

AV RECEIVER RX-V692/ RX-V692RDS

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).

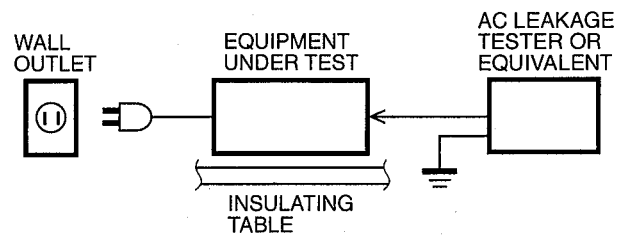
IMPORTANT: Turn the unit OFF during disassembly and part replacement. Recheck all work before you apply power to the unit.

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■ TO SERVICE PERSONNEL

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



"CAUTION"

"F702 : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 8.0A, 125V FUSE."

CAUTION

F702 : REPLACE WITH SAME TYPE 8.0A, 125V FUSE.

ATTENTION

F702 : UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE DE 8.0A, 125V.

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.

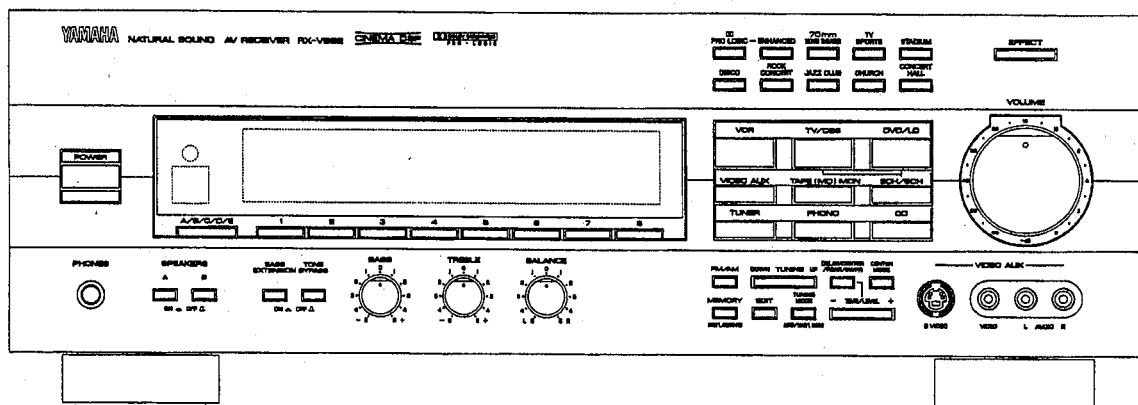
DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!

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

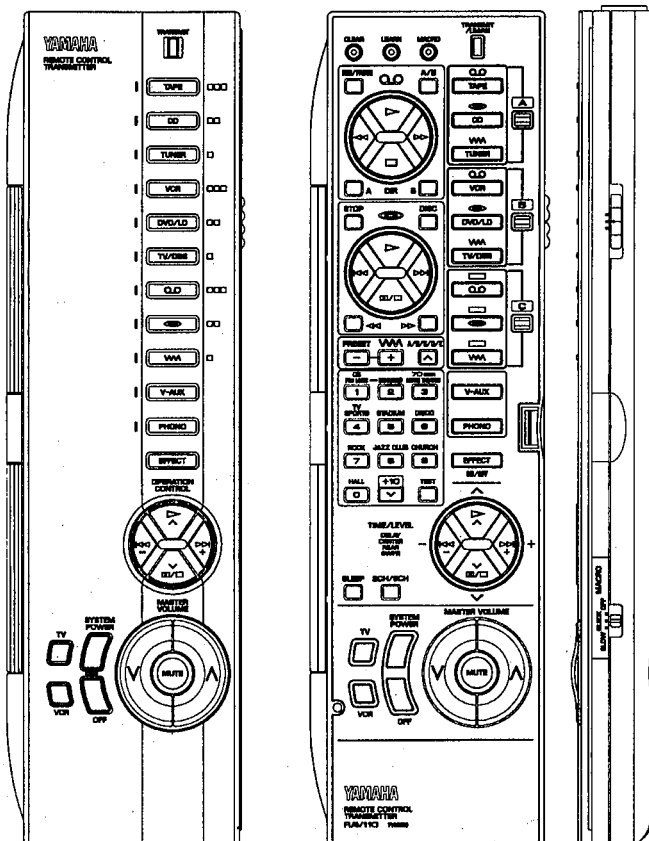
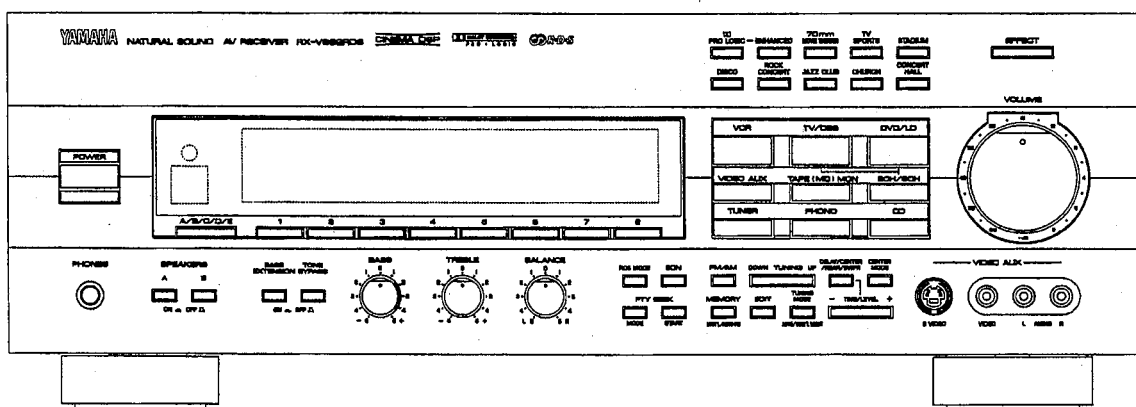
If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

FRONT PANELS

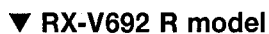
▼ RX-V692



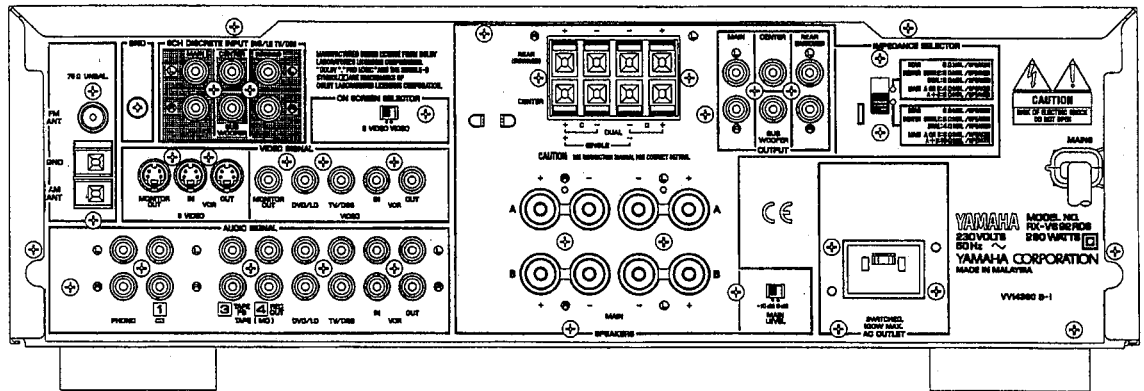
▼ RX-V692RDS



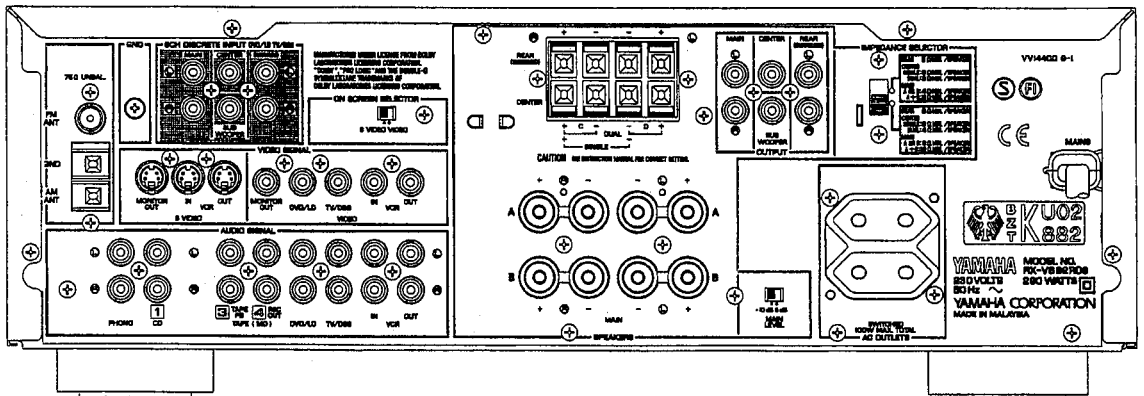
▼ RX-V692 U model



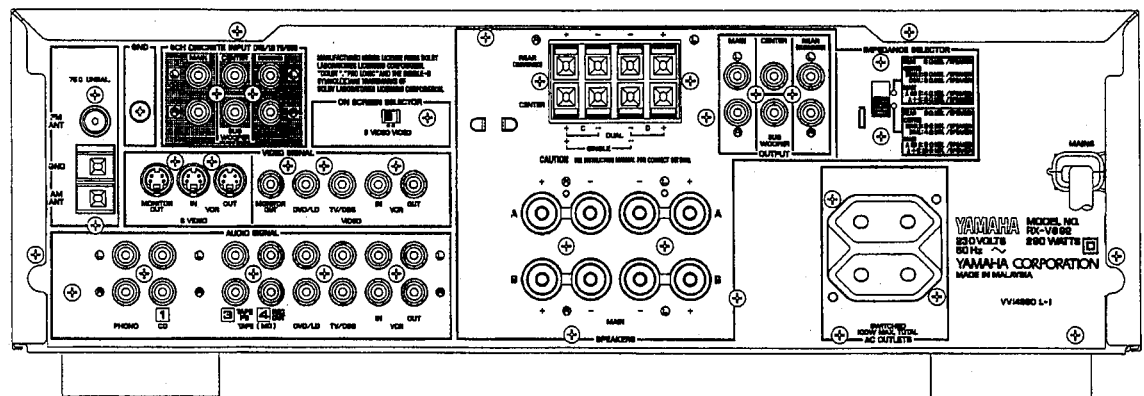
▼ RX-V692RDS B model



▼ RX-V692RDS G model



▼ RX-V692 L model



RX-V692/
RX-V692RDS

SPECIFICATIONS

AUDIO SECTION

Minimum RMS Output Power per Channel

MAIN, 20Hz to 20kHz, 0.04% THD, 8Ω	
U, C models	80W
A, B, G, L, R models	75W
CENTER, 20Hz to 20kHz, 0.07% THD, 8Ω	
U, C models	80W
A, B, G, L, R models	75W
REAR, 1kHz, 0.3% THD, 8Ω	40W

Maximum Power per Channel (R model only)

MAIN, 1kHz, EIAJ, 10% THD, 8Ω	120W
-------------------------------	------

Dynamic Power per Channel (IHF)

U, C models, 8/6/4/2Ω	115/145/175/200W
A, B, G, L, R models, 8/6/4/2Ω	100/125/150/175W

DIN Standard Output Power per Channel (G model only)

MAIN, 1kHz, 0.7% THD, 4Ω	120W
--------------------------	------

Dynamic Headroom (U, C, models only)

8Ω	1.58dB
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IEC Power (G model only)

MAIN, 1kHz, 0.1% THD, 8Ω	90W
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Power Band Width

0.09% THD, 40W, 8Ω	10Hz to 50kHz
--------------------	---------------

Damping Factor

20Hz to 20kHz, 8Ω	80 or more
-------------------	------------

Input Sensitivity/Impedance

PHONO MM	2.5mV/47kΩ
CD, etc	150mV/47kΩ
6ch DISCRETE INPUT	150mV/40kΩ

Maximum Input Signal Level

PHONO MM, 1kHz, 0.04% THD	110mV
CD, etc, 1kHz, 0.5% THD	2.2V

Output Level/Impedance

REC OUT	150mV/2.5kΩ
PRE OUT (MAIN)	2.2V/1.2kΩ
PRE OUT (REAR)	1.6V/1.2kΩ
SUB WOOFER (Effect off)	6.0V/1.5kΩ

Headphone Jack Rated Output/Impedance

0.04% THD, 8Ω	0.5V/390Ω
---------------	-----------

Frequency Response (20Hz to 20kHz)

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

RIAA Equalization Deviation (20Hz to 20kHz)

PHONO MM	0±0.5dB
----------	---------

Total Harmonic Distortion (20Hz to 20kHz)

PHONO MM to REC OUT (1V)	0.02%
CD, etc to MAIN SP OUT (40W/8Ω)	0.025%

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

PHONO MM, Input Shorted (5mV) REC OUT	
U, C models	86dB
A, B, G, L, R models	83dB
CD, etc, Input Shorted	98dB

Residual Noise (IHF-A-Network)

MAIN, SP OUT	140μV
--------------	-------

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

PHONO MM, Input Shorted, 1kHz/10kHz	60dB/50dB
CD, etc, Input 5.1kΩ Shorted, 1kHz/10kHz	60dB/45dB

Tone Control Characteristics

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

Bass Extension

	+6dB (50Hz)
--	-------------

Gain Tracking Error (0dB to -60dB)

	3dB
--	-----

Tuner Output Level/Impedance

FM (100% mod.)	
1kHz U, C, R models	500mV/2.2kΩ
40kHz Dev. A, B, G, L models	400mV/2.2kΩ
AM (30% mod. 1kHz)	150mV/2.2kΩ

FM SECTION

Tuning Range

U, C models	87.5 to 107.9MHz
A, B, G, L models	87.50 to 108.00MHz
R model	87.5 to 107.9/87.50 to 108.00MHz

50dB Quieting Sensitivity (IHF, 75 Ω)

Mono U, C, R, A, L models	1.55μV (15.1dBf)
Stereo U, C, R, A, L models	21μV (37.7dBf)

Usable Sensitivity (75 Ω)

DIN, Mono (S/N 26dB) A, B, G, L models	0.9μV
DIN, Stereo (S/N 46dB) A, B, G, L models	24μV

Image Response Ratio

U, C, R models	45dB
A, B, G, L models	80dB

IF Response Ratio

U, C, R models	70dB
A, B, G, L models	80dB

Spurious Response Ratio

	70dB
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AM Suppression Ratio

	55dB
--	------

Capture Ratio

	1.5dB
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Alternate Channel Selectivity

U, C, R models	85dB
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Selectivity (two signals, 40kHz Dev.)

A, B, G, L models	70dB
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Signal-to-Noise Ratio

Mono/Stereo (IHF)	
U, C, R models	80/75dB
Mono/Stereo (DIN-weighted, 40kHz Dev.)	
A, B, G, L models	75/70dB

Harmonic Distortion

Mono/Stereo (1kHz)	
U, C, R models	0.1/0.2%
Mono/Stereo (40kHz Dev.)	
A, B, G, L models	0.1/0.2%

Stereo Separation

1kHz, U, C, R models	50dB
40kHz Dev., A, B, G, L models	50dB

Frequency Response

20Hz to 15kHz	0±1.5dB
---------------	---------

AM SECTION

Tuning Range

U, C models	530 to 1,710kHz
A, B, G, L models	531 to 1,611kHz
R model	530 to 1,710/531 to 1,611kHz

Usable Sensitivity

	100μV/m
--	---------

Selectivity

	32dB
--	------

Signal-to-Noise Ratio

	50dB
--	------

Image Response Ratio

	40dB
--	------

Spurious Response Ratio

	50dB
--	------

Harmonic Distortion (1kHz)

	0.3%
--	------

VIDEO SECTION

Video Signal Type

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

Video Signal Level 1Vp-p/75Ω

S-Video Signal Level

Y	1Vp-p/75Ω
C	0.286Vp-p/75Ω

Maximum Input Level 1.5Vp-p

Signal-to-Noise Ratio 50dB

Monitor Output Frequency Response .. 5Hz~10MHz, -3dB

GENERAL

Power Supply

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

Power Consumption

U model	240W
C model	280W/370VA
A, B, G, L, R models	290W

Maximum Power Consumption (R model only) 690W

AC Outlets

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

Dimensions (W x H x D) 435 x 151 x 379.5mm
(17-1/8" x 5-15/16" x 14-15/16")

Weight 12.5 kg (27 lbs 9oz)

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

G European model

C Canadian model

L Singapore model

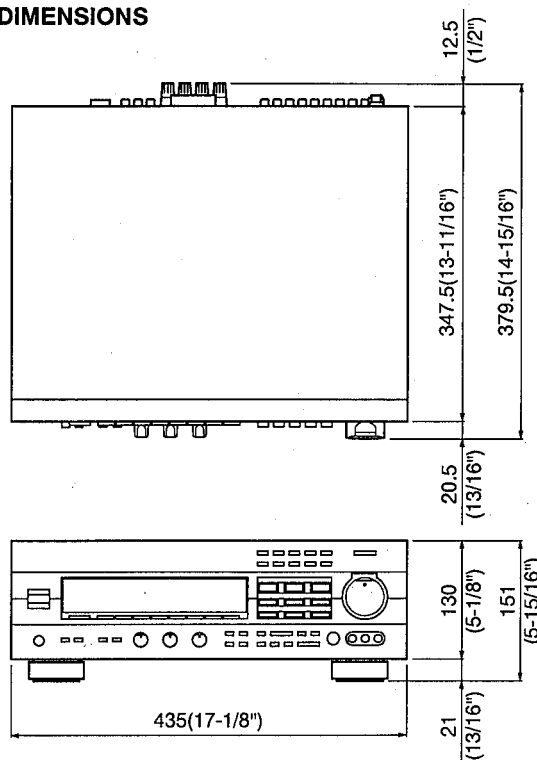
A Australian model

R General model

B British model

Manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby", "Pro Logic", and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

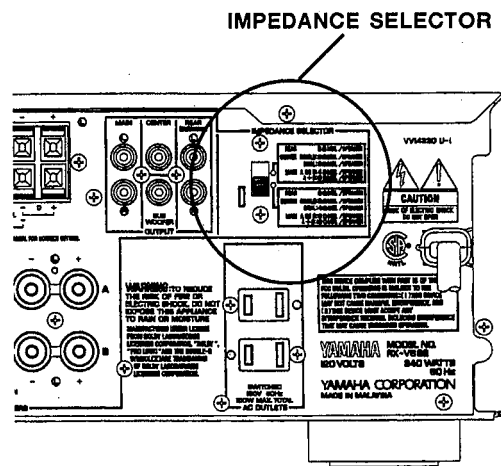
DIMENSIONS



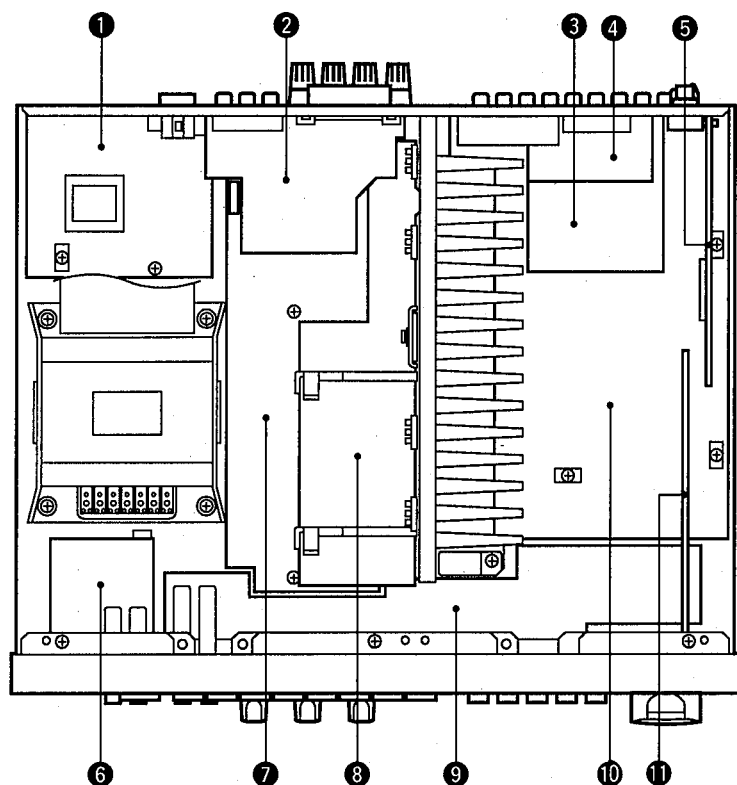
Units : mm (inch)

WARNING

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



INTERNAL VIEW



- ① P. C. B. INPUT (3)
- ② P. C. B. AMP (3)
- ③ P. C. B. INPUT (2)
- ④ P. C. B. OPERATION (4)
- ⑤ P. C. B. TUNER
- ⑥ P. C. B. AMP (4)
- ⑦ P. C. B. AMP (2)
- ⑧ P. C. B. AMP (1)
- ⑨ P. C. B. OPERATION (3)
- ⑩ P. C. B. INPUT (1)
- ⑪ P. C. B. OPERATION (2)

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

1. Removal of Top Cover

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

2. Removal of Bottom Cover

- a. Remove 6 screws (③) in Fig. 1.

3. Removal of Front Panel

- a. Remove 4 knobs.
b. Remove 6 screws (④) in Fig. 1.

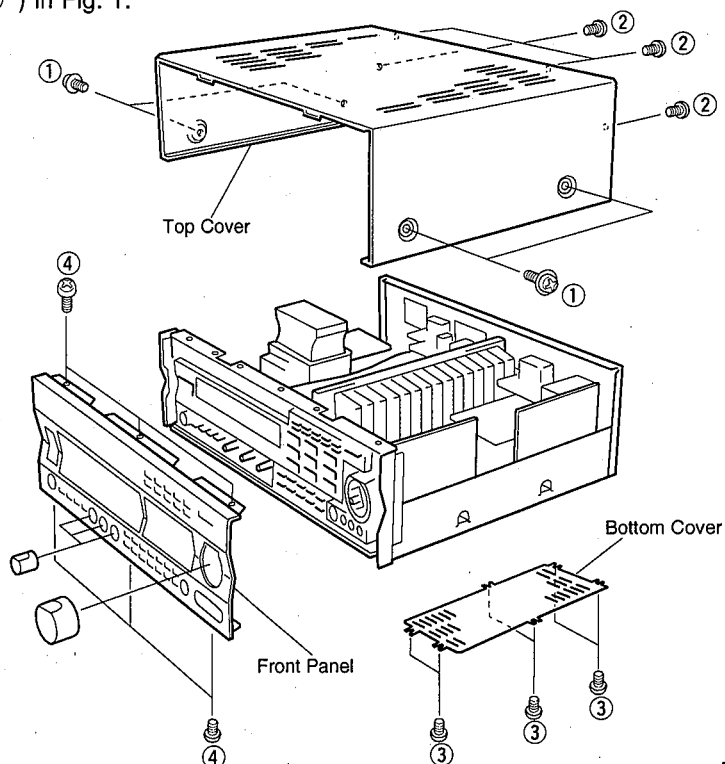


Fig. 1

■ DIAGNOSTIC MODE

PURPOSE OF DIAGNOSTIC MODE

- If the protection circuit operates to turn OFF the POWER when the POWER is turned ON, the cause can be found out by starting the DIAGNOSTIC mode. (Protection message)
- Some items of the DIAGNOSTIC menu facilitate operation check, inspection and measurement.

HOW TO START DIAGNOSTIC (DIAG.)

Turn on the POWER key while pressing DVD/LD and PRESET STATION No. 8 keys simultaneously, and then the DIAG. mode is started.

HOW TO CANCEL DIAG.

Turning off the POWER key of the front panel or remote control transmitter will restore the normal operation and DIAG. will be canceled.

- * To keep the setting stored in the memory, be sure to check that DIAG. No. 7 is set to "KEEP DATA" before canceling DIAG. DIAG. No.7 is set to "KEEP DATA" when starting DIAG.

CONTENTS OF DIAG. OPERATIONS

- DIAG. MENU can be selected by pressing PRESET STATIONS key of the front panel or PROGRAM key of the remote control transmitter.
- Each DIAG. MENU has some SUB-MENU. Every time the same key, PRESET STATIONS key of the front panel or PROGRAM key of the remote control transmitter is pressed, another SUB-MENU is selected.
- While the diagnostic mode is set, function of power on/off, selecting an input source, adjusting master volume & CENTER/REAR/SWFR level are available.
- The contents of each DIAG. MENU are as follows.

No.	DIAG. Menu	Sub Menu
1	MAIN BYPASS	CENTER, REAR & SWFR LEVEL -10dB / 0dB
2	FRONT RAM THR	CENTER, REAR & SWFR LEVEL -10dB / 0dB
3	MAIN DSP THR	CENTER, REAR & SWFR LEVEL +10dB(0dB/SWFR)/-10dB/0dB(REAR -3dB)
4	EF OF/ENH/DISP	EFFECT OFF/ENHANCED/DISPLAY CHECK
5	MANUAL TEST	TEST : LEFT/CENTER/RIGHT/SUR
6	PRO LOGIC	CENTER NORMAL/CENTER WIDE/ CENTER PHANTOM/BYPASS
7	FACTORY PRESET	KEEP DATA/FACTORY PRESET
8	AD CHECK MODE	KEY AD & OTHER AD CHECK

DISPLAY

When the DIAGNOSTIC mode is set, the initial display appears on the FL display followed by the DIAGNOSTIC display (No.1).

The initial display can be redisplayed by pressing the A/B/C/D/E key (but not when performing AD check by using DIAG. No.8).

● Components of initial display (Example)

3	DC	10	R	2.4
Protection Message		AD value (Market)	Market	ROM version

[Protection message]

When the protection function is at work, the protection message is displayed and the power is turned off.

Instantly → "1 I"

After about 0.5 seconds → "2 PS"

After about 2 seconds → "3 DC"

Correct the faulty part according to the protection message.

Protection message	Cause
1 I	An abnormal current flowed to the power amplifier.
2 PS	Abnormal condition occurred in the power section.
3 DC	DC is detected in the output of the power amplifier.

[AD value & Market relation]

AD value (±3)	Market	Remarks
00	U/C ***	USA & Canadian models
10	R ***	General model
30	L/A ***	Singapore & Australian models
40	G/B ***	European & British models

● Components of DIAGNOSTIC display

1	CD	M	BYP -10
DIAG. menu No.	Input source	Operation display	

*Supplement

When in the DIAG. mode, lighting of all segments of the tuning meter for catalogue photographing can be reserved by using the EFFECT key. (Do not use this function as it is not intended for servicing.)

With such reservation made, all segments of the tuning meter light when the tuner function is selected in the normal mode. (This reservation is effective once only at the next POWER ON. After that, normal meter operation is provided.)

Content	FL display
Reservation of full scale	T-MTR ON
Reservation of normal	T-MTR OFF

HOW TO USE DIAG. MODE

In order to confirm characteristics (specifications) listed in the table below, use DIAG. No. 1, 3 and 4. (For specifications, refer to page 3.)

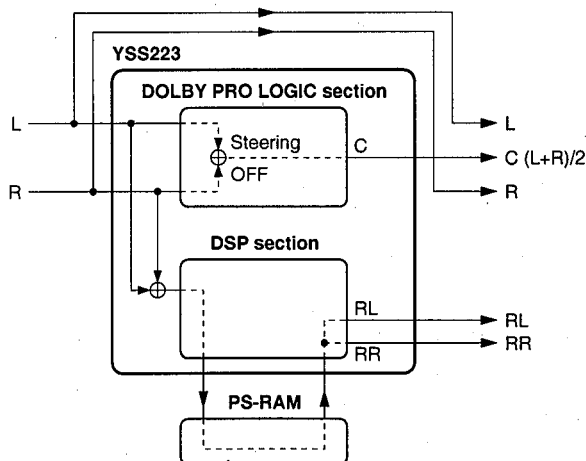
No.	Items
1	- Output Level/Impedance - Frequency Response - S/N
3	- Minimum RMS Output Power Per Channel (Center & Rear) - Total Harmonic Distortion (Center & Rear)
4	- Minimum RMS Output Power Per Channel (MAIN) - Dynamic Power - Power Bandwidth - Damping Factor - Input Sensitivity/Impedance - Headphone Jack Rated Output/Impedance - Channel Separation - Total Harmonic Distortion (Rec Out & MAIN) - Tone Control Characteristics

CONTENTS OF DIAGNOSIS

DIAG 1 MAIN BYPASS

- MAIN L/R is output through the bypass.
- CENTER is output with the steering off and at $(L + R)/2$.
- RL/RR is output by way of PS-RAM at DSP through.
- Electric volume for both the CENTER, REAR & SWFR is changeable by changing the SUB-MENU.

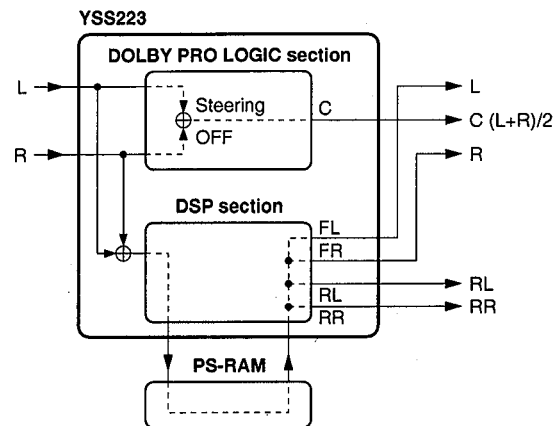
Sub-menu	FL display
Center, Rear & SWFR E. Volume -10dB	1 (Input source) M BYP -10
Center, Rear & SWFR E. Volume 0dB	1 (Input source) M BYP 0



DIAG 2 FRONT RAM THROUGH

- CENTER is output with the steering off and at $(L + R)/2$.
- RL/RR is output by way of PS-RAM at DSP through.
- FL/FR is output by way of PS-RAM to MAIN L/R at DSP through.
- Electric volume for both the CENTER, REAR & SWFR is changeable by changing the SUB-MENU.

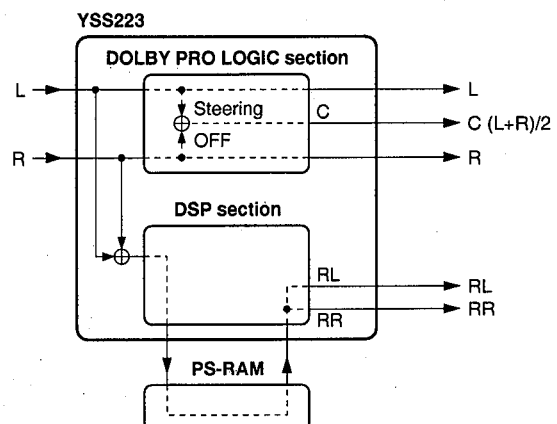
Sub-menu	FL display
Center, Rear & SWFR E. Volume -10dB	2 (Input source) F THR -10
Center, Rear & SWFR E. Volume 0dB	2 (Input source) F THR 0



DIAG 3 MAIN DSP THROUGH

- MAIN L/R is output through the PRO LOGIC.
- CENTER is output with the steering off and at $(L + R)/2$.
- RL/RR is output by way of PS-RAM at DSP through.
- Electric volume for both the CENTER, REAR & SWFR is changeable by changing the SUB-MENU.

Sub-menu	FL display
Center, Rear & SWFR E. Volume +10dB	3 (Input source) M DSP +10
Center, Rear & SWFR E. Volume -10dB	3 (Input source) M DSP -10
Center, Rear & SWFR E. Volume 0dB	3 (Input source) M DSP 0
Center & SWFR / Rear E. Volume 0dB / -3dB	3 (Input source) M DSP 0/-3



DIAG 4 EFFECT OFF/PRO LOGIC ENHANCED/DISPLAY CHECK

- Effect off.
- Surround mode : PRO LOGIC ENHANCED, CENTER, REAR & SUBWOOFER level : 0dB
- CENTER MODE is WIDE.
- All segments of the FL are displayed.

Sub-menu	FL display
EFFECT OFF	4 (Input source) EFFECT OFF
PRO LOGIC ENHANCED	4 (Input source) PRO LOGIC
FULL SEGMENT DISPLAY	—FULL SEGMENT DISPLAY—

DIAG 5 MANUAL TEST TONE

- Every time PRESET key No. 5 is pressed, the TEST TONE shifts and is output.
- CENTER MODE is WIDE.
- Electric volume for both the CENTER, REAR & SWFR is -10dB.

Sub-menu	FL display
Noise LEFT	5 (Input source) TEST LEFT
Noise CENTER	5 (Input source) TEST CNTR
Noise RIGHT	5 (Input source) TEST RIGHT
Noise SUR	5 (Input source) TEST SUR

DIAG 6 PRO LOGIC

- The auto input balance which is on in the normal mode is turned off (PRO LOGIC).
- Electric volume for both of CENTER, REAR & SWFR is -10dB.

Sub-menu	FL display
Center Mode NORMAL	6 (Input source) PRO LOGIC
Center mode WIDE	6 (Input source) PRO LOGIC
Center mode PHANTOM	6 (Input source) PRO LOGIC
EFFECT OFF	6 (Input source) BYPASS

DIAG 7 FACTORY PRESET

- Reservation of the initializing DATA of the BACK-UP RAM.
- Then with the POWER key turned off after selecting the SUB-MENU, FACTORY PST, all RAM DATA is initialized.

Sub-menu	FL display
Keeping on RAM DATA	7 (Input source) KEEP DATA
Initializing RAM DATA	7 (Input source) FACTORY PST

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

Preset group	P1	P2	P3	P4
A				
B				
C				
D				
E				

Preset group	P5	P6	P7	P8
A				
B				
C				
D				
E				

● Factory Preset**1) SURROUND section**

DELAY TIME	: ☐ PRO LOGIC	20ms
	: ENHANCED	20ms
	: 70mm MOVIE THEATER	17ms
	: TV SPORTS	20ms
	: STADIUM	45ms
	: DISCO	14ms
	: ROCK CONCERT	22ms
	: JAZZ CLUB	26ms
	: CHURCH	40ms
	: CONCERT HALL	30ms

CENTER MODE : NORMAL

EFFECT LEVEL	: CENTER	0dB
	: REAR	0dB
	: SWFR	0dB

2) SELECTOR section

INPUT	: CD
VIDEO (BGV)	: DVD/LD

3) TUNER section

Preset group	P1	P2	P3	P4
A / C / E	87.5MHz	90.1MHz	95.1MHz	98.1MHz
B / D	630kHz	1080kHz	1440kHz	530kHz (U, C, R) 531kHz (R, A, B, G, L)

Preset group	P5	P6	P7	P8
A / C / E	107.9MHz (U, C, R) 108.0MHz (R, A, B, G, L)	88.1MHz	106.1MHz	107.9MHz (U, C, R) 108.0MHz (R, A, B, G, L)
B / D	1710kHz (U, C, R) 1611kHz (R, A, B, G, L)	900kHz	1350kHz	1400kHz (U, C, R) 1404kHz (R, A, B, G, L)

For all the above, AUTO TUNING and AUTO STEREO are selected as the TUNING mode.

DIAG 8 AD DATA CHECK

- In this MENU, it is possible to check the different AD data.
- The AD data is a percent unit, about 5V is equal to 100%.

Sub-menu	FL display			
Normal DIAG. mode	8 (Input source)	AD CHK MOD		
AD DATA PAGE 1	P 1 AD check page No.	9 9 CH 0	9 9 CH 1	9 9 CH 2
AD DATA PAGE 2	P 2 AD check page No.	9 9 CH 3	9 9 CH 4	0 0 TUNING METER
AD DATA PAGE 3	P 3 AD check page No.	0 7 PROTECTION 3	2 1 PROTECTION 2	0 0 Market

* When in the PAGE1, PAGE2 or PAGE3 sub-menu, it is not possible to operate the menu of DIAG. No. 1~7.

● Table for checking AD DATA.

(+) : RX-V692RDS only

AD Data % (±3)	Key channel				
	CH0	CH1	CH2	CH3	CH4
00	—	EDIT	TUNING DOWN	DISCO	EFFECT ON/OFF
10	PRESET ST. 7	MEMORY	TUNING UP	ROCK CONCERT	PRO LOGIC
20	PRESET ST. 6	FM/AM	TUNING MODE	VCR	ENHANCED
30	PRESET ST. 5	EON (+)	DELAY/CNTER...	V-AUX	70mm MOVIE
40	PRESET ST. 4	PTY SEEK START (+)	TIME/LEVEL -	TUNER	TV SPORTS
50	PRESET ST. 3	PTY SEEK MODE (+)	TIME/LEVEL +	PHONO	STADIUM
60	PRESET ST. 2	RDS MODE (+)	CENTER MODE	TAPE MONITOR	CONCERT HALL
70	PRESET ST. 1	—	CD	TV/DBS	CHURCH
80	PRESET PAGE	—	2CH/6CH DISCRT	DVD/LD	JAZZ CLUB
90	—	—	—	—	—
99	KEY OFF STATE				

Kind of the protection	AD DATA of normal
Protection 3 (Power amp DC check)	1~13
Protection 2 (Power supply voltage check)	15~29

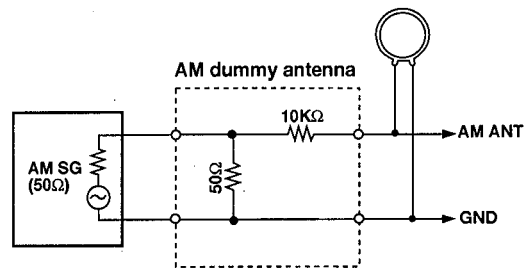
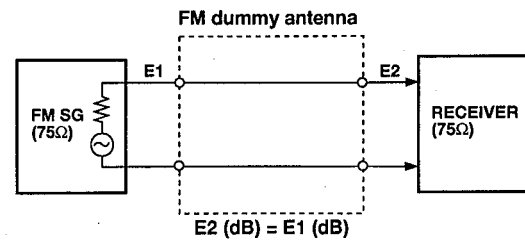
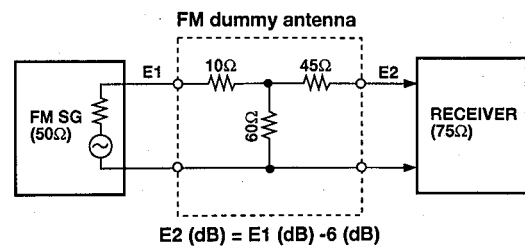
* If protection has occurred, its will be displayed on FL display in initial diag entry. Also, diag initial protection display is canceled by selecting "FACTORY PST" in diag No. 7, exiting diag and pushing power key.

■ TUNER ADJUSTMENTS

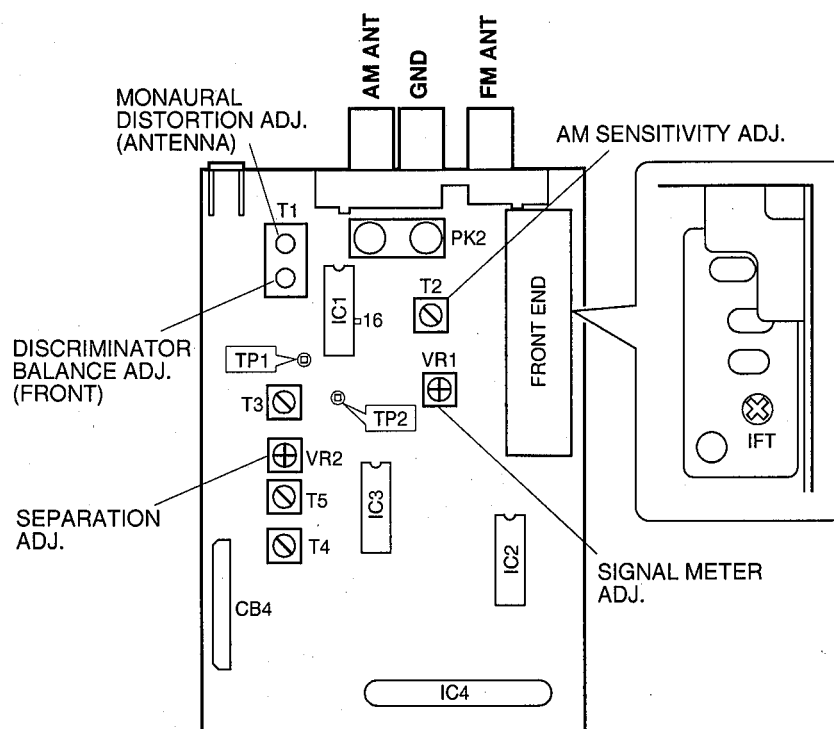
● Measuring Instruments

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 75kHz.

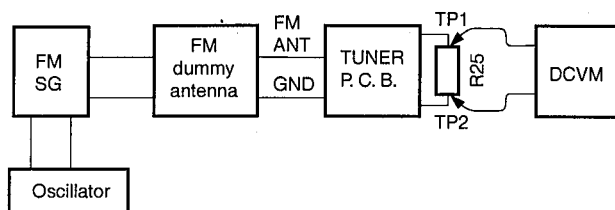
- 3) Install the Matching Transformer and connect FM SG.
- 4) Set each switch to the following position unless otherwise specified.

INPUT SELECTOR TUNER

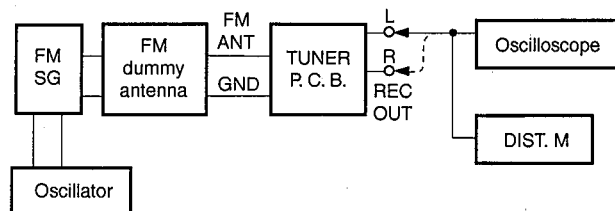
TUNING MODE AUTO

● Connection diagram (Measuring instruments)

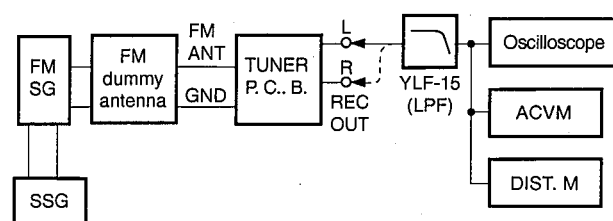
1) Discriminator balance adjustment



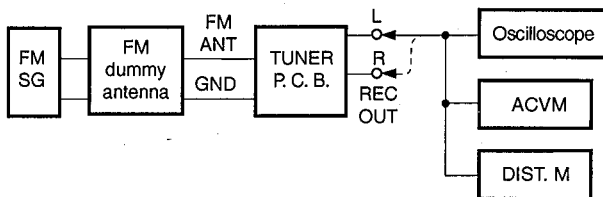
2) Monaural distortion adjustment



3) Stereo distortion adjustment/separation adjustment



4) Sensitivity Verification



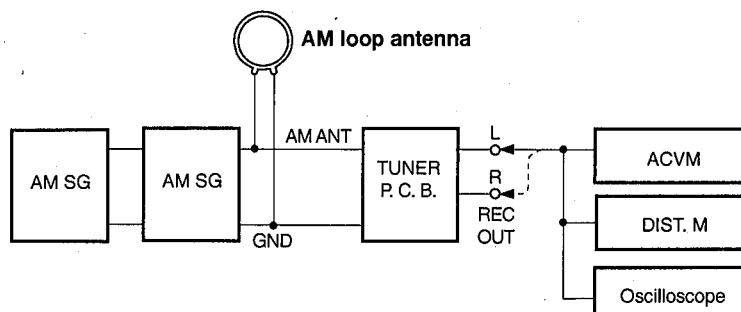
See page 12 for TP locations & adjustment points.

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 1kHz 100% modulation	98.1MHz * (A-4)	T1 (Front 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 (Front 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 (Front side core)	Both ends of R25 (Between TP1 and TP2)	DC 0V±50mV

* : Execution of FACTORY PRESET (Refer to page 10.) will facilitate setting reception frequency for adjustment.

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 Modulation off	88.1MHz * (A-6) 98.1MHz * (A-4) 106.1MHz * (A-7)		ANT (75Ω)	1) Set the tuning mode to MAN'L MONO. (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 3dBμ (14.25dBf) or less. (G, B only : 6dBμ 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. 36dB or more
11	Adjustment of Signal meter	FM ANT (75Ω) 98.1MHz 45dBμ MONO 1kHz 30% modulation -10dBμ or less	98.1MHz * (A-4)	VR1		Adjust so that all signal meters light. Check to ensure that signal meters turn OFF.
12	Verification of auto tuning	FM ANT (75Ω) 98.1MHz 23dBμ Stereo L or R 1kHz, 30% modulation	98.1MHz			• 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 10.) will facilitate setting reception frequency for adjustment.

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


See page 12 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.

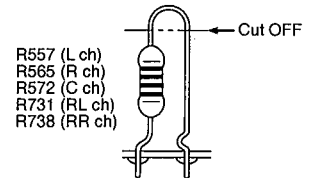
* : Execution of FACTORY PRESET (Refer to page 10.) will facilitate setting reception frequency for adjustment.

■ AMP ADJUSTMENTS

● Confirmation of Idling Current

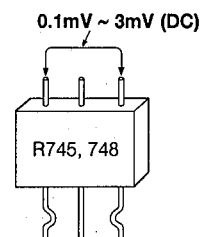
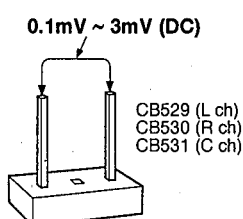
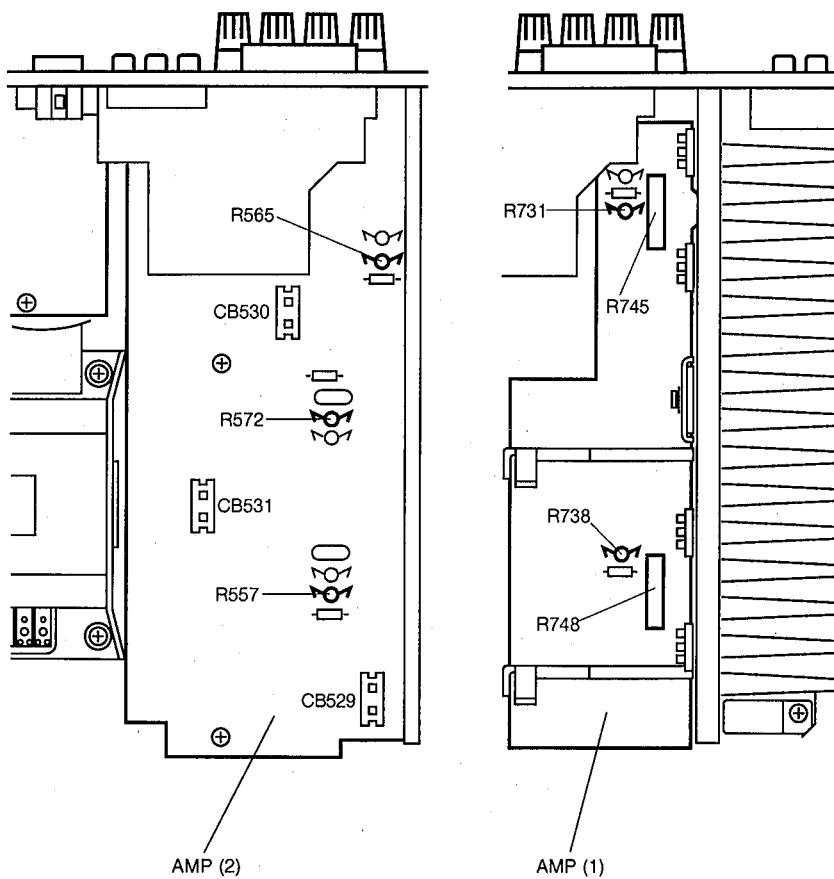
- 1) No signal applied.
- 2) Non-loaded condition.
- 3) Aging is not necessary.

Item	Test Point	Rating (DC)	Note
MAIN L	CB529	0.1mV~3mV	If the measured voltage exceeds 3.1mV, cut the lead wires of R557(L ch), R565(R ch), R572(C ch), R731(RL ch) and R738(RR ch) and then check again if each measured value satisfies the rating.
MAIN R	CB530		
CENTER	CB531		
REAR L	R745		
REAR R	R748		



Note)

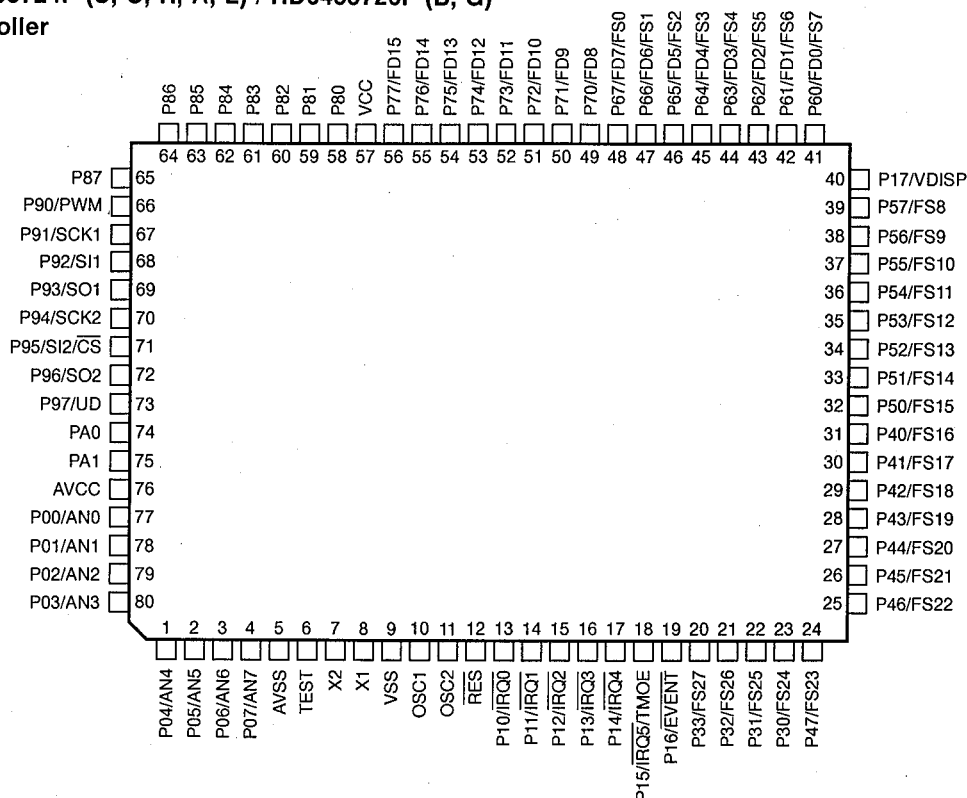
- If R557(L ch), R565(R ch), R572(C ch), R731(RL ch) and R738(RR ch) have already been cut off and idling current does not flow, reconnect R557(L ch), R565(R ch), R572(C ch), R731(RL ch) and R738(RR ch).
- Q514, Q516, Q518, Q708 and Q713 are transistors for temperature correction. Apply silicone grease to contact surface with the heat sink.



IC DATA

IC601 : HD6433724F (U, C, R, A, L) / HD6433726F (B, G)

System controller
(8 bit μ -COM)



No.	Port	Name	I/O	Function
1	P04/AN4	V2	I	Frequency step select (R model)
2	P05	P/N	I	PAL/NTSC select (R model)
3	P06			N.C.
4	P07	/ST	I	Stereo in (Tuner)
5	AVSS	AVSS		GND for A-D
6	TEST			GND
7	X2			N. C.
8	X1			+5V
9	VSS	VSS		GND
10	OSC1	OC1	I	] Clock (8MHz)
11	OSC2	OC2	O	
12	/RES	RES	I	Reset
13	P10/IRQ0	DET	I	Power down detect
14	P11/IRQ1	REM	I	Remote control
15	P12/IRQ2	R/ST	I/O	SCI2 : RDS start (STK311-020B)
16	P13/IRQ3	VSY	I/O	Superimpose Vertical Sync (LC74781)
17	P14	PRI	I	Speaker protection detect
18	P15	ONCS	O	SCI1 : SPI CS (LC74781)
19	P16	PSW	I	Power Switch
20	P33/FS27	STBY	I/O	Standby In (Note)
21	P32/FS26	P19	O	] Fluorescent character display tube anode drive signal
22	P31/FS25	P18	O	
23	P30/FS24	P17	O	
24	P47/FS23	P16	O	
25	P46/FS22	P15	O	
26	P45/FS21	P14	O	
27	P44/FS20	P13	O	

Note) Input port when the power is ON.

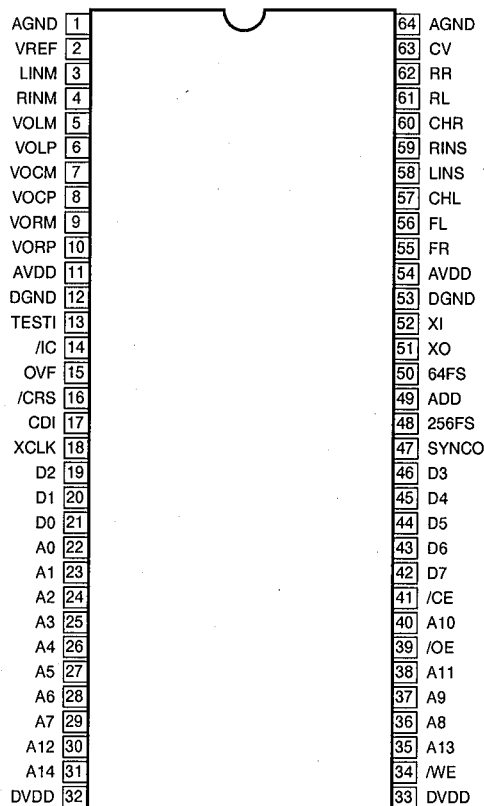
H : Stand-by mode is not available (U, C)

L : Stand-by mode is available (R, A, L, B, G) → Then changed to output port. (H : Stand-by LED light ON. L : Stand-by LED light OFF.)

No.	Port	Name	I/O	Function
28	P43/FS19	P12	O	Fluorescent character display tube anode drive signal
29	P42/FS18	P11	O	
30	P41/FS17	P10	O	
31	P40/FS16	P9	O	
32	P50/FS15	P8	O	
33	P51/FS14	P7	O	
34	P52/FS13	P6	O	
35	P53/FS12	P5	O	
36	P54/FS11	P4	O	
37	P55/FS10	P3	O	
38	P56/FS9	P2	O	
39	P57/FS8	P1	O	
40	P17/VDISP	VP	I	VP (-25V)
41	P60/FD0	G16	O	Fluorescent character display tube grid drive signal
42	P61/FD1	G15	O	
43	P62/FD2	G14	O	
44	P63/FD3	G13	O	
45	P64/FD4	G12	O	
46	P65/FD5	G11	O	
47	P66/FD6	G10	O	
48	P67/FD7	G9	O	
49	P70/FD8	G8	O	
50	P71/FD9	G7	O	
51	P72/FD10	G6	O	
52	P73/FD11	G5	O	
53	P74/FD12	G4	O	
54	P75/FD13	G3	O	
55	P76/FD14	G2	O	
56	P77/FD15	G1	O	
57	VCC	VCC		+5V
58	P80	ASA	O	A-D select (4051)
59	P81	ASB	O	
60	P82	ASC	O	
61	P83	SPRY	O	Speaker relay (MAIN)
62	P84	DTB	O	BU2090 Serial data
63	P85	CKB	O	BU2090 Serial clock
64	P86	PRY	O	Power relay
65	P87	FMC	O	Full MUTE
66	P90	CRY	O	Speaker relay (CENTER & REAR)
67	P91/SCK1	SCK	O	SCI1 : Serial clock
68	P92	XDT	I/O	SCI1 : RX data
69	P93/SO1	SDT	O	SCI1 : TX data
70	P94/SCK2	R/CLK	O	SCI2 : RDS clock (STK311-020B)
71	P95	R/DAT	I/O	SCI2 : RDS RX data (STK311-020B)
72	P96/SO2	R/RES	O	SCI2 : RDS reset (STK311-020B)
73	P97	72CS	O	SCI1 : LC72131 CS
74	PA0	VUP	O	Volume up
75	PA1	VDN	O	Volume down
76	AVCC	AVCC		+5V for A-D
77	P00/AN0	4051	I	Key & Signal meter in (A-D)
78	P01/AN1	PRD	I	Protection 1 (DC) (A-D)
79	P02/AN2	PRV	I	Protection 2 (PS) (A-D)
80	P03/AN3	V1	I	Market Select (A-D)

IC7 : YSS223

Digital Dolby Pro Logic Decoder with Auto Input Balance



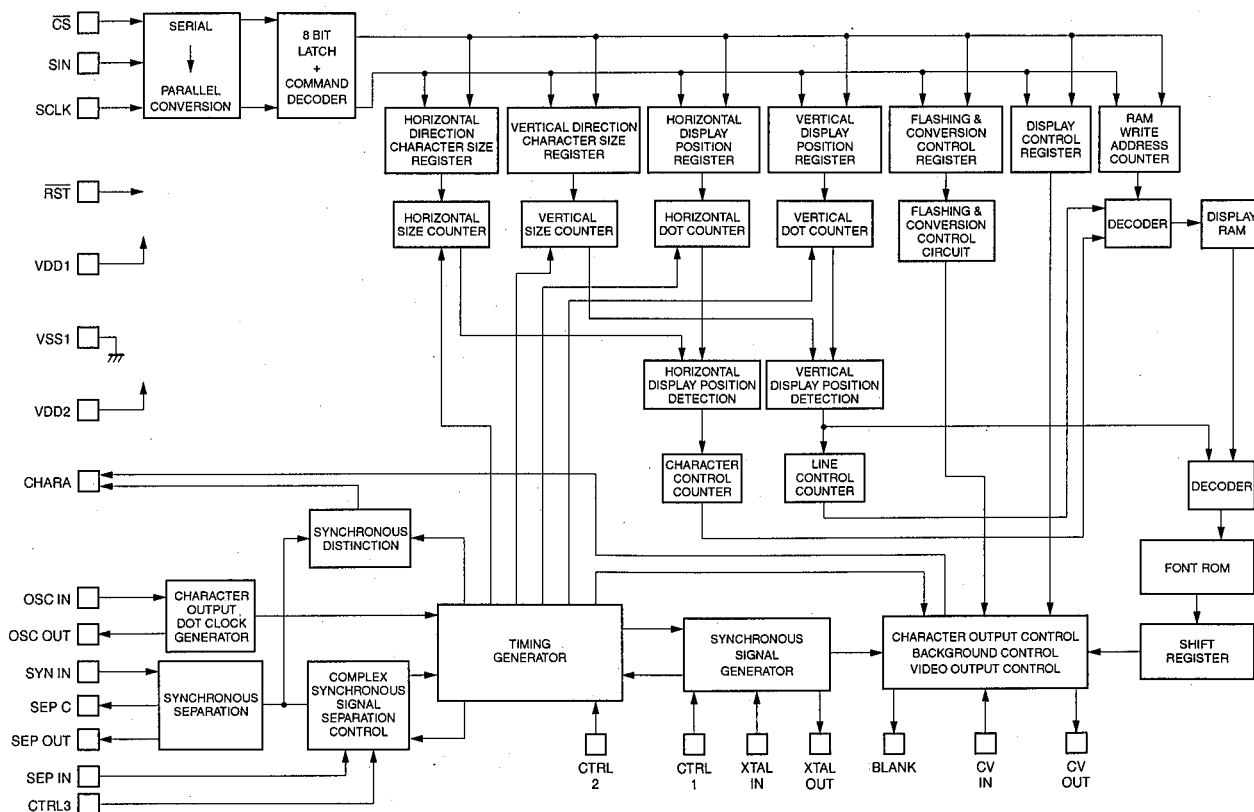
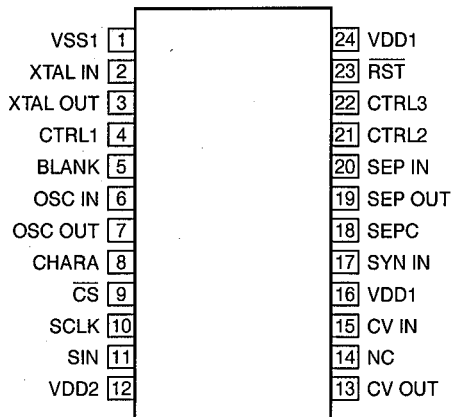
No.	Name	I/O	Function
1	AGND	A—	Ground (Analog section)
2	VREF	AI	Multiplying DAC reference voltage input
3	LINM	AI	L channel Multiplying DAC input
4	RINM	AI	R channel Multiplying DAC input
5	VOLM	AO	L channel operation amplifier, connected to (–) terminal
6	VOLP	AO	L channel operation amplifier, connected to (+) terminal
7	VOCM	AO	C channel operation amplifier, connected to (–) terminal
8	VOCP	AO	C channel operation amplifier, connected to (+) terminal
9	VORM	AO	R channel operation amplifier, connected to (–) terminal
10	VORP	AO	R channel operation amplifier, connected to (+) terminal
11	AVDD	A—	+5V power supply (Analog section)
12	DGND	—	Ground (digital section)
13	TESTI	Ic	LSI test terminal Normally connected to DGND
14	/IC	Ics	Initial clear terminal (Power ON resetting is necessary)
15	OVF	O	A/D Converter, Overflow detect terminal
16	CRS	I _{ts}	Microprocessor interface reset terminal
17	CDI	I _{ts}	Microprocessor interface data input terminal
18	XCLK	I _{ts}	Microprocessor interface clock input terminal
19	D2	I/O _t	External delay RAM data terminal
20	D1	I/O _t	
21	D0	I/O _t	

No.	Name	I/O	Function
22	A0	O	External data RAM address terminal
23	A1	O	
24	A2	O	
25	A3	O	
26	A4	O	
27	A5	O	
28	A6	O	
29	A7	O	
30	A12	O	
31	A14	O	
32	DVDD	—	+5V power supply (digital section)
33	DVDD	—	
34	/WE	O	External delay RAM write enable terminal
35	A13	O	External delay RAM address terminal
36	A8	O	
37	A9	O	
38	A11	O	
39	/OE	O	External delay RAM output enable terminal
40	A10	O	External delay RAM address terminal
41	/CE	O	External delay RAM chip enable terminal
42	D7	I/Ot	External delay RAM data terminal
43	D6	I/Ot	
44	D5	I/Ot	
45	D4	I/Ot	
46	D3	I/Ot	
47	SYNCO	O	External A/D converter word clock terminal
48	256FS	O	External A/D converter 256fs clock terminal
49	ADD	It	External A/D converter data input terminal
50	64FS	O	External A/D converter 64fs clock terminal
51	XO	O	Crystal oscillator connecting terminal
52	XI	I	
53	DGND	—	Ground (digital section)
54	AVDD	A—	+5V power supply (Analog section)
55	FR	AO	FR channel D/A input
56	FL	AO	FL channel D/A output
57	CHL	A—	LINS input Sample/hold Capacitor external terminal
58	LINS	AI	L channel A/D input
59	RINS	AI	R channel A/D input
60	CHR	A—	RINS input Sample/hold Capacitor external terminal
61	RL	AO	RL channel D/A output
62	RR	AO	RR channel D/A input
63	CV	AO	A/D, multiplying DAC center voltage
64	AGND	A—	Ground (Analog section)

Note : Letters used in the above I/O column represent as follows.

I : Input terminal O : Output terminal t : TTL level C : CMOS level S : Schmidt input A : Analog

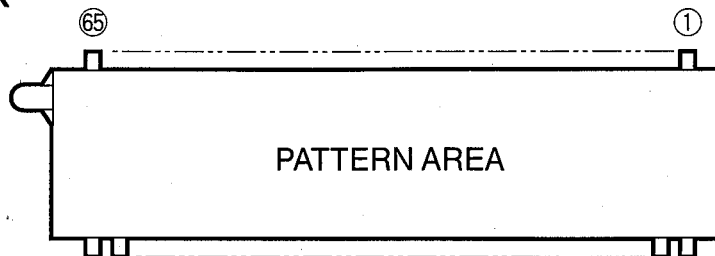
IC30 : LC74781-9626
Superimpose



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		
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)

DISPLAY DATA (VV416700)

V801 : 16-BT-46GK

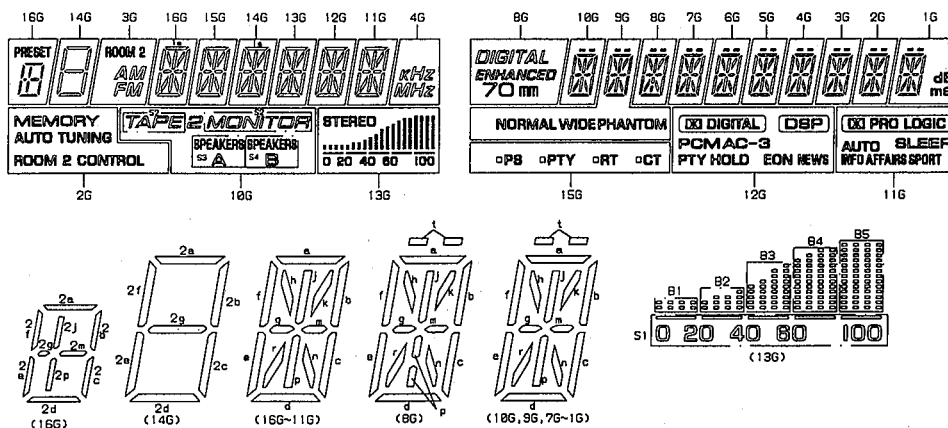


PIN CONNECTION

Pin No.	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47
Connection	F2	F2	NP	P19	P18	P17	P16	P15	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4
Pin No.	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
Connection	P3	P2	P1	NC	NC	NC	NC	NC	NC	IC	NP	Fd	Fd	Np	IC	16G	15G	14G	13G
Pin No.	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9
Connection	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NC	NC	NC	NC	NC	NC	NC
Pin No.	8	7	6	5	4	3	2	1											
Connection	NC	NC	NC	NC	NC	NP	F1	F1											

Note 1) F1, F2 Filament 3) NC No Connection 5) 1G-16G Grid
 2) NP No Pin 4) P1-P19 Datum Line 6) IC Internal connection

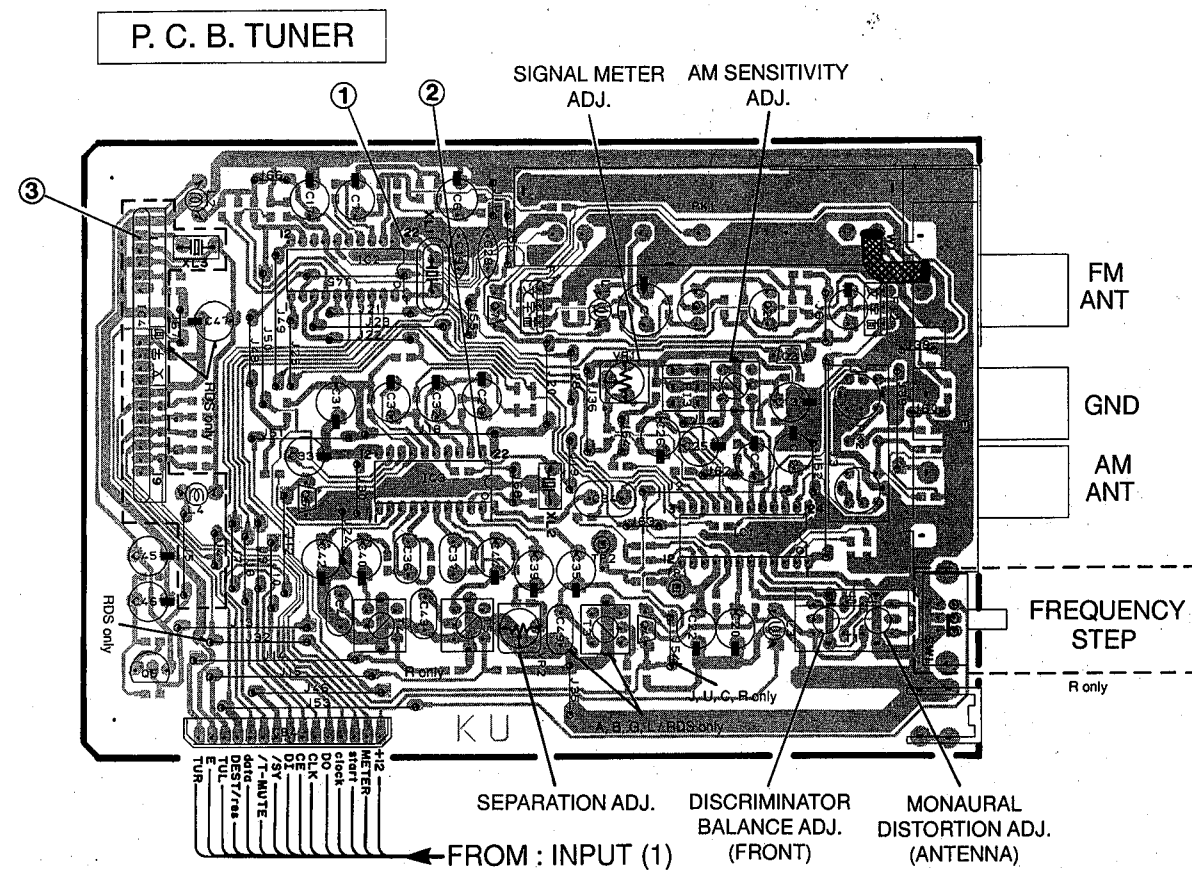
GRID ASSIGNMENT



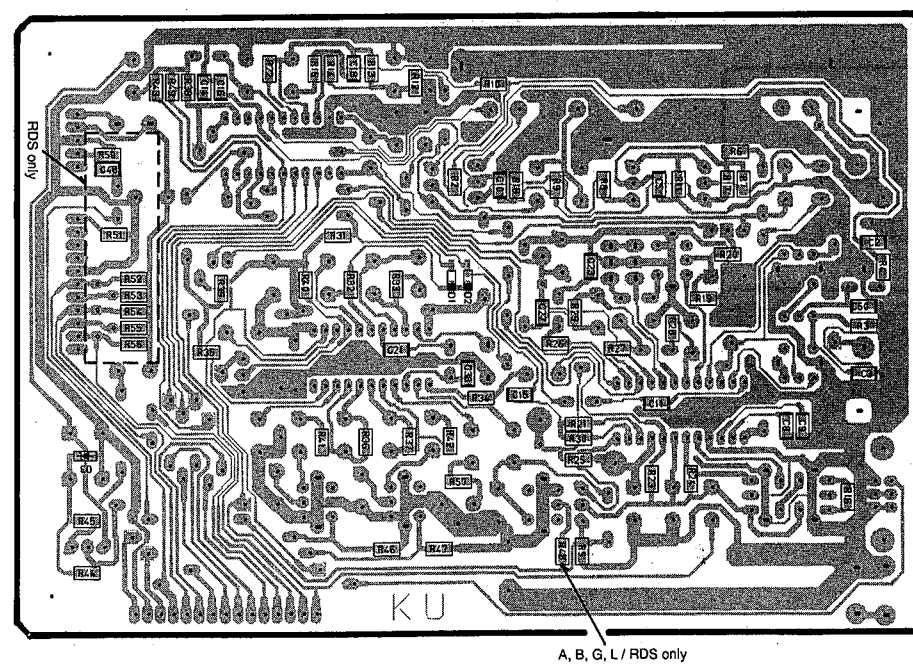
ANODE CONNECTION

	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	1a	a	1a	a	a	a	a	a	a	a	a	a	a	a	a	a
P2	1b	b	1b	b	b	b	b	b	b	b	b	b	b	b	b	b
P3	1c	c	1c	c	c	c	c	c	c	c	c	c	c	c	c	c
P4	1d	d	1d	d	d	d	d	d	d	d	d	d	d	d	d	d
P5	1e	e	1e	e	e	e	e	e	e	e	e	e	e	e	e	e
P6	1f	f	1f	f	f	f	f	f	f	f	f	f	f	f	f	f
P7	1g	g	1g	g	g	g	g	g	g	g	g	g	g	g	g	g
P8	1m	m	1m	m	m	m	m	m	m	m	m	m	m	m	m	m
P9	1j, 1p	j, p	1j, 1p	j, p	j, p	j, p	j, p	j, p	j, p	j, p	j, p	j, p	j, p	j, p	j, p	j, p
P10	1k, 1r	k, r	1k, 1r	k, r	k, r	k, r	k, r	k, r	k, r	k, r	k, r	k, r	k, r	k, r	k, r	k, r
P11	1h, 1n	h, n	1h, 1n	h, n	h, n	h, n	h, n	h, n	h, n	h, n	h, n	h, n	h, n	h, n	h, n	h, n
P12	PRESET	D (PS)	1n	n	n	n	n	n	n	n	n	n	n	n	n	n
P13	2a	PS	2a	STEREO	DBP	DIGITAL	PRO LOGIC	p	p	p	p	p	p	p	p	p
P14	2b, 2c	D (PTY)	2b	B1	DBP	SLEEP	r	r	r	r	r	r	r	r	r	r
P15	2d	PTY	2c	B2	AC-3	AUTO	t	t	t	t	t	t	t	t	t	t
P16	2e, 2f	D (RT)	2d	B3	PCM	INFO	S2	-	-	-	-	-	-	-	-	-
P17	2g	RT	2e	B4	PTY HOLD	AFFAIRS	2	NORMAL	DIGITAL	-	kHz	ROOM 2	MEMORY	dB		
P18	2j, 2p	D (CT)	2f	B5	EON	SPORT	S3	WIDE	ENHANCED	-	MHz	AM	AUTO TUNING	ms		
P19	2m	CT	2g	S1	NEWS	-	S4	PHANTOM	70 mm	-	-	FM	ROOM 2 CONTROL	-		

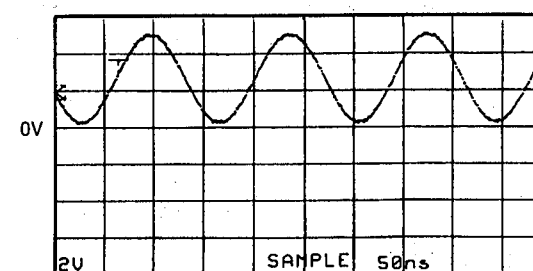
PRINTED CIRCUIT BOARD (Foil side)



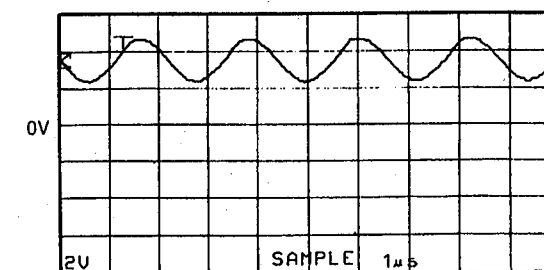
P. C. B. TUNER



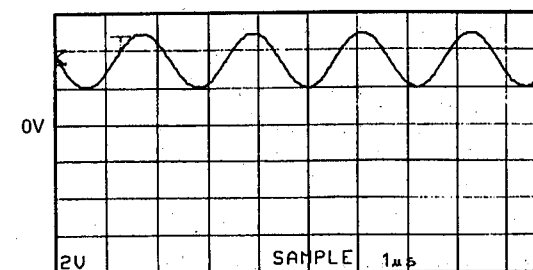
Point ① (Pin22 of IC2) FM reception
 V : 2V/div H : 50nsec/div
 DC range 1 : 1 probe



Point ② (Pin21 of IC3)
 V : 2V/div H : 1μsec/div
 DC range 1 : 1 probe



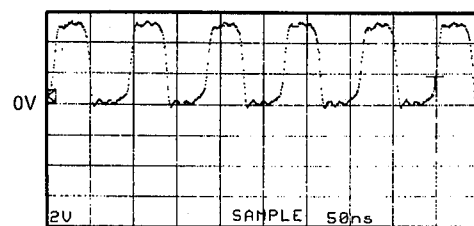
Point ③ (Pin1 of IC4)
 V : 5V/div H : 1μsec/div
 DC range 1 : 1 probe



PRINTED CIRCUIT BOARD (Foil side)

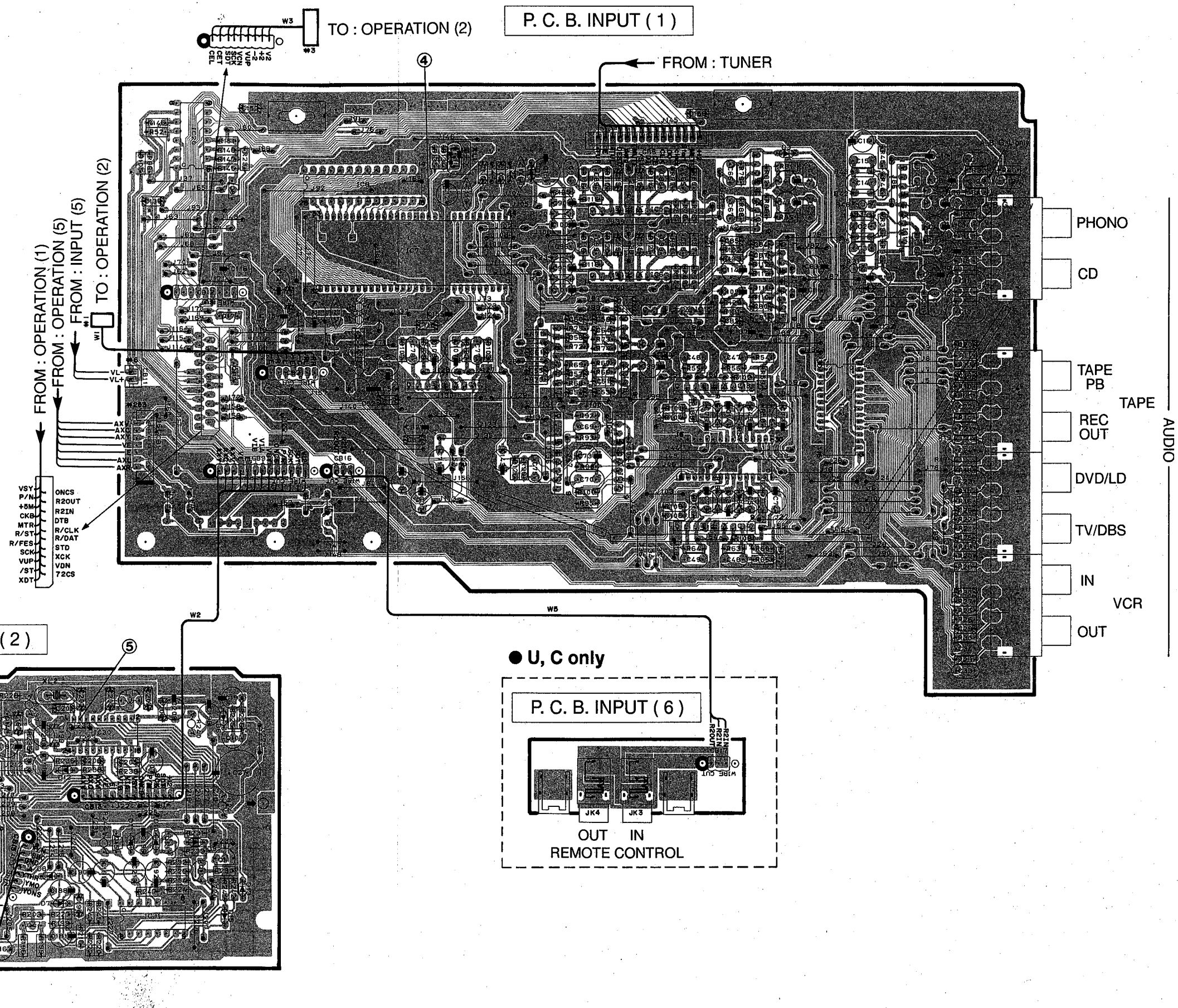
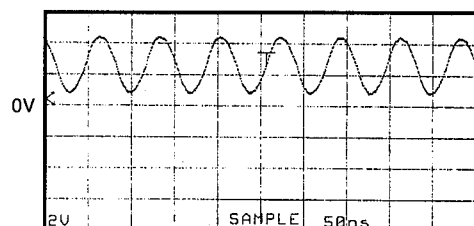
Point ④ (Pin51 of IC7)

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

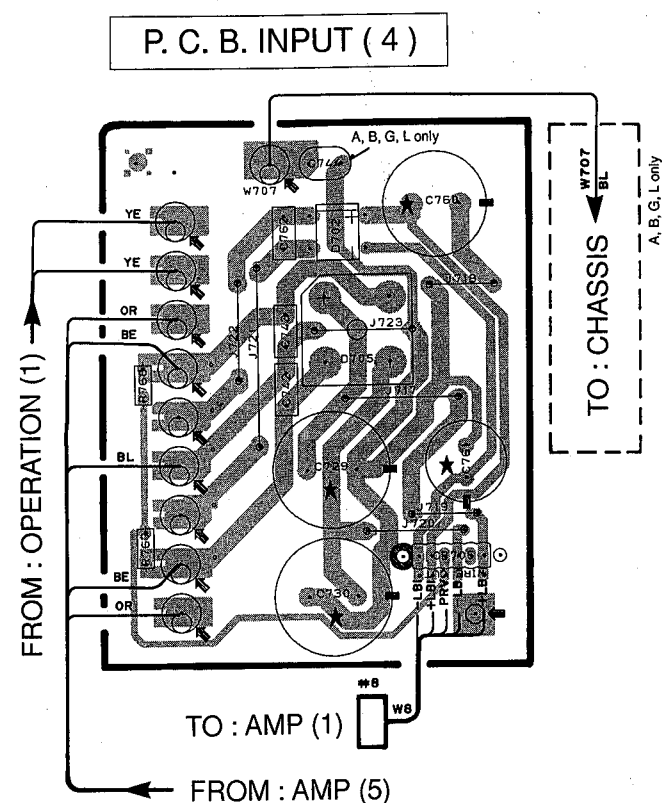


Point ⑤ (Pin3 of IC30)

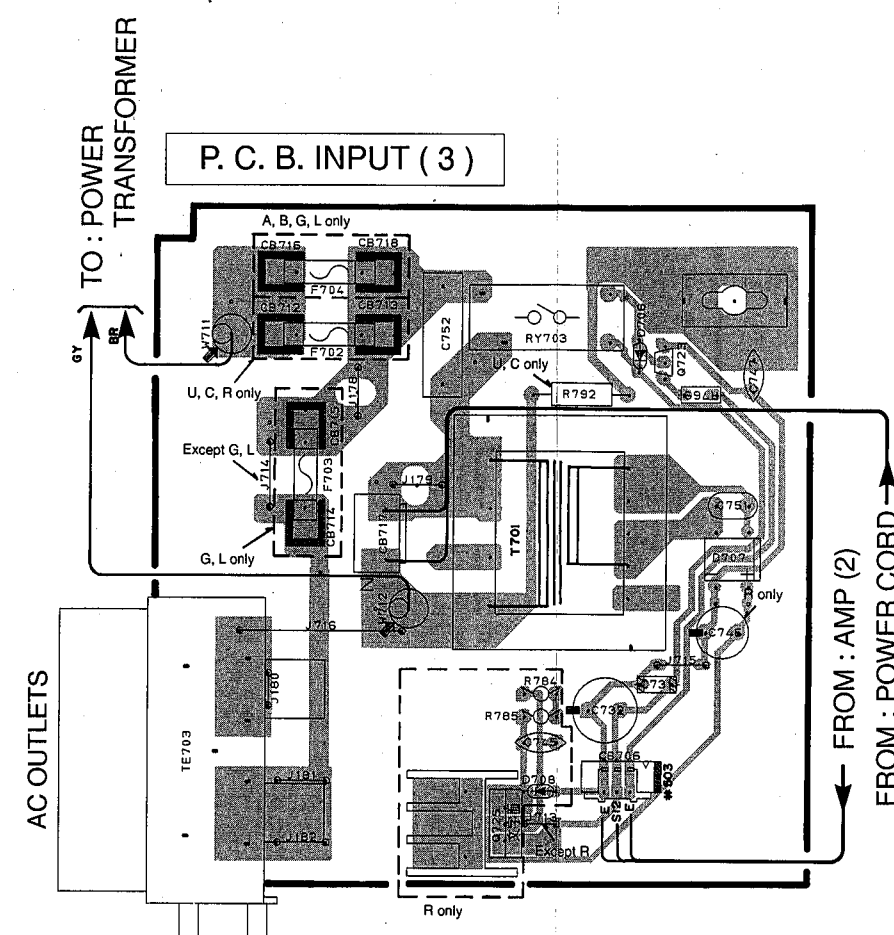
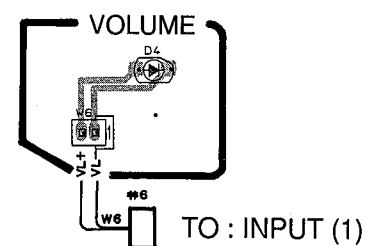
V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe



PRINTED CIRCUIT BOARD (Foil side)

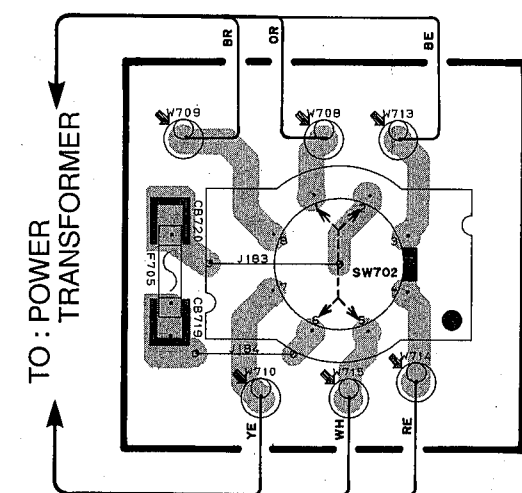


P. C. B. INPUT (5)



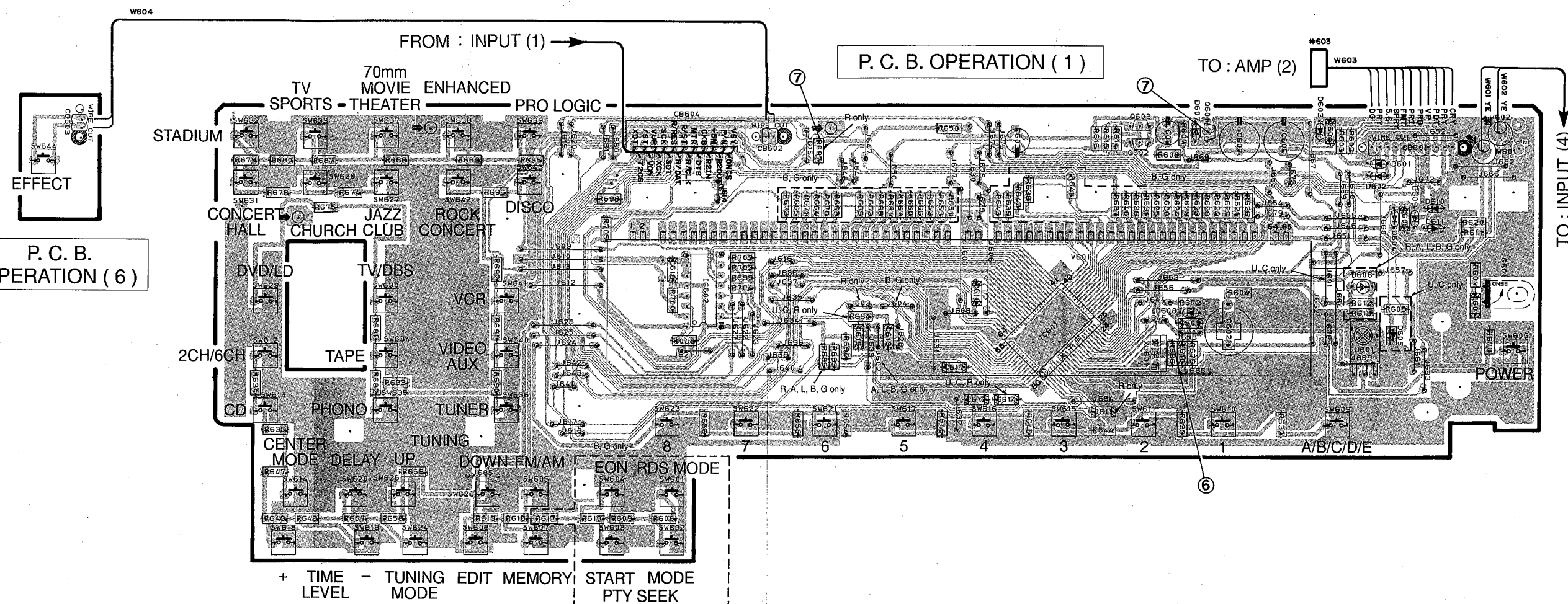
● R only

P. C. B. INPUT (7)

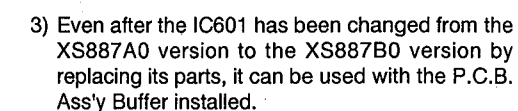


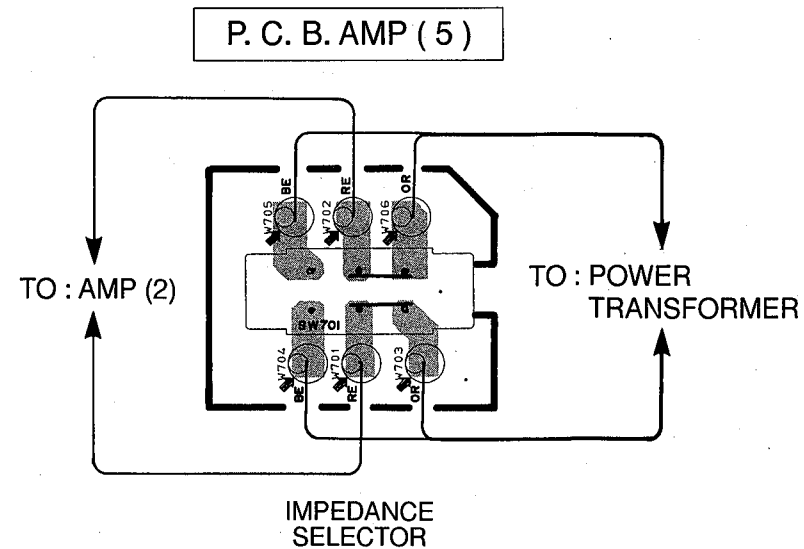
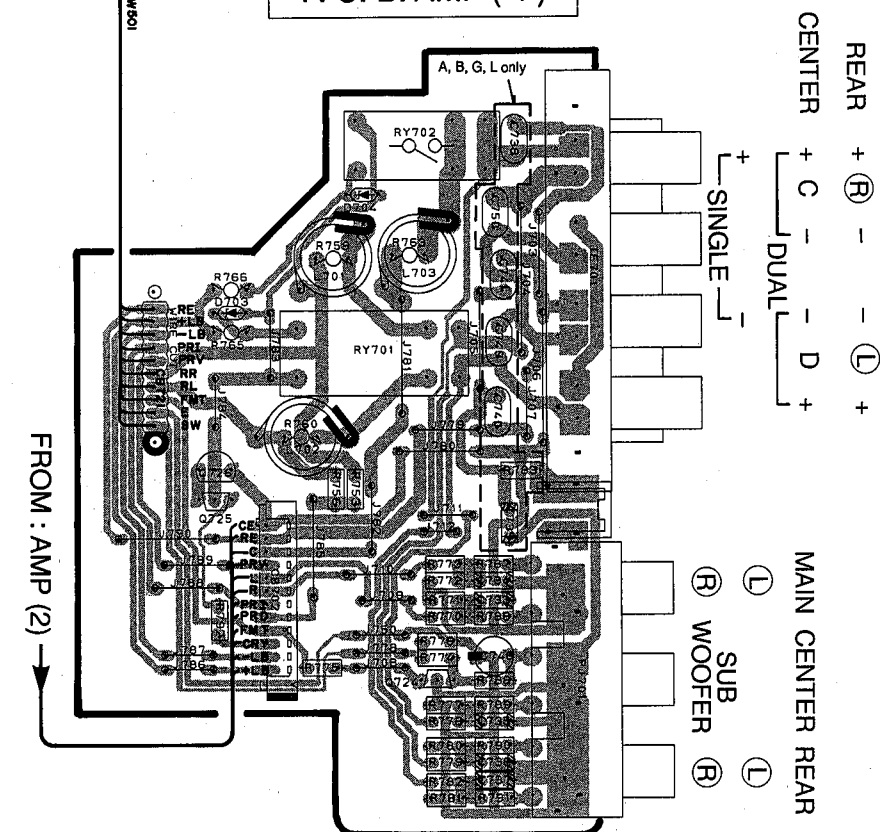
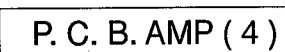
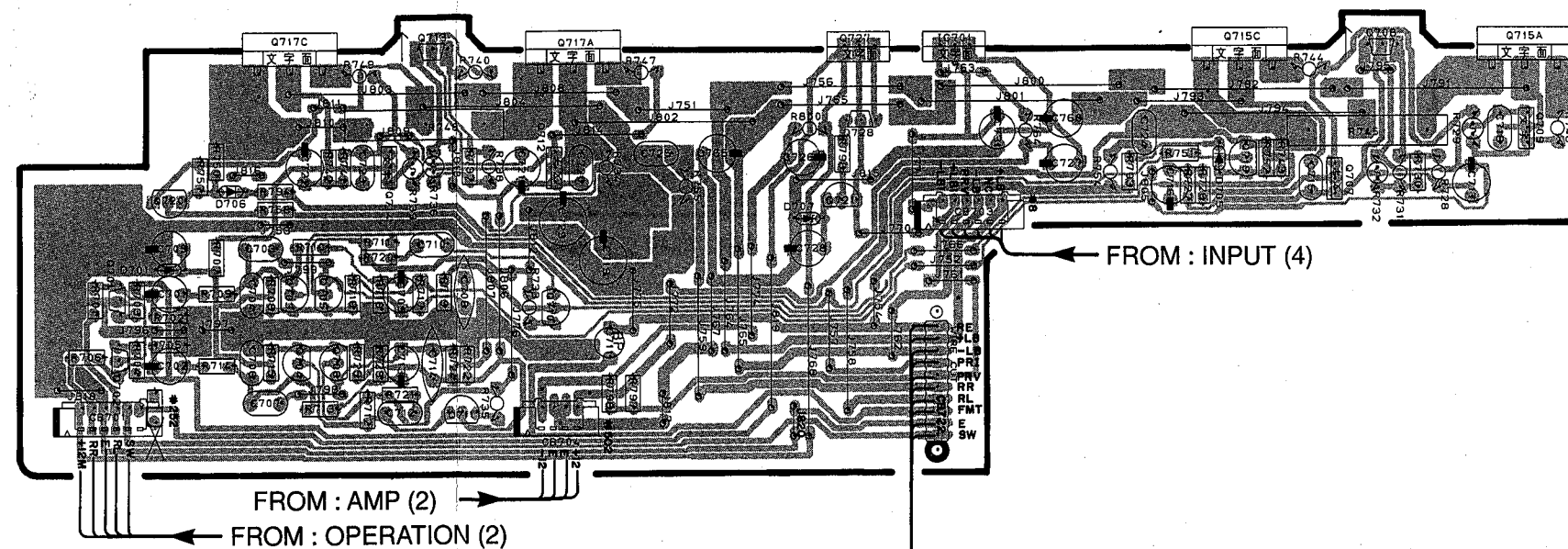
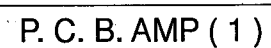
VOLTAGE SELECTOR

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



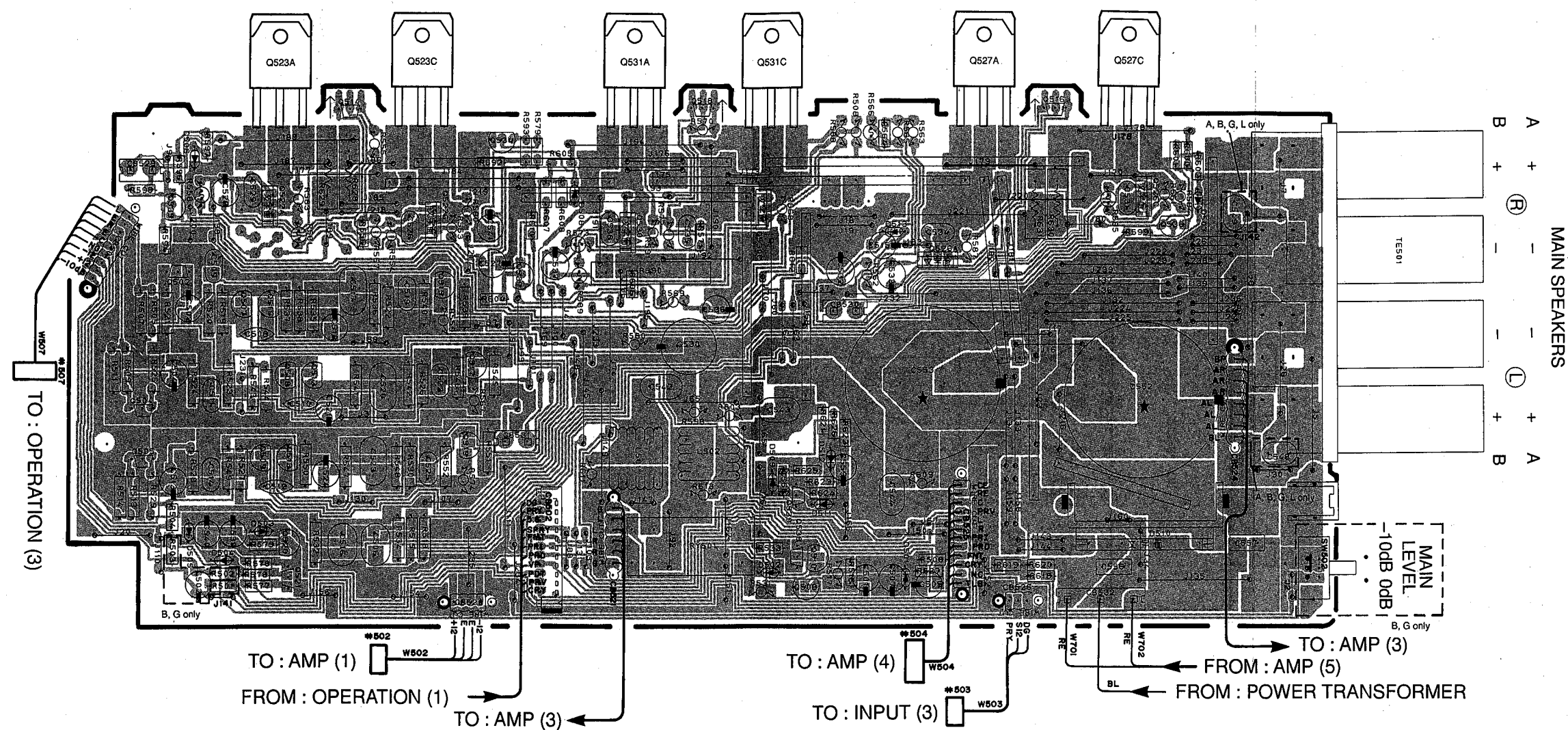
With the POWER ON, disconnect the A/C power cord. Reconnect the A/C power cord and the above waveforms will start.





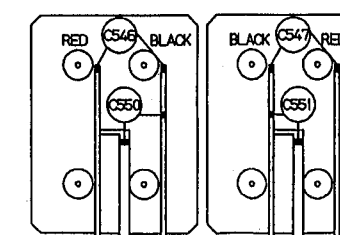
PRINTED CIRCUIT BOARD (Foil side)

P. C. B. AMP (2)

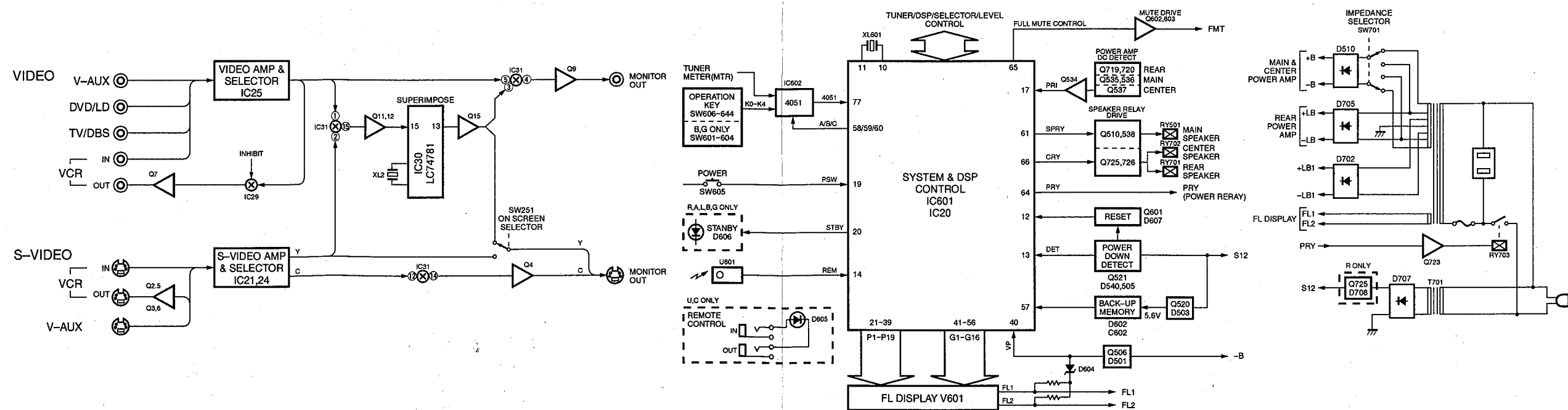
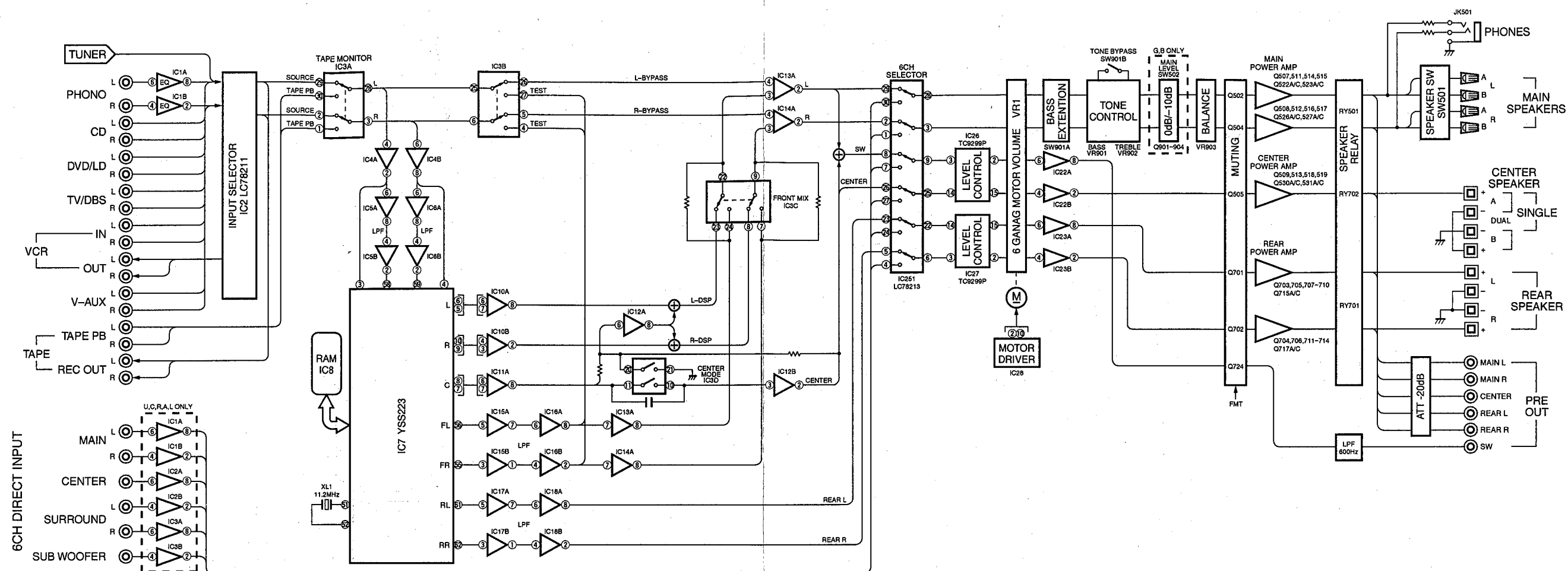


Note) Mounting of C546, 547, 550, 551 shown as below.
(A, B, G, L models only)

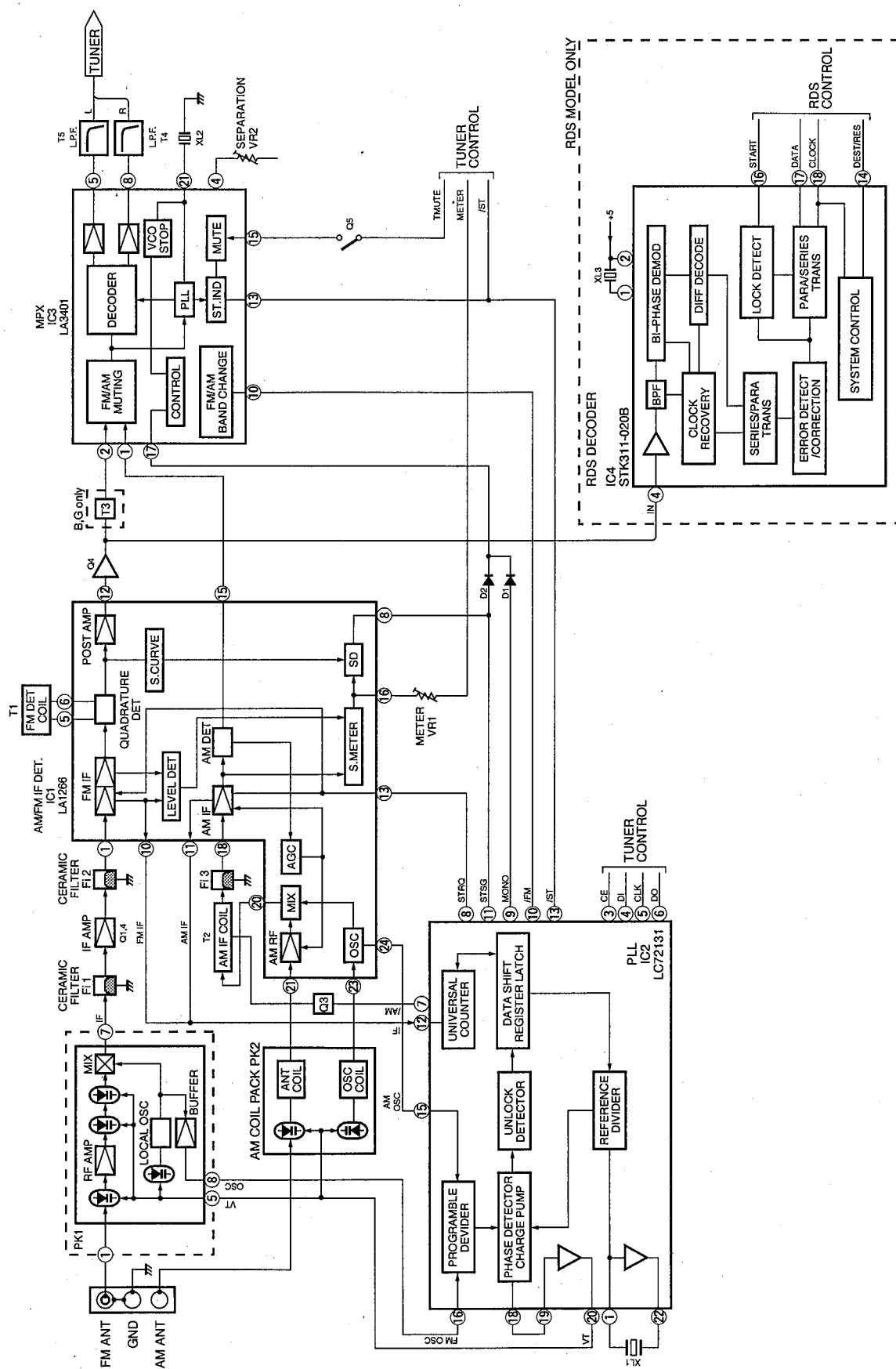
MAIN SPEAKERS



■ BLOCK DIAGRAM



BLOCK DIAGRAM



PIN CONNECTION DIAGRAM

ICs

AN78N05 1:INPUT 2:COMMON 3:OUTPUT	NJM79M12FA 1:COMMON 2:INPUT 3:OUTPUT	NJM4558L 	LA7956 	μPC4570HA 	LB1641 	STK311-020B
μPD4066BC 	TC4053BP HD74HC4051P TC9299P 	BU2090 	LA3401 LC72131 	LA1266 LC74781-9626 		
LH5P832D-10 	LC78213 LC78211 	YSS223 	HD6433724F HD6433726F 			

Diodes

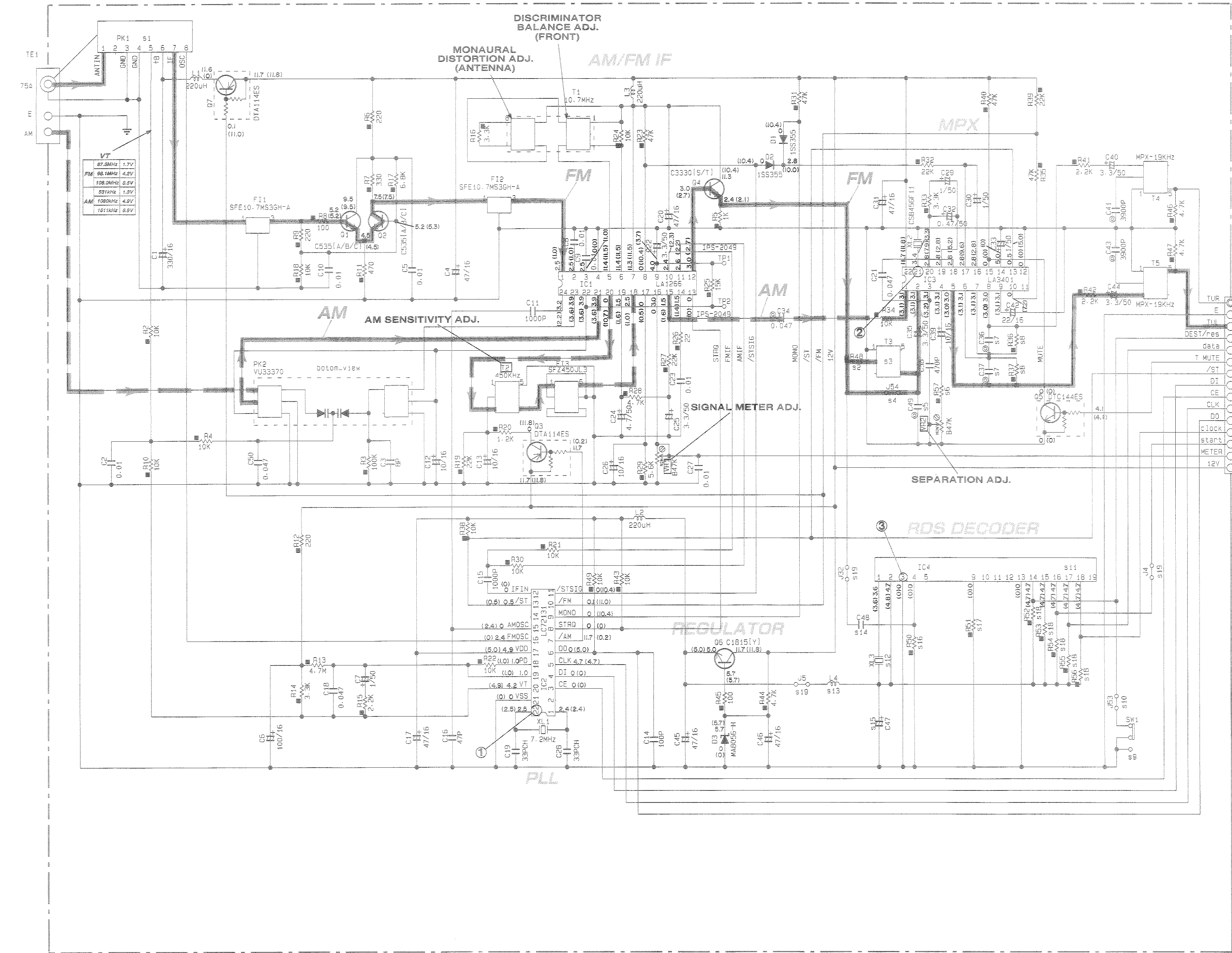
1SS133 1SS270A 1SS355 	HZS5C2TD HZS5B2TD HZS6B2TD HZS6C2TD HZS7B2TD HZS12B2TD HZS12C2TD HZS242TD HZS302TD MA8056-H
D5SB20 	
S1NB20 	
S4VB20 	

Transistors

2SA933S (Q, R) 2SA1740S (R, S) 2SC3330 (S, T) 2SD1915F (S, T) DTA114ES DTA144ES DTC144ES 	2SA1708 (S, T) 2SC4488 (S, T)
2SA893A (D, E) 2SA970 (GR, BL) 2SA1015 (Y) 2SA2878 (R, S) 2SC535 (A, B, C) 2SC1815 (Y) 2SC1890A (D, E) 2SC2061 (P, Q, R) 2SC2229 (O, Y) 2SC2240 (GR, BL) 	2SK30ATM (GR)
2SD856 (P, Q) 2SD2396 (J, K) 	2SA1693 (O, P, Y) 2SC4466 (O, P, Y) 2SA1962 (R, O) 2SC5242 (R, O)
2SA1358 (O, Y) 2SC3421 (O, Y) 	

SCHEMATIC DIAGRAM (TUNER)

Each voltage given here represents that in the FM (98.1MHz, STEREO) reception mode but the one in the parentheses () is that in the AM (1080kHz, MAN'L) reception mode.



S	J	U.C	R	A.B.G.L	B.G/RDS
1	PK1	VR24220	VR24220	VR24220	VR24220
2	R48			4.7K	4.7K
3	T3			XYA2	XYA2
4	J54				
5	C49			120P	120P
6	R57	22K	22K	22K	1K
7	C35, 37	580P	1000P	1000P	470P
8	R36, 37	75K	75K	75K	100K
9	SW1			VS50250	
10	V53				
11	IC4				STK311-020B
12	XL3				CSB456F33
13	L4				220uH
14	C46				100P
15	C47				47/15
16	R50				47K
17	R51				33K
18	R52-55				10K
19	J4, 5, 32				
20					

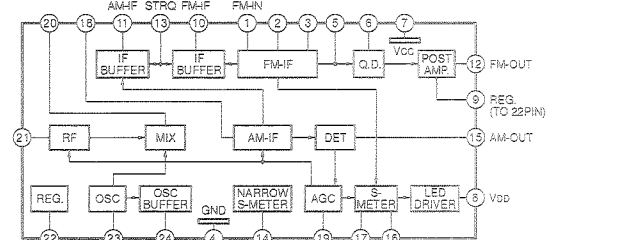
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
NO MARK	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
NO MARK	CERAMIC TUBULAR CAPACITOR
NO MARK	POLYESTER FILM CAPACITOR
NO MARK	POLYSTYRENE FILM CAPACITOR
NO MARK	MICA CAPACITOR
NO MARK	POLYPROPYLENE FILM CAPACITOR
NO MARK	SEMICONDUCTIVE CERAMIC CAPACITOR

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 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

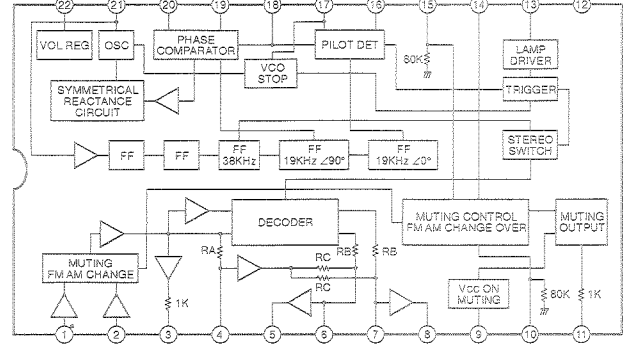
IC1 : LA1266

AM/FM IF



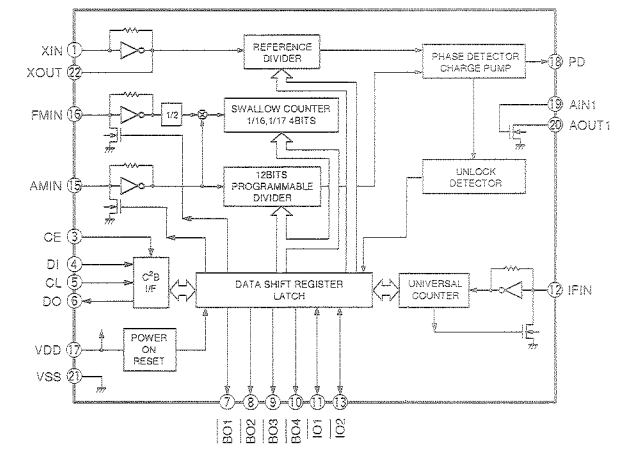
IC3 : LA3401

MPX



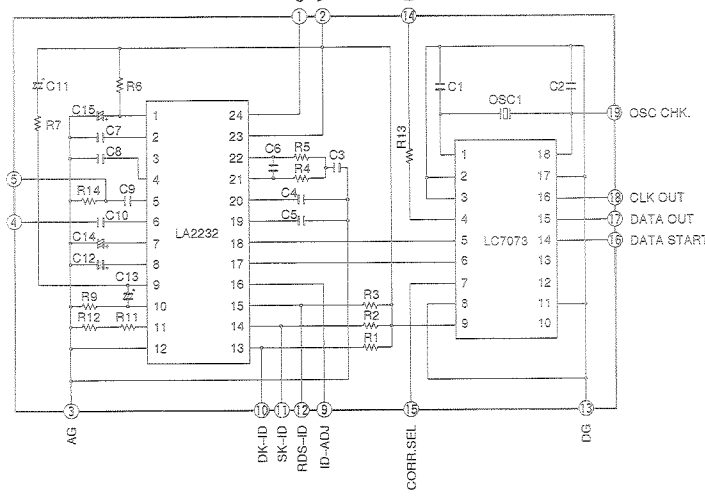
IC2 : LC72131

PLL Controller

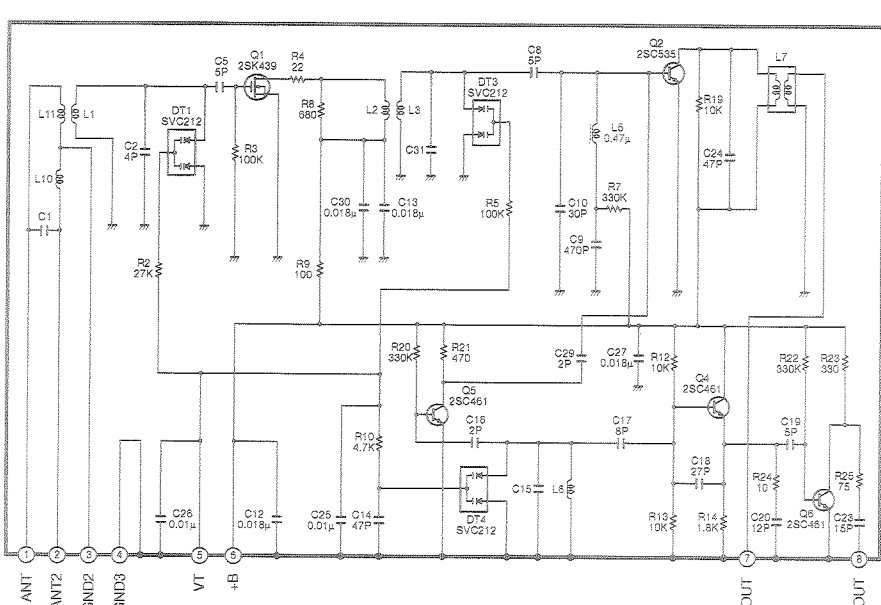


IC4 : STK311-020B

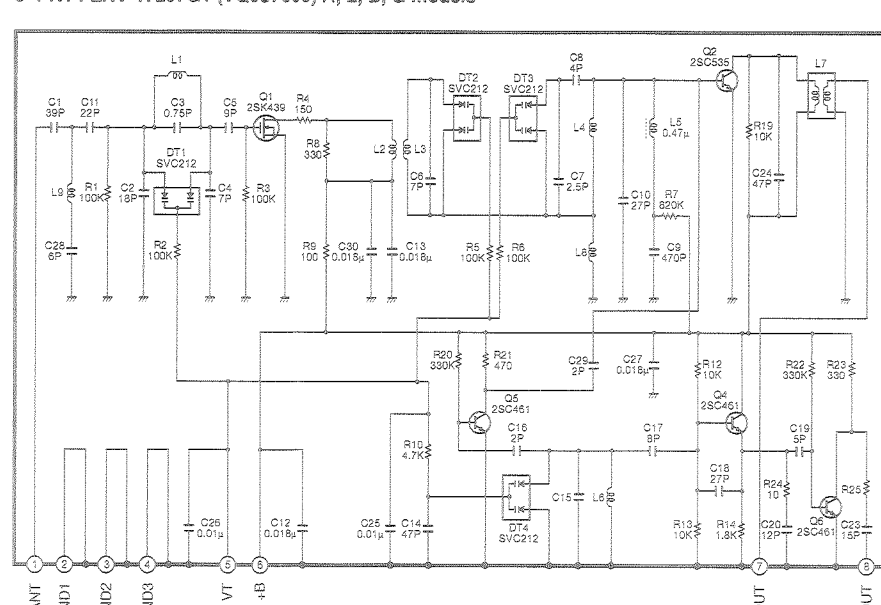
RDS Decoder & Controller



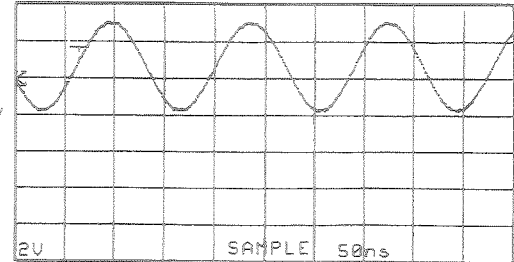
PK1 : ENV-17298G1 (VR24220) U, C, R models



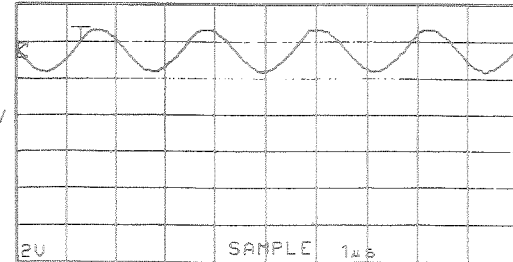
PK1 : ENV-17297G1 (VQ87600) A, L, B, G models



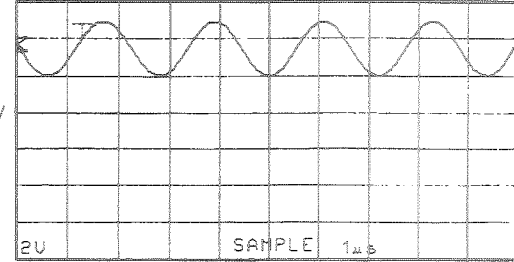
Point ① (Pin22 of IC2) FM reception
V : 2V/div H : 50nsec/div
DC range 1 : 1 probe



Point ② (Pin21 of IC3)
V : 2V/div H : 1μsec/div
DC range 1 : 1 probe

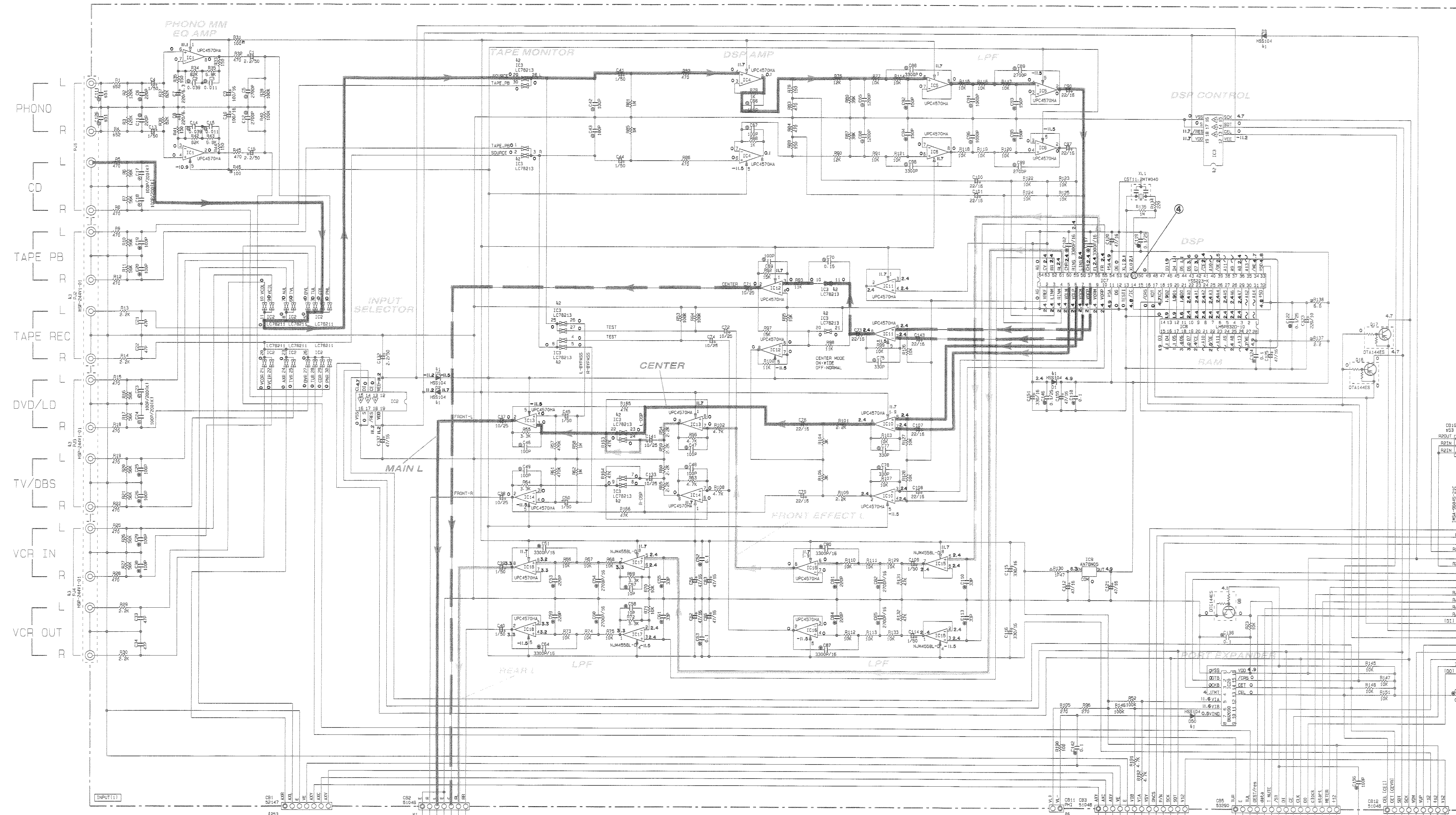


Point ③ (Pin1 of IC4)
V : 5V/div H : 1μsec/div
DC range 1 : 1 probe

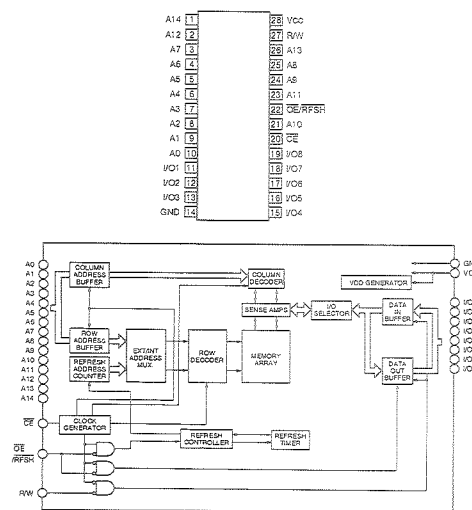


* All voltage are measured with a 10MΩ/DC electric volt meter.
* Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

SCHEMATIC DIAGRAM (INPUT)



ICB : LH5P820-10
256K Pseudo Static RAM



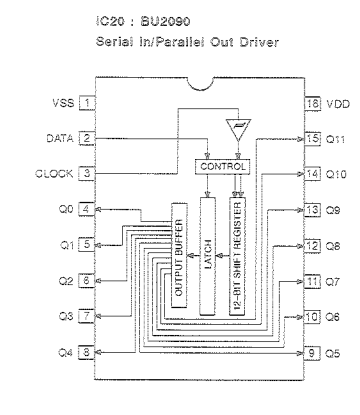
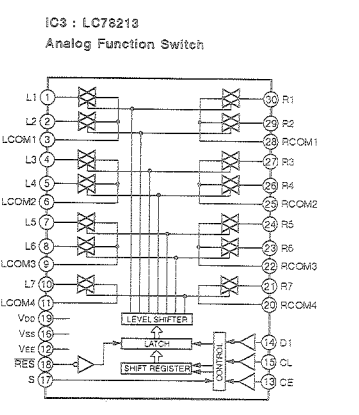
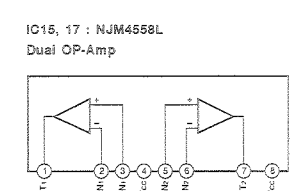
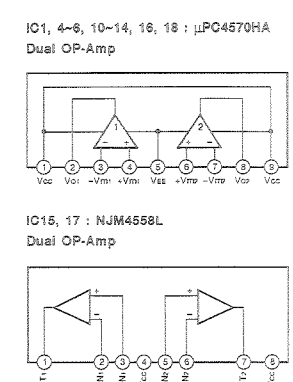
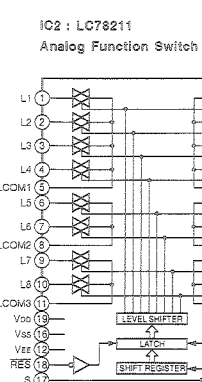
Other ICs
IC7 : V58223-See page 10

MODEL NO.	U-C	R	A	B	B-L
5 C/PDOUT NO.					
51 C111-105	X	X	100P	100P	100P
52 R1-4	47	47	UAS210	UAS210	UAS210
53 CB16-17	V78710	HF4547	HF4562	HF4562	HF4562
54 UK3-4	VJ7880	X	X	X	X
55 W5	HF0320	X	X	X	X

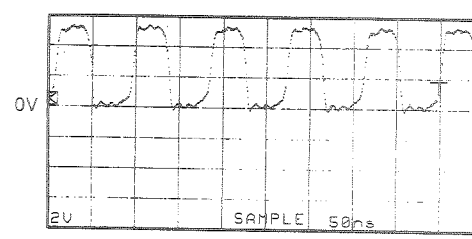
Mark	Reference	Parts Number	Parts Name
51	D1-5.5-50	HS104	5.5K 1/4W
52	IC3	LC78213	LC78213
53	P46-4	YK021-3048	10/100-09-03514

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
□	FINE 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

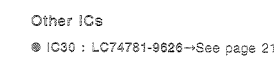
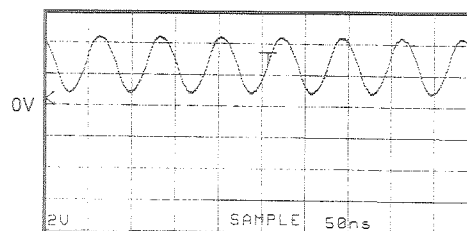


Point ④ (Pin51 of IC7)
V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe

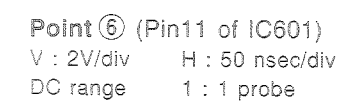


* All voltage are measured with a 10MΩ/DC electric volt meter.
* Components having special characteristics are marked △ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

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



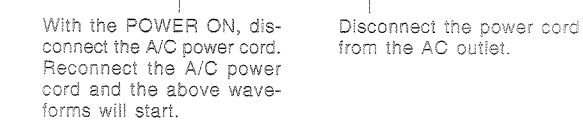
- * All voltage are measured with a 10MS/DC electric volt meter.
- * Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
- * Schematic diagram is subject to change without notice.



CH1 : Pin76 of IC601 V : 2V/div (CH1)
CH2 : Pin12 of IC601 V : 2V/div (CH2)

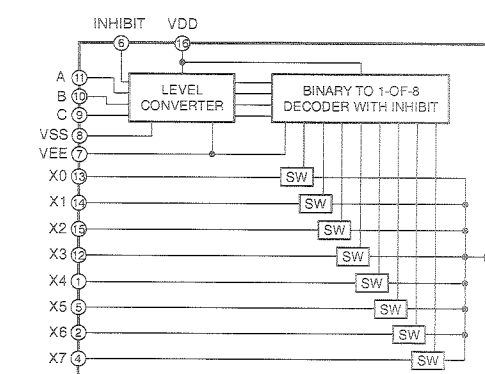
H : 0.5 sec/div DC range 1 : 1 probe

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



MODEL NO.		RX-V659/RSML			
CIRCUIT NO.	U.C	A-L	B-B		
1 R625	×	33K	27K	18K	
2 R693	10K	3.9K	12K	12K	
3 J601	×	×	×	×	
4 D606	×	SLR-35VCT31 SLR-30VCA47	SLR-35VCT31 SLR-30VCA47	SLR-35VCT31 SLR-30VCA47	
5 R612	×	100K	100K	100K	
6 R613	×	270	270	270	
7 R684	10K	10K	×	×	
8 R602	×	×	×	×	
9 5514	0.01/15	0.01/15	×	×	
10 SW601-504	×	×	×	×	V639590
11 R608	×	×	×	×	4.7K
12 R609	×	×	×	×	3.3K
13 R610	×	×	×	×	2.7K
14 R617	×	×	×	×	1.6K
15 J603	×	×	×	×	
16 J604	×	×	×	×	
17 R697	×	10K	×	×	
18 C611	×	0.01/15	×	×	
19 R605	10K	×	×	×	
20 D605	V62510	X598740	X598740	X595640	
21 J6601	X598740	X598740	X598740	X595640	
22		×	×	×	82K
	663-631 636-643 663-663 663-671, 673				

IC602 : HD74HC4051P
Analog Multiplexers/Demultiplexers



INPUT STATES				"ON" CHANNEL
INHIBIT	C	B	A	
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7
1	X	X	X	NONE

Other ICs

● IC601 : HD6433724F/HD6433726F → See page 17

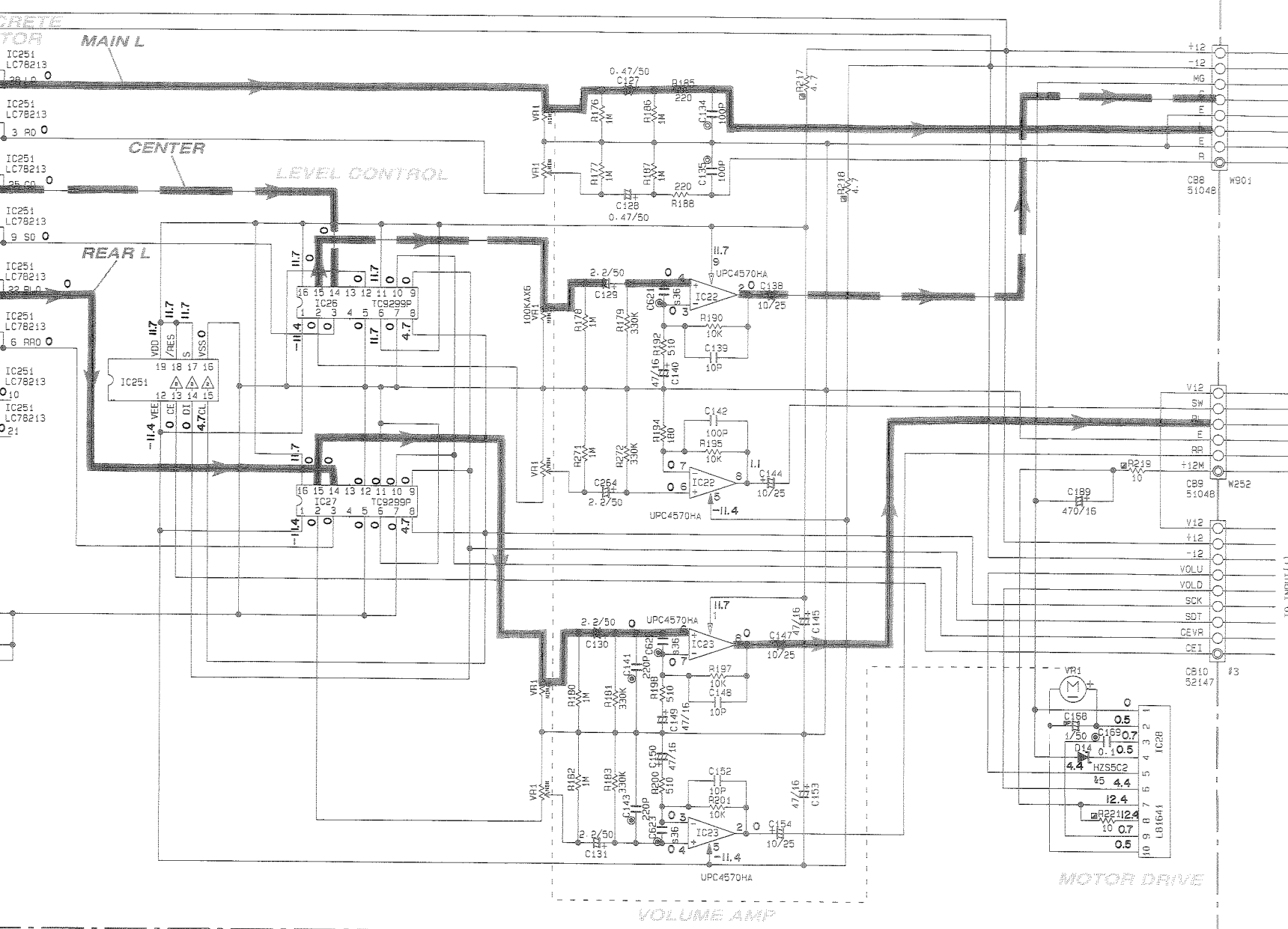
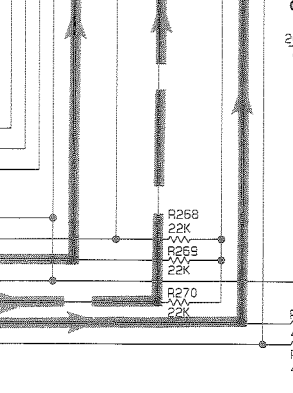
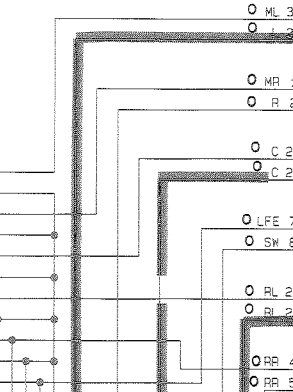
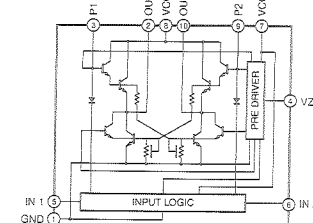
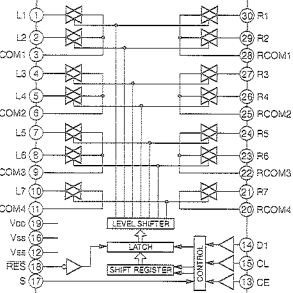
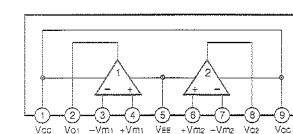
- * All voltage are measured with a 10MS/2/DC electric volt meter.
- * Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
- * Schematic diagram is subject to change without notice.

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

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

Mark	Reference Parts Number	Parts Name
#1	0602-603	2S4933S(g/R) 2S4111S(E/F) 2S41399A(g/R/S)
#2	D601-602-607-609-611	HSS104 1SS133 1SS176
#3	D603-608	HZ95B2 MTZJ4-7C
#4	D604	HZ57B2 MTZJ7-5A

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

[illegible]

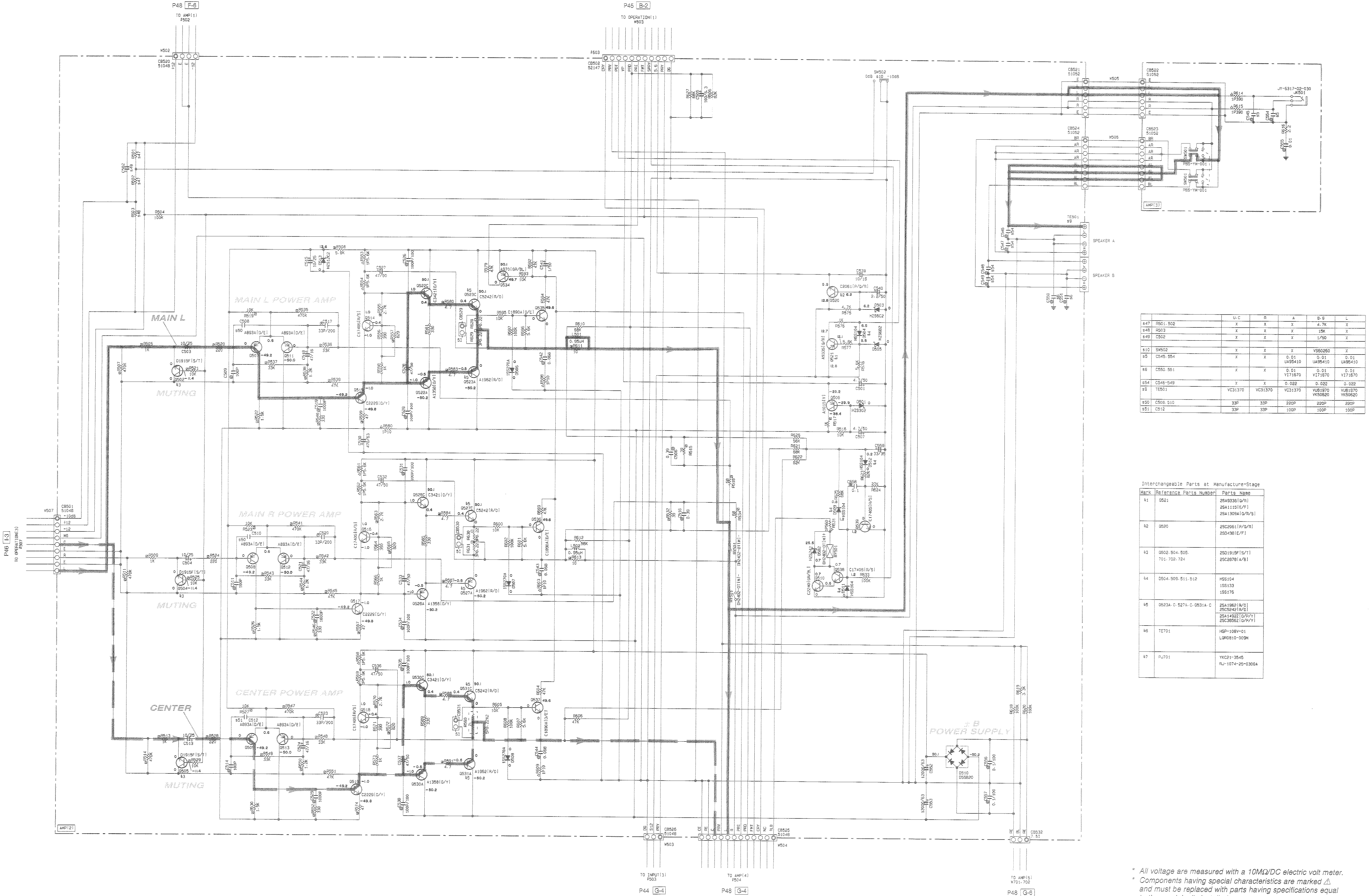
- * All voltage are measured with a 10MΩ/DC electric volt meter.
- * Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
- * Schematic diagram is subject to change without notice.

■ SCHEMATIC DIAGRAM (AMP)

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
⊙	CERAMIC CAPACITOR
⊖	CERAMIC TUBULAR CAPACITOR
⊕	POLYESTER FILM CAPACITOR
⊖	POLYSTYRENE FILM CAPACITOR
⊕	MICA CAPACITOR
⊖	POLYPROPYLENE FILM CAPACITOR
⊕	SEMICONDUCTIVE CERAMIC CAPACITOR

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



	U.C	R	A	B.B	L
S47 R501:502	X	X	X	4.7K	X
S48 R503	X	X	X	15K	X
S49 C502	X	X	X	1/50	X
S10 S502	X	X	X	VS60280	X
S5 C545:554	X	X	0.01	UA95410	0.01
S6 C550:551	X	X	0.01	UA95410	0.01
S8 C546:549	X	X	0.022	0.022	0.022
S9 T501	VC31370	VC31370	VC31370	V81870	V81870
S10 C506:510	33P	33P	220P	220P	220P
S11 C512	33P	33P	100P	100P	100P

Mark	Reference Parts Number	Parts Name
S1	0521	25A9335(R/N) 25A11101(E/F) 25A1309A(G/R/S)
S2	0520	25C2061(R/N/R) 25D4381(E/F)
S3	0502:504:505: 701:702:704	25D1915(R/Y) 25C2879(A/S)
S4	0504:509:511:512	VS5104 VS5133 VS5176
S5	0523A-C:527A-C:0531A-C	25A19821(R/O) 25C25421(R/O) 25A14922(D/R/Y) 25C36562(D/R/Y)
S6	T5701	HSP-108V-01 LH0810-009M
S7	PJ701	YK21-3545 RJ-1074-25-0300A

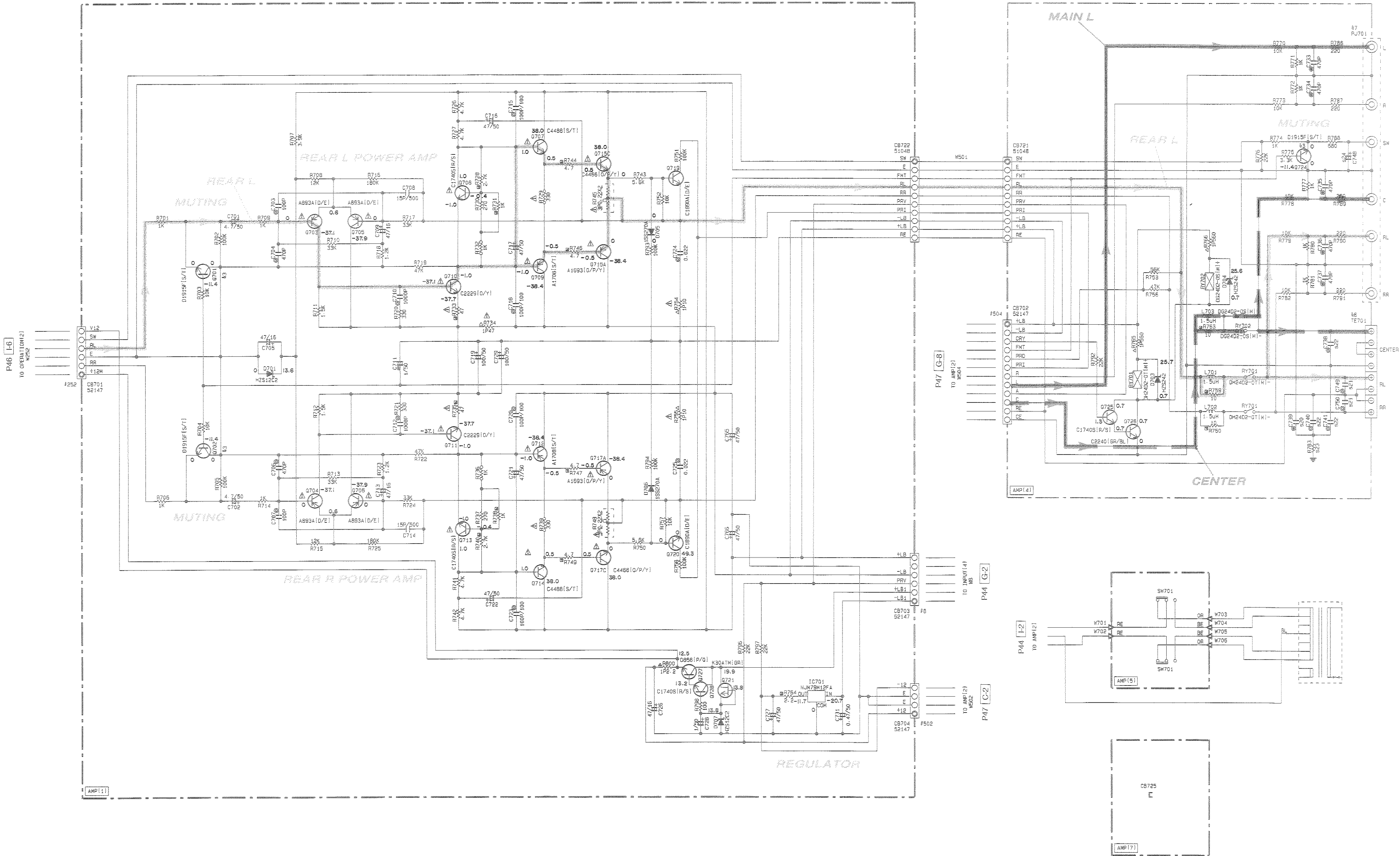
* All voltage are measured with a 10MΩ/DC electric volt meter.
* Components having special characteristics are marked △ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

■ SCHEMATIC DIAGRAM (AMP)

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 WOLDED 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

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



	U.C	R	A.B.G.L
817			
818			
819			
820 C739	X	X	0.1
821 C479-750	X	X	0.01
822 C739-740-741	X	X	0.022
823 R783	X	X	2.2
824 C745	0.47/50	1/50	1/50
825			
826			
827			
828			

* All voltage are measured with a 10MSΩ/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.

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.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS :

C.A.EL.CHP	: CHIP ALUMI. ELECTROLYTIC CAP	L.EMIT	: LIGHT EMITTING MODULE
C.CE	: CERAMIC CAP	LED.DSPLY	: LED DISPLAY
C.CE.ARRAY	: CERAMIC CAP ARRAY	LED.INFRD	: LED, INFRARED
C.CE.CHP	: CHIP CERAMIC CAP	MODUL.RF	: MODULATOR, RF
C.CE.ML	: MULTILAYER CERAMIC CAP	PHOT.CPL	: PHOTO COUPLER
C.CE.M.CHP	: CHIP MULTILAYER CERAMIC CAP	PHOT.INTR	: PHOTO INTERRUPTER
C.CE.SAFTY	: RECOGNIZED CERAMIC CAP	PHOT.RFLCT	: PHOTO REFLECTOR
C.CE.TUBLR	: CERAMIC TUBULAR CAP	PIN.TEST	: PIN, TEST POINT
C.CE.SMI	: SEMI CONDUCTIVE CERAMIC CAP	PLST.RIVET	: PLASTIC RIVET
C.EL	: ELECTROLYTIC CAP	R.ARRAY	: RESISTOR ARRAY
C.MICA	: MICA CAP	R.CAR	: CARBON RESISTOR
C.ML.FLM	: MULTILAYER FILM CAP	R.CAR.CHP	: CHIP RESISTOR
C.MP	: METALLIZED PAPER CAP	R.CAR.FP	: FLAME PROOF CARBON RESISTOR
C.MYLAR	: MYLAR FILM CAP	R.FUS	: FUSABLE RESISTOR
C.MYLAR.ML	: MULTILAYER MYLAR FILM CAP	R.MTL.CHP	: CHIP METAL FILM RESISTOR
C.PAPER	: PAPER CAPACITOR	R.MTL.FLM	: METAL FILM RESISTOR
C.PLS	: POLYSTYRENE FILM CAP	R.MTL.OXD	: METAL OXIDE FILM RESISTOR
C.POL	: POLYESTER FILM CAP	R.MTL.PLAT	: METAL PLATE RESISTOR
C.POLY	: POLYETHYLENE FILM CAP	RSNR.CE	: CERAMIC RESONATOR
C.PP	: POLYPROPYLENE FILM CAP	RSNR.CRYS	: CRYSTAL RESONATOR
C.TNTL	: TANTALUM CAP	R.TW.CEM	: TWIN CEMENT FIXED RESISTOR
C.TNTL.CHP	: CHIP TANTALUM CAP	R.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. TUNER

Schm Ref.	PART NO.	Description
	VV610200	P. C. B. TUNER(UC)
	VV610300	P. C. B. TUNER(R)
	VV610400	P. C. B. TUNER(AL)
	VV610500	P. C. B. TUNER(BG)
CB4	VQ961800	CN.BS.PIN 15P
C1	VG287800	C. EL 330uF 16V
C2	UB044100	C. CE. M. CHP 0.01uF 50V
C3	UB050800	C. CE. M. CHP 8pF 50V
C4	VG291200	C. EL 47uF 50V
C5	UB044100	C. CE. M. CHP 0.01uF 50V
C6	VG288900	C. EL 100uF 25V
C7	VJ839100	C. EL 1uF 50V
C8	UB044100	C. CE. M. CHP 0.01uF 50V
C9	UB044100	C. CE. M. CHP 0.01uF 50V
C10	UB044100	C. CE. M. CHP 0.01uF 50V
C11	UB013100	C. CE. M. CHP 1000pF 50V
C12	VJ836900	C. EL 10uF 16V
C13	VJ836900	C. EL 10uF 16V
C14	UB052100	C. CE. M. CHP 100pF 50V
C15	UB013100	C. CE. M. CHP 1000pF 50V
C16	UB051470	C. CE. M. CHP 47pF 50V
C17	VG291200	C. EL 47uF 50V
C18	UB044470	C. CE. M. CHP 0.047uF 50V
C19	VA761200	C. CE 33pF 50V
C20	VG291200	C. EL 47uF 50V
C21	UB044470	C. CE. M. CHP 0.047uF 50V
C22	UM216330	C. EL 3.3uF 50V
C23	UB044100	C. CE. M. CHP 0.01uF 50V
C24	UM416470	C. EL 4.7uF 50V
C25	UM216330	C. EL 3.3uF 50V
C26	VJ836900	C. EL 10uF 16V
C27	UB044100	C. CE. M. CHP 0.01uF 50V
C28	VA761200	C. CE 33pF 50V
C29	VJ839100	C. EL 1uF 50V
C30	VJ839100	C. EL 1uF 50V
C31	VG291200	C. EL 47uF 50V
C32	VJ839000	C. EL 0.47uF 50V
C33	VJ839100	C. EL 1uF 50V
C34	UA654470	C. MYLAR 0.047uF 50V
C35	UM216330	C. EL 3.3uF 50V
C36	UA652470	C. MYLAR 470pF 50V(ALBG)
C36	UA653100	C. MYLAR 1000pF 50V(UCR)
C37	UA652470	C. MYLAR 470pF 50V(ALBG)
C37	UA653100	C. MYLAR 1000pF 50V(UCR)
C38	UB012470	C. CE. M. CHP 470pF 50V
C39	VJ836900	C. EL 10uF 16V
C40	UM216330	C. EL 3.3uF 50V
C41	UA653390	C. MYLAR 3900pF 50V
C42	UM407220	C. EL 22uF 16V
C43	UA653390	C. MYLAR 3900pF 50V
C44	UM216330	C. EL 3.3uF 50V
C45	VG291200	C. EL 47uF 50V
C46	VG291200	C. EL 47uF 50V

* New Parts

Schm Ref.	PART NO.	Description
C47	VG291200	C. EL 47uF 50V(BG)
C48	UB052100	C. CE. M. CHP 100pF 50V(BG)
C49	UA652120	C. MYLAR 120pF 50V(ALBG)
C50	UB044470	C. CE. M. CHP 0.047uF 50V
D1	VT332900	DIODE 1SS355
D2	VT332900	DIODE 1SS355
D3	VU993100	DIODE. ZENR MA8056-H 5.8V
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	XQ359A00	IC STK311-020B(BG)
L1	VU889500	COIL 220uH
L2	VU889500	COIL 220uH
L3	VU889500	COIL 220uH
L4	VU889500	COIL 220uH(BG)
PK1	VQ987600	TUNER. PK EXV-17296G1(ALBG)
PK1	VR242200	TUNER. PK EXV-17296G1(UCR)
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	VC218900	TR 2SC3330 R, S, T
Q5	VG722000	TR. DGT DTC144ES
Q6	iC1815C0	TR 2SC1815 Y
Q7	VD678500	TR. DGT DTA114ES
R2	RD257100	R. CAR. CHP 10KΩ 1/10W
R3	RD258100	R. CAR. CHP 100KΩ 1/10W
R4	RD257100	R. CAR. CHP 10KΩ 1/10W
R5	RD256100	R. CAR. CHP 1KΩ 1/10W
R6	RD255220	R. CAR. CHP 220Ω 1/10W
R7	RD255330	R. CAR. CHP 330Ω 1/10W
R8	RD255100	R. CAR. CHP 100Ω 1/10W
R9	RD255220	R. CAR. CHP 220Ω 1/10W
R10	RD257100	R. CAR. CHP 10KΩ 1/10W
R11	RD255470	R. CAR. CHP 470Ω 1/10W
R12	RD255220	R. CAR. CHP 220Ω 1/10W
R13	RD259470	R. CAR. CHP 4.7MΩ 1/10W
R14	RD256330	R. CAR. CHP 3.3KΩ 1/10W
R15	RD256220	R. CAR. CHP 2.2KΩ 1/10W
R16	RD256330	R. CAR. CHP 3.3KΩ 1/10W
R17	RD256680	R. CAR. CHP 6.8KΩ 1/10W
R18	RD257100	R. CAR. CHP 10KΩ 1/10W
R19	RD257220	R. CAR. CHP 22KΩ 1/10W
R20	RD256120	R. CAR. CHP 1.2KΩ 1/10W
R21	RD257100	R. CAR. CHP 10KΩ 1/10W
R22	RD257100	R. CAR. CHP 10KΩ 1/10W
R23	RD257470	R. CAR. CHP 47KΩ 1/10W
R24	RD257100	R. CAR. CHP 10KΩ 1/10W
R25	RD257150	R. CAR. CHP 15KΩ 1/10W
R26	RD254220	R. CAR. CHP 22Ω 1/10W

* New Parts

P.C.B. TUNER & AMP

Schm Ref.	PART NO.	Description
R27	RD257220	R. CAR. CHP 22K Ω 1/10W
R28	RD256470	R. CAR. CHP 4.7K Ω 1/10W
R29	RD256560	R. CAR. CHP 5.6K Ω 1/10W
R30	RD257100	R. CAR. CHP 10K Ω 1/10W
R31	RD257470	R. CAR. CHP 47K Ω 1/10W
R32	RD257220	R. CAR. CHP 22K Ω 1/10W
R33	RD256330	R. CAR. CHP 3.3K Ω 1/10W
R34	RD257100	R. CAR. CHP 10K Ω 1/10W
R35	RD257470	R. CAR. CHP 47K Ω 1/10W
R36	RD257750	R. CAR. CHP 75K Ω 1/10W(UCR)
R36	RD258100	R. CAR. CHP 100K Ω 1/10W(ALBG)
R37	RD257750	R. CAR. CHP 75K Ω 1/10W(UCR)
R37	RD258100	R. CAR. CHP 100K Ω 1/10W(ALBG)
R38	RD257100	R. CAR. CHP 10K Ω 1/10W
R39	RD257220	R. CAR. CHP 22K Ω 1/10W
R40	RD257470	R. CAR. CHP 47K Ω 1/10W
R41	RD256220	R. CAR. CHP 2.2K Ω 1/10W
R42	RD256220	R. CAR. CHP 2.2K Ω 1/10W
R43	RD257100	R. CAR. CHP 10K Ω 1/10W
R44	RD256470	R. CAR. CHP 4.7K Ω 1/10W
R45	RD255100	R. CAR. CHP 100 Ω 1/10W
R46	RD256470	R. CAR. CHP 4.7K Ω 1/10W
R47	RD256470	R. CAR. CHP 4.7K Ω 1/10W
R48	RD256470	R. CAR. CHP 4.7K Ω 1/10W(ALBG)
R49	RD257100	R. CAR. CHP 10K Ω 1/10W
R50	RD257470	R. CAR. CHP 47K Ω 1/10W(BG)
R51	RD257330	R. CAR. CHP 33K Ω 1/10W(BG)
R52	RD257100	R. CAR. CHP 10K Ω 1/10W(BG)
R53	RD257100	R. CAR. CHP 10K Ω 1/10W(BG)
R54	RD257100	R. CAR. CHP 10K Ω 1/10W(BG)
R55	RD257100	R. CAR. CHP 10K Ω 1/10W(BG)
R56	RD257100	R. CAR. CHP 10K Ω 1/10W(BG)
R57	RD256100	R. CAR. CHP 1K Ω 1/10W(ALBG)
R57	RD257220	R. CAR. CHP 22K Ω 1/10W(UCR)
SW1	VS602600	SW. SLIDE SS070-P022 A(R)
T1	VC218600	COIL. DT. FM 10.7MHz
T2	VR895700	COIL. IF 450KHz
T3	VT486800	COIL XYA2 (ALBG)
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 B47K Ω
VR2	VJ694000	VR. TRIM B47K Ω
XL1	QU003800	RSNR. CRYST 7.2MHz
XL2	GG000750	RSNR. CE 18.95MHz
XL3	VS860100	RSNR. CE 19KHz (BG)
	BB071360	SCR. TERM 8.3x13
	VR282500	PLATE ANT.

* New Parts

Schm Ref.	PART NO.	Description
* VV563300	P. C. B.	AMP(UC)
* VV563400	P. C. B.	AMP(R)
* VV563500	P. C. B.	AMP(A)
* VV563600	P. C. B.	AMP(BG)
* VV899500	P. C. B.	AMP(L)
CB501	Vi878700	CN. BS. PIN 9P
CB502	VK025500	CN. BS. PIN 11P
CB520	Vi878200	CN. BS. PIN 4P
CB521	VQ584800	CN. BS. PIN 6P
CB522	VQ584800	CN. BS. PIN 6P
CB523	VQ585000	CN. BS. PIN 8P
CB524	VQ585000	CN. BS. PIN 8P
CB525	Vi879000	CN. BS. PIN 12P
CB526	Vi878100	CN. BS. PIN 3P
CB529	LA002110	TERM. WRAP 2P
CB530	LA002110	TERM. WRAP 2P
CB531	LA002110	TERM. WRAP 2P
CB532	LA002320	TERM. WRAP 3P
CB701	VF728300	CN 6P
CB702	VK025600	CN. BS. PIN 12P
CB703	VF728300	CN 6P
CB704	VK024800	CN. BS. PIN 4P
CB721	Vi878800	CN. BS. PIN 10P
CB722	Vi878800	CN. BS. PIN 10P
CB725	VP206500	HOLDER. FUS EYF-52BC
CB726	Vi878000	CN. BS. PIN 2P (BG)
CB727	VK024600	CN. BS. PIN 2P (BG)
C501	UM416470	C. EL 4.7uF 50V
C502	VJ839100	C. EL 1uF 50V (BG)
C503	UM417100	C. EL 10uF 50V
C504	UM417100	C. EL 10uF 50V
C505	VF760000	C. EL 100uF 10V
C506	VK399200	C. MYLAR. ML 0.39uF 50V
C507	UM416470	C. EL 4.7uF 50V
C508	FG212220	C. CE 220pF 50V (ABGL)
C508	FG251330	C. CE 33pF 50V (UCR)
C509	UA652100	C. MYLAR 100pF 50V
C510	FG212220	C. CE 220pF 50V (ABGL)
C510	FG251330	C. CE 33pF 50V (UCR)
C511	UA652100	C. MYLAR 100pF 50V
C512	FG212100	C. CE 100pF 50V (ABGL)
C512	FG251330	C. CE 33pF 50V (UCR)
C513	UM417100	C. EL 10uF 50V
C514	UA652100	C. MYLAR 100pF 50V
C515	UM417100	C. EL 10uF 50V
C516	VK399200	C. MYLAR. ML 0.39uF 50V
C517	VQ245400	C. PP 33pF 200V
C518	VJ837200	C. EL 47uF 16V
C519	UA653100	C. MYLAR 1000pF 50V
C520	VQ245400	C. PP 33pF 200V
C521	VJ837200	C. EL 47uF 16V
C522	UA653100	C. MYLAR 1000pF 50V
C523	VQ245400	C. PP 33pF 200V

* New Parts

P.C.B. AMP

Schm Ref.	PART NO.	Description
C524	VJ837200	C. EL 47uF 16V
C525	UA653100	C. MYLAR 1000pF 50V
C526	VR325000	C. MYLAR 100pF 100V
C527	UJ667470	C. EL 47uF 50V
C528	UJ667470	C. EL 47uF 50V
C529	VR325000	C. MYLAR 100pF 100V
C530	VK347900	C. EL 470uF 63V
C531	VR325000	C. MYLAR 100pF 100V
C532	UJ667470	C. EL 47uF 50V
C533	UJ667470	C. EL 47uF 50V
C534	VR325000	C. MYLAR 100pF 100V
C535	VR325000	C. MYLAR 100pF 100V
C536	UJ667470	C. EL 47uF 50V
C537	UJ667470	C. EL 47uF 50V
C538	VR325000	C. MYLAR 100pF 100V
C539	VJ836900	C. EL 10uF 16V
C540	VJ839200	C. EL 2.2uF 50V
C541	VJ839100	C. EL 1uF 50V
C542	UA654680	C. MYLAR 0.068uF 50V
C543	UA654680	C. MYLAR 0.068uF 50V
C544	UA654680	C. MYLAR 0.068uF 50V
C545	UA654100	C. MYLAR 0.01uF 50V(ABGL)
C546	UA654220	C. MYLAR 0.022uF 50V(ABGL)
C547	UA654220	C. MYLAR 0.022uF 50V(ABGL)
C548	UA654220	C. MYLAR 0.022uF 50V(ABGL)
C549	UA654220	C. MYLAR 0.022uF 50V(ABGL)
C550	Vi716700	C. MYLAR 0.01uF 50V(ABGL)
C551	Vi716700	C. MYLAR 0.01uF 50V(ABGL)
C552	VV887100	C. EL 12000uF 63V
C553	VV887100	C. EL 12000uF 63V
C554	UA654100	C. MYLAR 0.01uF 50V(ABGL)
C555	UA654100	C. MYLAR 0.01uF 50V
C556	VS745400	C. POL. MTL 0.1uF 100V
C557	VS745400	C. POL. MTL 0.1uF 100V
C558	VH053100	C. CE. TUBLR 0.1uF 50V
C559	UJ167330	C. EL 33uF 50V
C701	UM416470	C. EL 4.7uF 50V
C702	UM416470	C. EL 4.7uF 50V
C703	UA652100	C. MYLAR 100pF 50V
C704	UA652470	C. MYLAR 470pF 50V
C705	VJ837200	C. EL 47uF 16V
C706	UA652470	C. MYLAR 470pF 50V
C707	UA652100	C. MYLAR 100pF 50V
C708	VR516400	C. CE 15p 500V
C709	VJ837200	C. EL 47uF 16V
C710	UA653100	C. MYLAR 1000pF 50V
C711	VG722100	C. EL 1uF 50V
C712	UA653100	C. MYLAR 1000pF 50V
C713	VJ837200	C. EL 47uF 16V
C714	VR516400	C. CE 15p 500V
C715	VR325000	C. MYLAR 100pF 100V
C716	UJ667470	C. EL 47uF 50V
C717	UJ667470	C. EL 47uF 50V

* New Parts

Schm Ref.	PART NO.	Description
C718	VR325000	C. MYLAR 100pF 100V
C719	UJ668100	C. EL 100uF 50V
C720	VR325000	C. MYLAR 100pF 100V
C721	UJ667470	C. EL 47uF 50V
C722	UJ667470	C. EL 47uF 50V
C723	VR325000	C. MYLAR 100pF 100V
C724	UA654220	C. MYLAR 0.022uF 50V
C725	UA654220	C. MYLAR 0.022uF 50V
C726	VJ837200	C. EL 47uF 16V
C727	UJ667470	C. EL 47uF 50V
C728	VJ839100	C. EL 1uF 50V
C729	UJ668100	C. EL 100uF 50V
C731	VJ839000	C. EL 0.47uF 50V
C733	VF466900	C. CE. TUBLR 470pF 50V
C734	VF466900	C. CE. TUBLR 470pF 50V
C735	VF466900	C. CE. TUBLR 470pF 50V
C736	VF466900	C. CE. TUBLR 470pF 50V
C737	VF466900	C. CE. TUBLR 470pF 50V
C738	UA654220	C. MYLAR 0.022uF 50V(ABGL)
C739	VH053100	C. CE. TUBLR 0.1uF 50V(ABGL)
C740	UA654220	C. MYLAR 0.022uF 50V(ABGL)
C741	UA654220	C. MYLAR 0.022uF 50V(ABGL)
C748	VJ839000	C. EL 0.47uF 50V(UC)
C748	VJ839100	C. EL 1uF 50V(RABGL)
C749	UA654100	C. MYLAR 0.01uF 50V(ABGL)
C750	UA654100	C. MYLAR 0.01uF 50V(ABGL)
C750	UA654100	C. MYLAR 0.01uF 50V
C765	UJ667470	C. EL 47uF 50V
C766	UJ667470	C. EL 47uF 50V
C767	VH053100	C. CE. TUBLR 0.1uF 50V(BG)
D501	VM976500	DIODE. ZENR HZS302TD 30V
D502	VM976300	DIODE. ZENR HZS242TD 24V
D503	VM974500	DIODE. ZENR HZS6C2TD 6.0V
D504	VD631600	DIODE 1SS133, 176, HSS104
D505	VM974400	DIODE. ZENR HZS6B2TD 6.0V
D506	VN008700	DIODE 1SS270A
D507	VN008700	DIODE 1SS270A
D508	VN008700	DIODE 1SS270A
D509	VD631600	DIODE 1SS133, 176, HSS104
D510	VN011400	DIODE. BRG D5SB20 5A 200V
D511	VD631600	DIODE 1SS133, 176, HSS104
D512	VD631600	DIODE 1SS133, 176, HSS104
D513	VM975700	DIODE. ZENR HZS12C2TD 12V
D701	VM975700	DIODE. ZENR HZS12C2TD 12V
D703	VM976300	DIODE. ZENR HZS242TD 24V
D704	VM976300	DIODE. ZENR HZS242TD 24V
D705	VN008700	DIODE 1SS270A
D706	VN008700	DIODE 1SS270A
D707	VM975700	DIODE. ZENR HZS12C2TD 12V
IC701	XD343A00	IC NJM79M12FA
* JK501	VY687200	JACK. PHONE JY-6317-02-030 NUT
L501	VR906600	COIL 0.95uH
L502	VR906600	COIL 0.95uH

* New Parts

P.C.B. AMP

Schm Ref.	PART NO.	Description
L701	VP575600	COIL 1.5uH
L702	VP575600	COIL 1.5uH
L703	VP575600	COIL 1.5uH
PJ701	VR245000	JACK. PIN 6P
Q502	VK432900	TR 2SD1915F S, T
Q504	VK432900	TR 2SD1915F S, T
Q505	VK432900	TR 2SD1915F S, T
Q506	iA101521	TR 2SA1015 Y
Q507	VP883000	TR 2SA893A D, E
Q508	VP883000	TR 2SA893A D, E
Q509	VP883000	TR 2SA893A D, E
Q510	iC224030	TR 2SC2240 GR, BL
Q511	VP883000	TR 2SA893A D, E
Q512	VP883000	TR 2SA893A D, E
Q513	VP883000	TR 2SA893A D, E
Q514	iC174020	TR 2SC1740S R, S
Q515	VR325600	TR 2SC2229 O, Y
Q516	iC174020	TR 2SC1740S R, S
Q517	VR325600	TR 2SC2229 O, Y
Q518	iC174020	TR 2SC1740S R, S
Q519	VR325600	TR 2SC2229 O, Y
Q520	iC206110	TR 2SC2061 P, Q, R
Q521	iA093320	TR 2SA933S Q, R
Q522	iX603580	TR 2SA1358
Q522	iX603590	TR 2SC3421
Q523	iX636490	TR 2SA1962 R, O
Q523	iX636500	TR 2SC5242 R, O
Q526	iX603580	TR 2SA1358
Q526	iX603590	TR 2SC3421
Q527	iX636490	TR 2SA1962 R, O
Q527	iX636500	TR 2SC5242 R, O
Q530	iX603580	TR 2SA1358
Q530	iX603590	TR 2SC3421
Q531	iX636490	TR 2SA1962 R, O
Q531	iX636500	TR 2SC5242 R, O
Q534	iA097000	TR 2SA970 GR, BL
Q535	VP883100	TR 2SC1890A D, E
Q536	VP883100	TR 2SC1890A D, E
Q537	VP883100	TR 2SC1890A D, E
Q538	iC174020	TR 2SC1740S R, S
Q539	iC174020	TR 2SC1740S R, S
Q701	VK432900	TR 2SD1915F S, T
Q702	VK432900	TR 2SD1915F S, T
Q703	VP883000	TR 2SA893A D, E
Q704	VP883000	TR 2SA893A D, E
Q705	VP883000	TR 2SA893A D, E
Q706	VP883000	TR 2SA893A D, E
Q707	VP872700	TR 2SC4488 S, T
Q708	iC174020	TR 2SC1740S R, S
Q709	VP872600	TR 2SA1708 S, T
Q710	VR325600	TR 2SC2229 O, Y
Q711	VR325600	TR 2SC2229 O, Y
Q712	VP872600	TR 2SA1708 S, T

* New Parts

Schm Ref.	PART NO.	Description
Q713	iC174020	TR 2SC1740S R, S
Q714	VP872700	TR 2SC4488 S, T
Q715	iX633320	TR 2SA1693 O, P, Y
Q715	iX633330	TR 2SC4466 O, P, Y
Q717	iX633320	TR 2SA1693 O, P, Y
Q717	iX633330	TR 2SC4466 O, P, Y
Q719	VP883100	TR 2SC1890A D, E
Q720	VP883100	TR 2SC1890A D, E
Q721	iE000020	FET 2SK30ATM GR
Q724	VK432900	TR 2SD1915F S, T
Q725	iC174020	TR 2SC1740S R, S
Q726	iC224030	TR 2SC2240 GR, BL
Q727	VV855300	TR 2SD856 Q, P
Q728	iC174020	TR 2SC1740S R, S
R508	HV456560	R. CAR. FP 5.6K Ω 1/4W
R517	HV456100	R. CAR. FP 1K Ω 1/4W
R531	HL315560	R. MIL. OXD 560 Ω 1W
R553	HL316560	R. MIL. OXD 5.6K Ω 1W
R554	HL316560	R. MIL. OXD 5.6K Ω 1W
R555	HV456270	R. CAR. FP 2.7K Ω 1/4W
R557	HV455820	R. CAR. FP 820 Ω 1/4W
R558	VK189000	R. FUS 1K Ω 1/4W
R559	HV454470	R. CAR. FP 47 Ω 1/4W
R560	HL314100	R. MIL. OXD 10 Ω 1W
R561	HL316560	R. MIL. OXD 5.6K Ω 1W
R562	HL316560	R. MIL. OXD 5.6K Ω 1W
R563	HV456270	R. CAR. FP 2.7K Ω 1/4W
R565	HV455820	R. CAR. FP 820 Ω 1/4W
R566	VK189000	R. FUS 1K Ω 1/4W
R567	HV454470	R. CAR. FP 47 Ω 1/4W
R568	HL316560	R. MIL. OXD 5.6K Ω 1W
R569	HL316560	R. MIL. OXD 5.6K Ω 1W
R570	HV456270	R. CAR. FP 2.7K Ω 1/4W
R572	HV455820	R. CAR. FP 820 Ω 1/4W
R573	VK189000	R. FUS 1K Ω 1/4W
R574	HV454470	R. CAR. FP 47 Ω 1/4W
R580	HV453470	R. CAR. FP 4.7 Ω 1/4W
R581	VK188400	R. FUS 330 Ω 1/4W
R583	HV453470	R. CAR. FP 4.7 Ω 1/4W
R584	HV453470	R. CAR. FP 4.7 Ω 1/4W
R585	VK188400	R. FUS 330 Ω 1/4W
R587	HV453470	R. CAR. FP 4.7 Ω 1/4W
R588	HV453470	R. CAR. FP 4.7 Ω 1/4W
R589	VK188400	R. FUS 330 Ω 1/4W
R590	HZ003780	R. MIL. PLAT 0.22 Ω +0.22 5W
R591	HV453470	R. CAR. FP 4.7 Ω 1/4W
R598	HL314100	R. MIL. OXD 10 Ω 1W
R603	HL314100	R. MIL. OXD 10 Ω 1W
R609	HL314100	R. MIL. OXD 10 Ω 1W
R611	HV454100	R. CAR. FP 10 Ω 1/4W
R613	HV454100	R. CAR. FP 10 Ω 1/4W
R614	VP944500	R. MIL. OXD 390 Ω 1W
R615	VP944500	R. MIL. OXD 390 Ω 1W

* New Parts

P.C.B. AMP & OPERATION

Schm Ref.	PART NO.	Description
* R628	VY689500	R. WW 0.22Ω 3W
* R629	VY689500	R. WW 0.22Ω 3W
* R630	VY689500	R. WW 0.22Ω 3W
* R631	VY689500	R. WW 0.22Ω 3W
R728	HV456270	R. CAR. FP 2.7KΩ 1/4W
R729	VK188400	R. FUS 330Ω 1/4W
R731	HV456100	R. CAR. FP 1KΩ 1/4W
R732	VK189000	R. FUS 1KΩ 1/4W
R733	HV454470	R. CAR. FP 47Ω 1/4W
R734	HL314470	R. MIL. OXD 47Ω 1W
R735	HV454470	R. CAR. FP 47Ω 1/4W
R736	VK189000	R. FUS 1KΩ 1/4W
R738	HV456100	R. CAR. FP 1KΩ 1/4W
R739	VK188400	R. FUS 330Ω 1/4W
R740	HV456270	R. CAR. FP 2.7KΩ 1/4W
R744	HV453470	R. CAR. FP 4.7Ω 1/4W
R745	VU981700	R. MIL. PLAT 0.22Ω+0.22 3W
R746	HV453470	R. CAR. FP 4.7Ω 1/4W
R747	HV453470	R. CAR. FP 4.7Ω 1/4W
R748	VU981700	R. MIL. PLAT 0.22Ω+0.22 3W
R749	HV453470	R. CAR. FP 4.7Ω 1/4W
R754	HL314100	R. MIL. OXD 10Ω 1W
R755	HL314100	R. MIL. OXD 10Ω 1W
R759	HV454100	R. CAR. FP 10Ω 1/4W
R760	HV454100	R. CAR. FP 10Ω 1/4W
R763	HV454100	R. CAR. FP 10Ω 1/4W
R764	HV453220	R. CAR. FP 2.2Ω 1/4W
R765	HL315560	R. MIL. OXD 560Ω 1W
R766	HL315560	R. MIL. OXD 560Ω 1W
R800	HL313220	R. MIL. FLM 2.2Ω 1W
RY501	VK438300	RELAY DH24D2-OT/M2
RY701	VK438300	RELAY DH24D2-OT/M2
RY702	VU566700	RELAY DG24D2-OS/M
SW501	VV523900	SW. PUSH PBS-YM-001
SW502	VS602600	SW. SLIDE SS070-P022 A(BG)
SW701	VV523800	SW. SLIDE SL13B-022-BMC1
TE501	VC313700	TERM. SP 8P(UCRA)
TE501	VU819700	TERM. SP 8P(BGL)
TE701	VS578600	TERM. SP 8P
	VJ828000	PIN IMSA-6024-03E
	BB071360	SCR. TERM 8.3x13
	VS606000	HEAT. SINK DPS35-45
	EP630280	SCR. BND. HD 3x10 FCRM3-BL
	VY987200	DAMPER HEATSINK
* VV562900	P.C.B.	OPERATION(UC)
* VV563000	P.C.B.	OPERATION(R)
* VV563100	P.C.B.	OPERATION(AL)
* VV563200	P.C.B.	OPERATION(BG)
CB6	Vi878500	CN. BS. PIN 7P
CB7	VK025100	CN. BS. PIN 7P

* New Parts

Schm Ref.	PART NO.	Description
CB8	Vi878600	CN. BS. PIN 8P
CB9	Vi878400	CN. BS. PIN 6P
CB10	VK025300	CN. BS. PIN 9P
CB251	Vi878900	CN. BS. PIN 11P
CB252	Vi878900	CN. BS. PIN 11P
CB253	VK025100	CN. BS. PIN 7P
CB601	Vi878900	CN. BS. PIN 11P
CB602	Vi878000	CN. BS. PIN 2P
CB603	Vi878000	CN. BS. PIN 2P
* CB604	VU282100	CN 21P
CB901	VK025200	CN. BS. PIN 8P
CB902	VK025300	CN. BS. PIN 9P
C103	VH053100	C. CE. TUBLR 0.1uF 50V
C104	VF466800	C. CE. TUBLR 100pF 50V
C105	VH053100	C. CE. TUBLR 0.1uF 50V
C106	VF466800	C. CE. TUBLR 100pF 50V
C127	VJ839000	C. EL 0.47uF 50V
C128	VJ839000	C. EL 0.47uF 50V
C129	VJ839200	C. EL 2.2uF 50V
C130	VJ839200	C. EL 2.2uF 50V
C131	VJ839200	C. EL 2.2uF 50V
C134	UA652100	C. MYLAR 100pF 50V
C135	UA652100	C. MYLAR 100pF 50V
C138	UM417100	C. EL 10uF 50V
C139	FG211100	C. CE 10pF 50V
C140	VJ837200	C. EL 47uF 16V
C141	VG278400	C. CE. TUBLR 220pF 50V
C142	FG212100	C. CE 100pF 50V
C143	VG278400	C. CE. TUBLR 220pF 50V
C144	UM417100	C. EL 10uF 50V
C145	VJ837200	C. EL 47uF 16V
C147	UM417100	C. EL 10uF 50V
C148	FG211100	C. CE 10pF 50V
C149	VJ837200	C. EL 47uF 16V
C150	VJ837200	C. EL 47uF 16V
C152	FG211100	C. CE 10pF 50V
C153	VJ837200	C. EL 47uF 16V
C154	UM417100	C. EL 10uF 50V
C168	VG722100	C. EL 1uF 50V
C169	VH053100	C. CE. TUBLR 0.1uF 50V
C189	UJ638470	C. EL 470uF 16V
C257	VH053100	C. CE. TUBLR 0.1uF 50V
C258	VG278400	C. CE. TUBLR 220pF 50V
C259	VG278400	C. CE. TUBLR 220pF 50V
C260	VG278400	C. CE. TUBLR 220pF 50V
C261	VG278400	C. CE. TUBLR 220pF 50V
C262	VG278400	C. CE. TUBLR 220pF 50V
C263	VG278400	C. CE. TUBLR 220pF 50V
C264	VJ839200	C. EL 2.2uF 50V
C601	VH053100	C. CE. TUBLR 0.1uF 50V
C602	VU545000	C. EL 47000uF 5.5V
C603	VJ839200	C. EL 2.2uF 50V
C604	VF467300	C. CE. TUBLR 0.01uF 16V

* New Parts

P.C.B. OPERATION

Schm Ref.	PART NO.	Description
C605	VH053100	C. CE. TUBLR 0.1uF 50V
C606	VF637900	C. EL 1000uF 10V
C607	VF637900	C. EL 1000uF 10V
C608	VJ839100	C. EL 1uF 50V
C609	VH053100	C. CE. TUBLR 0.1uF 50V
C610	VH053100	C. CE. TUBLR 0.1uF 50V
C611	VF467300	C. CE. TUBLR 0.01uF 16V(R)
C612	VF467300	C. CE. TUBLR 0.01uF 16V
C613	VH053100	C. CE. TUBLR 0.1uF 50V
C614	VF467300	C. CE. TUBLR 0.01uF 16V(UCR)
C615	VF466700	C. CE. TUBLR 47pF 50V
C616	VH053100	C. CE. TUBLR 0.1uF 50V
C617	VF466900	C. CE. TUBLR 470pF 50V
C618	VH053100	C. CE. TUBLR 0.1uF 50V
C619	VF466800	C. CE. TUBLR 100pF 50V(ABGL)
C620	VF466800	C. CE. TUBLR 100pF 50V(ABGL)
C621	VF466800	C. CE. TUBLR 100pF 50V(ABGL)
C622	VF466800	C. CE. TUBLR 100pF 50V(ABGL)
C623	VF466800	C. CE. TUBLR 100pF 50V(ABGL)
C630	VF467300	C. CE. TUBLR 0.01uF 16V
C631	VF467300	C. CE. TUBLR 0.01uF 16V
C901	VJ839100	C. EL 1uF 50V
C902	UM215100	C. EL 0.1uF 50V
C903	VJ839000	C. EL 0.47uF 50V
C904	VG287800	C. EL 330uF 16V
C905	VG287800	C. EL 330uF 16V
C906	UM215100	C. EL 0.1uF 50V
C907	VJ839000	C. EL 0.47uF 50V
C908	VJ839100	C. EL 1uF 50V
C909	UM407220	C. EL 22uF 16V
C910	FG211470	C. CE 47pF 50V
C911	VJ839200	C. EL 2.2uF 50V
C912	VJ839200	C. EL 2.2uF 50V
C913	FG211470	C. CE 47pF 50V
C914	UM407220	C. EL 22uF 16V
C915	UA655120	C. MYLAR 0.12uF 50V
C916	UA654330	C. MYLAR 0.033uF 50V
C917	UA654330	C. MYLAR 0.033uF 50V
C918	UA655120	C. MYLAR 0.12uF 50V
D14	VM974200	DIODE. ZENR HZS5C2TD 5.0V
D601	VD631600	DIODE 1SS133, 176, HSS104
D602	VD631600	DIODE 1SS133, 176, HSS104
D603	VM974100	DIODE. ZENR HZS5B2TD 5.0V
D604	VM974700	DIODE. ZENR HZS7B2TD 7.0V
* D605	VV625100	LED(re) SIM-22ST(UC)
D606	VS132300	LED(re) SLR325VCT31(RABGL)
D607	VD631600	DIODE 1SS133, 176, HSS104
D608	VM974100	DIODE. ZENR HZS5B2TD 5.0V
D609	VD631600	DIODE 1SS133, 176, HSS104
D610	VD631600	DIODE 1SS133, 176, HSS104
D611	VD631600	DIODE 1SS133, 176, HSS104
G601	VR463400	TERM. GND D3.5 TP00385
IC22	XB247301	IC uPC4570HA

* New Parts

Schm Ref.	PART NO.	Description
IC23	XB247301	IC uPC4570HA
IC26	XR040A00	IC TC9299P
IC27	XR040A00	IC TC9299P
IC28	XF494A00	IC LB1641
IC251	XP896A00	IC LC78213
IC601	XS887B00	IC HD6433724(UCRAL)
IC601	XS888A00	IC HD6433726XXX(BG)
* IC602	XR289A00	IC HD74HC4051P
IC901	XB247301	IC uPC4570HA
JK1	VU245200	CN. DIN 1P
PJ5	VV325100	JACK. PIN 3P
PJ251	VV577800	JACK. PIN 6P
Q601	VG722000	TR. DGT DTC144ES
Q602	IA093320	TR 2SA933S Q, R"
Q603	IA093320	TR 2SA933S Q, R"
Q901	VK432900	TR 2SD1915F S, T(BG)
Q902	VK432900	TR 2SD1915F S, T(BG)
Q903	VK432900	TR 2SD1915F S, T(BG)
Q904	VK432900	TR 2SD1915F S, T(BG)
R217	HV453470	R. CAR. FP 4.7Ω 1/4W
R218	HV453470	R. CAR. FP 4.7Ω 1/4W
R219	HV454100	R. CAR. FP 10Ω 1/4W
R221	HV454100	R. CAR. FP 10Ω 1/4W
R931	HL315100	R. MTL. OXD 100Ω 1W
R932	HL315100	R. MTL. OXD 100Ω 1W
SW251	VS602600	SW. SLIDE SS070-P022 A
SW252	VS602600	SW. SLIDE SS070-P022 A(R)
SW601	VG392900	SW. TACT SKHVAA (BG)
SW602	VG392900	SW. TACT SKHVAA (BG)
SW603	VG392900	SW. TACT SKHVAA (BG)
SW604	VG392900	SW. TACT SKHVAA (BG)
SW605	VG392900	SW. TACT SKHVAA
SW606	VG392900	SW. TACT SKHVAA
SW607	VG392900	SW. TACT SKHVAA
SW608	VG392900	SW. TACT SKHVAA
SW609	VG392900	SW. TACT SKHVAA
SW610	VG392900	SW. TACT SKHVAA
SW611	VG392900	SW. TACT SKHVAA
SW612	VG392900	SW. TACT SKHVAA
SW613	VG392900	SW. TACT SKHVAA
SW614	VG392900	SW. TACT SKHVAA
SW615	VG392900	SW. TACT SKHVAA
SW616	VG392900	SW. TACT SKHVAA
SW617	VG392900	SW. TACT SKHVAA
SW618	VG392900	SW. TACT SKHVAA
SW619	VG392900	SW. TACT SKHVAA
SW620	VG392900	SW. TACT SKHVAA
SW621	VG392900	SW. TACT SKHVAA
SW622	VG392900	SW. TACT SKHVAA
SW623	VG392900	SW. TACT SKHVAA
SW624	VG392900	SW. TACT SKHVAA
SW625	VG392900	SW. TACT SKHVAA
SW626	VG392900	SW. TACT SKHVAA

* New Parts

P.C.B. OPERATION & INPUT

Schm Ref.	PART NO.	Description
SW627	VG392900	SW. TACT SKHVAA
SW628	VG392900	SW. TACT SKHVAA
SW629	VG392900	SW. TACT SKHVAA
SW630	VG392900	SW. TACT SKHVAA
SW631	VG392900	SW. TACT SKHVAA
SW632	VG392900	SW. TACT SKHVAA
SW633	VG392900	SW. TACT SKHVAA
SW634	VG392900	SW. TACT SKHVAA
SW635	VG392900	SW. TACT SKHVAA
SW636	VG392900	SW. TACT SKHVAA
SW637	VG392900	SW. TACT SKHVAA
SW638	VG392900	SW. TACT SKHVAA
SW639	VG392900	SW. TACT SKHVAA
SW640	VG392900	SW. TACT SKHVAA
SW641	VG392900	SW. TACT SKHVAA
SW642	VG392900	SW. TACT SKHVAA
SW643	VG392900	SW. TACT SKHVAA
SW644	VG392900	SW. TACT SKHVAA
* SW901	VV885000	SW. PUSH SPUN22 2
U601	VU591000	L. DTCT GP1U271X
* V601	VV416700	FL. DSPLY 16-BT-46GK
VR1	VV412800	VR A100K Ω
VR901	VP741800	VR B20K Ω
VR902	VP741900	VR G25K Ω
VR903	VP742000	VR MN100K Ω
XL601	VE222400	RSNR. CE 8MHz
	VJ828000	PIN IMSA-6024-03E
	BB071360	SCR. TERM 8.3x13
	VS588900	SHEET
	VV499900	SPACER FL-T7.5
	VY760000	SPACER (UC)
* * * * *	VV562300	P. C. B. INPUT (UC)
* * * * *	VV562400	P. C. B. INPUT (R)
* * * * *	VV562500	P. C. B. INPUT (A)
* * * * *	VV562600	P. C. B. INPUT (B)
* * * * *	VV562700	P. C. B. INPUT (GL)
CB1	VK025100	CN. BS. PIN 7P
CB2	Vi878500	CN. BS. PIN 7P
CB3	Vi879100	CN. BS. PIN 13P
* CB4	VU272100	CN 21P
CB5	VQ963600	CN. BS. PIN 15P
CB11	VD004500	CN. BS. PIN 2P
CB12	Vi878700	CN. BS. PIN 9P
CB13	Vi879100	CN. BS. PIN 13P
CB15	Vi878500	CN. BS. PIN 7P
CB16	Vi878100	CN. BS. PIN 3P (UC)
CB17	Vi878100	CN. BS. PIN 3P (UC)
CB705	Vi878400	CN. BS. PIN 6P
CB706	VK024700	CN. BS. PIN 3P
CB712	VP206500	HOLDER. FUS EYF-52BC (UCR)

* New Parts

Schm Ref.	PART NO.	Description
CB713	VP206500	HOLDER. FUS EYF-52BC (UCR9
CB714	VP206500	HOLDER. FUS EYF-52BC (GL)
CB715	VP206500	HOLDER. FUS EYF-52BC (GL)
CB716	VP206500	HOLDER. FUS EYF-52BC (ABGL)
CB717	VG879900	CN. BS. PIN 2P
CB718	VP206500	HOLDER. FUS EYF-52BC (ABGL)
CB719	VP206500	HOLDER. FUS EYF-52BC (R)
CB720	VP206500	HOLDER. FUS EYF-52BC (R9
C1	VJ839200	C. EL 2.2uF 50V
C2	UA654390	C. MYLAR 0.039uF 50V
C3	UA654110	C. MYLAR 0.011uF 50V
C4	VJ839100	C. EL 1uF 50V
C5	UA653270	C. MYLAR 2700pF 50V
C6	UA652220	C. MYLAR 220pF 50V
C7	VC815000	C. EL 220uF 6.3V
C8	VC815000	C. EL 220uF 6.3V
C9	VF964800	C. EL 100uF 16V
C10	VF964800	C. EL 100uF 16V
C11	UA652220	C. MYLAR 220pF 50V
C12	UA653270	C. MYLAR 2700pF 50V
C13	VJ839100	C. EL 1uF 50V
C14	UA654390	C. MYLAR 0.039uF 50V
C15	UA654110	C. MYLAR 0.011uF 50V
C16	VJ839200	C. EL 2.2uF 50V
C17	VK533900	C. PP 100pF 200V
C18	VK533900	C. PP 100pF 200V
C19	VF466800	C. CE. TUBLR 100pF 50V
C20	VF466800	C. CE. TUBLR 100pF 50V
C21	FG211470	C. CE 47pF 50V
C22	FG211470	C. CE 47pF 50V
C23	VK533900	C. PP 100pF 200V
C24	VK533900	C. PP 100pF 200V
C25	VF466800	C. CE. TUBLR 100pF 50V
C26	VF466800	C. CE. TUBLR 100pF 50V
C27	VF904800	C. EL 2200uF 16V
C29	VF466800	C. CE. TUBLR 100pF 50V
C30	VF466800	C. CE. TUBLR 100pF 50V
C33	FG211470	C. CE 47pF 50V
C34	FG211470	C. CE 47pF 50V
C37	UM417100	C. EL 10uF 50V
C38	UM417100	C. EL 10uF 50V
C39	VJ839100	C. EL 1uF 50V
C40	VJ839100	C. EL 1uF 50V
C41	VJ839100	C. EL 1uF 50V
C42	UA652100	C. MYLAR 100pF 50V
C43	UA652100	C. MYLAR 100pF 50V
C44	VJ839100	C. EL 1uF 50V
C45	VJ839100	C. EL 1uF 50V
C46	UA652100	C. MYLAR 100pF 50V
C47	UA652100	C. MYLAR 100pF 50V
C48	UA652100	C. MYLAR 100pF 50V
C49	UA652100	C. MYLAR 100pF 50V
C50	VJ839100	C. EL 1uF 50V

* New Parts

P.C.B. INPUT

Schm Ref.	PART NO.	Description
C51	VG279600	C. CE. TUBLR 3300pF 16V
C52	VH053100	C. CE. TUBLR 0.1uF 50V
C53	VG278400	C. CE. TUBLR 220pF 50V
C54	VG279500	C. CE. TUBLR 2700pF 16V
C55	VG277000	C. CE. TUBLR 33pF 50V
C56	VJ837200	C. EL 47uF 16V
C57	VF466600	C. CE. TUBLR 10pF 50V
C58	VF466600	C. CE. TUBLR 10pF 50V
C59	VG278400	C. CE. TUBLR 220pF 50V
C60	VG279500	C. CE. TUBLR 2700pF 16V
C61	VG277000	C. CE. TUBLR 33pF 50V
C62	VJ837200	C. EL 47uF 16V
C63	VH053100	C. CE. TUBLR 0.1uF 50V
C64	VG279600	C. CE. TUBLR 3300pF 16V
C65	UA653120	C. MYLAR 1200pF 50V
C66	UA652100	C. MYLAR 100pF 50V
C67	UA652100	C. MYLAR 100pF 50V
C68	UA653120	C. MYLAR 1200pF 50V
C69	UA652100	C. MYLAR 100pF 50V
C70	UA655150	C. MYLAR 0.15uF 50V
C71	UM417100	C. EL 10uF 50V
C72	UM417100	C. EL 10uF 50V
C73	UM407220	C. EL 22uF 16V
C74	UM417100	C. EL 10uF 50V
C75	UA652330	C. MYLAR 330pF 50V
C76	UM407220	C. EL 22uF 16V
C77	UA652330	C. MYLAR 330pF 50V
C78	UA652330	C. MYLAR 330pF 50V
C79	UM407220	C. EL 22uF 16V
C80	VG279600	C. CE. TUBLR 3300pF 16V
C81	VG278400	C. CE. TUBLR 220pF 50V
C82	VG279500	C. CE. TUBLR 2700pF 16V
C83	VJ837200	C. EL 47uF 16V
C84	VG278400	C. CE. TUBLR 220pF 50V
C85	VG279500	C. CE. TUBLR 2700pF 16V
C86	VJ837200	C. EL 47uF 16V
C87	VG279600	C. CE. TUBLR 3300pF 16V
C88	UA653330	C. MYLAR 3300pF 50V
C89	UA653270	C. MYLAR 2700pF 50V
C90	UM407220	C. EL 22uF 16V
C91	UA653100	C. MYLAR 1000pF 50V
C92	VG278200	C. CE. TUBLR 150pF 50V
C93	VG278200	C. CE. TUBLR 150pF 50V
C94	VG278200	C. CE. TUBLR 150pF 50V
C95	VG278200	C. CE. TUBLR 150pF 50V
C96	UA653100	C. MYLAR 1000pF 50V
C97	UM407220	C. EL 22uF 16V
C98	UA653330	C. MYLAR 3300pF 50V
C99	UA653270	C. MYLAR 2700pF 50V
C100	UM407220	C. EL 22uF 16V
C101	UM407220	C. EL 22uF 16V
C102	VG279600	C. CE. TUBLR 3300pF 16V
C107	UM407220	C. EL 22uF 16V

* New Parts

Schm Ref.	PART NO.	Description
C108	UM407220	C. EL 22uF 16V
C109	VJ839100	C. EL 1uF 50V
C110	VG277000	C. CE. TUBLR 33pF 50V
C111	UA652100	C. MYLAR 100pF 50V (ABGL)
C112	VJ837200	C. EL 47uF 16V
C113	VG277000	C. CE. TUBLR 33pF 50V
C114	VJ839100	C. EL 1uF 50V
C115	VG287800	C. EL 330uF 16V
C116	VG287800	C. EL 330uF 16V
C117	VG279600	C. CE. TUBLR 3300pF 16V
C118	VH053100	C. CE. TUBLR 0.1uF 50V
C119	VD930900	C. CE. SMI 0.1uF 25V
C120	VJ837200	C. EL 47uF 16V
C121	VJ837200	C. EL 47uF 16V
C122	VD930900	C. CE. SMI 0.1uF 25V
C123	VE117600	C. EL 220uF 10V
C124	VH053100	C. CE. TUBLR 0.1uF 50V
C125	VJ837200	C. EL 47uF 16V
C126	UA652100	C. MYLAR 100pF 50V (ABGL)
C132	VJ839200	C. EL 2.2uF 50V
C133	UM417100	C. EL 10uF 50V
C136	VH053100	C. CE. TUBLR 0.1uF 50V
C137	VJ837200	C. EL 47uF 16V
C141	UM417100	C. EL 10uF 50V
C142	VH053100	C. CE. TUBLR 0.1uF 50V
C143	UM407220	C. EL 22uF 16V
C146	VD930900	C. CE. SMI 0.1uF 25V
C151	UJ638330	C. EL 330uF 16V
C155	VJ837200	C. EL 47uF 16V
C156	VF466800	C. CE. TUBLR 100pF 50V
C157	VH053100	C. CE. TUBLR 0.1uF 50V
C158	VF466800	C. CE. TUBLR 100pF 50V
C159	VF466800	C. CE. TUBLR 100pF 50V
C160	VF466800	C. CE. TUBLR 100pF 50V
C161	VF466800	C. CE. TUBLR 100pF 50V
C163	UM397330	C. EL 33uF 16V
C164	VG279600	C. CE. TUBLR 3300pF 16V
C165	VF466800	C. CE. TUBLR 100pF 50V
C166	VJ836900	C. EL 10uF 16V
C167	VJ836900	C. EL 10uF 16V
C170	UM397330	C. EL 33uF 16V
C171	VG276600	C. CE. TUBLR 22pF 50V
C172	VF637900	C. EL 1000uF 10V
C173	VF466800	C. CE. TUBLR 100pF 50V
C174	VF637900	C. EL 1000uF 10V
C175	VG276600	C. CE. TUBLR 22pF 50V
C176	VJ836900	C. EL 10uF 16V
C177	VJ836900	C. EL 10uF 16V
C178	VJ836900	C. EL 10uF 16V
C179	VF637900	C. EL 1000uF 10V
C180	VH053100	C. CE. TUBLR 0.1uF 50V
C181	UM397330	C. EL 33uF 16V
C182	VF637900	C. EL 1000uF 10V

* New Parts

P.C.B. INPUT

Schm Ref.	PART NO.	Description
C183	VJ836900	C. EL 10uF 16V
C184	VJ836900	C. EL 10uF 16V
C185	VJ836900	C. EL 10uF 16V
C186	VJ836900	C. EL 10uF 16V
C187	VJ836900	C. EL 10uF 16V
C188	UM407220	C. EL 22uF 16V
C190	VJ836900	C. EL 10uF 16V
C191	VJ836900	C. EL 10uF 16V
C192	VJ836900	C. EL 10uF 16V
C193	VJ837200	C. EL 47uF 16V
C194	VF466900	C. CE. TUBLR 470pF 50V
C195	UM416470	C. EL 4.7uF 50V
C196	VF760000	C. EL 100uF 10V
C197	VH053100	C. CE. TUBLR 0.1uF 50V
C198	VJ839100	C. EL 1uF 50V
C199	VH053100	C. CE. TUBLR 0.1uF 50V
C200	VJ837200	C. EL 47uF 16V
C201	VG273100	C. CE. TUBLR 6.8pF 50V
C202	VG273100	C. CE. TUBLR 6.8pF 50V
C203	VG276700	C. CE. TUBLR 24pF 50V
C204	VG276700	C. CE. TUBLR 24pF 50V
C205	VG279100	C. CE. TUBLR 1200pF 16V
C206	VF466900	C. CE. TUBLR 470pF 50V
C207	VJ839100	C. EL 1uF 50V
C208	VH053100	C. CE. TUBLR 0.1uF 50V
C209	VJ837200	C. EL 47uF 16V
C210	VJ836900	C. EL 10uF 16V
C211	VH053100	C. CE. TUBLR 0.1uF 50V
C212	VH053100	C. CE. TUBLR 0.1uF 50V
C729	UR769330	C. EL 3300uF 50V
C730	UR769330	C. EL 3300uF 50V
C731	VH053100	C. CE. TUBLR 0.1uF 50V
C732	UJ648470	C. EL 470uF 25V
C742	VS745400	C. POL. MTL 0.1uF 100V
C743	VS745400	C. POL. MTL 0.1uF 100V
C744	UA655100	C. MYLAR 0.1uF 50V(ABGL)
C745	FG213100	C. CE 1000pF 50V(R)
C746	Ui377470	C. EL 47uF 63V(R)
C747	Vi716700	C. MYLAR 0.01uF 50V
C751	UA654100	C. MYLAR 0.01uF 50V
C752	VS741700	C. CE. SAFETY 0.01uF 275V
C760	UJ649220	C. EL 2200uF 25V
C761	VF606700	C. EL 1000uF 25V
C762	VS745400	C. POL. MTL 0.1uF 100V
D1	VD631600	DIODE 1SS133, 176, HSS104
D2	VD631600	DIODE 1SS133, 176, HSS104
D3	VD631600	DIODE 1SS133, 176, HSS104
D4	VR711500	LED(or) SLR-325DC
D5	VD631600	DIODE 1SS133, 176, HSS104
D6	VM974400	DIODE. ZENR HZS6B2TD 6.0V
D7	VD631600	DIODE 1SS133, 176, HSS104
D8	VD631600	DIODE 1SS133, 176, HSS104
D9	VD631600	DIODE 1SS133, 176, HSS104

* New Parts

Schm Ref.	PART NO.	Description
D10	VD631600	DIODE 1SS133, 176, HSS104
D11	VD631600	DIODE 1SS133, 176, HSS104
D12	VD631600	DIODE 1SS133, 176, HSS104
D13	VD631600	DIODE 1SS133, 176, HSS104
D15	VD631600	DIODE 1SS133, 176, HSS104
D50	VD631600	DIODE 1SS133, 176, HSS104
△ D702	VR253700	DIODE. BRG SINB20 1.0A 200V
△ D705	iH001090	DIODE. BRG S4VB20 2.6A 200V
D706	VD631600	DIODE 1SS133, 176, HSS104
△ D707	VR253700	DIODE. BRG SINB20 1.0A 200V
D708	VM975600	DIODE. ZENR HZS12B2TD 12V(R)
△ F702	VS823300	FUSE T8.0A 125V(UCR)
△ F703	KB002980	FUSE T2.5A 250V(GL)
△ F704	KB003100	FUSE T4.0A 250V(ABGL)
△ F705	KB000790	FUSE T4.0A 250V(R)
IC1	XB247301	IC uPC4570HA
IC2	XP894A00	IC LC78211
IC3	XP896A00	IC LC78213
IC4	XB247301	IC uPC4570HA
IC5	XB247301	IC uPC4570HA
IC6	XB247301	IC uPC4570HA
IC7	XL816A00	IC YSS223-K
IC8	XS881A00	IC LH5P832D-10 PSRAM
IC9	XA507A00	IC AN78N05
IC10	XB247301	IC uPC4570HA
IC11	XB247301	IC uPC4570HA
IC12	XB247301	IC uPC4570HA
IC13	XB247301	IC uPC4570HA
IC14	XB247301	IC uPC4570HA
IC15	XQ212A00	IC NJM4558LD
IC16	XB247301	IC uPC4570HA
IC17	XQ212A00	IC NJM4558LD
IC18	XB247301	IC uPC4570HA
IC20	XP265A00	IC BU2090
IC21	XH436A00	IC LA7956
IC24	XH436A00	IC LA7956
IC25	XH436A00	IC LA7956
IC29	iG037400	IC uPD4066BC
* IC30	XS502A00	IC LC74781-9626
IC31	iG055100	IC TC4053BP
JK2	VN938100	CN. DIN 3P S
JK3	VJ726800	JACK. MNI (UC)
JK4	VJ726800	JACK. MNI (UC)
* L1	VG668700	COIL 33uH
PJ1	VK421600	JACK. PIN 4P
PJ2	VV306900	JACK. PIN 4P
PJ3	VV306900	JACK. PIN 4P
PJ4	VV306900	JACK. PIN 4P
PJ6	VV852500	JACK. PIN 3P
PJ7	VV325000	JACK. PIN 2P
Q1	iC287820	TR 2SC2878 A, B
Q2	iA101521	TR 2SA1015 Y
Q3	iA101521	TR 2SA1015 Y

* New Parts

P.C.B. INPUT & BUFFER

Schm Ref.	PART NO.	Description
Q4	iC174020	TR 2SC1740S R, S
Q5	iC1815C0	TR 2SC1815 Y
Q6	iC1815C0	TR 2SC1815 Y
Q7	iC174020	TR 2SC1740S R, S
Q8	VG722000	TR. DGT DTC144ES
Q9	iA101521	TR 2SA1015 Y
Q10	iC1815C0	TR 2SC1815 Y
Q11	iA101521	TR 2SA1015 Y
Q12	iC053540	TR 2SC535 A, B, C
Q13	iC224030	TR 2SC2240 GR, BL
Q14	VG722000	TR. DGT DTC144ES
Q15	iA093320	TR 2SA933S Q, R
Q16	VH257100	TR. DGT DTA124ES
Q17	VH257100	TR. DGT DTA124ES
Q723	iC174020	TR 2SC1740S R, S
Q725	VR510800	TR 2SD2396 J, K(R)
R24	HV453220	R. CAR. FP 2.2Ω 1/4W
R31	HV455100	R. CAR. FP 100Ω 1/4W
R46	HV455100	R. CAR. FP 100Ω 1/4W
R130	HL314470	R. MIL. OXD 47Ω 1W
R136	HV453680	R. CAR. FP 6.8Ω 1/4W
R137	HV453220	R. CAR. FP 2.2Ω 1/4W
* R175	VY716000	R. MIL. OXD 270Ω 1W
* R223	VY716000	R. MIL. OXD 270Ω 1W
R237	HV453220	R. CAR. FP 2.2Ω 1/4W
R240	HV453220	R. CAR. FP 2.2Ω 1/4W
* R244	VY716000	R. MIL. OXD 270Ω 1W
R784	HV456560	R. CAR. FP 5.6KΩ 1/4W(R)
R785	HV456560	R. CAR. FP 5.6KΩ 1/4W(R)
RY703	VU349800	RELAY DC SDT-SS(UCABGL)
* RY703	VY735300	RELAY DC G5P-1(R)
△ SW702	VA961800	VOLT. SELECT ESE-37247-F(R)
△ T701	XQ485B00	TRANS. PWR (UC)
△ T701	XQ486B00	TRANS. PWR (ABGL)
△ T701	XT331A00	TRANS. PWR (R)
△ TE703	VT915000	OUTLET. AC 2P(A)
△ TE703	VU543100	OUTLET. AC 2P(UCR)
△ TE703	VU543300	OUTLET. AC 1P(B)
△ TE703	VU543400	OUTLET. AC 2P(GL)
XL1	VK175200	RSNR. CE 11.28MHz
* XL2	VV949800	RSNR. CRYST 14.31818MHz(UCR)
* XL2	VV949900	RSNR. CRYST 17.734475MHz(ABGL)
	VJ828000	PIN IMSA-6024-03E
	VR506800	HEAT. SINK PUH16-25(R)
	BB071360	SCR. TERM 8.3x13(UC)
	VR264300	PLATE. GND
	ED330066	SCR. BND. HD 3x6 FCRM3-BL(R)

* New Parts

Schm Ref.	PART NO.	Description
	(N. S. P.)	P. C. B. BUFFER (UCRAL)
CB1	VK027000	CN 11P
CB2	VK027000	CN 11P
CB3	VB858100	CN. BS. PIN 2P
C1	VJ839200	C. EL 2.2uF 50V
C2	VJ839200	C. EL 2.2uF 50V
C3	VJ839200	C. EL 2.2uF 50V
C4	VJ839200	C. EL 2.2uF 50V
C5	VJ839200	C. EL 2.2uF 50V
C6	VJ839200	C. EL 2.2uF 50V
C7	UM417100	C. EL 10uF 50V
C8	UM417100	C. EL 10uF 50V
C9	UM417100	C. EL 10uF 50V
C10	UM417100	C. EL 10uF 50V
C11	UM417100	C. EL 10uF 50V
C12	UM417100	C. EL 10uF 50V
C13	UM417100	C. EL 10uF 50V
C14	UM417100	C. EL 10uF 50V
IC1	XB247301	IC uPC4570HA
IC2	XB247301	IC uPC4570HA
IC3	XB247301	IC uPC4570HA
	BB071360	SCR. TERM 8.3x13

* New Parts

A

B

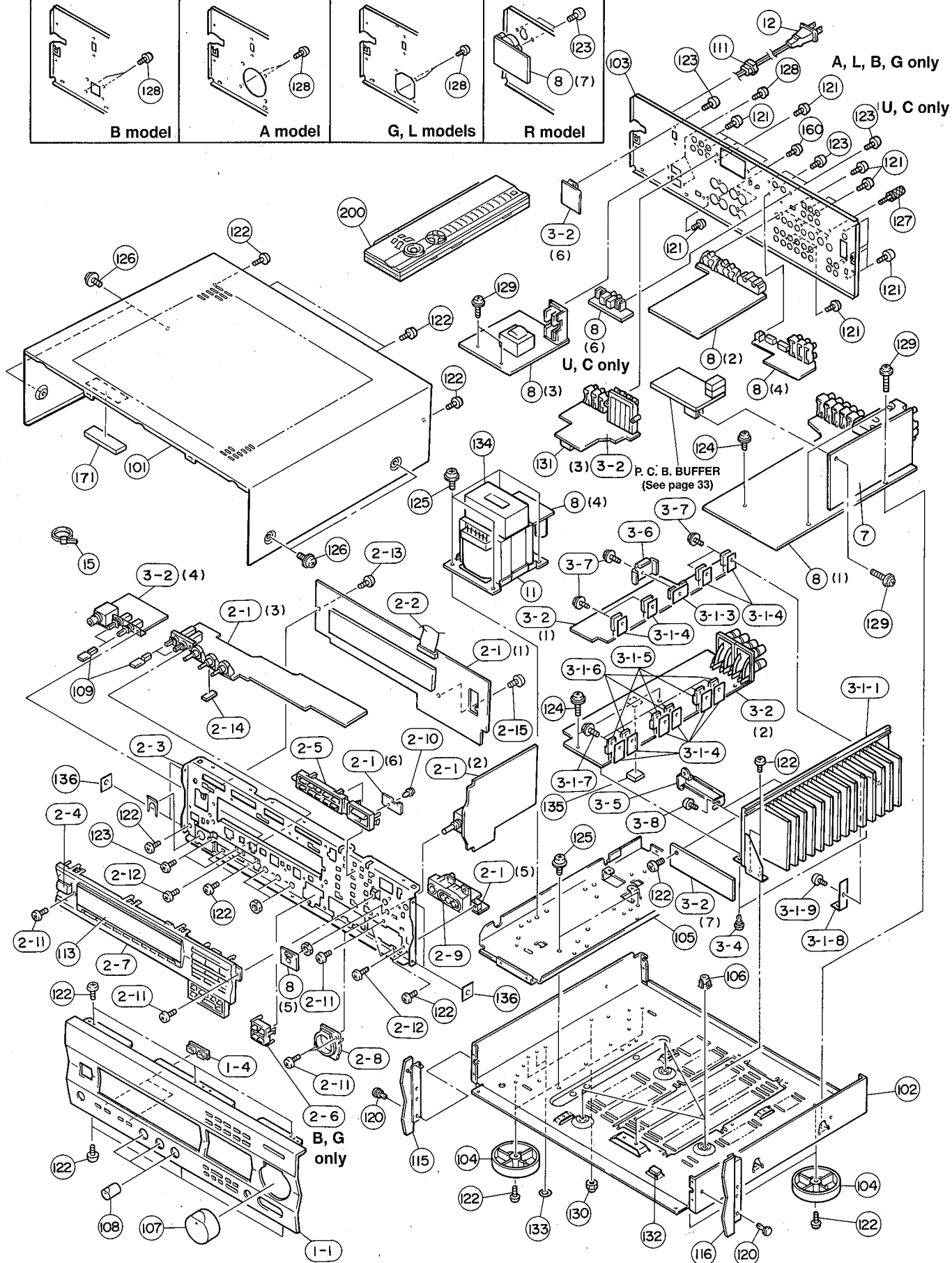
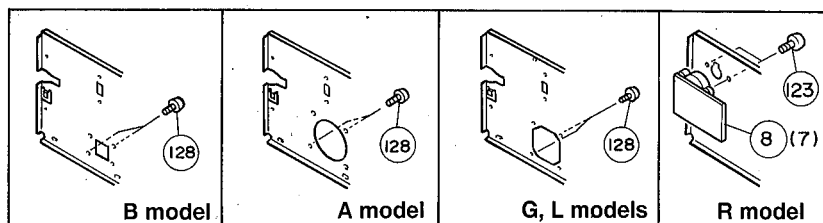
C

D

E

RX-V692/RX-V692RDS

EXPLODED VIEW



■ MECHANICAL PARTS

Ref. No.	PART NO.	Description	Remarks	Markets
* 1- 1	VV141200	FRONT PANEL	RX-V692 BL	(UCRAL)
* 1- 1	VV141300	FRONT PANEL	RX-V692RDS BL	(BG)
* 1- 1	VV141400	FRONT PANEL	RX-V692RDS TI	
1- 4	VV123700	ESCUTCHEON, 3/8	2P	
1- 4	VV123800	ESCUTCHEON, 3/8	2P	
* 2- 1	VV562900	P.C.B. ASS'Y	OPERATION	(UC)
* 2- 1	VV563000	P.C.B. ASS'Y	OPERATION	(R)
* 2- 1	VV563100	P.C.B. ASS'Y	OPERATION	(AL)
* 2- 1	VV563200	P.C.B. ASS'Y	OPERATION	(BG)
* 2- 2	MF121300	FLEXIBLE FLAT CABLE C&C	21P 300mm	
2- 3	VV140700	SUB CHASSIS	130	
2- 4	VV136300	BUTTON, CASE	BL	
2- 4	VV136400	BUTTON, CASE	TI	
* 2- 5	VV137500	BUTTON, DSP	BL	
* 2- 5	VV137600	BUTTON, DSP	TI	
2- 6	VV137900	BUTTON, RDS	BL	(BG)
2- 6	VV138000	BUTTON, RDS	TI	
2- 7	VV309200	SUB PANEL CASE	9	
2- 7	VV309300	SUB PANEL CASE	9	
2- 8	VV149500	ESCUTCHEON, VOL	BL	
2- 8	VV149600	ESCUTCHEON, VOL	TI	
2- 9	VV149800	ESCUTCHEON, PJ	BL	
2- 9	VV149900	ESCUTCHEON, PJ	TI	
2-10	VQ368500	PUSH RIVET	P3545-B	
2-11	Ei330086	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
2-12	ED330066	BIND HEAD SCREW	3x6 FCRM3-BL	
2-13	VT669300	PW HEAD B-TITE SCREW	3x8-8 MFC2	
2-14	VS699700	DAMPER	SIDE	
2-15	EP630220	BIND HEAD P-TITE SCREW	3x8 ZMC2-BL	
3-1-1	VV143000	HEAT SINK ASS'Y		
3-1-3	VV901800	RADIATION SHEET		
3-1-4	VV849300	RADIATION SHEET	BFG-20ADH-3 19x24	
# 3-1-5	iX636490	TRANSISTOR	2SA1962 R, O	Q523A, 527A, 531A
# 3-1-6	iX636500	TRANSISTOR	2SC5242 R, O	Q523C, 527C, 531C
3-1-7	VK173200	SCREW, TRANSISTOR	3x15 SP FCM3	
3-1-8	VV518700	SUPPORT, HEAT SINK	L	
3-1-9	Ei330086	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
* 3-2	VV563300	P.C.B. ASS'Y	AMP	(UC)
* 3-2	VV563400	P.C.B. ASS'Y	AMP	(R)
* 3-2	VV563500	P.C.B. ASS'Y	AMP	(A)
* 3-2	VV563600	P.C.B. ASS'Y	AMP	(BG)
* 3-2	VV899500	P.C.B. ASS'Y	AMP	(L)
3-4	VQ368500	PUSH RIVET	P3545-B	
3-5	VV491300	SUPPORT, PCB		
3-6	VV901900	SUPPORT, TR		
3-7	VK173200	SCREW, TRANSISTOR	3x15 SP FCM3	
7	VV610200	P.C.B. ASS'Y	TUNER	(UC)
7	VV610300	P.C.B. ASS'Y	TUNER	(R)
7	VV610400	P.C.B. ASS'Y	TUNER	(AL)
7	VV610500	P.C.B. ASS'Y	TUNER	(BG)
* 8	VV562300	P.C.B. ASS'Y	INPUT	(UC)
* 8	VV562400	P.C.B. ASS'Y	INPUT	(R)
* 8	VV562500	P.C.B. ASS'Y	INPUT	(A)

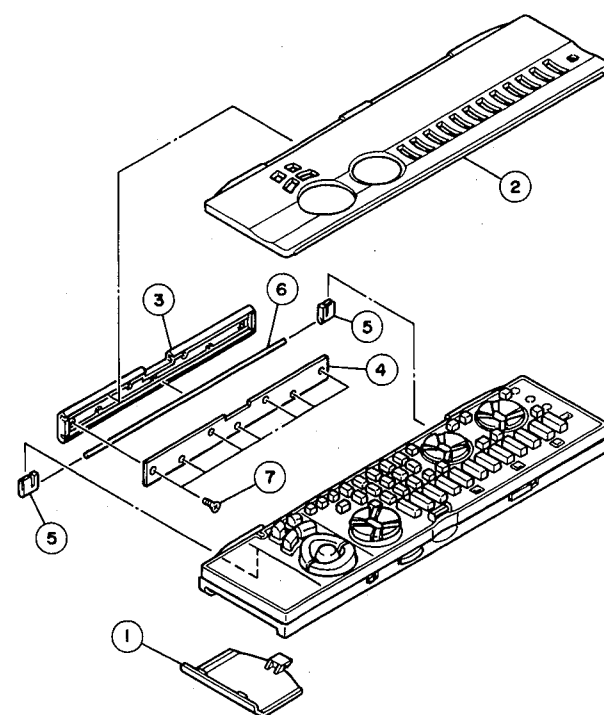
* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
* 8	VV562600	P.C.B. ASS'Y	INPUT	(B)
* 8	VV562700	P.C.B. ASS'Y	INPUT	(GL)
* 11	XS852A00	POWER TRANSFORMER		(U)
* 11	XS853A00	POWER TRANSFORMER		(C)
* 11	XS854A00	POWER TRANSFORMER		(R)
* 11	XS855A00	POWER TRANSFORMER		(A)
* 11	XS856A00	POWER TRANSFORMER		(BGL)
12	VL238100	POWER CORD ASS'Y		(R)
12	VN363700	POWER CORD ASS'Y		(G)
12	VQ508600	POWER CORD ASS'Y		(A)
12	VV437200	POWER CORD ASS'Y		(UC)
12	VV437300	POWER CORD ASS'Y		(B)
15	VU590000	BINDING TIE	CBTD001B	
101	VV121300	TOP COVER		BL
101	VV121500	TOP COVER		TI
102	VS001400	CHASSIS		
* 103	VV143300	REAR PANEL		(U)
* 103	VV143400	REAR PANEL		(C)
* 103	VV143600	REAR PANEL		(R)
* 103	VV143700	REAR PANEL		(A)
* 103	VV143800	REAR PANEL		(L)
* 103	VV143900	REAR PANEL		(B)
* 103	VV144000	REAR PANEL		(G)
104	VS025000	LEG	D60xH21	
105	VV123100	FRAME, TRANS		
106	VR264400	SPACER	H8	
* 107	VV150100	KNOB, LED	D40	BL
107	VV268600	KNOB, LED	D40	BL
107	VV268700	KNOB, LED	D40	TI
108	VV123300	KNOB	D14	BL
108	VV123400	KNOB	D14	TI
109	VV123500	BUTTON, 3/8		BL
109	VV123600	BUTTON, 3/8		TI
111	VN158600	CORD STOPPER	No. 2104	
* 113	VV259400	SHEET, WINDOW		(UC)
* 113	VV259600	SHEET, WINDOW		(R)
115	VV124300	PLATE SIDE L	130	BL
115	VV124400	PLATE SIDE L	130	TI
116	VV124500	PLATE SIDE R	130	BL
116	VV124600	PLATE SIDE R	130	TI
120	VQ368600	PUSH RIVET	P3555-B	
121	VN413300	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2-BL	
122	Ei330086	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
123	ED330066	BIND HEAD SCREW	3x6 FCRM3-BL	
124	VT669400	PW HEAD B-TITE SCREW	3x15-8 MFC2	
125	EK365090	PW HEAD S-TITE SCREW	4x8-10 FCRM3-BL	
126	EK365090	PW HEAD S-TITE SCREW	4x8-10 FCRM3-BL	BL
126	EX601150	BW HEAD S-TITE SCREW	4x8-10 FNM3-BL	TI
127	AA627310	GROUND TERMINAL		
128	Ei030086	BIND HEAD B-TITE SCREW	3x8 ZMC2-Y	
129	VT669300	PW HEAD B-TITE SCREW	3x8-8 MFC2	
130	VK002600	HEXAGONAL CAP NUT	4mm	
131	VS758000	DAMPER, T5		

* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
132	VS936800	DAMPER	3x5x10	
133	VU984400	RING	D14	
* 134	VY731300	DAMPER	TRANS	
135	VQ366100	DAMPER, PCB		
136	VY989400	DAMPER	SIDE	
* 160	VY731200	BONDING HEAD TAPPING SCREW	3x10 MFNI33	
171	VV050400	SPACER		
ACCESSORIES				
* 200	VV626900	REMOTE CONTROL TRANSMITTER	RRC4000-5501R	
	VQ147100	ANTENNA, FM	1P 1.4m	
	VR248500	ANTENNA, AM LOOP	1P 1.0m	
	VE364900	ANTENNA ADAPTER	PAL 75-300Ω	(B)
	VT948000	ANTENNA ADAPTER		(UC)
		BATTERY, MANGANESE	SUM-3, AA, R06	

* New Parts

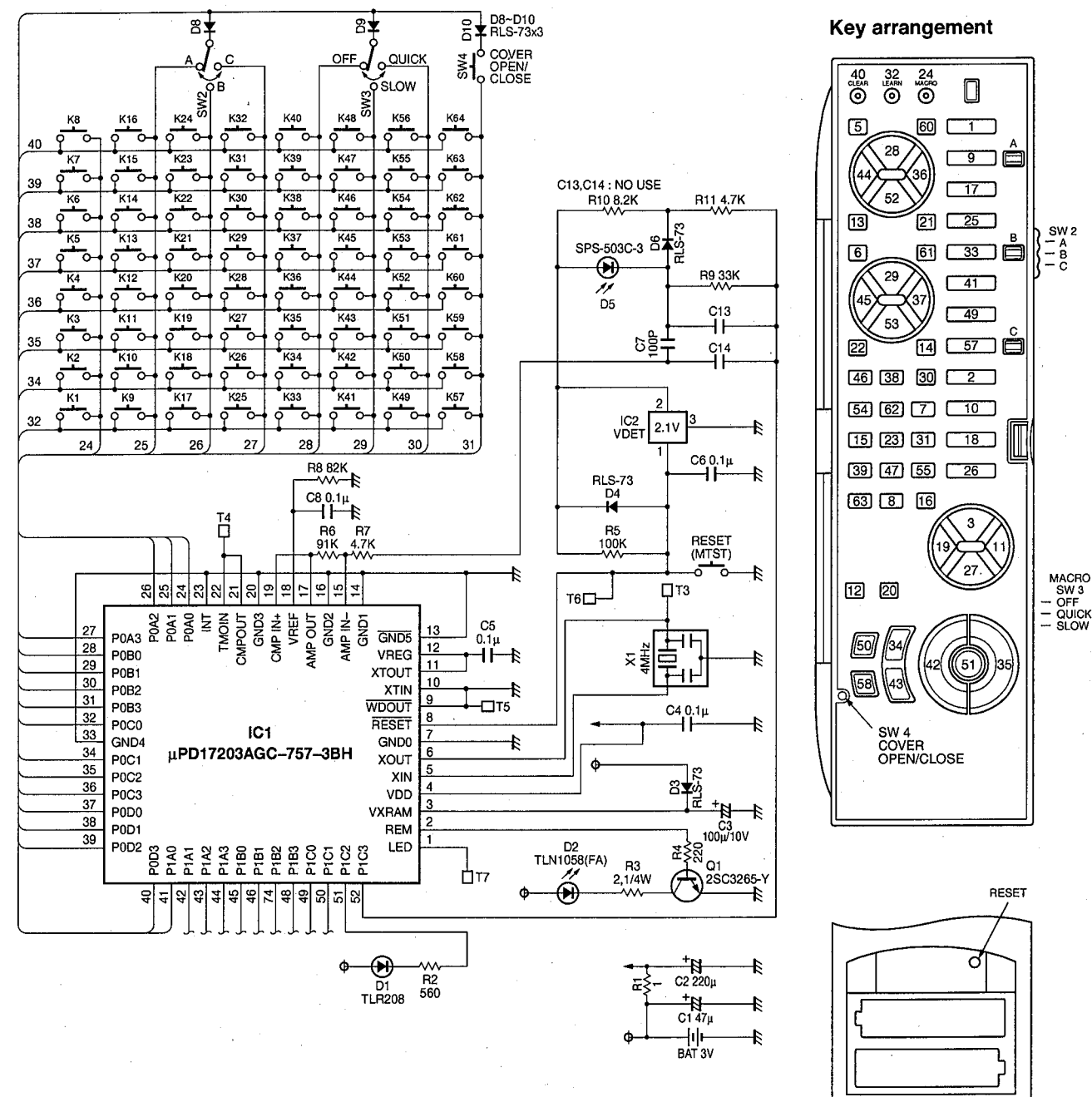


Ref. No.	PART NO.	Description	Remarks	Markets
* 1	VV626900	REMOTE CONTROL TRANSMITTER	RRC4000-5501R	
* 2	CX680040	COVER, BATTERY	103RRC11101R	
* 3	CX680050	LID	103RRC11201R	
* 4	CX680060	BRACKET	503RRC00401R	A
* 5	CX680070	BRACKET	503RRC00501R	B
* 6	CX680080	GUIDE PIN	522RRC00101R	
* 7	CX680090	PIN	524RRC00101R	
* 7	EX603910	SCREW	ABB1703321001	

* New Parts

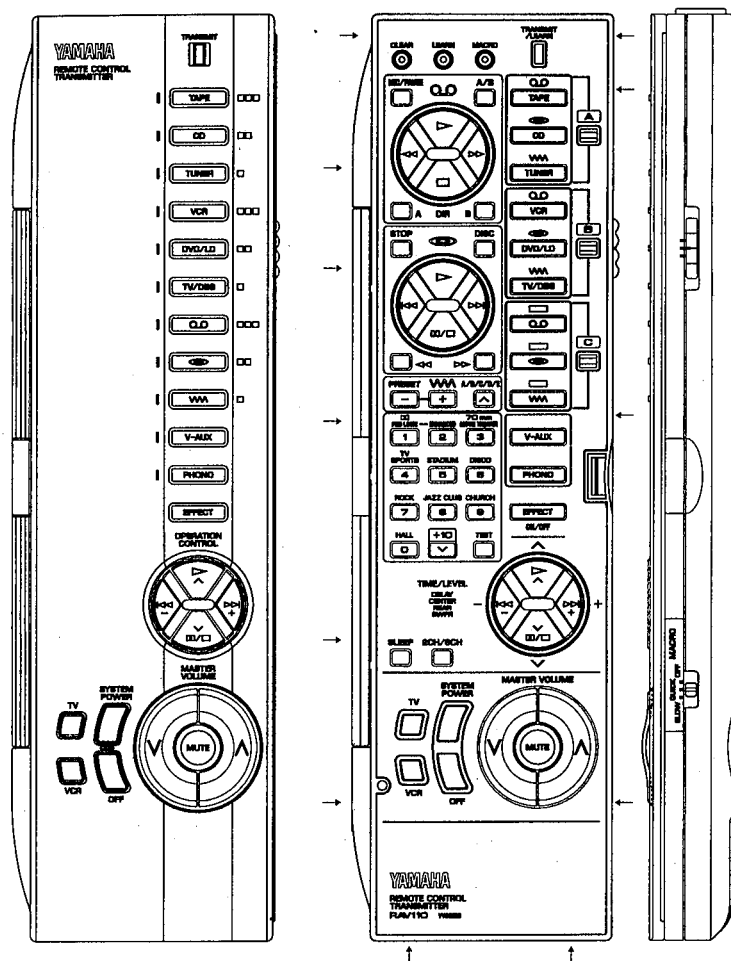
REMOTE CONTROL TRANSMITTER

■ SCHEMATIC DIAGRAM



6

7



MACRO transmission

Transmission code of initial setting shows under the below. (key No.)

Each transmission code is the fixed or learning code.

Key No.	COVER	CLOSE							
	SW 2	Don't care.							
	SW 3	QUICK or SLOW							
	MACRO order	1	2	3	4	5	6	7	
1	TAPE	K34	K1	K28-A	-	-	-	-	
2	VCR	K34	K2	-	-	-	-	-	
9	CD	K34	K9	K29-A	-	-	-	-	
10	V-AUX	K34	K10	-	-	-	-	-	
17	TUNER	K34	K17	-	-	-	-	-	
18	PHONO	K34	K18	-	-	-	-	-	
25	VCR	K34	K25	K28-B	-	-	-	-	
33	DVD/LD	K34	K33	K29-B	-	-	-	-	
34	SYSTEM POWER	K34	K50	K58	-	-	-	-	
41	TV/DBS	K34	K41	-	-	-	-	-	
43	SYSTEM POWER OFF	K43	-	-	-	-	-	-	
49	Q.O	K34	K49	K28-A	-	-	-	-	
57	Q.O	K34	K57	K29-B	-	-	-	-	

Detail : K × × - ○

Key No. The position of SW2

List of the fixed code

Key No.	FUNCTION	SW 2		
		A	B	C
1	TAPE	7A-85-18	7A-85-18	7A-85-18
2	VCR	—	—	—
3	△▷△	7A-85-98	7A-85-98	7A-85-98
4	NOT USED	7A-85-9B	7A-85-9B	7A-85-9B
5	REC/PAUSE	7A-85-04	—	—
6	STOP	—	—	7C-83-5B
7	3	7A-85-8A	7A-85-8A	7A-85-8A
8	+10	—	—	—
9	CD	7A-85-15	7A-85-15	7A-85-15
10	V-AUX	7A-85-55	7A-85-55	7A-85-55
11	+▷▷+	7A-85-52	7A-85-52	7A-85-52
12	SLEEP	7A-85-57	7A-85-57	7A-85-57
13	DIR A	7A-85-07	—	—
14	▷▷	7A-85-0C	—	7C-83-07
15	4	7A-85-8B	7A-85-8B	7A-85-8B
16	TEST	7A-85-85	7A-85-85	7A-85-85
17	TUNER	7A-85-16	7A-85-16	7A-85-16
18	PHONO	7A-85-14	7A-85-14	7A-85-14
19	-◀◀-	7A-85-53	7A-85-53	7A-85-53
20	2CH/6CH	7A-85-87	7A-85-87	7A-85-87
21	DIR B	7A-85-40	—	—
22	◀◀	7A-85-0D	—	7C-83-06
23	5	7A-85-8E	7A-85-8E	7A-85-8E
25	VCR	7A-85-0F	7A-85-0F	7A-85-0F
26	EFFECT	7A-85-56	7A-85-56	7A-85-56
27	△00/□△	7A-85-99	7A-85-99	7A-85-99
28	▷ (TAPE)	7A-85-00	—	—
29	▷ (CD)	7A-85-08	—	7C-83-05
30	A/B/C/D/E	7A-85-12	—	—
31	6	7A-85-8F	7A-85-8F	7A-85-8F

Key No.	FUNCTION	SW 2		
		A	B	C
33	DVD/LD	7A-85-17	7A-85-17	7A-85-17
34	SYSTEM POWER	7A-85-1D	7A-85-1D	7A-85-1D
35	MASTER VOL +	7A-85-1A	7A-85-1A	7A-85-1A
36	▷▷	7A-85-02	—	—
37	▷▷	7A-85-0A	—	7C-83-03
38	PRESET +	7A-85-10	—	—
39	7	7A-85-8C	7A-85-8C	7A-85-8C
41	TV/DBS	7A-85-54	7A-85-54	7A-85-54
42	MASTER VOL -	7A-85-1B	7A-85-1B	7A-85-1B
43	SYSTEM POWER OFF	7A-85-1E	7A-85-1E	7A-85-1E
44	◀◀	7A-85-01	—	—
45	◀◀	7A-85-0B	—	7C-83-02
46	PRESET -	7A-85-11	—	—
47	8	7A-85-8D	7A-85-8D	7A-85-8D
49	Q.O	—	—	—
50	SYSTEM POWER TV	—	—	—
51	MUTE	7A-85-1C	7A-85-1C	7A-85-1C
52	□	7A-85-03	—	—
53	00/□	7A-85-09	—	7C-83-04
54	1	7A-85-88	7A-85-88	7A-85-88
55	9	7A-85-90	7A-85-90	7A-85-90
57	Q.O	—	—	—
58	SYSTEM POWER VCR	—	—	—
59	NOT USED	7A-85-9A	7A-85-9A	7A-85-9A
60	A/B	7A-85-06	—	—
61	DISC	7A-85-4F	—	—
62	2	7A-85-89	7A-85-89	7A-85-89
63	0	7A-85-91	7A-85-91	7A-85-91

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

HF85 ○○○○

5mm