

SERVICE MANUAL

R-325/R-325RDS

AUDIO/VIDEO PRO-LOGIC RECEIVER



■ CONTENTS ■

SAFETY PRECAUTIONS	2	MECHANICAL PARTS LIST	22
SPECIFICATIONS	3	EXPLODED VIEW	23
BLOCK DIAGRAM	7	PRINTED CIRCUIT BOARDS	25
WIRING DIAGRAM	9	ELECTRICAL PARTS LIST	31
CIRCUIT DESCRIPTION	11	IC FUNCTIONAL BLOCK DIAGRAM	37
ALIGNMENT PROCEDURES	16	SCHEMATIC DIAGRAMS (I), (II), (III)	41
TROUBLESHOOTING	19	SCHEMATIC DIAGRAMS (IV), (V), (VI)	47

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SAFETY PRECAUTIONS

WARNING

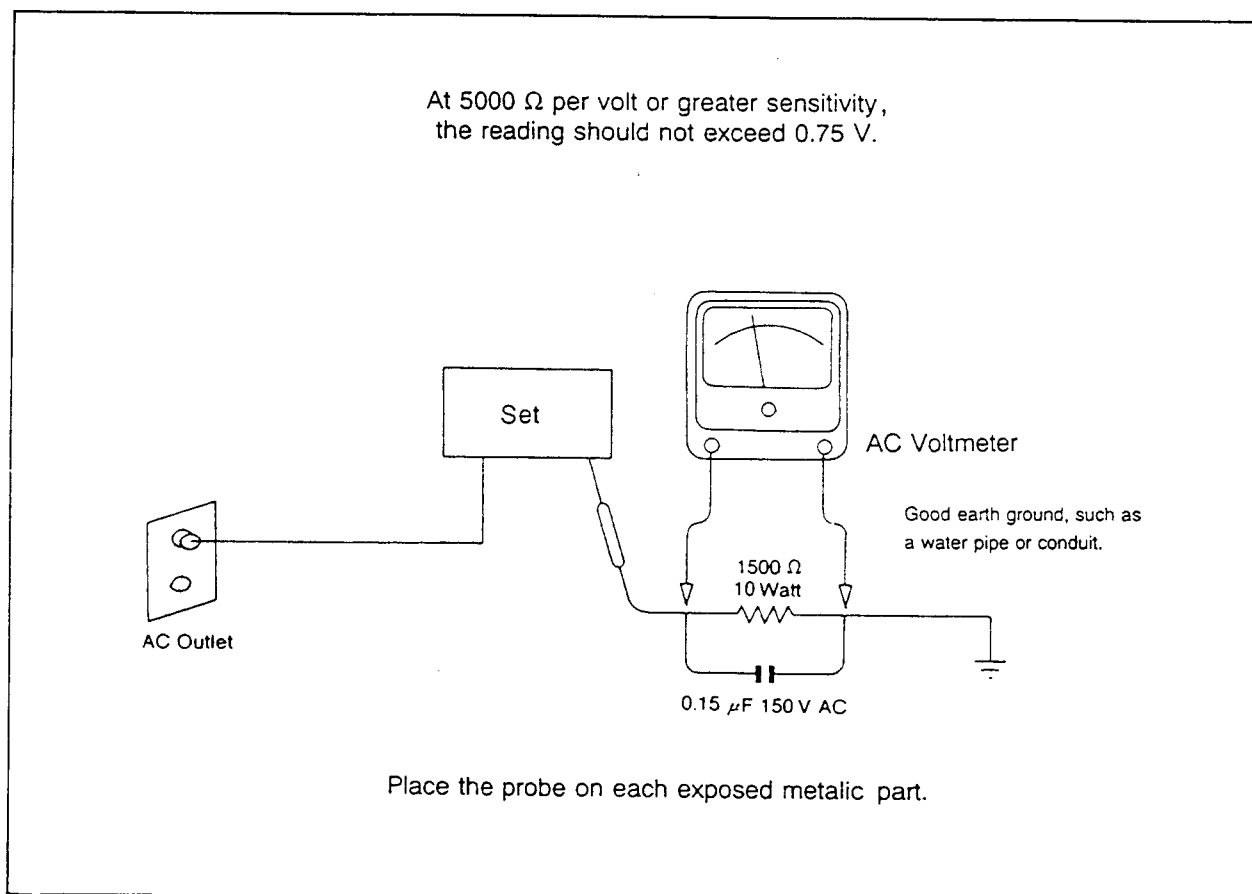
Before servicing this unit, familiarize yourself with the following precautions:

1. Many electrical and mechanical parts in this chassis have special safety characteristics that often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements: electrical components having such features are identified by ! in the schematic diagram and the parts list.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

2. Before returning the set to the customer, always do an AC leakage current check on the

exposed metal parts of the cabinet, such as terminals, screw heads, and metal overlays, to be sure the set is safe to operate danger of electrical shock. Plug the AC line cord directly into a 120 V AC outlet (120 V AC version only). (Do not use a line isolation transformer during this check.) Be sure your AC voltmeter has a sensitivity of 5000 Ω per volt or greater. Then connect a 1500 Ω 10 watt resistor, paralleled by a 0.15 μ F 150 V AC capacitor, between a known good earth ground (such as a water pipe, or conduit) and the exposed metallic is parts, one at a time. Measure the AC voltage across the combination of a 1500 Ω resistor and a 0.15 μ F capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.75V RMS. This corresponds to 0.2 mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



SPECIFICATIONS

FRONT AMP SECTION

Measuring methods are based on IHF and IEC standard 268-3.

Measurements conditions, unless otherwise noted:

- * Output resistive load: 8 ohms/Both channel driven.
- * Tone (Bass, Treble), Balance: Center Position, Other SW's: OFF.
- * Nominal input level: 5 mV for MM, 0.5 mV for MC, 500 mV for general purpose inputs.
- * Power figures should be kept minimum 10 min. between 15 and 35 °C.
- * Terminator: 100 ohms for MC, 1 kohms for MM and general purpose inputs.
- * Filter: IHF-A filter
- * R/O: Rated Output

NO	DESCRIPTION	INPUT	FREQ.	REMARK	UNIT	LIMIT	NOMINAL
1	Input Sensitivity	AUX	1 kHz	-	mV	±30	170
		MM	1 kHz	-	mV	±0.5	2.5
2	Channel Balance	AUX	1 kHz	0 to -40 dB	dB	±3	±2
			1 kHz	-VO to -40 dB	dB	±6	±4
3	Residual Noise	AUX	1 kHz	VOL. min.	mV	1	0.8
4	Total Harmonic Distortion	AUX	20 Hz	60 W/1 W	%	0.2	0.09
			1 kHz	60 W/1 W	%	0.2	0.09
			20 kHz	60 W/1 W	%	0.2	0.09
5	Continuous Average Power at 0.2% THD	AUX	20 Hz	8 ohms	W	55	60
			1 kHz	8 ohms	W	55	60
			20 kHz	8 ohms	W	55	60
6	Inter Modulation Distortion SMPTE	AUX	60 Hz=4	R/O	%	0.2	0.09
			7 kHz=1	1 W	%	0.2	0.09
7	Signal to Noise Ratio	AUX	1 kHz	R/O	dB	90	93
		MM	1 kHz	R/O	dB	70	74
8	Channel Separation input shorted.	AUX	100 Hz	R/O -3 dB	dB	50	55
			1 kHz	R/O -3 dB	dB	50	55
			10 kHz	R/O -3 dB	dB	45	50
9	Function Crosstalk	CD→AUX	1/10 kHz	R/O -3 dB	dB	70/65	75/70
10	Frequency Response	AUX	-	1 W	Hz ~ kHz	20/50	10/70
11	Tone Control, ±10 dB	AUX	100 Hz	1 W	dB	±10±2	±10±1
			10 kHz	1 W	dB	±10±2	±10±1
12	Phono Equalization	PHONO	100 Hz	TAPE OUT	dB	RIAA±2	RIAA±1
			10 kHz	TAPE OUT	dB	RIAA±2	RIAA±1
13	Input Overload at 0.5% THD	MM	1 kHz	TAPE OUT	mV	140	145

REAR AMP SECTION

Measurements conditions: Input level 350 mV, Delay time 20 mS, Rear level max., Master volume adj, Only Rear Channel drive.

NO	DESCRIPTION	INPUT	FREQ.	REMARK	UNIT	LIMIT	NOMINAL
1	Power Output at 0.7% THD	AUX	1 kHz	8 ohms	W	50	70
2	Total Harmonic Distortion	AUX	1 kHz	1 W	%	1.0	0.7
3	Signal to Noise Ratio (IHF-A Filter) DOLBY	AUX	-	1W	dB	65	70
		AUX	-	1W	dB	65	70
		AUX	-	1W	dB	65	70
		AUX	-	1W	dB	60	65
4	Frequency Response at ±3 dB (ONLY DOLBY)	AUX	1 kHz	1 W	Hz ~ kHz	100~6	80~7

☞ CENTER AMP SECTION

Measurements conditions: Input level 350 mV, WIDE mode, Center level max., Master volume adj, Only Rear Channel drive.

NO	DESCRIPTION	INPUT	FREQ.	REMARK	UNIT	LIMIT	NOMINAL
1	Power Output at 0.3% THD	AUX	1 kHz	8 ohms	W	50	70
2	Total Harmonic Distortion	AUX	1 kHz	1 W	%	0.3	0.09
3	Signal to Noise Ratio, IHF-A	AUX	-	1W	dB	70	78
4	Frequency Response DOLBY MODE NORMAL WIDE	AUX	-	1 W	Hz ~ kHz	140~50	120~60
		AUX	-	1 W	Hz ~ kHz	50~50	20~60

☞ VIDEO SECTION

NO	DESCRIPTION	INPUT	FREQ.	REMARK	UNIT	LIMIT	NOMINAL
1	Output Level at 75 ohms	VCR1 (1Vp-p)	1 MHz	-	Vp-p	1±0.5	1
2	Frequency Response	VCR1 (1Vp-p)	1 MHz	-	Hz ~ MHz	DC~6	DC~6.3
3	Signal to Noise Ratio	VCR1 (1Vp-p)	1 MHz	-	dB	45	50
4	Crosstalk	VCR1 (1Vp-p)	1 MHz	-	dB	45	50

☞ AM SECTION

Measuring methods in conformity with IEC standard 315.

Measurements conditions;

- * Radio frequency: 1000/999 kHz, Audio frequency: 400 Hz
- * Reference level: 5 mV/m, 10 mV/m on 50 ohms, Modulation: 30%
- * Test point: TP1=600 kHz, TP2=1000 kHz, TP3=1400 kHz (USA/Canada Version)
- * Test point: TP1=594 kHz, TP2=999 kHz, TP3=1404 kHz (Korea/Europe Version)

NO	DESCRIPTION	INPUT	VERSION	UNIT	LIMIT	NOMINAL
1	Tuning Cover Range Step	LOW~HIGH AUTO/Man.	USA/Canada	kHz	520 ~ 1710	
			Europe/Korea	kHz	522 ~ 1611	
			USA/Canada	kHz	10/10	
			Europe/Korea	kHz	9/9	
2	Usable Sensitivity S/N=20 dB	TP1		uV/m	≤800	≤500
		TP2		uV/m	≤800	≤500
		TP3		uV/m	≤800	≤500
3	Signal to Noise Ratio			dB	≥40	≥45
4	Total Harmonic Distortion			%	≤1.5	≤1
5	Over Load Distortion at 5 mV input, 80% MOD.			%	≤10	≤5
6	Frequency Response at -6 dB			Hz	100~2k	80~2.3k
7	Selectivity	10 kHz/9 kHz		dB	≥20	≥25
8	AGC Figure of Merit	100 mV at -10 dB		dB	≥50	≥55
9	Whistle Modulation at 1 mV/m 2I _F			%	≤15	≤10
10	Image Rejection	TP3		dB	≥30	≥35
12	Auto Stop Level			uV/m	800±6dB	800±5dB
13	Output Level			mV	160±50	160±30

FM SECTION

Measuring methods in conformity with IEC standard 315.

Measurements conditions FM;

* Radio frequency: 98.1 MHz, Audio frequency: 1 kHz * Reference level: 1 mV on 75 ohms

* Deviation: MONO= ± 75 kHz, Stereo= ± 67.5 kHz ± 7.5 kHz (Korea/USA/Canada Version)

* Deviation: MONO= ± 40 kHz, Stereo= ± 40 kHz ± 7.5 kHz (Europe Version)

* Test point: TP1=90.1 MHz, TP2=98.1 MHz, TP3=106.1 MHz (Korea/USA/Canada Version)

* Test point: TP1=90 MHz, TP2=98 MHz, TP3=106 MHz (Europe Version)

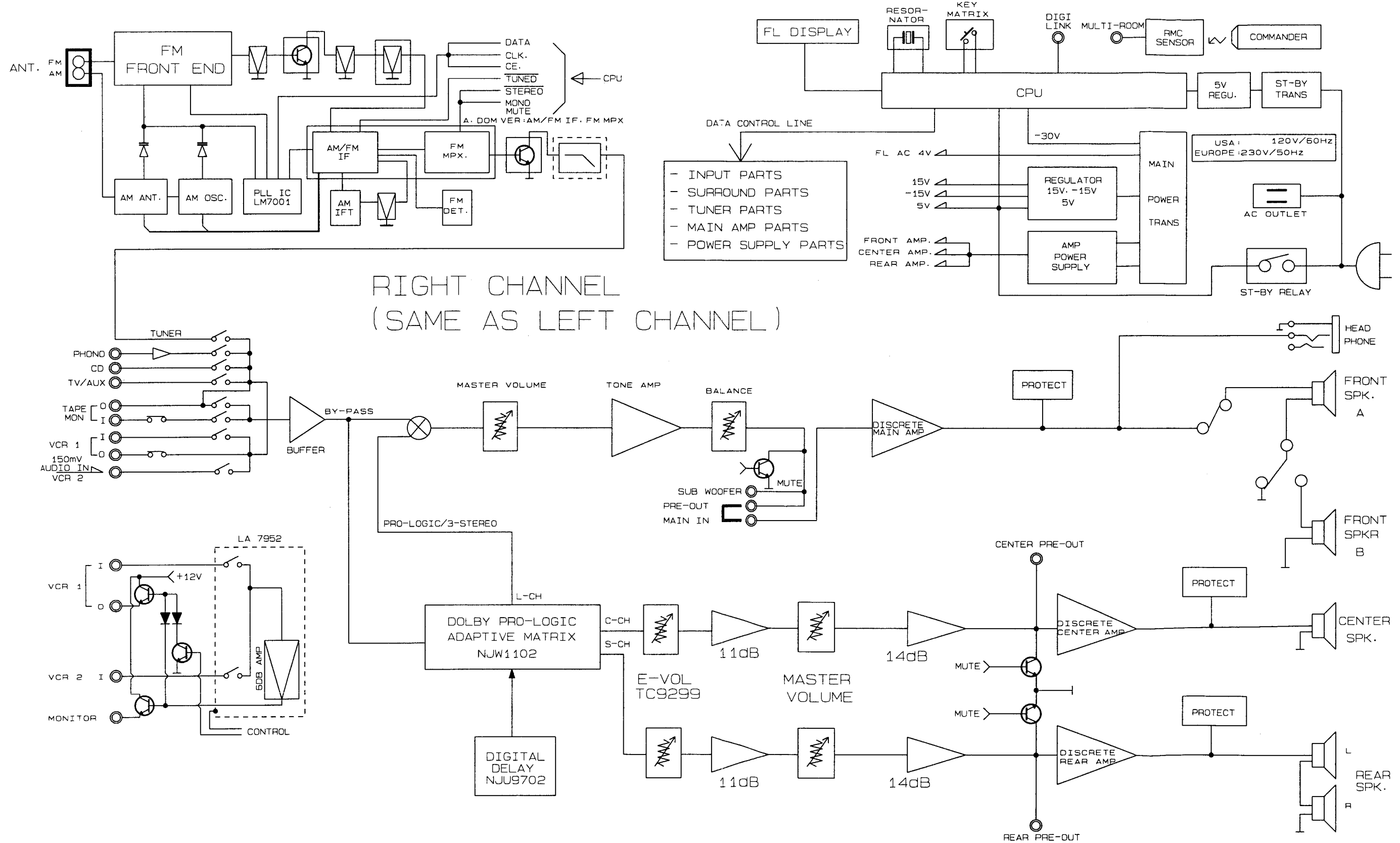
NO	DESCRIPTION		VERSION	UNIT	LIMIT	NOMINAL
1	Tuning Cover Range	LOW ~ HIGH	Korea/USA/Canada	MHz	87.5 ~ 107.9	
	Step	AUTO/Man.	Europe Korea/USA/Canada Europe	kHz	87.5 ~ 108 200/200 100/50	
2	Usable Sensitivity S/N=30 dB	TP1	Korea/USA/Canada	dBf	≤ 17.2	≤ 14.2
		TP2		dBf	≤ 17.2	≤ 14.2
		TP3		dBf	≤ 17.2	≤ 14.2
	S/N=26 dB	TP1	Europe	dBf	≤ 20.2	≤ 17.2
		TP2		dBf	≤ 20.2	≤ 17.2
		TP3		dBf	≤ 20.2	≤ 17.2
3	Full Limiting Sense	Output= -3 dB	Korea/USA/Canada Europe	dBf	≤ 15.2 ≤ 20.2	≤ 12.2 ≤ 17.2
4	Auto Stop Level			dBf	31.2(±5)	31.2(±3)
5	Signal to Noise Ratio	MONO	Korea/USA/Canada	dB	≥ 65	≥ 70
			Europe	dB	≥ 62	≥ 66
		STEREO	Korea/USA/Canada	dB	≥ 60	≥ 65
			Europe	dB	≥ 60	≥ 63
6	Total Harmonic Distortion	MONO		%	≤ 0.5	≤ 0.3
		STEREO		%	≤ 0.8	≤ 0.5
7	50 dB Quieting Sensitivity	MONO	Korea/USA/Canada	dBf	≤ 23.2	≤ 20.2
		STEREO		dBf	≤ 48.3	≤ 45.3
	46 dB Quieting Sensitivity	MONO	Europe	dBf	≤ 23.2	≤ 20.2
		STEREO		dBf	≤ 48.3	≤ 45.3
8	Frequency Response at ± 1.5 dB			Hz/kHz	20/12.5	10/14
9	Channel Separation	100 Hz	Korea/USA/Canada	dB	≥ 35	≥ 40
			Europe	dB	≥ 32	≥ 37
		1 kHz	Korea/USA/Canada	dB	≥ 40	≥ 45
			Europe	dB	≥ 37	≥ 42
		10 kHz	Korea/USA/Canada	dB	≥ 30	≥ 35
			Europe	dB	≥ 27	≥ 32
10	Spurious Response		Korea/USA/Canada	dB	≥ 70	≥ 80
			Europe	dB	≥ 80	≥ 90
11	IF Rejection	TP1		dB	≥ 70 ≥ 70	≥ 80 ≥ 80
12	Image Rejection	TP3	Korea/USA/Canada	dB	≥ 60	≥ 65
			Europe	dB	≥ 70	≥ 80
13	AM Rejection ratio		Korea/USA/Canada	dB	≥ 50	≥ 55
			Europe	dB	≥ 47	≥ 52
14	Capture ratio			dB	≤ 2.5	≤ 2
15	Output Level	MONO		mV	500 ± 150	500 ± 100

GENERAL

Power consumption	A: 2.3A, D: 550W, K: 450W
Power Supplies	A: AC 120v, 50Hz (USA/Canada Version) D: AC 230V, 50Hz (Europe Version) K: AC 220V, 60Hz (Korea Version)
Dimensions (W × H × D)	440 × 125 × 300mm 17-5/16 × 4-15/16 × 11.8inches
Weight (Net)	10.5kg

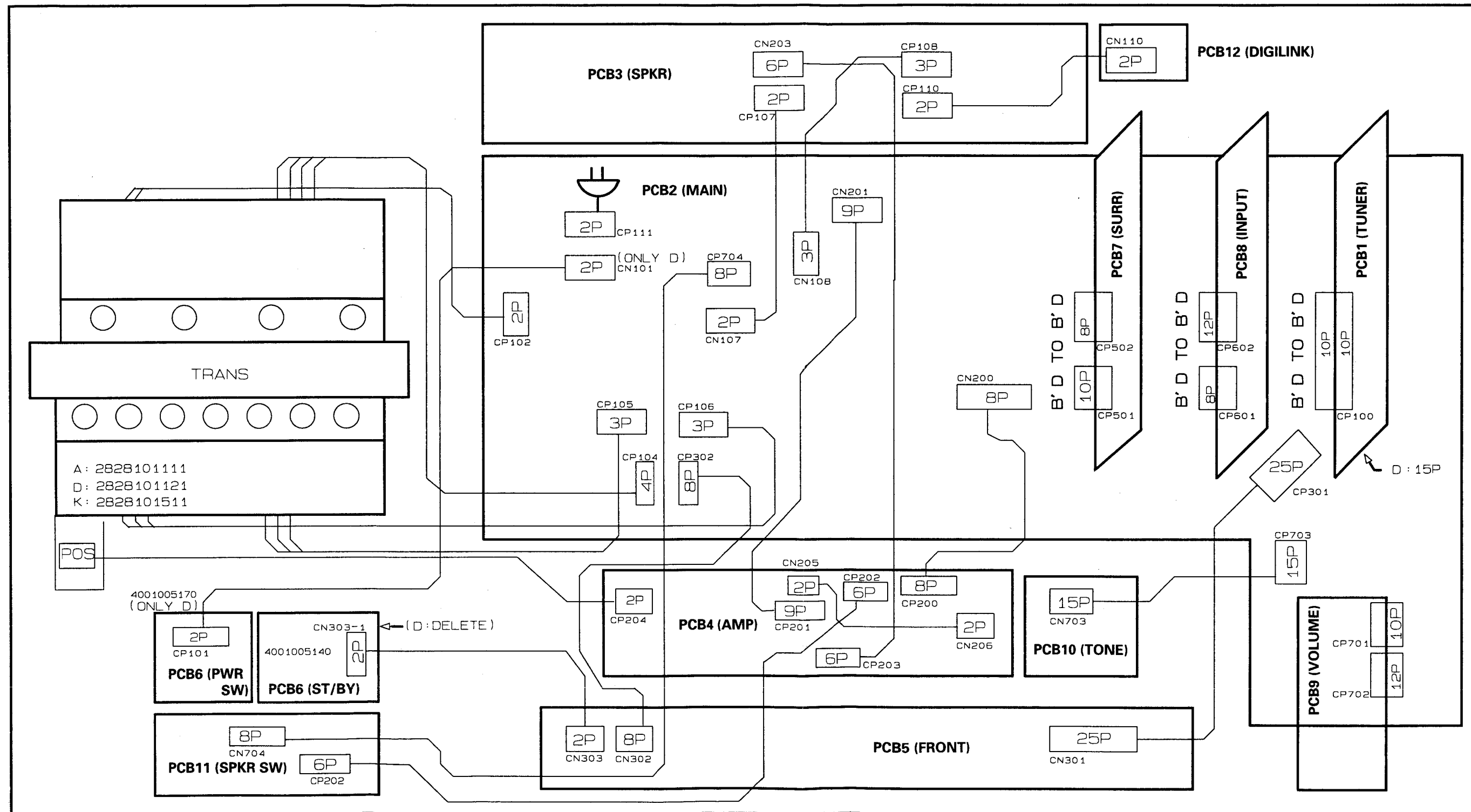
BLOCK DIAGRAM

Model No. : R325/R325RDS



WIRING DIAGRAM

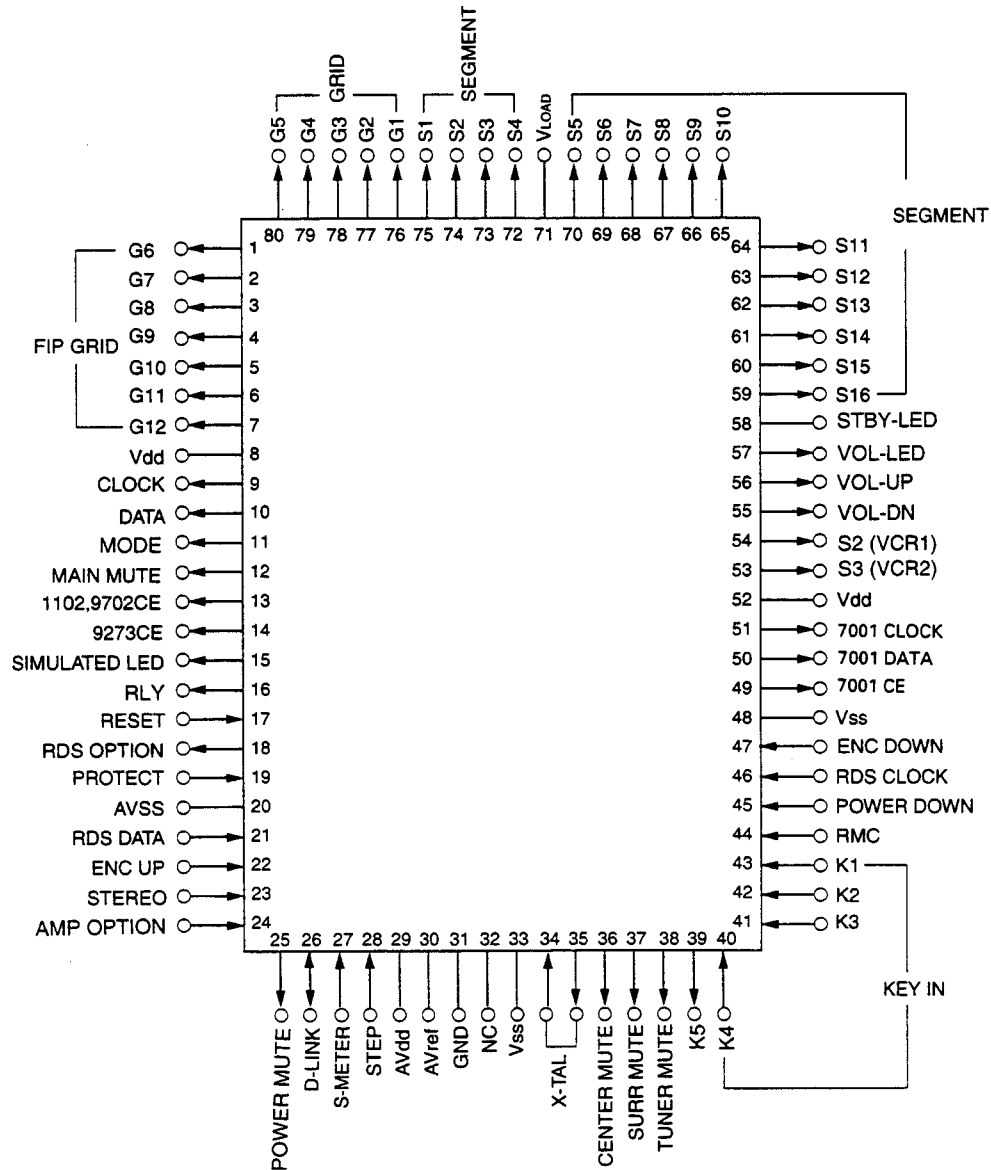
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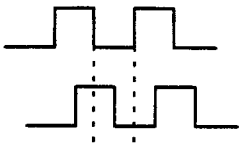
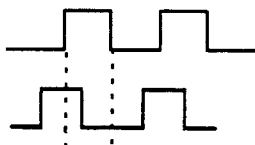
CIRCUIT DESCRIPTION

IC301 : μ PD 78043AGF-209 -3B9

1. Pin Description



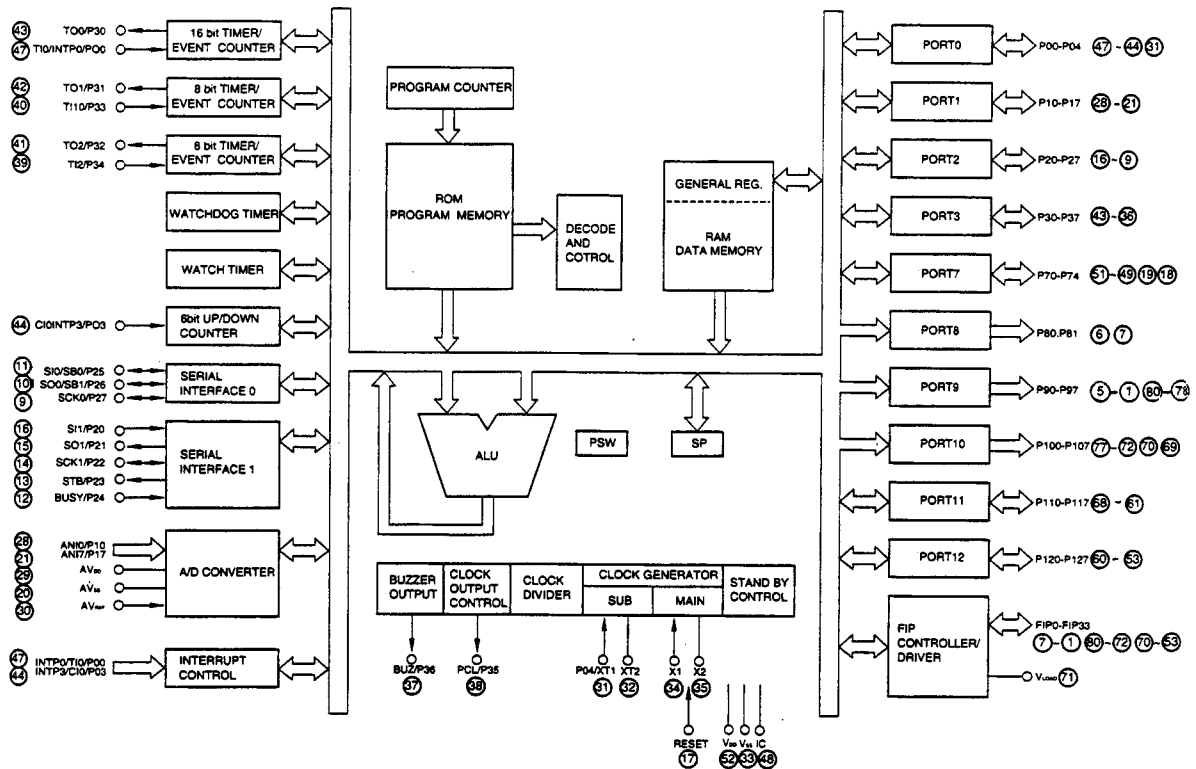
2. Input & Output Terminal Functions

Pin No.	Symbol	Description
1~7	G6~G12	Grid signal output for FIP.
8	Vdd	+5V power supply.
9	CLK	Output, clock signal to TC9273, NJW1102 and NJU9702.
10	DATA	Output, data signal to TC9273, NJW1102 and NJU9702.
11	MODE	Output, control output for ByPass Mode and surr Mode.
12	MAIN MUTE	Output for main mute. Output is low level under the following conditions. 1. When power is turned on or off. 2. When function is changed. 3. When MONO or STEREO is changed. 4. When Low level is inputted to PROTECT port of CPU. 5. When mute signal is received from the commander.
13	1102, 9702 CE	Chip enable output for NJW1102 and NJU9702.
14	9273 CE	Chip enable output for TC9273.
15	SIMULATED LED	Each time the simulated button is pressed, the "SIMULATED LED" light on or off.
16	RLY	Output for driving Power Relay (Active High)
17	RESET	Input for resetting CPU. (Active High)
18	RDS OPTION	Control output for RDS mode. (This output is used only for R325RDS)
19	PROTECT	Signal input for protection. When low Level is inputted, it is changed to STAND BY mode.
20	AVss	This pin provides the ground potential.
21	RDS DATA	RDS data input of TDA7330BD. (This input is used only for R325RDS)
22/47	ENC UP/DOWN	Input for Encoder Volume up and down. (CW)  (CCW) 
23	STEREO	Input for lighting the "STEREO" indicator. (Active Low)
24	AMP OPTION	Input for selecting AV 5060.
25	POWER MUTE	When the power is on, control data output is High after 3 seconds. When the power is off, control data output is "L".
26	D-LINK	Input/Output for controlling digi-link .
27	S-METER	Input signal level of Tuner.

Pin No.	Symbol	Description																
28	STEP	According to region, input for selecting the frequency bands and steps for FM and AM Settings are as follows <table><tr><th>REGION</th><th>FREQUENCY BAND</th><th>STEP</th><th>PIN21(IC301)</th></tr><tr><td>USA/ CANADA</td><td>FM: 87.5~107.9 MHz AM: 520 ~ 1710 kHz</td><td>200 kHz 10 kHz</td><td>5 V</td></tr><tr><td>EUROPE</td><td>FM: 87.5 ~ 108 MHz AM: 522 ~ 1611 kHz</td><td>50 kHz 9 kHz</td><td>2.5 V</td></tr><tr><td>KOREA</td><td>FM: 87.5~107.9 MHz AM: 522 ~ 1611 kHz</td><td>200 kHz 9 kHz</td><td>0 V</td></tr></table>	REGION	FREQUENCY BAND	STEP	PIN21(IC301)	USA/ CANADA	FM: 87.5~107.9 MHz AM: 520 ~ 1710 kHz	200 kHz 10 kHz	5 V	EUROPE	FM: 87.5 ~ 108 MHz AM: 522 ~ 1611 kHz	50 kHz 9 kHz	2.5 V	KOREA	FM: 87.5~107.9 MHz AM: 522 ~ 1611 kHz	200 kHz 9 kHz	0 V
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EUROPE	FM: 87.5 ~ 108 MHz AM: 522 ~ 1611 kHz	50 kHz 9 kHz	2.5 V															
KOREA	FM: 87.5~107.9 MHz AM: 522 ~ 1611 kHz	200 kHz 9 kHz	0 V															
29	AVdd	Power supply of analog A/D converter.																
30	AVref	Referance voltage of analog A/D converter.																
31	GND	Ground																
32	NC	Not Used !																
33	Vss	This pin provides the ground potential.																
34/35	X-TAL	Input/Output for crystal oscillator.																
36	CENTER MUTE	Output for center mute. Output is low level under the following conditions. 1. When power is turned on or off. 2. When center mode is on or off. 3. When center mode is switched. 4. When test tone mode is on or off, When the channels is changed to the test tone mode. 5. When Low level is inputted to "PROTECTION" of CPU. 6. When mute signal is received from the commander.																
37	SURR. MUTE	Output for surround mute. Output is low level under the following conditions. 1. When power is turned on or off. 2. When surround mode is on or off. 3. When test tone mode is on or off, When the channels is changed the test tone mode. 4. When delay time is changed. 5. When Low level is inputted to "PROTECTION" of CPU. 6. When mute signal is received from the commander.																

Pin No.	Symbol	Description																
38	TUNER MUTE	Output for tuner mute. Output is high level under the following conditions. 1. When power is turned on or off. 2. When tuner band is changed. 3. When tuning up or down button is pressed. 4. When preset button is pressed. 5. When displayed preset number is changed during memory scan. 6. When Low level is inputted to "PROTECTION" of CPU. 7. When mute signal is received from the commander.																
39~43	KEY IN 5~1	Input data of K ₅ ~K ₁ for key scan.																
44	RMC	Input for remote control signal.(Active low)																
45	PWR DN	Input for power down.(Active low)																
46	RDS CLOCK	RDS clock signal input for TDA7330B.(This input is used only for R325RDS)																
48	Vss	Ground																
49	7001 CE	Chip enable output for LM7001.																
50/51	7001 CLK/DATA	CLOCK/DATA signal output for LM7001.																
52	Vdd	+5V power supply.																
53/54	S3/S2	Output to select the video signal VCR1 or VCR2. Output data for LA7952 is as follows. <table border="1"><thead><tr><th>MODE</th><th>S2</th><th>S3</th><th>REMARKS</th></tr></thead><tbody><tr><td>VCR1</td><td>L</td><td>H</td><td>Initial settings</td></tr><tr><td>VCR2</td><td>H</td><td>L</td><td></td></tr><tr><td>OTHERS</td><td>△</td><td>△</td><td>△: Previous state</td></tr></tbody></table> * Last memory function is available	MODE	S2	S3	REMARKS	VCR1	L	H	Initial settings	VCR2	H	L		OTHERS	△	△	△: Previous state
MODE	S2	S3	REMARKS															
VCR1	L	H	Initial settings															
VCR2	H	L																
OTHERS	△	△	△: Previous state															
55/56	VOL-DOWN/UP	Output data for volume control.																
57	VOL-LED	Signal for volume led.																
58	STBY-LED	Output signal for standby led.																
59/60	SEG 16/15	Segment signal output for FIP.																
61 ~ 68	SEG14 ~ 7	Segment signal output for FIP and key scan.																
71	Vload	-30V Power supply for FIP.																
69 ~ 75	SEG6 ~ 1	Segment signal output for FIP.																
76 ~ 80	GRID1 ~ 5	Grid signal output for FIP.																

3. Block Diagram



4. Key Matrix

	KSCAN1 PIN 61	KSCAN2 PIN 62	KSCAN3 PIN 63	KSCAN4 PIN 64	KSCAN5 PIN 65	KSCAN6 PIN 66	KSCAN7 PIN 67	KSCAN8 PIN 68
KEY IN1 PIN 43	DISPLAY SW333	BAND SW326	TAPE M SW325	REAR ▽ SW320	TUNE ▽ SW311	SIMULATED SW319	3-STEREO SW316	1 SW301
KEY IN2 PIN 42	SEARCH SW332	FM MODE SW327	CEN MODE SW324	TUNE △ SW312	0 SW310	5 SW305	THEATER SW317	2 SW302
KEY IN3 PIN 41	EON TA SW331	MEMORY SW328	FREQ SW313	REAR SW321	9 SW309	7 SW307	HALL SW318	3 SW303
KEY IN4 PIN 40	EON PTY SW330		CENTER △ SW323	CENTER ▽ SW322	8 SW308	6 SW306	PTY SW334	4 SW304
KEY IN5 PIN 39	SLEEP (STBY) SW336	OFF SW314	Prologic SW315					

ALIGNMENT PROCEDURES

TUNER

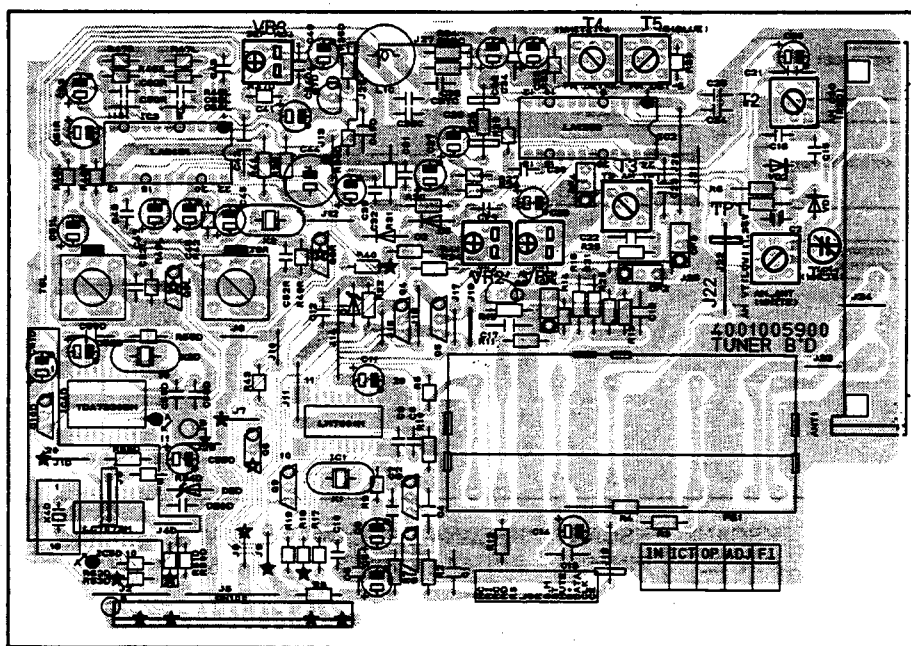
1. Equipment Required

- AM Standard Signal Generator (AM SSG)
- Oscilloscope
- AC Voltmeter
- FM Standard Signal Generator (FM SSG)
- Stereo Modulator
- Audio Generator
- Distortion Meter
- DC Voltmeter
- Frequency Counter

Note : Disconnect external FM antenna prior to alignment.

2. Alignment

2-1. Alignment and Test Point



2-2. AM Alignment

- Output of signal generator should not be greater than necessary to obtain an optimum output reading.
- Signal generator modulation : 30 %
- RF signal frequency : 400 Hz
- Switch : Press the BAND button to AM

Step	Subject	Signal Generator Frequency	Set Frequency Setting	Equipment Connection	Adjustment Point	Adjust for
1	Tuning Voltage	520kHz (522kHz)	520kHz 1) (522kHz)	DC Volt meter to J22 (TP1)	T2 AM OSC(R)	DC 1.32V±1.35V
2	RF Tuning	600kHz (594kHz)	600kHz 1) (594kHz)	AC voltmeter and oscilloscope to speaker terminal of L or R channel	T1 MW ANT(W)	Maximize audio output
		1400kHz (1404kHz)	1400kHz 2) (1404kHz)		TC1	
* Feed signal should be fed to loop antenna through the test loop antenna 60 cm distant from the appliance.						
* Repeat the step 1) and 2) until no further improvement occurs.						

3	IF	1000kHz (999kHz)	1000kHz (999kHz)	Ac voltmeter and oscilloscope to speaker terminal of L or R channel	T3 AM IFT	Maximize audio output
4	Tuned Level	1000kHz (999kHz) 800 $\mu\text{V}/\text{m}$	1000kHz (999kHz)		VR1	"Tuned" flag in the FL display light on

3-3. FM Alignment

- Output of signal generator should not be greater than necessary to obtain an optimum output reading.
- Signal generator deviation : USA/Canada/Korea : 75kHz. Europe : 40kHz
- RF signal frequency : 1 kHz
- Switch : Press the BAND button to FM and the FM MODE button to MONO

Step	Subject	Signal Generator Frequency	Set Frequency Setting	Equipment Connection	Adjustment Point	Adjust for
1	Tuning Band Width	98.1MHz (98MHz)	98.1MHz (98MHz)	DC Volt meter to R26(PCB1)	T4	Zero reading on DC Volt meter
2	THD	98.1MHz (98MHz)	98.1MHz (98MHz)	Distortion meter to TAPE OUT jack of L or R channel	T5	Minimize distortion
3	Tuned Level	98.1MHz (98MHz) SSG output level : 10 $\mu\text{V}/\text{m}$	98.1MHz (98MHz)		VR2	"Tuned" flag in the FL display light on

3-4. MPX Alignment

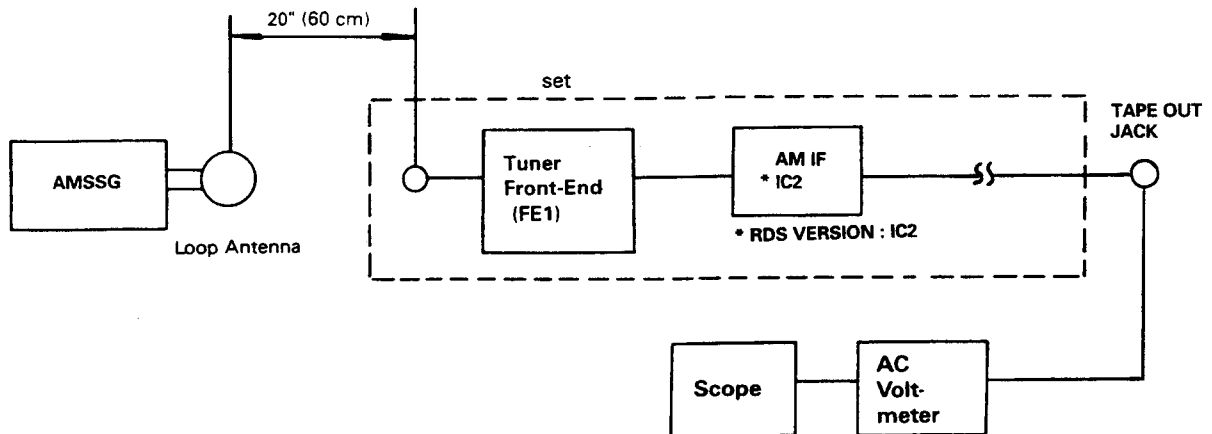
- Signal generator frequency : 98 MHz
- Signal generator deviation : USA : 75kHz. Europe : 40kHz
- RF signal frequency : 1 kHz
- Signal generator output level : 1000 $\mu\text{V}/\text{m}$
- Connect signal generator to FM antenna terminal through FM dummy antenna (75 Ω)
- Switch : Press the BAND button to FM and the FM MODE button to STEREO

Step	Subject	19 kHz Modulation Level	Signal Generator Setting	Equipment Connection	Adjustment Point	Adjust for
1	Seperation R $\rightarrow$ L	8 % Modulation	Pilot on	AC voltmeter to speaker terminal of R channel	VR3	Set AC voltmeter to 0 dB
				AC voltmeter to speaker terminal of L channel		AC voltmeter reading should be at least 40 dB below
2	Seperation L $\rightarrow$ R	8 % Modulation	Pilot on	AC voltmeter to speaker terminal of L channel	VR3	Set AC voltmeter to 0 dB
				AC voltmeter to speaker terminal of R channel		AC voltmeter reading should be at least 40 dB below

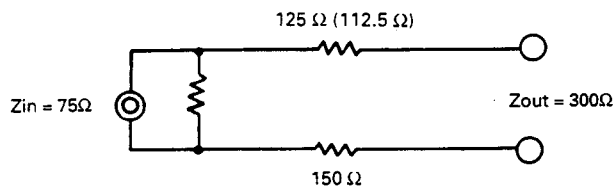
If you could not obtain -40 dB readings in steps 1 and 2, readjust VR3 until you obtain -40 dB readings.
Nominal is -45 dB. (Europe: Nominal -42 dB, Limit -37 dB)

4. Equipment Connection

4-1. AM Alignment Connection

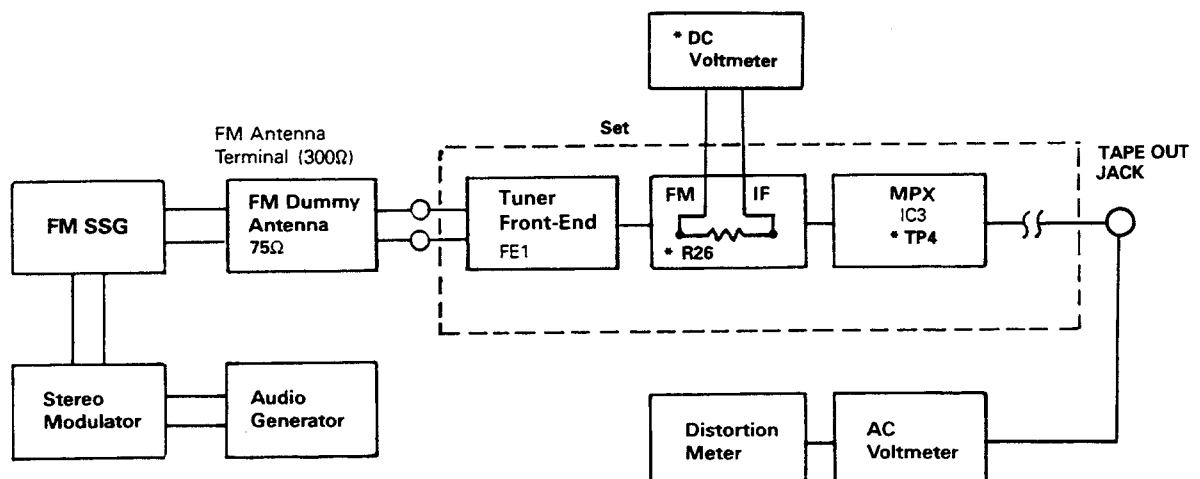


4-2. FM Dummy Antenna



FM Dummy Antenna to 300 Ω Antenna terminal of system.

4-3. FM RF/IF and MPX Alignment Connection



TROUBLESHOOTING

Symptom	Cause and Remedy
Receiver inoperative. (FL indicator does not light.)	A) Faulty AC power cord. Replace. B) Defective power switch. Replace. C) Broken wire in the power transformer. Replace the power transformer. D) Blown fuse. Replace the fuse.
Fuse blows when power is turned on.	A) Defective power transformer. Replace. B) Short on the primary or secondary of the transformer circuitry. Repair the short. C) Damaged rectifier D118 or damaged transistor Q210 L/R/C/S Q211 L/R/C/S. Replace the defective component(s). D) Short circuit in the amplifier circuit. Replace the shorted component(s) in the amplifier circuit.
Power indicator lights but no sound from both channels.	A) Defect in transistor Q210 L/R, Q211 L/R or Q205 L/R on the Amp Board. Replace the defective component(s).
One channel does not work when volume is at maximum with a test signal applied to the center terminal of volume control of the dead channel.	A) Defect in transistors Q210 L/R or Q205 L/R on the Main Amp Board. Replace the defect. B) Break in copper foil of printed circuit board. Repair the defect. C) Short in speaker output terminal. Repair or replace.
Speaker works normally but headphones inoperative.	A) Defective headphone plug. Replace the plug. B) Defective resistor R735L/R. Replace.
FM inoperative	A) Defective front-end (FE). Replace. B) Defective FM switch. Replace the switch. C) Defective transistor Q3 and ICS (IC2,IC3). Replace the defective transistor or IC(s). D) Defective coil T4,T5. Replace the coil(s). E) Defective lead-in. Repair or replace the lead-in. F) Ceramic filters CF1,CF3 defective. Replace the defective ceramic filter(s).

Symptom	Cause and Remedy
Poor multiplex separation.	A) Improper adjustment. Readjust VR3. (Refer to MPX Alignment.) B) IC3 defective. Replace. C) Variable resistor VR3 defective. Replace the variable resistor.
STEREO indicator does not light.	A) Defective indicator in FL. Replace. B) Improper adjustment of VR2 of tuner board. Make readjustment. C) Defective IC2. Replace the defective component.
FM volume is insufficient.	A) If volume from both L and R channels is not loud enough : Front end section defective. Faulty IC2, Coil T4 or T5. If sound of one channel is not loud enough: Defective VR3.
FM Mono has no effect.	A) Defective FM MODE switch. Replace.
AM inoperative.	A) Damaged IC2 of tuner board. Replace. B) Defective T1,T2,T3 or CF4 of Tuner Board. Replace the defective component(s). C) Defective AM switch. Replace. D) Defective varicap diodes VD1 or VD2. Replace varicap diodes(s). E) Damaged AM loop antenna. Repair or replace.
Bass control has no effect	A) Variable resistor BASS defective. Replace.

Symptom	Cause and Remedy
Treble control has no effect.	A) Variable resistor TREBLE defective. Replace.
Auto tune inoperative. (UP/DOWN)	A) Poor contact in Up/Down key. Repair or replace. B) Defective IC301. Replace. C) Defective tuner circuit components. Replace. D) In case of FM only, improper adjustment of FM front-end. Readjust.
Manual tune inoperative. (UP/DOWN) (AM or FM)	A) Poor contact in Up/Down key. Replace. B) Defective IC301. Replace.
Memory setting inoperative.	A) Poor contact in memory keys 1-10. Replace. B) Defective IC301. Replace the defective component.
FL inoperative.	A) FL defective. Replace. B) Defective IC301. Replace. C) Defective D113 and D114. Replace.
Noisy volume control.	A) Defective volume. Replace.
Remote Control Unit inoperative.	A) Weak battery. Replace. B) Defective. Replace. C) Defective Remote sensor. Replace.

MECHANICAL PARTS LIST

Model No. : R325/R325RDS

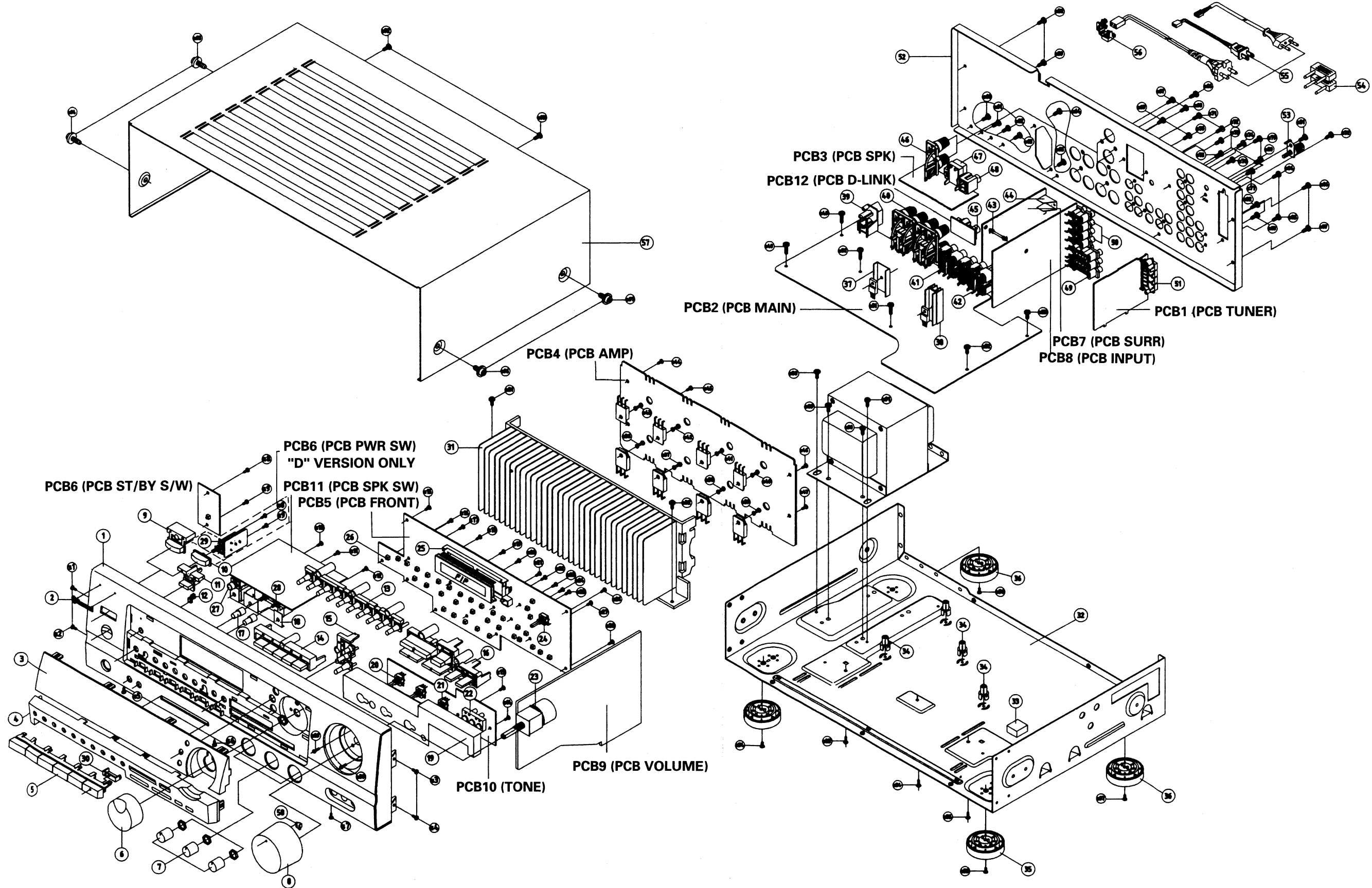
REF. NO.	DESCRIPTION	PARTS NO.	QTY	VERSION	REF. NO.	DESCRIPTION	PARTS NO.	QTY	VERSION
	PACKAGE					HARDWARE KIT			
	BOX CARTON	601704179003	1	K	S1-S30	SCREW #8 BTT3x8B	BO20030083B1	30	
	BOX CARTON	601704179002	1		S31-S35	SCREW #2 WPTC3x8Y	BO10530101W1	5	
	POLY BAG	633004009201	1		S36-S43	SCREW HEAT SINK	150704113601	8	
	FILM SOFT PE	632004005201	1		S44-S47	SCREW #8 BTT3x8B	BO20030083B1	4	
	CUSHION POLY	623004376401	1		S48-S51	SCREW #2 BTC3x20Y	BO10530201B1	4	
					S52-S53	SCREW #2 WPTC3x8Y	BO10530101W1	2	
	ACCESSORIES				S54-S71	SCREW #8 BTT3x8B	BO20030083B1	17	
	ANTENNA AM LOOP STAND-TYPE	E60101000000	1		S72-S73	SCREW GROUND	150704099601	2	
	ANTENNA WIRE FM	E60501001000	1		S74	SCREW #8 BTT3x8B	BO20030083B1	1	
	MATCHING TRANS	L10928400710	1	A,K	S75-S76	SCREW GROUND	150704099601	2	
	MATCHING TRANS	L10928400720	1	D,RDS	S77-S78	SCREW #8 BTT3x8B	BO20030083B1	2	
	COMMANDER ASS'Y	830004025W01	1		S79-S80	SCREW GROUND	150704099601	2	
	COMMANDER ASS'Y	830004025W03	1	K	S81-S83	SCREW #8 BTT3x8B	BO20030083B1	3	
	BATTERY 1.5V AA(R6M)	G670001R5012	2		S84	SCREW GROUND	150704099601	1	
	MANUAL INSTRUCTION	570704593003	1	A	S85-S93	SCREW #8 BTT3x8B	BO20030083B1	8	
	MANUAL INSTRUCTION	570704637001	1	K	S94-S97	SCREW BSAM4x8B	BO20940083B1	4	
	MANUAL INSTRUCTION	570704593001	1	D					
	MANUAL INSTRUCTION	570704593002	1	RDS					
	CABINET & CHASSIS					MISCELLANEOUS			
1	PANEL FRONT	306704599101	1	A,K		POWER TRANSFORMAR,120V 60Hz	820028101111	1	A
(1)	PANEL FRONT	306704220102	1	D		POWER TRANSFORMAR,220V 60Hz	820028101511	1	K
(1)	PANEL FRONT	306704220103	1	RDS		POWER TRANSFORMAR,230V 50Hz	820028101121	1	D,RDS
2	BADGE,SHERWOOD	563704059101	1		PCB1	P.C.BDARD TUNNER	702005776000	1	
3	WINDOW FL.	507704490301	1	A,K	PCB2	P.C.BDARD MAIN	702004048000	1	
(3)	WINDOW FL.	507704005301	1	D	PCB3	P.C.BDARD SPKR		1	
(3)	WINDOW FL.	507704490302	1	RDS	PCB4	P.C.BDARD AMP	702004044000	1	
4	DECORATION CAP(DUMMY)	450704203101	1	A,K	PCB5	P.C.BDARD FRONT	702004049000	1	
(4)	DECORATION CAP(DUMMY)	512704095101	1	D	PCB6	P.C.BDARD POWER SW		1	D,RDS
(4)	DECORATION CAP(DUMMY)	512704092101	1	RDS	PCB6	P.C.BDARD ST/BY SW		1	A,K
5	BUTTON FUNCTION (6KEY)	509708933101	1	A,K	PCB7	P.C.BDARD SURROUND	702005362000	1	
(5)	BUTTON FUNCTION (6KEY)	509704648101	1	D,RDS	PCB8	P.C.BDARD INPUT	702004064000	1	
6	KNOB ENCODER	509005921101	1		PCB9	P.C.BDARD VOLUME		1	
7	KNOB ROTARY	509705064101	3		PCB10	P.C.BDARD TONE		1	
8	KNOB MAIN	509005922101	1		PCB11	P.C.BDARD SPKR SW		1	
9	BUTTON POWER -A	509005907101	1	A,K	PCB12	P.C.BDARD D-LINK		1	
10	BUTTON POWER -D	509005399101	1	D,RDS					
11	BUTTON STANDBY	509006683101	1						
12	INDICATOR	516004059301	1						
13	BUTTON MEMORY (10KEY)	509005920101	1						
14	BUTTON RDS(5KEY)	509005918101	1	RDS					
15	BUTTON MEDE (3KEY)	509005919101	1						
16	BUTTON TUNNING (9KEY)	509708934101	1	A,K					
(16)	BUTTON TUNNING (9KEY)	509704649101	1	D,RDS					
17	BUTTON PUSH	509006682101	2						
18	BRACKET PHONE	401004361601	1						
19	SHIELD TONE	307004653601	1						
20	SWITCH BALANCE	C45511140200	1						
21	SWITCH TREBLE/BASS	C45512140230	2						
22	JACK RCA (3P)	G80804030000	1						
23	VOLUME MOTOR	C49514530001	1						
24	SWITCH ENCODER	C45004203001	1						
25	HOLDER FL	432004078101	1						
26	SWITCH TACT	G18004050001	35						
27	JACK PHONE	G40204016133	1						
28	SWITCH PUSH	G00004117000	2						
29	SWITCH PUSH POWER	G00004159000	1	D,RDS					
30	INDICATOR FUNCTION	516004081301	1						
31	HEAT SINK POWER	212004087801	1						
32	CHASSIS MAIN	320004477601	1						
33	SPONGE	405004434501	1						
34	SPACER	430004056101	4						
35	FOOT AL	400704102101	2						
36	FOOT PL	400004020101	2						
37	HEAT SINK REG TR	212004429801	2						
38	HEAT SINK REG TR	212004480801	1						
39	AC OUTLET	G43504014000	1	A					
(39)	AC OUTLET	G43004040001	1	K					
(39)	AC OUTLET	G43504011000	1	D,RDS					
40	SPK TERMINAL (8P)	G61404021000	1						
41	RCA JACK (4P)	G60240045003	1	A,D					
42	RCA JACK (6P)	G60360092002	1	A,D					
43	FASTENER	442004025301	1						
44	BRACKET INSERT	307004558601	1	RDS					
45	RCA JACK (2P)	G60120116003	1						
46	SPK TERMINAL (2P)	G61104031000	1						
47	SPK TERMINAL (4P)	G59404047000	1						
48	DIGI LINK (1P)-A	G40204207000	1	A,only					
49	RCA JACK (9P)	G60790150001	1						
50	RCA JACK (4P)	G60240045003	1						
51	ANT TERMINAL	G59004047000	1	A,K					
(51)	ANT TERMINAL	G59004045000	1	D,RDS					
52	CHASSIS BACK	320704283603	1	A					
(52)	CHASSIS BACK	320704283601	1	K					
(52)	CHASSIS BACK	320705320603	1	D					
(52)	CHASSIS BACK	320705320603	1	RDS					
53	GROUND TERMINAL	G61004006001	1						
54	PLUG JUMPER	L06304075000	1						
55	AC POWER CORD	L06104005101	1	A					
(55)	AC POWER CORD	L06104035103	1	K					
(55)	AC POWER CORD	L06104040103	1	D,RDS					
56	CORD STOPPER	438004016201	1						
57	COVER TOP	300004475601	1						
58	INDICATOR KNOB	516004085301	1						

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list are of special significance to safety. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

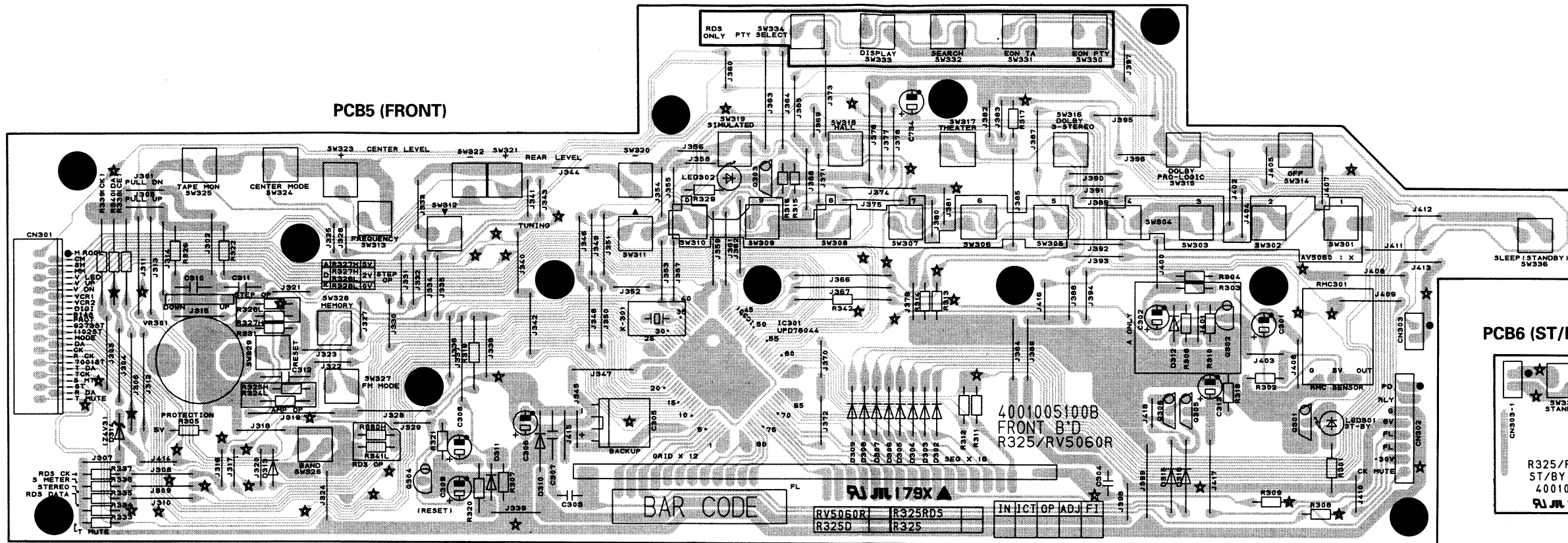
EXPLODED VIEW

Model No. : R325/R325RDS

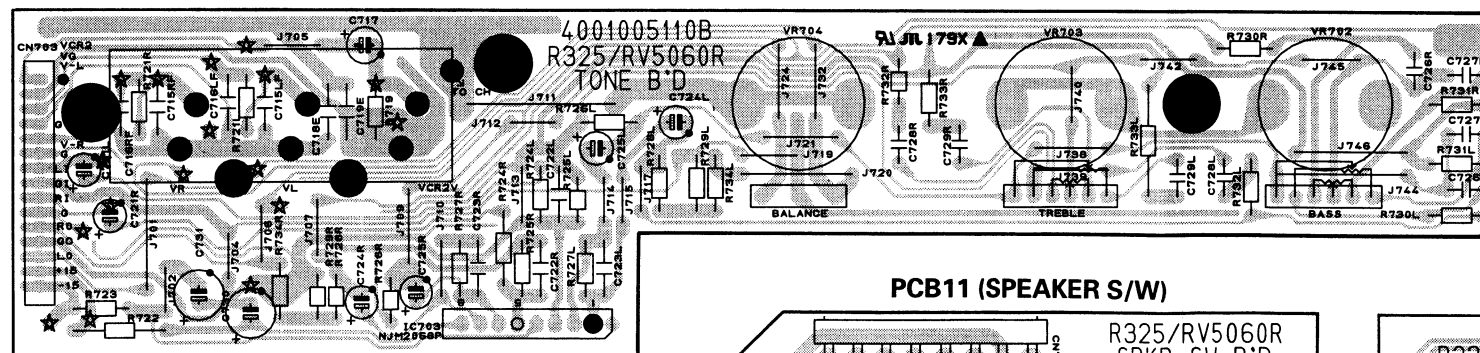


Model No. : R325/R325RDS

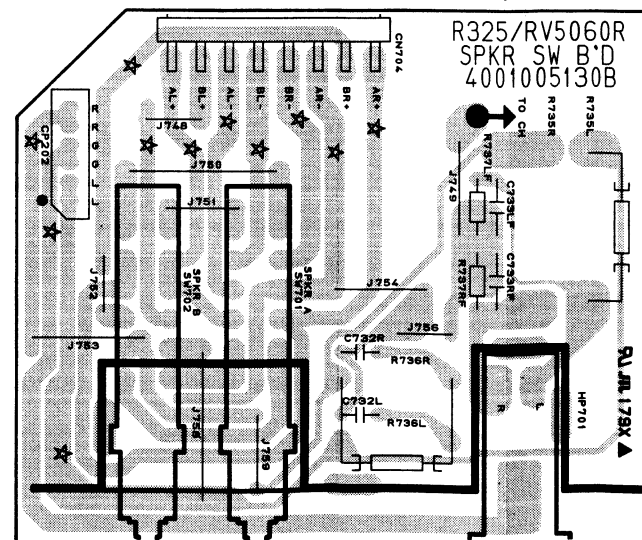
PCB6 (ST/BY S/W)



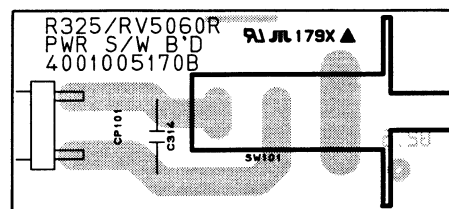
PCB9 (VOLUME)



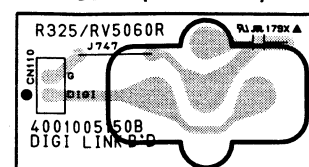
PCB11 (SPEAKER S/W)



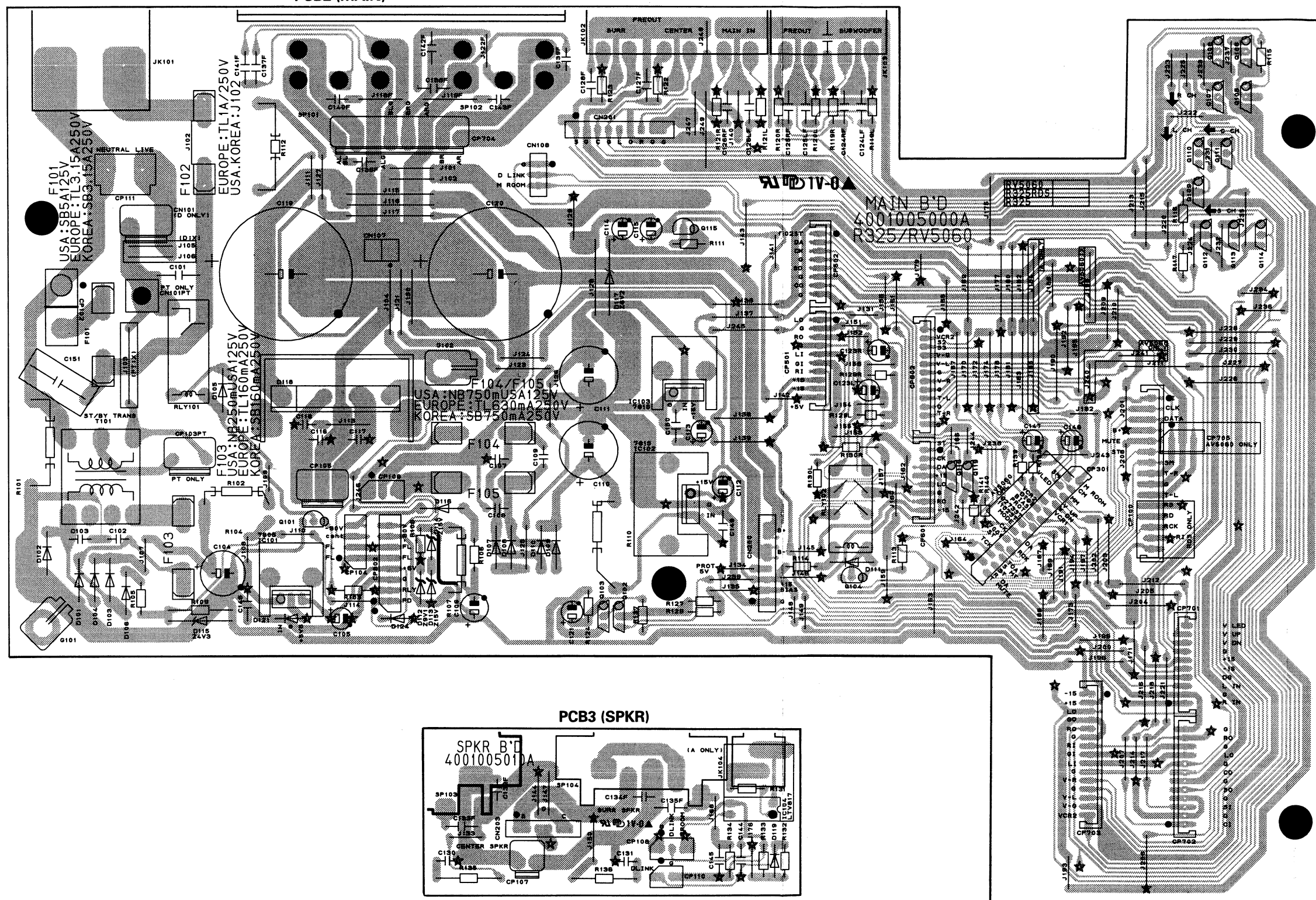
PCB6 (POWER S/W)



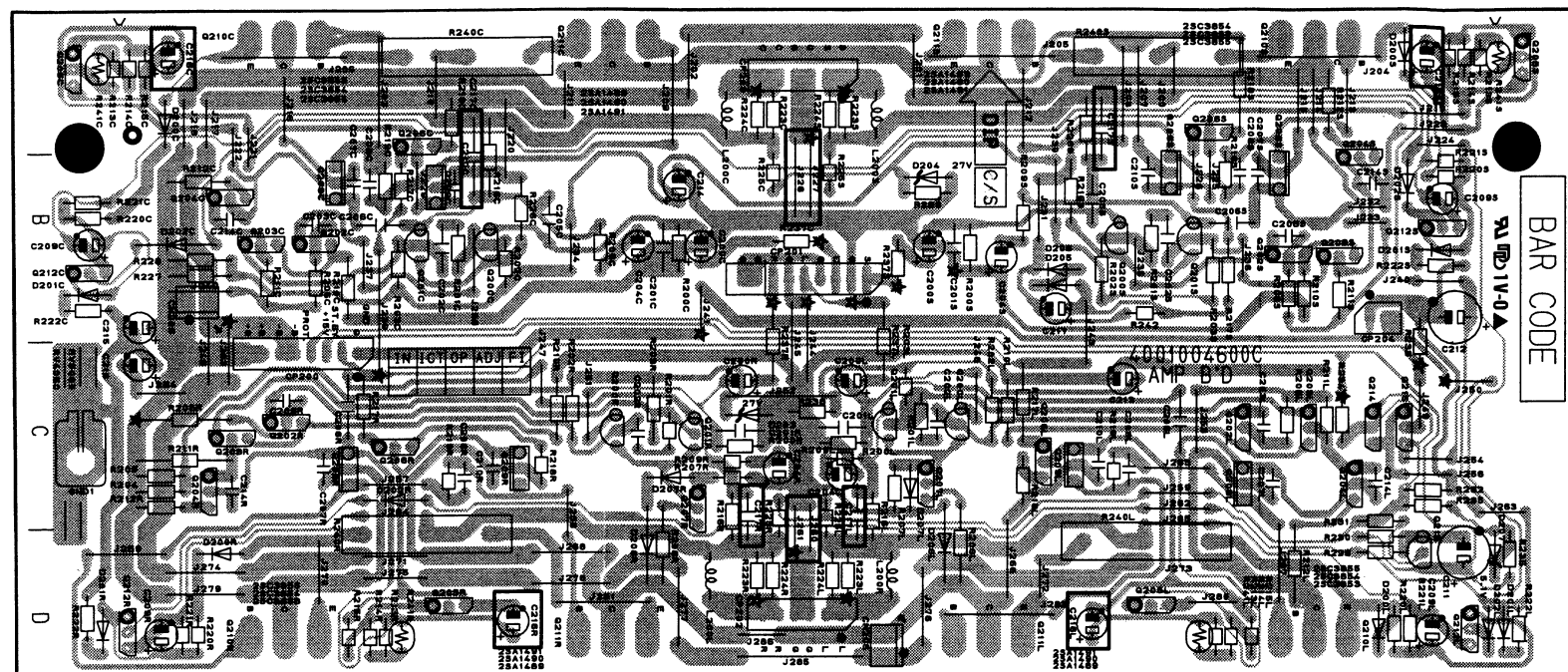
PCB12 (DIGILINK)



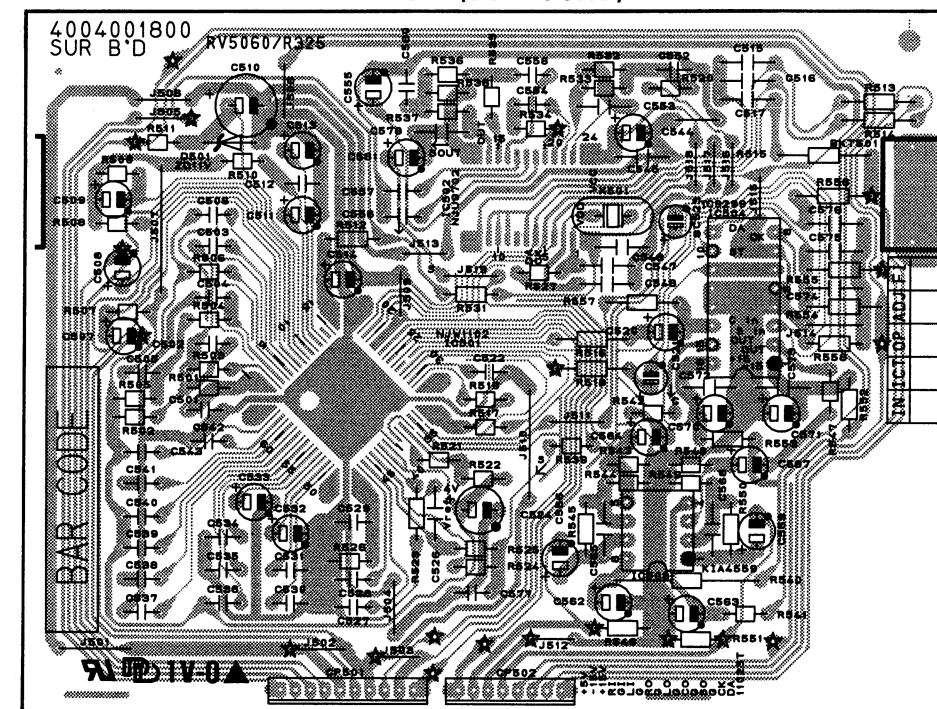
PCB2 (MAIN)



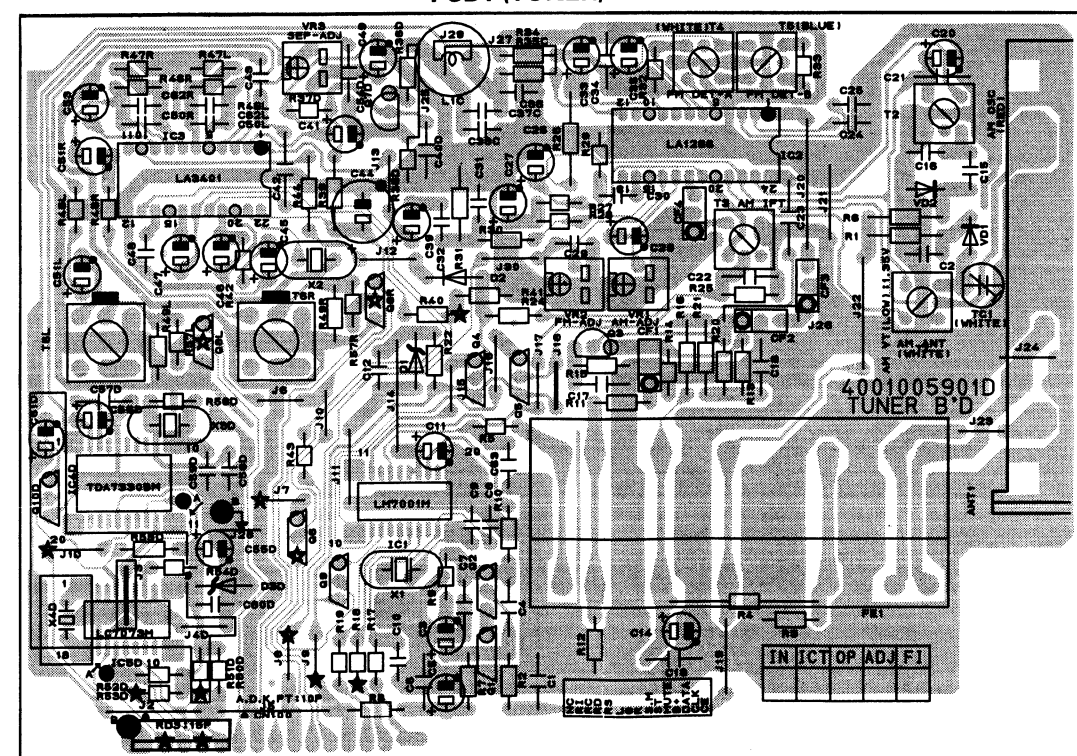
PCB4 (AMP)



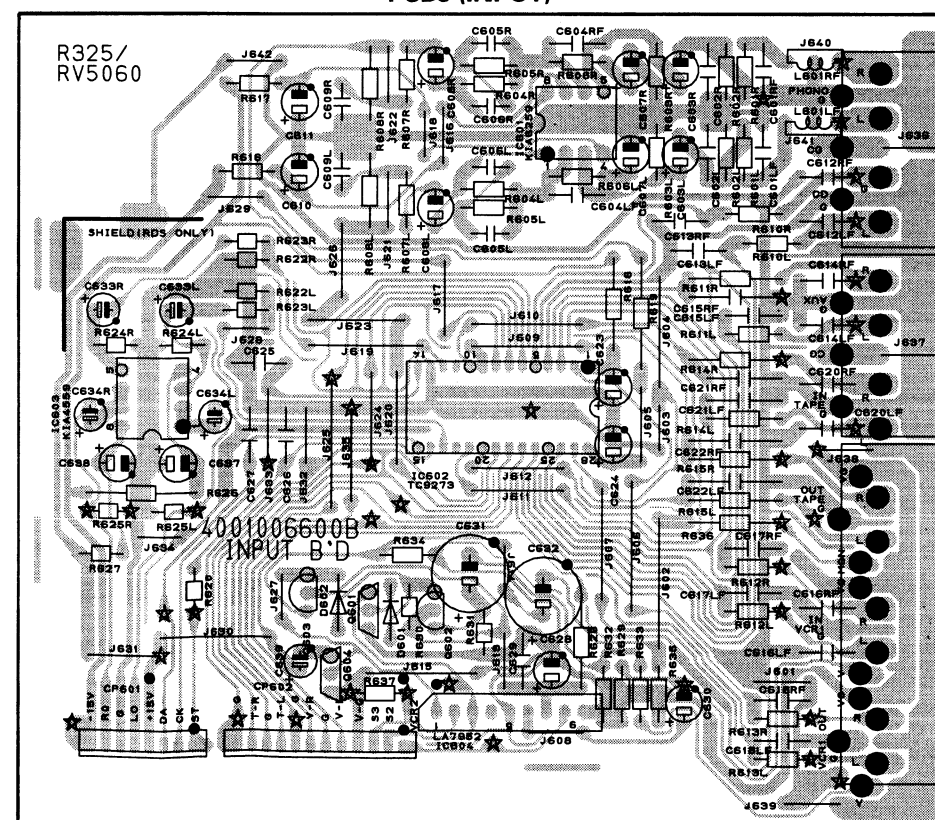
PCB7 (SURROUND)



PCB1 (TUNER)



PCB8 (INPUT)



ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTICE : Products marked with Δ have special characteristics important to safety.
If you replace any of these components, read carefully the product safety notice in this manual.
Don't degrade the safety of the product through improper servicing.
Resistor/Capacitor tolerance – D : ($\pm 0.5\%$), J : ($\pm 5\%$), K : ($\pm 10\%$), M : ($\pm 20\%$), Z : (+80, – 20%)

REF.NO	DESCRIPTION	PART NO.	Q'ty	VERSION	REF.NO	DESCRIPTION	PART NO.	Q'ty	VERSION		
PCB1	ASSEMBLY P.C.BOARD TUNER (A,K, VERSION)				R15	METAL FILM	470 ohm 1/5 W J	C06004716P52	1		
	CAPACITORS				R16	METAL FILM	100 ohm 1/5 W J	C06001016P52	1		
C1	CERAMIC TUBULAR	0.022 μ F	25 V	D00522357453	1	R17-R19	METAL FILM	1 kohm 1/5 W J	C06001026P52	3	
C2	CERAMIC DISC	0.047 μ F	50 V Z	D00447309706	1	R20	METAL FILM	330 ohm 1/5 W J	C06003316P52	1	
C3	ELECTROLYTIC SG	3.3 μ F	50 V M	D0403R308710	1	R21	METAL FILM	270 ohm 1/5 W J	C06002716P52	1	
C4	CERAMIC TUBULAR	0.01 μ F	16 V	D00510377353	1	R22	METAL FILM	470 ohm 1/5 W J	C06004716P52	1	
C5	ELECTROLYTIC SG	47 μ F	16 V M	D04047008310	1	R24	METAL FILM	4.7 kohm 1/5 W J	C06004726P52	1	
C6	CERAMIC TUBULAR	0.022 μ F	25 V	D00522357453	1	R25	CARBON FILM	68 kohm 1/5 W J	C00006836P52	1	
C7	CERAMIC TUBULAR	0.01 μ F	16 V	D00510377353	1	R26	CARBON FILM	18 kohm 1/5 W J	C00001836P52	1	
C8/C9	CERAMIC DISC CH	18 μ F	50 V	D00018016707	2	R27	CARBON FILM	10 kohm 1/5 W J	C00001036P52	1	
C10	CERAMIC DISC	100 μ F	50 V J	D00410106706	1	R28	CARBON FILM	22 kohm 1/5 W J	C00002236P52	1	
C11	ELECTROLYTIC SG	47 μ F	16 V M	D04047008310	1	R29	METAL FILM	22 ohm 1/5 W J	C06002206P52	1	
C12	CERAMIC DISC	0.022 μ F	50 V Z	D00422309706	1	R30	METAL FILM	4.7 kohm 1/5 W J	C06004726P52	1	
C13	CERAMIC TUBULAR	0.022 μ F	25 V	D00522357453	1	R31	CARBON FILM	10 kohm 1/5 W J	C00001036P52	1	
C14	ELECTROLYTIC SG	100 μ F	16 V M	D04010108310	1	R32	CARBON FILM	5.6 kohm 1/5 W J	C00005626P52	1	
C15	POLY	470 μ F	50 V J	D02247106705	1	R33	METAL FILM	3.3 kohm 1/5 W J	C06003326P52	1	
C16	CERAMIC DISC CH	15 μ F	50 V	D00015016707	1	R34	METAL FILM	100 ohm 1/5 W J	C06001016P52	1	
C17/C18	CERAMIC TUBULAR	0.022 μ F	25 V	D00522357453	2	R39	METAL FILM	100 ohm 1/5 W J	C06001016P52	1	
C20	ELECTROLYTIC SG	10 μ F	35 V M	D04010008510	1	R40	CARBON FILM	47 kohm 1/5 W J	C00004736P52	1	
C21/C22	CERAMIC TUBULAR	0.022 μ F	25 V	D00522357453	2	R41	CARBON FILM	22 kohm 1/5 W J	C00002236P52	1	
C23	CERAMIC TUBULAR	0.01 μ F	16 V	D00510377353	1	R42	METAL FILM	3.3 kohm 1/5 W J	C06003326P52	1	
C24/C25	CERAMIC DISC	0.022 μ F	50 V Z	D00422309706	2	R43	CARBON FILM	22 kohm 1/5 W J	C00002236P52	1	
C26	ELECTROLYTIC SG	4.7 μ F	50 V M	D0404R708710	1	R44	CARBON FILM	47 kohm 1/5 W J	C00004736P52	1	
C27	ELECTROLYTIC SG	3.3 μ F	50 V M	D0403R308710	1	R46/LR	CARBON FILM	120 kohm 1/5 W J	C00001246P52	2	
C28	ELECTROLYTIC SG	4.7 μ F	50 V M	D0404R708710	1	R47/LR	CARBON FILM	180 kohm 1/5 W J	C00001846P52	2	
C29	CERAMIC DISC	0.022 μ F	50 V Z	D00422309706	1	R48/LR	METAL FILM	2.7 kohm 1/5 W J	C06002726P52	2	
C30	MYLAR	0.022 μ F	100V J	D02022306C06	1	R49/LR	METAL FILM	3.3 kohm 1/5 W J	C06003326P52	2	
C31	MYLAR	0.0033 μ F	100V J	D02033206C06	1	R57/LR	METAL FILM	1.5 kohm 1/5 W J	C06001526P52	2	
C32	MYLAR	0.039 μ F	100V J	D02039306C06	1		COILS				
C33	ELECTROLYTIC SG	1 μ F	50 V M	D04001008710	1	T1	AM-ANT		D30401000000	1	
C34	CERAMIC TUBULAR	0.022 μ F	25 V	D00522357453	1	T2	AM-OSC		D94001001000	1	
C35	ELECTROLYTIC SG	100 μ F	16 V M	D04010108310	1	T3	AM-IFT P-7SB		D95001005000	1	
C36	CERAMIC DISC	330 μ F	50 V J	D00433106706	1	T4	FM-DET-A		D97001004000	1	
C39	ELECTROLYTIC SG	10 μ F	35 V M	D04010008510	1	T5	FM-DET-B		D97001006000	1	
C41	ELECTROLYTIC SG	4.7 μ F	50 V M	D0404R708710	1	T6/LR	MPX(19/38kHz) BLK		E40101001000	2	
C42	CERAMIC TUBULAR	0.047 μ F	50 V	D00547309753	1		SEMI FIXED VAREABLE RESISTORS				
C43	CERAMIC DISC	680 μ F	50 V J	D00468106706	1	VR1	5K(B)-H		C54150211500	1	
C44	ELECTROLYTIC SG	100 μ F	16 V M	D04010108310	1	VR2	50K(B)-H		C54150311500	1	
C45	ELECTROLYTIC SG	1 μ F	50 V M	D04001008710	1	VR3	200K(B)-H		C54120411500	1	
C46	ELECTROLYTIC SG	0.22 μ F	50 V M	D040R2208710	1		MISCELLANEOUS				
C47	ELECTROLYTIC SG	1 μ F	50 V M	D04001008710	1	TC1	TRIMMER	10 μ F	D11010090110	1	
C48	CERAMIC DISC	0.022 μ F	50 V Z	D00422309706	1	X1	X7M2		E80072000008	1	
C49	ELECTROLYTIC SG	10 μ F	35 V M	D04010008510	1	X2	CSB456F		E83045600005	1	
C50/LR	CERAMIC DISC	560 μ F	50 V J	D00456106706	2	FE1	FTA4-556HB		E90045560010	1	
C51/LR	ELECTROLYTIC SG	10 μ F	35 V M	D04010008510	2	S1	ANT TERMINAL		G59004047000	1 A,K	
C53	ELECTROLYTIC SG	10 μ F	35 V M	D04010008510	1						
C62/LR	CERAMIC DISC	68 μ F	50 V J	D00068006706	2						
	CONNECTOR				PCB1	ASSEMBLY P.C.BOARD TUNER (D,RDS, VERSION)					
CN100	PLUG 10P.35238-1010			L12252419100	1		CAPACITORS				
	CERAMIC FILTERS				C1	CERAMIC TUBULAR	0.022 μ F	25 V	D00522357453	1	
CF1	SFE10.7MA8-A-TF21			E43010700014	1	C2	CERAMIC DISC	0.047 μ F	50 V Z	D00447309706	1
CF3	SFE10.7MA8-A-TF21			E43010700014	1	C3	ELECTROLYTIC SG	3.3 μ F	50 V M	D0403R308710	1
CF4	CFM2-450BL			E43145000012	1	C4	CERAMIC TUBULAR	0.01 μ F	16 V	D00510377353	1
	DIODES				C5	ELECTROLYTIC SG	47 μ F	16 V M	D04047008310	1	
D1	ZENER, UZ 5.1 BSB			K06005R11452	1	C6	CERAMIC TUBULAR	0.022 μ F	25 V	D00522357453	1
D2	SWITCHING, 1N4148M			K00041480152	1	C7	CERAMIC TUBULAR	0.01 μ F	16 V	D00510377353	1
VD1/VD2	VARACTOR, SVC321SPA-C			K08003210052	2	C8/C9	CERAMIC DISC CH	18 μ F	50 V	D00018016707	2
	INTEGRATED CIRCUITS				C10	CERAMIC DISC	100 μ F	50 V J	D00410106706	1	
IC1	LM77001M			J12470010001	1	C11	ELECTROLYTIC SG	47 μ F	16 V M	D04047008310	1
IC2	LA1266G			J12412660000	1	C12	CERAMIC DISC	0.022 μ F	50 V Z	D00422309706	1
IC3	LA3401			J12434010000	1	C13	CERAMIC TUBULAR	0.022 μ F	25 V	D00522357453	1
	TRANSISTORS				C14	ELECTROLYTIC SG	100 μ F	16 V M	D04010108310	1	
Q1/Q2	2SC1740S, NPN			J5021740Y005	2	C15	POLY	470 μ F	50 V J	D02247106705	1
Q3	KTC1923Y/KTC3194Y, NPN			J5023194Y005	1	C16	CERAMIC DISC CH	15 μ F	50 V	D00015016707	1
Q4-Q6	KRA107M/DTA114YS, PNP			J601107M0005	3	C17/C18	CERAMIC TUBULAR	0.022 μ F	25 V	D00522357453	2
Q8/LR	DTC323TS, NPN			J602323TS005	2	C20	ELECTROLYTIC SG	10 μ F	35 V M	D04010008510	1
Q9	KRA107M/DTA114YS, PNP			J601107M0005	1	C21/C22	CERAMIC TUBULAR	0.022 μ F	25 V	D00522357453	2
	RESISTORS				C23	CERAMIC TUBULAR	0.01 μ F	16 V	D00510377353	1	
R1	CARBON FILM	100 kohm 1/5 W J		C00001046P52	1	C24/C25	CERAMIC DISC	0.022 μ F	50 V Z	D00422309706	2
R2	CARBON FILM	5.6 kohm 1/5 W J		C00005626P52	1	C26	ELECTROLYTIC SG	4.7 μ F	50 V M	D0404R708710	1
R3	CARBON FILM	22 kohm 1/5 W J		C00002236P52	1	C27	ELECTROLYTIC SG	3.3 μ F	50 V M	D0403R308710	1
R4	CARBON FILM	100 kohm 1/5 W J		C00001046P52	1	C28	ELECTROLYTIC SG	4.7 μ F	50 V M	D0404R708710	1
R5	METAL FILM	470 ohm 1/5 W J		C06004716P52	1	C29	CERAMIC DISC	0.022 μ F	50 V Z	D00422309706	1
R6	CARBON FILM	100 kohm 1/5 W J		C00001046P52	1	C30	MYLAR	0.022 μ F	100V J	D02022306C06	1
R7	CARBON FILM	10 kohm 1/5 W J		C00001036P52	1	C31	MYLAR	0.0033 μ F	100V J	D02033206C06	1
R8	METAL FILM	270 ohm 1/5 W J		C06002716P52	1	C32	MYLAR	0.039 μ F	100V J	D02039306C06	1
R9	METAL FILM	560 ohm 1/5 W J		C06005616P52	1	C33	ELECTROLYTIC SG	1 μ F	50 V M	D04001008710	1
R10	METAL FILM	1 kohm 1/5 W J		C06001026P52	1	C34	CERAMIC TUBULAR	0.022 μ F	25 V	D00522357453	1
R11	METAL FILM	180 ohm 1/5 W J		C06001816P52	1	C35	ELECTROLYTIC SG	100 μ F	16 V M	D04010108310	1
R12	METAL FILM	560 ohm 1/5 W J		C06005616P52	1	C36	CERAMIC DISC	330 μ F	50 V J	D00433106706	1
R13	METAL FILM	3.3 kohm 1/5 W J		C06003326P52	1	C37C	CERAMIC DISC	82 μ F	50 V J	D00082006706	1
R14	METAL FILM	560 ohm 1/5 W J		C06005616P52	1	C38C	CERAMIC DISC	100 μ F	50 V J	D00410106706	1
					C39	ELECTROLYTIC SG	10 μ F	35 V M	D04010008510	1	
					C40D	CERAMIC TUBULAR	0.022 μ F	25 V	D00522357453	1	
					C41	ELECTROLYTIC SG	4.7 μ F	50 V M	D0404R708710	1	

REF.NO	DESCRIPTION	PART NO.	Q'ty	VERSION
C42	CERAMIC TUBULAR	0.047	50 V	D00547309753 1
C43	CERAMIC DISC	880	50 V	D00468106706 1
C44	ELECTROLYTIC SG	100	16 V	D04010108310 1
C45	ELECTROLYTIC SG	1	50 V	D04001008710 1
C46	ELECTROLYTIC SG	0.22	50 V	D040R2208710 1
C47	ELECTROLYTIC SG	1	50 V	D04001008710 1
C48	CERAMIC DISC	0.022	50 V	D00422309706 1
C49	ELECTROLYTIC SG	10	35 V	D04010008510 1
C50L	CERAMIC DISC	220	50 V	D00422106706 1
C50R	CERAMIC DISC	220	50 V	D00422106706 1
C51L/R	ELECTROLYTIC SG	10	35 V	D04010008510 2
C53	ELECTROLYTIC SG	10	35 V	D04010008510 1
C54D	CERAMIC TUBULAR	270	50 V	D00527107753 1
C55D	ELECTROLYTIC SG	47	16 V	D04047008310 1
C56D	ELECTROLYTIC SG	10	35 V	D04010008510 1
C57D	CERAMIC TUBULAR	0.1	50 V	D00510409753 1
C58D/C59D	CERAMIC DISC	27	50 V	D00427006706 2
C60D	CERAMIC DISC	0.1	50 V	D00410409706 1
C62L/R	CERAMIC DISC	10	50 V	D00010006706 2
CONNECTOR				
CN100	PLUG, 15P M.O	L11252419190	1	
CERAMIC FILTERS				
CF1	10M7S3GH	E43010700015	1	
CF3	10M7S3GH	E43010700015	1	
CF4	CFM2-450BL	E43145000012	1	
DIODES				
D1	ZENER, UZ 5.1 BSB	K06005R11452	1	
D2	SWITCHING, 1N4148M	K00041480152	1	
D3D	ZENER, UZ 5.1 BSB	K06005R11452	1	
VD1/VD2	VARACTOR, SVC321SPA-C	K08003210052	2	
INTEGRATED CIRCUITS				
IC1	LM7001M	J12470010001	1	
IC2	LA1266G	J12412660000	1	
IC3	LA3401	J12434010000	1	
IC4D	TDA7330BD	J02073300001	1	
COILS				
L1C	20M8H	D33020800112	1	
T1	AM-ANT	D30401000000	1	
T2	AM-OSC	D94001001000	1	
T3	AM-IFT P-7SB	D95001005000	1	
T4	FM-DET-A	D97001004000	1	
T5	FM-DET-B	D97001006000	1	
T6L/R	MPX(1938KHz) BLK	E40101001000	2	
TRANSISTORS				
Q1/Q2	2SC1740S, NPN	J5021740Y005	2	
Q3	KTC1923Y/KTC3194Y, NPN	J5023194Y005	1	
Q4-Q6	KRA107M/DTA114YS, PNP	J601107M0005	3	
Q7D	2SC1740S, NPN	J5021740Y005	1	
Q8L/R	DTG323TS, NPN	J602323TS005	2	
Q9	KRA107M/DTA114YS, PNP	J601107M0005	1	
RESISTORS				
R1	CARBON FILM	100 kohm 1/5 W	J	C00001046P52 1
R2	CARBON FILM	5.6 kohm 1/5 W	J	C00005626P52 1
R3	CARBON FILM	22 kohm 1/5 W	J	C00006236P52 1
R4	CARBON FILM	100 kohm 1/5 W	J	C00001046P52 1
R5	METAL FILM	470 ohm 1/5 W	J	C06004716P52 1
R6	CARBON FILM	100 kohm 1/5 W	J	C00001046P52 1
R7	CARBON FILM	10 kohm 1/5 W	J	C00001036P52 1
R8	METAL FILM	270 ohm 1/5 W	J	C06002716P52 1
R9	METAL FILM	560 ohm 1/5 W	J	C06005616P52 1
R10	METAL FILM	1 kohm 1/5 W	J	C06001026P52 1
R11	METAL FILM	180 ohm 1/5 W	J	C06001816P52 1
R12	METAL FILM	560 ohm 1/5 W	J	C06005616P52 1
R13	METAL FILM	3.3 kohm 1/5 W	J	C06003326P52 1
R14	METAL FILM	560 ohm 1/5 W	J	C06005616P52 1
R15	METAL FILM	470 ohm 1/5 W	J	C06004716P52 1
R16	METAL FILM	100 ohm 1/5 W	J	C06001016P52 1
R17/R18	METAL FILM	1 kohm 1/5 W	J	C06001026P52 2
R20	METAL FILM	330 ohm 1/5 W	J	C06003316P52 1
R21	METAL FILM	270 ohm 1/5 W	J	C06002716P52 1
R22	METAL FILM	470 ohm 1/5 W	J	C06004716P52 1
R24	METAL FILM	4.7 kohm 1/5 W	J	C06004726P52 1
R25	CARBON FILM	68 kohm 1/5 W	J	C00006836P52 1
R26	CARBON FILM	47 kohm 1/5 W	J	C00004736P52 1
R27	CARBON FILM	10 kohm 1/5 W	J	C00001036P52 1
R28	CARBON FILM	22 kohm 1/5 W	J	C00002236P52 1
R29	METAL FILM	22 ohm 1/5 W	J	C06002206P52 1
R30	METAL FILM	4.7 kohm 1/5 W	J	C06004726P52 1
R31	METAL FILM	2.7 kohm 1/5 W	J	C06002726P52 1
R32	CARBON FILM	5.6 kohm 1/5 W	J	C00006826P52 1
R33	METAL FILM	3.3 kohm 1/5 W	J	C06003326P52 1
R34	METAL FILM	100 ohm 1/5 W	J	C06001016P52 1
R35C	METAL FILM	1.8 kohm 1/5 W	J	C06001826P52 1
R36D	CARBON FILM	47 kohm 1/5 W	J	C00004736P52 1
R37D	METAL FILM	22 ohm 1/5 W	J	C06002206P52 1
R38D	METAL FILM	1 kohm 1/5 W	J	C06001026P52 1
R39	METAL FILM	100 ohm 1/5 W	J	C06001016P52 1
R40	CARBON FILM	47 kohm 1/5 W	J	C00004736P52 1
R41	CARBON FILM	22 kohm 1/5 W	J	C00002236P52 1

REF.NO	DESCRIPTION	PART NO.	Q'ty	VERSION
R42	METAL FILM	3.3 kohm 1/5 W	J	C06003326P52 1
R43	CARBON FILM	22 kohm 1/5 W	J	C00002236P52 1
R44	CARBON FILM	47 kohm 1/5 W	J	C00004736P52 1
R46L/R	CARBON FILM	220 kohm 1/5 W	J	C00002246P52 2
R47L/R	CARBON FILM	270 kohm 1/5 W	J	C00002746P52 2
R48L/R	METAL FILM	2.7 kohm 1/5 W	J	C06002726P52 2
R49L/R	METAL FILM	3.3 kohm 1/5 W	J	C06003326P52 2
R50D	METAL FILM	680 ohm 1/5 W	J	C06006816P52 1
R52D/R53D	CARBON FILM	10 kohm 1/5 W	J	C00001036P52 2
R56D	CARBON FILM	2.2 Mohm 1/5 W	J	C00002256P52 1
R57L/R	METAL FILM	1.5 kohm 1/5 W	J	C06001526P52 2
SEMI FIXED VAREABLE RESISTORS				
VR1	5K(B)-H	C54150211500	1	
VR2	50K(B)-H	C54150311500	1	
VR3	200K(B)-H	C54120411500	1	
MISCELLANEOUS				
TC1	TRIMMER	10 pF		D11010090110 1
X1	X7M2			E80072000008 1
X2	CSB456F			E83045600005 1
X3D	X4M332			E80043320006 1
FE1	FTH4-460H			E90044600011 1
(51)	ANT TERMINAL			G59004045000 1 D,RDS
PCB2 ASSEMBLY P.C.BOARD MAIN CAPACITORS				
C101	CERAMIC	0.0047	400 V	D00847208K01 1
C102/C103	MYLAR	0.047	100 V	D02047306C06 2
C104	ELECTROLYTIC SG	220	35 V	M D04022108520 1
C105	ELECTROLYTIC SG	1	50 V	M D04001008710 1
C106	ELECTROLYTIC SG	47	50 V	M D04047008710 1
C107-C109	MYLAR	0.047	100V	J D02047306C06 3
C110/C111	ELECTROLYTIC SG	1000	35 V	M D04010208520 2
C112/C113	ELECTROLYTIC SG	1	50 V	M D04001008710 2
C114	ELECTROLYTIC SG	10	50 V	M D04010008710 1
C115	ELECTROLYTIC SG	47	25 V	M D04047008410 1
C116-C118	MYLAR	0.01	400V	K D02010306K08 3
C119/C120	ELECTROLYTIC HM	8200	63 V	M D04082208836 2
C121	ELECTROLYTIC SG	22	16 V	M D04022008310 1
C123L/R	ELECTROLYTIC SG	1	50 V	M D04001008710 2
C124LF	CERAMIC TUBULAR	100	50 V	D00110107753 1 D,RDS
C124RF	CERAMIC TUBULAR	100	50 V	D00110107753 1 D,RDS
C125LF	CERAMIC TUBULAR	100	50 V	D00110107753 1 D,RDS
C125RF	CERAMIC TUBULAR	100	50 V	D00110107753 1 D,RDS
C126LF	CERAMIC TUBULAR	100	50 V	D00110107753 1 D,RDS
C126RF	CERAMIC TUBULAR	100	50 V	D00110107753 1 D,RDS
C127F	CERAMIC TUBULAR	100	50 V	D00110107753 1 D,RDS
C128F	CERAMIC TUBULAR	100	50 V	D00110107753 1 D,RDS
C129LF	CERAMIC TUBULAR	100	50 V	D00110107753 1 D,RDS
C129RF	CERAMIC TUBULAR	100	50 V	D00110107753 1 D,RDS
C136F	CERAMIC DISC	0.0047	50 V	Z D00447209706 1 D,RDS
C137F	CERAMIC TUBULAR	0.0047	16 V	D00547277353 1 D,RDS
C138F	CERAMIC TUBULAR	0.0047	16 V	D00547277353 1 D,RDS
C139F	CERAMIC DISC	0.0047	50 V	Z D00447209706 1 D,RDS
C140F	CERAMIC DISC	0.0047	50 V	Z D00447209706 1 D,RDS
C141F	CERAMIC TUBULAR	0.0047	16 V	D00547277353 1 D,RDS
C142F	CERAMIC TUBULAR	0.0047	16 V	D00547277353 1 D,RDS
C143F	CERAMIC DISC	0.0047	50 V	Z D00447209706 1 D,RDS
C146/C147	ELECTROLYTIC SG	1	50 V	M D04001008710 2
C151	CERAMIC MYLAR	0.1	250 V	D02010408H21 1 D,RDS
CONNECTORS				
CN101	PLUG, JE202B1T2			L10820200022 1 D,RDS
CN107	LEAD ASS'Y, 2P, 120			L02002124166 1
CN108	LEAD ASS'Y, 2P, 120			L02103123331 1
CP100	PLUG, 35337-1020, 10P			L10253291100 1 A,K
(CP100)	PLUG, 35337-1020, 15P			L10253291190 1 D,RDS
CP102	PLUG, AC S-2 2P			L10302000000 1
CP104	PLUG, 5267-04P			L10252670040 1
CP105	PLUG, JE202A1T3			L10420200030 1
CP106	PLUG, 5267-03A			L10252670030 1
CP111	PLUG, GSCS-1302			L10402004000 1 A
(CP111)	PLUG, GSCS-1301			L10402002000 1 D,RDS,K
CN200	LEAD ASS'Y, 8P 80			L02108083321 1
CN201	LEAD ASS'Y, 9P 200			L02108203321 1
CP301	PLUG 25P FPC			L13162160250 1
CP302	PLUG, 5267-08A			L10252670080 1
CP501	PLUG, 10P M.O 2			L10135336100 1
CP502	PLUG, 8P M.O 2			L10135336080 1
CP601	PLUG, 8P M.O 2			L10135336080 1
CP602	PLUG, 12P M.O 2			L10135336120 1
CP701	PLUG, 10P M.O 2			L10135336100 1
CP702	PLUG, 12P M.O 2			L10135336120 1
CP703	PLUG 15P, G1L-S-15P-S2T2			L10122015000 1
CP704	PLUG, JE202A1T8			L10420200080 1
DIODES				
D101-D110	RECTIFIER, 1N4003			K04040030052 1
D111	SWITCHING, 1N4148M			K00041480152 1
D112	ZENER, UZ 9.1 BSC			K06009R12452 1
D113/D114	ZENER, UZ 15.0 BSC			K06015002452 2
D115	ZENER, UZ 4.3BSB			K06004R31452 1
D116	RECTIFIER, 1N4003			K04040030052 1
D117	ZENER, UZ 6.2 BSB			K06006R21452 1

REF.NO	DESCRIPTION	PART NO.	Q'ty	VERSION
C544	ELECTROLYTIC SG	220	1	1
C545	CERAMIC TUBULAR	0.1	1	1
C546	CERAMIC TUBULAR	0.1	1	1
C547/C548	CERAMIC TUBULAR	220	2	1
C552	MYLAR	0.0022	1	1
C553	CERAMIC TUBULAR	560	1	1
C554	MYLAR BOX	0.1	1	1
C555	ELECTROLYTIC SG	47	1	1
C556/C557	MYLAR	0.047	2	1
C558	MYLAR BOX	0.1	1	1
C560	MYLAR	0.0056	1	1
C561	ELECTROLYTIC SG	1	1	1
C562/C563	ELECTROLYTIC SG	47	2	1
C564	ELECTROLYTIC SG	1	1	1
C565	CERAMIC TUBULAR	47	1	1
C566	ELECTROLYTIC SG	1	1	1
C567	ELECTROLYTIC SG	0.47	1	1
C568	CERAMIC TUBULAR	560	1	1
C569	ELECTROLYTIC SG	0.47	1	1
C570/C571	ELECTROLYTIC SG	47	2	1
C572/C573	CERAMIC TUBULAR	0.1	2	1
C574-C576	CERAMIC TUBULAR	100	3	1
C577	CERAMIC TUBULAR	0.001	1	1
C578	CERAMIC TUBULAR	560	1	1

CP501	CONNECTORS			
	PLUG, 35237-1010	L10135237100	1	
CP502	PLUG, 35237-0810	L10135237080	1	

D501	DIODE			
	ZENER, UZ 11.0 BSC	K06011002452	1	

IC501	INTEGRATED CIRCUITS			
	NJW1102AFG1	J08111020000	1	
IC502		J12097020001	1	
IC503		J12145590001	1	
IC504		J08492990000	1	

R501	RESISTORS			
	CARBON FILM	47 kohm	1/5 W J	C00004736P52 1
R502		15 kohm	1/5 W J	C00001536P52 1
R503		7.5 kohm	1/5 W J	C00007526P52 1
R504		47 kohm	1/5 W J	C00004736P52 1
R505		15 kohm	1/5 W J	C00001536P52 1
R506		7.5 kohm	1/5 W J	C00007526P52 1
R507/R508		22 kohm	1/5 W J	C00002236P52 2
R509		4.7 kohm	1/5 W J	C00004756P52 1
R510		100 kohm	1/5 W J	C00001046P52 1
R511		100 ohm	1/5 W J	C06001016P52 1
R512		470 ohm	1/5 W J	C06004716P52 1
R513-R515		1 kohm	1/5 W J	C06001026P52 3
R516		470 ohm	1/5 W J	C06004716P52 1
R517		10 kohm	1/5 W J	C00001036P52 1
R518		470 ohm	1/5 W J	C06004716P52 1
R519		20 kohm	1/5 W J	C00002036P52 1
R520		43 kohm	1/5 W J	C00004336P52 1
R521		10 kohm	1/5 W J	C00001036P52 1
R522		4.7 kohm	1/5 W J	C06004726P52 1
R523		100 kohm	1/5 W J	C00001046P52 1
R524		15 kohm	1/5 W J	C00001536P52 1
R525		22 kohm	1/5 W J	C00002236P52 1
R526		330 kohm	1/5 W J	C0000336P52 1
R527		1 Mohm	1/5 W J	C00001056P52 1
R531		47 ohm	1/5 W J	C06004706P52 1
R532		10 kohm	1/5 W J	C00001036P52 1
R533		15 kohm	1/5 W J	C00001536P52 1
R534/R535		22 ohm	1/5 W J	C06002206P52 2
R536		15 kohm	1/5 W J	C00001536P52 1
R537		10 kohm	1/5 W J	C00001036P52 1
R538/R539		15 kohm	1/5 W J	C00001536P52 2
R540/R541		150 ohm	1/5 W J	C06001516P52 2
R542		470 ohm	1/5 W J	C06004716P52 1
R543		100 kohm	1/5 W J	C00001046P52 1
R544		2.7 kohm	1/5 W J	C06002726P52 1
R545		6.8 kohm	1/5 W J	C00006826P52 1
R546		100 kohm	1/5 W J	C00001046P52 1
R547		470 ohm	1/5 W J	C06004716P52 1
R548		47 kohm	1/5 W J	C00004736P52 1
R549		2.7 kohm	1/5 W J	C06002726P52 1
R550		6.8 kohm	1/5 W J	C00006826P52 1
R551		10 kohm	1/5 W J	C00001036P52 1
R552/R553		820 ohm	1/5 W J	C06008216P52 2
R554-R556		1 kohm	1/5 W J	C06001026P52 3
R557/R558		47 kohm	1/5 W J	C00004736P52 2

X501	MISCELLANEOUS			
	RESONATOR, CSA2M	E83020000005	1	

PCB8	ASSEMBLY P.C.BOARD INPUT			
	CAPACITORS			
C602/LR	CERAMIC TUBULAR	100	2	1
C603/LR	ELECTROLYTIC SG	4.7	2	1
C604/LF	CERAMIC TUBULAR	0.0022	1	D.RDS
C604/R	CERAMIC TUBULAR	0.0022	1	D.RDS
C605/LR	MYLAR	0.0018	2	1

REF.NO	DESCRIPTION	PART NO.	Q'ty	VERSION
C606/LR	MYLAR	0.0056	2	1
C607/LR	ELECTROLYTIC SG	33	2	1
C608/LR	ELECTROLYTIC SG	1	2	1
C609/LR	MYLAR	0.0018	2	1
C610/C611	ELECTROLYTIC SG	47	2	1
C612/LF	CERAMIC TUBULAR	100	6	D.RDS
-C617/LF				
C612/R	CERAMIC TUBULAR	100	6	D.RDS
-C617/R				
C618/LF	CERAMIC TUBULAR	47	1	D.RDS
C618/R	CERAMIC TUBULAR	47	1	D.RDS
C623/C624	ELECTROLYTIC SG	47	2	1
C625-C627	CERAMIC TUBULAR	100	3	1
C628	ELECTROLYTIC SG	100	1	1
C629	CERAMIC TUBULAR	0.1	1	1
C630	ELECTROLYTIC SA	33	1	1
C631/C632	ELECTROLYTIC SG	470	2	1
C633/LR	ELECTROLYTIC SSE	4.7	2	1
C634/LR	ELECTROLYTIC SSE	4.7	2	1
C637/C638	ELECTROLYTIC SG	4.7	2	1
C639	ELECTROLYTIC SSE	10	1	1

CP601	CONNECTORS			
	PLUG, 35237-0810	L10135237080	1	
CP602		L10135237120	1	

D601/D602	DIODES			
	SWITCHING, 1N4148M	K00041480152	2	

IC601	INTEGRATED CIRCUITS			
	OP AMP, KIA6259P	J12162590001	1	
IC602		J08092730000	1	
IC603		J12145590001	1	
IC604		J17179520000	1	

Q601	TRANSISTORS			
	DTC114YS, NPN	J60201140005	1	
Q602/Q603		J5023199Y005	2	
Q604		J60201140005	1	

L601/LF	COILS			
	INDUCTOR, 47UH	D33047000102	1	D.RDS
L601/R		D33047000102	1	D.RDS

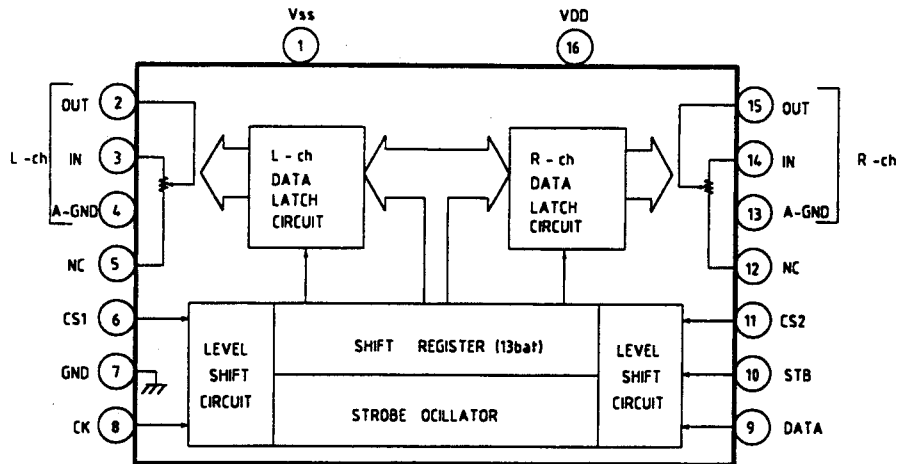
R601/LR	RESISTORS			
	METAL FILM	1 kohm	1/5 W J	C06001026P52 2
R602/LR		91 kohm	1/5 W J	C00009136P52 2
R603/LR		91 kohm	1/5 W J	C00009136P52 2
R604/LR		560 kohm	1/5 W J	C00005646P52 2
R605/LR		43 kohm	1/5 W J	C00004336P52 2
R606/LR		820 ohm	1/5 W J	C06008216P52 2
R607/LR		560 ohm	1/5 W J	C06005616P52 2
R608/LR		100 kohm	1/5 W J	C00001046P52 2
R610/LR		1 kohm	1/5 W J	C06001026P52 2
R611/LR		1 kohm	1/5 W J	C06001026P52 2
R612/LR		1 kohm	1/5 W J	C06001026P52 2
R613/LR		1 kohm	1/5 W J	C06001026P52 2
R614/LR		1 kohm	1/5 W J	C06001026P52 2
R615/LR		1 kohm	1/5 W J	C06001026P52 2
R616/R617		220 ohm	1/5 W J	C06002216P52 2
R618/R619		820 ohm	1/5 W J	C06008216P52 2
R620		1 kohm	1/5 W J	C06001026P52 1
R622/LR		100 kohm	1/5 W J	C00001046P52 2
R623/LR		470 ohm	1/5 W J	C06004716P52 2
R624/LR		100 kohm	1/5 W J	C00001046P52 2
R625/LR		100 kohm	1/5 W J	C00001046P52 2
R626/R627		220 ohm	1/5 W J	C06002216P52 2
R628		33 ohm	1/5 W J	C0600336P52 1
R629		75 ohm	1/5 W J	C06007506P52 1
R630		3.3 kohm	1/5 W J	C06003326P52 1
R631		390 ohm	1/5 W J	C06003916P52 1
R632		47 kohm	1/5 W J	C00004736P52 1
R633		75 ohm	1/5 W J	C06007506P52 1
R634		390 ohm	1/5 W J	C06003916P52 1
R635		47 kohm	1/5 W J	C00004736P52 1
R636		75 ohm	1/5 W J	C06007506P52 1
R637		22 kohm	1/5 W J	C00002236P52 1
49				G60790150001 1
50				G60240045003 1

PCB9	ASSEMBLY P.C.BOARD VOLUME			
C701	ELECTROLYTIC SG	10	1	1
C702	CERAMIC TUBULAR	100	1	1
C703	CERAMIC TUBULAR	100	1	1
C704	ELECTROLYTIC SG	10	1	1
C705/C706	ELECTROLYTIC SG	47	2	1
C707	ELECTROLYTIC SG	0.47	1	1
C708	CERAMIC TUBULAR	100	1	1
C709	CERAMIC TUBULAR	680	1	1
C710	ELECTROLYTIC SG	0.47	1	1
C711	ELECTROLYTIC SG	47	1	1
C712/C713	ELECTROLYTIC SG	100	2	1
C714	ELECTROLYTIC SG	100	2	1
CP701	PLUG, 35237-1010	L10135237100	1	
CP702	PLUG, 35237-1210	L10135237120	1	

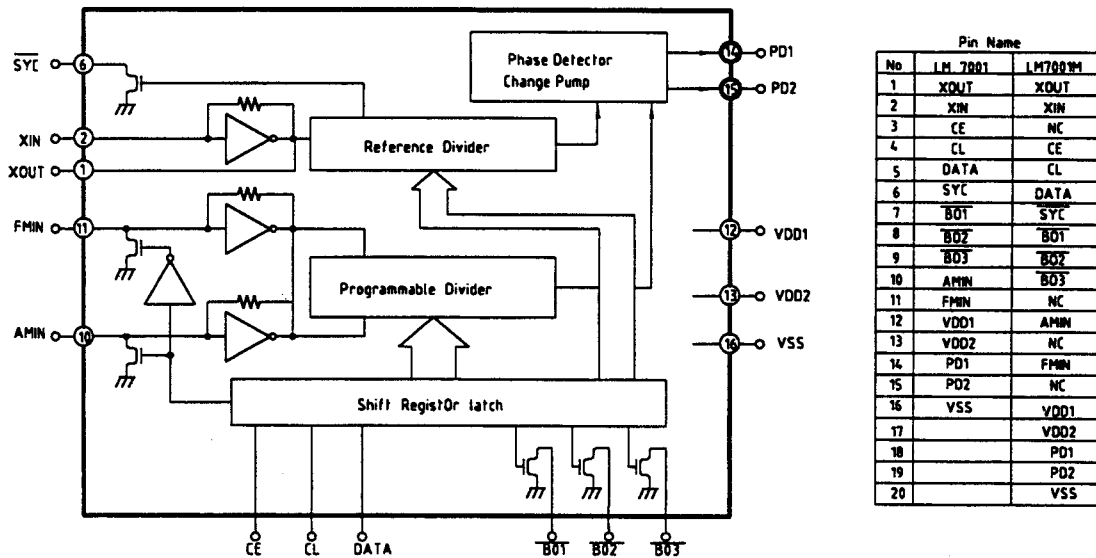
REF.NO	DESCRIPTION	PART NO.	Q'ty	VERSION
IC701	KIA4559P/KIA75559P	J12145590001	1	
IC702	MOTOR DRIVER, TA7291S	J12772910000	1	
Q701	DTC114YS, NPN	J60201140005	1	
R701	METAL FILM	820 ohm 1/5 W J C06008216P52	1	
R702	METAL FILM	470 ohm 1/5 W J C06004716P52	1	
R703	CARBON FILM	100 kohm 1/5 W J C00001046P52	1	
R704	METAL FILM	2.4 kohm 1/5 W J C06002226P52	1	
R705	CARBON FILM	9.1 kohm 1/5 W J C00009126P52	1	
R706	METAL FILM	1 kohm 1/5 W J C06001026P52	1	
R707	CARBON FILM	100 kohm 1/5 W J C00001046P52	1	
R708/R709	METAL FILM	220 ohm 1/5 W J C06002216P52	2	
R710	METAL FILM	470 ohm 1/5 W J C06004716P52	1	
R711	CARBON FILM	47 kohm 1/5 W J C00004736P52	1	
R712	METAL FILM	2.4 kohm 1/5 W J C06002226P52	1	
R713	CARBON FILM	9.1 kohm 1/5 W J C00009126P52	1	
R714	METAL FILM	1 kohm 1/5 W J C06001026P52	1	
R715	CARBON FILM	10 kohm 1/5 W J C00001036P52	1	
R716	METAL FILM	33 ohm 1/5 W J C06003306P52	1	
R717	CARBON FILM	15 kohm 1/5 W J C00001536P52	1	
R718	METAL FILM	4.7 kohm 1/5 W J C06004726P52	1	
23	VOLUME MOTOR	C49514530001	1	
PCB10 ASSEMBLY P.C.BOARD TONE				
CAPACITORS				
C715LF	CERAMIC TUBULAR	100 pF 50 V D00110107753	1	D.RDS
C715RF	CERAMIC TUBULAR	100 pF 50 V D00110107753	1	D.RDS
C716LF	CERAMIC TUBULAR	100 pF 50 V D00110107753	1	D.RDS
C716RF	CERAMIC TUBULAR	100 pF 50 V D00110107753	1	D.RDS
C717	ELECTROLYTIC SSE	33 uF 16 V M D04033008312	1	
C718E	CERAMIC TUBULAR	0.1 uF 50 V D00510409753	1	
C719E	CERAMIC TUBULAR	0.1 uF 50 V D00510409753	1	
C721L/R	ELECTROLYTIC SSE	4.7 uF 16 V M D0404R708312	2	
C722L/R	CERAMIC TUBULAR	100 pF 50 V D00110107753	2	
C723L/R	CERAMIC TUBULAR	47 pF 50 V D00147006753	2	
C724L/R	ELECTROLYTIC SSE	4.7 uF 16 V M D0404R708312	2	
C725L/R	ELECTROLYTIC SSE	4.7 uF 16 V M D0404R708312	2	
C728L/R	MYLAR BOX	0.018 uF 63 V J D02018306805	2	
C727L/R	MYLAR BOX	0.082 uF 63 V J D02082306805	2	
C728L/R	MYLAR BOX	0.0033 uF 63 V J D02033206805	2	
C729L/R	MYLAR BOX	0.018 uF 63 V J D02018306805	2	
C730/C731	ELECTROLYTIC SSE	47 uF 16 V M D04047008312	2	
CONNECTOR				
CN703	OP AMP, LEAD ASS"Y, 15P 220 um	L02215223332	1	
INTEGRATED CIRCUIT				
IC703	NJM2068LD	J12120680001	1	
RESISTORS				
R719	METAL FILM	75 ohm 1/5 W J C06007506P52	1	
R721L/R	METAL FILM	470 ohm 1/5 W J C06004716P52	2	
R722/R723	METAL FILM	220 ohm 1/5 W J C06002216P52	2	
R724L/R	METAL FILM	1 kohm 1/5 W J C06001026P52	2	
R725L/R	CARBON FILM	100 kohm 1/5 W J C00001046P52	2	
R726L/R	CARBON FILM	47 kohm 1/5 W J C00004736P52	2	
R727L/R	CARBON FILM	1 Mohm 1/5 W J C00001056P52	2	
R728L/R	METAL FILM	470 ohm 1/5 W J C06004716P52	2	
R729L/R	CARBON FILM	100 kohm 1/5 W J C00001046P52	2	
R730L/R	CARBON FILM	22 kohm 1/5 W J C00002236P52	2	
R731L/R	METAL FILM	3.9 kohm 1/5 W J C06003926P52	2	
R732L/R	METAL FILM	2.2 kohm 1/5 W J C06002226P52	2	
R733L/R	METAL FILM	560 ohm 1/5 W J C06005616P52	2	
R734L/R	METAL FILM	1.2 kohm 1/5 W J C06001226P52	2	
MISCELLANEOUS				
VR702	CARBON FILM	100 kohm 1/5 W J C00001046P52	1	
VR703	CARBON FILM	100 kohm 1/5 W J C00001046P52	1	
20	SWITCH BALANCE	C45511140200	1	
21	SWITCH TREBLE/BASS	C45512140230	2	
22	JACK RCA (3P)	G60604030000	1	
PCB11 ASSEMBLY P.C.BOARD SPEAKER SWITCH				
C732L/R	MYLAR	0.047 uF 100V J D02047306C06	2	
C733LF	CERAMIC TUBULAR	560 pF 50 V D00556107753	1	
C733RF	CERAMIC TUBULAR	560 pF 50 V D00556107753	1	
CP202	PLUG, 5267-06A	L10252670060	1	
CN704	PLUG, JE202A2T8	L10420200081	1	
R735L/R	METAL FILM	470 ohm 2 W J C06004716652	2	
R736L/R	METAL FILM	10 ohm 1 W J C06001006552	2	
R737LF	CARBON FILM	15 kohm 1/5 W J C00001536P52	1	
R737RF	CARBON FILM	15 Kohm 1/5 W J C00001536P52	1	
27	JACK PHONE	G40204016133	1	
28	SWITCH PUSH	G00004117000	2	
PCB12 ASSEMBLY P.C.BOARD D-LINK				
CN110	CONNECTOR 2P, 120 um	L02102123331	1	
J747	JUMPER	L04508400602	1	
45	RCA JACK (2P)	G60120116003	1	

IC FUNCTIONAL BLOCK DIAGRAM

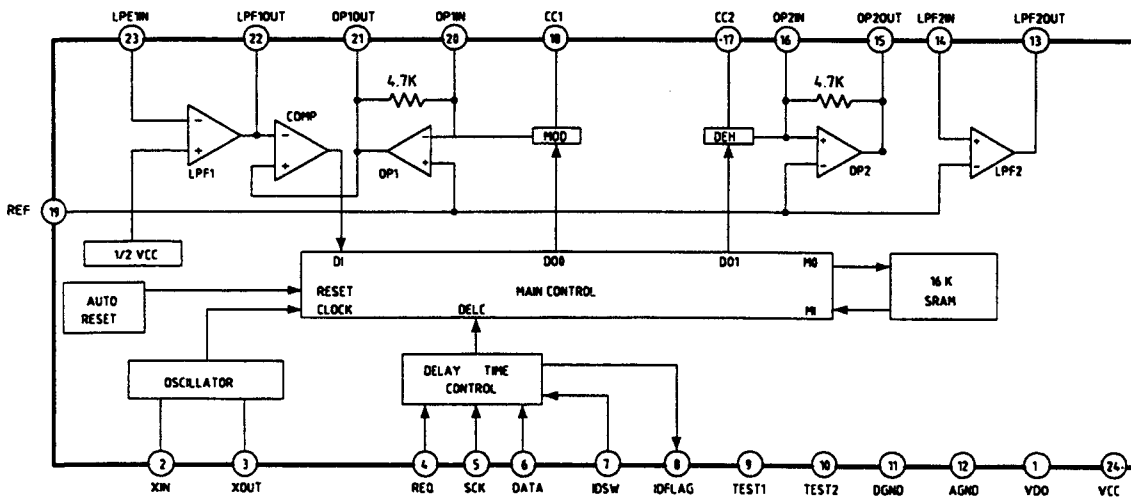
IC 504 : TC 9299P



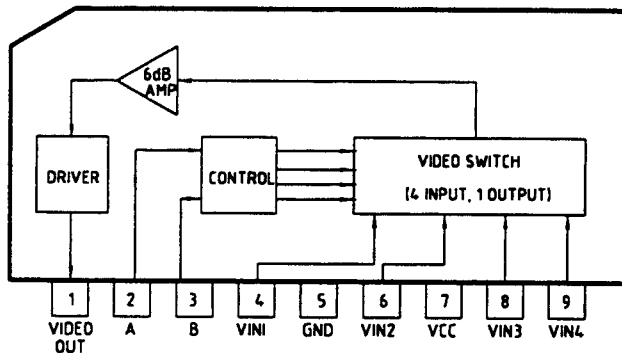
IC 1 : LM 7001M



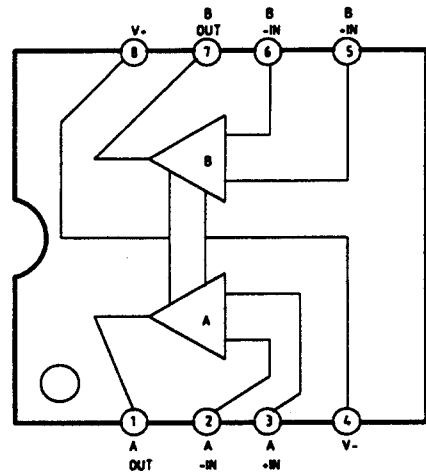
IC 502 : NJU9702G



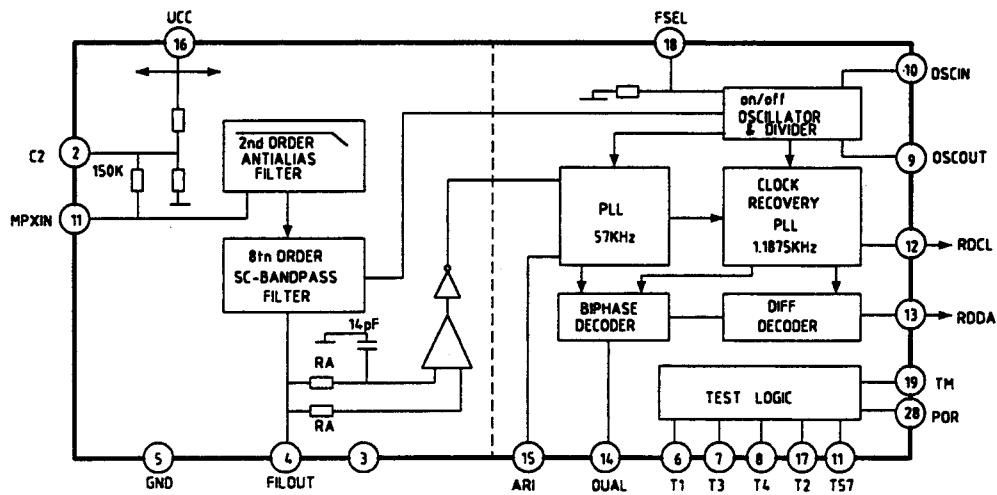
IC 604 : LA 7952



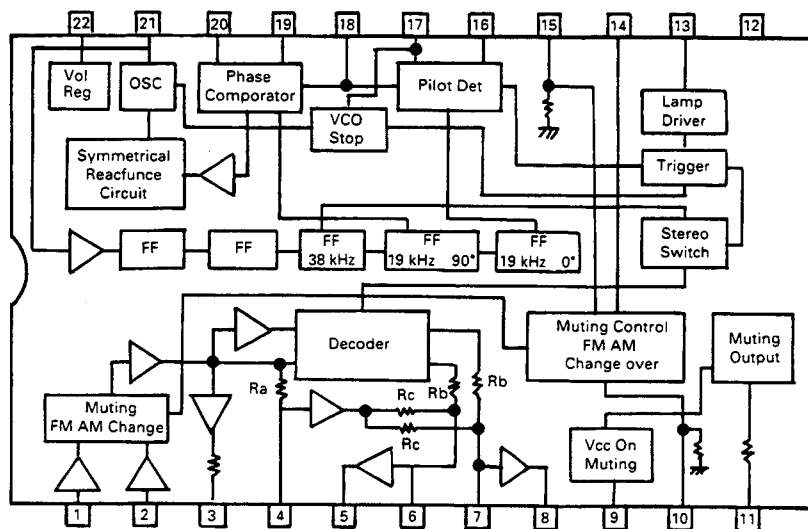
IC 503/IC601/IC603/IC701 : KIA4559P, KIA7559P



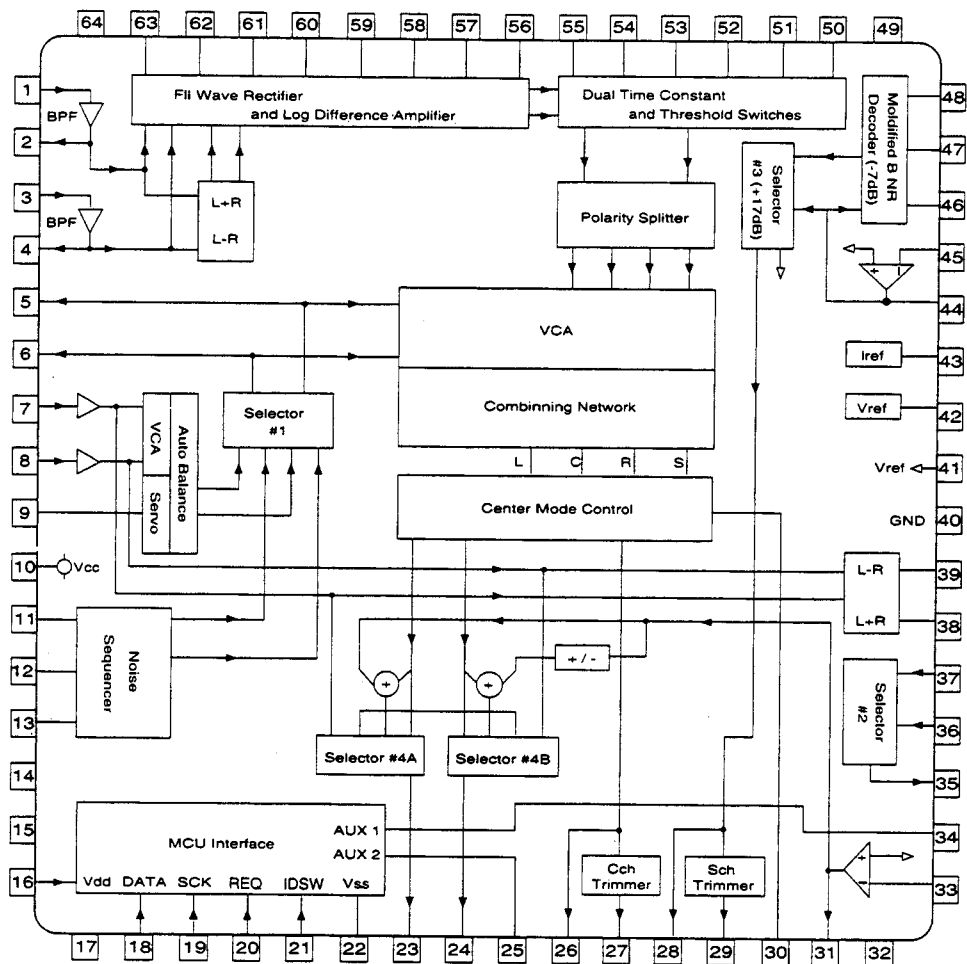
IC 4D : TDA7330BD



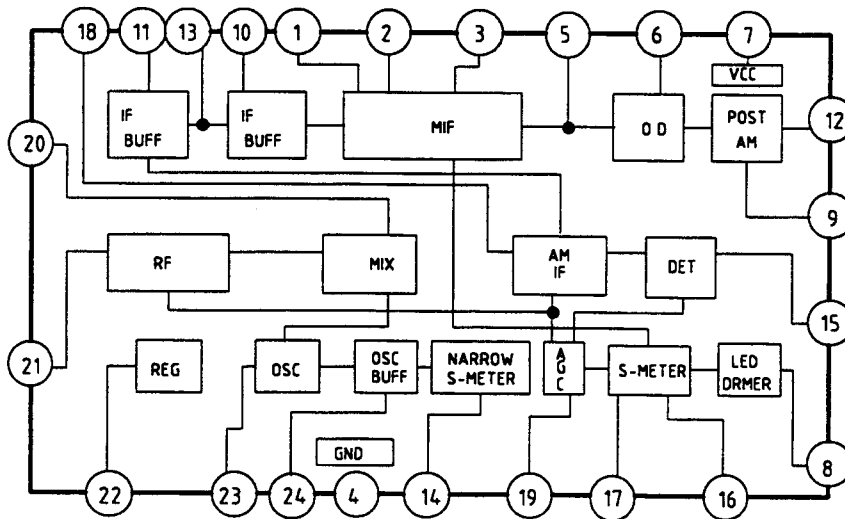
IC 3 : LA3401



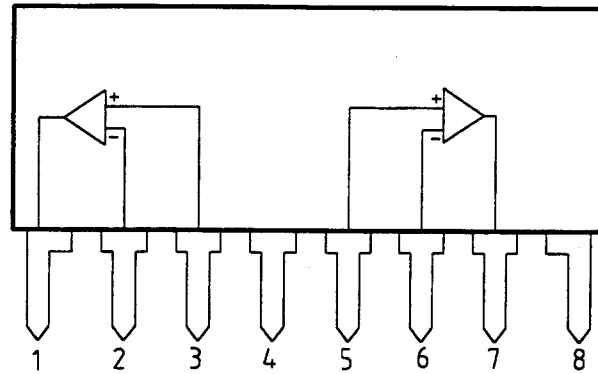
IC 501 : NJW1102AFG1



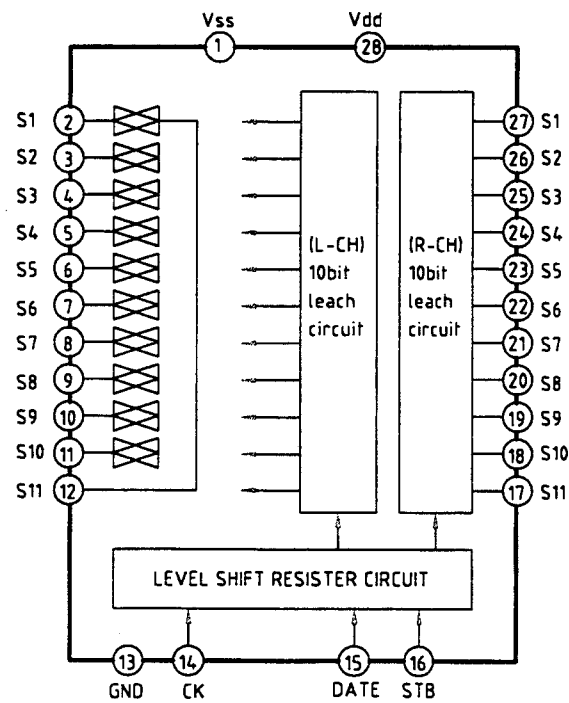
IC 2 : LA1266G



IC 703 : NJM2068



IC 602 : TC9273N-007

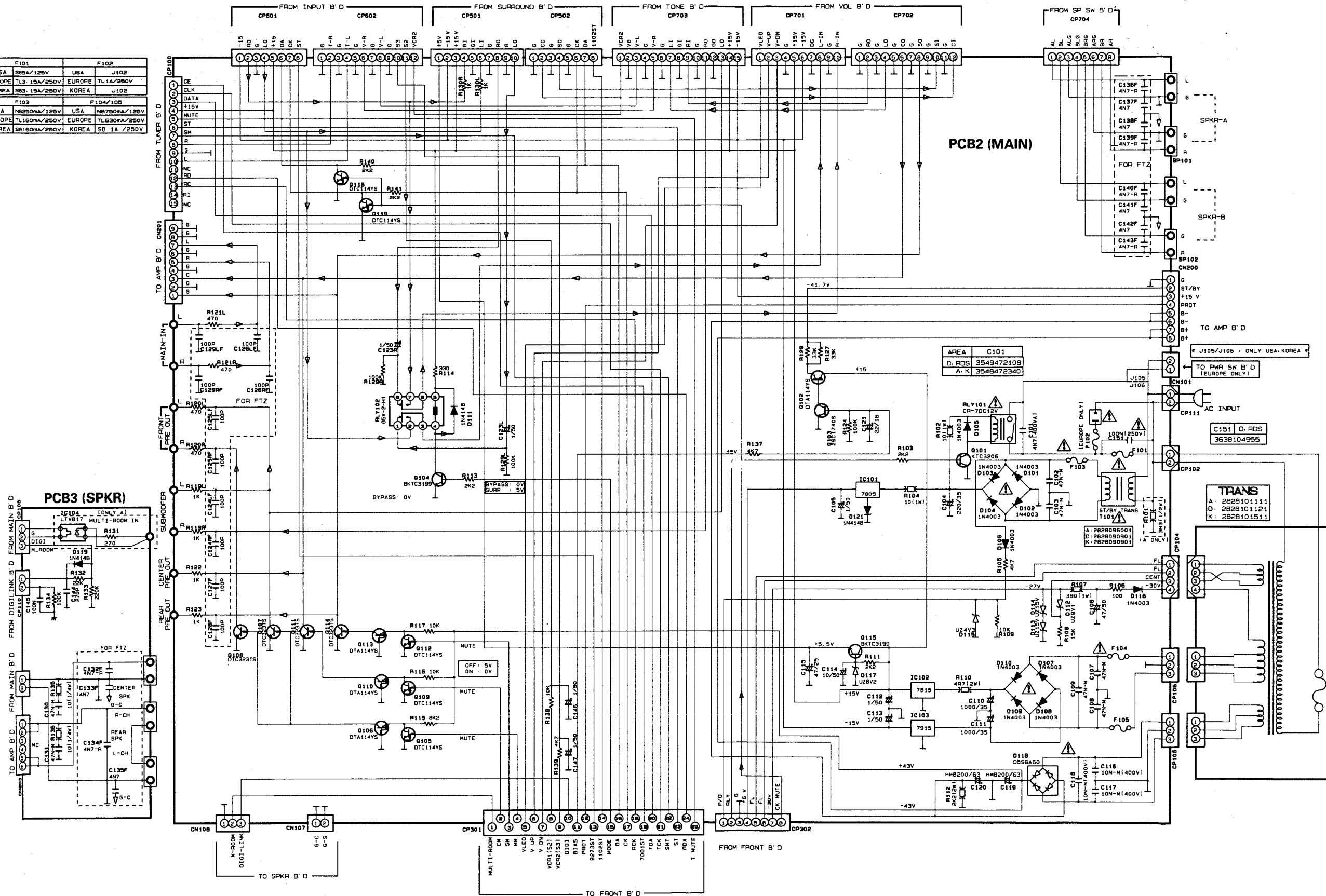


SCHEMATIC DIAGRAM (I)

Model No. : R325/R325RDS

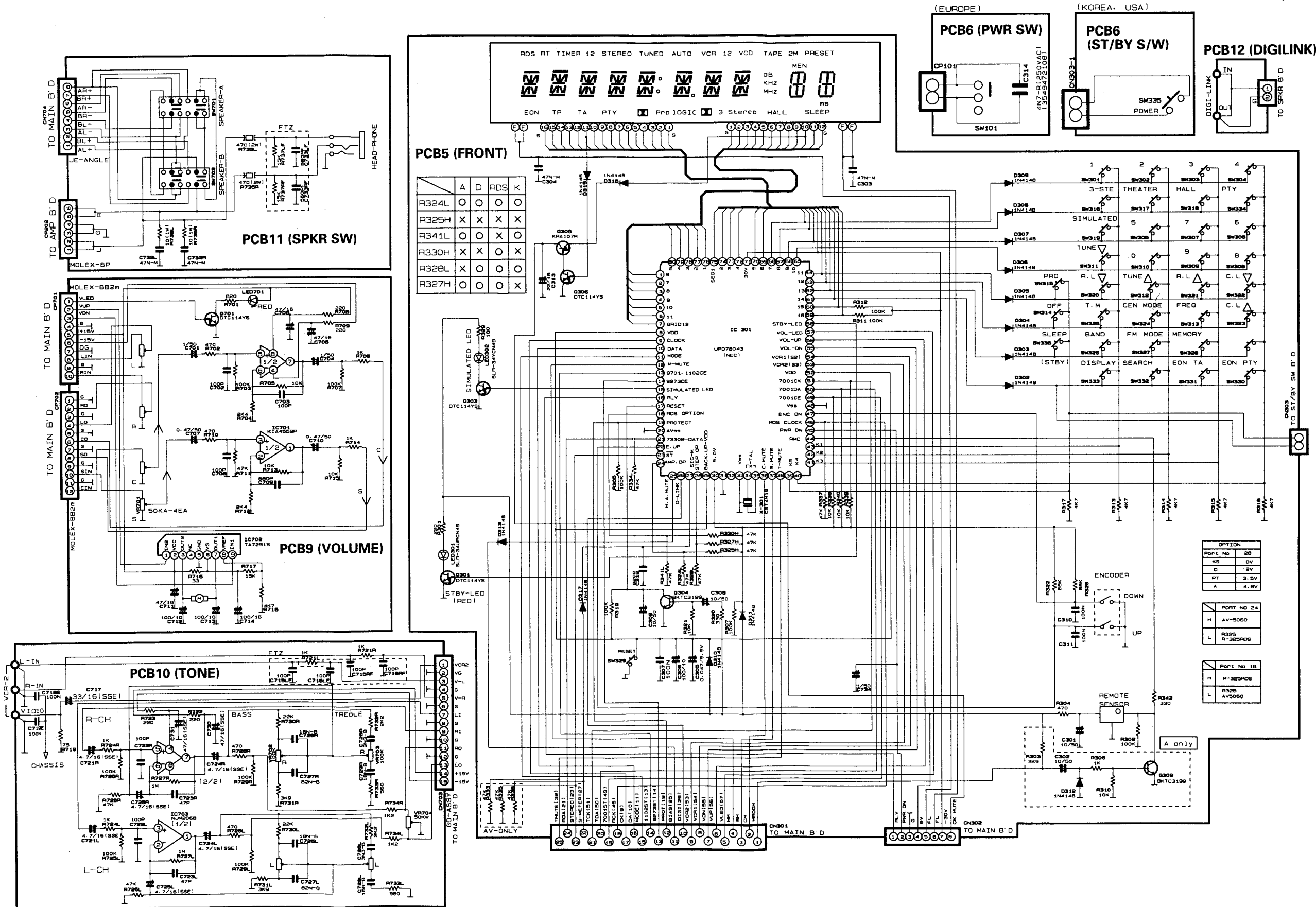
F101	F102
USA 585A/125V	USA J102
EUROPE TL3.15A/250V	EUROPE TL1A/250V
KOREA 583.15A/250V	KOREA J102

F103	F104/105
USA N8250MA/125V	USA N8750MA/125V
EUROPE TL160MA/250V	EUROPE TL630MA/250V
KOREA 58160MA/250V	KOREA 58 1A /250V



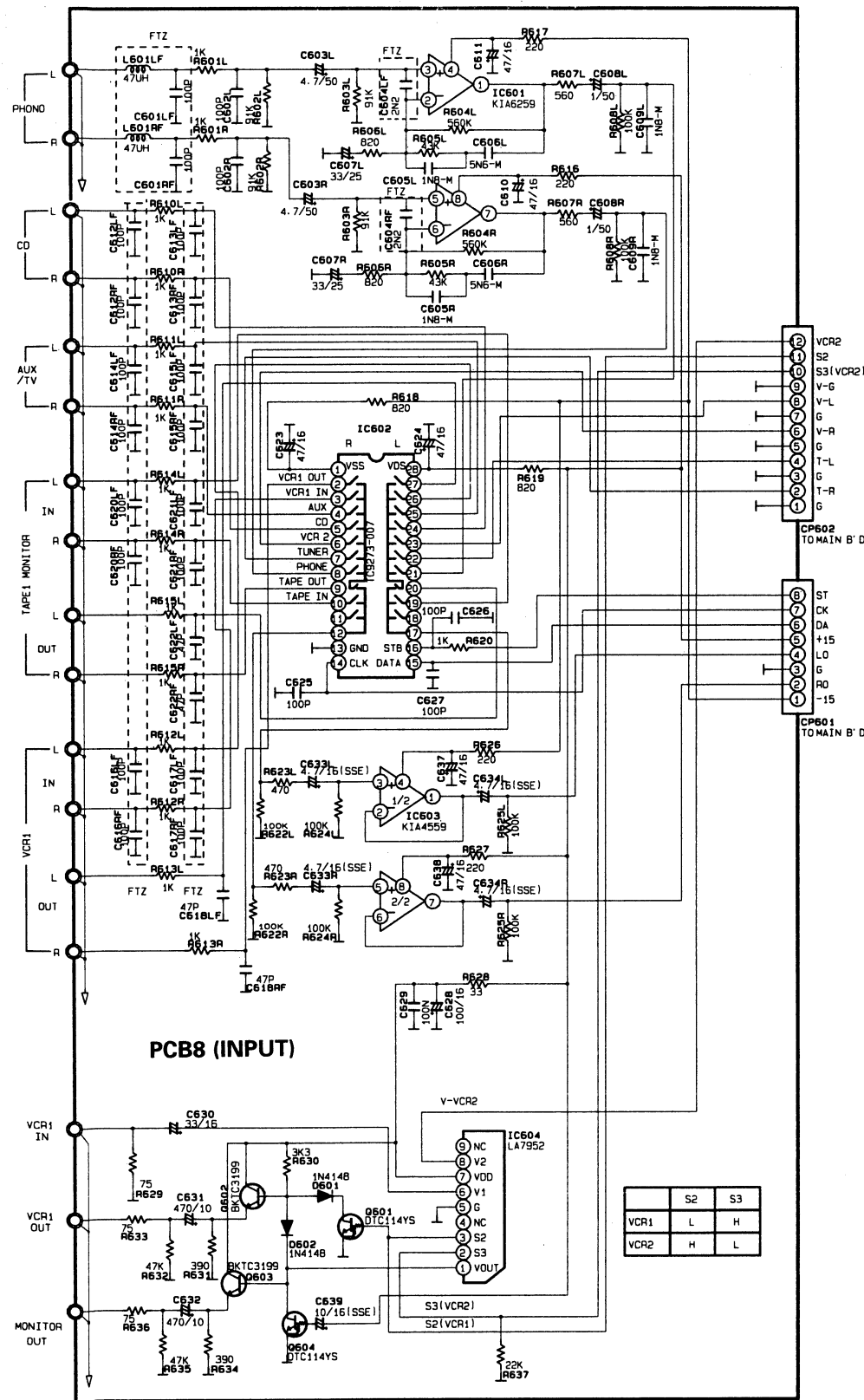
SCHEMATIC DIAGRAM (II)

Model No. : R325/R325RDS

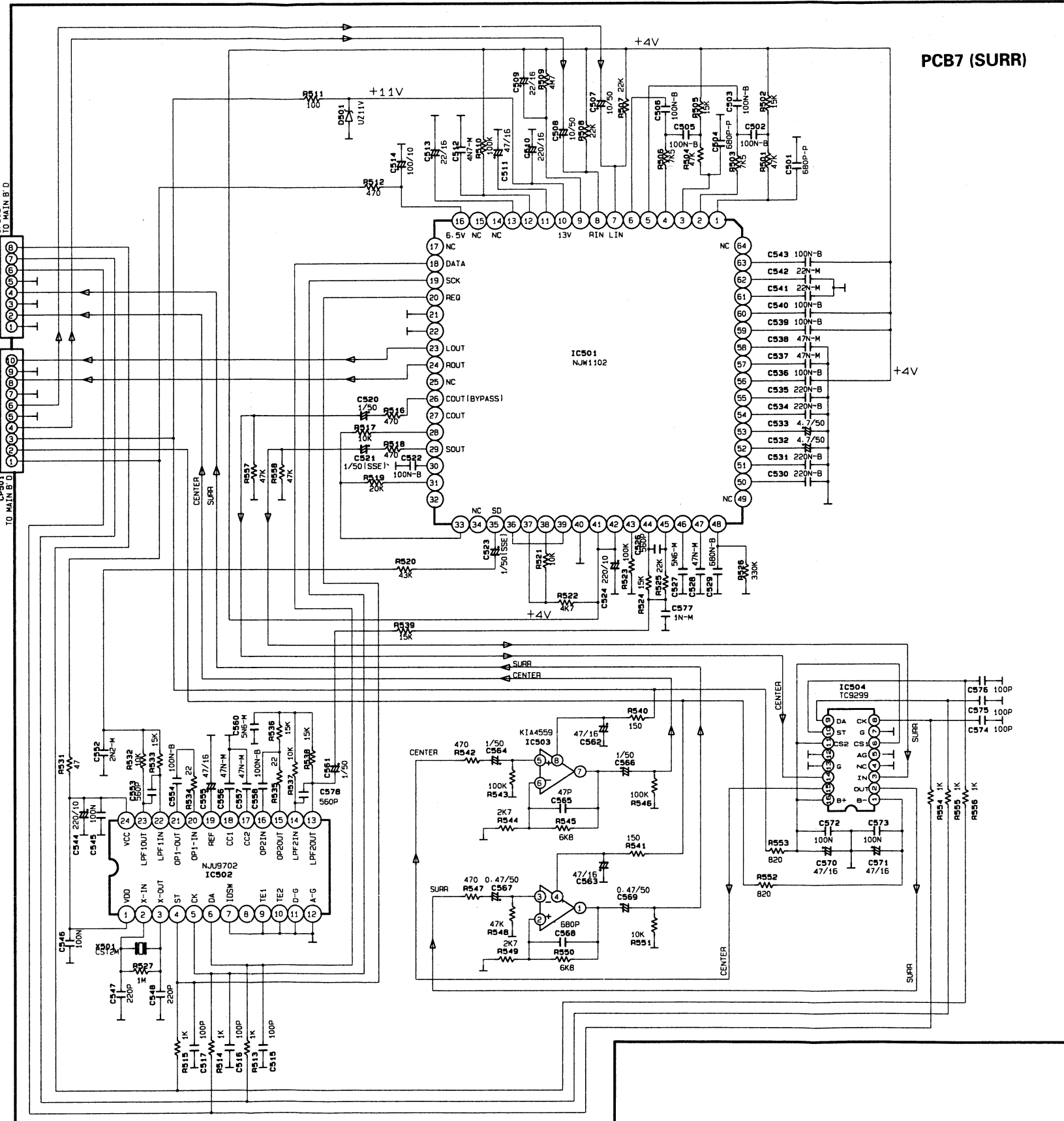


SCHEMATIC DIAGRAM (III)

Model No. : R325/R325RDS

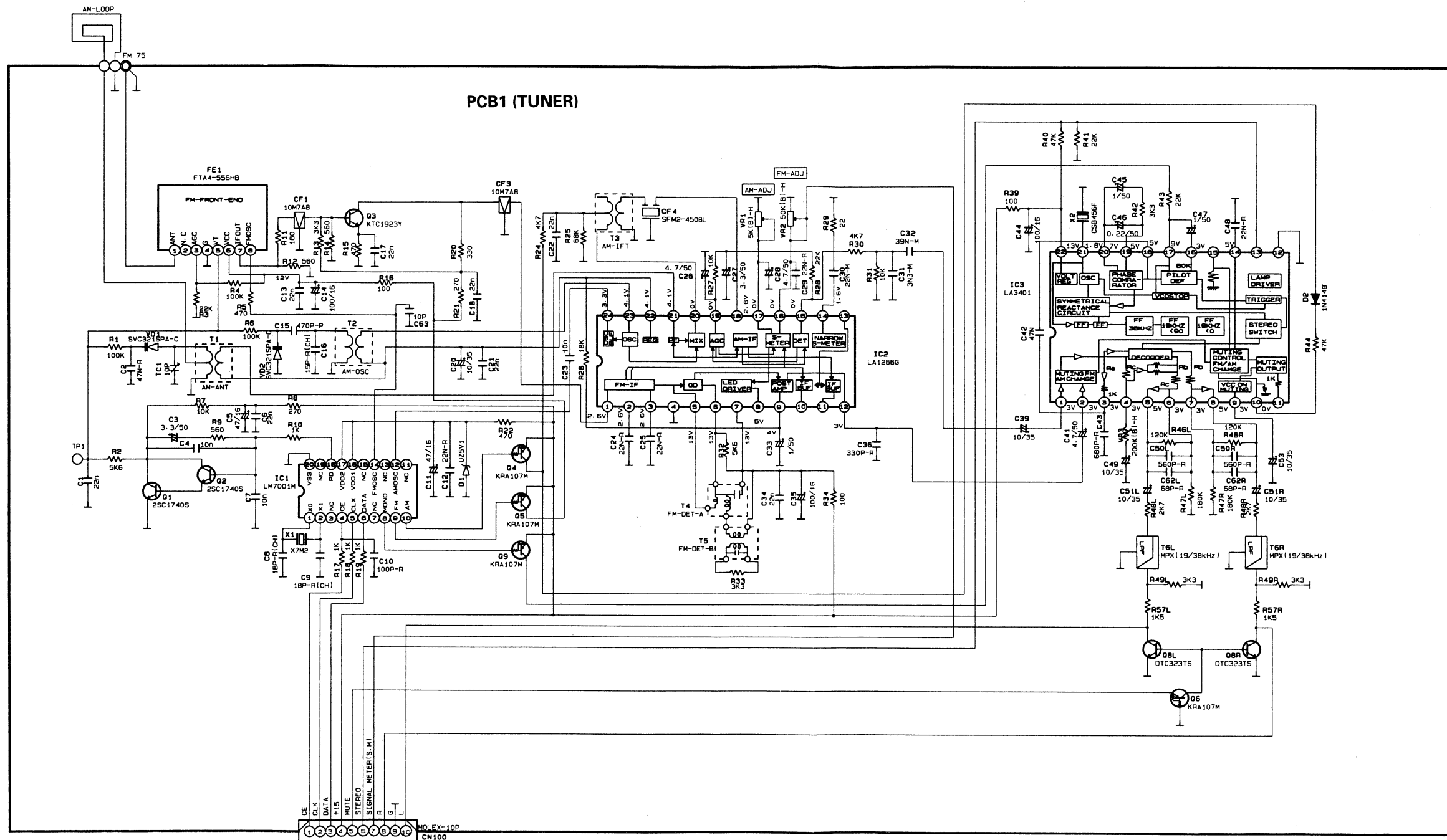


(NOTE) ▽ : CHASSIS GND



SCHEMATIC DIAGRAM (IV)

Model No. : R325/R325RDS



NOTES

1. Resistor values are indicated in ohms unless otherwise specified.
(K=1,000 M=1,000,000)
2. Capacitor values are indicated in microfarads unless otherwise specified.
(p=micro-microfarads)

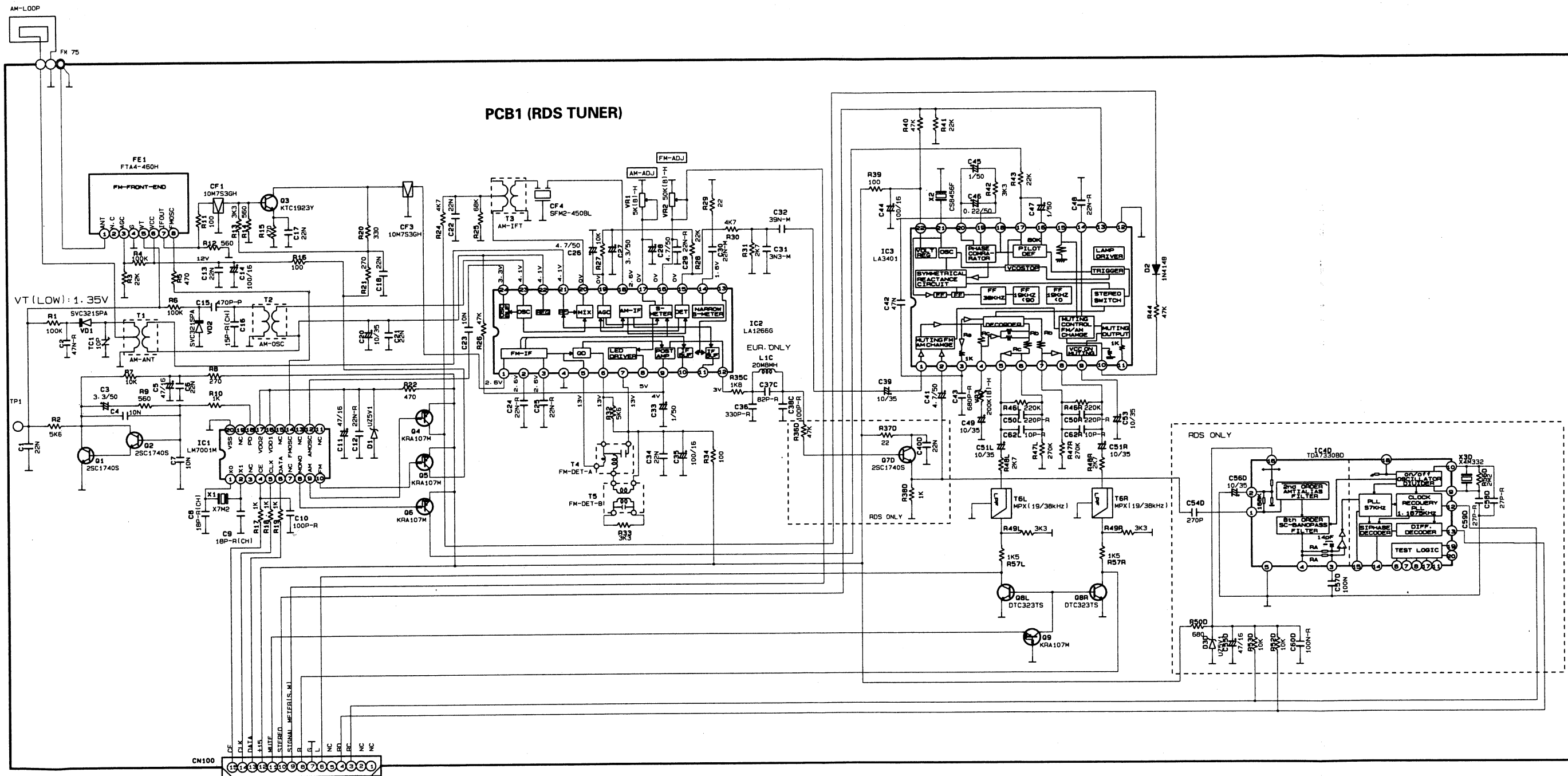
CAUTION

Safety precaution to be followed during servicing

- 1) Since those parts marked with  are critical parts for safety, use only the one described in the parts list.
- 2) Before returning the set to the customer make appropriate leakage current or resistance measurements to determine the exposed parts are properly insulated from the supply circuit.

SCHEMATIC DIAGRAM (V)

Model No. : R325/R325RDS



NOTES

1. Resistor values are indicated in ohms unless otherwise specified.
[K=1,000 M=1,000,000]
2. Capacitor values are indicated in microfarads unless otherwise specified.
[p=micro-microfarads]

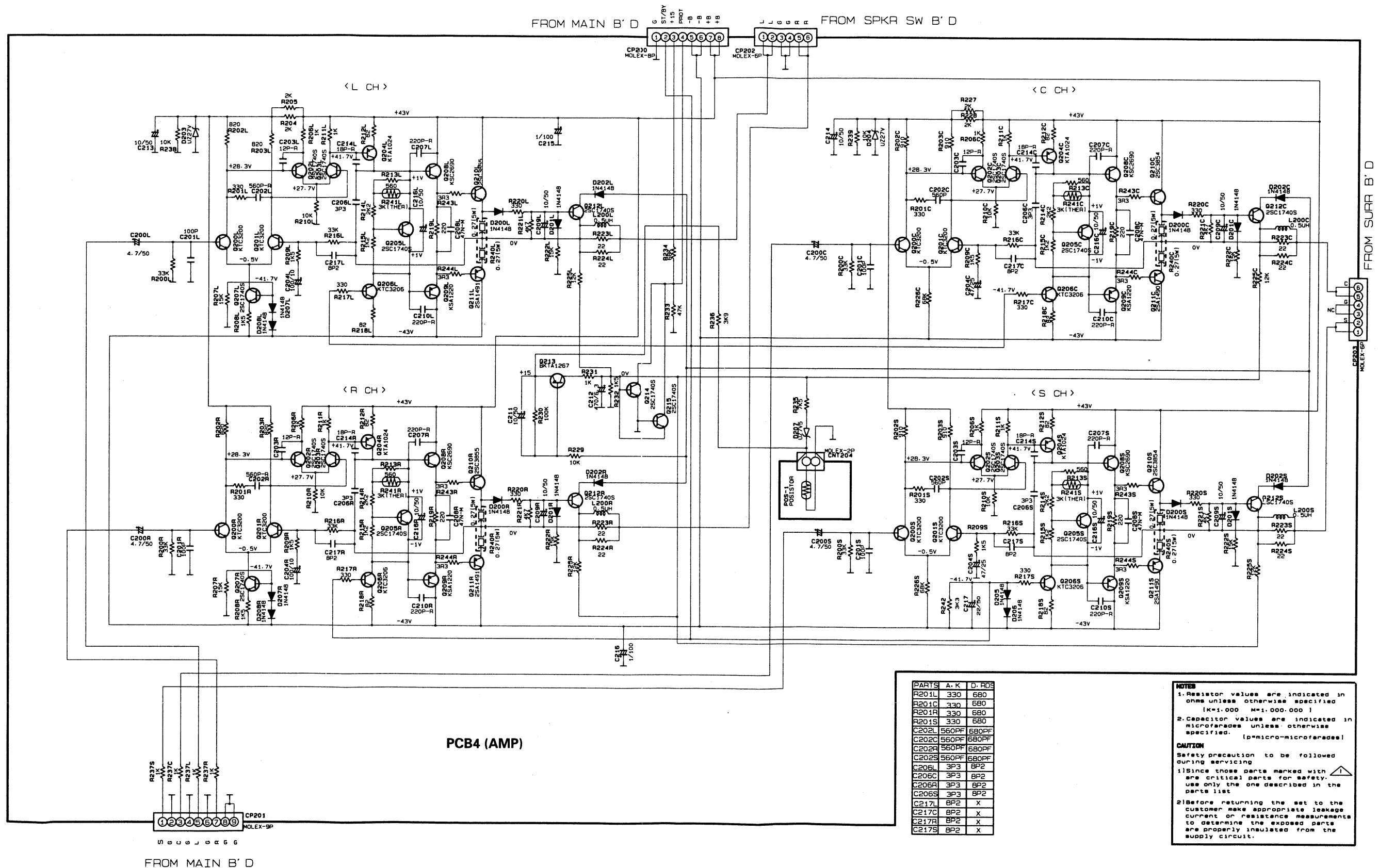
CAUTION

Safety precaution to be followed during servicing:

- 1) Since those parts marked with a triangle are critical parts for safety, use only the one described in the parts list.
- 2) Before returning the set to the customer, make appropriate leakage current or resistance measurements to determine the exposed parts are properly insulated from the supply circuit.

SCHEMATIC DIAGRAM (VI)

Model No. : R325/R325RDS



PIN CONNECTION DIAGRAM OF DIODES, TRANSISTORS AND ICS

TC9210P	TC9273N-007	μPD78042 μPD78043AGF	LM7001/M TDA7330BD
LA3401 LA1266	NJM2068	KIA4559P/KIA7555P	LA7952
NJU9702G	NJW1102AFG1	KA 7815 KA 7805	KA 7915
KSC2690A KSC1220A	KTC2229/KTC3206 KTA949/KTA1024	DTA114YS DTC114YS DTC114YS KRA107N DTC323TS 2SC3199Y 2SC1740 KTA1267	2SC3855/2SC3854 2SA1491/2SA1490
KTC2240/KTC3200 KTC1923Y/KTC3194	D5SBA60	ZENER IN4003 IN4148	SVC321SPA-C