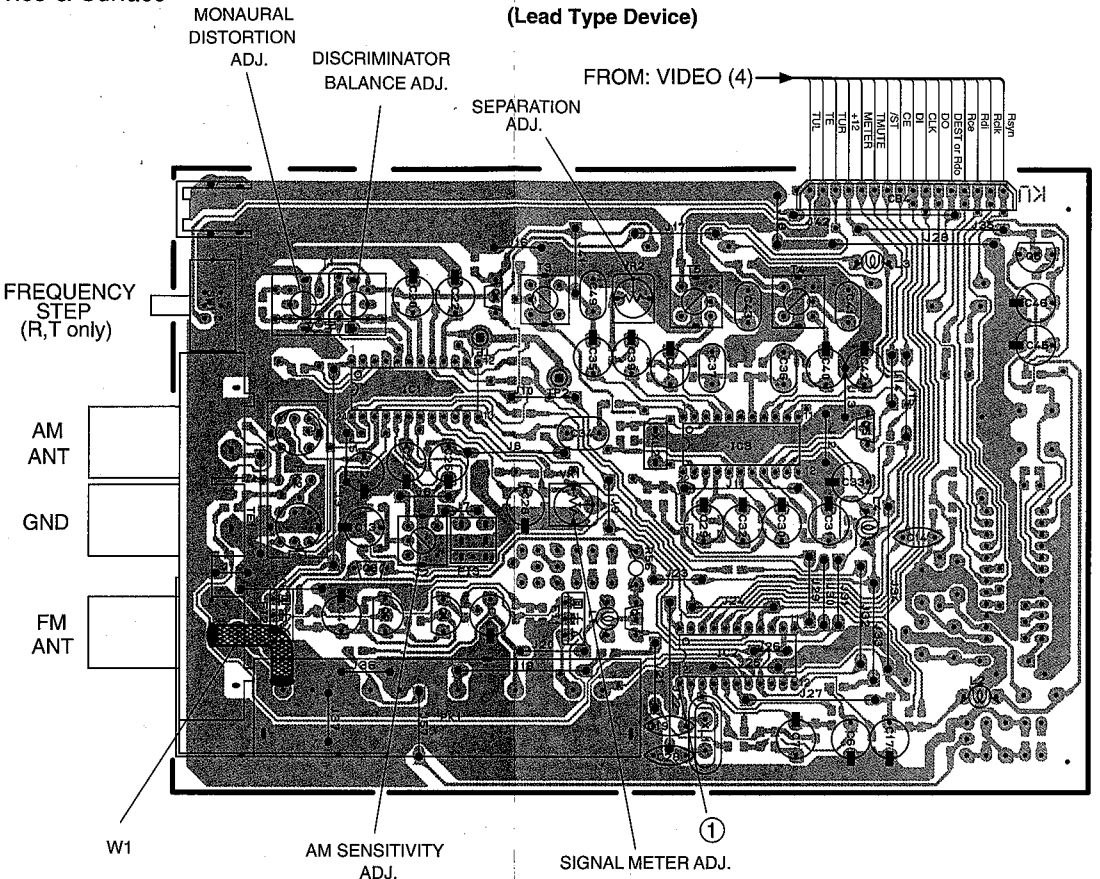
CIRCUIT CHANGES BY MARKET.

	J	U, C	R, T	A, B, G, L
R48, 55, 57, 58, 60	X	X	X	O
T3	X	X	X	O
J41	O	O	O	X
J42	X	X	O	X
SW1	X	X	O	X

O : USED
X : NOT USED

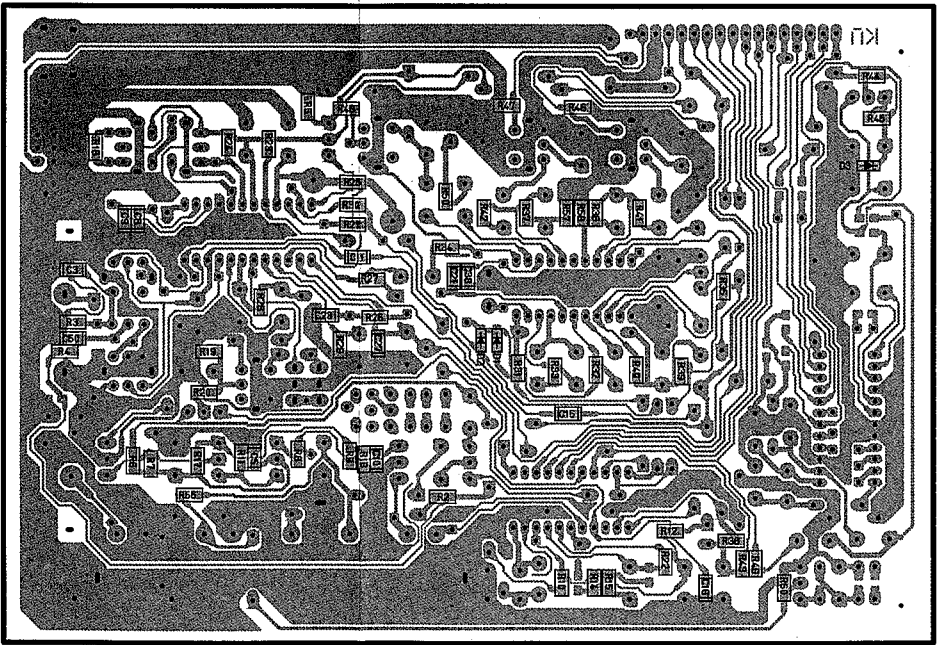
P.C.B. TUNER (Lead Type & SMD)

(Lead Type Device)

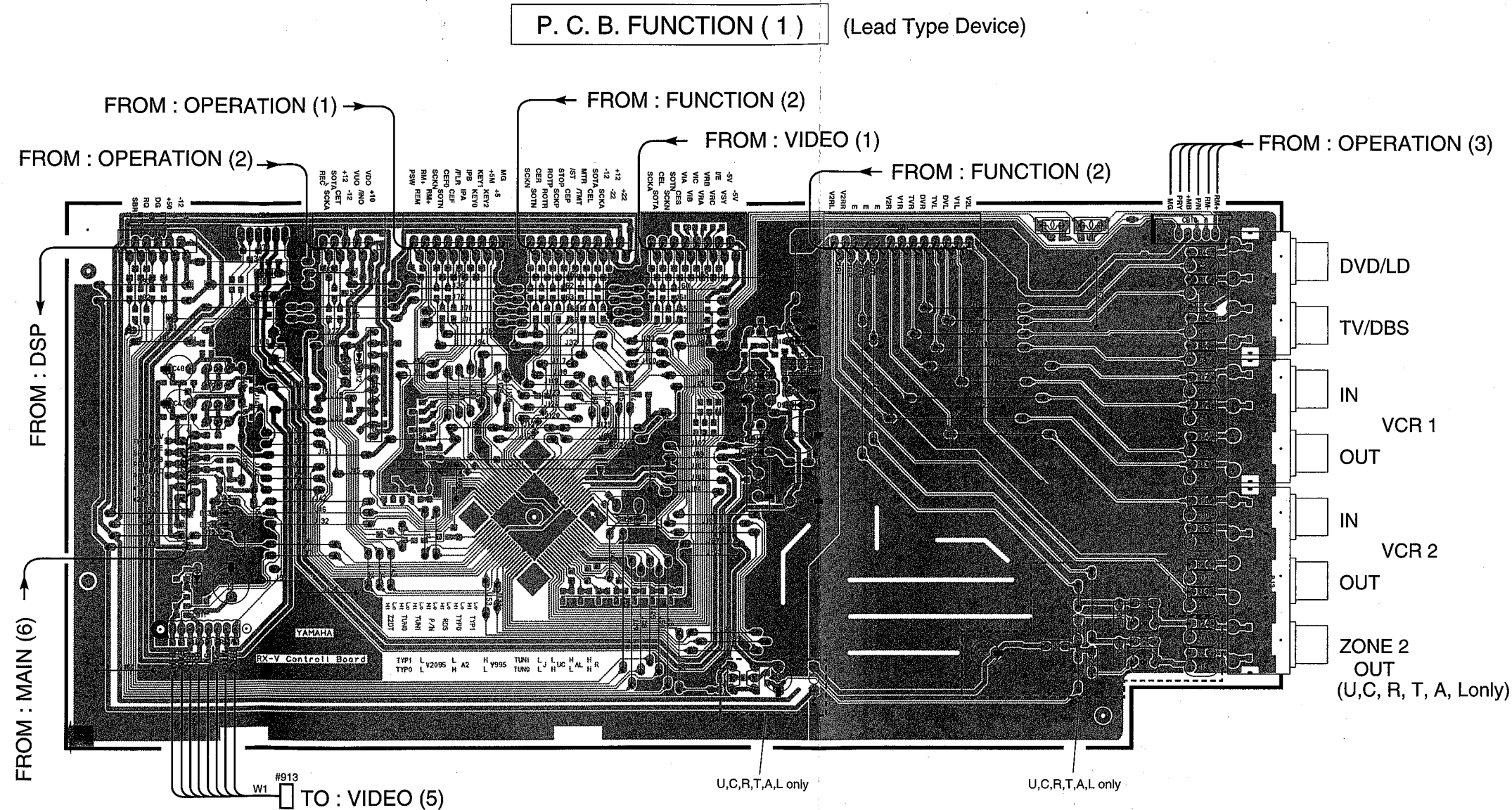


P.C.B. TUNER (Lead Type & SMD)

(Surface Mount Device)

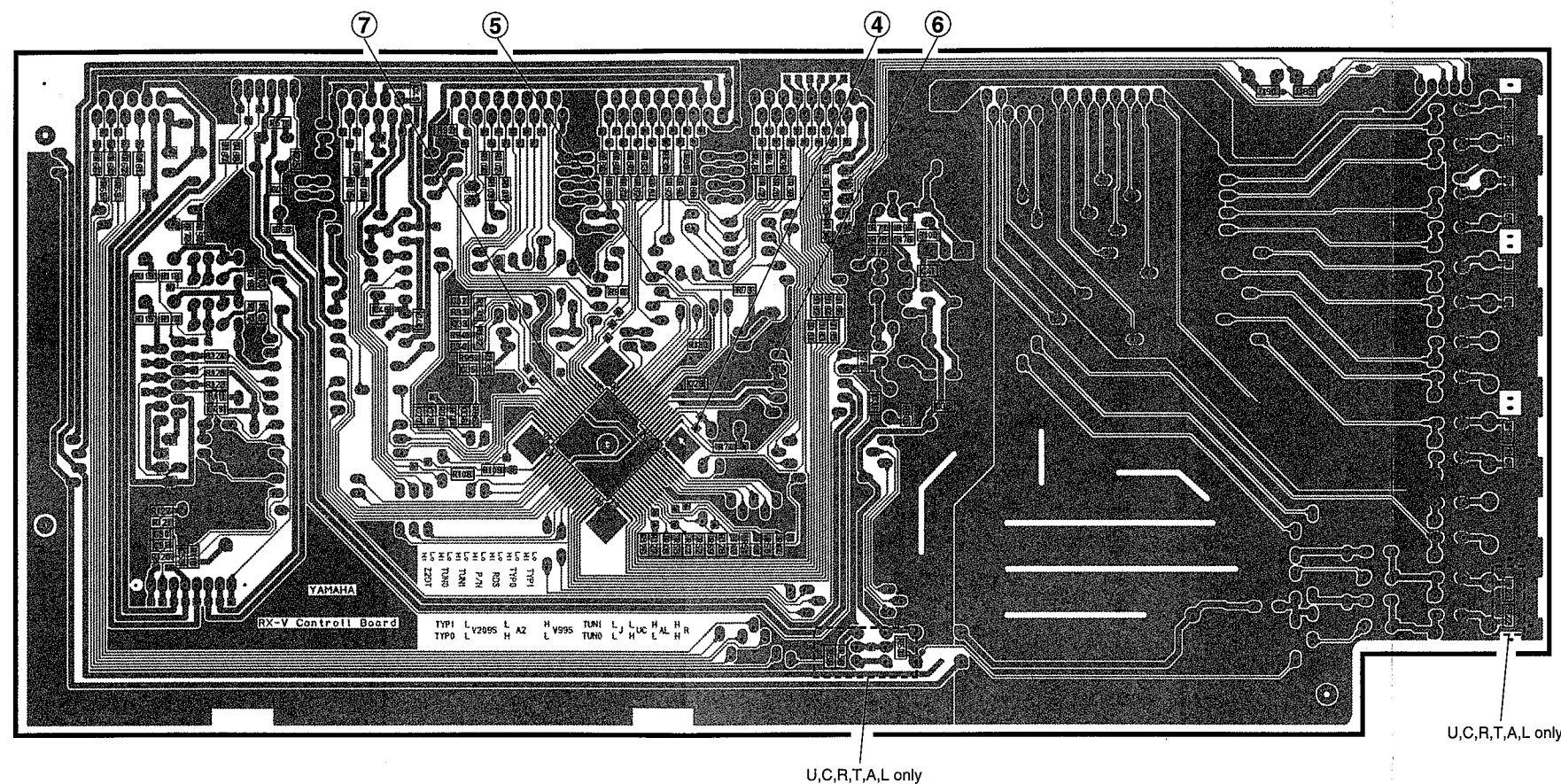


■ PRINTED CIRCUIT BOARD(Foil side)／シート図(パターン側)



PRINTED CIRCUIT BOARD(Foil side)/シート図(パターン側)

P. C. B. FUNCTION (1) (Surface Mount Device)



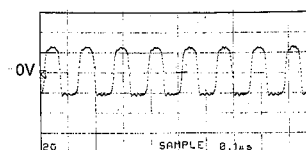
CIRCUIT CHANGES BY MARKET.

	U,C	R,T	A	L	J
R126	O	O	O	O	X
R127	X	X	X	X	O
R52, 128	O	X	X	X	O
R47, 69	X	O	O	O	X
R53	X	X	O	O	O
R48	O	O	X	X	X
L1, 2	X	X	O	X	X
J189, 190	O	O	X	O	O

O : USED
X : NOT USED

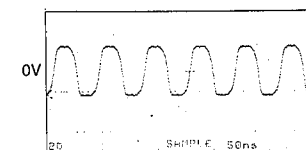
Point ④ (Pin2 of IC3)

V : 2V/div H : 0.1 μ sec/div
DC range 1 : 1 probe



Point ⑤ (Pin13 of IC3)

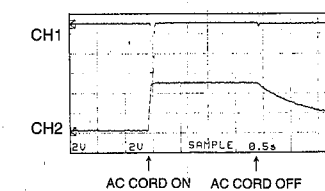
V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe



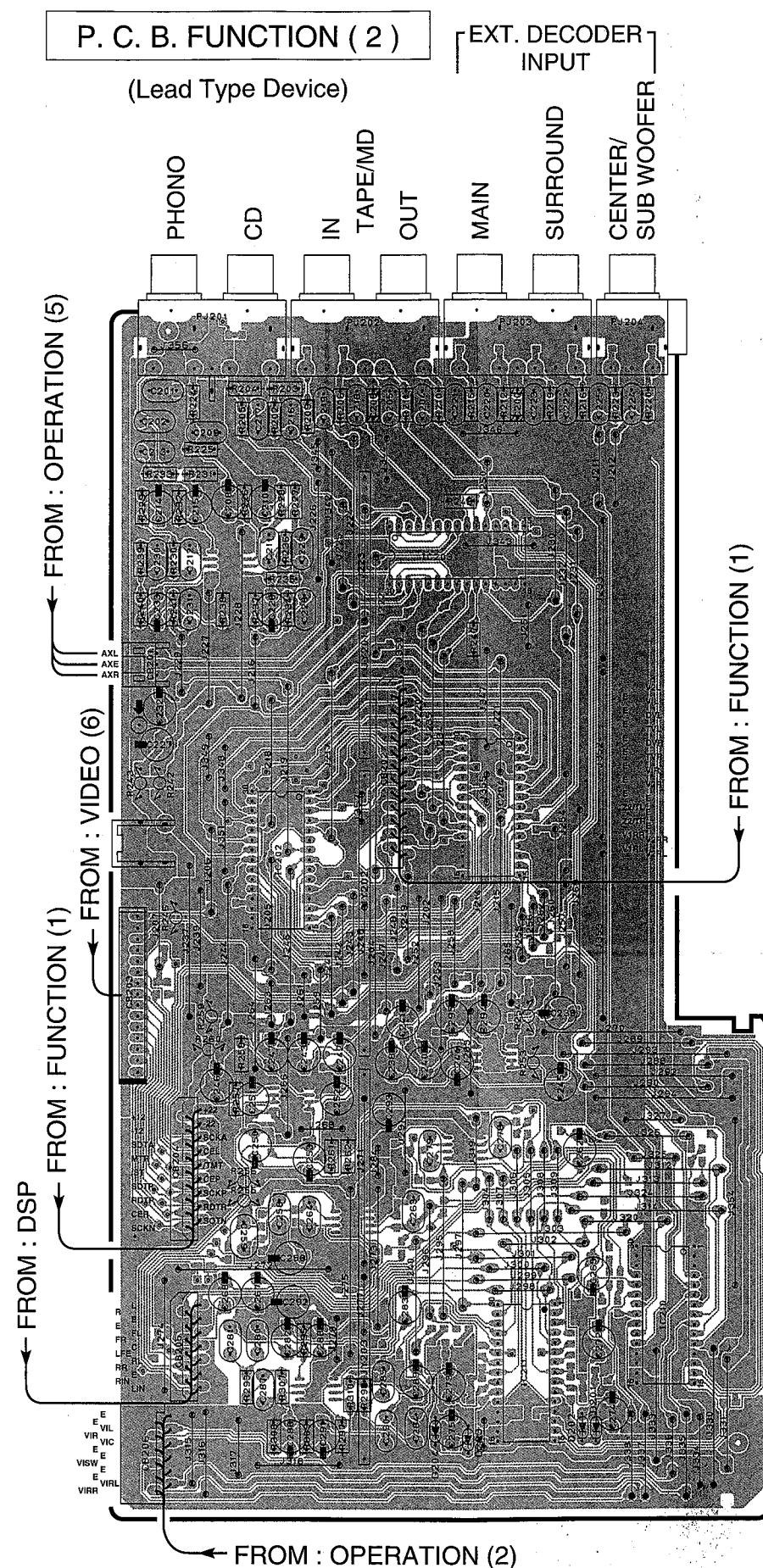
Point ⑥ (Pin1 of IC3 : CH1)

Point ⑦ (Pin29 of IC3 : CH2)

CH1 : 2V/div H : 0.5 sec/div
CH2 : 2V/div 1 : 1 probe DC range



PRINTED CIRCUIT BOARD (Foil side) / シート図 (パターン側)

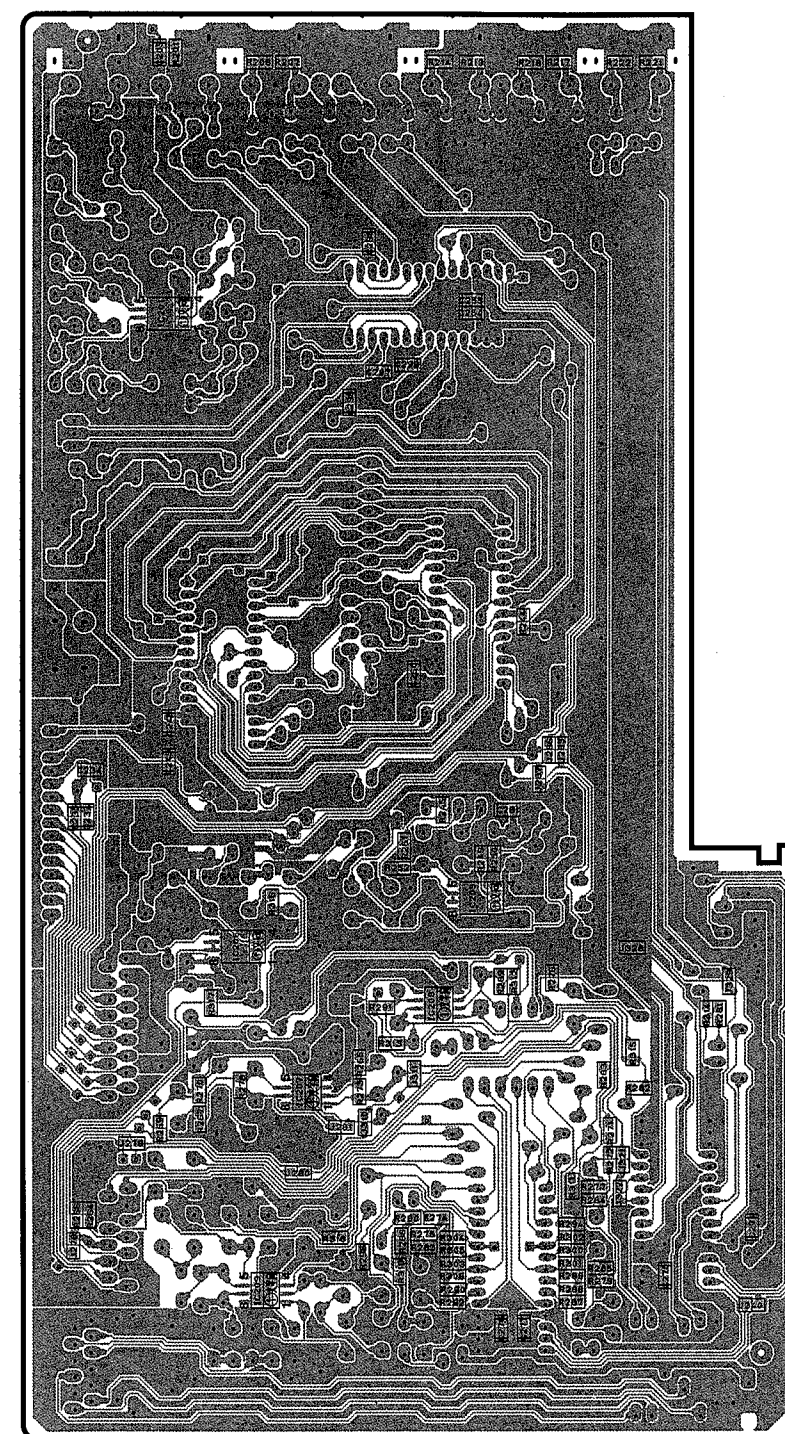


CIRCUIT CHANGES BY MARKET.

	U, C	R, T	A	L	J
C238, 241	O	O	O	O	X
J202, 204	O	O	O	O	X

O : USED
X : NOT USED

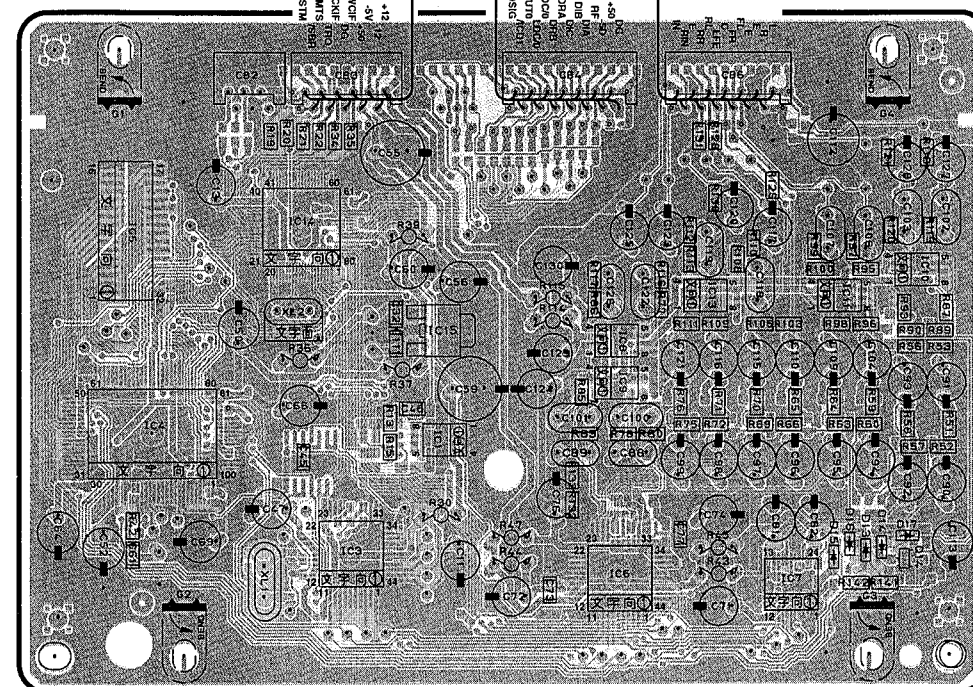
P. C. B. FUNCTION (2)
(Surface Mount Device)



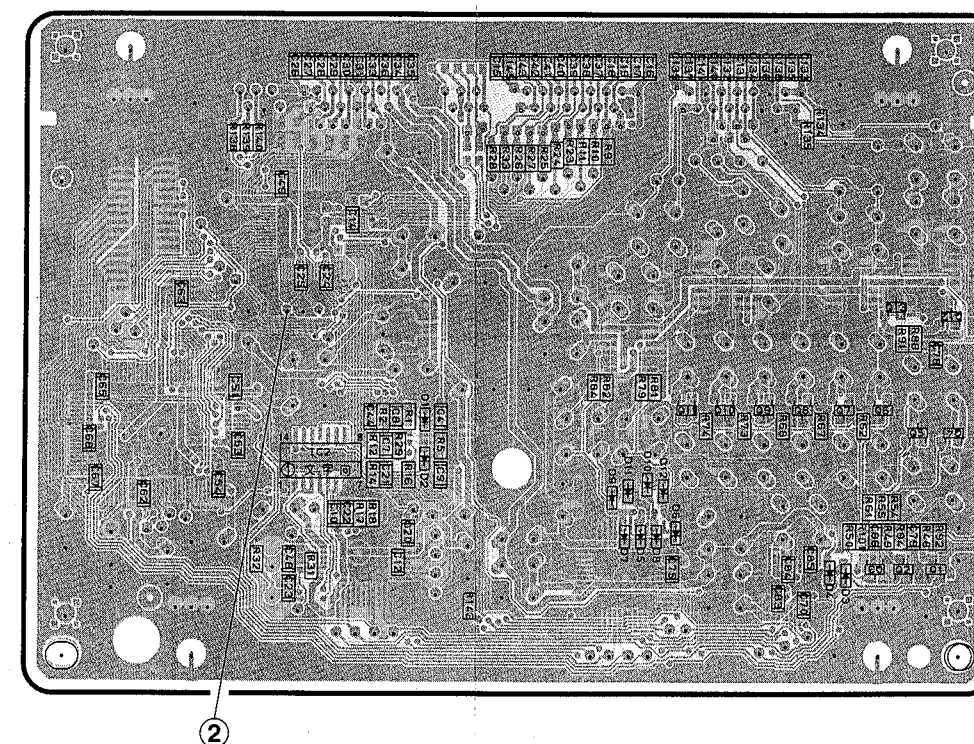
■ PRINTED CIRCUIT BOARD(Foil side)／シート図(パターン側)

P. C. B. DSP	(Lead Type Device)
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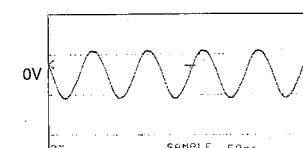
FROM : FUNCTION (1) →



P. C. B. DSP (Surface Mount Device)



Point ② (Pin13 of IC14)
V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe

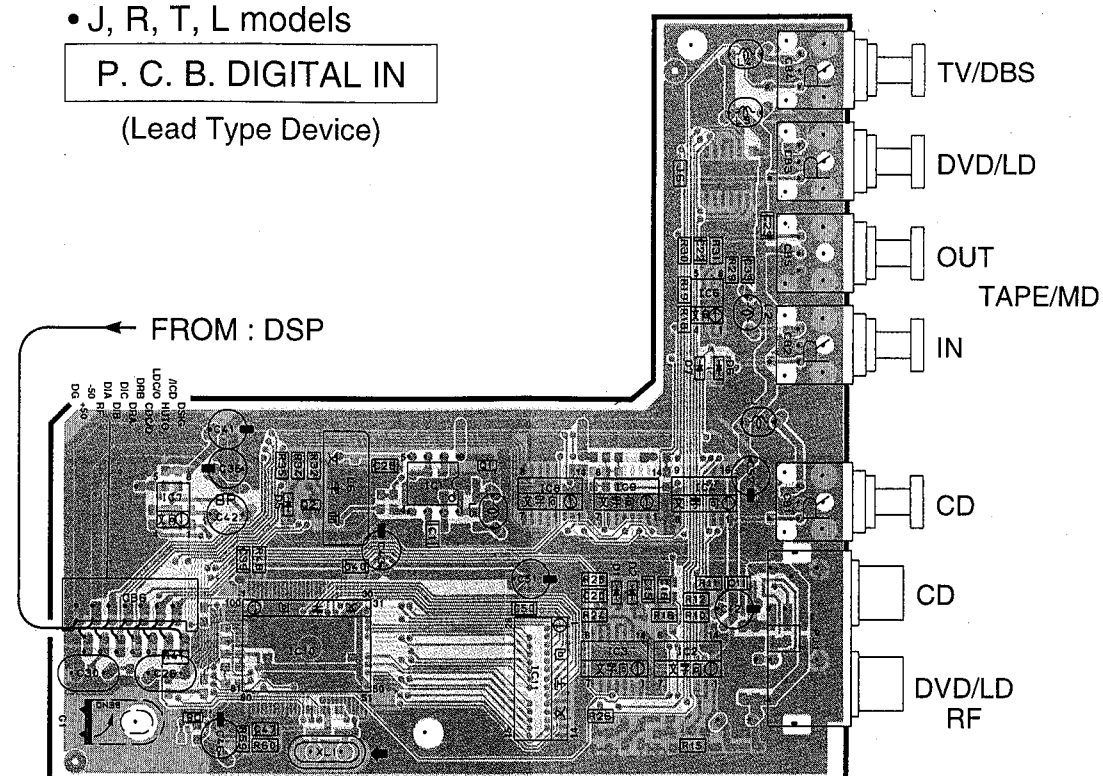


■ PRINTED CIRCUIT BOARD(Foil side)／シート図(パターン側)

• J, R, T, L models

P. C. B. DIGITAL IN

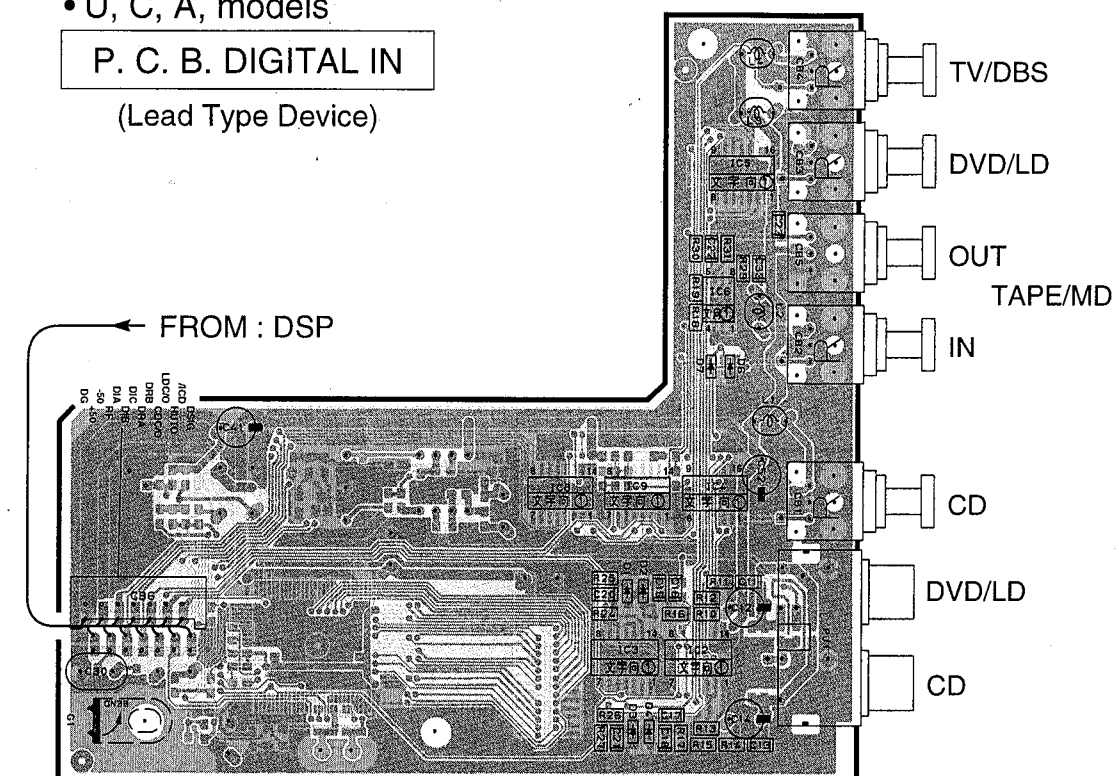
(Lead Type Device)



• U, C, A, models

P. C. B. DIGITAL IN

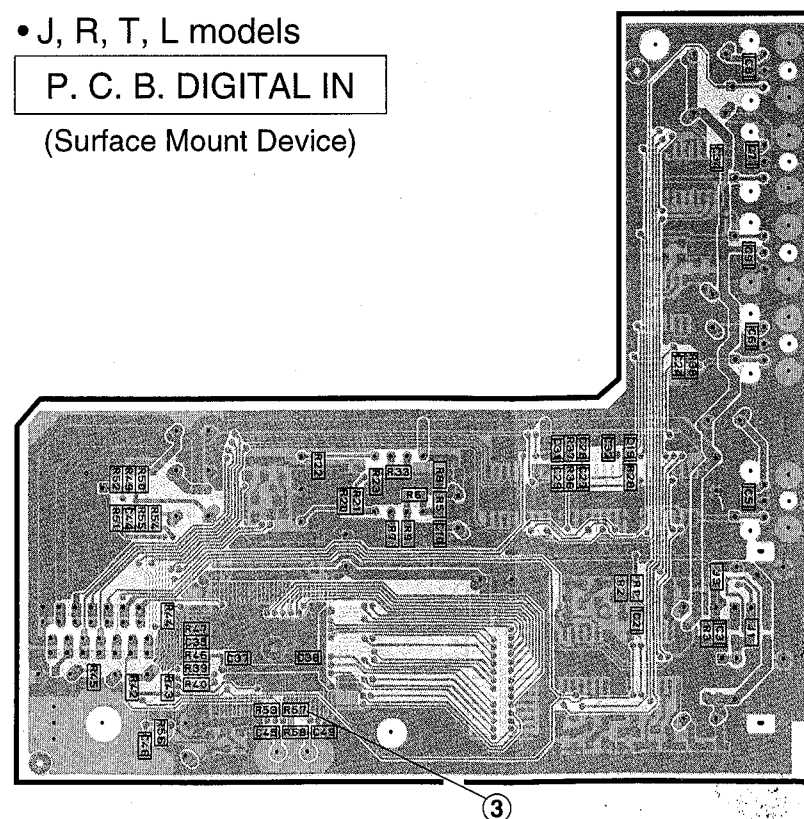
(Lead Type Device)



• J, R, T, L models

P. C. B. DIGITAL IN

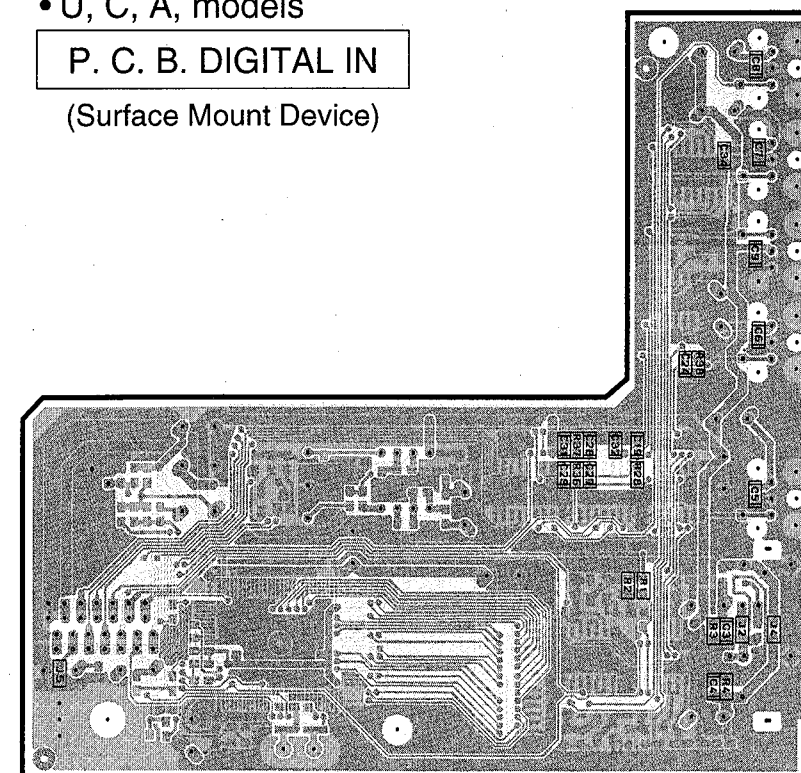
(Surface Mount Device)



• U, C, A, models

P. C. B. DIGITAL IN

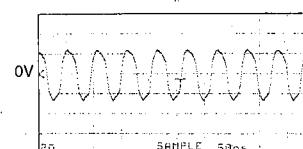
(Surface Mount Device)



Point ③ (Pin56 of IC10)

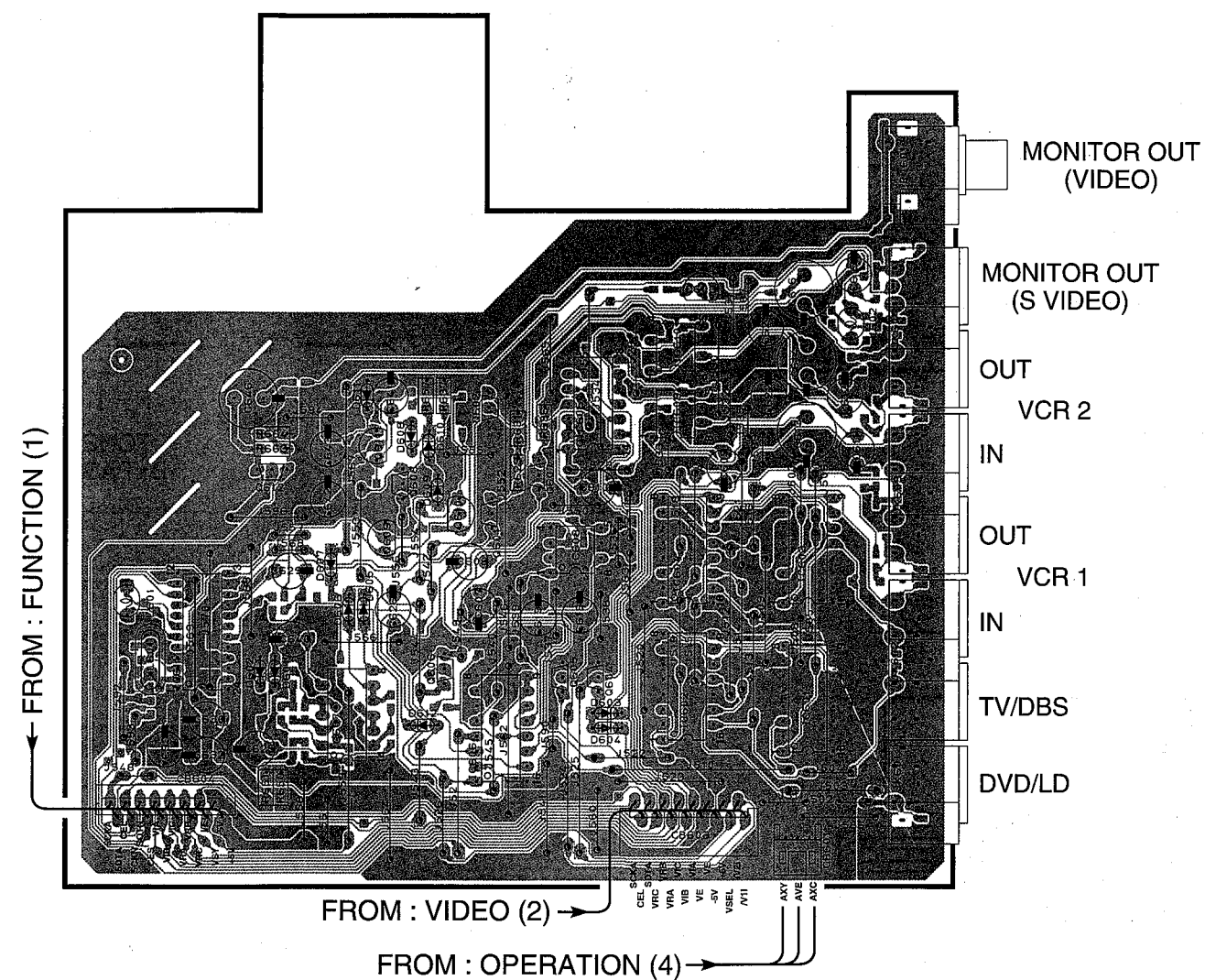
V : 2V/div H : 50 nsec/div

DC range 1 : 1 probe

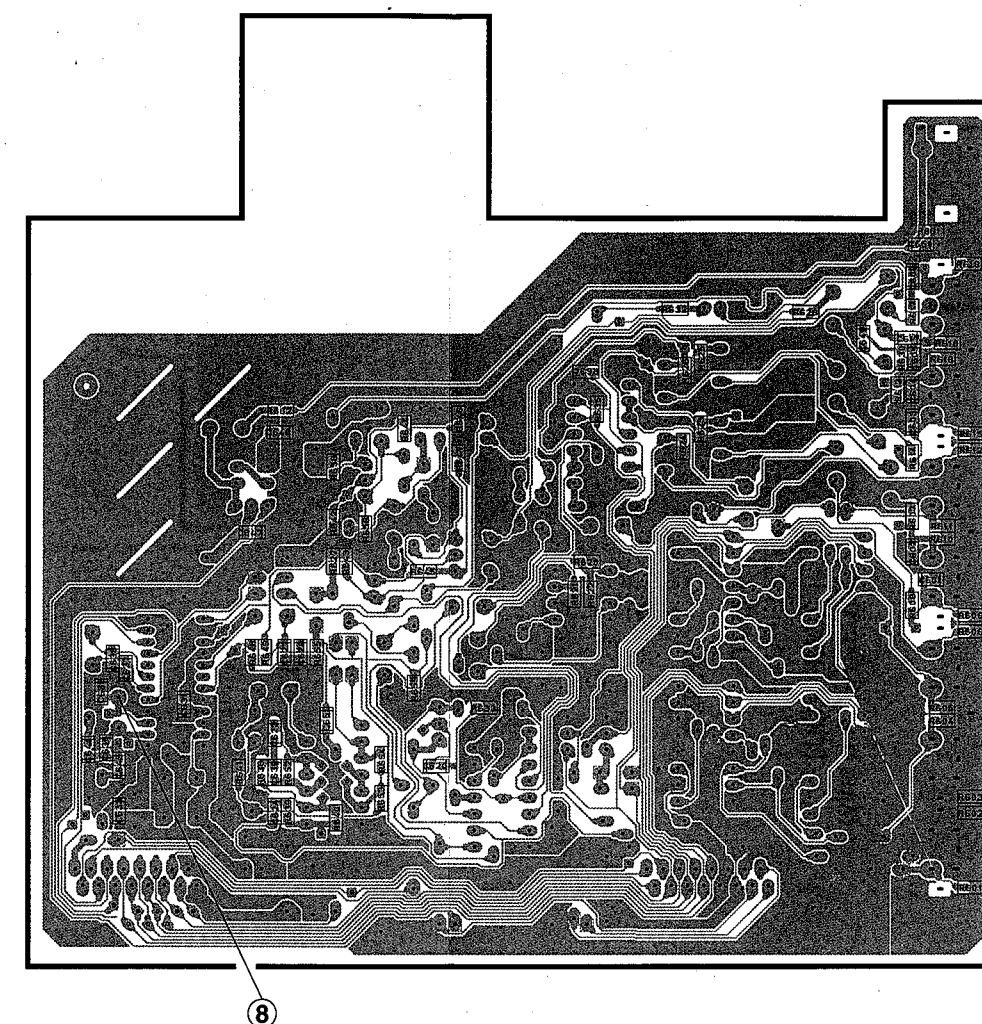


■ PRINTED CIRCUIT BOARD(Foil side)／シート図(パターン側)

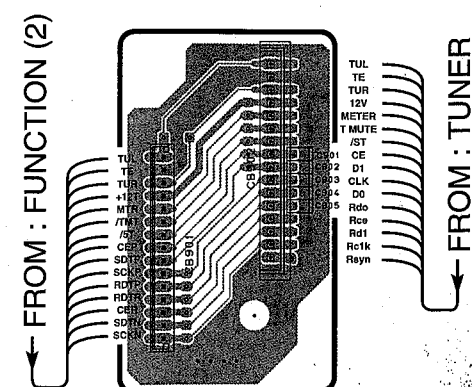
P. C. B. VIDEO (1) (Lead Type Device)



P. C. B. VIDEO (1) (Surface Mount Device)



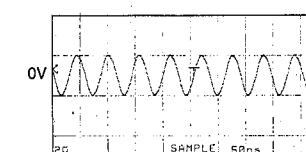
P. C. B. VIDEO (6)



CIRCUIT CHANGES BY MARKET.

	U, C	R, T	A	L	J
C905	X	O	X	X	X
O : USED					
X : NOT USED					

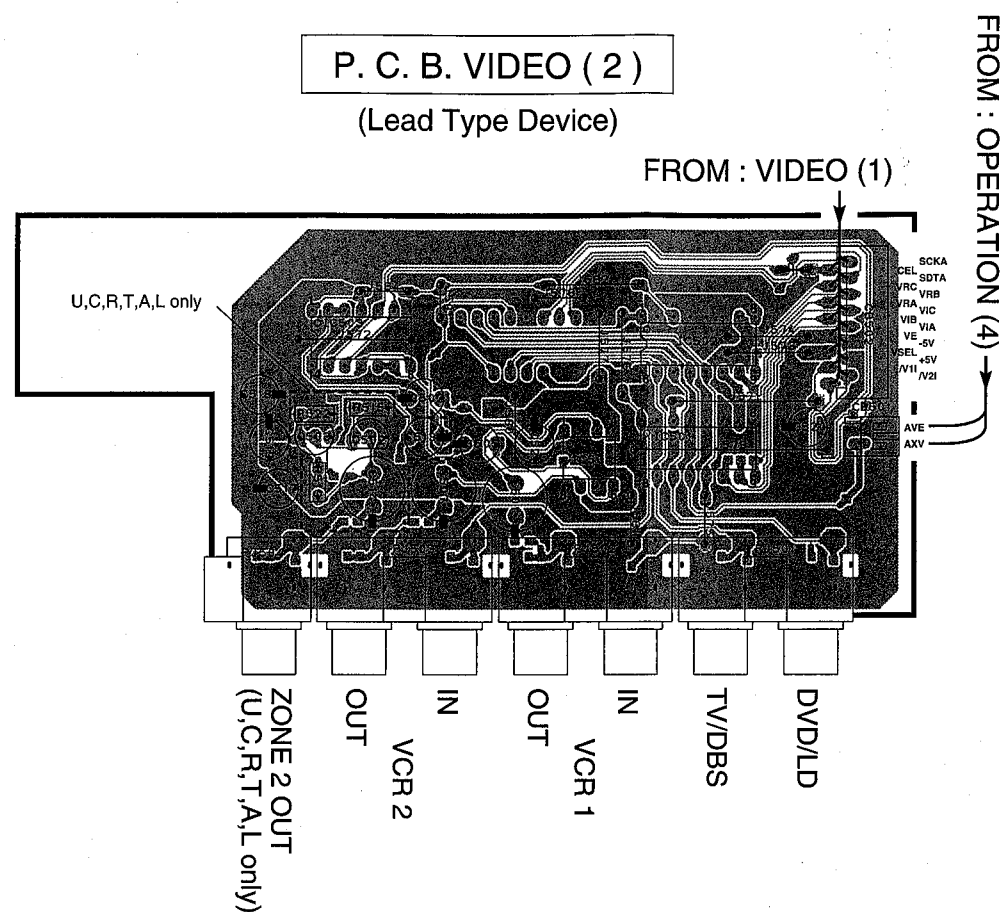
Point ⑧ (Pin3 of IC611)
 V : 2V/div H : 50 nsec/div
 DC range 1 : 1 probe



■ PRINTED CIRCUIT BOARD(Foil side)／シート図(パターン側)

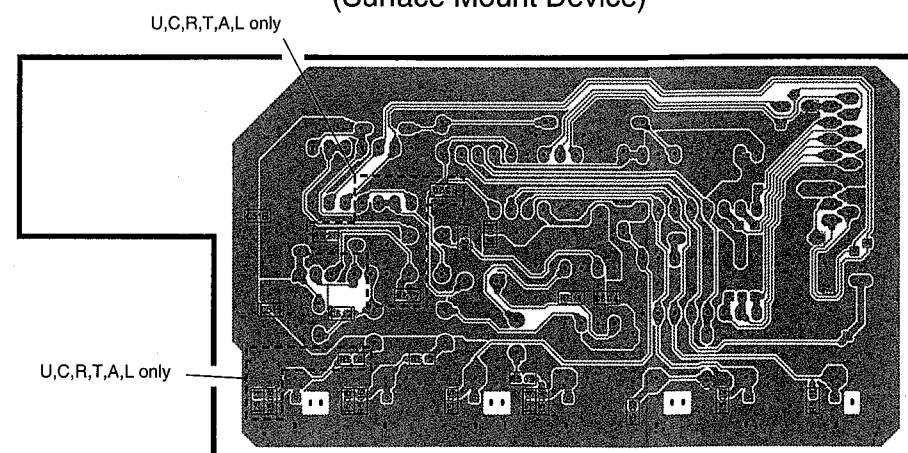
P. C. B. VIDEO (2)

(Lead Type Device)

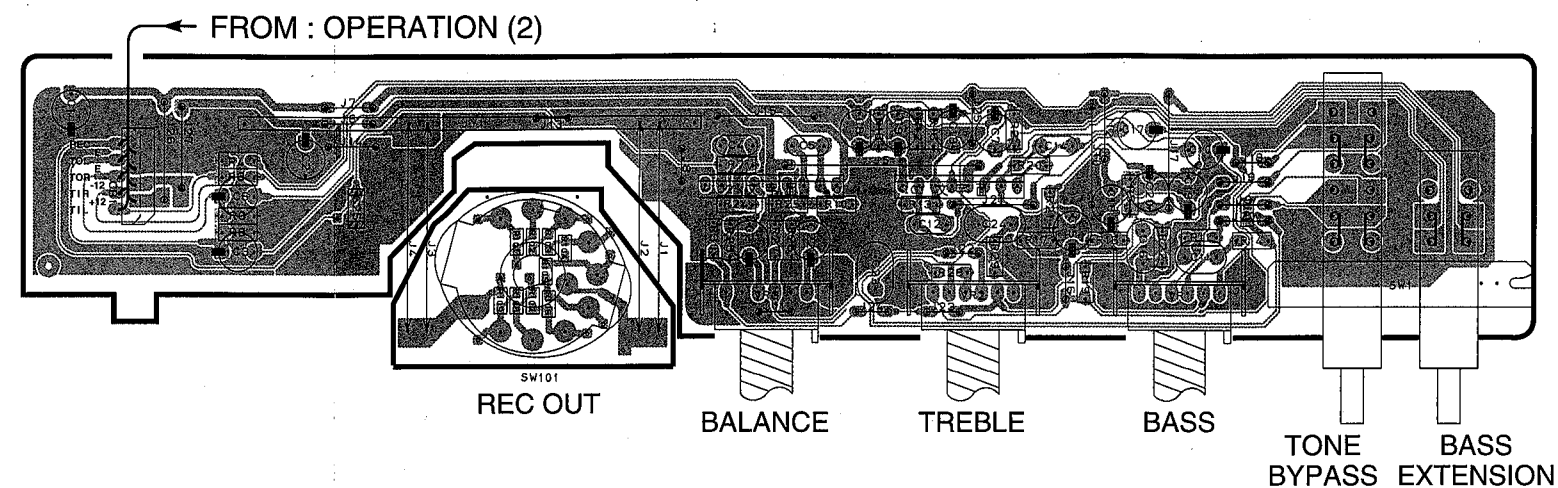


P. C. B. VIDEO (2)

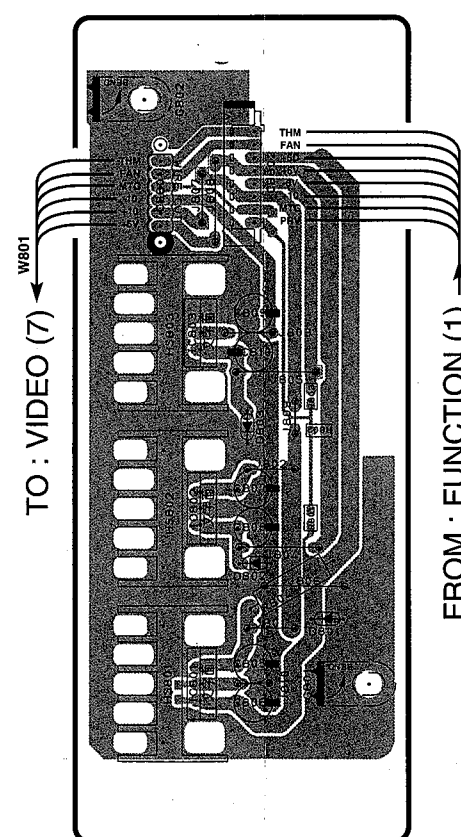
(Surface Mount Device)



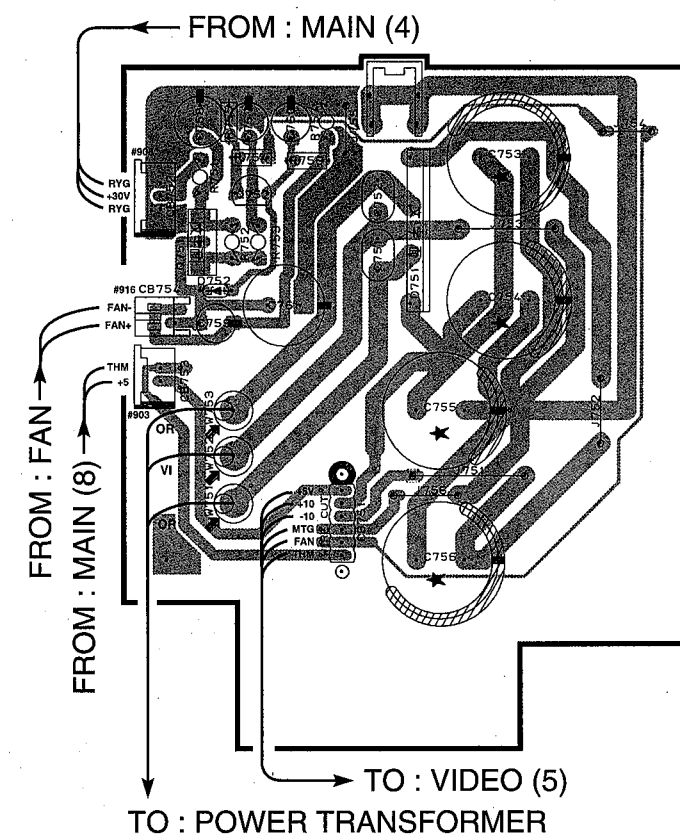
P. C. B. VIDEO (3)



P. C. B. VIDEO (5)

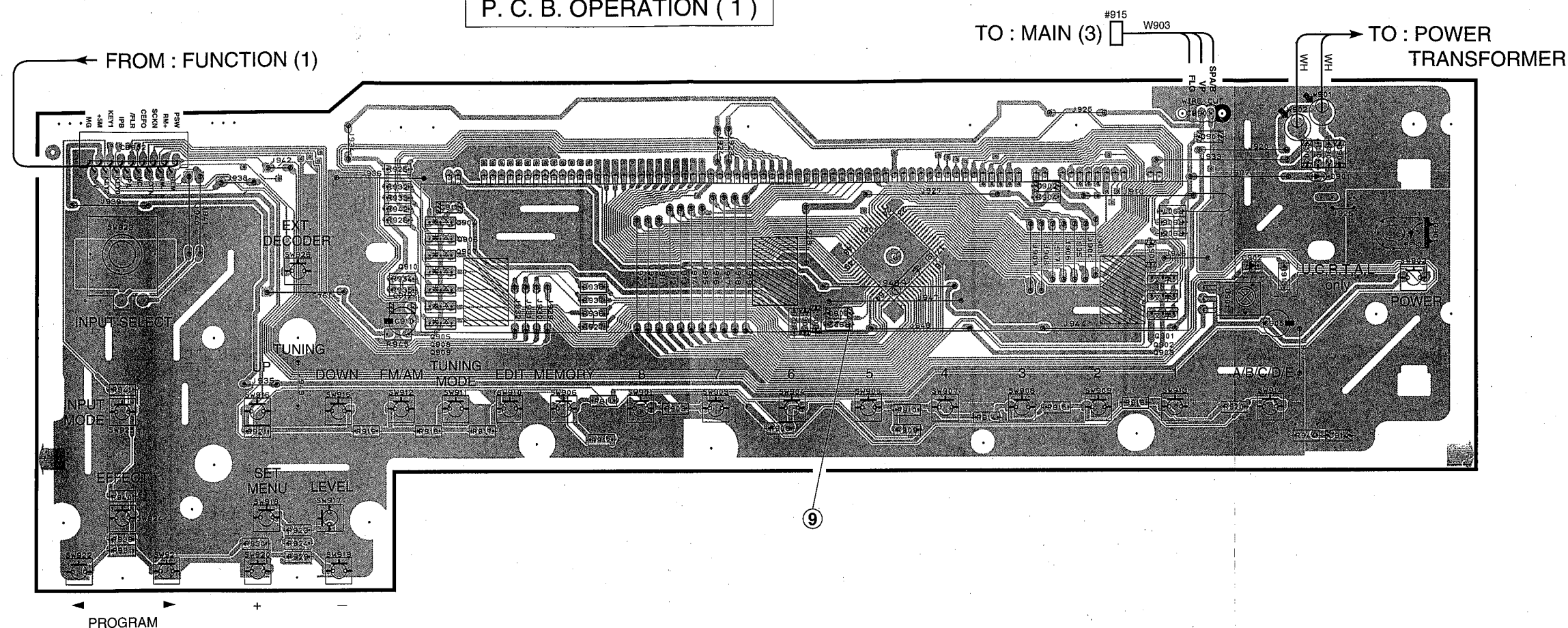


P. C. B. VIDEO (7)

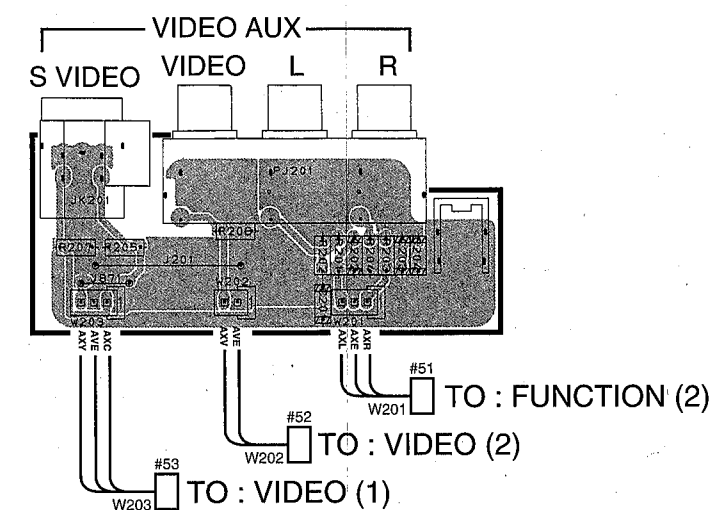


■ PRINTED CIRCUIT BOARD (Foil side) / シート図 (パターン側)

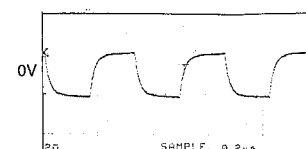
P. C. B. OPERATION (1)



P. C. B. OPERATION (4)



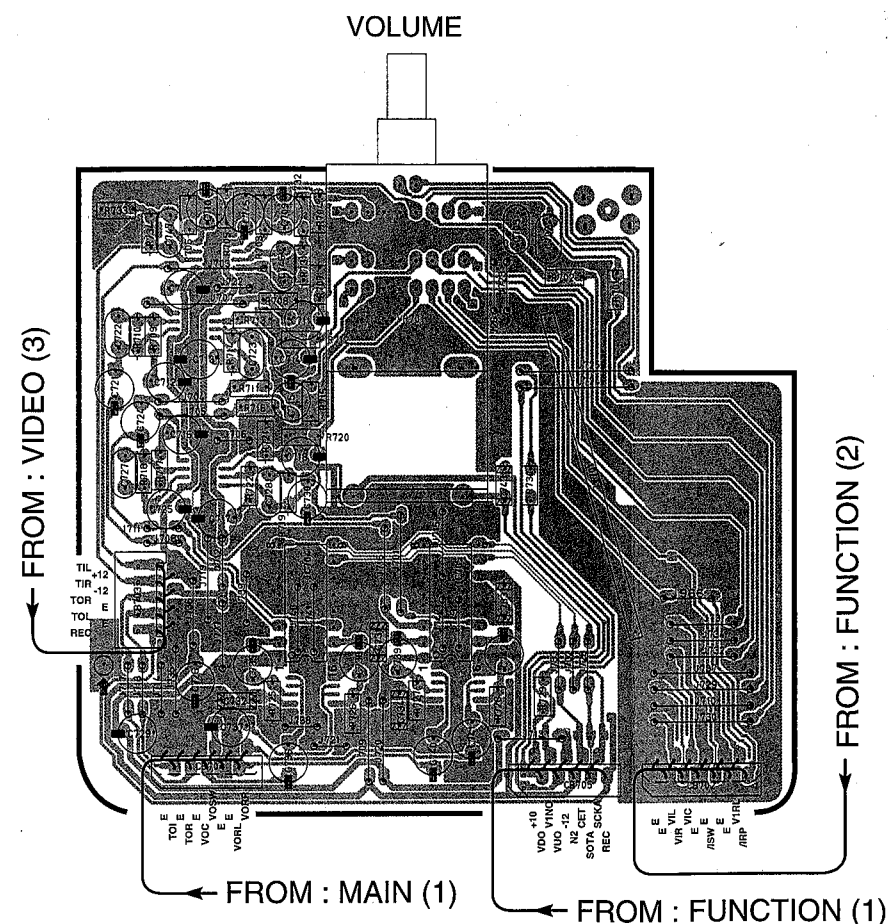
Point ⑨ (Pin58 of IC901)
 V : 2V/div H : 0.2 μ sec/div
 DC range 1 : 1 probe



PRINTED CIRCUIT BOARD (Foil side) / シート図 (パターン側)

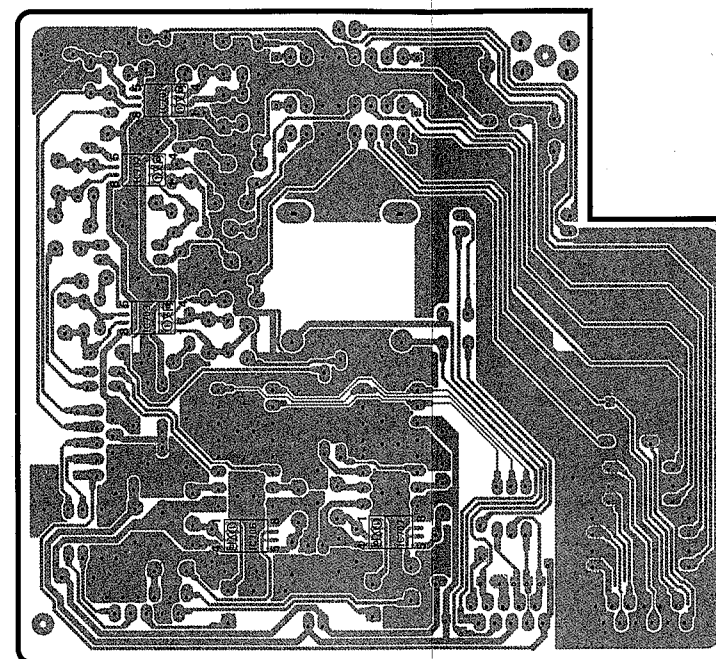
P. C. B. OPERATION (2)

(Lead Type Device)

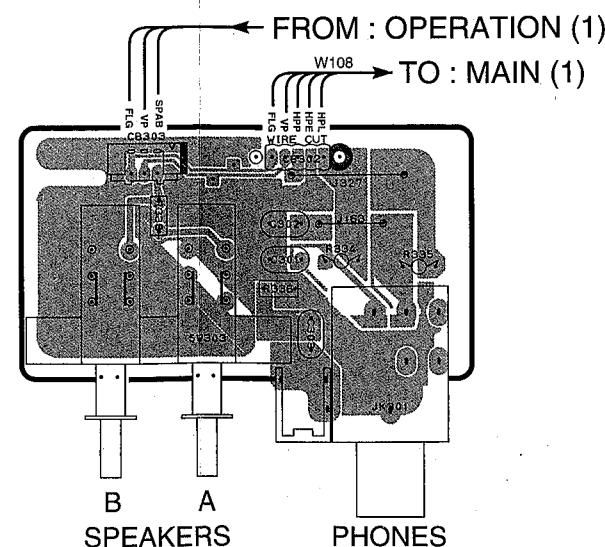


P. C. B. OPERATION (2)

(Surface Mount Device)



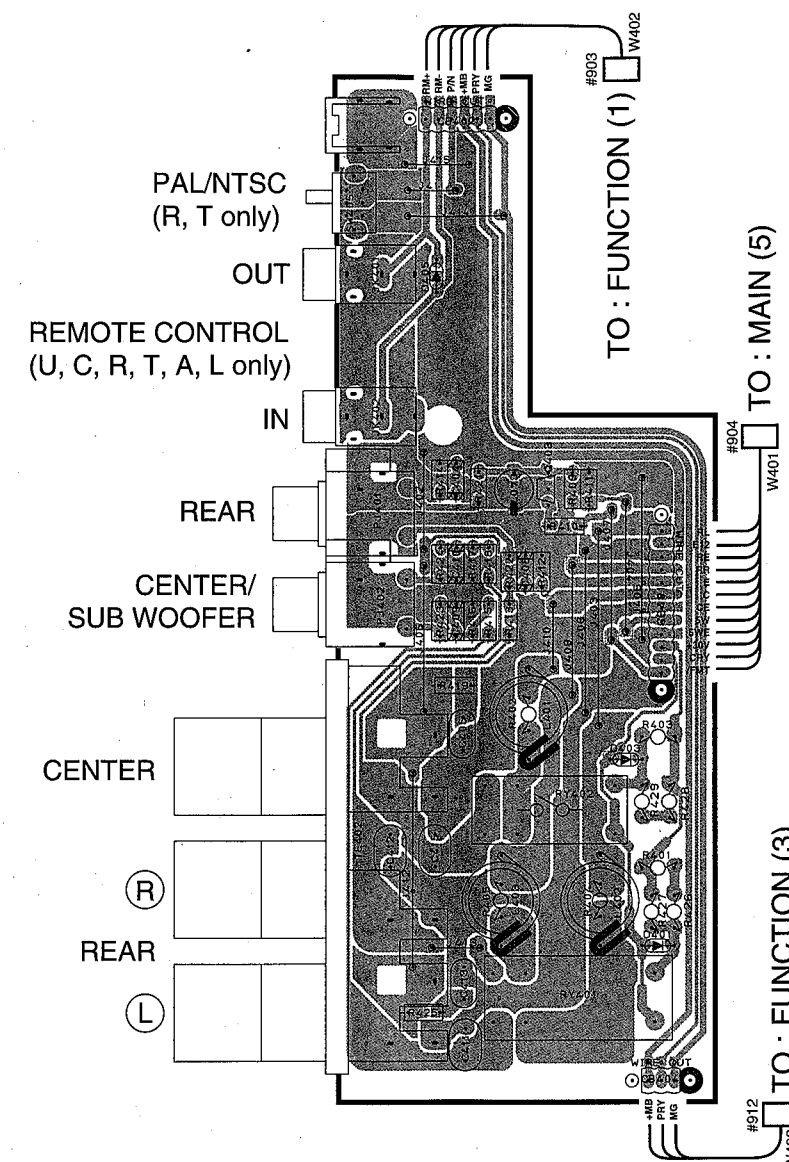
P. C. B. MAIN (3)



CIRCUIT CHANGES BY MARKET.

	U, C	R, T	A	L	J
C301, 302	X	X	X	O	X
O : USED					
X : NOT USED					

P. C. B. OPERATION (3)



CIRCUIT CHANGES BY MARKET.

	U, C	R, T	A	L	J
C411, 412, 415	X	X	X	O	X
C411, 412, 413	X	X	X	O	X
R419, 425	X	X	X	O	X
R403, 427	O	O	O	O	X
R401, 428	X	X	X	X	O
R426, 429	X	X	X	X	O
SW405	X	O	X	X	X
W601	O	O	O	O	X
JK401, 402	O	O	O	O	X
D405	O	O	O	O	X
J651	O	X	X	X	X

O : USED
X : NOT USED

1

2

3

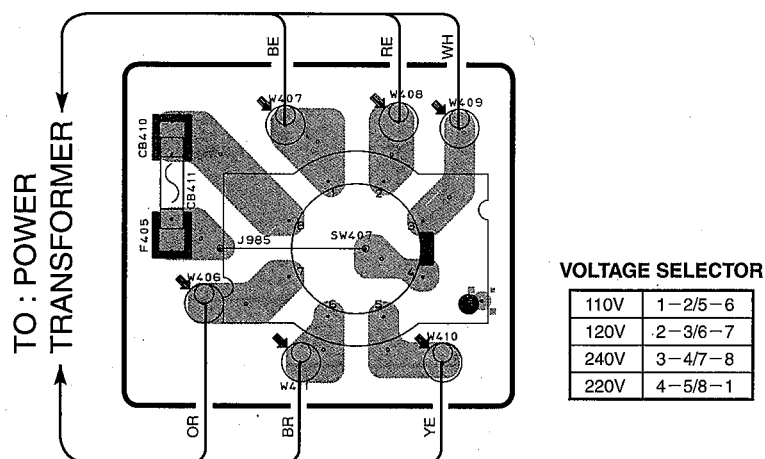
4



6

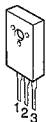



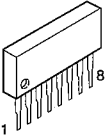
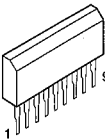
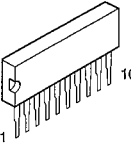

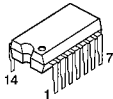
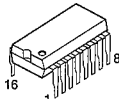
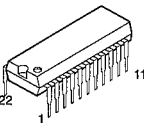
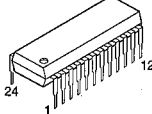
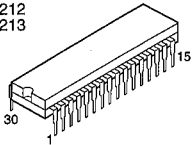
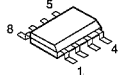
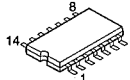
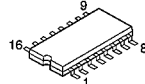
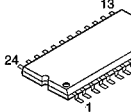
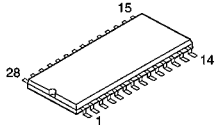
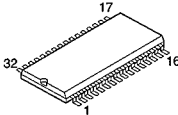

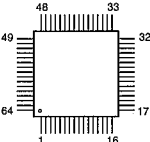
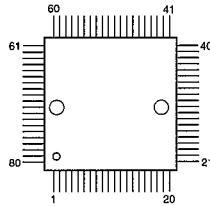
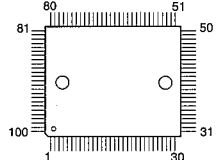
- R, T models

P. C. B. OPERATION (5)



■ PIN CONNECTION DIAGRAM / 半導体外形図

● ICs

AN78N05  <p>1: INPUT 2: COMMON 3: OUTPUT</p>	NJM79M05FA NJM79M12FA  <p>1: COMMON 2: INPUT 3: OUTPUT</p>	NJM78M05FA  <p>1: OUTPUT 2: COMMON 3: INPUT</p>	μPC29M33T-E1  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	NJM2068L-D M5220L  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	μPC4570HA  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	LB1641  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>
MC14576CP MC14577CP NJM2068MD  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	TC74HC04AP HD14066BP  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	HD14051BP HD14053BP TC9299P  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	LA3401 LC72131  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	LA1266 LC74781-9626  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	LC78211 LC78212 LC78213  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	
NJM2904M M5220FP μPC4570G2  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	TC74HC00FPEL TC74HC02FPEL TC74HC04AF-TP1  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	TC74HC151FPEL TC74HC153FPEL  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	AK4320-VM-E1  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	UM61256FS-15Q  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>		
M5M51288BKJ-20LTEL  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	AK4526VQ YM3436DK  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	LC75710NE  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	HD64F3337YF16 LC87F5164  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>	PM4007A YSS918  <p>1: INPUT 2: GND 3: OUTPUT 4: GND</p>		

● Transistors

<p>2SA933S (Q, R) 2SC1740S (R, S) 2SD1915F (S, T) DTA114ES DTA144ES DTA144ES DTC114ES DTC143XS DTC144ES</p>	<p>2SA1037K (Q, R, S) 2SC2412K (Q, R, S) 2SC3326 (A, B) DTA144EKA DTC144EKA</p>	<p>2SA893A (D, E) 2SA970 (GR, BL) 2SA1015 (Y) 2SC535 (A, B, C) 2SC1815 (Y) 2SC1890A (D, E) 2SC2240 (GR, BL) 2SC2229 (O, Y) 2SC2878 (A, B)</p>	<p>2SK246 (Y)</p>
<p>2SC4038 (Q, R, S)</p>	<p>2SA1358 (O, Y) 2SC3421 (O, Y)</p>	<p>2SB941 (P, Q) 2SC4495 2SD2396 (J, K)</p>	<p>2SA1943 (O, R) 2SA1986 (R, O) 2SC5200 (O, R) 2SC5358 (R, O)</p>

● Diodes

<p>1SS133 1SS270A MA2240 MTZJ5.1A MTZJ5.1B</p>	<p>MTZJ5.6B MTZJ6.8A MTZJ11.0B HZZS7B2TD HZZS12B2TD HZZS12C2TD HZZS152TD HZZS242TD HZZS302TD</p>	<p>1SS355</p>	<p>KV1851-TL</p>	<p>S1NB20</p>	<p>D3SBA20 D5SB20</p>
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SCHEMATIC DIAGRAM(TUNER)／総回路図

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

RESISTOR	REMARKS	PARTS NAME
NO MARK	⊗	CARBON FILM RESISTOR (P=5)
NO MARK	⊙	CARBON FILM RESISTOR (P=10)
NO MARK	⊖	METAL OXIDE FILM RESISTOR
NO MARK	⊕	METAL FILM RESISTOR
NO MARK	⊖	METAL PLATE RESISTOR
NO MARK	⊕	FIRE PROOF CARBON FILM RESISTOR
NO MARK	⊖	CEMENT MOLDED RESISTOR
NO MARK	⊕	SEMI VARIABLE RESISTOR
NO MARK	⊖	CHIP RESISTOR

NOTICE (model)
 (J)..... JAPANESE
 (U)..... U.S.A.
 (C)..... CANADIAN
 (R)..... GENERAL
 (A)..... AUSTRALIAN
 (B)..... BRITISH
 (G)..... EUROPEAN
 (T)..... CHINA
 (L)..... SINGAPORE

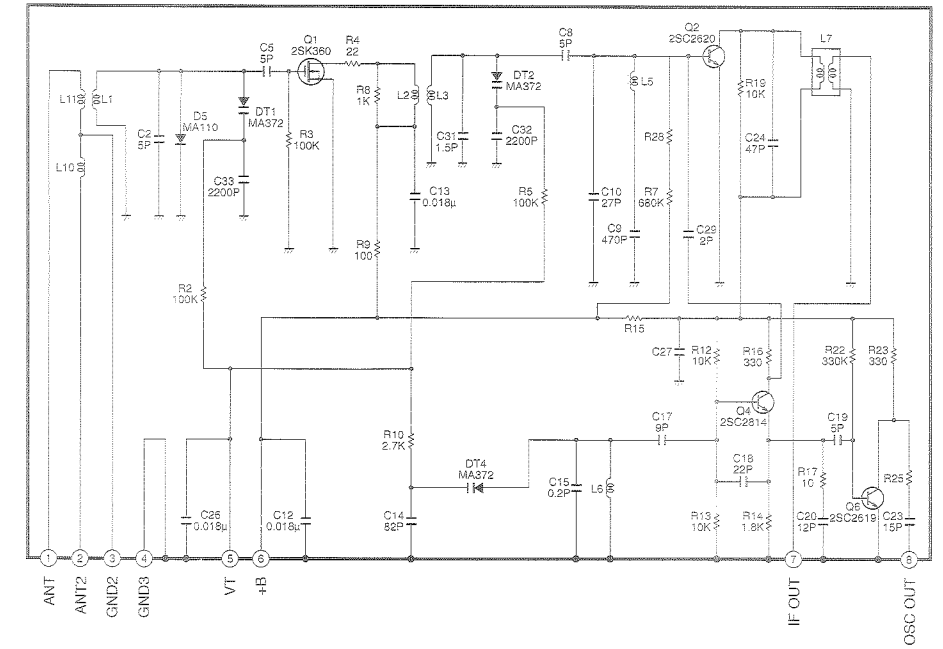
Mark	Reference Parts Number	Parts Name
k1	D1-2	HSS104 ISS133 ISS175

CIRCUIT CHANGES BY MARKET.

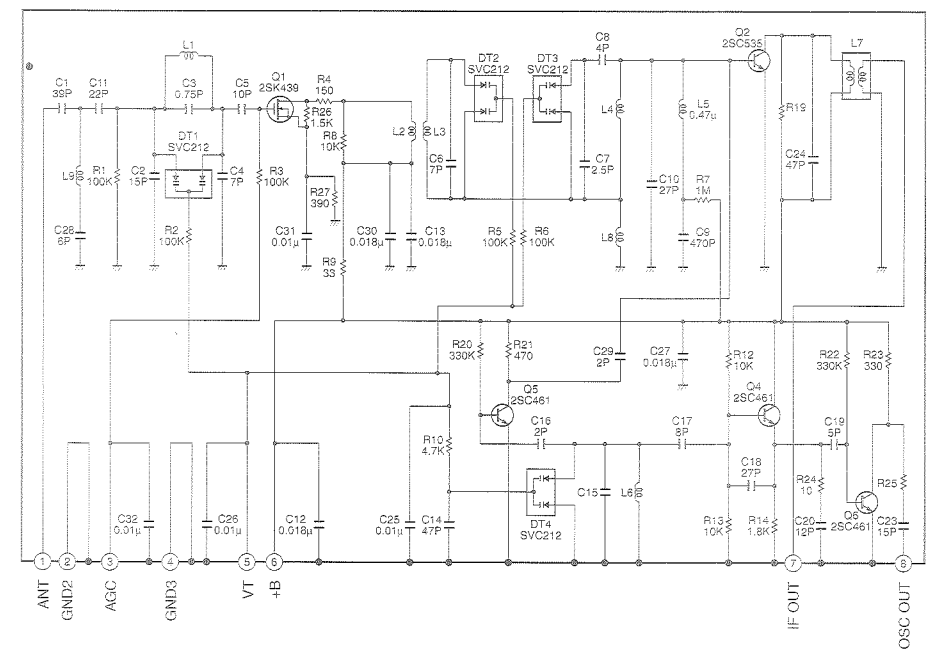
8	J	U.C	R.T	A-B-G-L
1	PK1	V251850	V251850	V251850
2	R48	V290900	V290910	V290910
3	T3			XY42 VT48680
4	J41			
5	C49	2200P UA95322	2200P UA95322	120P UA95212
6	R50	22K	22K	1K
7	C38-37	580P UA95268	1000P UA95310	270P UA95227
8	R35-37	75K	75K	180K
9	SW1			V560260
10	J42			
11				
12	R55-57-58			270K
13	R60			180K
14	R34	10K	10K	27K

○ : USED
 △ : NOT USED

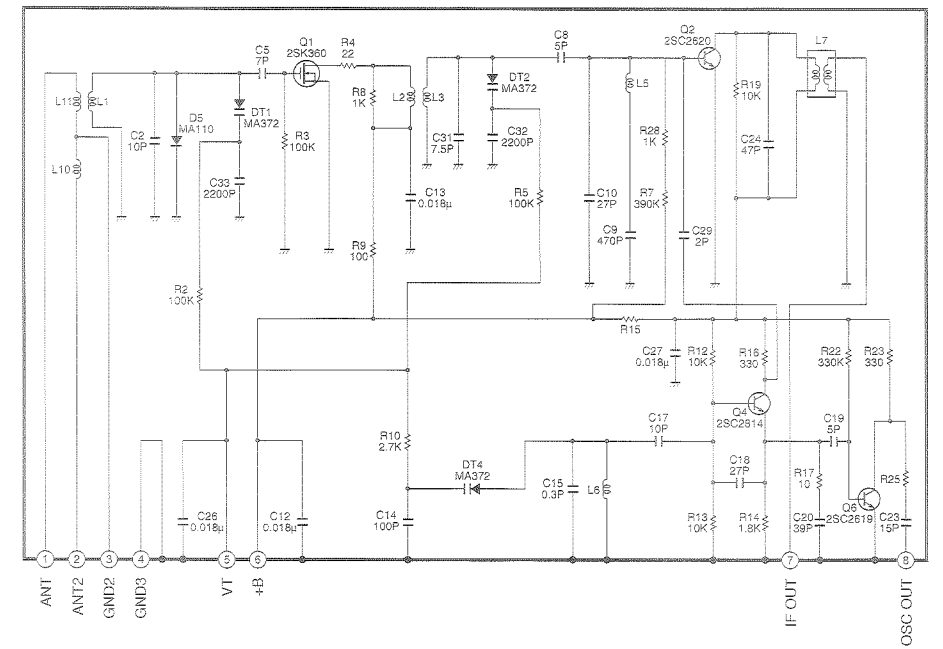
PK1 : ENV-172C8G1R (V2909100) U, C, R, T models



PK1 : ENV-172A4G1 (V2716700) A, B, G, L models



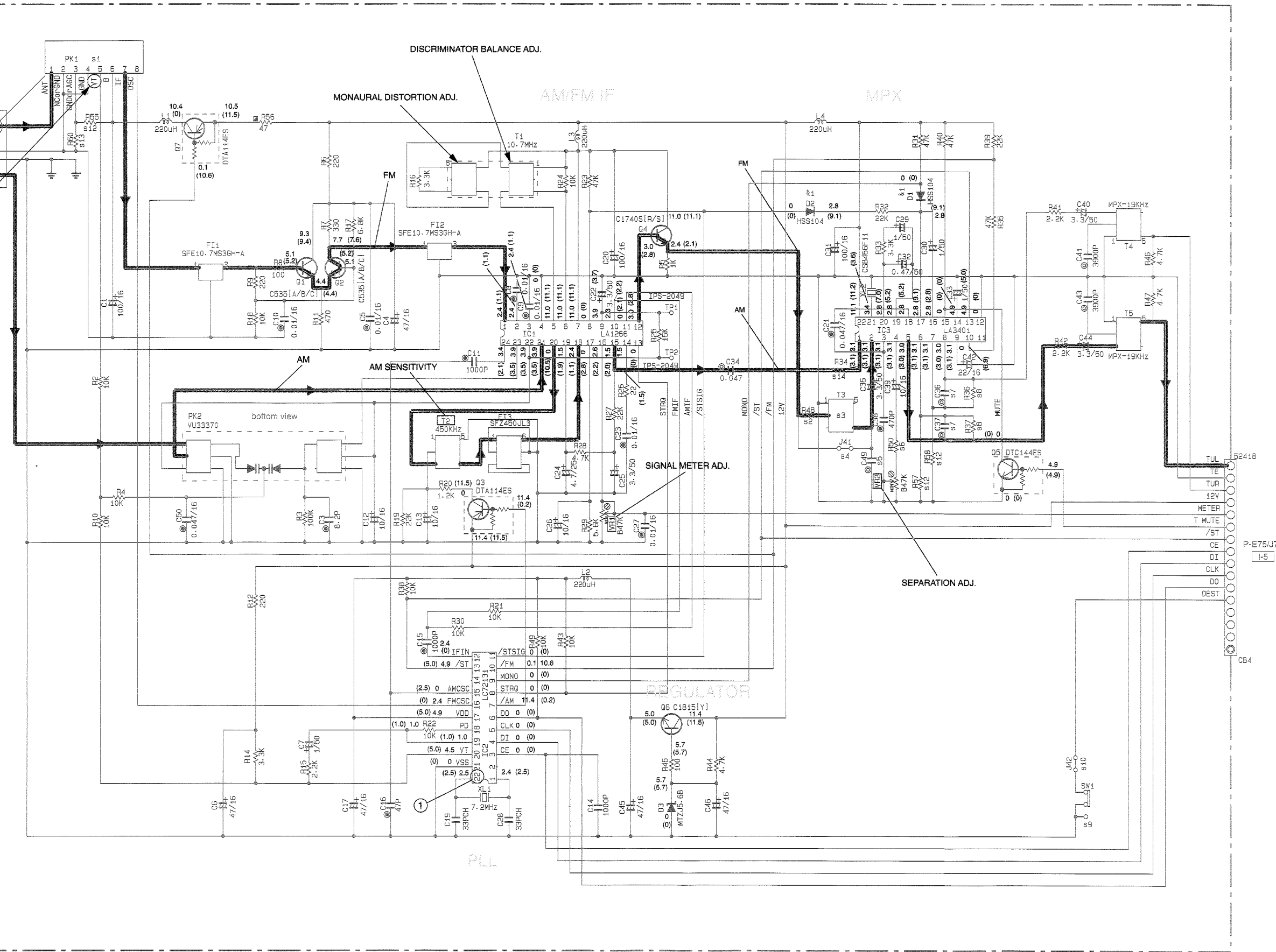
PK1 : ENV-142C2G1R (V2909000) J model



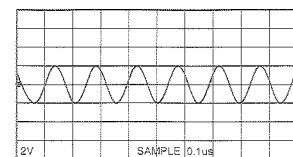
TUNER

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

●電圧は、内部抵抗10MΩの電圧計で測定したものです。
 ●△印のある部品は、安全性確保部分を示しています。部品の交換が必要な場合、パーツリストに記載されている部品を使用してください。
 ●本回路図は、標準回路図です。改良のため予告なく変更することがございます。

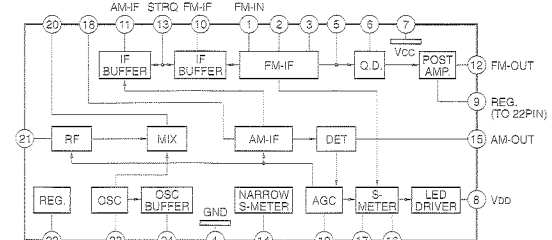


Point ① (Pin22 of IC2)
 V : 2V/div H : 0.1 μsec/div
 DC range 1 : 1 probe



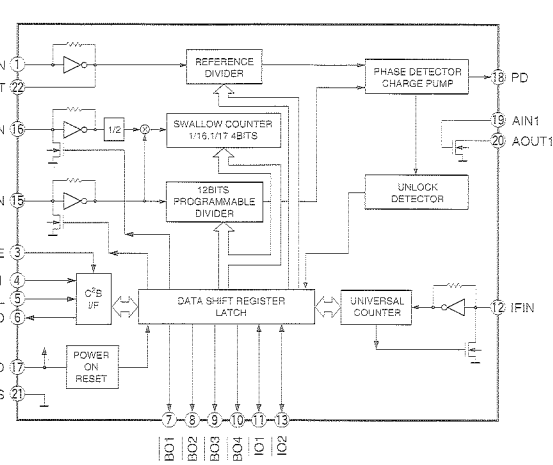
IC1 : LA1266

AM/FM IF



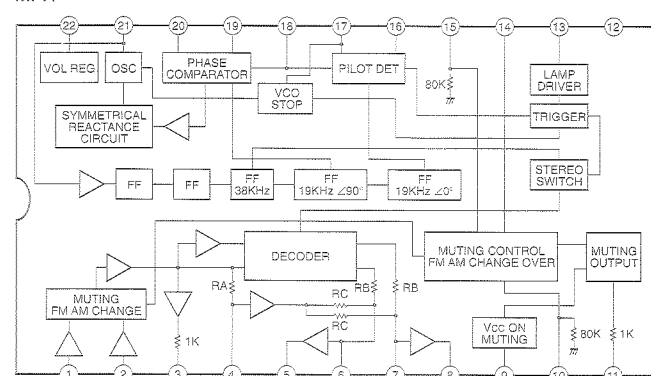
IC2 : LC72131

PLL Controller

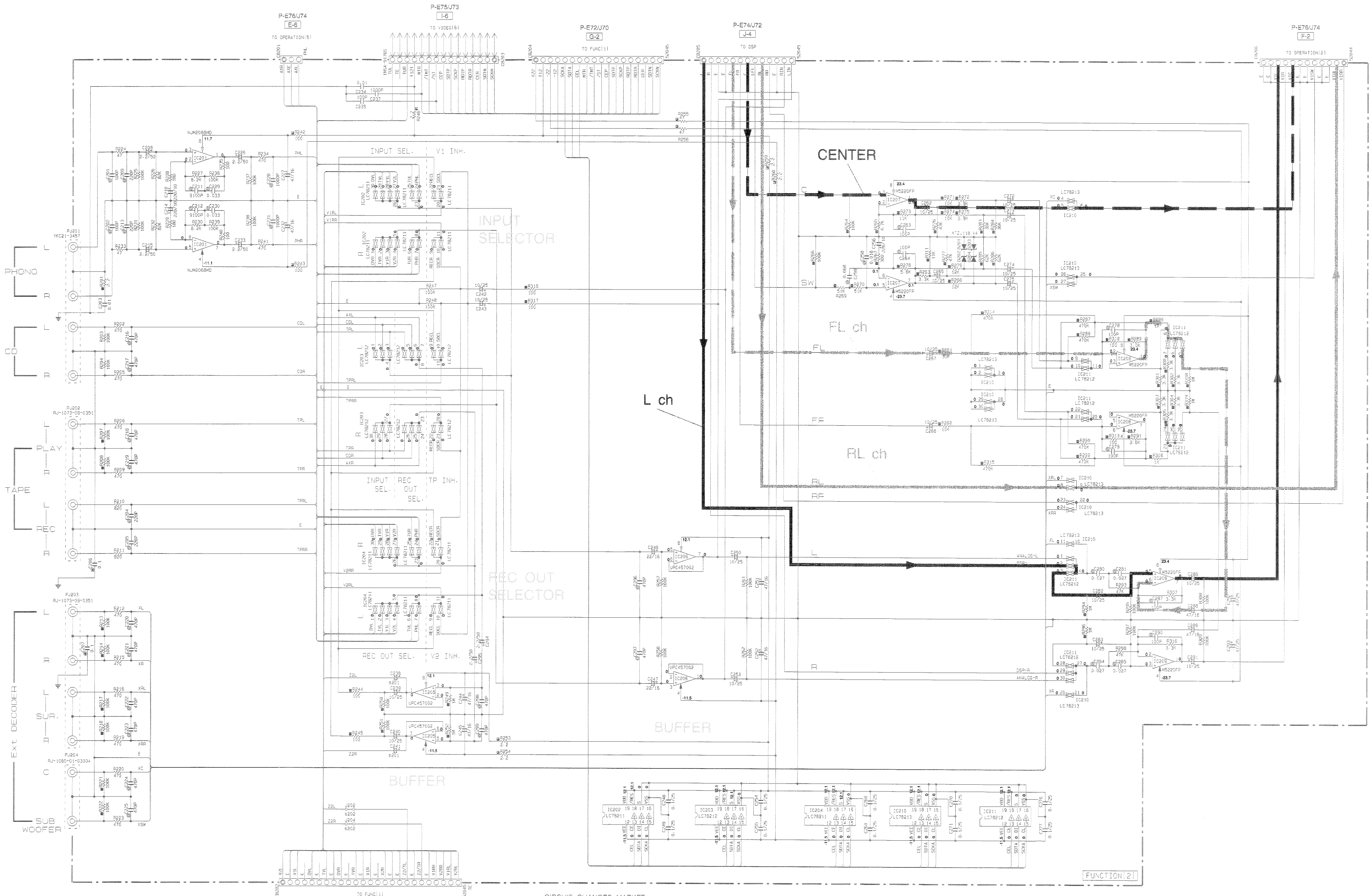


IC3 : LA3401

MPX



SCHEMATIC DIAGRAM(FUNCTION [2])／総回路図



NOTICE (model)
(J)..... JAPANESE
(U)..... U.S.A
(C)..... CANADIAN
(R)..... GENERAL
(A)..... AUSTRALIAN
(B)..... BRITISH
(G)..... EUROPEAN
(T)..... CHINA
(L)..... SINGAPORE

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
△	CARBON FILM RESISTOR (P=10)
▲	METAL OXIDE FILM RESISTOR
●	METAL FILM RESISTOR
■	METAL PLATE RESISTOR
□	FIRE PROOF CARBON FILM RESISTOR
○	CEMENT MOUNTED RESISTOR
◇	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

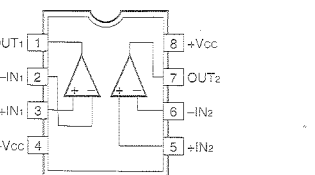
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
◎	TANTALUM CAPACITOR
●	CERAMIC CAPACITOR
○	CERAMIC TUBULAR CAPACITOR
◇	POLYESTER FILM CAPACITOR
□	POLYSTYRENE FILM CAPACITOR
△	MICA CAPACITOR
◇	POLYPROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR

CIRCUIT CHANGES MARKET

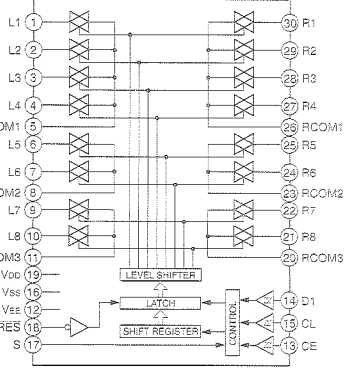
S	Ref. No.	U	U.C	R.T	A	L
201	C336-241	×	○	10/25	10/25	10/25
202	U202-204	×	○	○	○	○
203						
204						
205						
206						
207						
PWB	XV530	XV530	XV530	XV530	XV530	XV530
PCB	V303650	V303650	V303670	V303680	V303690	

X : NOT USED
O : USED

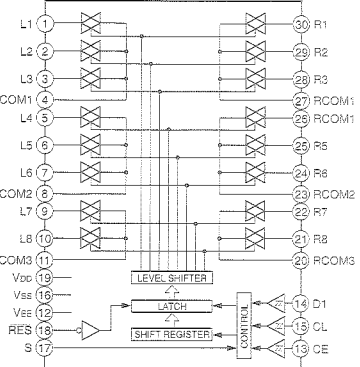
IC201 : NJM2068MD-T1
IC205, 206 : μ PC4570G2
IC207~209 : M5220FP
Dual OP-Amp



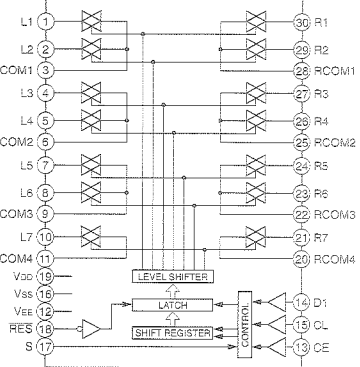
IC202, 204 : LC78211
Analog Function Switch



IC203, 211 : LC78212
Analog Function Switch



IC210 : LC78213
Analog Function Switch



FUNCTION [2]

* All voltage are measured with a 10M Ω /V DC electric volt meter.
* Components having special characteristics are marked Δ , and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

●電圧は、内部抵抗10M Ω の電圧計で測定したものです。
● Δ 印のある部品は、安全性確保部分を示しています。部品の交換が必要な場合、パーツリストに記載されている部品を使用してください。
●本回路図は、標準回路図です。改良のため予告なく変更することがございます。

■ SCHEMATIC DIAGRAM(FUNCTION[1])／総回路図

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

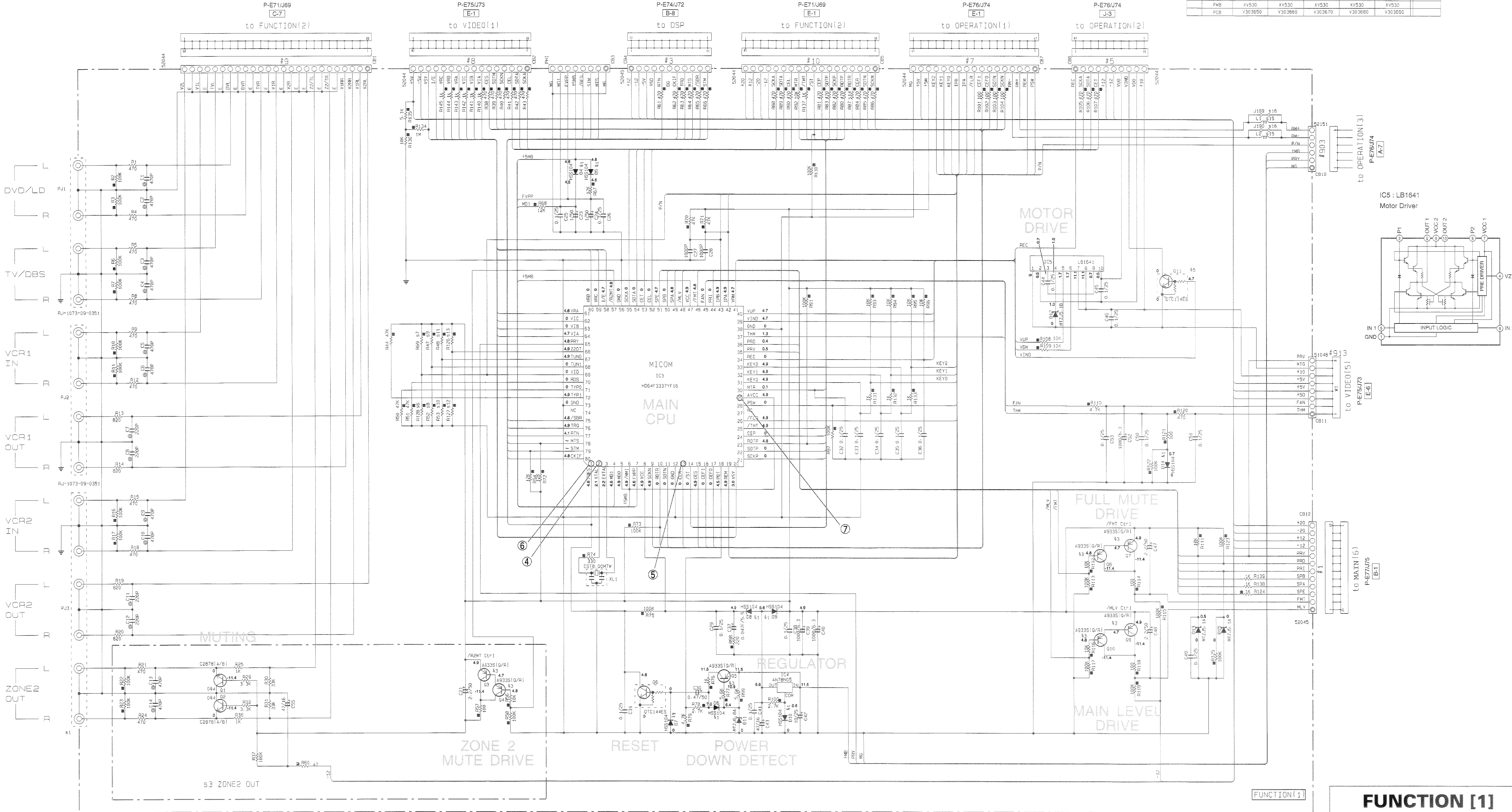
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
⊠	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
▴	METAL PLATE RESISTOR
▢	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOUNTED RESISTOR
⊞	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

NOTICE (model)
(J)..... JAPANESE
(U)..... U.S.A
(C)..... CANADIAN
(R)..... GENERAL
(A)..... AUSTRALIAN
(B)..... BRITISH
(S)..... EUROPEAN
(T)..... CHINA
(L)..... SINGAPORE

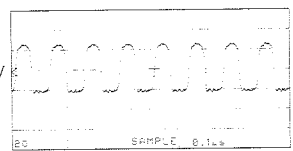
Mark	Reference Parts Number	Parts Name
Ⓚ1	D4-10-14	HSS104 18S13 18S176
Ⓚ3	03-5-7-10	2849335(2/R) 2841155(6/F) 2841305(10/R/S)
Ⓚ4	01-2	2822878(14/R) 2801915(15/F)
Ⓚ5	011	DTC114ES UN4211
Ⓚ6		

S	J	U-C	R-T	A	L	HEW
1	PJ3	VV30560(14P)	VV32540(16P)	VV32540(16P)	VV32540(16P)	ZONE2
2						
3	ZONE2 OUT	X	O	O	O	ZONE2
4						
5						
6	R128	47K	47K	X	X	P/N INTSC
7	R65	X	X	47K	47K	P/N PAL
8	R52	47K	47K	X	X	TUN1 LO
9	R47	X	X	47K	47K	TUN1 HI
10	R53	47K	X	47K	47K	TUN2 LO
11	R48	X	47K	X	X	TUN2 HI
12	R127	47K	X	X	X	220T LO
13	R126	X	47K	47K	47K	220T HI
14	R67	470	470	4.7K	470	Tuner
15	L1-2	X	X	X	VD47370	B2T
16	J165-150	RD25000	RD25000	RD25000	RD25000	B2T
	PWB	XV530	XV530	XV530	XV530	
	PCB	X303650	X303660	X303670	X303680	X303690

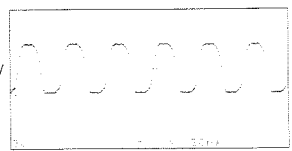
X : NOT USED
O : USED



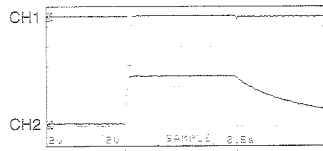
Point ④ (Pin2 of IC3)
V : 2V/div H : 0.1 μsec/div
DC range 1 : 1 probe



Point ⑤ (Pin13 of IC3)
V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe



Point ⑥ (Pin1 of IC3 : CH1)
Point ⑦ (Pin29 of IC3 : CH2)
CH1 : 2V/div H : 0.5 sec/div
CH2 : 2V/div 1 : 1 probe DC range



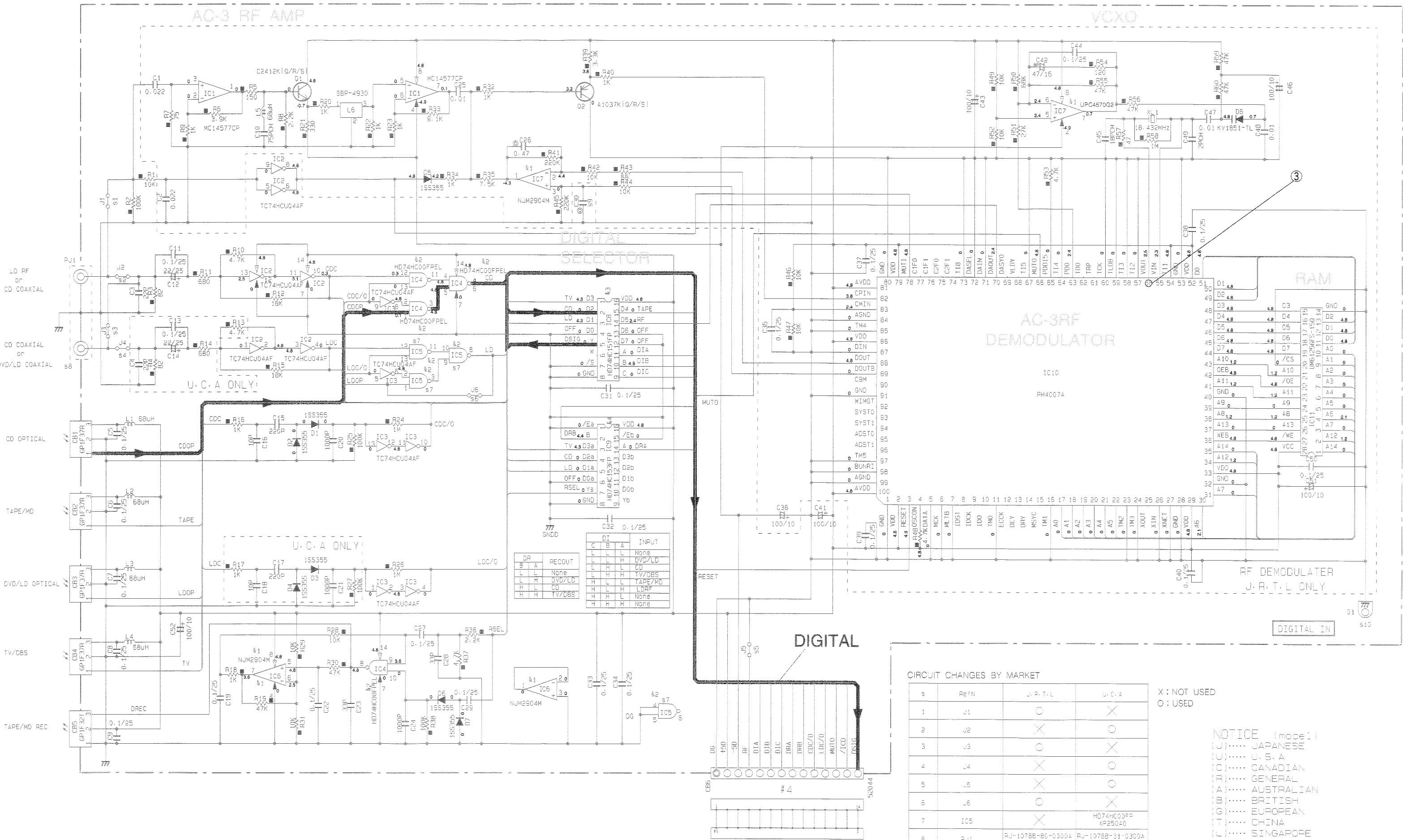
AC CORD ON AC CORD OFF

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

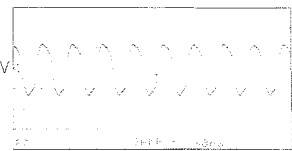
●電圧は、内部抵抗10MΩの電圧計で測定したものです。
●△印のある部品は、安全性確保部分を示しています。部品の交換が必要な場合、パーツリストに記載されている部品を使用してください。
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FUNCTION [1]

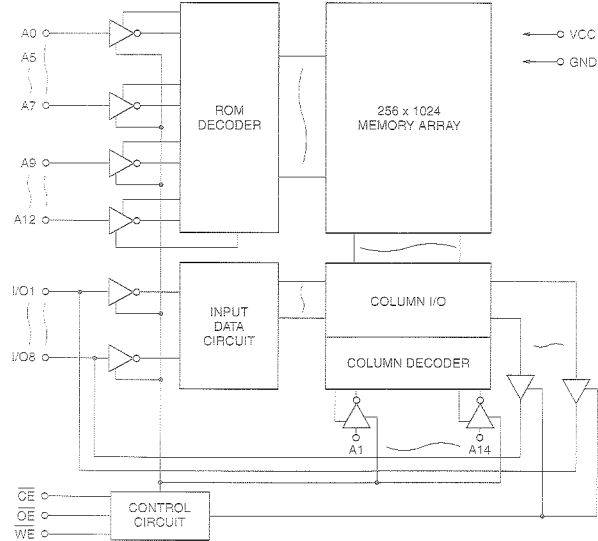
SCHEMATIC DIAGRAM(DIGITAL IN)／総回路図



Point ③ (Pin56 of IC10)
V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe



IC11 : UM61256FS-15Q
32K X 8 High Speed Static RAM



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

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

Mark	Reference Parts Number	Parts Name
41	IC6-7	NUM2904M NUM2904G
42	IC4-5	HD74HC00FPEL TC74HC00AF
43	IC8	HD74HC151FPEL TC74HC151AF
44	IC9	HD74HC153FPEL TC74HC153AF

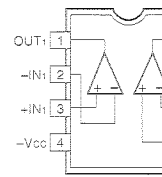
DSP
P-E74/U72
[B-1]

CIRCUIT CHANGES BY MARKET

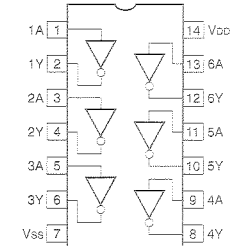
s	Ref.N	J.P.T.L	J.C.A	X : NOT USED O : USED
1	J1	○	×	
2	J2	×	○	
3	J3	○	×	
4	J4	×	○	
5	J5	○	○	
6	J6	○	×	
7	IC5	×	×	
8	PJ1	PJ-1078B-BG-0300A V251070	PJ-1078B-34-0300A V251050	
9	C30	VF15520	FG65110	
10	G1	×	TP00385 V46340	
	RF DEMODULATOR	○	×	
	DVD COAXIAL	×	○	
	PWB	XV533	XV533	
	PCB	V303810	V303820	

NOTICE (model)
(J)..... JAPANESE
(U)..... U.S.A
(C)..... CANADIAN
(R)..... GENERAL
(A)..... AUSTRALIAN
(B)..... BRITISH
(G)..... EUROPEAN
(T)..... CHINA
(L)..... SINGAPORE

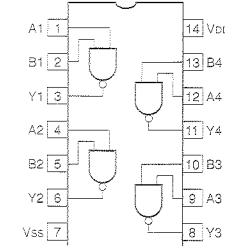
IC1 : MC145770P
IC6, 7 : NUM2904M-T1
Dual OP Amp



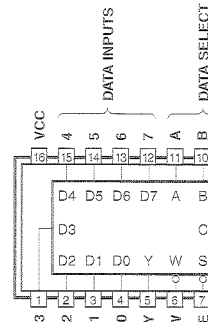
IC2, 3 : TC74HC04AF-TP1
Hex Inverters



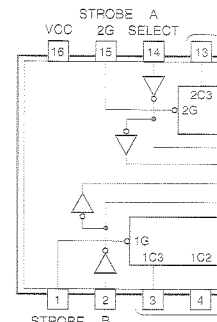
IC4, 5 : HD74HC00FPEL
Quad 2 Input NAND



IC8 : HD74HC151FPEL
8 to 1 Data Selectors



IC9 : HD74HC153FPEL
Dual 4 to 1 Data Selectors



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SCHEMATIC DIAGRAM(DSP)／総回路図

DSP-R995/RX-V995

1

2

3

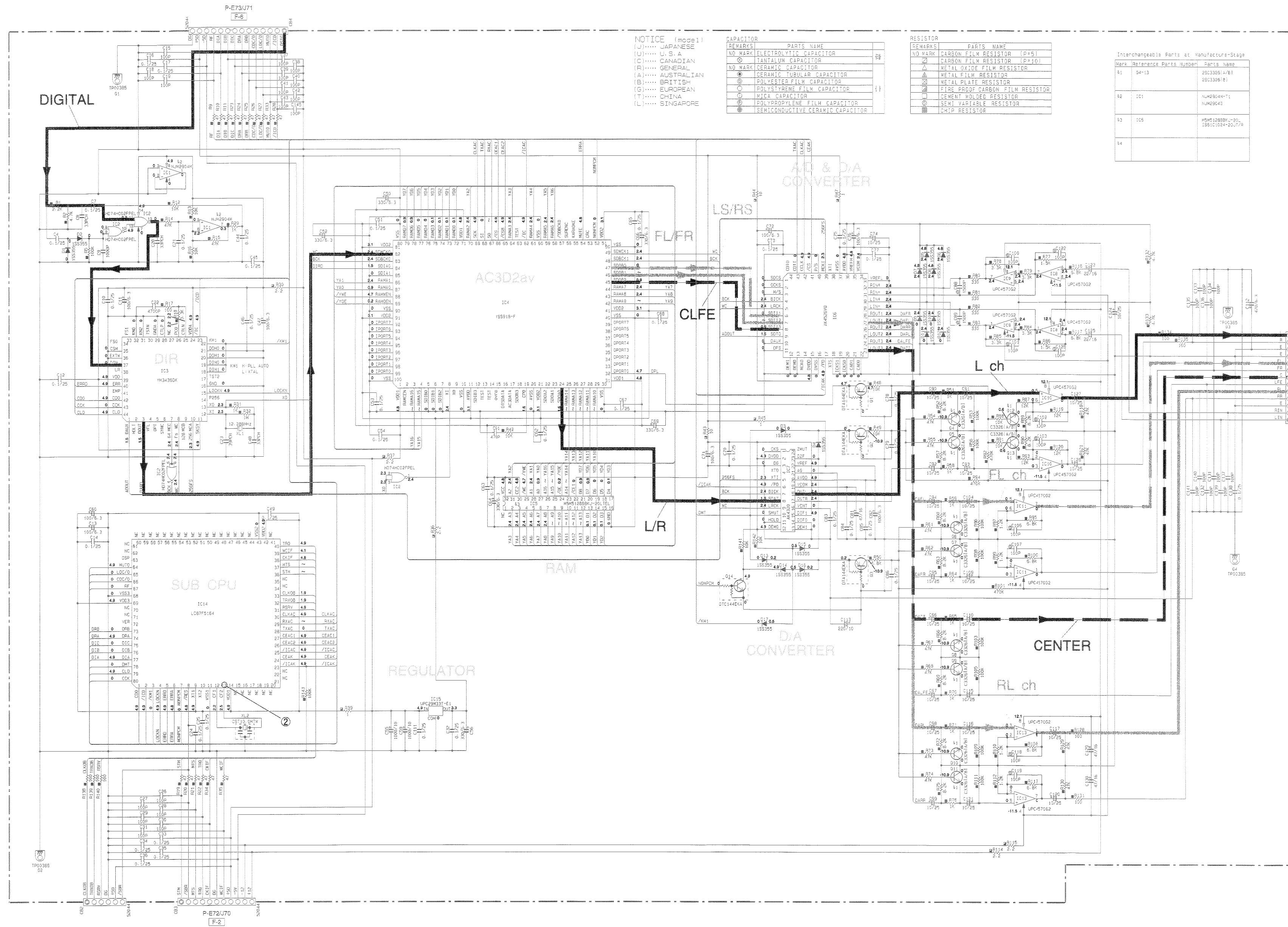
4

5

6

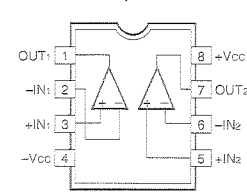
7

8

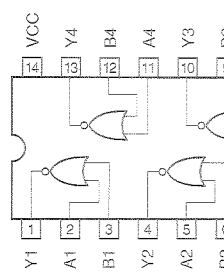


IC1: NJM2904M-T1
IC8~11, 13: μ PC4570G2

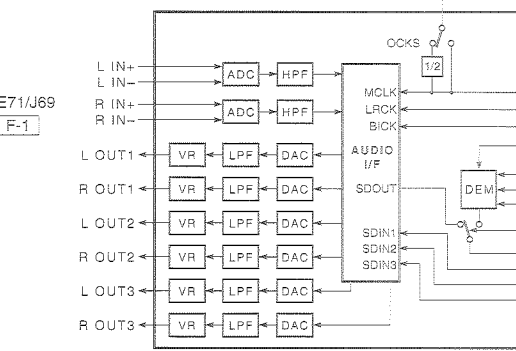
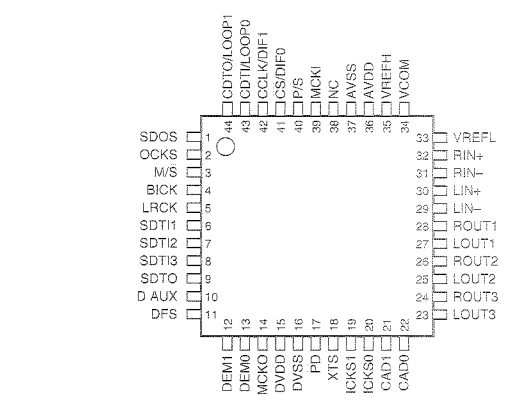
Dual OP-Amp



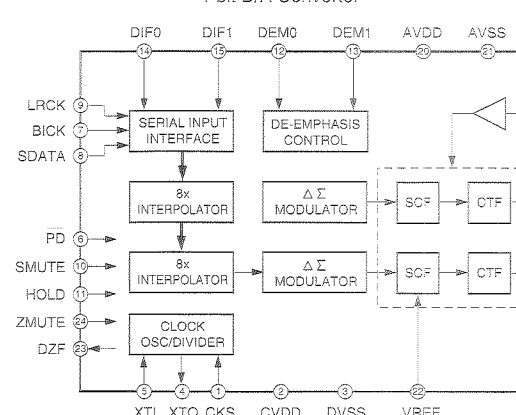
IC2: HD74HC02FPEL
Quad 2 Input NOR



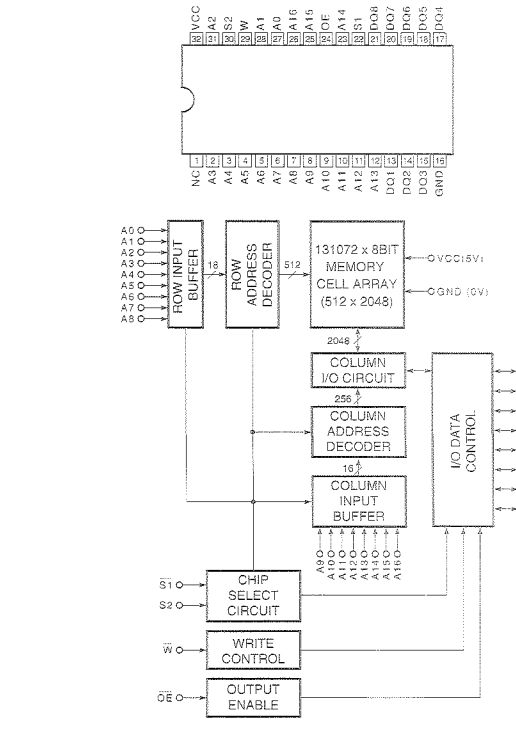
IC6: AK4526VQ
20 bit 6ch A/D, D/A Converter



IC7: AK4320-VM-E1
1 bit D/A Converter



IC5: M5M51288BKJ-20TEL
131,072 x 8 bit Static RAM



NOTICE (model1)
(U)..... JAPANESE
(U)..... U.S.A
(C)..... CANADIAN
(S)..... GENERAL
(A)..... AUSTRALIAN
(B)..... BRITISH
(G)..... EUROPEAN
(T)..... CHINA
(L)..... SINGAPORE

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

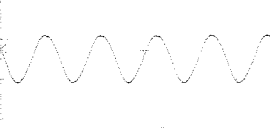
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
NO MARK	CARBON FILM RESISTOR (P=10)
NO MARK	METAL OXIDE FILM RESISTOR
NO MARK	METAL FILM RESISTOR
NO MARK	METAL PLATE RESISTOR
NO MARK	FIRE PROOF CARBON FILM RESISTOR
NO MARK	CEMENT COATED RESISTOR
NO MARK	SEMI VARIABLE RESISTOR
NO MARK	CHIP RESISTOR

Mark	Reference Parts Number	Parts Name
41	04-13	28C33801A/B1 28C33801B1
42	101	NJM2904M-T1 NJM2904M
43	105	M5M51288BKJ-20TEL M5M51288BKJ-20J7H
44		

* All voltage are measured with a 10M Ω /V DC electric volt meter.
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* Schematic diagram is subject to change without notice.

●電圧は、内部抵抗10M Ω の電圧計で測定したものです。
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Point ② (Pin13 of IC14)
V: 2V/div H: 50 nsec/div
DC range 1: 1 probe

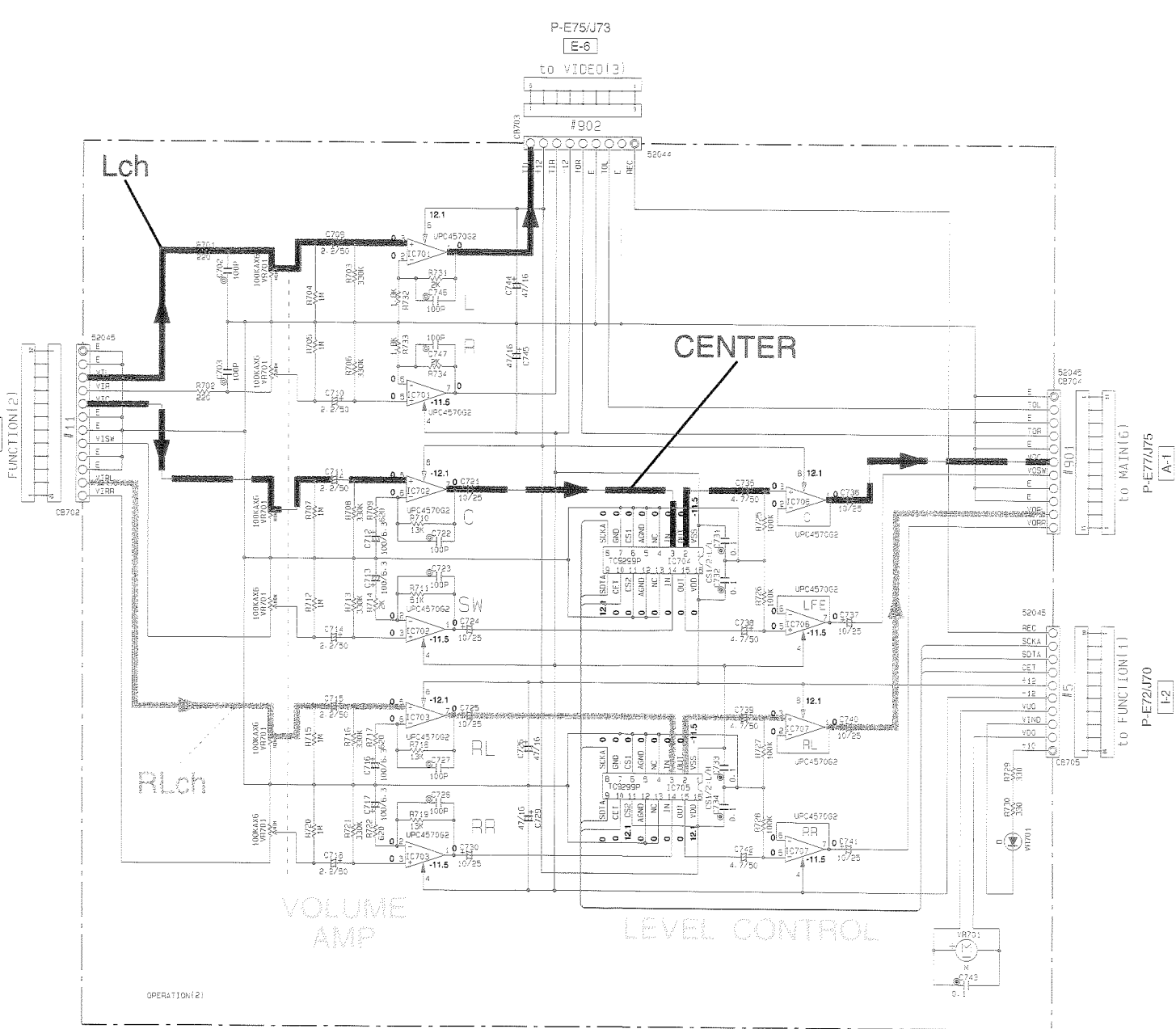
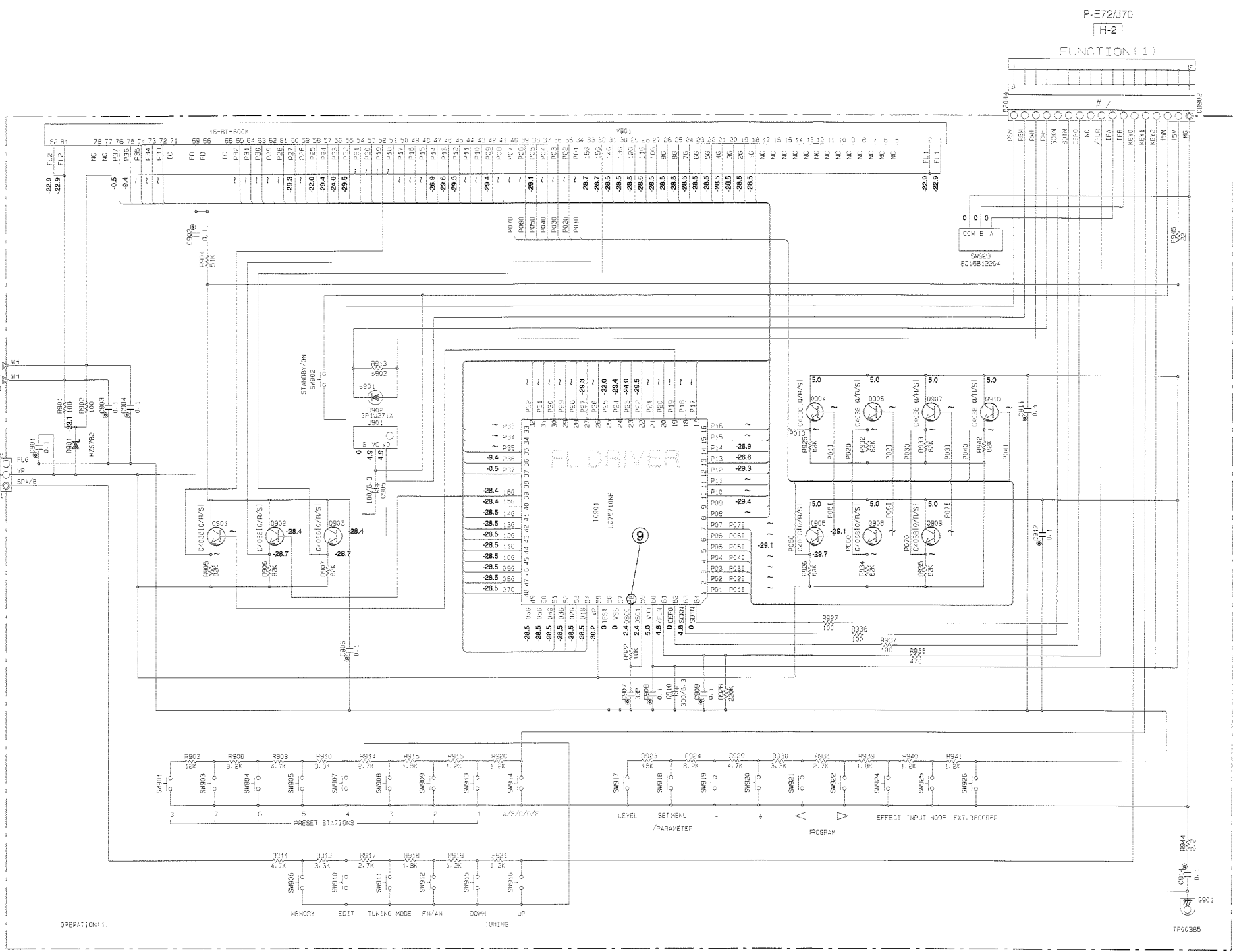


DSP

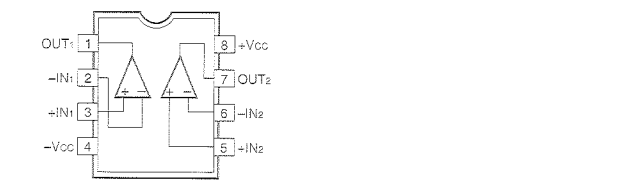
E-75/J-73

■ SCHEMATIC DIAGRAM(OPERATION)／総回路図

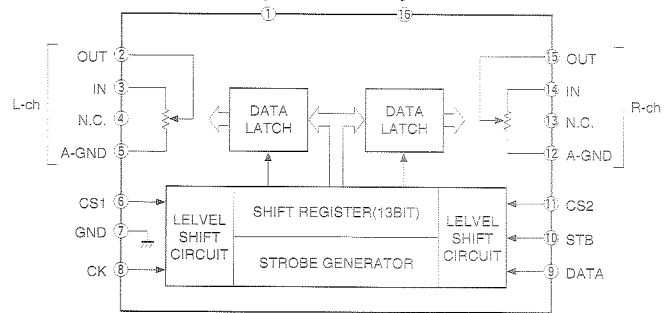
1
2
3
4
5
6
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8



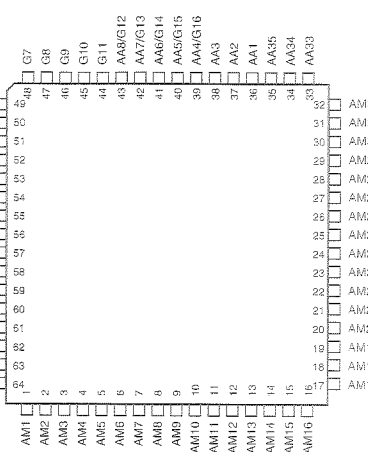
IC701~703, 706, 707 : μ PC4570G2
Dual OP-Amp



IC704, 705 : TC9259P
Electric Controlled Volume



IC901 : L075710NE
FL Display Driver



Interchangeable Parts at Manufacturer's Stage

Part Number	Part Name
11	5401-402
12	5403

CIRCUIT CHANGES BY MARKET

Part Number	Part Name	Part Number	Part Name
401	TE402	V20500	V20500
402	UP401-402	V20500	V20500
403	C410-410	V20500	V20500
404	C410-410	V20500	V20500
405	C410-410	V20500	V20500
406	SK405	V20500	V20500
407	R403-407	V20500	V20500
408	R403-408	V20500	V20500
409	R408-409	V20500	V20500
410	C414	V20500	V20500
411	C405	V20500	V20500
412	SK407	V20500	V20500
413	M411	V20500	V20500
414	M405	V20500	V20500
415	M407	V20500	V20500
416	M408	V20500	V20500
417	M409	V20500	V20500
418	M410	V20500	V20500
419	CB410-411	V20500	V20500
420	P405	V20500	V20500
421	Q201	V20500	V20500
422	Q202	V20500	V20500
423	Q203	V20500	V20500
424	Q204	V20500	V20500
425	Q205	V20500	V20500
426	Q206	V20500	V20500
427	Q207	V20500	V20500
428	Q208	V20500	V20500
429	Q209	V20500	V20500
430	Q210	V20500	V20500
431	Q211	V20500	V20500
432	Q212	V20500	V20500
433	Q213	V20500	V20500
434	Q214	V20500	V20500
435	Q215	V20500	V20500
436	Q216	V20500	V20500
437	Q217	V20500	V20500
438	Q218	V20500	V20500
439	Q219	V20500	V20500
440	Q220	V20500	V20500
441	Q221	V20500	V20500
442	Q222	V20500	V20500
443	Q223	V20500	V20500
444	Q224	V20500	V20500
445	Q225	V20500	V20500
446	Q226	V20500	V20500
447	Q227	V20500	V20500
448	Q228	V20500	V20500
449	Q229	V20500	V20500
450	Q230	V20500	V20500
451	Q231	V20500	V20500
452	Q232	V20500	V20500
453	Q233	V20500	V20500
454	Q234	V20500	V20500
455	Q235	V20500	V20500
456	Q236	V20500	V20500
457	Q237	V20500	V20500
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459	Q239	V20500	V20500
460	Q240	V20500	V20500
461	Q241	V20500	V20500
462	Q242	V20500	V20500
463	Q243	V20500	V20500
464	Q244	V20500	V20500
465	Q245	V20500	V20500
466	Q246	V20500	V20500
467	Q247	V20500	V20500
468	Q248	V20500	V20500
469	Q249	V20500	V20500
470	Q250	V20500	V20500
471	Q251	V20500	V20500
472	Q252	V20500	V20500
473	Q253	V20500	V20500
474	Q254	V20500	V20500
475	Q255	V20500	V20500
476	Q256	V20500	V20500
477	Q257	V20500	V20500
478	Q258	V20500	V20500
479	Q259	V20500	V20500
480	Q260	V20500	V20500
481	Q261	V20500	V20500
482	Q262	V20500	V20500
483	Q263	V20500	V20500
484	Q264	V20500	V20500
485	Q265	V20500	V20500
486	Q266	V20500	V20500
487	Q267	V20500	V20500
488	Q268	V20500	V20500
489	Q269	V20500	V20500
490	Q270	V20500	V20500
491	Q271	V20500	V20500
492	Q272	V20500	V20500
493	Q273	V20500	V20500
494	Q274	V20500	V20500
495	Q275	V20500	V20500
496	Q276	V20500	V20500
497	Q277	V20500	V20500
498	Q278	V20500	V20500
499	Q279	V20500	V20500
500	Q280	V20500	V20500

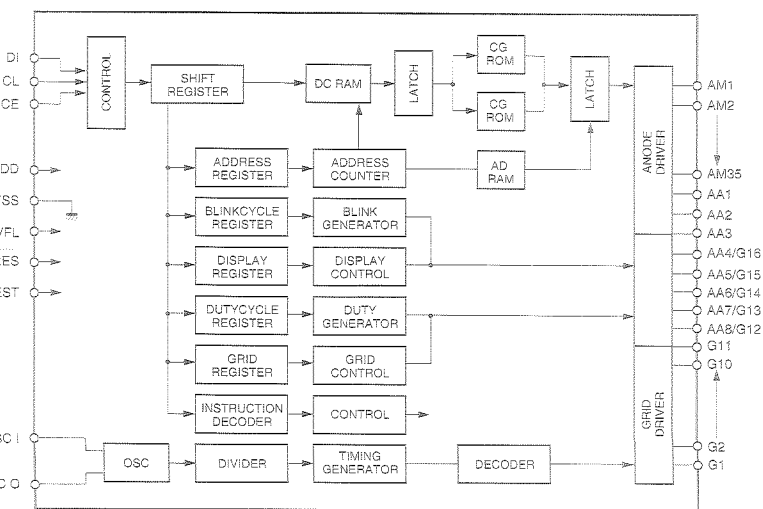
X : NOT USED

REMARKS

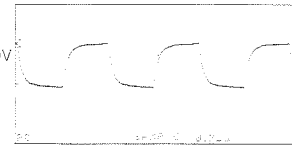
Part Number	Part Name
11	5401-402
12	5403

NOTICE

(1) JAPANESE
(2) U.S.A.
(3) CANADIAN
(4) GERMAN
(5) AUSTRALIAN
(6) BRITISH
(7) EUROPEAN
(8) CHINA
(9) SINGAPORE



Point ⑨ (Pin58 of IC901)
V : 2V/div H : 0.2 μ sec/div
DC range 1 : 1 probe



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* Schematic diagram is subject to change without notice.

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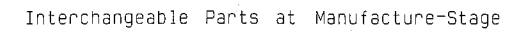
OPERATION



* Schematic diagram is subject to change without notice.

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- △印のある部品は、安全性確保部分を示しています。部品の交換が必要な場合、パーツリストに記載されている部品を使用してください。
- 本回路図は、標準回路図です。改良のため予告なく変更することがございます。

SUB POWER SUPPLY



CIRCUIT CHANGES BY MARKET

X : NOT USED

CAPACITOR

RESISTOR

FUNCTION [3]

- 電圧は、内部抵抗10MΩの電圧計で測定したものです。
- △印のある部品は、安全性確保部分を示しています。部品の交換が必要な場合、パーツリストに記載されている部品を使用してください。
- 本回路図は、標準回路図です。改良のため予告なく変更することがございます。

PARTS LIST

ELECTRICAL PARTS

WARNING

Components having special characteristics are marked Δ 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 resistors refer to the last page.

- Chip resistors are listed on page 93.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS :

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

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

P.C.B. DSP

Schm Ref.	PART NO.	Description
* CB3	V3037900	P.C.B.
CB4	VQ044500	CN.BS.PIN 11P
CB6	VF982200	CN.BS.PIN 14P
C4	VQ044600	CN.BS.PIN 13P
C7	UB245100	C.CE.M.CHP 0.1uF 25V
C8	UB245100	C.CE.M.CHP 0.1uF 25V
C9	VJ900700	C.CE.M.CHP 33pF 50V
C10	UB013100	C.CE.M.CHP 1000pF 50V
C11	UB245100	C.CE.M.CHP 0.1uF 25V
C12	UR818100	C.EL 100uF 6.3V
C13	UB245100	C.CE.M.CHP 0.1uF 25V
C14	UR818100	C.EL 100uF 6.3V
C15	UB245100	C.CE.M.CHP 0.1uF 25V
C16	UB052100	C.CE.M.CHP 100pF 50V
C17	UB245100	C.CE.M.CHP 0.1uF 25V
C18	UB245100	C.CE.M.CHP 0.1uF 25V
C19	UB052100	C.CE.M.CHP 100pF 50V
C20	UB052100	C.CE.M.CHP 100pF 50V
C21	VJ900700	C.CE.M.CHP 33pF 50V
C22	UB245100	C.CE.M.CHP 0.1uF 25V
C23	UB013470	C.CE.M.CHP 4700pF 50V
C24	VJ900900	C.CE.M.CHP 39pF 50V
C25	UB245100	C.CE.M.CHP 0.1uF 25V
C26	UB245100	C.CE.M.CHP 0.1uF 25V
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
C37	UB052100	C.CE.M.CHP 100pF 50V
C38	UB052100	C.CE.M.CHP 100pF 50V
C39	UB052100	C.CE.M.CHP 100pF 50V
C40	UB052100	C.CE.M.CHP 100pF 50V
C41	UB052100	C.CE.M.CHP 100pF 50V
C42	UB052100	C.CE.M.CHP 100pF 50V
C43	UB052100	C.CE.M.CHP 100pF 50V
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

* New Parts

Schm Ref.	PART NO.	Description
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
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

* New Parts

P.C.B. DSP

Schm Ref.	PART NO.	Description
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
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
C145	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	XV304A00	IC YSS918-F

* New Parts

Schm Ref.	PART NO.	Description
IC5	XV457A00	IC M5M51288BKJ-20LTEL
IC6	XU722A00	IC AK4526
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
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. CRY5 12. 288MHz
XL2	VQ791000	RSNR. CE 10MHz

* New Parts

P.C.B. DIGITAL IN

Schm Ref.	PART NO.	Description
* V3038100	P. C. B.	DIGITAL-IN(RLT)
* V3038200	P. C. B.	DIGITAL-IN(UCA)
CB1	V2508700	CN. PHOT. SN 1P GP1F37R
CB2	V2508700	CN. PHOT. SN 1P GP1F37R
CB3	V2508700	CN. PHOT. SN 1P GP1F37R
CB4	V2508700	CN. PHOT. SN 1P GP1F37R
* CB5	V2508600	CN. PHOT. DT GP1F32T
CB6	VF982200	CN. BS. PIN 14P
C1	UB044220	C. CE. M. CHP 0.022uF 50V(RTL)
C2	UB044220	C. CE. M. CHP 0.022uF 50V(RLT)
C3	UB051220	C. CE. M. CHP 22pF 50V
C4	UB051220	C. CE. M. CHP 22pF 50V(UCA)
C5	UB245100	C. CE. M. CHP 0.1uF 25V
C6	UB245100	C. CE. M. CHP 0.1uF 25V
C7	UB245100	C. CE. M. CHP 0.1uF 25V
C8	UB245100	C. CE. M. CHP 0.1uF 25V
C9	UB245100	C. CE. M. CHP 0.1uF 25V
C10	VJ901600	C. CE. M. CHP 75pF 50V(RLT)
C11	UB245100	C. CE. M. CHP 0.1uF 25V
C12	UR847220	C. EL 22uF 25V
C13	UB245100	C. CE. M. CHP 0.1uF 25V(UCA)
C14	UR847220	C. EL 22uF 25V(UCA)
C15	UB012220	C. CE. M. CHP 220pF 50V
C16	UB051100	C. CE. M. CHP 10pF 50V
C17	UB012220	C. CE. M. CHP 220pF 50V(UCA)
C18	UB051100	C. CE. M. CHP 10pF 50V(UCA)
C19	UB245100	C. CE. M. CHP 0.1uF 25V
C20	UB013100	C. CE. M. CHP 1000pF 50V
C21	UB013100	C. CE. M. CHP 1000pF 50V(UCA)
C22	UB245100	C. CE. M. CHP 0.1uF 25V
C23	UB051330	C. CE. M. CHP 33pF 50V
C24	UB013100	C. CE. M. CHP 1000pF 50V
C25	UB044100	C. CE. M. CHP 0.01uF 50V(RTL)
C26	VR169200	C. MYLAR. ML ECQ-V1H474JL3(RLT)
C27	UB245100	C. CE. M. CHP 0.1uF 25V
C28	UB051330	C. CE. M. CHP 33pF 50V
C29	UB245100	C. CE. M. CHP 0.1uF 25V
C30	FG651100	C. CE 10pF 50V(UCA)
C30	VR169200	C. MYLAR. ML ECQ-V1H474JL3(RLT)
C31	UB245100	C. CE. M. CHP 0.1uF 25V
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(RLT)
C36	UR828100	C. EL 100uF 10V(RLT)
C37	UB245100	C. CE. M. CHP 0.1uF 25V(RLT)
C38	UB245100	C. CE. M. CHP 0.1uF 25V(RLT)
C39	UB245100	C. CE. M. CHP 0.1uF 25V(RTL)
C40	UB245100	C. CE. M. CHP 0.1uF 25V(RTL)
C41	UR828100	C. EL 100uF 10V
C42	UN837470	C. EL 47uF 16V(RLT)
C43	UR828100	C. EL 100uF 10V(RLT)
C44	UB245100	C. CE. M. CHP 0.1uF 25V(RLT)

* New Parts

Schm Ref.	PART NO.	Description
C45	VJ900100	C. CE. M. CHP 18pF 50V(RLT)
C46	UR828100	C. EL 100uF 10V(RLT)
C47	UB044100	C. CE. M. CHP 0.01uF 50V(RTL)
C48	UB044100	C. CE. M. CHP 0.01uF 50V(RLT)
C49	VJ898700	C. CE. M. CHP 2pF 50V(RLT)
C50	UB245100	C. CE. M. CHP 0.1uF 25V(RTL)
C51	UR828100	C. EL 100uF 10V(RLT)
C52	UR828100	C. EL 100uF 10V
D1	VT332900	DIODE 1SS355
D2	VT332900	DIODE 1SS355
D3	VT332900	DIODE 1SS355(UCA)
D4	VT332900	DIODE 1SS355(UCA)
D5	VT332900	DIODE 1SS355(RTL)
D6	VT332900	DIODE 1SS355
D7	VT332900	DIODE 1SS355
D8	VT707700	C. TRIM KV1851-TL(RTL)
G1	VR463400	TERM. GND D3.5 TP00385(UCA)
IC1	Xi110D00	IC MC14577CP(RLT)
IC2	XD660A00	IC TC74HC04AF-TP1
IC3	XD660A00	IC TC74HC04AF-TP1
IC4	XP250A00	IC HD74HC00FPTR NAND
IC5	XP250A00	IC HD74HC00FPTR(UCA)
IC6	XR038A00	IC NJM2904M OP AMP
IC7	XF291A00	IC uPC4570G2(RTL)
* IC8	XV493A00	IC HD74HC151FPEL
* IC9	XV494A00	IC HD74HC153FPEL
IC10	XT958A00	IC PM4007A(RTL)
IC11	XS282A00	IC UM61256FS-15Q(RTL)
* L1	V2726500	COIL 68uH
* L2	V2726500	COIL 68uH
* L3	V2726500	COIL 68uH
* L4	V2726500	COIL 68uH
* L5	V2726500	COIL 68uH(RLT)
L6	VT623200	FLTR. LC SBP-4930(RLT)
* PJ1	V2910600	JACK. PIN 2P(UCA)
* PJ1	V2910700	JACK. PIN 2P(RLT)
Q1	VV556400	TR 2SC2412K QRS(RTL)
Q2	iA103700	TR. CHP 2SA1037 QRS(RTL)
XL1	VT928600	RSNR. CRYST 18.432MHz(RLT)

* New Parts

P.C.B. MAIN

Schm Ref.	PART NO.	Description
* V3036200	P.C.B.	MAIN(UCRT)
* V3036300	P.C.B.	MAIN(A)
* V3036400	P.C.B.	MAIN(L)
CB101	Vi878600	CN.BS. PIN 8P
CB102	VB390200	CN.BS. PIN 6P
CB105	Vi878600	CN.BS. PIN 8P
CB106	Vi878500	CN.BS. PIN 7P
CB107	Vi878300	CN.BS. PIN 5P
CB108	VR428900	CN.BS. PIN 4P
CB109	Vi878800	CN.BS. PIN 10P
CB110	Vi878100	CN.BS. PIN 3P
CB251	Vi878400	CN.BS. PIN 6P
CB252	VK025600	CN.BS. PIN 12P
CB257	VK025200	CN.BS. PIN 8P
CB261	VK025100	CN.BS. PIN 7P
CB301	VR428900	CN.BS. PIN 4P
CB302	Vi878300	CN.BS. PIN 5P
CB303	VK024700	CN.BS. PIN 3P
CB331	VN066500	CN.BS. PIN 12P
CB332	VF728300	CN 6P
CB333	VF728200	CN.BS. PIN 10P
CB334	VK025200	CN.BS. PIN 8P
CB335	VQ044500	CN.BS. PIN 11P
C101	UR867100	C. EL 10uF 50V
C102	UR847100	C. EL 10uF 25V
C103	UA952100	C. MYLAR 100pF 50V
C104	UR847100	C. EL 10uF 25V
C105	UA952100	C. MYLAR 100pF 50V
C106	UR847100	C. EL 10uF 25V
C107	UA952100	C. MYLAR 100pF 50V
C108	FG651330	C. CE 33pF 50V
C109	UR837470	C. EL 47uF 16V
C110	FG651330	C. CE 33pF 50V
C111	UR837470	C. EL 47uF 16V
C112	FG651330	C. CE 33pF 50V
C113	UR837470	C. EL 47uF 16V
C114	UR867470	C. EL 47uF 50V
C115	VQ245400	C. PP 33pF 200V
C116	UA953100	C. MYLAR 1000pF 50V
C117	VK699400	C. EL 330uF 63V
C118	UR867470	C. EL 47uF 50V
C119	VQ245400	C. PP 33pF 200V
C120	UA953100	C. MYLAR 1000pF 50V
C121	UR867470	C. EL 47uF 50V
C122	VQ245400	C. PP 33pF 200V
C123	UA953100	C. MYLAR 1000pF 50V
C124	VR325000	C. MYLAR 100pF 100V
C125	UR867470	C. EL 47uF 50V
C126	VR325000	C. MYLAR 100pF 100V
C127	VR325000	C. MYLAR 100pF 100V
C128	UR867470	C. EL 47uF 50V
C129	VR325000	C. MYLAR 100pF 100V
C130	VR325000	C. MYLAR 100pF 100V

* New Parts

Schm Ref.	PART NO.	Description
C131	UR867470	C. EL 47uF 50V
C132	VR325000	C. MYLAR 100pF 100V
C133	UA954680	C. MYLAR 0.068uF 50V
C134	UA954680	C. MYLAR 0.068uF 50V
C135	UR866330	C. EL 3.3uF 50V
C136	UA954680	C. MYLAR 0.068uF 50V
C137	UA655390	C. MYLAR 0.39uF 50V
C138	UA655390	C. MYLAR 0.39uF 50V
C139	V3232600	C. EL 15000uF 71V
C140	V3232600	C. EL 15000uF 71V
* C141	UR868470	C. EL 470uF 50V
C143	VF466900	C. CE. TUBLR 470pF 50V
C144	VF466900	C. CE. TUBLR 470pF 50V
C145	UR867100	C. EL 10uF 50V
C146	UR868220	C. EL 220uF 50V
C147	UA954220	C. MYLAR 0.022uF 50V(L)
C148	UA954220	C. MYLAR 0.022uF 50V(L)
C149	UA954220	C. MYLAR 0.022uF 50V(L)
C150	UA954220	C. MYLAR 0.022uF 50V(L)
C151	UA954100	C. MYLAR 0.01uF 50V
C152	UA954100	C. MYLAR 0.01uF 50V
C153	VS745400	C. POL. MTL 0.1uF 100V
C154	VS745400	C. POL. MTL 0.1uF 100V
C155	UA655100	C. MYLAR 0.1uF 50V
C156	UA655100	C. MYLAR 0.1uF 50V
* C157	UR868470	C. EL 470uF 50V
C159	UR818100	C. EL 100uF 6.3V
C160	UR847100	C. EL 10uF 25V
C161	UA655100	C. MYLAR 0.1uF 50V
C162	UR867100	C. EL 10uF 50V
C163	VF467300	C. CE. TUBLR 0.01uF 16V(A)
C251	FG651330	C. CE 33pF 50V
C252	UR847100	C. EL 10uF 25V
C253	FG652100	C. CE 100pF 50V
C254	UA954100	C. MYLAR 0.01uF 50V
C255	FG652100	C. CE 100pF 50V
C256	UR847100	C. EL 10uF 25V
C257	FG651330	C. CE 33pF 50V
C258	VQ245400	C. PP 33pF 200V
C259	UR837470	C. EL 47uF 16V
C260	UA953100	C. MYLAR 1000pF 50V
C261	UA953100	C. MYLAR 1000pF 50V
C262	UR837470	C. EL 47uF 16V
C263	VQ245400	C. PP 33pF 200V
C264	UR847100	C. EL 10uF 25V
C265	VR325000	C. MYLAR 100pF 100V
C266	UR867470	C. EL 47uF 50V
C267	UR867470	C. EL 47uF 50V
C268	VR325000	C. MYLAR 100pF 100V
C269	UR877470	C. EL 47uF 63V
C270	VR325000	C. MYLAR 100pF 100V
C271	UR867470	C. EL 47uF 50V
C272	UR867470	C. EL 47uF 50V

* New Parts

P.C.B. MAIN

Schm Ref.	PART NO.	Description
C273	VR325000	C. MYLAR 100pF 100V
C274	UA954220	C. MYLAR 0.022uF 50V
C275	UA954220	C. MYLAR 0.022uF 50V
C276	UR866470	C. EL 4.7uF 50V
C277	UR749470	C. EL 4700uF 25V
C278	UR749470	C. EL 4700uF 25V
C279	UR865470	C. EL 0.47uF 50V
C280	UR837470	C. EL 47uF 16V
C283	UA655100	C. MYLAR 0.1uF 50V
C284	UA655100	C. MYLAR 0.1uF 50V
C285	UR848100	C. EL 100uF 25V
C289	VR324800	C. MYLAR 0.047uF 100V
C290	VR324800	C. MYLAR 0.047uF 100V
C301	UA954100	C. MYLAR 0.01uF 50V(L)
C302	UA954100	C. MYLAR 0.01uF 50V(L)
C303	UA954100	C. MYLAR 0.01uF 50V
D101	VN008700	DIODE 1SS270A
D102	VN008700	DIODE 1SS270A
D103	VN008700	DIODE 1SS270A
D104	VD631600	DIODE 1SS133, 176, HSS104
D105	VD631600	DIODE 1SS133, 176, HSS104
D106	VD631600	DIODE 1SS133, 176, HSS104
D107	VN011400	DIODE. BRG D5SB20 5A 200V
D108	VR253700	DIODE. BRG SINB20 1.0A 200V
D109	VM976500	DIODE. ZENR HZS302TD 30V
D112	VD631600	DIODE 1SS133, 176, HSS104
D113	VD631600	DIODE 1SS133, 176, HSS104
D114	VD631600	DIODE 1SS133, 176, HSS104
D115	VM975700	DIODE. ZENR HZS12C2TD 12V
D116	VZ361400	DIODE. ZENR MA2240 24V
D117	VZ361400	DIODE. ZENR MA2240 24V
D251	VM975800	DIODE. ZENR HZS152TD 15V
D252	VN008700	DIODE 1SS270A
D253	VN008700	DIODE 1SS270A
D254	VM975600	DIODE. ZENR HZS12B2TD 12V
D255	VR253700	DIODE. BRG SINB20 1.0A 200V
HS101	VS606000	HEAT. SINK DPS35-45
IC251	XD343A00	IC NJM79M12FA
JK301	V3336300	JACK. PHONE JY-6311-03-060G
L101	VR906600	COIL 0.95uH
L102	VR906600	COIL 0.95uH
* PJ101	V2895300	JACK. PIN 2P
Q101	iC287820	TR 2SC2878 A, B
Q102	iC287820	TR 2SC2878 A, B
Q103	iC287820	TR 2SC2878 A, B
Q104	iC287820	TR 2SC2878 A, B
Q105	iC287820	TR 2SC2878 A, B
Q106	VP883000	TR 2SA893A D, E
Q107	VP883000	TR 2SA893A D, E
Q108	VP883000	TR 2SA893A D, E
Q109	VP883000	TR 2SA893A D, E
Q110	VP883000	TR 2SA893A D, E
Q111	VP883000	TR 2SA893A D, E

* New Parts

Schm Ref.	PART NO.	Description
△ Q112	iC174020	TR 2SC1740S R, S
Q113	VR325600	TR 2SC2229 O, Y
△ Q114	iC174020	TR 2SC1740S R, S
Q115	VR325600	TR 2SC2229 O, Y
△ Q116	iC174020	TR 2SC1740S R, S
Q117	VR325600	TR 2SC2229 O, Y
△ Q118	iP011600	TR. PAIR 2SA1358/C3421 O, Y
△ Q120	iP011600	TR. PAIR 2SA1358/C3421 O, Y
△ Q122	iP011600	TR. PAIR 2SA1358/C3421 O, Y
Q124	iA097030	TR 2SA970 GR, BL
△ # Q125	VZ750200	TR. PAIR 2SA1943/C5200 O, R
Q126	VP883100	TR 2SC1890A D, E
△ # Q128	VZ750200	TR. PAIR 2SA1943/C5200 O, R
Q129	VP883100	TR 2SC1890A D, E
△ # Q131	VZ750200	TR. PAIR 2SA1943/C5200 O, R
Q132	VP883100	TR 2SC1890A D, E
Q134	VD488500	TR. DGT DTC143XS
Q135	VD488500	TR. DGT DTC143XS
Q136	iC174020	TR 2SC1740S R, S
△ Q139	iA101510	TR 2SA1015 Y
Q140	iC174020	TR 2SC1740S R, S
Q141	iC174020	TR 2SC1740S R, S
Q251	iC287820	TR 2SC2878 A, B
Q252	iC287820	TR 2SC2878 A, B
Q253	VP883000	TR 2SA893A D, E
Q254	VP883000	TR 2SA893A D, E
Q255	VP883000	TR 2SA893A D, E
Q256	VP883000	TR 2SA893A D, E
△ Q257	iC224030	TR 2SC2240 GR, BL
Q258	VR325600	TR 2SC2229 O, Y
Q259	VR325600	TR 2SC2229 O, Y
△ Q260	iC224030	TR 2SC2240 GR, BL
△ Q261	iP011600	TR. PAIR 2SA1358/C3421 O, Y
△ * Q262	V3077200	TR. PAIR 2SA1986/C5358 R, O
△ * Q263	V3077200	TR. PAIR 2SA1986/C5358 R, O
△ Q265	iP011600	TR. PAIR 2SA1358/C3421 O, Y
Q269	VP883100	TR 2SC1890A D, E
Q270	VP883100	TR 2SC1890A D, E
△ Q273	VN996900	TR 2SC4495
R101	VP941100	R. MTL. OXD 1KΩ 1W
R102	VP941100	R. MTL. OXD 1KΩ 1W
R136	VP941600	R. MTL. OXD 5.6KΩ 1W
R137	VP941600	R. MTL. OXD 5.6KΩ 1W
R138	HV756270	R. CAR. FP 2.7KΩ 1/4W
△ R141	VK189000	R. FUS 1KΩ 1/4W
R143	HV754470	R. CAR. FP 47Ω 1/4W
R145	VP941600	R. MTL. OXD 5.6KΩ 1W
R146	VP941600	R. MTL. OXD 5.6KΩ 1W
R147	HV756270	R. CAR. FP 2.7KΩ 1/4W
△ R150	VK189000	R. FUS 1KΩ 1/4W
R152	HV754470	R. CAR. FP 47Ω 1/4W
R154	VP941600	R. MTL. OXD 5.6KΩ 1W
R155	VP941600	R. MTL. OXD 5.6KΩ 1W

* New Parts

P.C.B. MAIN

Schm Ref.	PART NO.	Description
△ R156	HV756270	R. CAR. FP 2.7KΩ 1/4W
△ R159	VK189000	R. FUS 1KΩ 1/4W
R161	HV754470	R. CAR. FP 47Ω 1/4W
△ R163	HV753470	R. CAR. FP 4.7Ω 1/4W
△ R164	VK188400	R. FUS 330Ω 1/4W
R165	HV755820	R. CAR. FP 820Ω 1/4W
R166	HV753470	R. CAR. FP 4.7Ω 1/4W
R167	VP939800	R. MTL. OXD 10Ω 1W
△ R168	HV753470	R. CAR. FP 4.7Ω 1/4W
△ R169	VK188400	R. FUS 330Ω 1/4W
R170	HV755820	R. CAR. FP 820Ω 1/4W
R171	HV753470	R. CAR. FP 4.7Ω 1/4W
R172	HV753470	R. CAR. FP 4.7Ω 1/4W
△ R173	VK188400	R. FUS 330Ω 1/4W
R174	HV755820	R. CAR. FP 820Ω 1/4W
R175	HV753470	R. CAR. FP 4.7Ω 1/4W
△ * R180	V3155200	R. MTL. PLAT 0.22Ω 3W
△ * R184	V3155200	R. MTL. PLAT 0.22Ω 3W
△ R188	HZ003780	R. MTL. PLAT 0.22Ω+0.22 5W
R192	VP939800	R. MTL. OXD 10Ω 1W
R194	VP939800	R. MTL. OXD 10Ω 1W
R197	VP939800	R. MTL. OXD 10Ω 1W
R198	VP941100	R. MTL. OXD 1KΩ 1W
R199	VP941100	R. MTL. OXD 1KΩ 1W
R203	HV754100	R. CAR. FP 10Ω 1/4W
R207	HV754100	R. CAR. FP 10Ω 1/4W
R210	VP941100	R. MTL. OXD 1KΩ 1W
R221	HV756100	R. CAR. FP 1KΩ 1/4W
R232	VP941700	R. MTL. OXD 6.8KΩ 1W
△ * R236	V3155200	R. MTL. PLAT 0.22Ω 3W
△ * R237	V3155200	R. MTL. PLAT 0.22Ω 3W
R241	VP940600	R. MTL. OXD 220Ω 1W
R242	VP940600	R. MTL. OXD 220Ω 1W
R274	VP941600	R. MTL. OXD 5.6KΩ 1W
R275	VP941600	R. MTL. OXD 5.6KΩ 1W
R276	HV756270	R. CAR. FP 2.7KΩ 1/4W
R278	HV755820	R. CAR. FP 820Ω 1/4W
△ R279	VK189000	R. FUS 1KΩ 1/4W
R280	HV754470	R. CAR. FP 47Ω 1/4W
R281	HV754470	R. CAR. FP 47Ω 1/4W
R282	HV754470	R. CAR. FP 47Ω 1/4W
△ R283	VK189000	R. FUS 1KΩ 1/4W
R285	HV755820	R. CAR. FP 820Ω 1/4W
R286	HV756270	R. CAR. FP 2.7KΩ 1/4W
R287	VP941600	R. MTL. OXD 5.6KΩ 1W
R288	VP941600	R. MTL. OXD 5.6KΩ 1W
R289	VP941700	R. MTL. OXD 6.8KΩ 1W
R290	HV753470	R. CAR. FP 4.7Ω 1/4W
△ R291	VK188400	R. FUS 330Ω 1/4W
△ R292	HZ003780	R. MTL. PLAT 0.22Ω+0.22 5W
R293	HV753470	R. CAR. FP 4.7Ω 1/4W
R294	HV753470	R. CAR. FP 4.7Ω 1/4W
△ R295	HZ003780	R. MTL. PLAT 0.22Ω+0.22 5W

* New Parts

Schm Ref.	PART NO.	Description
△ R296	VK188400	R. FUS 330Ω 1/4W
R297	HV753470	R. CAR. FP 4.7Ω 1/4W
R301	HV754100	R. CAR. FP 10Ω 1/4W
R304	HV754100	R. CAR. FP 10Ω 1/4W
R320	HV753100	R. CAR. FP 1Ω 1/4W
R334	VP940600	R. MTL. OXD 220Ω 1W
R335	VP940600	R. MTL. OXD 220Ω 1W
R361	HV753470	R. CAR. FP 4.7Ω 1/4W
R362	HV753470	R. CAR. FP 4.7Ω 1/4W
R381	HV753100	R. CAR. FP 1Ω 1/4W
R382	HV753100	R. CAR. FP 1Ω 1/4W
RY101	VK438300	RELAY DH24D2-OT/M2
RY102	VK438300	RELAY DH24D2-OT/M2
RY103	VK438300	RELAY DH24D2-OT/M2
△ SW301	VZ075500	SW. SLIDE SL14-22AM5F
SW303	VV490000	SW. PUSH PBS-YM-002 2/2/2
TE101	VK506200	TERM. SP 8P (L)
TE101	VV003100	TERM. SP 8P (UCRTA)
	VJ828000	PIN IMSA-6024-03E
	BB071360	SCR. TERM 8.3x13
	EP600140	SCR. BND. HD 3x10 MFZN2-BL

* New Parts

P.C.B. FUNCTION

Schm Ref.	PART NO.	Description
* V3036600	P. C. B.	FUNCTION (UC)
* V3036700	P. C. B.	FUNCTION (RT)
* V3036800	P. C. B.	FUNCTION (A)
* V3036900	P. C. B.	FUNCTION (L)
CB1	VQ045400	CN. BS. PIN 25P
CB2	VQ044700	CN. BS. PIN 16P
CB4	VM859500	CN. BS. PIN 11P
CB5	VQ044800	CN. BS. PIN 18P
CB7	VF982300	CN. BS. PIN 17P
CB8	VP113500	CN. BS. PIN 10P
CB10	VK026500	CN. BS. PIN 6P
CB11	Vi878600	CN. BS. PIN 8P
CB12	VQ047300	CN. BS. PIN 12P
CB201	VB858200	CN. BS. PIN 3P
CB202	VP082900	CN. BS. PIN 25P
* CB203	VV075100	SOCKET 15P
CB204	VP573800	CN. BS. PIN 18P
CB205	VM923600	CN. BS. PIN 13P
CB206	VN066500	CN. BS. PIN 12P
CB401	VP206500	HOLDER. FUS EYF-52BC (AL)
CB402	VP206500	HOLDER. FUS EYF-52BC (AL)
CB403	VK024700	CN. BS. PIN 3P
CB404	VS996100	HOLDER. FUS EYF64BC (UCRT)
CB405	VG879900	CN. BS. PIN 2P
CB406	VS996100	HOLDER. FUS EYF64BC (UCRT)
C1	UA952470	C. MYLAR 470pF 50V
C2	UA952470	C. MYLAR 470pF 50V
C3	UA952470	C. MYLAR 470pF 50V
C4	UA952470	C. MYLAR 470pF 50V
C5	UA952470	C. MYLAR 470pF 50V
C6	UA952470	C. MYLAR 470pF 50V
C7	UA952220	C. MYLAR 220pF 50V
C8	UA952220	C. MYLAR 220pF 50V
C9	UA952470	C. MYLAR 470pF 50V
C10	UA952470	C. MYLAR 470pF 50V
C11	UA952220	C. MYLAR 220pF 50V
C12	UA952220	C. MYLAR 220pF 50V
C13	UA952470	C. MYLAR 470pF 50V
C14	UA952470	C. MYLAR 470pF 50V
C21	UR866220	C. EL 2.2uF 50V
C27	UB013100	C. CE. M. CHP 1000pF 50V
C28	UB013100	C. CE. M. CHP 1000pF 50V
C29	UB245100	C. CE. M. CHP 0.1uF 25V
C30	UR865470	C. EL 0.47uF 50V
C31	UB245100	C. CE. M. CHP 0.1uF 25V
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
C37	VT740700	C. EL 4700uF 5.5V
C38	UB245100	C. CE. M. CHP 0.1uF 25V
C39	UR819100	C. EL 1000uF 6.3V

* New Parts

Schm Ref.	PART NO.	Description
C40	UR819100	C. EL 1000uF 6.3V
C41	UB245100	C. CE. M. CHP 0.1uF 25V
C42	UR847100	C. EL 10uF 25V
C43	UR837470	C. EL 47uF 16V
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	UR866220	C. EL 2.2uF 50V
C48	UR866220	C. EL 2.2uF 50V
C49	UB245100	C. CE. M. CHP 0.1uF 25V
C50	UB245100	C. CE. M. CHP 0.1uF 25V
C51	UB245100	C. CE. M. CHP 0.1uF 25V
C52	UR819100	C. EL 1000uF 6.3V
C53	UB245100	C. CE. M. CHP 0.1uF 25V
C55	UR837470	C. EL 47uF 16V
C57	UB245100	C. CE. M. CHP 0.1uF 25V (A)
C201	UA952100	C. MYLAR 100pF 50V
C202	UA952100	C. MYLAR 100pF 50V
C203	UB044100	C. CE. M. CHP 0.01uF 50V
C204	UA952220	C. MYLAR 220pF 50V
C205	UA952220	C. MYLAR 220pF 50V
C206	VJ599100	C. CE. TUBLR 0.1uF 50V
C207	VJ599100	C. CE. TUBLR 0.1uF 50V
C208	UR866220	C. EL 2.2uF 50V
C209	UA952220	C. MYLAR 220pF 50V
C210	UR828220	C. EL 220uF 10V
C211	UA653910	C. MYLAR 9100pF 50V
C212	UA653910	C. MYLAR 9100pF 50V
C213	UA952220	C. MYLAR 220pF 50V
C214	UR828220	C. EL 220uF 10V
C215	UR866220	C. EL 2.2uF 50V
C216	UA952470	C. MYLAR 470pF 50V
C217	UA952470	C. MYLAR 470pF 50V
C218	UA952470	C. MYLAR 470pF 50V
C219	UA952470	C. MYLAR 470pF 50V
C220	UA952470	C. MYLAR 470pF 50V
C221	UA952470	C. MYLAR 470pF 50V
C222	UA952470	C. MYLAR 470pF 50V
C223	UA952470	C. MYLAR 470pF 50V
C224	UA952470	C. MYLAR 470pF 50V
C225	UA952470	C. MYLAR 470pF 50V
C226	UR866220	C. EL 2.2uF 50V
C227	UR837470	C. EL 47uF 16V
C228	UA953100	C. MYLAR 1000pF 50V
C229	UA954330	C. MYLAR 0.033uF 50V
C230	UA954330	C. MYLAR 0.033uF 50V
C231	UA953100	C. MYLAR 1000pF 50V
C232	UR837470	C. EL 47uF 16V
C233	UR866220	C. EL 2.2uF 50V
C234	UB044100	C. CE. M. CHP 0.01uF 50V
C235	UB052100	C. CE. M. CHP 100pF 50V
C237	UB013100	C. CE. M. CHP 1000pF 50V
C238	UR847100	C. EL 10uF 25V

* New Parts

P.C.B. FUNCTION

Schm Ref.	PART NO.	Description
C239	UR847100	C. EL 10uF 25V
C240	UR847100	C. EL 10uF 25V
C241	UR847100	C. EL 10uF 25V
C242	UR847100	C. EL 10uF 25V
C243	UR847100	C. EL 10uF 25V
C244	UR837470	C. EL 47uF 16V
C245	UR837470	C. EL 47uF 16V
C246	UR837220	C. EL 22uF 25V
C247	UR837220	C. EL 22uF 25V
C248	UB245100	C. CE. M. CHP 0.1uF 25V
C249	UB245100	C. CE. M. CHP 0.1uF 25V
C250	UR847100	C. EL 10uF 25V
C251	UR837470	C. EL 47uF 16V
C252	UR837470	C. EL 47uF 16V
C253	UR847100	C. EL 10uF 25V
C254	UB245100	C. CE. M. CHP 0.1uF 25V
C255	UB245100	C. CE. M. CHP 0.1uF 25V
C256	UR828220	C. EL 220uF 10V
C258	UA954180	C. MYLAR 0.018uF 50V
C259	UA954680	C. MYLAR 0.068uF 50V
C260	UB245100	C. CE. M. CHP 0.1uF 25V
C261	UB245100	C. CE. M. CHP 0.1uF 25V
C262	UR847100	C. EL 10uF 25V
C263	UA952100	C. MYLAR 100pF 50V
C264	UA952100	C. MYLAR 100pF 50V
C265	UR847100	C. EL 10uF 25V
C267	UR847100	C. EL 10uF 25V
C268	UR847100	C. EL 10uF 25V
C270	UB245100	C. CE. M. CHP 0.1uF 25V
C271	UB245100	C. CE. M. CHP 0.1uF 25V
C272	UR847100	C. EL 10uF 25V
C273	UR847100	C. EL 10uF 25V
C274	UR847100	C. EL 10uF 25V
C275	UR847100	C. EL 10uF 25V
C276	UB245100	C. CE. M. CHP 0.1uF 25V
C277	UB245100	C. CE. M. CHP 0.1uF 25V
C278	UA952100	C. MYLAR 100pF 50V
C279	UA952100	C. MYLAR 100pF 50V
C280	UA954270	C. MYLAR 0.027uF 50V
C281	UA954270	C. MYLAR 0.027uF 50V
C282	UR847100	C. EL 10uF 25V
C283	UR847100	C. EL 10uF 25V
C284	UA954270	C. MYLAR 0.027uF 50V
C285	UA954270	C. MYLAR 0.027uF 50V
C286	UR847100	C. EL 10uF 25V
C287	UA952100	C. MYLAR 100pF 50V
C288	UR837470	C. EL 47uF 16V
C289	UR837470	C. EL 47uF 16V
C290	UA952100	C. MYLAR 100pF 50V
C291	UR847100	C. EL 10uF 25V
C292	UR847470	C. EL 47uF 25V
C293	UR847470	C. EL 47uF 25V
C294	UR866220	C. EL 2.2uF 50V

* New Parts

Schm Ref.	PART NO.	Description
C295	UR866220	C. EL 2.2uF 50V
* C296	VS029500	C. MYLA. CHP 0.00047uF 50V
* C297	VS029500	C. MYLA. CHP 0.00047uF 50V
* C298	VS029500	C. MYLA. CHP 0.00047uF 50V
* C299	VS029500	C. MYLA. CHP 0.00047uF 50V
C401	UA953100	C. MYLAR 1000pF 50V(RT)
C402	UR749100	C. EL 1000uF 25V
C403	UR877470	C. EL 47uF 63V(RT)
C405	VS741700	C. CE. SAFTY 0.01uF 275V
C406	UA954100	C. MYLAR 0.01uF 50V
D4	VD631600	DIODE 1SS133, 176, HSS104
D5	VD631600	DIODE 1SS133, 176, HSS104
D6	VD631600	DIODE 1SS133, 176, HSS104
D7	VD631600	DIODE 1SS133, 176, HSS104
D8	VD631600	DIODE 1SS133, 176, HSS104
D9	VD631600	DIODE 1SS133, 176, HSS104
D10	VD631600	DIODE 1SS133, 176, HSS104
D11	VG438200	DIODE. ZENR MTZJ6.8A 6.8V
D12	VG437400	DIODE. ZENR MTZJ5.1B 5.1V
D13	VG437300	DIODE. ZENR MTZJ5.1A 5.1V
D14	VD631600	DIODE 1SS133, 176, HSS104
D15	VG437300	DIODE. ZENR MTZJ5.1A 5.1V
D201	VG439900	DIODE. ZENR MTZJ11B 11V
D202	VG439900	DIODE. ZENR MTZJ11B 11V
D203	VG439900	DIODE. ZENR MTZJ11B 11V
D204	VG439900	DIODE. ZENR MTZJ11B 11V
△ D401	VR253700	DIODE. BRG S1NB20 1.0A 200V
D402	VD631600	DIODE 1SS133, 176, HSS104
D403	VG439900	DIODE. ZENR MTZJ11B 11V(RT)
△ F401	KB000780	FUSE T5.0A 250V(AL)
△ F402	KB001390	FUSE 10A 250V(UCRT)
HS401	VS605900	HEAT. SINK DPS15-45(RT)
IC3	XV288C00	IC HD6433397XXXF CPU
IC4	XA507A00	IC AN78N05
IC5	XF494A00	IC LB1641
IC201	XJ553A00	IC NJM2068MD
IC202	XP894A00	IC LC78211
IC203	XP895A00	IC LC78212
IC204	XP894A00	IC LC78211
IC205	XF291A00	IC uPC4570G2
IC206	XF291A00	IC uPC4570G2
IC207	XV039A00	IC M5220FP OP AMP
IC208	XV039A00	IC M5220FP OP AMP
IC209	XV039A00	IC M5220FP OP AMP
IC210	XP896A00	IC LC78213
IC211	XP895A00	IC LC78212
L1	VD473700	COIL 60uH(A)
L2	VD473700	COIL 60uH(A)
PJ1	VV306900	JACK. PIN 4P
PJ2	VV306900	JACK. PIN 4P
PJ3	VV325400	JACK. PIN 6P
PJ201	VQ260900	JACK. PIN 4P
PJ202	VV306900	JACK. PIN 4P

* New Parts

P.C.B. FUNCTION & OPERATION

Schm Ref.	PART NO.	Description
PJ203	VV306900	JACK. PIN 4P
* PJ204	V2916500	JACK. PIN 2P
Q1	iC287820	TR 2SC2878 A, B
Q2	iC287820	TR 2SC2878 A, B
Q3	iA093320	TR 2SA933S Q, R
Q4	iA093320	TR 2SA933S Q, R
Q5	iA093320	TR 2SA933S Q, R
Q6	VG722000	TR. DGT DTC144ES
Q7	iA093320	TR 2SA933S Q, R
Q8	iA093320	TR 2SA933S Q, R
Q9	iA093320	TR 2SA933S Q, R
Q10	iA093320	TR 2SA933S Q, R
Q11	VD678700	TR. DGT DTC114ES
Q401	VD488500	TR. DGT DTC143XS
△ Q402	VR510800	TR 2SD2396 J, K(RT)
Q403	iE102620	FET 2SK246 Y(RT)
R60	HV754470	R. CAR. FP 47Ω 1/4W
R242	HV755100	R. CAR. FP 100Ω 1/4W
R243	HV755100	R. CAR. FP 100Ω 1/4W
R246	HV753220	R. CAR. FP 2.2Ω 1/4W
R253	HV753220	R. CAR. FP 2.2Ω 1/4W
R254	HV753220	R. CAR. FP 2.2Ω 1/4W
R255	HV754470	R. CAR. FP 47Ω 1/4W
R256	HV754470	R. CAR. FP 47Ω 1/4W
R259	HV753220	R. CAR. FP 2.2Ω 1/4W
R260	HV753220	R. CAR. FP 2.2Ω 1/4W
R401	HV753680	R. CAR. FP 6.8Ω 1/4W(A)
△ * RY401	V2695300	RELAY DC DG12D1-0/M-II
△ T401	XC082A00	TRANS. PWR (RT)
△ T401	XC083A00	TRANS. PWR (UC)
△ T401	XC084A00	TRANS. PWR (AL)
△ TE401	VT915000	OUTLET. AC 2P(A)
△ TE401	VU543100	OUTLET. AC 2P(UCRT)
△ TE401	VU543400	OUTLET. AC 2P(L)
XL1	VJ802400	RSNR. CE 8MHz
	VJ828000	PIN IMSA-6024-03E
	V3502100	SHEET. HTSK (RT)
	BB071360	SCR. TERM 8.3x13
	EP600140	SCR. BND. HD 3x10 MFZN2-BL(RT)
* * * *	V3037400	P. C. B. OPERATION(UC)
	V3037500	P. C. B. OPERATION(RT)
	V3037700	P. C. B. OPERATION(A)
	V3037800	P. C. B. OPERATION(L)
CB401	Vi879000	CN. BS. PIN 12P
CB402	Vi878400	CN. BS. PIN 6P
CB404	Vi878100	CN. BS. PIN 3P
CB410	VP206500	HOLDER. FUS EYF-52BC(RT)
CB411	VP206500	HOLDER. FUS EYF-52BC(RT)
CB702	VQ047300	CN. BS. PIN 12P
CB703	VQ044400	CN. BS. PIN 9P

* New Parts

Schm Ref.	PART NO.	Description
CB704	VM859500	CN. BS. PIN 11P
CB705	VM688900	CN. BS. PIN 10P
CB901	Vi878100	CN. BS. PIN 3P
CB902	VF982300	CN. BS. PIN 17P
C201	VJ599100	C. CE. TUBLR 0.1uF 50V
C202	VF466800	C. CE. TUBLR 100pF 50V
C203	VF466800	C. CE. TUBLR 100pF 50V
C204	VJ599100	C. CE. TUBLR 0.1uF 50V
C404	VJ599100	C. CE. TUBLR 0.1uF 50V
C405	UA954100	C. MYLAR 0.01uF 50V(AL)
C407	UR865220	C. EL 0.22uF 50V
C408	VF466900	C. CE. TUBLR 470pF 50V
C409	VF466900	C. CE. TUBLR 470pF 50V
C410	VF466900	C. CE. TUBLR 470pF 50V
C411	UA954220	C. MYLAR 0.022uF 50V(AL)
C412	UA954220	C. MYLAR 0.022uF 50V(AL)
C413	UA954100	C. MYLAR 0.01uF 50V(AL)
C414	VF467000	C. CE. TUBLR 1000pF 50V(A)
C415	UA954220	C. MYLAR 0.022uF 50V(AL)
C702	UA952100	C. MYLAR 100pF 50V
C703	UA952100	C. MYLAR 100pF 50V
C709	UR866220	C. EL 2.2uF 50V
C710	UR866220	C. EL 2.2uF 50V
C711	UR866220	C. EL 2.2uF 50V
C712	UR818100	C. EL 100uF 6.3V
C713	UR818100	C. EL 100uF 6.3V
C714	UR866220	C. EL 2.2uF 50V
C715	UR866220	C. EL 2.2uF 50V
C716	UR818100	C. EL 100uF 6.3V
C717	UR818100	C. EL 100uF 6.3V
C718	UR866220	C. EL 2.2uF 50V
C721	UR847100	C. EL 10uF 25V
C722	UA952100	C. MYLAR 100pF 50V
C723	UA952100	C. MYLAR 100pF 50V
C724	UR847100	C. EL 10uF 25V
C725	UR847100	C. EL 10uF 25V
C726	UR837470	C. EL 47uF 16V
C727	UA952100	C. MYLAR 100pF 50V
C728	UA952100	C. MYLAR 100pF 50V
C729	UR837470	C. EL 47uF 16V
C730	UR847100	C. EL 10uF 25V
C731	VJ599100	C. CE. TUBLR 0.1uF 50V
C732	VJ599100	C. CE. TUBLR 0.1uF 50V
C733	VJ599100	C. CE. TUBLR 0.1uF 50V
C734	VJ599100	C. CE. TUBLR 0.1uF 50V
C735	UR866470	C. EL 4.7uF 50V
C736	UR847100	C. EL 10uF 25V
C737	UR847100	C. EL 10uF 25V
C738	UR866470	C. EL 4.7uF 50V
C739	UR866470	C. EL 4.7uF 50V
C740	UR847100	C. EL 10uF 25V
C741	UR847100	C. EL 10uF 25V
C742	UR866470	C. EL 4.7uF 50V

* New Parts

P.C.B. OPERATION

Schm Ref.	PART NO.	Description
C743	VJ599100	C. CE. TUBLR 0.1uF 50V
C744	UR837470	C. EL 47uF 16V
C745	UR837470	C. EL 47uF 16V
C746	UA952100	C. MYLAR 100pF 50V
C747	UA952100	C. MYLAR 100pF 50V
C901	VJ599100	C. CE. TUBLR 0.1uF 50V
C902	VJ599100	C. CE. TUBLR 0.1uF 50V
C903	VJ599100	C. CE. TUBLR 0.1uF 50V
C904	VJ599100	C. CE. TUBLR 0.1uF 50V
C905	UR818100	C. EL 100uF 6.3V
C906	VJ599100	C. CE. TUBLR 0.1uF 50V
C907	VG277000	C. CE. TUBLR 33pF 50V
C908	VJ599100	C. CE. TUBLR 0.1uF 50V
C909	VJ599100	C. CE. TUBLR 0.1uF 50V
C910	UR818330	C. EL 330uF 6.3V
C911	VJ599100	C. CE. TUBLR 0.1uF 50V
C912	VJ599100	C. CE. TUBLR 0.1uF 50V
C914	VJ599100	C. CE. TUBLR 0.1uF 50V
D401	VD631600	DIODE 1SS133, 176, HSS104
D403	VD631600	DIODE 1SS133, 176, HSS104
D405	VD631600	DIODE 1SS133, 176, HSS104
D901	VM974700	DIODE. ZENR HZS7B2TD 7.0V
D902	VV625100	LED(re) SIM-22ST
F405	KB000780	FUSE T5.0A 250V(RT)
G901	VR463400	TERM. GND D3.5 TP00385
IC701	XF291A00	IC uPC4570G2
IC702	XF291A00	IC uPC4570G2
IC703	XF291A00	IC uPC4570G2
IC704	XR040A00	IC TC9299P
IC705	XR040A00	IC TC9299P
IC706	XF291A00	IC uPC4570G2
IC707	XF291A00	IC uPC4570G2
IC901	XR188A00	IC LC75710NE FLD
JK201	V2589500	CN 1P
JK401	VJ726800	JACK. MNI
JK402	VJ726800	JACK. MNI
L401	VU038100	COIL 1.5uH
L402	VU038100	COIL 1.5uH
L403	VU038100	COIL 1.5uH
PJ201	VV852700	JACK. PIN 3P
* PJ401	V2924700	JACK. PIN 2P
* PJ402	V2895200	JACK. PIN 2P
Q403	VK432900	TR 2SD1915F S, T
Q901	VR948600	TR 2SC4038 Q, R, S
Q902	VR948600	TR 2SC4038 Q, R, S
Q903	VR948600	TR 2SC4038 Q, R, S
Q904	VR948600	TR 2SC4038 Q, R, S
Q905	VR948600	TR 2SC4038 Q, R, S
Q906	VR948600	TR 2SC4038 Q, R, S
Q907	VR948600	TR 2SC4038 Q, R, S
Q908	VR948600	TR 2SC4038 Q, R, S
Q909	VR948600	TR 2SC4038 Q, R, S
Q910	VR948600	TR 2SC4038 Q, R, S

* New Parts

Schm Ref.	PART NO.	Description
R402	HV754100	R. CAR. FP 10Ω 1/4W
R403	VP941100	R. MTL. OXD 1KΩ 1W
R404	HV754100	R. CAR. FP 10Ω 1/4W
R405	HV754100	R. CAR. FP 10Ω 1/4W
R427	VP941100	R. MTL. OXD 1KΩ 1W
RY401	VK438300	RELAY DH24D2-OT/M2
RY402	VU566700	RELAY DG24D2-OS/M
SW405	VY811700	SW. SLIDE SS029-P2022BJ6(RT)
SW407	VA961800	VOLT. SELCT ESE-37247-F(RT)
SW901	VG392900	SW. TACT SKHVAA
SW902	VG392900	SW. TACT SKHVAA
SW903	VG392900	SW. TACT SKHVAA
SW904	VG392900	SW. TACT SKHVAA
SW905	VG392900	SW. TACT SKHVAA
SW906	VG392900	SW. TACT SKHVAA
SW907	VG392900	SW. TACT SKHVAA
SW908	VG392900	SW. TACT SKHVAA
SW909	VG392900	SW. TACT SKHVAA
SW910	VG392900	SW. TACT SKHVAA
SW911	VG392900	SW. TACT SKHVAA
SW912	VG392900	SW. TACT SKHVAA
SW913	VG392900	SW. TACT SKHVAA
SW914	VG392900	SW. TACT SKHVAA
SW915	VG392900	SW. TACT SKHVAA
SW916	VG392900	SW. TACT SKHVAA
SW917	VG392900	SW. TACT SKHVAA
SW918	VG392900	SW. TACT SKHVAA
SW919	VG392900	SW. TACT SKHVAA
SW920	VG392900	SW. TACT SKHVAA
SW921	VG392900	SW. TACT SKHVAA
SW922	VG392900	SW. TACT SKHVAA
SW923	VT140300	SW. RT. ENC EC16B12204
SW924	VG392900	SW. TACT SKHVAA
SW925	VG392900	SW. TACT SKHVAA
SW926	VG392900	SW. TACT SKHVAA
* TE402	V2505000	TERM. SP 6P(UCRTA)
* TE402	V2505100	TERM. SP 6P(L)
U901	VU591000	L. DTCT GPIU271X
V901	V2573800	FL. DSPLY 16-BT-60GK
VR701	V2556700	VR. MTR A100KΩ
	VJ828000	PIN IMSA-6024-03E
	VS588900	SHEET
	V3422300	SPACER FL-WIDE
	VY760000	SPACER
	BB071360	SCR. TERM 8.3x13

* New Parts

P.C.B. VIDEO

Schm Ref.	PART NO.	Description
* V3137000	P. C. B.	VIDEO (UC)
* V3137100	P. C. B.	VIDEO (RT)
* V3137200	P. C. B.	VIDEO (AL)
CB1	VQ047200	CN. BS. PIN 9P
CB501	VB858100	CN. BS. PIN 2P
CB502	VQ044700	CN. BS. PIN 16P
CB601	VB858200	CN. BS. PIN 3P
CB603	VQ044700	CN. BS. PIN 16P
CB604	VM859700	CN. BS. PIN 16P
CB751	Vi878400	CN. BS. PIN 6P
CB752	VK026200	CN. BS. PIN 3P
CB753	VB858200	CN. BS. PIN 3P
CB754	VB858100	CN. BS. PIN 2P
CB801	Vi878400	CN. BS. PIN 6P
CB802	VK025200	CN. BS. PIN 8P
* CB901	VV073300	CN. BS. PIN 15P
CB902	VQ963700	CN. BS. PIN 16P
C1	UR847100	C. EL 10uF 25V
C2	UR847100	C. EL 10uF 25V
C3	UR847100	C. EL 10uF 25V
C4	VQ645600	C. MYLAR 100pF 50V
C5	VQ645600	C. MYLAR 100pF 50V
C6	UR847100	C. EL 10uF 25V
C7	UR866100	C. EL 1uF 50V
C8	UR865100	C. EL 0.1uF 50V
C9	UR865100	C. EL 0.1uF 50V
C10	UR837470	C. EL 47uF 16V
C11	UA655120	C. MYLAR 0.12uF 50V
C12	VQ645600	C. MYLAR 100pF 50V
C13	UR866100	C. EL 1uF 50V
C14	VQ645600	C. MYLAR 100pF 50V
C15	UR866100	C. EL 1uF 50V
C16	UA655120	C. MYLAR 0.12uF 50V
C17	UR837470	C. EL 47uF 16V
C18	UR865100	C. EL 0.1uF 50V
C19	UR865100	C. EL 0.1uF 50V
C20	UR866100	C. EL 1uF 50V
C21	UR847100	C. EL 10uF 25V
C22	UR847100	C. EL 10uF 25V
C23	UA954330	C. MYLAR 0.033uF 50V
C24	UA954330	C. MYLAR 0.033uF 50V
C25	VJ599100	C. CE. TUBLR 0.1uF 50V
C501	UR829100	C. EL 1000uF 10V
C502	UR847100	C. EL 10uF 25V
C503	UB052100	C. CE. M. CHP 100pF 50V
C504	UB245100	C. CE. M. CHP 0.1uF 25V
C505	UR847100	C. EL 10uF 25V
C506	UB245100	C. CE. M. CHP 0.1uF 25V
C507	UR829100	C. EL 1000uF 10V
C508	UB052100	C. CE. M. CHP 100pF 50V
C511	UB052100	C. CE. M. CHP 100pF 50V
C512	VJ900300	C. CE. M. CHP 22pF 50V
C513	UR847100	C. EL 10uF 25V
C514	UR829100	C. EL 1000uF 10V
C515	UB245100	C. CE. M. CHP 0.1uF 25V

* New Parts

Schm Ref.	PART NO.	Description
C516	UB245100	C. CE. M. CHP 0.1uF 25V
C517	UR837470	C. EL 47uF 16V
C518	UR837470	C. EL 47uF 16V
C519	UR837470	C. EL 47uF 16V
C520	UR837470	C. EL 47uF 16V
C521	UR837470	C. EL 47uF 16V
C601	UB052100	C. CE. M. CHP 100pF 50V
C602	UB052100	C. CE. M. CHP 100pF 50V
C603	UB052100	C. CE. M. CHP 100pF 50V
C604	UB052100	C. CE. M. CHP 100pF 50V
C605	UB052100	C. CE. M. CHP 100pF 50V
C606	UB052100	C. CE. M. CHP 100pF 50V
C607	UR847100	C. EL 10uF 25V
C608	UR847100	C. EL 10uF 25V
C609	UR847100	C. EL 10uF 25V
C610	UR847100	C. EL 10uF 25V
C611	UR847100	C. EL 10uF 25V
C612	UR847100	C. EL 10uF 25V
C613	UR829100	C. EL 1000uF 10V
C614	UR829100	C. EL 1000uF 10V
C615	UR847100	C. EL 10uF 25V
C616	UR829100	C. EL 1000uF 10V
C617	UB013330	C. CE. M. CHP 3300pF 50V
C618	UR837470	C. EL 47uF 16V
C619	UR837470	C. EL 47uF 16V
C620	UB012820	C. CE. M. CHP 820pF 50V
C621	UR818100	C. EL 100uF 6.3V
C622	UR837470	C. EL 47uF 16V
C623	UB052120	C. CE. M. CHP 120pF 50V
C624	UB044100	C. CE. M. CHP 0.01uF 50V
C625	UR837470	C. EL 47uF 16V
C626	UR847100	C. EL 10uF 25V
C627	UB013120	C. CE. M. CHP 1200pF 50V
C628	UB012470	C. CE. M. CHP 470pF 50V
C629	UR866100	C. EL 1uF 50V
C630	UR866100	C. EL 1uF 50V
C631	UB245100	C. CE. M. CHP 0.1uF 25V
C632	UR837470	C. EL 47uF 16V
C633	UB245100	C. CE. M. CHP 0.1uF 25V
C634	UR837470	C. EL 47uF 16V
C635	VJ899300	C. CE. M. CHP 8pF 50V
C636	VJ899200	C. CE. M. CHP 7pF 50V
C637	UB051240	C. CE. M. CHP 24pF 50V
C638	UB051240	C. CE. M. CHP 24pF 50V
C639	UB012220	C. CE. M. CHP 220pF 50V
C640	UR847100	C. EL 10uF 25V
C641	UR866470	C. EL 4.7uF 50V
C642	UR837470	C. EL 47uF 16V
C643	UR837470	C. EL 47uF 16V
C644	VJ900700	C. CE. M. CHP 33pF 50V
C645	VJ900300	C. CE. M. CHP 22pF 50V
C646	UR829100	C. EL 1000uF 10V
C647	UB245100	C. CE. M. CHP 0.1uF 25V
C648	UB245100	C. CE. M. CHP 0.1uF 25V
C649	UB012820	C. CE. M. CHP 820pF 50V (AL)

* New Parts

P.C.B. VIDEO

Schm Ref.	PART NO.	Description
C649	UB013150	C. CE. M. CHP 1500pF 50V(UCRT)
C650	UB052100	C. CE. M. CHP 100pF 50V
C651	UB245100	C. CE. M. CHP 0.1uF 25V
C751	UA655100	C. MYLAR 0.1uF 50V
C752	UA655100	C. MYLAR 0.1uF 50V
C753	UR739680	C. EL 6800uF 16V
C754	UR739680	C. EL 6800uF 16V(UC)
* C754	UR73A100	C. EL 10000uF 16V(RTAL)
C755	UR739680	C. EL 6800uF 16V(UC)
* C755	UR73A100	C. EL 10000uF 16V(RTAL)
C756	UR739680	C. EL 6800uF 16V
C757	UR867100	C. EL 10uF 50V
C758	UR868100	C. EL 100uF 50V
C759	UR866100	C. EL 1uF 50V
C760	UR847100	C. EL 10uF 25V
C761	UR759100	C. EL 1000uF 35V
C805	UR847100	C. EL 10uF 25V
C806	UR837470	C. EL 47uF 16V
C807	UR847100	C. EL 10uF 25V
C808	UR837470	C. EL 47uF 16V
C809	UR847100	C. EL 10uF 25V
C810	UR837470	C. EL 47uF 16V
C901	UB052100	C. CE. M. CHP 100pF 50V
C902	UB052100	C. CE. M. CHP 100pF 50V
C903	UB052100	C. CE. M. CHP 100pF 50V
C904	UB052100	C. CE. M. CHP 100pF 50V
C905	UB052100	C. CE. M. CHP 100pF 50V(RT)
D601	VD631600	DIODE 1SS133, 176, HSS104
D602	VD631600	DIODE 1SS133, 176, HSS104
D603	VD631600	DIODE 1SS133, 176, HSS104
D604	VD631600	DIODE 1SS133, 176, HSS104
D605	VD631600	DIODE 1SS133, 176, HSS104
D606	VD631600	DIODE 1SS133, 176, HSS104
D607	VD631600	DIODE 1SS133, 176, HSS104
D608	VD631600	DIODE 1SS133, 176, HSS104
D609	VD631600	DIODE 1SS133, 176, HSS104
D610	VD631600	DIODE 1SS133, 176, HSS104
D611	VD631600	DIODE 1SS133, 176, HSS104
D612	VD631600	DIODE 1SS133, 176, HSS104
* D751	VN011300	DIODE. BRG D3SBA20 4A 200V
D752	VM976300	DIODE. ZENR HZS242TD 24V
D801	VD631600	DIODE 1SS133, 176, HSS104
D802	VD631600	DIODE 1SS133, 176, HSS104
D803	VD631600	DIODE 1SS133, 176, HSS104
G801	VR463400	TERM. GND D3.5 TP00385
G802	VR463400	TERM. GND D3.5 TP00385
HS801	VL391100	RADIATOR OSH-2440-SPL
HS802	VL391100	RADIATOR OSH-2440-SPL
HS803	VL391100	RADIATOR OSH-2440-SPL
IC1	XM356A00	IC NJM2068LD
IC2	XB247A00	IC uPC4570HA
* IC501	XV634A00	IC HD14051BP MPX
* IC502	XV634A00	IC HD14051BP MPX
IC503	iG156200	IC HD14066BP ANALOGSW
IC504	Xi109D00	IC MC14576CP

* New Parts

Schm Ref.	PART NO.	Description		
* IC601	XV634A00	IC	HD14051BP MPX	
* IC602	XV634A00	IC	HD14051BP MPX	
* IC603	XV634A00	IC	HD14051BP MPX	
* IC604	XV634A00	IC	HD14051BP MPX	
IC605	iG156200	IC	HD14066BP ANALOGSW	
IC606	iG055100	IC	TC4053BP	
IC607	iG142200	IC	TC74HCU04AP	
IC608	Xi109D00	IC	MC14576CP	
IC609	Xi109D00	IC	MC14576CP	
IC610	Xi109D00	IC	MC14576CP	
IC611	XS502A00	IC	LC74781-9626	
△ IC801	XJ604A00	IC	NJM78M05FA	
△ IC802	XJ604A00	IC	NJM78M05FA	
△ IC803	XE436A00	IC	NJM79M05FA	
JK601	VU245200	CN. DIN	1P	
JK602	VP113600	CN. DIN	2P	
JK603	VP113600	CN. DIN	2P	
JK604	VT973000	CN. DIN	2P	
* L601	V2726100	COIL	33uH	
L602	V3233700	COIL	1.5uH	
PJ501	VV325000	JACK. PIN	2P	
PJ502	VV325000	JACK. PIN	2P	
PJ503	VV325000	JACK. PIN	2P	
* PJ504	V2773400	JACK. PIN	1P	
* PJ601	V2773400	JACK. PIN	1P	
Q502	iA1015I0	TR	2SA1015 Y	
Q503	iC053540	TR	2SC535 A, B, C	
Q601	iC174020	TR	2SC1740S R, S	
Q602	VH964100	TR. DGT	DTA143ES	
Q603	iC287820	TR	2SC2878 A, B	
Q604	VG721700	TR. DGT	DTA144ES	
Q605	VG721700	TR. DGT	DTA144ES	
Q606	VD678700	TR. DGT	DTC114ES	
Q607	iC174020	TR	2SC1740S R, S	
Q608	iC174020	TR	2SC1740S R, S	
Q609	iA1015I0	TR	2SA1015 Y	
Q610	iC053540	TR	2SC535 A, B, C	
Q611	iC224030	TR	2SC2240 GR, BL	
Q612	iC174020	TR	2SC1740S R, S	
Q751	VC141900	TR	2SB941 P, Q	
Q752	iC1815I0	TR	2SC1815 Y	
R751	VS267200	R. MTL. OXD	82 Ω	1W
R752	HV756330	R. CAR. FP	3.3K Ω	1/4W
R753	HV756470	R. CAR. FP	4.7K Ω	1/4W
R757	VP939800	R. MTL. OXD	10 Ω	1W
R804	VC757300	R. MTL. OXD	27 Ω	2W
SW1	VV885000	SW. PUSH	SPUN22 2	
SW101	VV350500	SW. RT	SR-2512-0110-20F2A	
VR1	VP741800	VR	B20K Ω	
VR2	VP741900	VR	G25K Ω	
VR3	VP742000	VR	MN100K Ω	
XL601	VV949800	RSNR. CRY	14.31818MHz (UCRT)	
XL601	VV949900	RSNR. CRY	17.734475MHz (AL)	
	BB071360	SCR. TERM	8.3x13	
	EG330030	SCR. BND. HD	3x6	FCRM3-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 (AL)
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	V3625800	C. CE 33pF 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	VA761200	C. CE 33pF 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 (AL)
C36	UA953100	C. MYLAR 1000pF 50V (UCRT)
C37	UA952270	C. MYLAR 270pF 50V (AL)
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
C49	UA952120	C. MYLAR 120pF 50V (AL)
C49	UA953220	C. MYLAR 2200pF 50V (UCRT)
C50	VJ599000	C. CE. TUBLR 0.047uF 16V

* New Parts

Schm Ref.	PART NO.	Description
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
L1	Vi546100	COIL 220uH
L2	Vi546100	COIL 220uH
L3	Vi546100	COIL 220uH
L4	Vi546100	COIL 220uH
PK1	V2716700	TUNER. PK ENV-172A4G1 (AL)
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 (AL)
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	QU003800	RSNR. CRYST 7.2MHz
XL2	GG000750	RSNR. CE 18.95KHz
	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 (AL)
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
C1	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	V3625800	C. CE 33pF 50V
C2	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	VA761200	C. CE 33pF 50V
C29	UM416100	C. EL 1uF 50V
C3	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	UA953100	C. MYLAR 1000pF 50V (UCRT)
C36	V3451700	C. PP 270pF 100V (AL)
C37	UA953100	C. MYLAR 1000pF 50V (UCRT)
C37	V3451700	C. PP 270pF 100V (AL)
C38	UB012470	C. CE. M. CHP 470pF 50V
C39	VG287200	C. EL 10uF 50V
C4	VG290700	C. EL 3.3uF 50V
C41	VL884100	C. PP 3900pF 100V
C42	UM397220	C. EL 22uF 25V
C43	UA953390	C. MYLAR 3900pF 50V
C43	VL884100	C. PP 3900pF 100V
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	UA953220	C. MYLAR 2200pF 50V (UCRT)
C49	V3451600	C. PP 120pF 100V (AL)
C5	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
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 (AL)
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
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	QU003800	RSNR. CRY5 7.2MHz
XL2	GG000750	RSNR. CE 18.95KHz
XL3	VY704900	RSNR. CRY5 4.332MHz
	BB071360	SCR. TERM 8.3x13
	VR282500	PLATE ANT.

* New Parts

CHIP RESISTOR

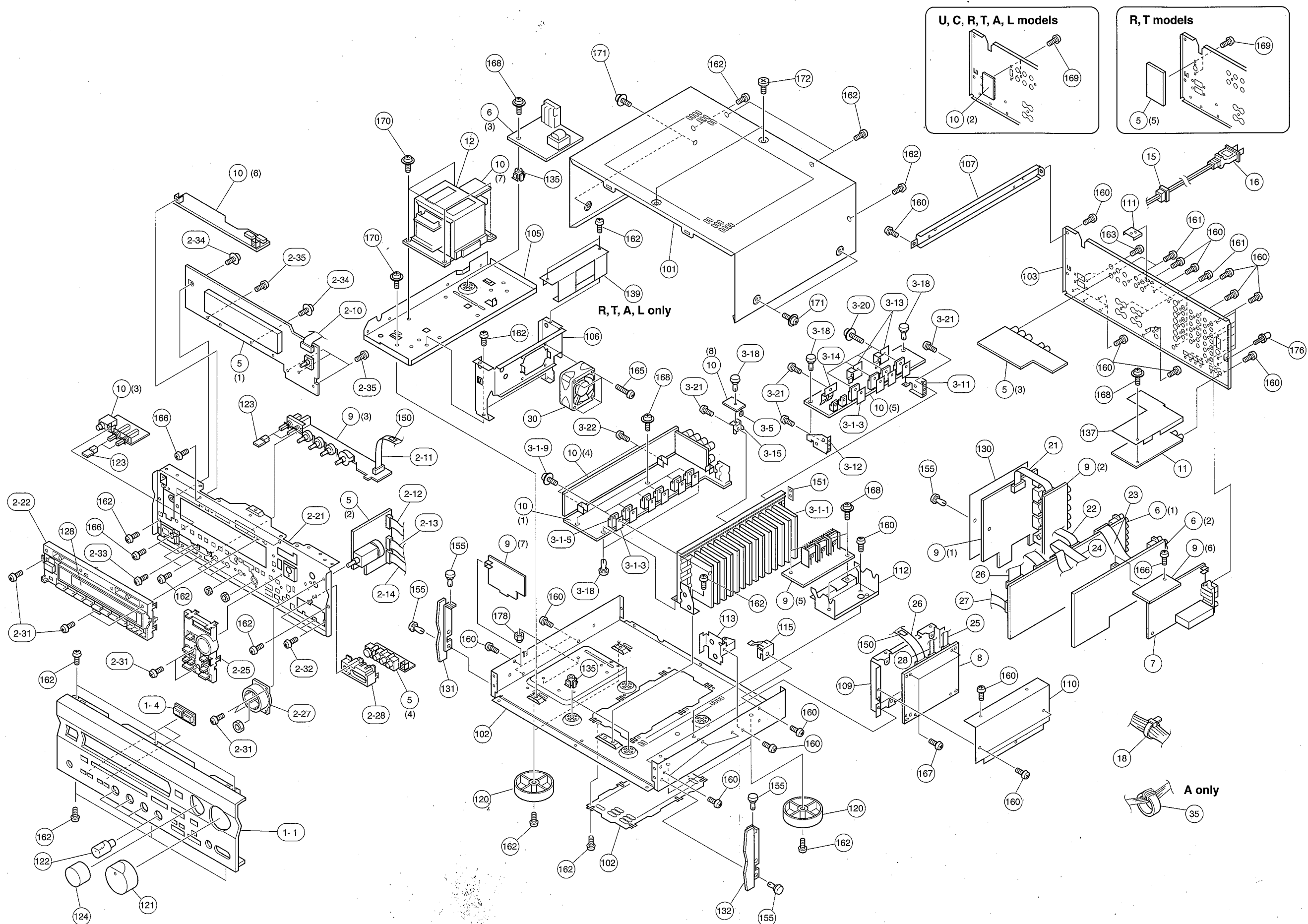
Schm Ref.	PART NO.	Description
	RD250000	R. CAR. CHP 0Ω 1/10W
	RD253220	R. CAR. CHP 2.2Ω 1/10W
	RD254220	R. CAR. CHP 22Ω 1/10W
	RD254470	R. CAR. CHP 47Ω 1/10W
	RD254680	R. CAR. CHP 68Ω 1/10W
	RD254750	R. CAR. CHP 75Ω 1/10W
	RD254820	R. CAR. CHP 82Ω 1/10W
	RD255100	R. CAR. CHP 100Ω 1/10W
	RD255120	R. CAR. CHP 120Ω 1/10W
	RD255150	R. CAR. CHP 150Ω 1/10W
	RD255220	R. CAR. CHP 220Ω 1/10W
	RD255300	R. CAR. CHP 300Ω 1/10W
	RD255330	R. CAR. CHP 330Ω 1/10W
	RD255430	R. CAR. CHP 430Ω 1/10W
	RD255470	R. CAR. CHP 470Ω 1/10W
	RD255680	R. CAR. CHP 680Ω 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
	RD256180	R. CAR. CHP 1.8KΩ 1/10W
	RD256220	R. CAR. CHP 2.2KΩ 1/10W
	RD256270	R. CAR. CHP 2.7KΩ 1/10W
	RD256330	R. CAR. CHP 3.3KΩ 1/10W
	RD256390	R. CAR. CHP 3.9KΩ 1/10W
	RD256470	R. CAR. CHP 4.7KΩ 1/10W
	RD256510	R. CAR. CHP 5.1KΩ 1/10W
	RD256560	R. CAR. CHP 5.6KΩ 1/10W
	RD256680	R. CAR. CHP 6.8KΩ 1/10W
	RD256750	R. CAR. CHP 7.5KΩ 1/10W
	RD256820	R. CAR. CHP 8.2KΩ 1/10W
	RD256910	R. CAR. CHP 9.1KΩ 1/10W
	RD257100	R. CAR. CHP 10KΩ 1/10W
	RD257110	R. CAR. CHP 11KΩ 1/10W
	RD257120	R. CAR. CHP 12KΩ 1/10W
	RD257150	R. CAR. CHP 15KΩ 1/10W
	RD257180	R. CAR. CHP 18KΩ 1/10W
	RD257220	R. CAR. CHP 22KΩ 1/10W
	RD257270	R. CAR. CHP 27KΩ 1/10W
	RD257330	R. CAR. CHP 33KΩ 1/10W
	RD257360	R. CAR. CHP 36KΩ 1/10W
	RD257470	R. CAR. CHP 47KΩ 1/10W
	RD257510	R. CAR. CHP 51KΩ 1/10W
	RD257620	R. CAR. CHP 62KΩ 1/10W
	RD257680	R. CAR. CHP 68KΩ 1/10W
	RD258100	R. CAR. CHP 100KΩ 1/10W
	RD258220	R. CAR. CHP 220KΩ 1/10W
	RD258470	R. CAR. CHP 470KΩ 1/10W
	RD258680	R. CAR. CHP 680KΩ 1/10W
	RD259100	R. CAR. CHP 1MΩ 1/10W
	RD556100	R. CAR. CHP 1KΩ 1/10W
	RD556300	R. CAR. CHP 3KΩ 1/10W
	RD556330	R. CAR. CHP 3.3KΩ 1/10W
	RD556390	R. CAR. CHP 3.9KΩ 1/10W

* New Parts

Schm Ref.	PART NO.	Description
	RD557100	R. CAR. CHP 10KΩ 1/10W
	RD557120	R. CAR. CHP 12KΩ 1/10W

* New Parts

EXPLODED VIEW



MECHANICAL PARTS

Ref. No.	PART NO.	Description	Remarks	Markets
* 1- 1	V2673100	FRONT PANEL	BL	
* 1- 1	V2673200	FRONT PANEL	GD	
1- 4	V2468600	ESCUTCHOEN	3/8	
* 2-10	MF117180	FLEXIBLE FLAT CABLE	17P 180mm	
* 2-11	MF109200	FLEXIBLE FLAT CABLE	9P 200mm	
2-12	MF111200	FLEXIBLE FLAT CABLE	11P 200mm	
2-13	MF110160	FLEXIBLE FLAT CABLE	10P 160mm	
* 2-14	MF112140	FLEXIBLE FLAT CABLE	12P 140mm	
* 2-21	V2672600	SUB CHASSIS		
2-22	V2465500	BUTTON CASE	BL	
2-22	V2465700	BUTTON CASE	GD	
* 2-25	V2466400	BUTTON, INPUT	BL	
* 2-25	V2466600	BUTTON, INPUT	GD	
2-27	V2467900	ESCUTCHEON, VOL	BL	
2-27	V2468100	ESCUTCHEON, VOL	GD	
2-28	V2468300	ESCUTCHEON, PJ	BL	
2-28	V2468500	ESCUTCHEON, PJ	GD	
2-31	EP600830	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
2-32	VN413300	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2-BL	
2-33	EG330030	BIND HEAD SCREW	3x6 FCRM3-BL	
2-34	VT669300	PW HEAD B-TITE SCREW	3x8-8 MFC2	
2-35	EP630220	BIND HEAD P-TITE SCREW	3x8 ZMC2-BL	
3-1-1	VV308800	HEAT SINK ASS'Y		
* 3-1-3	V3153800	RADIATION SHEET	BFG-20ADH-6 22x29	
Δ# 3-1-5	VZ750200	PAIR TRANSISTOR	2SA1943/C5200 O, R	Q125, 128, 131
3-1-9	VK173200	SCREW, TRANSISTOR	3x15 SP FCM3	
3- 5	VM842400	POSISTOR	PTH9M04 BE/90°C	
3-11	VV517000	SUPPORT	RA-L	
3-12	VV517100	SUPPORT	RA-R	
3-13	V2564500	SUPPORT, TR		
* 3-14	V2673000	SUPPORT, TR-2P		
3-15	VY934600	SUPPORT, PS		
3-18	VQ368500	PUSH RIVET	P3545-B	
3-20	VK173200	SCREW, TRANSISTOR	3x15 SP FCM3	
3-21	EP600830	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
3-22	EG330030	BIND HEAD SCREW	3x6 FCRM3-BL	
* 5	V3037400	P. C. B. ASS'Y	OPERATION	(UC)
* 5	V3037500	P. C. B. ASS'Y	OPERATION	(RT)
* 5	V3037700	P. C. B. ASS'Y	OPERATION	(A)
* 5	V3037800	P. C. B. ASS'Y	OPERATION	(L)
* 6	V3036600	P. C. B. ASS'Y	FUNCTION	(UC)
* 6	V3036700	P. C. B. ASS'Y	FUNCTION	(RT)
* 6	V3036800	P. C. B. ASS'Y	FUNCTION	(A)
* 6	V3036900	P. C. B. ASS'Y	FUNCTION	(L)
* 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)
* 8	V3037900	P. C. B. ASS'Y	DSP	
* 9	V3137000	P. C. B. ASS'Y	VIDEO	(UC)
* 9	V3137100	P. C. B. ASS'Y	VIDEO	(RT)
* 9	V3137200	P. C. B. ASS'Y	VIDEO	(AL)
* 10	V3036200	P. C. B. ASS'Y	MAIN	(UCRT)
* 10	V3036300	P. C. B. ASS'Y	MAIN	(A)

* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
* 10	V3036400	P. C. B. ASS'Y	MAIN	(L)
* 11	V3038100	P. C. B. ASS'Y	DIGITAL-IN	(RTL)
* 11	V3038200	P. C. B. ASS'Y	DIGITAL-IN	(UCA)
△ * 12	XV543A00	POWER TRANSFORMER		(U)
△ * 12	XV544A00	POWER TRANSFORMER		(C)
△ * 12	XV545A00	POWER TRANSFORMER		(RT)
△ * 12	XV546A00	POWER TRANSFORMER		(A)
△ * 12	XV547A00	POWER TRANSFORMER		(L)
15	V2438700	CORD STOPPER	#10P1	
△ 16	V2296800	POWER CORD ASS'Y		(A)
△ 16	V2643800	POWER CORD ASS'Y		(UC)
△ 16	VN363700	POWER CORD ASS'Y		(L)
△ 16	VZ542500	POWER CORD ASS'Y		(RT)
18	VU590000	BINDING TIE	CBTD001B	
21	MF116070	FLEXIBLE FLAT CABLE	16P 70mm	
22	MF116100	FLEXIBLE FLAT CABLE	16P 100mm	
* 23	MF125100	FLEXIBLE FLAT CABLE	25P 100mm	
24	MF118070	FLEXIBLE FLAT CABLE	18P 70mm	
* 25	MF113100	FLEXIBLE FLAT CABLE	13P 100mm	
26	MF111140	FLEXIBLE FLAT CABLE	11P 140mm	
27	MF112120	FLEXIBLE FLAT CABLE	12P 120mm	
* 28	MF114300	FLEXIBLE FLAT CABLE	14P 300mm	
30	VV272500	DC FAN MOTOR	2410ML-05W-B20-L00	
35	V3438200	FERRITE CORE	FSOB190RT	(A)
101	VV263800	TOP COVER	BL	
101	VZ884600	TOP COVER	GD	
102	VV305600	CHASSIS		
* 103	V2672100	REAR PANEL		(U)
* 103	V2672200	REAR PANEL		(C)
* 103	V2672300	REAR PANEL		(RT)
* 103	V2672400	REAR PANEL		(A)
* 103	V2672500	REAR PANEL		(L)
105	VV305900	FRAME, TRANSFORMER		
106	VV306000	FRAME, FAN		
107	VV306100	FRAME		
109	V2461100	SHIELD CASE		
110	VZ332800	SHIELD CASE COVER		
111	VV306200	SUPPORT, TOP		
* 112	V2672800	SUPPORT, PCB		
* 113	V2672900	SUPPORT, TUNER		
115	V3317200	EARTH PLATE		
120	V0042500	LEG	D60xH21	GD
120	VS025000	LEG	D60xH21	BL
* 121	V2566600	KNOB, LED		BL
121	V2566800	KNOB, LED		GD
122	V0016700	KNOB		GD
122	VV311000	KNOB	D14	BL
123	V2467300	BUTTON, 3/8		BL
123	V2467500	BUTTON, 3/8		GD
124	V2467600	KNOB, ENC	D30	BL
124	V2467800	KNOB, ENC	D30	GD
128	V2469400	SHEET, WINDOW		
* 130	V3127400	SHEET		

* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
* 131	V2673500	PLATE SIDE L	150	BL
* 131	V2673700	PLATE SIDE L	150	GD
* 132	V2673800	PLATE SIDE R	150	BL
* 132	V2674000	PLATE SIDE R	150	GD
135	VR264400	SPACER	H8	
137	V3298700	SHIELD PLATE	RF	
139	V3297900	PLATE, FAN COVER		(RALT)
150	V2126000	DAMPER	T2x10x20	
151	V3617100	SHEET, REAR		(RT)
155	VQ368500	PUSH RIVET	P3545-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	
165	VV220300	BIND HEAD B-TITE SCREW	3x30 MFZN2-BL	
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	
169	EP600530	BIND HEAD S-TITE SCREW	3x8 ZMC2-BL	
170	VL572800	BW HEAD S-TITE SCREW	4x10 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
172	VK522000	SPECIAL SCREW S-TITE	4x8-10 FCRM3-BL	BL
172	VZ893000	DECORATED SCREW S-TIGHT	4x8-10 MFNI-33	GD
176	AA627310	GROUND TERMINAL		
178	03700480	HEXAGONAL CAP NUT	4.0 MFNI33	
ACCESSORIES				
* 131	V2686800	REMOTE CONTROL TRANSMITTER	RAV190	
	VQ147100	ANTENNA, FM	1.4m	
	VR248500	ANTENNA, AM LOOP	1.0m	
	VY731700	LABEL, REMOTE CONTROL		
	VT948000	ANTENNA ADAPTER		
	VH214900	BATTERY, MANGANESE	SUM-3, AA, R06	

* New Parts

A

B

C

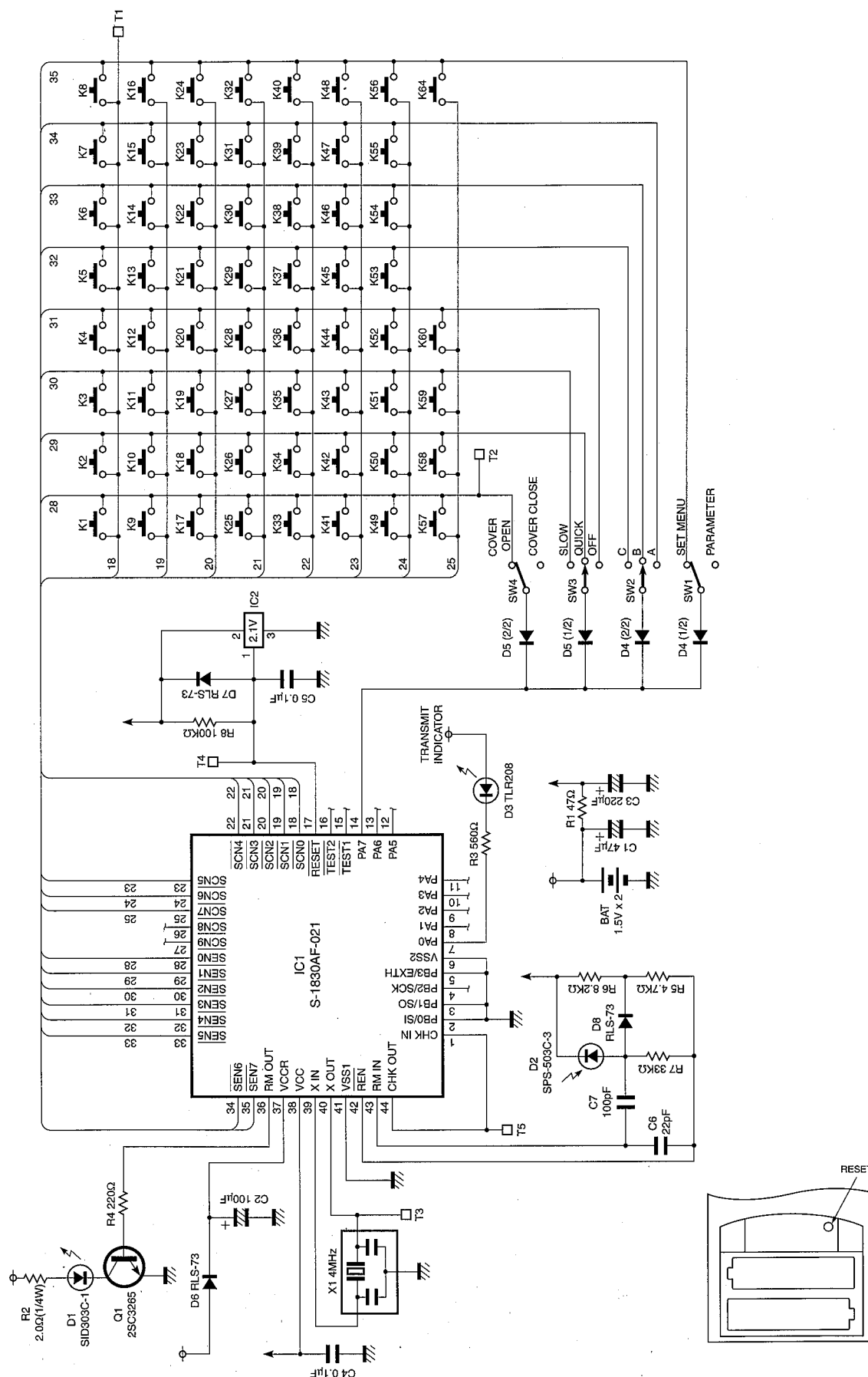
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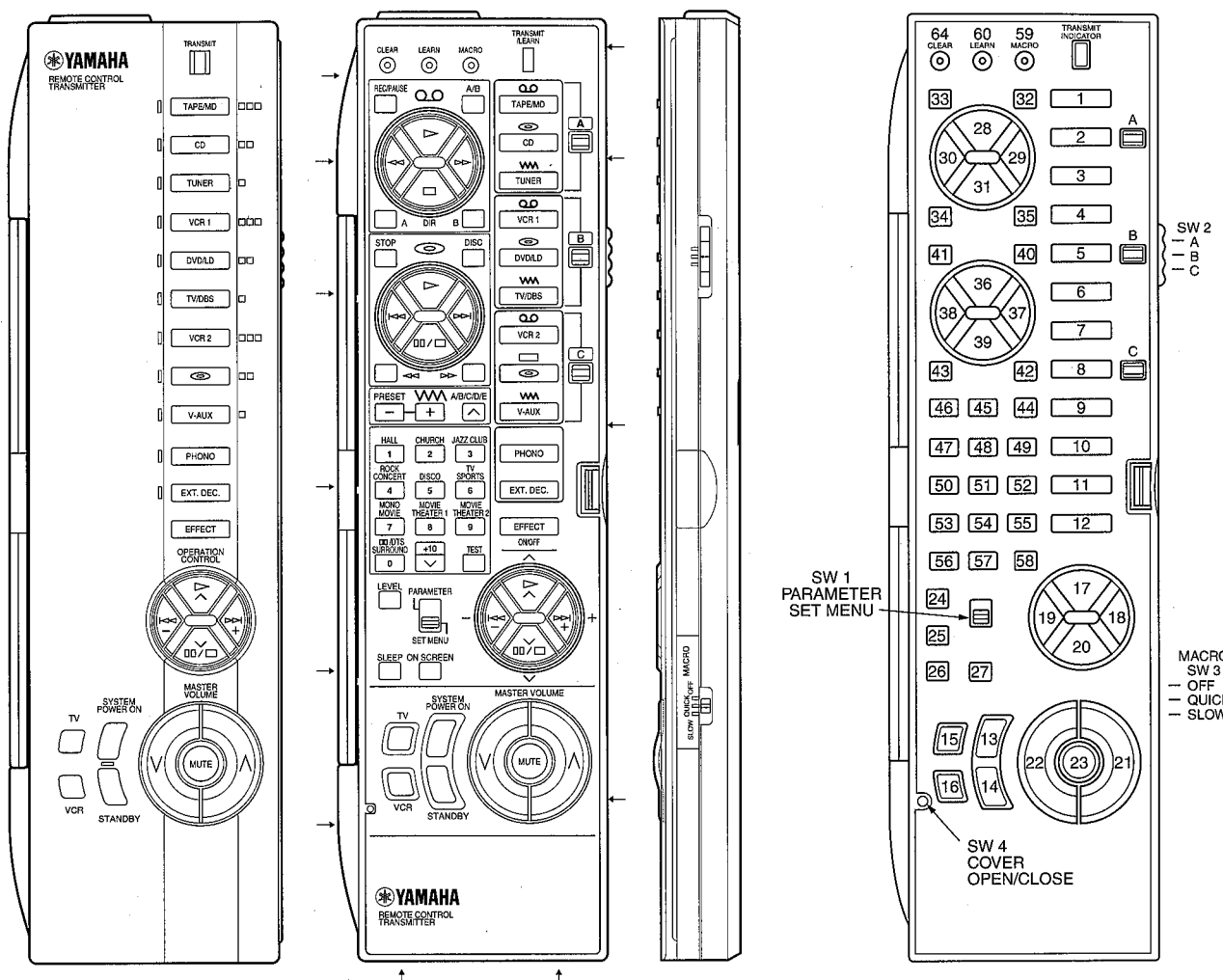
RX-V995

REMOTE CONTROL TRANSMITTER

■ SCHEMATIC DIAGRAM



Key arrangement



RX-V995

List of the fixed code

Key No.	SW 1	SW 2	SET MENU	PARAMETER
1	TAP/MD	7A-85-18	7A-85-18	7A-85-18
2	CD	7A-85-15	7A-85-15	7A-85-15
3	TUNER	7A-85-16	7A-85-16	7A-85-16
4	VCR 1	7A-85-0F	7A-85-0F	7A-85-0F
5	DVD/LD	7A-85-17	7A-85-17	7A-85-17
6	TV/DBS	7A-85-54	7A-85-54	7A-85-54
7	VCR 2	7A-85-13	7A-85-13	7A-85-13
8	V-AUX	7A-85-55	7A-85-55	7A-85-55
9	PHONO	7A-85-14	7A-85-14	7A-85-14
10	EXT. DECODER	7A-85-87	7A-85-87	7A-85-87
11	EFFECT	7A-85-56	7A-85-56	7A-85-56
12	SYSTEM POWER	7A-85-1D	7A-85-1D	7A-85-1D
13	POWER STANDBY	7A-85-1E	7A-85-1E	7A-85-1E
14	TV POWER	—	—	—
15	VCR POWER	—	—	—
16	PLAY	7A-85-9D	7A-85-9D	7A-85-9D
17	STOP	7A-85-9E	7A-85-9E	7A-85-9E
18	PAUSE/STOP	7A-85-9F	7A-85-9F	7A-85-9F
19	VOLUME +	7A-85-9C	7A-85-9C	7A-85-9C
20	VOLUME -	7A-85-1A	7A-85-1A	7A-85-1A
21	MUTE	7A-85-1B	7A-85-1B	7A-85-1B
22	LEVEL	7A-85-1C	7A-85-1C	7A-85-1C
23	SLEEP	7A-85-86	7A-85-86	7A-85-86
24	ON SCREEN	7A-85-57	7A-85-57	7A-85-57
25	PLAY	7A-85-02	7A-85-02	7A-85-02
26	STOP	7A-85-01	7A-85-01	7A-85-01

Key No.	SW 1	SW 2	SET MENU	PARAMETER
31	STOP	7A-85-03	7A-85-03	7A-85-03
32	A/B	7A-85-06	7A-85-06	7A-85-06
33	REC/PAUSE	7A-85-04	7A-85-04	7A-85-04
34	DIR A	7A-85-07	7A-85-07	7A-85-07
35	DIR B	7A-85-08	7A-85-08	7A-85-08
36	PLAY	7A-85-08	7A-85-08	7A-85-08
37	PAUSE/STOP	7A-85-0A	7A-85-0A	7A-85-0A
38	STOP	7A-85-0B	7A-85-0B	7A-85-0B
39	PAUSE/STOP	7A-85-09	7A-85-09	7A-85-09
40	DISC	7A-85-4F	7A-85-4F	7A-85-4F
41	STOP	7A-85-85	7A-85-85	7A-85-85
42	PAUSE/STOP	7A-85-0C	7A-85-0C	7A-85-0C
43	STOP	7A-85-0D	7A-85-0D	7A-85-0D
44	A/B/C/D/E	7A-85-12	7A-85-12	7A-85-12
45	PRESET +	7A-85-10	7A-85-10	7A-85-10
46	PRESET -	7A-85-11	7A-85-11	7A-85-11
47	1	7A-85-88	7A-85-88	7A-85-88
48	2	7A-85-89	7A-85-89	7A-85-89
49	3	7A-85-8A	7A-85-8A	7A-85-8A
50	4	7A-85-8B	7A-85-8B	7A-85-8B
51	5	7A-85-8C	7A-85-8C	7A-85-8C
52	6	7A-85-8D	7A-85-8D	7A-85-8D
53	7	7A-85-8E	7A-85-8E	7A-85-8E
54	8	7A-85-8F	7A-85-8F	7A-85-8F
55	9	7A-85-90	7A-85-90	7A-85-90
56	0	7A-85-91	7A-85-91	7A-85-91
57	+10	—	—	—
58	TEST	7A-85-93	7A-85-93	7A-85-93

Learning and macro key

Key No.	NAME	LEARN	MACRO	Key No.	NAME	LEARN	MACRO
1	TAPE/MD	X	O	31	STOP	●	X
2	CD	X	O	32	A/B	●	X
3	TUNER	X	O	33	REC/PAUSE	●	X
4	VCR 1	X	O	34	DIR A	●	X
5	DVD/LD	X	O	35	DIR B	●	X
6	TV/DBS	X	O	36	PLAY	●	X
7	VCR 2	X	O	37	⏮	●	X
8	⏮	O	O	38	⏭	●	X
9	V-AUX	X	O	39	PAUSE/STOP	●	X
10	PHONO	X	O	40	DISC	●	X
11	EXT. DECODER	X	O	41	STOP	●	X
12	EFFECT	X	X	42	⏮	●	X
13	SYSTEM POWER	X	O	43	⏭	●	X
14	POWER STANDBY	X	O	44	A/B/C/D/E	●	X
15	TV POWER	O	X	45	PRESET +	●	X
16	VCR POWER	O	X	46	PRESET -	●	X
17	⏮ PLAY ⏭	X	X	47	1	●	X
18	+ ⏮ +	X	X	48	2	●	X
19	- ⏭ -	X	X	49	3	●	X
20	∨ PAUSE/STOP ∨	X	X	50	4	●	X
21	VOLUME +	X	X	51	5	●	X
22	VOLUME -	X	X	52	6	●	X
23	MUTE	X	X	53	7	●	X
24	LEVEL	X	X	54	8	●	X
25	no key	X	X	55	9	●	X
26	SLEEP	X	X	56	0	●	X
27	ON SCREEN	X	X	57	∨ +10	●	X
28	PLAY	●	X	58	TEST	●	X
29	⏮	●	X				
30	⏭	●	X				

LEARN

O : Learning key A (The key of learning 1 position (Don't care every SW).)

● : Learning key B (The key of learning 2 position of SW3-B and SW3-C. in case of SW3-A, non-learning key, without regard to the positions of other SW.)

X : Non-learning key (The key of non-learning without regard to positions of every SW.)

MACRO

O : The key of macro setting

X : The key of macro non-setting

The list of action when each key is pushed.

Key No.	SW 1 SW 2 SW 3	Cover OPEN Don't care			Cover CLOSE Don't care		
		A	B	C	OFF	QUICK	SLOW
		Don't care			Don't care		
1	TAPE/MD	A	A	A	A	M	M
2	CD	A	A	A	A	M	M
3	TUNER	A	A	A	A	M	M
4	VCR 1	A	A	A	A	M	M
5	DVD/LD	A	A	A	A	M	M
6	TV/DBS	A	A	A	A	M	M
7	VCR 2	A	A	A	A	M	M
8	⏮	G	G	G	G	M	M
9	V-AUX	A	A	A	A	M	M
10	PHONO	A	A	A	A	M	M
11	EXT. DECODER	A	A	A	A	M	M
12	EFFECT	A	A	A	A	A	A
13	SYSTEM POWER	A	A	A	A	M	M
14	POWER STANDBY	A	A	A	A	M	M
15	TV POWER	G	G	G	G	G	G
16	VCR POWER	G	G	G	G	G	G
17	⏮ PLAY ⏭	A	A	A	C	C	C
18	+ ⏮ +	A	A	A	C	C	C
19	- ⏭ -	A	A	A	C	C	C
20	∨ PAUSE/STOP ∨	A	A	A	C	C	C
21	VOLUME +	A	A	A	A	A	A
22	VOLUME -	A	A	A	A	A	A
23	MUTE	A	A	A	A	A	A
24	LEVEL	A	A	A	—	—	—
25	no key	A	A	A	—	—	—
26	SLEEP	A	A	A	—	—	—
27	ON SCREEN	A	A	A	—	—	—
28	PLAY	A	G	B	—	—	—
29	⏮	A	G	B	—	—	—
30	⏭	A	G	B	—	—	—

Key No.	SW 1 SW 2 SW 3	Cover OPEN Don't care			Cover CLOSE Don't care		
		A	B	C	OFF	QUICK	SLOW
		Don't care			Don't care		
31	STOP	A	G	B	—	—	—
32	A/B	A	G	B	—	—	—
33	REC/PAUSE	A	G	B	—	—	—
34	DIR A	A	G	G	—	—	—
35	DIR B	A	G	G	—	—	—
36	PLAY	A	B	B	—	—	—
37	⏮	A	B	B	—	—	—
38	⏭	A	B	B	—	—	—
39	PAUSE/STOP	A	B	B	—	—	—
40	DISC	A	B	B	—	—	—
41	STOP	N	B	B	—	—	—
42	⏮	A	B	B	—	—	—
43	⏭	A	B	B	—	—	—
44	A/B/C/D/E	A	G	G	—	—	—
45	PRESET +	A	G	G	—	—	—
46	PRESET -	A	G	G	—	—	—
47	1	A	B	B	—	—	—
48	2	A	B	B	—	—	—
49	3	A	B	B	—	—	—
50	4	A	B	B	—	—	—
51	5	A	B	B	—	—	—
52	6	A	B	B	—	—	—
53	7	A	B	B	—	—	—
54	8	A	B	B	—	—	—
55	9	A	B	B	—	—	—
56	0	A	B	B	—	—	—
57	∨ +10	N	G	G	—	—	—
58	TEST	A	B	B	—	—	—

A : Transmit the fixed code (non-learning key)

B : Transmit the fixed code or learn code

G : Transmit the learn code (in case of the non-learning, transmits no code)

M : MACRO transmission


N : Transmit no code

Control transmission

The unit transmits the code of the mode set by pushing one of 4 keys (OPERATION CONTROL keys) shown below.

The codes of every mode are the code setting key No. shown below.

(The code is fixed code or learned signal in case of finishing learning. If the key has no code and no learning, the unit transmits no code.)

Key No.	NAME	TAPE	CD	TUNER	VCR 1	DVD/LD	TV/DBS	VCR 2		V-AUX
17	△ PLAY △	K28-A	K36-A	K44-A	K28-B	K36-B	K44-B	K28-C	K36-C	K44-C
18	+ ▷▷ +	K29-A	K37-A	K45-A	K29-B	K37-B	K45-B	K29-C	K37-C	K45-C
19	- ◁◁ -	K30-A	K38-A	K46-A	K30-B	K38-B	K46-B	K30-C	K38-C	K46-C
20	▽ PAUSE/STOP ▽	K31-A	K39-A	K57-A	K31-B	K39-B	K57-B	K31-C	K39-C	K57-C


Detail : K × × - Y

Key No. The position of SW2

MACRO transmission

Transmission code of initial setting is shown below. (key No.)

Each transmission code is the fixed or learning code.

Key No.	COVER	CLOSE						
	SW 1	Don't care.						
	SW 2	Don't care.						
	SW 3	QUICK or SLOW						
	MACRO order	1	2	3	4	5	6	7
1	TAPE/MD	K13	K1	K28-A	-	-	-	-
2	CD	K13	K2	K36-A	-	-	-	-
3	TUNER	K13	K3	-	-	-	-	-
4	VCR 1	K13	K4	K28-B	-	-	-	-
5	DVD/LD	K13	K5	K36-B	-	-	-	-
6	TV/DBS	K13	K6	-	-	-	-	-
7	VCR 2	K13	K7	K28-C	-	-	-	-
8		K13	K8	K36-C	-	-	-	-
9	V-AUX	K13	K9	-	-	-	-	-
10	PHONO	K13	K10	-	-	-	-	-
11	EXT. DECODER	K13	K11	-	-	-	-	-
13	SYSTEM POWER	K13	K15	K16	-	-	-	-
14	POWER STANDBY	K14	-	-	-	-	-	-

Detail : K × × - Y

Key No. The position of SW2

A

B

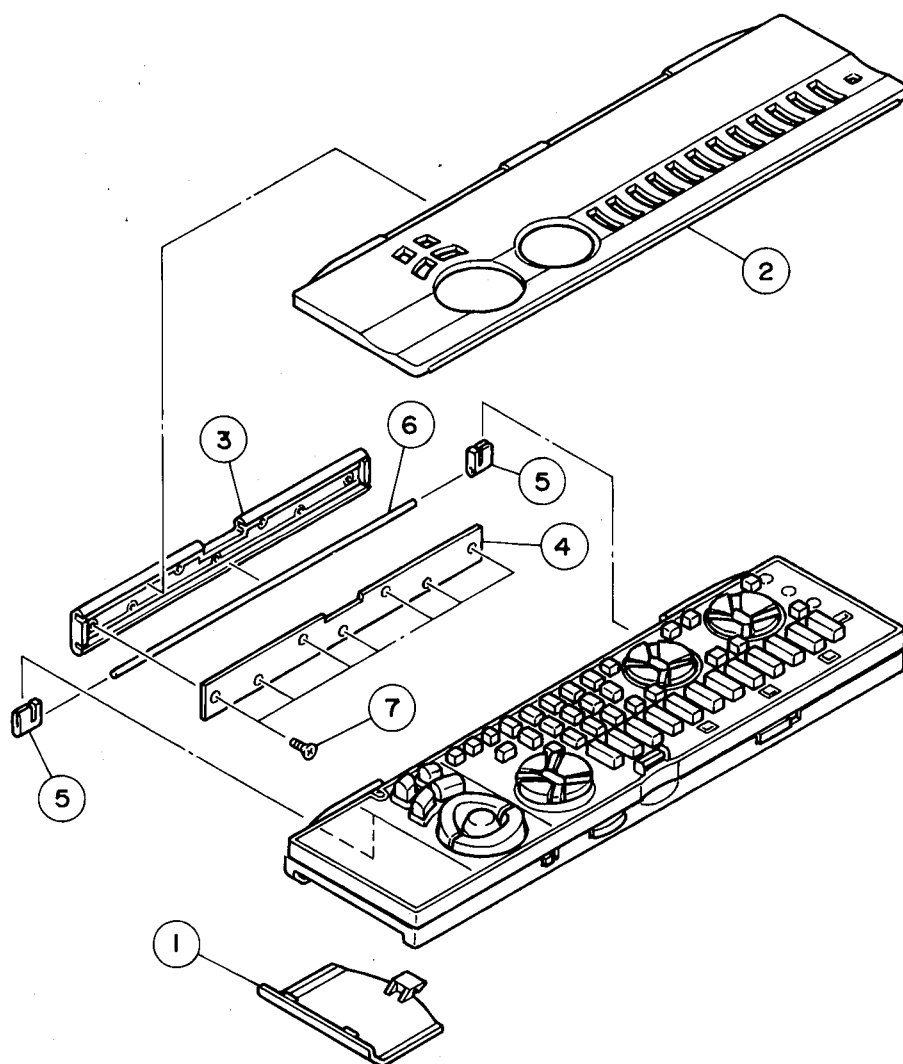
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D

E

RX-V995

■ EXPLODED VIEW



Ref. No.	PART NO.	Description	Remarks	Markets
* 1	V2686800	REMOTE CONTROL TRANSMITTER	RAV190	
* 2	CX680040	COVER, BATTERY		103RRC11101R
3	XX710680	LID		103RRC11204R
4	CX680060	BRACKET	A	503RRC00401R
5	CX680070	BRACKET	B	503RRC00501R
6	CX680080	GUIDE PIN		522RRC00101R
7	CX680090	PIN		524RRC00101R
	EX603910	SCREW	M1.7x13.5	ABB1703321001

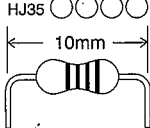
* New Parts

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 k Ω	HF45 7100	HF45 7100
1.8 Ω	HJ35 3180	*	11 k Ω	HF45 7110	HF45 7110
2.2 Ω	HJ35 3220	HF85 3220	12 k Ω	HJ35 7120	HF85 7120
3.3 Ω	HJ35 3330	HF85 3330	13 k Ω	HF45 7130	HF45 7130
4.7 Ω	HJ35 3470	HF85 3470	15 k Ω	HF45 7150	HF45 7150
5.6 Ω	HJ35 3560	HF85 3560	18 k Ω	HF45 7180	HF45 7180
10 Ω	HF45 4100	HF45 4100	22 k Ω	HF45 7220	HF45 7220
15 Ω	HJ35 4150	HF85 4150	24 k Ω	HF45 7240	HF45 7240
22 Ω	HF45 4220	HF45 4220	27 k Ω	HJ35 7270	HF85 7270
27 Ω	HJ35 4270	HF85 4270	30 k Ω	HF45 7300	HF45 7300
33 Ω	HF45 4330	HF45 4330	33 k Ω	HF45 7330	HF45 7330
39 Ω	HJ35 4470	HF85 4390	36 k Ω	HF45 7360	HF45 7360
47 Ω	HF45 4470	HF45 4470	39 k Ω	HF45 7390	HF45 7390
56 Ω	HF45 4560	HF45 4560	47 k Ω	HF45 7470	HF45 7470
68 Ω	HF45 4680	HF45 4680	51 k Ω	HF45 7510	HF45 7510
75 Ω	HF45 4750	HF45 4750	56 k Ω	HF45 7560	HF45 7560
82 Ω	HF45 4820	HF45 4820	62 k Ω	HF45 7620	HF45 7620
91 Ω	HF45 4910	HF45 4910	68 k Ω	HF45 7680	HF45 7680
100 Ω	HF45 5100	HF45 5100	82 k Ω	HF45 7820	HF45 7820
110 Ω	HJ35 5110	HF85 5110	91 k Ω	HF45 7910	HF45 7910
120 Ω	HF45 5120	HF45 5120	100 k Ω	HF45 8100	HF45 8100
150 Ω	HF45 5150	HF45 5150	110 k Ω	HF45 8110	HF45 8110
160 Ω	HJ35 5160	*	120 k Ω	HF45 8120	HF45 8120
180 Ω	HF45 5180	HF45 5180	150 k Ω	HF45 8150	HF45 8150
200 Ω	HF45 5200	HF45 5200	180 k Ω	HF45 8180	HF45 8180
220 Ω	HF45 5220	HF45 5220	220 k Ω	HJ35 8220	HF85 8220
270 Ω	HF45 5270	HF45 5270	270 k Ω	HF45 8270	HF45 8270
330 Ω	HF45 5330	HF45 5330	300 k Ω	HF45 8300	HF45 8300
390 Ω	HF45 5390	HF45 5390	330 k Ω	HF45 8330	HF45 8330
430 Ω	HF45 5430	HF45 5430	390 k Ω	HJ35 8390	HF85 8390
470 Ω	HF45 5470	HF45 5470	470 k Ω	HF45 8470	HF45 8470
510 Ω	HF45 5510	HF45 5510	560 k Ω	HJ35 8560	HF85 8560
560 Ω	HF45 5560	HF45 5560	680 k Ω	HJ35 8680	HF85 8680
680 Ω	HF45 5680	HF45 5680	820 k Ω	HJ35 8820	HF85 8820
820 Ω	HF45 5820	HF45 5820	1.0 M Ω	HF45 9100	HF45 9100
910 Ω	HF45 5910	HF45 5910	1.2 M Ω	HJ35 9120	*
1.0 k Ω	HF45 6100	HF45 6100	1.5 M Ω	HJ35 9150	HF85 9150
1.2 k Ω	HF45 6120	HF45 6120	1.8 M Ω	HJ35 9180	HF85 9180
1.5 k Ω	HF45 6150	HF45 6150	2.2 M Ω	HJ35 9220	HF85 9220
1.8 k Ω	HF45 6180	HF45 6180	3.3 M Ω	HJ35 9330	HF85 9330
2.0 k Ω	HJ35 6200	HF85 6200	3.9 M Ω	HJ35 9390	*
2.2 k Ω	HF45 6220	HF45 6220	4.7 M Ω	HJ35 9470	HF85 9470
2.4 k Ω	HJ35 6240	HF85 6240			
2.7 k Ω	HF45 6270	HF45 6270			
3.0 k Ω	HF45 6300	HF45 6300			
3.3 k Ω	HF45 6330	HF45 6330			
3.6 k Ω	HJ35 6360	HF85 6360			
3.9 k Ω	HF45 6390	HF45 6390			
4.7 k Ω	HF45 6470	HF45 6470			
5.1 k Ω	HF45 6510	HF45 6510			
5.6 k Ω	HF45 6560	HF45 6560			
6.8 k Ω	HF45 6680	HF45 6680			
8.2 k Ω	HF45 6820	HF45 6820			
9.1 k Ω	HF45 6910	HF45 6910			

1/4W Type

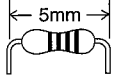
HJ35 ○○○○



10mm

1/6W Type

HF45 ○○○○



5mm

RX-V995

YAMAHA

RX-V995
