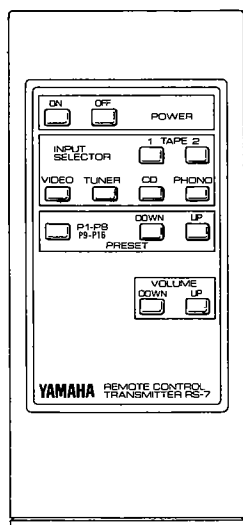
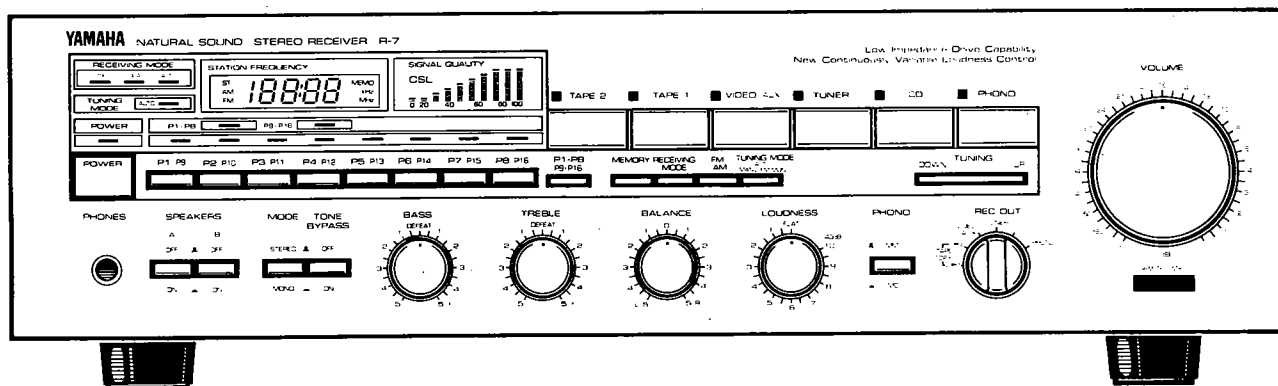


STEREO RECEIVER R-7

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 all 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, 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 changes in specification 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 parts replacement. Recheck all work before you apply power to the unit.

CONTENTS

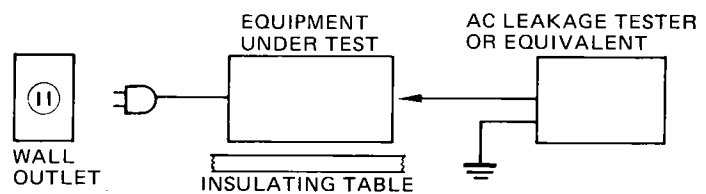
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■ TO SERVICE PERSONNEL

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



■ SPECIFICATIONS

■ AUDIO SECTION

Continuous Power Per Channel	
20Hz ~ 20kHz, 0.015% THD, 8 Ω	65W
20Hz ~ 20kHz, 0.03% THD, 6 Ω	75W
1kHz, 0.01% THD, 8 Ω	75W
(IEC Rated Power)	
Dynamic Headroom	1.8dB
8 Ω	
Dynamic Power	
8 Ω	101W
6 Ω	118W
4 Ω	144W
2 Ω	170W
Power Band Width	
0.1% THD, 32.5W, 8 Ω	10Hz ~ 50kHz
Damping Factor	more than 50
1kHz, 8 Ω	
Input Sensitivity/Impedance	
Phono MC	160 μ V/220 Ω
Phono MM	2.5mV/47k Ω
CD/TAPE/VIDEO	150mV/47k Ω
Input Sensitivity (New IHF)	
Phono MC	20 μ V
Phono MM	0.31mV
CD/TAPE/VIDEO	18.6mV
Maximum-Input Signal	
0.01% THD, Phono MC	8mV
0.01% THD, Phono MM	110mV
Output Level/Impedance	
REC OUT	150mV/470 Ω
Headphone Jack Rated Output Load/Impedance	
0.015% THD	0.8V/8 Ω
Frequency Response	
20Hz ~ 20kHz, CD/TAPE/VIDEO	± 0.5 dB
RIAA Equalization Deviation	
30Hz ~ 20kHz, Phono MC RIAA	± 0.5 dB
20Hz ~ 20kHz, Phono MM RIAA	± 0.3 dB
Total Harmonic Distortion (20Hz ~ 20kHz)	
Phono MC to Rec Out 3V	0.005%
Phono MM to Rec Out 3V	0.003%
CD/TAPE/VIDEO to SP out 30W/8 Ω	0.015%
Intermodulation Distortion	
CD/TAPE/VIDEO Rated Output/8 Ω	0.01%
Signal to Noise Ratio	
Phono MC (500 μ V, Input Shorted)	75dB
Phono MM (5mV, Input Shorted)	92dB
CD/TAPE/VIDEO (Input Shorted)	103dB
Signal to Noise Ratio (New IHF)	
Phono MC	75dB
Phono MM	76dB
CD/TAPE/VIDEO	82dB
Residual Noise (IHF-A-Network)	140 μ V
Channel Separation	
Phono MM, 1kHz (Input Shorted, Vol. -20dB)	60dB
CD/TAPE/VIDEO, 1kHz (5.1k Ω)	60dB
Tone Control Characteristics	
BASS boost/cut	± 10 dB (at 50Hz)
turnover frequency	350Hz
TREBLE boost/cut	± 10 dB (at 20kHz)
turnover frequency	3.5kHz
Filter Characteristics	
LOW (Subsonic, builtin)	10Hz, -12dB/oct
Continuous Loudness Control (Level-related equalization)	
Attenuation	40dB (at 1kHz)

■ FM SECTION

Tuning Range	87.5MHz ~ 108.0MHz
50dB Quieting Sensitivity (IHF)	
Mono, 75 Ω	1.55 μ V (15.1dBf)
Stereo, 75 Ω	21 μ V (37.7dBf)
Usable Sensitivity (IHF Mono)	
1kHz, 100% MOD, 75 Ω	0.8 μ V (9.3dBf)
Image Response Ratio	40dB
IF Response Ratio	90dB
Spurious Response Ratio	70dB
AM Suppression Ratio	55dB
Capture Ratio	
Local	1.2dB
DX	2.5dB
Alternate Channel Selectivity	
DX	85dB
Signal to Noise Ratio	
Mono	85dB
Stereo	81dB
Harmonic Distortion	
Mono 100Hz	0.05%
1kHz	0.05%
6kHz	0.1%
Stereo 100Hz	0.07%
1kHz	0.07%
6kHz	0.15%
Stereo Separation	
Local 50Hz	45dB
1kHz	50dB
10kHz	45dB
Frequency Response	
30Hz to 13kHz	± 0.5 dB
Output Level/Impedance (Rec Out)	
100% MOD, 1kHz	500mV/2.8k Ω

■ AM SECTION

Tuning Range	510kHz ~ 1620kHz (U)(C) 510kHz ~ 1620kHz or 513kHz ~ 1620kHz (R) 513kHz ~ 1620kHz (A)(B)
Usable Sensitivity	250 μ V/m
Selectivity	24dB
Signal to Noise Ratio	50dB
Image Response Ratio	40dB
Spurious Response Ratio	50dB
Harmonic Distortion (400Hz)	0.3%
Output Level/Impedance (Rec Out)	
30% MOD, 400Hz	150mV/2.8k Ω

■ GENERAL

Power Supply	
U.S.A. & Canadian models	120V AC, 60Hz
General model	110V/120V/220V/240V AC, 60/50Hz
Australian & British models	240V AC, 50Hz
Power Consumption	260W (U)(C)(R) 420W (A)(B)
AC Outlet (U)(C)(R) only	
Switched x 1	100W max.
Unswitched x 1	200W max.
Dimensions (W x H x D)	435 x 126 x 289 mm (17-1/8" x 4-15/16" x 11-3/8")
Weight	6.3 kg (13.8 lbs)

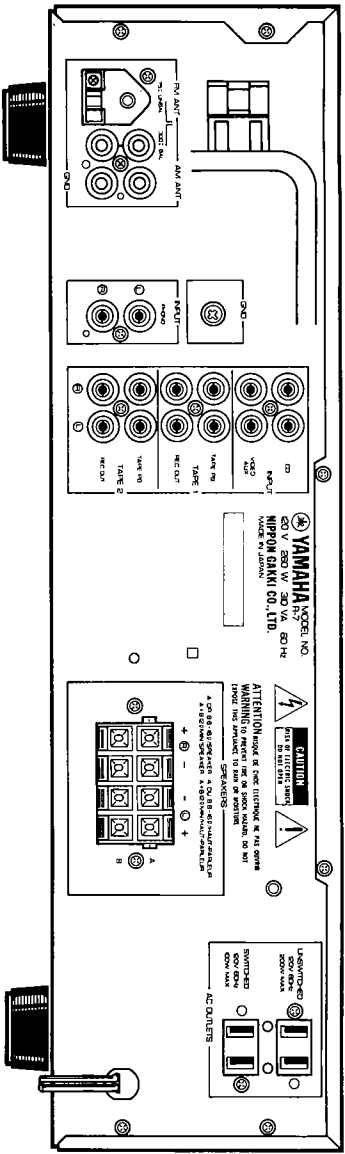
Specifications subject to change without notice.

(U) U.S.A. model	(G) European model
(C) Canadian model	(B) British model
(A) Australian model	(R) General model

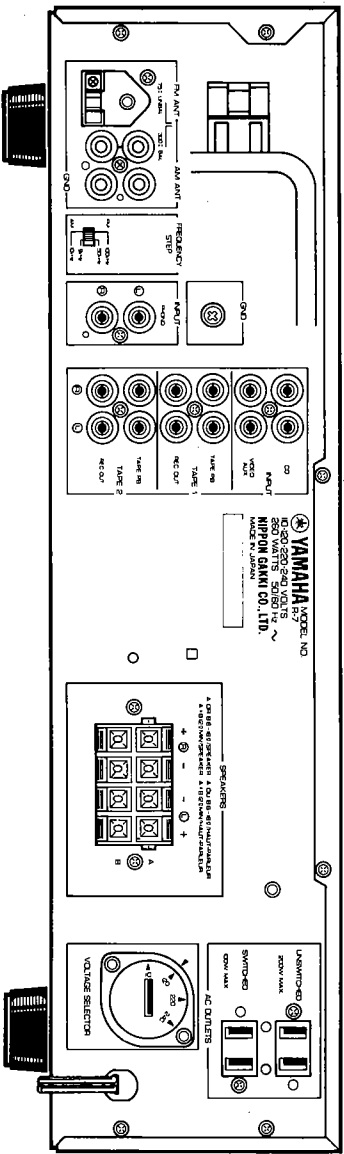


REAR PANELS

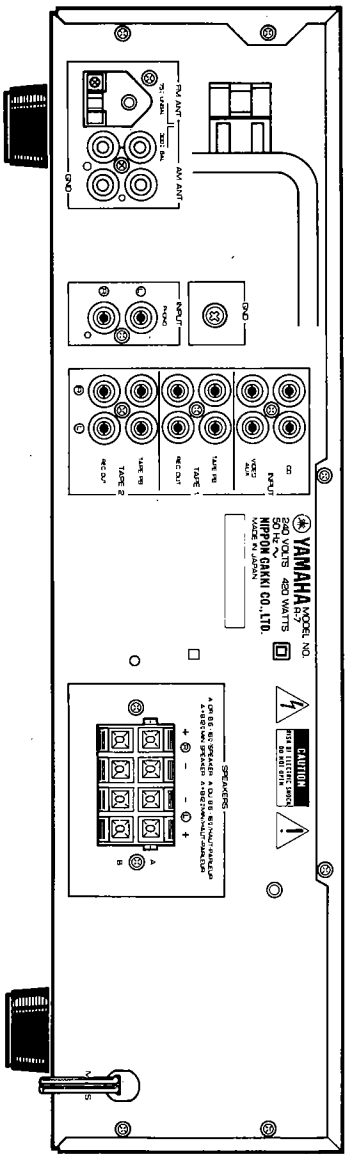
U.S.A. & Canadian models



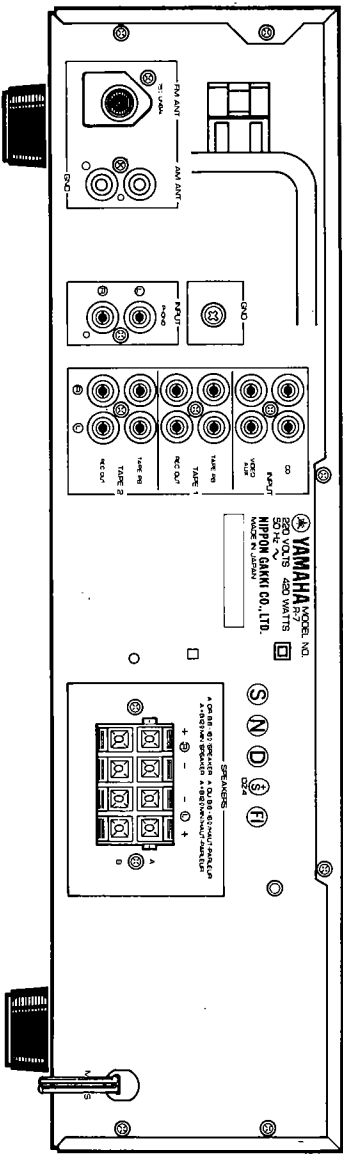
General model



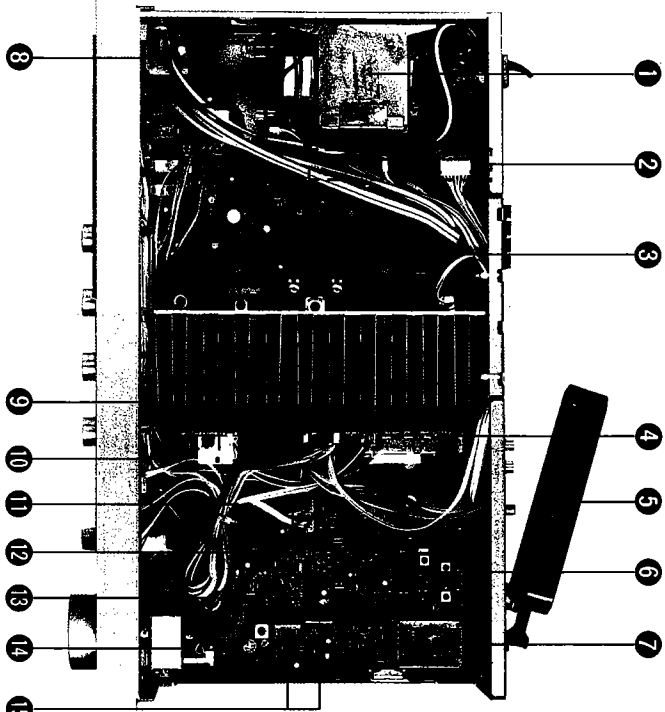
Australian & British models



European model



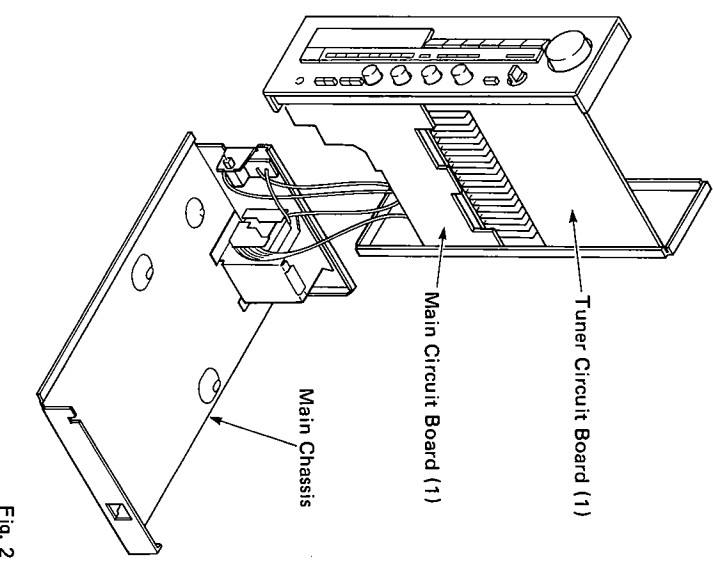
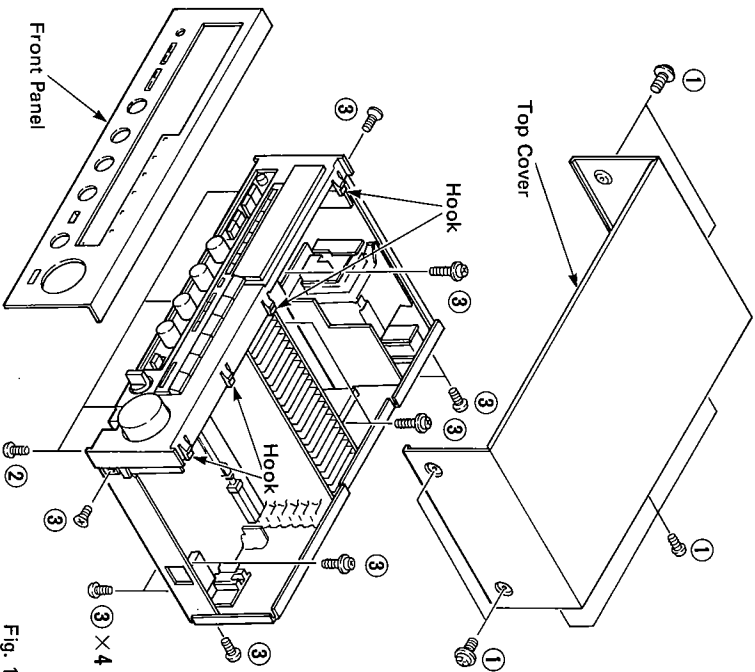
INTERNAL VIEW



- 1 POWER TRANSFORMER
U.S.A. model: GA69001
Canadian model: GA69011
European model: GA69022
General model: GA69032
Australian & British models: GA69042
- 2 MAIN CIRCUIT BOARD (2)
- 3 MAIN CIRCUIT BOARD (1)
- 4 TUNER CIRCUIT BOARD (2)
- 5 AM LOOP ANTENNA
- 6 AM IC: LA1245
- 7 FRONT END PACK
- 8 POWER SWITCH
- 9 MOTOR CONTROL IC: BA6229
- 10 A.V CONTROL IC: iG14780 (LC6505C-696)
- 11 PLL IC: LC7210
- 12 CSL CONTROLLER IC: iG14770 (LC6510C-695)
- 13 TUNER CIRCUIT BOARD (1)
- 14 POTENTIOMETER WITH MOTOR
- 15 IF IC: μ PC577H (E, F)

DISASSEMBLY PROCEDURES

1. Removal of Top Cover
Remove 7 screws (1) in Fig. 1, and slide the Top Cover back and up.
2. Removal of Front Panel
Remove 4 screws (2) and 4 hooks in Fig.1, and pull the Front Panel forward.
3. Check of Main & Tuner Circuit Board (1) and replacement of parts.
 - a. Remove 13 screws (3) in Fig. 1.
 - b. Push the Power switch on.
 - c. Remove the Main Chassis as shown in Fig. 2.
In this condition it is possible for you check the Main and Tuner Circuit Board (1), and replace the parts.



■ ADJUSTMENTS

1. Before adjustment

- 1) After the power switch is pushed on, wait for 5 minutes before measuring, to be sure of the most stable operation.
- 2) Adjust the OSC coil and IFT with a nonferrous screw driver.
- 3) Set the switches to the following positions.
TUNING MODE AUTO
RECEIVING MODE AUTO
- 4) Proceed with the AM section adjustments after having finished the FM section adjustment.
- 5) $0\text{dB}\mu = 1\mu\text{V}$ Ex: $60\text{dB}\mu = 1\text{mV}$

2. Measuring instruments abbreviation

FM SG : FM signal generator
SSG : Stereo signal generator
AM SG : AM signal generator
DIST. M : Distortion meter
A.C.V.M. : AC voltmeter
D.C.V.M. : DC voltmeter

<POWER SUPPLY CHECK>

Check that the following voltages are obtained respectively across each test point and ground on main circuit.

Test Point	Rating or standard	Remark								
TR301 EMITTER	+11.9V ± 0.5V	Make sure that AC line voltage comes within <table border="1"><tr><th>Models</th><th>AC line voltage</th></tr><tr><td>U, C</td><td>120V ± 10%</td></tr><tr><td>G</td><td>220V ± 10%</td></tr><tr><td>A, B</td><td>240V ± 10%</td></tr></table>	Models	AC line voltage	U, C	120V ± 10%	G	220V ± 10%	A, B	240V ± 10%
Models	AC line voltage									
U, C	120V ± 10%									
G	220V ± 10%									
A, B	240V ± 10%									
D305 Anode	+5.8V ± 0.5V									
+7	+5.5V ± 0.5V									
TR303 EMITTER	+6.1V ± 0.5V									
TR302 EMITTER	−11.9V ± 0.5V									
D304 Anode	−6.1 ± 0.5V									
+B	+50V ± 5V									
−B	−50V ± 5V									
+18	+18V ± 5V									
−18	−18V ± 5V									
FB	At FM reception mode +12V ± 1V									
	At AM reception mode 0V									
AB	At FM reception mode 0V									
	At AM reception mode +12V ± 1V									

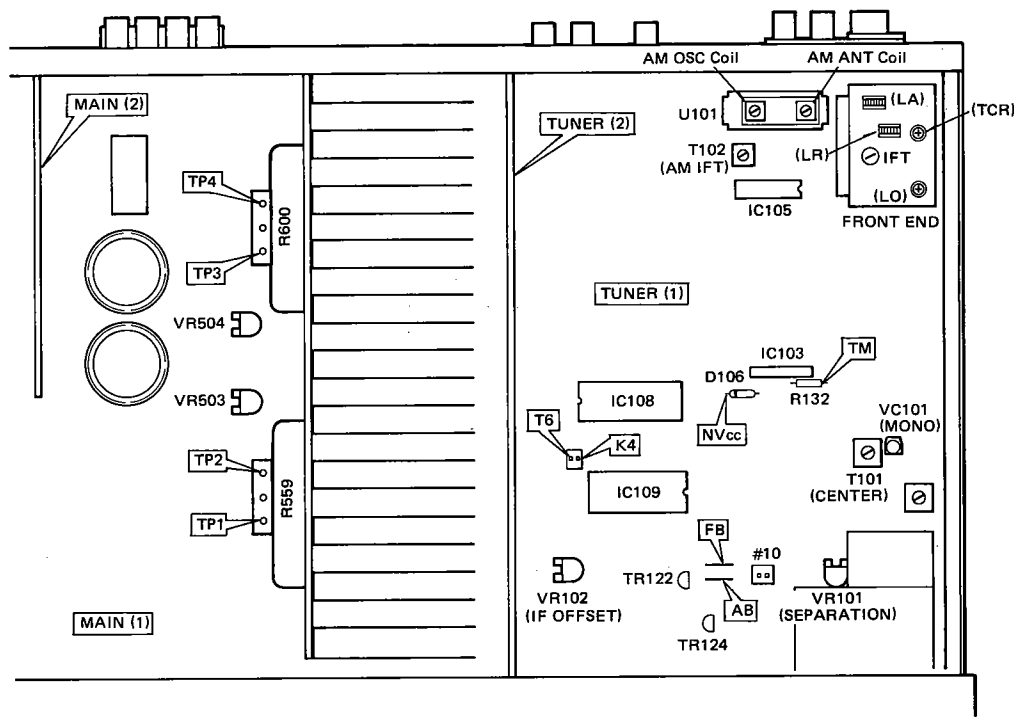
<AUDIO SECTION>

● Idling Current Adjustment

When replacing the power and drive transistors, adjust idling current. After the power has been turned on, age about 5 minutes in non loaded condition. Adjust VR503 (Lch) and VR504 (Rch) so that the voltage across the terminals of R559 (TP1 - TP2) and R560 (TP3 - TP4) comes to $11\text{mV} \pm 2\text{mV}$ DC.

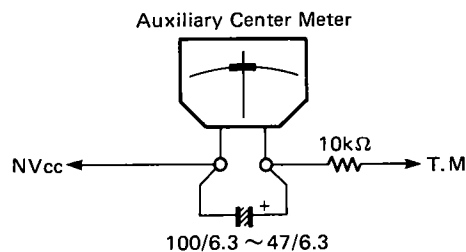
Test points		Adjustment points	Rating
Lch	Across the terminals of R559 (TP1 - TP2)	VR503	$11\text{mV} \pm 2\text{mV}$ DC.
Rch	Across the terminals of R560 (TP3 - TP4)	VR504	$11\text{mV} \pm 2\text{mV}$ DC.

• TEST POINT



< FM TUNER SECTION >

- Use 19kHz L.P.F. to measure the REC OUT.
- On step 1 and 2 connect the auxiliary center meter (ji00036 or similar) to confirm the best tuned point.
- 100% modulation means that the Frequency Deviation is 75kHz. (R) (U) (C) (A) (B)
- For the G model, Frequency Deviation is 40kHz.
- For the G model, install the Matching Transformer and connect FM SG.



Step	Item to be Adjusted	Connection terminal	Instrument required	Adjustment locations	Adjustment method	Rating or standard	Remarks
1	Discriminator balance	NVcc ~ T.M	Auxiliary center meter	T101 (CENTER)	Adjust the pointer of the auxiliary center meter points to "0" at detuned point.		After the adjustment of step 1 to 5, confirm it again.
2	Confirmation of station center set	300Ω FM ANT	FM SG 98MHz ± 1kHz 70dBμ (75.2dBf) MONO 1kHz 100% MOD	TUNING key → UP or DOWN	Confirm that the auxiliary center meter deflects to "0" when tuned to signal of FM SG.		
		NVcc ~ T.M	Auxiliary center meter				
3	Monaural distortion	300Ω FM ANT	FM SG 98MHz ± 1kHz 70dBμ (75.2dBf) MONO 100Hz 100% MOD	VC101 (MONO)	Reduce distortion to minimum.	Less than -55dB	Reception should be made in LOCAL mode
		REC OUT L, R	DIST. M L.P.F.				
4	Stereo distortion	300Ω FM ANT	FM SG, SSG 98MHz ± 1kHz 70dBμ (75.2dBf) STEREO L, R 1kHz, 100% MOD	Front end IFT ST indicator	Same as step 3	Less than -46dB	Confirm that ST indicator lights up. Reception should be made in LOCAL mode.
		REC OUT L, R	DIST. M L.P.F.				
5	Separation	300Ω FM ANT	FM SG, SSG 98MHz ± 1kHz 70dBμ (75.2dBf) STEREO L, R 1kHz, 100% MOD	VR101 (SEPARATION)	Reduce output level to minimum.	Separation more than 40dB	
		REC OUT L, R	A.C.V.M L.P.F.				

Step	Item to be Adjusted	Connection terminal	Instrument required	Adjustment locations	Adjustment method	Rating or standard	Remarks
6	Confirmation of Full-scale signal quality level	300Ω FM ANT	FM SG, SSG 98MHz ± 1kHz 70dBμ (75.2dBf) STEREO L, R 1kHz, 100% MOD	SIGNAL QUALITY indicator	Confirm that all signal quality indicators light up.		Confirm that all signal quality indicators goes out at detuned point.
7	IF Offset	300Ω FM ANT K4 ~ T6	FM SG. 98MHz ± 1kHz 70dBμ (75.2dBf) STEREO L, R 1kHz 30% MOD Short	VR102 (IF OFFSET) Frequency display	By shorting across terminals K4 and T6, the frequency display shifts 1 digit. Therefore, adjust VR102 until 10kHz digit becomes 9 or 0.		After adjustment open across K4 and T6.
8	Confirmation of auto search reception	300Ω FM ANT	FM SG 98MHz ± 1kHz 15dBμ (20.2dBf) MONO 1kHz 100% MOD	TUNING key UP or DOWN	Confirm that auto search reception is possible with the tuning key.		Confirm that muting is performed at auto reception.

Note: $X \text{ dB}\mu = X + 5.2\text{dB}\mu\text{f}$

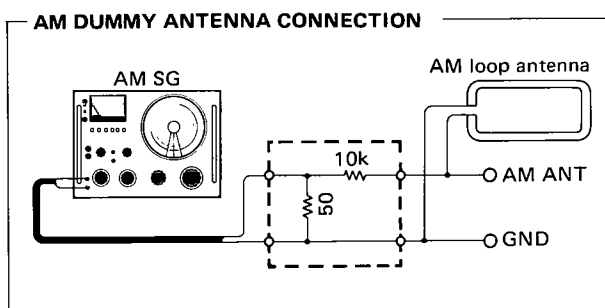
- Shorting K4 and T6 while set at FM will result in automatic memory of each preset from P1/P9 to P9/P16 as given in the right table. This is convenient when making an adjustment.

P1/P9	P2/P10	P3/P11	P4/P12	P5/P13
AM 630kHz	AM 1080kHz	AM 1440kHz	FM 87.5MHz	FM 95.1MHz

P6/P14	P7/P15	P8/P16
FM 98.1MHz	FM 101.5MHz	FM 108.0MHz

< AM TUNER SECTION >

- Connect the AM loop antenna to the AM ANT terminals.
- Connect the AM dummy antenna for adjustment.



Step	Item to be Adjusted	Connection terminal	Instrument required	Adjustment locations	Adjustment method	Rating or standard
1	AM IFT	AM ANT REC OUT	AM SG AM dummy antenna 630kHz ± 0.1kHz 50dBμ 400Hz, 30% MOD A.C.V.M.	T102	Adjust T102 to maximize detector output.	
2	Confirmation of sensitivity	AM ANT REC OUT	AM SG AM dummy antenna 630kHz ± 0.1kHz 1080kHz ± 0.1kHz 1440kHz ± 0.1kHz 400Hz, 30% MOD A.C.V.M. DST. M.	PRESET STATION key P1/P9 P2/P10 P3/P11	Obtain AM SG output level where distortion become 10%.	Less than 58dBμ
3	Confirmation Full-scale signal quality level	AM ANT	AM SG. AM dummy antenna 1080kHz ± 0.1kHz 80dBμ 400Hz, 30% MOD	PRESET STATION key P2/P10 SIGNAL QUALITY indicator	Confirm that all signal quality indicators light up.	
4	Confirmation of auto search reception	AM ANT	AM SG AM dummy antenna 1080kHz ± 0.1kHz 60dBμ 400Hz, 30% MOD	TUNING key UP or DOWN		Confirm the auto search reception with the tuning key

< DIGITAL CONTROL SECTION >

Step	Confirmation item	Connection terminal	Instrument required	Operation key	Confirmation method
1	Preset memory	300Ω FM ANT	FM SG, SSG 98MHz ± 1kHz 70dBμ (75.2 dBf) STEREO, L, R 1kHz, 100% MOD	FUNCTION key TUNING MODE key TUNING key (UP or DOWN) MEMORY key PRESET STATION key	① Receive FM 98MHz by means of auto search. ② Set P1-P8 → P1-P8 indicator lights. ③ Press MEMORY key → MEMORY indicator flashes about 5 seconds. ④ Press P1 → MEMORY indicator goes OFF P1 of PRESET STATION indicator lights.
		AM ANT	AM SG AM dummy antenna 1080kHz ± 0.1kHz 80dBμ 400Hz, 30% MOD	P1-P8/P9-P16	⑤ Receive AM 1080kHz ⑥ Press MEMORY key → MEMORY indicator flashes about 5 seconds. ⑦ Press P2 → MEMORY indicator goes OFF P2 of PRESET STATION indicator lights.
		300Ω FM ANT AM ANT	FM SG, SSG AM SG AM dummy antenna		⑧ Press P1 and P2 and check that content is read out. → P1 and P2 of PRESET STATION indicator lights. ⑨ Set P9-P16 → P9-P16 indicator flashes. ⑩ Press MEMORY key → MEMORY indicator flashes. ⑪ Press P9 → MEMORY indicator goes OFF. P9-P16 indicator lights. P9 indicator lights. ⑫ Press P9 and check that content is read out.
2	Tuning mode	Same as step 1	Same as step 1	FUNCTION key TUNING MODE key TUNING key (UP or DOWN)	Tune to FM 98MHz and AM 1080kHz, and check that when receiving MAN'L/MONO, FM reception become forced mono TUNING MODE indicator → Goes out ST indicator → Goes out
				PRESET STATION key P1, P2	Check that tuning operation stops when tuned while AUTO searching. TUNING MODE indicator → lights up ST indicator → lights up
3	Receiving Mode			PRESET STATION key P1 RECEIVING MODE key	① Press P1 and content is read out (FM) ② Press RECEIVING MODE key → The following 3 states are switched and each indicator lights up. → AUTO → DX → LOCAL
4	Last channel memory			POWER key	① Read out P1. ② Turn OFF POWER Switch. ③ Turn ON POWER Switch after 5 seconds. ④ P1 content should come out. P1 of PRESET STATION indicator lights.

LSI DATA

• IC109: LC7210

This is the CMOS LSI utilized to tune the CSL (Computer Servo Lock) tuning system for FM/AM radio which has realized stable station selection by PLL (Phase Locked Loop) synthesizer, precise automatic station search (applicable to all areas of the world and multiple bands) by SL² (Signal Locked Loop) voltage synthesizer, and optimum tuning point reception by AFC operation.

When combined with a prescaler ($\div 100$), this LSI can be controlled by a 4-bit microcomputer in the controller.

The functions are:

- SL² auto search-control
- PLL control
- Analog switch for S-curve AFC
- Station-originated frequency counter
- Data generation for FM band IF offset adjustment (5 bits)

Terminal No.	Description	I/O	Function
1	Xin	IN	Oscillation terminals. By connecting Quartz across Xin and Xout, and load capacity across both terminals and Vss, basic clock signal is generated (32kHz).
2	Xout	OUT	
3	Vss	—	Ground terminal
4	DI/DO	IN	Pull-up feature. Input terminal which controls whether data terminal ($D_0 \sim 3$) signal is input mode (DI/DO = 1) or output mode. (DI/DO = 0).
5	STB	IN	Pull-up feature. Determines the timing of internal latch, FF clock pulse and set/reset signal which are determined by control input ($C_0 \sim 3$).
6	D_3	I/O	I/O terminals. Push-pull output. Transfers (DI/DO = 1) data to internal data bus (4 bits) or outputs the contents of internal data bus.
7	D_2		
8	D_1		
9	D_0		
10	C_3	IN	Pull-up feature. Input used to create signal which specifies which logic is to be connected with internal data bus.
11	C_2		
12	C_1		
13	C_0		
14	M/L	OUT	Outputs "1" only when received band is AM NC.
15	PLL	OUT	Push-pull. Outputs "1" while PLL operation is made.
16	Sout	OUT	Tri-state. Connected with push-pull output and analog switch. • PLL mode: Charge pump output can be obtained. • SEARCH mode: Auto search output can be obtained. • AFC mode: Conducts to Sin terminal via analog switch. High impedance state in other modes
17	$\overline{SD}$	IN	Controls whether reception is made by SL ² or PLL when FM is received.
18	Sin	IN	Connected with analog switch or comparator input. • AFC mode: Conducts to Sout terminal via analog switch and makes reception by AFC. • AUTO SEARCH mode: Discriminates S signal between SH and SL via wind comparator and uses as input which controls search speed limit and stop.
19	AFC	OUT	Outputs "1" in AFC mode. Outputs "0" in other than AFC mode.
20	SMK	IN	Prohibits search stop and speed control by SH and SL in AUTO SEARCH mode ("1"). Controls when "0" is input.
21	F/A	OUT	Band data output terminal. Outputs "1" in FM mode.
22	Ain	IN	AM (FM) local oscillator frequency input terminal. Pull-down transistor is turned on in FM mode.
23	Fin	IN	1/100 dividing output of AM (FM) local oscillator frequency is input. Pull-down transistor is turned off in FM mode in which reception is not made by AFC.
24	VDD	—	Power source +5V
25	A/D	IN	Input used to generate data for compensating the shift of center frequency of FM IF filter.
26	Vref	—	Power source for setting wind comparator level (Sin) and power source for A/D converter ladder network of FM fine.
27	$\overline{PSC}$	OUT	Outputs "0" when PLL or counter is operated in FM mode. Outputs "1" in other cases (other than when reception is made in FM mode, and other than in FM mode).
28	LOC	I/O	Detects the locking of CSL operation, connected with CR integration circuit. Judges as LOCK state when "1" is input and as UNLOCK state when "0" is input.

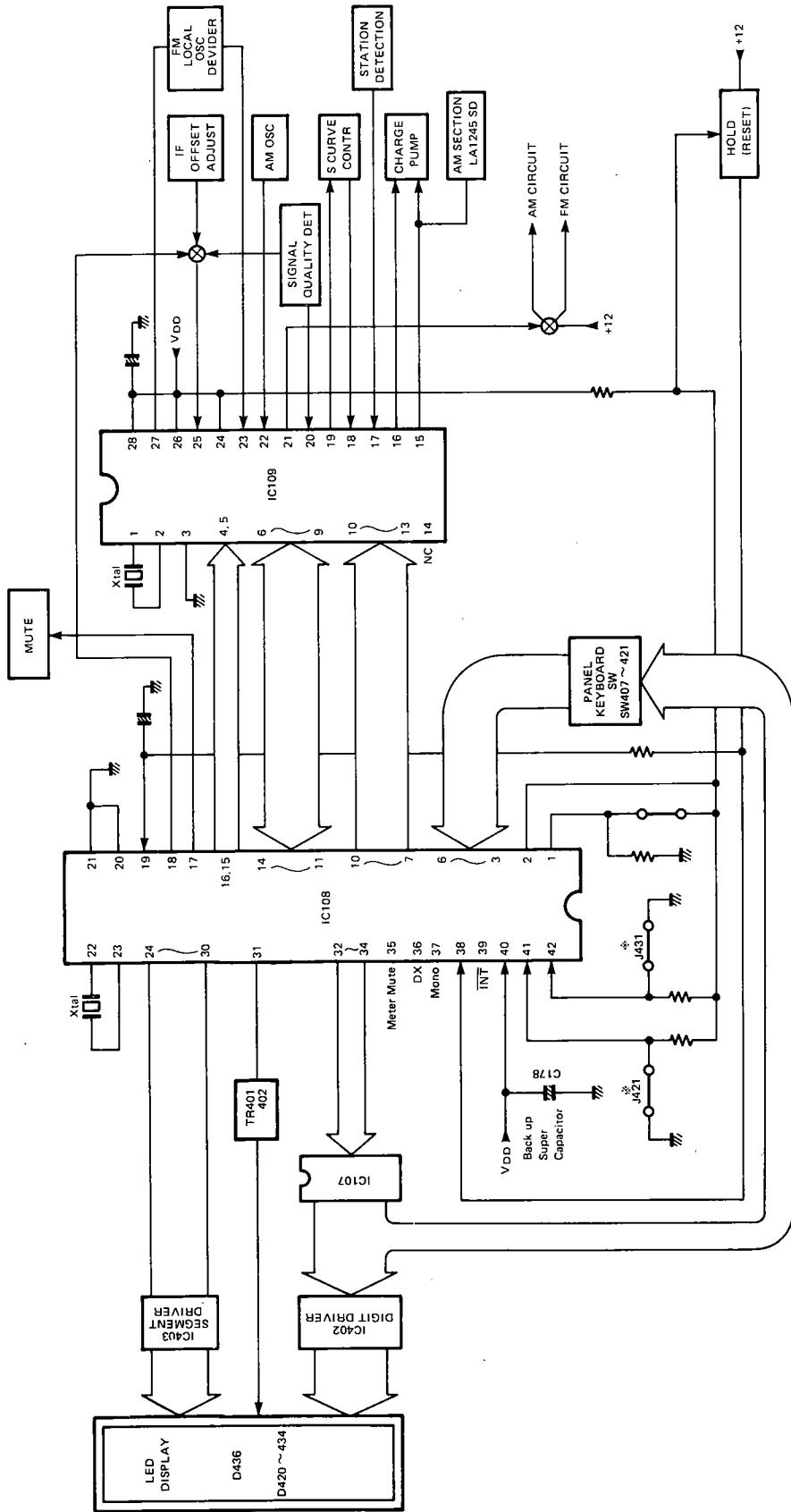
● IC108: CSL Controller V4.0 695 (LC6510C-695)

1-chip type 4-bit microcomputer which incorporates 4096 x 8 bit ROM (for programming) and 256 x 4 bit RAM (for data memory)

Terminal No.	Description	I/O	Function
1	PA ₂ AWAM9K	IN	Destination symbol. 42 Pin = "1" : U model AM in 10kHz increments.
2	PA ₃ REM REQ	IN	Destination symbol. REM REQ = "1" : Remote Control Request
3	PB ₀ K1	IN	Key matrix input. Judges the switches 407 to 421.
4	PB ₁ K2	IN	
5	PB ₂ K3	IN	
6	PB ₃ K4	IN	
7	PC ₀ C0	OUT	Control output. Sepcifies which logic of LC7210 is connected with data bus.
8	PC ₁ C1	OUT	
9	PC ₂ C2	OUT	
10	PC ₃ C3	OUT	
11	PD ₀ D0	I/O	Data bus. Sends and receives data to and from LC7210.
12	PD ₁ D1	I/O	
13	PD ₂ D2	I/O	
14	PD ₃ D3	I/O	
15	PE ₀ STB	OUT	Strobe output.
16	PE ₁ DI/DO	OUT	Specifies the direction of I/O of data bus.
17	PE ₂ MUT	OUT	Muting output. +4.5V (reference value) in MUTING mode.
18	PE ₃ A/D	OUT	Signal Quality/IF Offset select. Signal Quality at "1" IF Offset at "0"
19	RES	IN	Reset input. +5V in normal condition.
20	TEST	—	
21	V _{ss}	—	Power ground.
22	OSC1	IN	Terminals for clock oscillating circuit.
23	OSC2	OUT	
24	PF ₀ H	OUT	Display, segment output.
25	PF ₁ G	OUT	
26	PF ₂ F	OUT	
27	PF ₃ E	OUT	
28	PG ₀ D	OUT	
29	PG ₁ C	OUT	
30	PG ₂ B	OUT	
31	PG ₃ A	OUT	
32	PH ₀ TA	OUT	Display, digit output
33	PH ₁ TB	OUT	
34	PH ₂ TC	OUT	
35	PH ₃ Mute	OUT	Meter Mute Control
36	PI ₀ DX	OUT	DX Mode Control
37	PI ₁ MONO	OUT	Mono Mode Control
38	HOLD	IN	Hold mode demand input terminal.
39	INT	—	INTVAL
40	V _{dd}	—	Power source +5V.
41	PA ₀ U	IN	Destination symbol.
42	PA ₁ G	IN	

42 pin	0	1
41 pin	J	U
0	G	W
1		

● Block Diagram of Microcomputer Peripheral Circuit



※Marked

	R	U.C	A	G	B
J421	OPEN	SHORT	OPEN	OPEN	OPEN
J431	OPEN	OPEN	SHORT	SHORT	SHORT

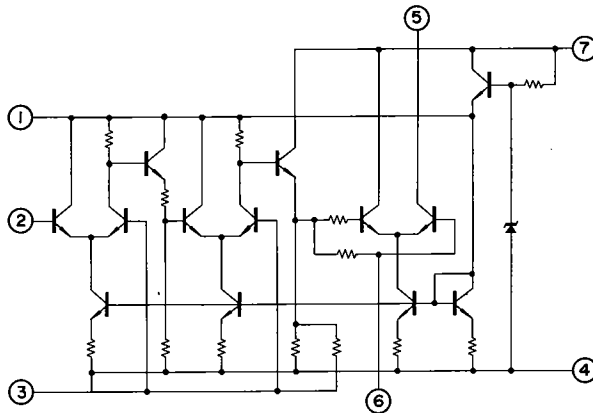
● IC306: A.V Controller V1.0 696 (LC6505C-696)

1-chip type 4-bit microcomputer which incorporates 1024 x 6 bit ROM (for programming) and 64 x 4 bit RAM (for data memory)

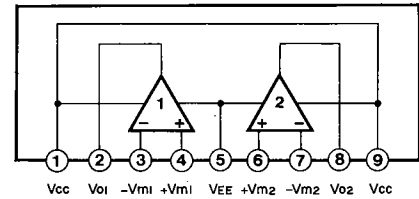
Terminal No.	Description	I/O	Function
1	PA ₂	IN	INPUT port A ₀ ~ A ₃ Input by 4 bit and decision by 1 bit for branch are possible. Also used for HALT mode cancel request input.
2	PA ₃		
3	PB ₀	IN	INPUT port B ₀ ~ B ₃ Input by 4 bit and decision by 1 bit for branch are possible.
4	PB ₁		
5	PB ₂		
6	PB ₃		
7	PC ₀	IN/OUT	IN/OUT common port C ₀ ~ C ₃ When INPUT, input by 4 bit and decision by 1 bit for branch are possible. When OUTPUT, output by 4 bit and set or reset by 1 bit are possible.
8	PC ₁		
9	PC ₂		
10	PC ₃		
11	PD ₀	IN/OUT	IN/OUT common port D ₀ ~ D ₃ When INPUT, input by 4 bit and decision by 1 bit for branch are possible. When OUTPUT, output by 4 bit and set or reset by 1 bit are possible.
12	PD ₁		
13	PD ₂		
14	PD ₃		
15	PE ₀	OUT	OUTPUT port E ₀ ~ E ₃ Output by 4 bit and set or reset by 1 bit are possible. Input of output latch content by 4 bit and decision of output latch by 1 bit for branch are possible.
16	PE ₁		
17	PE ₂		
18	PE ₃		
19	RES	IN	Reset input terminal
20	TEST	IN	LSI test terminal usually connected to Vss (0V).
21	Vss	—	Connected to 0V of power supply.
22	OSC 1	IN	Used by supplying external clock. Also used with OSC2 terminal and C.R. ceramic oscillator when using internal clock oscillation.
23	OSC 2	OUT	Attached to oscillatory circuit for internal clock oscillation.
24	PF ₀	OUT	OUTPUT port F ₀ ~ F ₃ Output by 4 bit and set or reset by 1 bit are possible. Input of output latch content by 4 bit and decision of output latch by 1 bit for branch are possible.
25	PF ₁		
26	PF ₂		
27	PF ₃		
28	PG ₀	OUT	OUTPUT port G ₀ ~ G ₃ Output by 4 bit and set or reset by 1 bit are possible. Input of output latch content by 4 bit and decision of output latch by 1 bit for branch are possible.
29	PG ₁		
30	PG ₂		
31	PG ₃		
32	PH ₀	OUT	OUTPUT port H ₀ ~ H ₃ Output by 4 bit and set or reset by 1 bit are possible. Input to output latch content by 4 bit and decision of output latch by 1 bit for branch are possible.
33	PH ₁		
34	PH ₂		
35	PH ₃		
36	PI ₀	OUT	OUTPUT port I ₀ , I ₁ Output by 2 bit and set or reset by 1 bit are possible. Input of output latch content by 2 bit and decision of output latch by 1 bit for branch are possible.
37	PI ₁		
38	HOLD	IN	HOLD mode request input terminal
39	INT	IN	Interrupt request input terminal
40	VDD	IN	Power supply terminal usually connected to +5V terminal.
41	PA ₀	IN	INPUT port A ₀ ~ A ₃ Input by 4 bit and decision by 1 bit branch are possible. Also used for HALT mode cancel request input.
42	PA ₁		

IC BLOCK

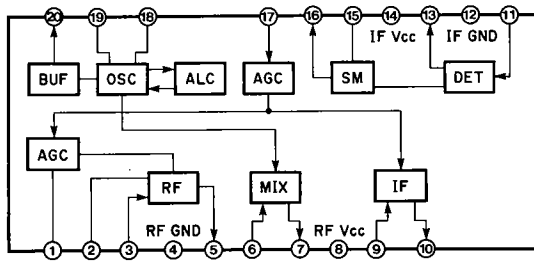
IC101, 102: μ PC577H (E, F)



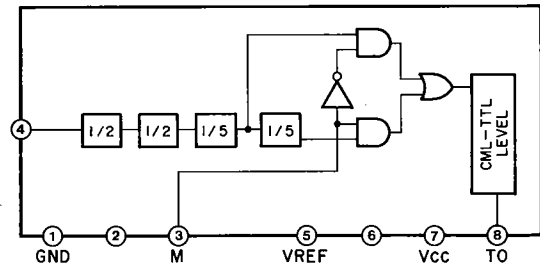
IC103: AN6551, NJM4558S or BA715
IC110: NJM4560S or BA4561



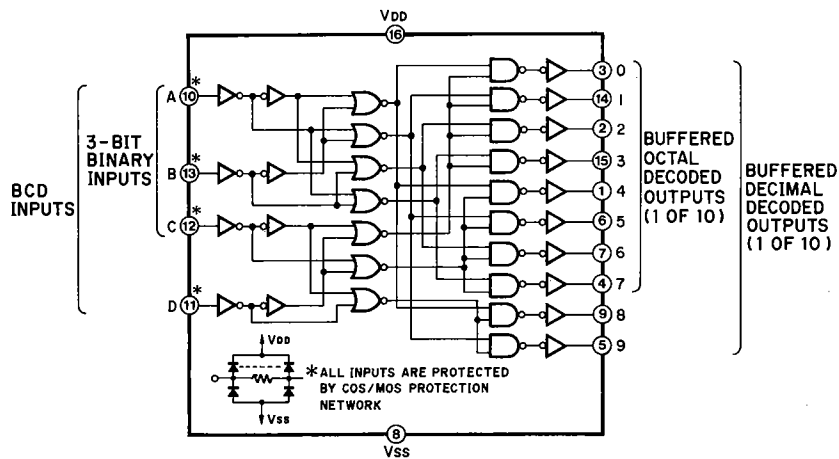
IC105: LA1245



IC106: M54459L



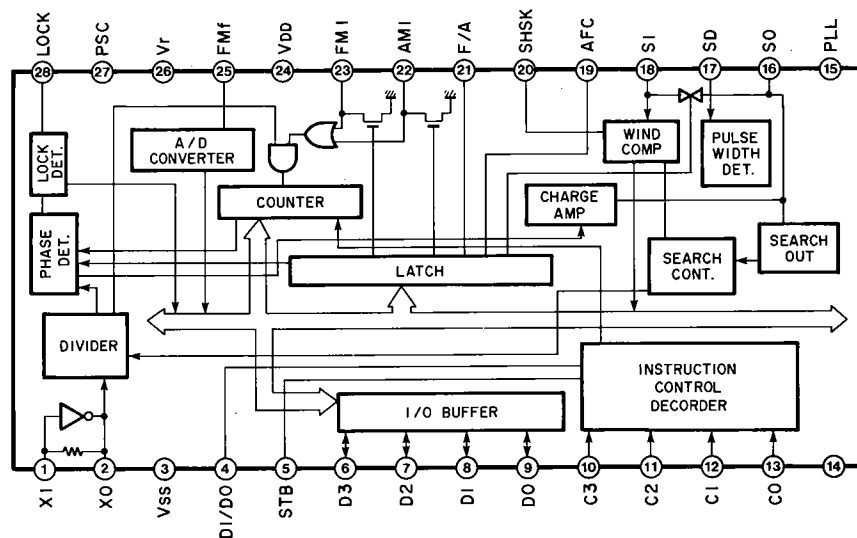
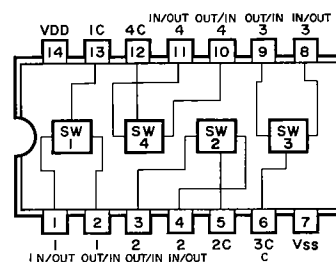
IC107: TC4028BP or BU4028B



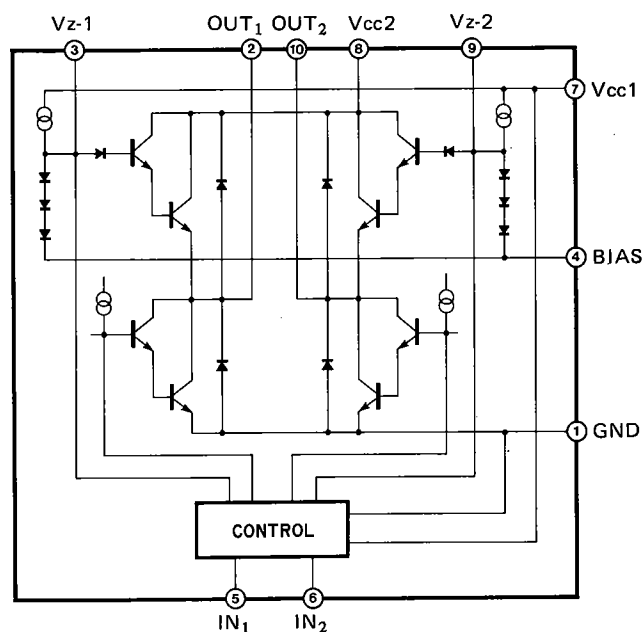
Data Table

D	C	B	A	0	1	2	3	4	5	6	7	8	9
0	0	0	0	1	0	0	0	0	0	0	0	0	0
0	0	0	1	0	1	0	0	0	0	0	0	0	0
0	0	1	0	0	0	1	0	0	0	0	0	0	0
0	0	1	1	0	0	0	1	0	0	0	0	0	0
0	1	0	0	0	0	0	0	1	0	0	0	0	0
0	1	0	1	0	0	0	0	0	1	0	0	0	0
0	1	1	0	0	0	0	0	0	0	1	0	0	0
0	1	1	1	0	0	0	0	0	0	0	1	0	0
1	0	0	0	0	0	0	0	0	0	0	0	1	0
1	0	0	1	0	0	0	0	0	0	0	0	0	1
1	0	1	0	0	0	0	0	0	0	0	0	0	0
1	0	1	1	0	0	0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0	0	0	0	0	0	0
1	1	0	1	0	0	0	0	0	0	0	0	0	0
1	1	1	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	0	0	0	0	0	0	0	0	0	0

IC109: LC7210

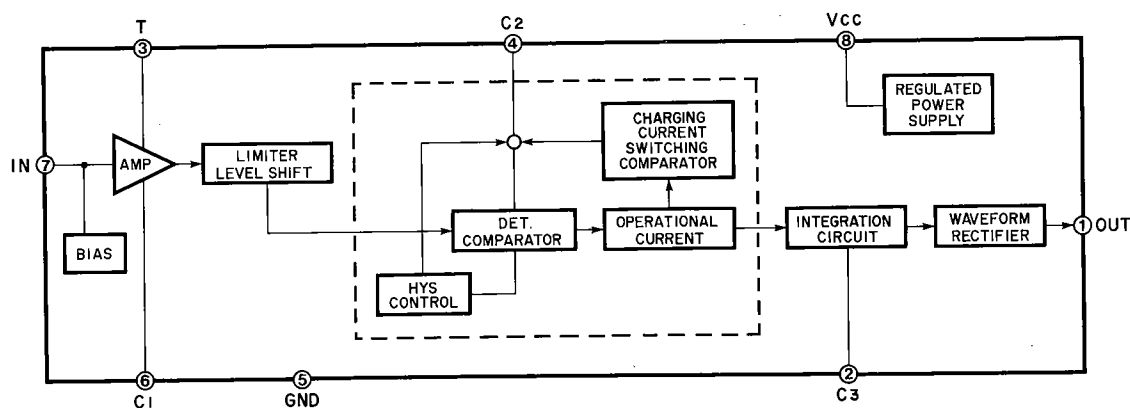
IC301, 302: μ PD4066 or LC4066B
IC303: LC4966

IC304: BA6229

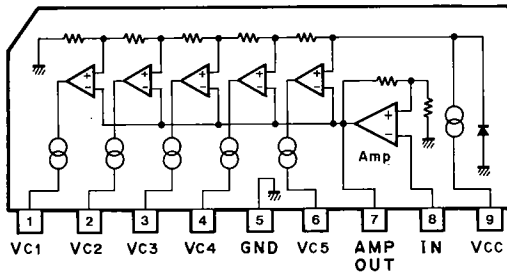


INPUT		OUTPUT		VOLUME
IN1 (5 pin)	IN2 (6 pin)	OUT1 (2 pin)	OUT2 (10 pin)	
L	L	OPEN	OPEN	STOP
H	L	H	L	UP
L	H	L	H	DOWN
H	H	L	L	BRAKE

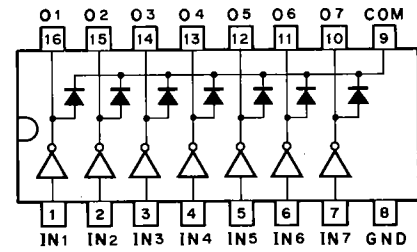
IC305: BA6340



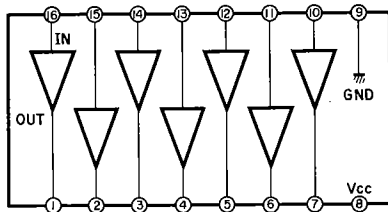
IC401: LB1413



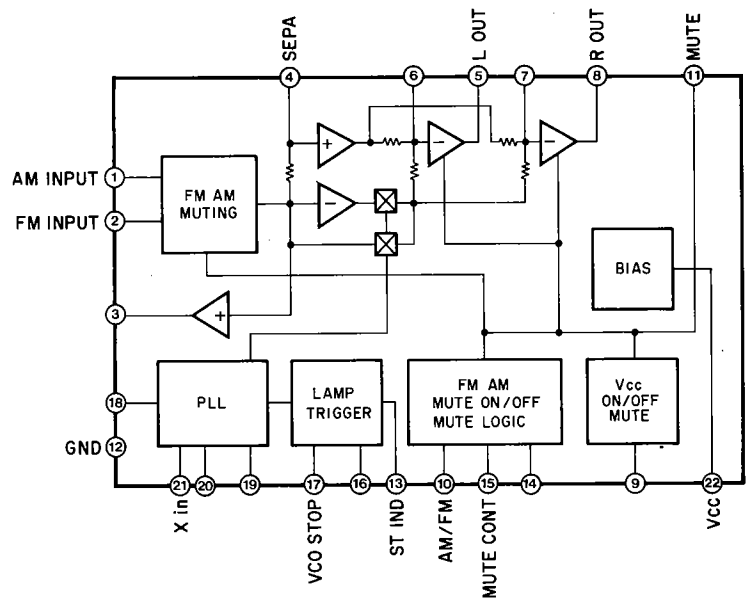
IC402: LB1234



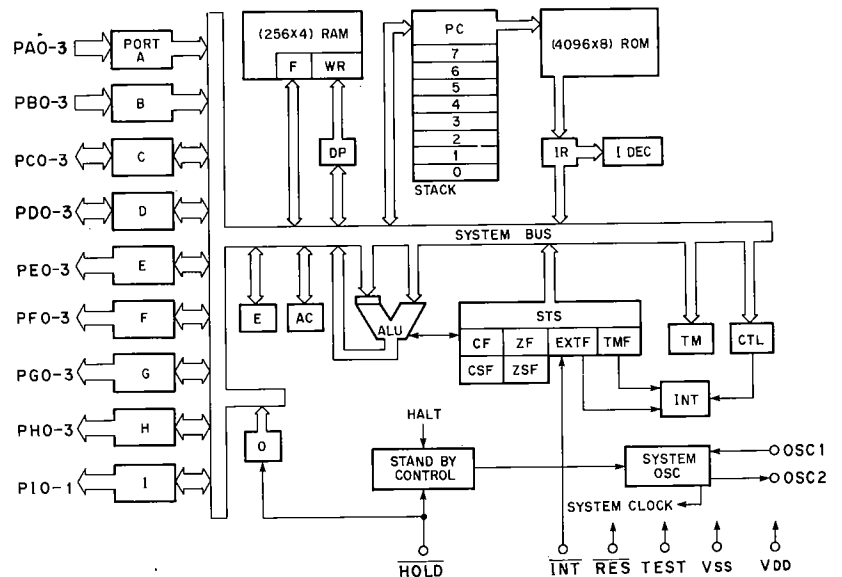
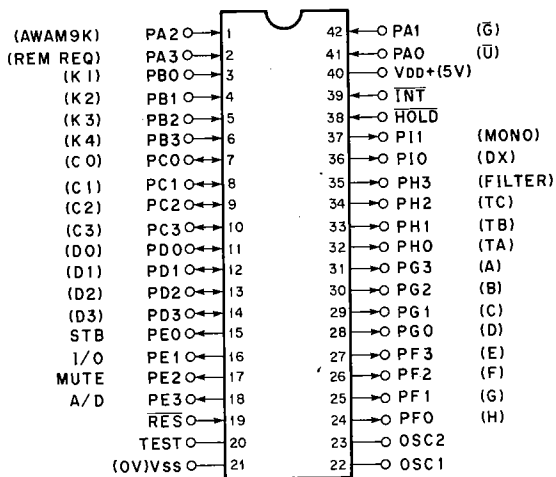
IC403: BA618



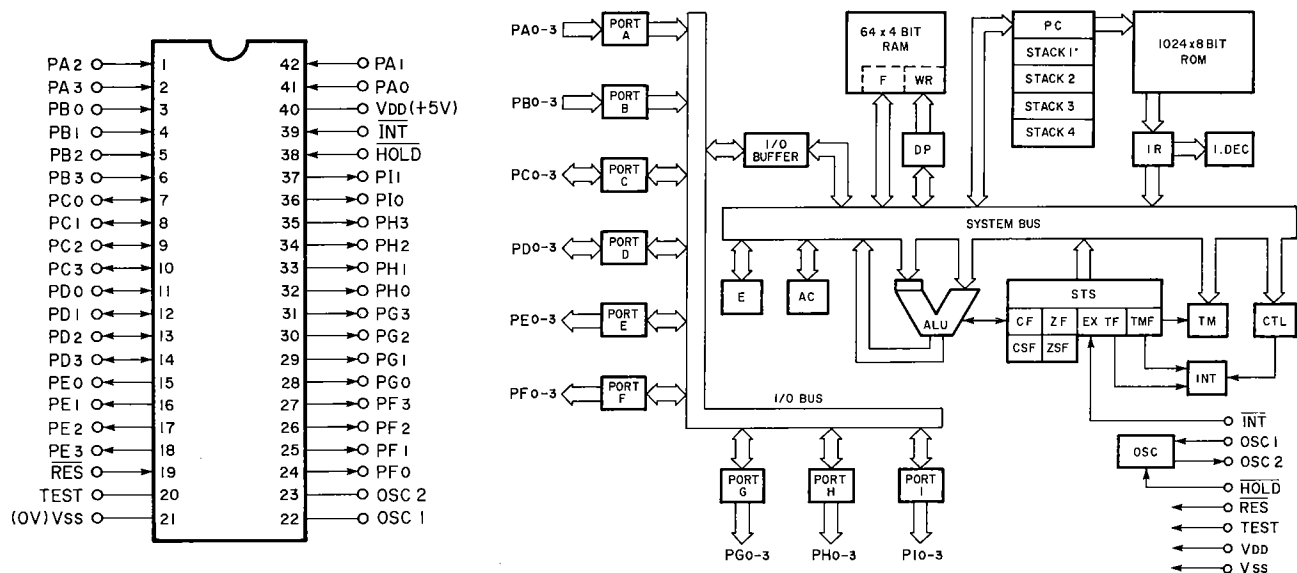
IC104: LA3400



IC108: LC6510C-695



IC306: LC6505C-696



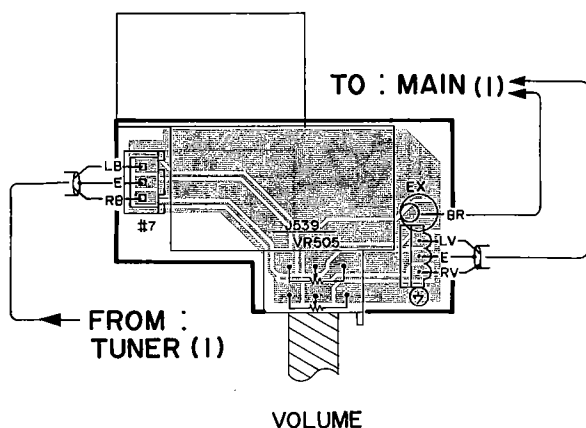
PRINTED CIRCUIT BOARD (Pattern side)

Note: * marked

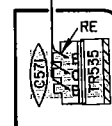
	R	U	C	A, B	G
C545 ~ 548	OPEN	OPEN	OPEN	OPEN	4700P
C549 ~ 554	OPEN	OPEN	OPEN	OPEN	0.022
C565	0.01/500	0.01/500	0.01/500	0.01/500	OPEN
C563, 564	OPEN	OPEN	OPEN	OPEN	0.047/100
R575, 576	OPEN	OPEN	OPEN	OPEN	4.7
R603	OPEN	2.2M ½P	2.2M ½P	OPEN	OPEN
J538	OPEN	SHORT	SHORT	OPEN	OPEN
J661	OPEN	OPEN	OPEN	OPEN	SHORT
D516	4D4B41	4D4B41	D5FB20	4D4B41	4D4B41
F501	T7.0A 250V	5A 125V	5A 125V	T3.15A 250V	T3.15A 250V
F502	T3.5A 250V	OPEN	OPEN	OPEN	OPEN

Main Circuit Board (5)

Main Circuit Board (7)



FROM: TUNER (2)



PRINTED CIRCUIT BOARD (Pattern side)

U.S.A. & Canadian models

Note)

文字面 : Component side

+ (R) - - (L) +

Main Circuit Board (1)

Main Circuit Board (2)

TO : TUNER (2)

Main Circuit Board (8)

Main Circuit Board (3)

Main Circuit Board (4)

TO : TUNER (1)
FROM : MAIN (5)

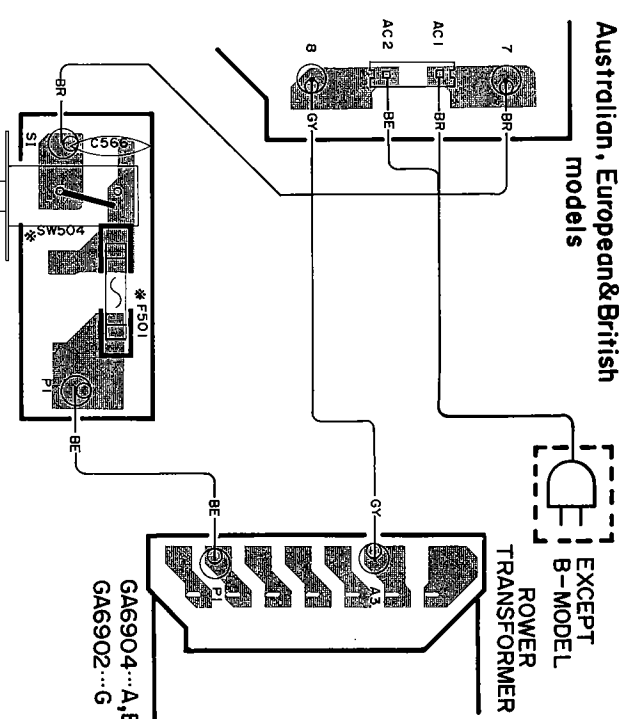
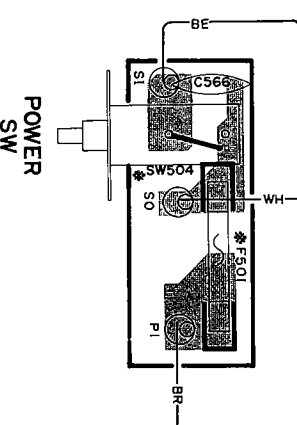
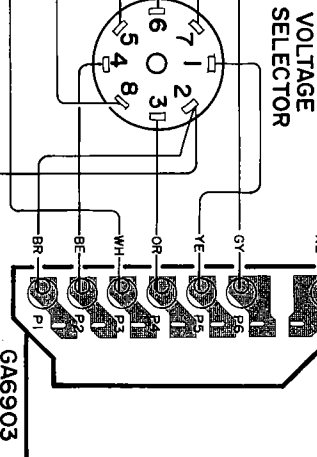
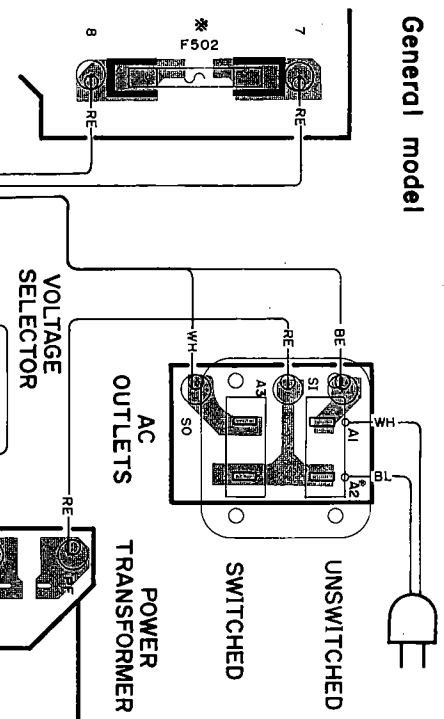
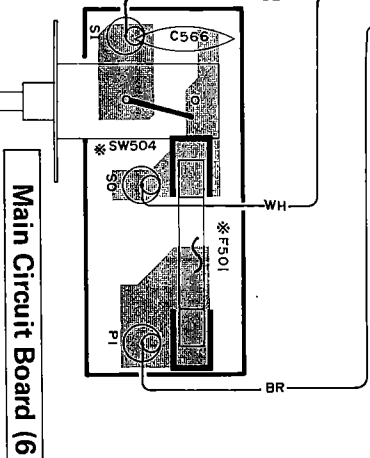
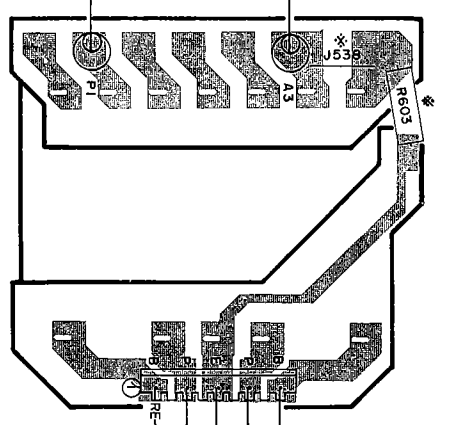
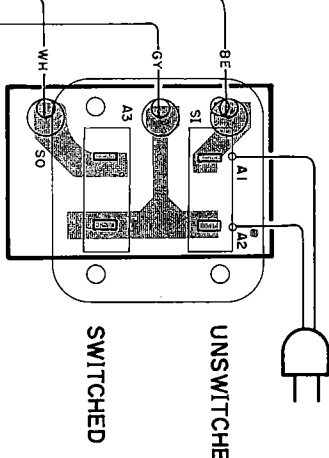
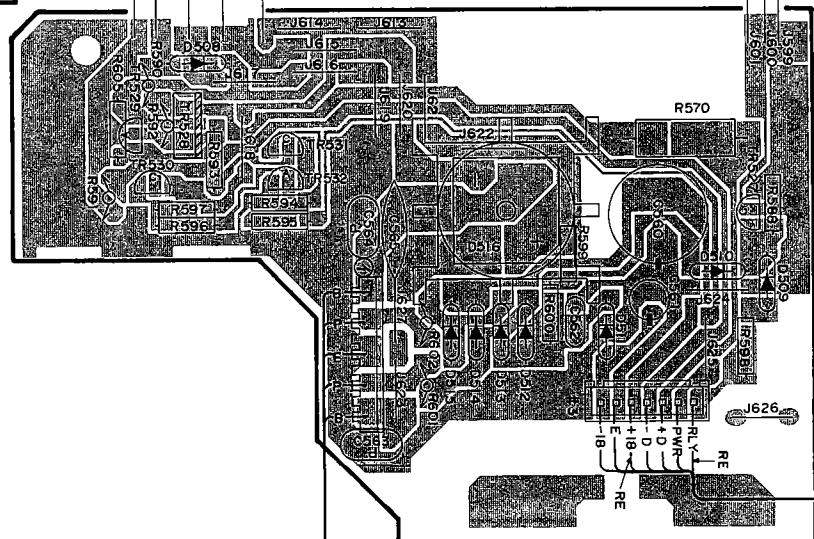
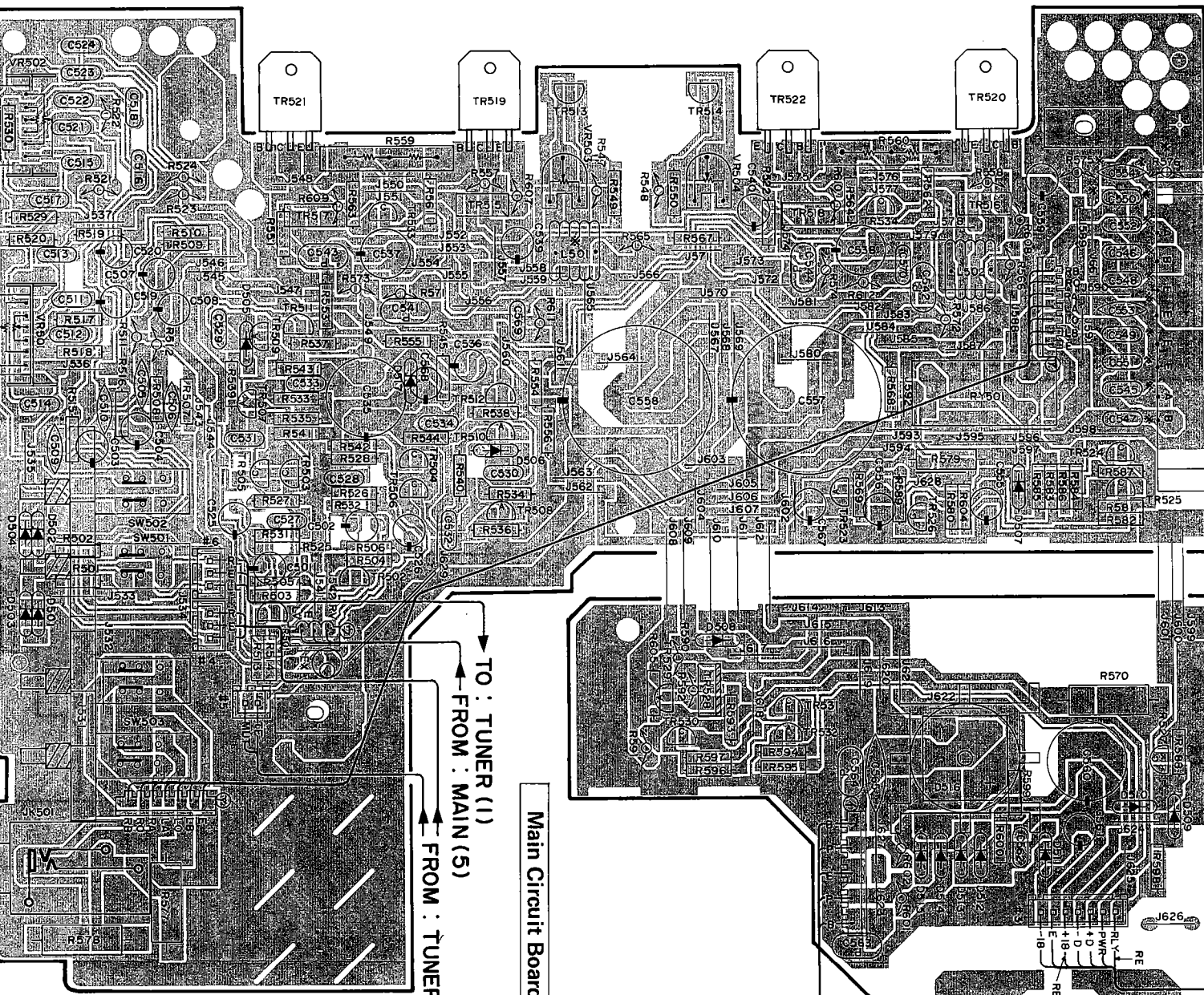
FROM : TUNER (2)

POWER
TRANSFORMER
GA6900...U
GA6901...C

Voltage	Terminal No.
110V	5-4 2-1
120V	6-5 3-2
220V	7-1 8-4
240V	7-6 8-3

Australian, European & British
models

EXCEPT
B-MODEL
POWER
TRANSFORMER



PRINTED CIRCUIT BOARD (Pattern side)

Note)

文字面 : Component side

① : Cylindrical Ceramic Capacitor

FM ANT 75Ω UNBAL. 300Ω BAL. AM ANT GND STEP FREQUENCY FM 100KHz 50KHz AM 10KHz 9KHz INPUT PHONO

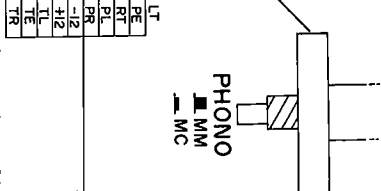
Tuner Circuit Board (1)

Tuner Circuit Board (2)

TAPE 2 TAPE 1 INPUT REC TAPE REC TAPE VIDEO CD OUT PB OUT PB /AUX

	R	U.C	A,B	G
PK101	PA00081	PA00081	PA00081	PA00085
T103	Non Set	Non Set	Non Set	Set
SW101	Set	Non Set	Non Set	Non Set
C133	0.047	0.047	0.047	0.022
C137, 138	1500P	1500P	1000P	@ 470P/100
C197, 198	OPEN	OPEN	OPEN	100P
C199, 200	OPEN	OPEN	OPEN	47P
C205, 206	@220P/100	@220P/100	@220P/100	@100P/100
C221	0.01	0.01	0.01	OPEN
C301 ~ 312	OPEN	OPEN	OPEN	330P
C333	OPEN	OPEN	OPEN	0.1/25
L107, 108	OPEN	OPEN	OPEN	15μH
L109, 110	OPEN	OPEN	OPEN	220μH
R143, 144	47K	47K	47K	100K
R177	12K	12K	12K	47K
R241	SHORT	SHORT	SHORT	100K
R245	OPEN	OPEN	OPEN	1M
R246	SHORT	SHORT	SHORT	4.7K
R247, 248	10	10	10	33
R249, 250	SHORT	SHORT	SHORT	470
R253, 254	33	33	33	2.2K
J401	SHORT	SHORT	SHORT	OPEN
J421	OPEN	SHORT	OPEN	OPEN
J431	OPEN	OPEN	SHORT	SHORT

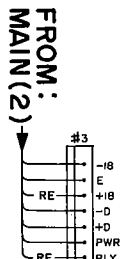
Note: * marked



TO : MAIN (1)

TO: TUNER (5)

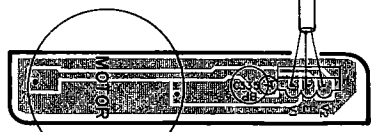
FROM: TUNER (5)



FROM: MAIN(2)

TO: TUNER (6)
TO: MAIN (7)
TO: TUNER (5)

Tuner Circuit Board (3)



TO : MAIN (5)

TO : TUNER (5)

REC OUT

FROM : MAIN (1)
LOUDNESS

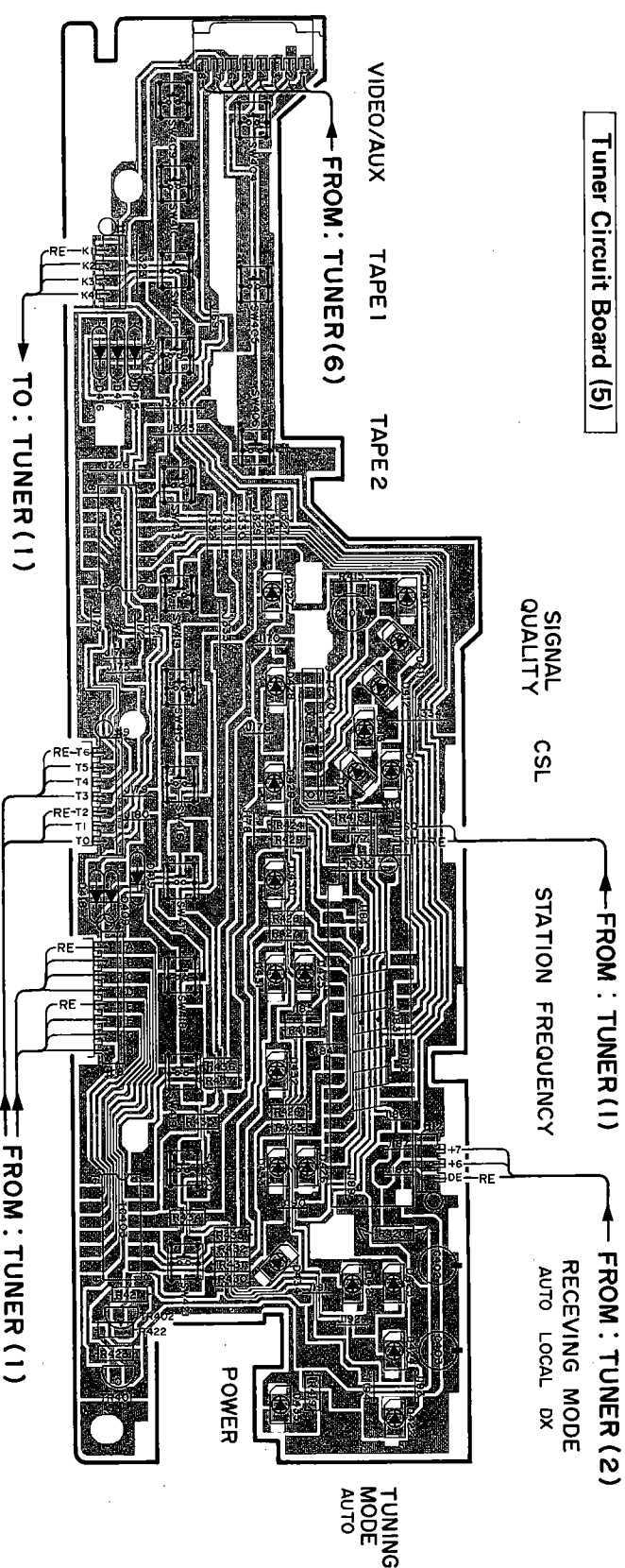
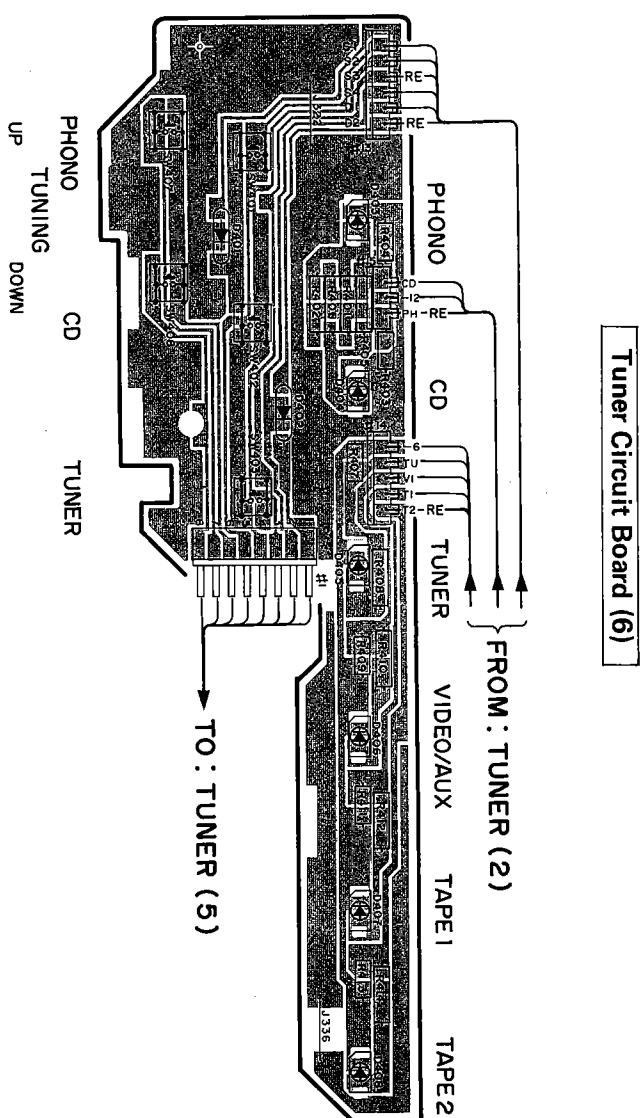
BALANCE

21 REMOTE CONTROL

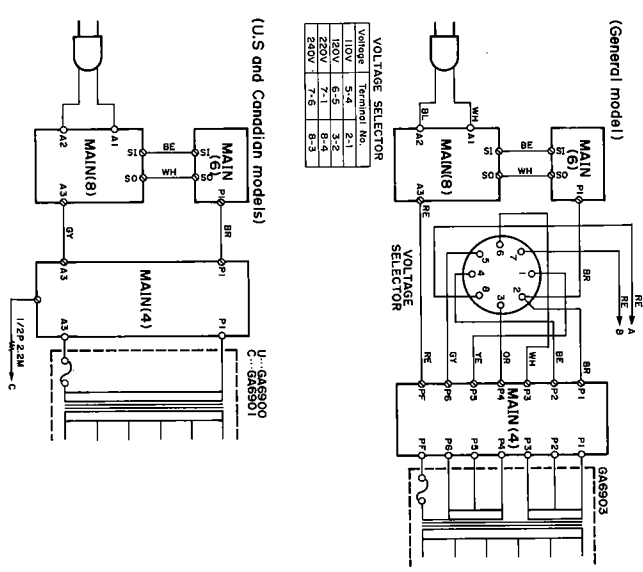
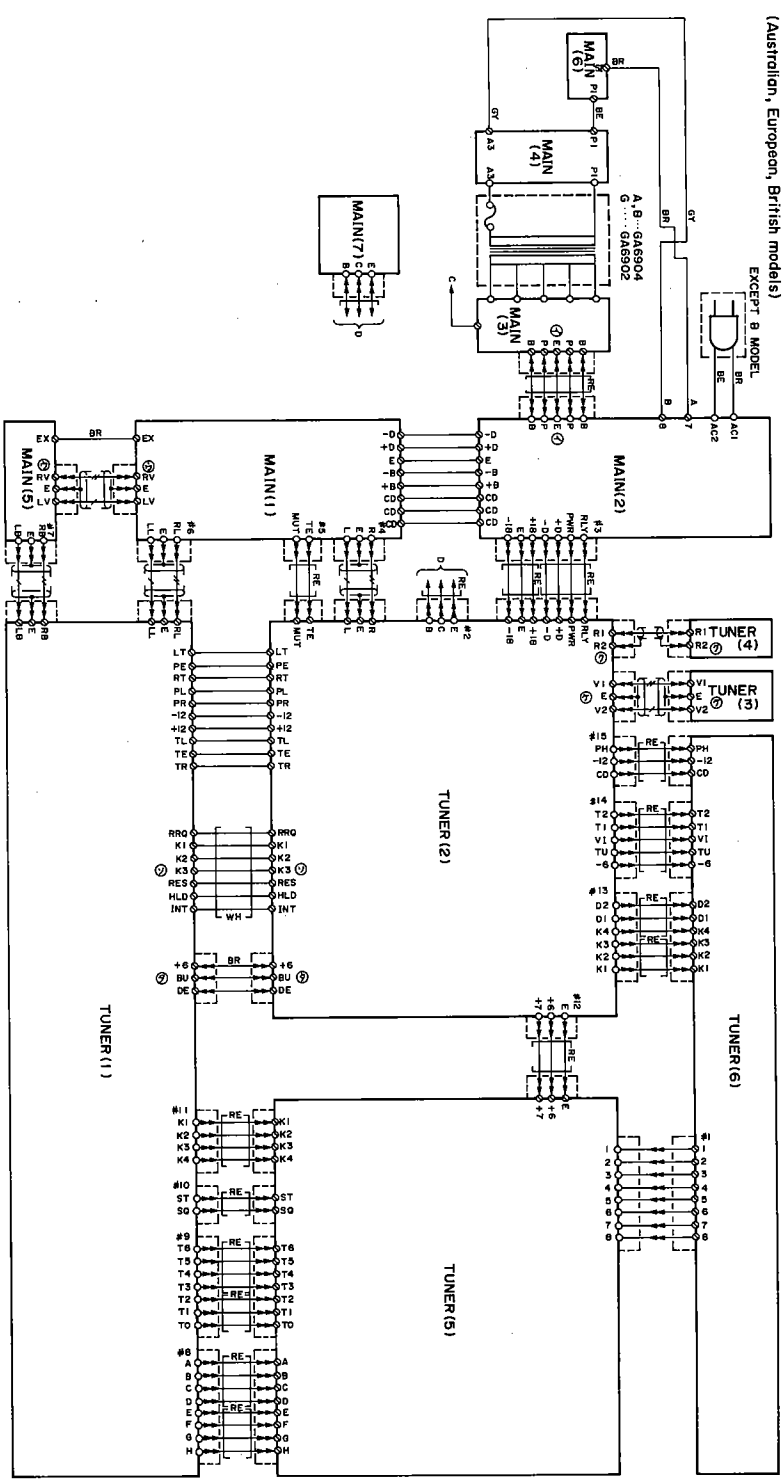
Tuner Circuit Board (4)

TO : TUNER (6)

PRINTED CIRCUIT BOARD (Pattern side)

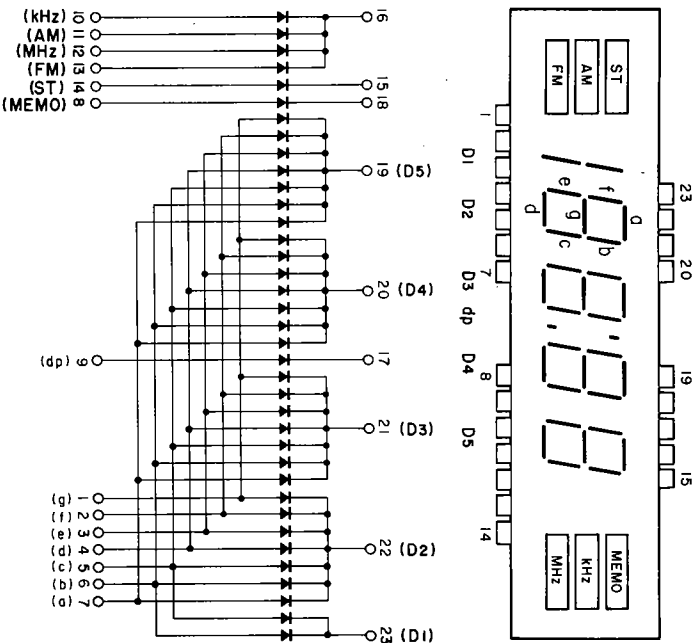


WIRING



CIRCUIT DATA

D436 (Frequency Display)



Pin No.	Function
1	segment "g" Anode
2	segment "f" Anode
3	segment "e" Anode
4	segment "d" Anode
5	segment "c" Anode
6	segment "b" Anode
7	segment "a" Anode
8	"MEMO" Anode
9	decimal point Anode
10	"kHz" Anode
11	"AM" Anode
12	"MHz" Anode
13	"FM" Anode
14	"ST" Anode
15	"ST" Cathode
16	"AM" "FM" Cathode
17	"kHz" "MHz" decimal point Cathode
18	"MEMO" Cathode
19	digit "5" Cathode
20	digit "4" Cathode
21	digit "3" Cathode
22	digit "2" Cathode
23	digit "1" Cathode

MATRIX OF DISPLAY (D436, D420 ~ 434)

IC108 IC107	A [31 Pin]	B [30 Pin]	C [29 Pin]	D [28 Pin]	E [27 Pin]	F [26 Pin]	G [25 Pin]	H [24 Pin]
T6 [4 Pin]	D5 a	D5 b	D5 c	D5 d	D5 e	D5 f	D5 g	
T5 [7 Pin]	D4 a	D4 b	D4 c	D4 d	D4 e	D4 f	D4 g	
T4 [1 Pin]	D3 a	D3 b	D3 c	D3 d	D3 e	D3 f	D3 g	FM DOT
T3 [1 Pin]	D2 a	D2 b	D2 c	D2 d	D2 e	D2 f	D2 g	P9-16 (D425)
T2 [15 Pin]	LOCAL (D424)	D1 b	D1 c	AUTO DX (D423)	DX (D422)	AUTO (D421)	P1-8 (D426)	
T1 [2 Pin]	P-1/9 (D434)	P-2/10 (D433)	P-3/11 (D432)	P-4/12 (D431)	P-5/13 (D430)	P-6/14 (D429)	P-7/15 (D428)	P8/16 (D427)
T0 [14 Pin]	MEMO (D420)	kHz	kHz	AM	MHz	FM		

MATRIX OF INPUT KEY

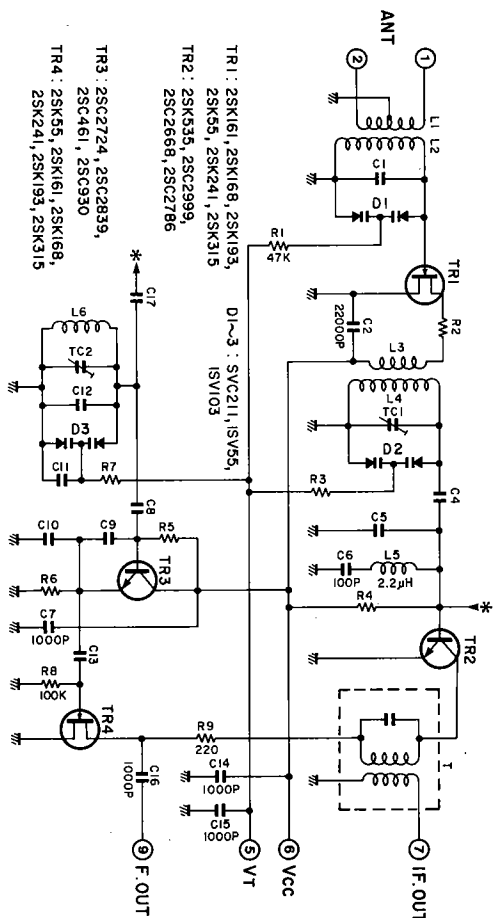
IC108 IC107	T1 [2 Pin]	T2 [15 Pin]	T3 [1 Pin]	T4 [6 Pin]	D5 [7 Pin]	T6 [4 Pin]
K1 [3 Pin]	P1/9	P5/13		UP	P1-8/ P9-16	
K2 [4 Pin]	P2/10	P6/14		DOWN	FM/AM	
K3 [5 Pin]	P3/11	P7/15	AUTO/ MAN'L		RECEIVING MOD	
K4 [6 Pin]	P4/12	P8/16	MEMORY			TEST (OFFSET)

IC107 DATA TABLE

INPUT				OUTPUT					
TC [12 Pin]	TB [13 Pin]	TA [10 Pin]	T0 [14 Pin]	T1 [2 Pin]	T2 [15 Pin]	T3 [1 Pin]	T4 [6 Pin]	T5 [7 Pin]	T6 [4 Pin]
0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0	0	0
0	1	0	0	1	0	0	0	0	0
0	1	1	0	0	1	0	0	0	0
1	0	0	0	0	0	1	0	0	0
1	0	1	0	0	0	0	1	0	0
1	1	0	0	0	0	0	0	1	0
1	1	1	0	0	0	0	0	0	1

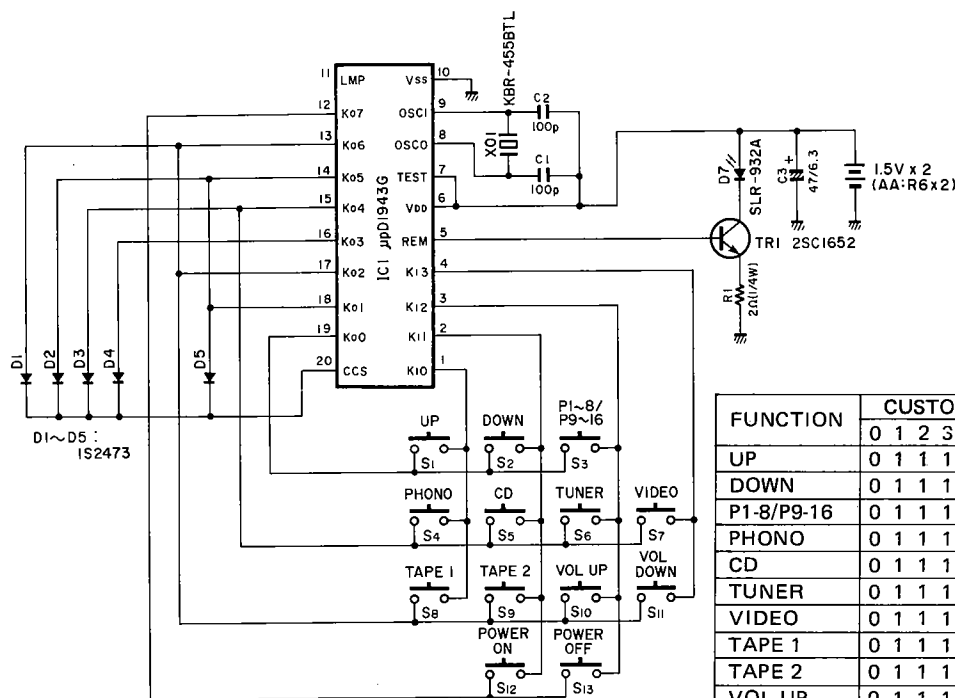
FRONT END PACK (PK101)

R, U, C, A, B models (PA00081)



RS-7 REMOTE CONTROL TRANSMITTER

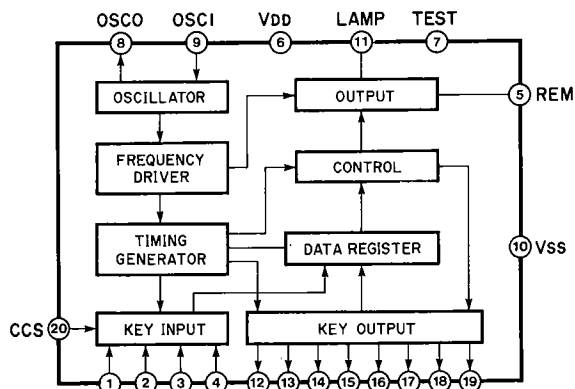
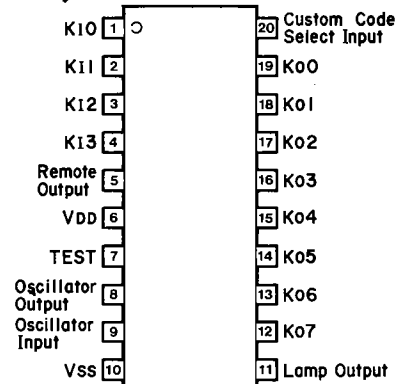
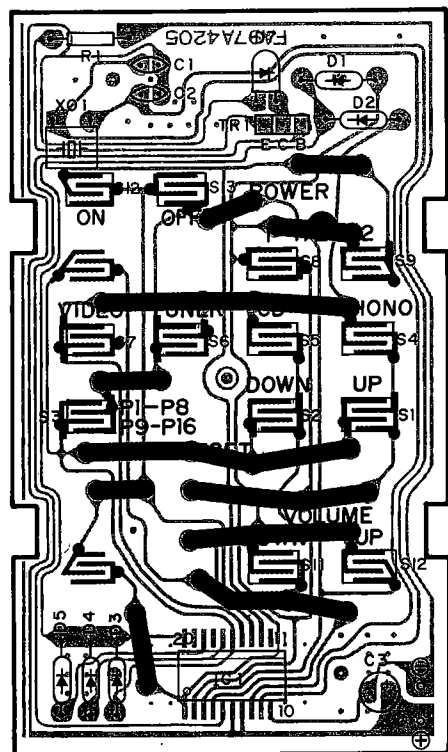
SCHEMATIC DIAGRAM



FUNCTION	CUSTOM CODE	DATA CODE
UP	0 1 1 1 0 1 0	0 1 2 3 4 5 6 7
DOWN	0 1 1 1 1 0 1 0	0 0 0 0 1 0 0 0
PHONO	0 1 1 1 1 0 1 0	1 0 0 0 1 0 0 0
CD	0 1 1 1 1 0 1 0	0 1 0 0 1 0 0 0
TUNER	0 1 1 1 1 0 1 0	0 1 1 0 1 0 0 0
VIDEO	0 1 1 1 1 0 1 0	1 1 1 0 1 0 0 0
TAPE 1	0 1 1 1 1 0 1 0	0 0 0 1 1 0 0 0
TAPE 2	0 1 1 1 1 0 1 0	1 0 0 1 1 0 0 0
VOL UP	0 1 1 1 1 0 1 0	0 1 0 1 1 0 0 0
VOL DOWN	0 1 1 1 1 0 1 0	1 1 0 1 1 0 0 0
POWER ON	0 1 1 1 1 0 1 0	0 0 1 1 1 0 0 0
POWER OFF	0 1 1 1 1 0 1 0	1 0 1 1 1 0 0 0

PRINTED CIRCUIT BOARD (Pattern side)

IC1: μPD1943G



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 of this stereo receiver are 1/6W. There is no description about them in this parts list. Use the "Part No." HF85○○○○ or equivalent.

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA 08 74 40	Main Circuit Board	メ イ ン シ ー ト			R	
※	NA 08 74 60	"	"			U	
※	NA 08 74 80	"	"			C	
※	NA 08 75 00	"	"			A, B	
※	NA 08 78 50	"	"			G	
	FG 21 05 00	Ceramic Cap.	セ ラ コ ン	5pF 50V	C509,510		
	FG 21 11 00	"	"	10pF 50V	C505,506		
	FG 21 31 00	"	"	1000pF 50V	C571		
	FG 24 42 20	"	"	0.022 μ F 50V	C553,554	G	
	FU 35 11 00	Mica Cap.	マ イ カ コ ン	10pF 500V	C529,530		
	FH 23 41 00	Ceramic Cap.	セ ラ コ ン	0.01 μ F 500V	C565	R,U,A,C,B	
	Fi 41 41 00	"	"	0.01 μ F	C566		Δ
	FZ 00 44 20	Polypropylene Film Cap.	ポ リ プ ロ コ ン	0.047 μ F 100V	C541~544		
	FZ 00 44 20	"	"	0.047 μ F 100V	C563,564	G	
※	FZ 00 76 20	Electrolytic Cap.	ブ ロ ッ ク ケ ミ コ ン	8200 μ F 63V	C557,558		
	FZ 00 61 40	"	ブ ラ ッ ク ゲ ー ト コ ン	100 μ F 25V	C537,538		
	UA 25 32 70	Mylar Cap.	マ イ ラ ー コ ン	2700pF 50V	C521,522		
	UA 25 34 70	"	"	4700pF 50V	C545~548	G	
	UA 25 41 00	"	"	0.01 μ F 50V	C533,534		
	UA 25 41 50	"	"	0.015 μ F 50V	C523,524		
	UA 25 42 20	"	"	0.022 μ F 50V	C511,512		
	UA 25 42 20	"	"	0.022 μ F 50V	C549~552	G	
	UA 25 43 30	"	"	0.033 μ F 50V	C569,570		
	UA 25 51 00	"	"	0.1 μ F 50V	C513,514		
	UA 25 51 50	"	"	0.15 μ F 50V	C562		
	UT 45 21 00	Polypropylene Film Cap.	ポ リ プ ロ コ ン	100pF 100V	C515,516		
	UT 45 22 20	"	"	220pF 100V	C527,528		
	UT 45 24 70	"	"	470pF 100V	C517,518		
	UT 45 26 80	"	"	680pF 100V	C531,532		
	UW 91 74 70	Electrolytic Cap.	ケ ミ コ ン	47 μ F 6.3V	C507,508,519,520,559		
	UW 81 82 20	"	"	220 μ F 6.3V	C555		
	UW 94 72 20	"	"	22 μ F 25V	C556,568		
	UW 96 54 70	"	"	0.47 μ F 50V	C501,502		
	UJ 16 61 00	"	"	1 μ F 50V	C503,504,525,526,539,540,567		
	UW 97 71 00	"	"	10 μ F 63V	C536		
※	UW 94 84 70	"	"	470 μ F 25V	C561		
	UW 84 92 20	"	"	2200 μ F 25V	C560		
※	FZ 00 76 00	"	"	220 μ F 63V	C535		
	GD 90 06 80	Coil	空 芯 コ イ ル	0.74 μ H	L501,502		
	HJ 35 42 20	Carbon Resistor	カ ー ボ ン 抵 抗	22 Ω 1/4W	R582		
	HJ 35 52 20	"	"	220 Ω "	R505,506		
	HJ 35 54 70	"	"	470 Ω "	R503,504		
	HV 45 55 60	Flame Proof Carbon Resistor	不 燃 化 カ ー ボ ン 抵 抗	560 Ω "	R549,550		
	HJ 35 66 80	Carbon Resistor	カ ー ボ ン 抵 抗	6.8k Ω "	R563,564		
	HJ 35 61 00	"	"	1k Ω "	R513,514		
	HJ 35 61 20	"	"	1.2k Ω "	R537,538		
	HJ 35 61 50	"	"	1.5k Ω "	R533,534,539,540		
	HJ 35 63 30	"	"	3.3k Ω "	R535,536		
	HJ 35 63 90	"	"	3.9k Ω "	R551,552		
	HJ 35 64 70	"	"	4.7k Ω "	R501,502,519,520,553,554,594		
	HJ 35 65 60	"	"	5.6k Ω "	R555,556		

※ New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	HJ 35 68 20	Carbon Resistor	8.2k Ω 1/4W	カーボン抵抗	R595		
	HJ 35 71 00	"	10k Ω "	"	R543,544,569,597,605		
	HJ 35 71 50	"	15k Ω "	"	R525,526,541,542,545		
	HJ 35 72 20	"	22k Ω "	"	R517,518		
	HJ 35 72 70	"	27k Ω "	"	R531,532,561,562,593,596		
	HJ 35 73 30	"	33k Ω "	"	R598,600		
	HJ 35 74 70	"	47k Ω "	"	R507~510,604		
	HJ 35 76 80	"	68k Ω "	"	R581		
	HJ 35 81 00	"	100k Ω "	"	R567,568,588,589		
	HJ 35 81 20	"	120k Ω "	"	R583,584		
	HJ 35 82 70	"	270k Ω "	"	R527,528		
	HJ 35 82 20	"	220k Ω "	"	R515,516,585~587		
	HJ 35 84 70	"	470k Ω "	"	R599		
	HJ 35 86 80	"	680k Ω "	"	R580		
	HJ 35 92 20	"	2.2M Ω "	"	R529,530		
※	HZ 00 51 10	"	2.2M Ω RD50S	"	R603	U,C	
	HL 31 61 50	Metal Oxide Film Resistor	1.5k Ω 1W	酸化金抵抗	R579		△
	HL 32 52 20	"	220 Ω 2W	"	R577,578		△
	HL 72 53 30	"	330 Ω 2W	"	R570		△
	HV 45 31 00	Flame Ploof Carbon Resistor	1 Ω ERD25FV	不燃化カーボン抵抗	R601,602		△
	HV 45 32 20	"	2.2 Ω "	"	R571~574,607~610		△
	HV 45 34 70	"	4.7 Ω "	"	R565,566,611,612		△
	HV 45 34 70	"	4.7 Ω "	"	R575,576	G	
	HV 45 61 00	"	1k Ω "	"	R523,524		
	HV 45 61 20	"	1.2k Ω "	"	R592		
	HV 45 42 20	"	22 Ω "	"	R590,591		△
	HV 45 61 80	"	1.8k Ω "	"	R511,512,547,548		△
	HV 45 53 30	"	330 Ω "	"	R557,558		△
	HV 45 63 30	"	3.3k Ω "	"	R521,522		△
	HZ 00 36 80	Dual Metal Plate Resistor	0.22 $\times$ 2 2W	デュアル金属板抵抗	R559,560		△
※	HS 31 26 50	Potentiometer with Motor	100KY $\times$ 2	モーター付可変抵抗器	VR505 VOLUME		
※	HS 41 26 10	Potentiometer	100Kトク $\times$ 2	可変抵抗器	VR501 BASS		
※	HS 41 26 20	"	80Kトク $\times$ 2	"	VR502 TREBLE		
	HT 37 03 20	Pre-Set Potentiometer	B300 Ω	半固定抵抗	VR503,504		
	iA 09 70 00	Transistor	2SA970 (GR,BL)	トランジスタ	TR507~510,523,529,532		△
	iA 11 45 00	"	2SA1145 (O,Y)	"	TR511,512		△
	iC 18 15 20	"	2SC1815 (Y)	"	TR526,527		
	iC 22 40 00	"	2SC2240 (GR,BL)	"	TR503~506,513,514,524,525,531,533,534		△
	iC 28 78 00	"	2SC2878	"	TR501,502		
	iD 12 75 10	"	2SD1275	"	TR535		
	iD 08 80 00	"	2SD880 (O,Y)	"	TR528	Inter-changeable	
※	iD 14 37 00	"	2SD1437 (E,F)	"	"		
	iD 04 38 00	"	2SD438 (E,F)	"	TR530		
	iA 09 68 00	"	2SA968	"	TR517,518		△
	iC 22 38 00	"	2SC2238	"	TR515,516		△
	iF 00 06 70	Diode	1S2473	ダイオード	D507,509,510	Inter-changeable	
	iF 00 00 40	"	1S1555	"	"		
	iF 00 14 00	"	1SS82	"	D505,506		
※	iX 60 42 90	Zener Diode	HZ12A3	ツェナーダイオード	D517		

※New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	iF 00:41:60	Zener Diode	HZ6C1L	ツェナーダイオード	D501~504		
	iF 00:14:70	"	RD6.2EB2	"	" } Inter-changeable		
	iH 00:08:70	Diode Bridge	4D4B41	ダイオードブリッジ	D516		R,U,A,G,B
	iH 00:11:30	"	D5FB20	"	"		C
	iH 00:14:30	Diode	1SR35-100A	ダイオード	D508,511~515		
※	KA 80:52:10	Push Switch		プッシュスイッチ	SW503 SPEAKERS		
	KA 80:45:00	Power Switch	TV-3	電源スイッチ	SW504 POWER		A,G,B
	KA 80:35:20	"	SDLB1P017	"	"		R,U,C
※	KA 80:51:10	Push Switch	SUN2-2NS	プッシュスイッチ	SW501,502 MODE, TONE PASS		
	KB 00:13:00	Fuse	T7.0A 250V	ヒューズ	F501		R
	KB 00:07:60	"	T3.15A 250V	"	"		A,G,B
	KB 00:14:20	"	5A 125V	"	"		U,C
	KB 00:03:70	"	T3.5A 250V	"	F502		R
	KC 00:19:40	Relay	DH2TU24VDC	リレー	RY501		
	KC 00:20:00	"	JR2a-DC24V	"	" } Inter-changeable		
	LB 30:13:70	Phone Jack	Black	ホーンジャック	JK501		
	LB 20:14:80	Voltage Selector		電圧切換器			R
	LA 00:38:70	Lapping Terminal	P=10 2P WTM -Type	WTM型ラッピング端子板			
※	LA 00:54:60	Speaker Terminal	8P	スピーカターミナル			
	LB 20:18:80	Pin, Fuse Holder	PC-FHI	ヒューズホルダーピン			
※	LB 40:14:50	AC Outlet	M7025-C	A C アウトレット			R,U
※	LB 40:14:60	"	M7031-C	"			C
	BB 06:83:70	Grond Metal		アース金具			
	CB 09:12:90	Holder, P.C.B		基板ホルダー			
※	AA 62:61:00	Shield Plate		シールド板			
	CB 06:92:50	Binding Tie	BK-1	インシュロックタイ			
※	NA 08:75:20	Tuner Circuit Board		チューナーシート			R
※	NA 08:75:30	"		"			U,C
※	NA 08:75:40	"		"			A,B
※	NA 08:75:50	"		"			G
	FG 21:11:20	Ceramic Cap.	12pF 50V	セラコン	C191		
	FG 21:14:70	"	47pF 50V	"	C107		
	FG 21:14:70	"	47pF 50V	"	C199,200		G
	FG 21:21:00	"	100pF 50V	"	C181,182,187,188		
	FG 21:21:00	"	100pF 50V	"	C197,198		G
	FG 21:22:20	"	220pF 50V	"	C330		
	FG 21:23:30	"	330pF 50V	"	C301~310		G
	FG 21:24:70	"	470pF 50V	"	C132,329		
	FG 21:31:00	"	1000pF 50V	"	C159,172		
	FG 24:41:00	"	0.01 μ F 50V	"	C102,104~106,109,115~121,149,154,157,162~165,171,180,231		
	FG 24:41:00	"	0.01 μ F 50V	"	C221		R,U,A,C,B
	Fi 19:12:20	"	22pF 50V	"	C184,185		
	Fi 19:21:00	"	100pF 50V	"	C122,123		
	FG 21:23:30	"	330pF 50V	"	C311,312		G
	FG 21:24:70	"	470pF 50V	"	C324		
	FG 24:31:00	"	1000pF 50V	"	C155,161		
	FX 60:08:00	"	4700pF 25V	"	C189,190		

※New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	FX 60:07:90	Ceramic Cap.	0.01 μ F 16V	セラコン	C101,110,112~114,151,160,167,173		
	FZ 00:41:30	"	0.1 μ F 25V	"	C334		
	FZ 00:41:30	"	0.1 μ F 25V	"	C333	G	
	FZ 00:35:80	Electrolytic Cap.	47000 μ F 5.5V	スーパーキャパシタ	C178	Inter-changeable	
	FZ 00:64:00	"	47000 μ F 5.5V	"	"		
	UA 25:31:00	Mylar Cap.	1000pF 50V	マイラーコン	C141,142		
	UA 25:31:00	"	1000pF 50V	"	C137,138	A,B	
	UA 25:31:50	"	1500pF 50V	"	"	R,U,C	
	UT 45:24:70	Polypropylene Film Cap.	470pF100V	ポリプロコン	"	G	
	UA 25:31:50	Mylar Cap.	1500pF 50V	マイラーコン	C207,208		
	UA 25:32:70	"	2700pF 50V	"	C139,140		
	UA 25:33:30	"	3300pF 50V	"	C217,218		
	UA 25:33:90	"	3900pF 50V	"	C143,144		
	UA 25:41:10	"	0.011 μ F 50V	"	C201,202,213,214,325		
	UA 25:42:20	"	0.022 μ F 50V	"	C136,225,226		
	UA 25:42:20	"	0.022 μ F 50V	"	C133	G	
	UA 25:44:70	"	0.047 μ F 50V	"	"	R,U,A,C,B	
	UA 25:43:90	"	0.039 μ F 50V	"	C211,212		
	UA 25:44:70	"	0.047 μ F 50V	"	C129,148		
	UK 13:72:20	Electrolytic Cap.	22 μ F 16V	B P コ ン	C215,216		
	UK 16:54:70	"	0.47 μ F 50V	"	C127,147		
	UK 16:61:00	"	1 μ F 50V	"	C128,332,335		
	UL 46:61:00	"	1 μ F 50V	ローノイズケミコン	C175		
	UL 46:62:20	"	2.2 μ F 50V	"	C176		
	UT 45:21:00	Polypropylene Film Cap.	100pF100V	ポリプロコン	C205,206	G	
	UT 45:22:20	"	220pF100V	"	"	R,U,A,C,B	
	UT 45:25:60	"	560pF100V	"	C156		
	UT 45:26:80	"	680pF100V	"	C223,224,315,316		
	UW 92:81:00	Electrolytic Cap.	100 μ F 10V	ケミコン	C402,403		
	UW 93:71:00	"	10 μ F 16V	"	C103,108,125,134,135,145,150,152,153,158,166,169,174,179,327,328,331,401		
	UW 94:72:20	"	22 μ F 25V	"	C128,195,222,313,314,319~323		
	UW 56:51:00	"	0.1 μ F 50V	"	C227,228		
	UJ 16:61:00	"	1 μ F 50V	"	C111,130,131,170,183,186,193,203,204,229,230		
	UW 96:63:30	"	3.3 μ F 50V	"	C192,194,196		
	UW 96:64:70	"	4.7 μ F 50V	"	C146,168,326		
※	UW 84:83:30	"	330 μ F 25V	"	C317		
※	Ui 91:84:70	"	470 μ F 6.3V	"	C124		
	Ui 91:92:20	"	2200 μ F 6.3V	"	C209,210		
	FY 00:01:90	Trimmer Cap.	5pF	トリマーコン	VC101		
	GE 10:02:80	Discri Coil	FM	FMディスクリコイル	T101		
	GE 10:04:70	IFT Coil	AM	AM IFT コイル	T102		
	GE 20:05:30	Anti-Bridie Filter	114kHz	アンチバーディーフィルター	T103		
	GE 90:12:30	Indactor	7.9mH	インダクター	T301	G	
	GE 30:04:30	Indactor, RF	220 μ H	R F インダクター	L103		
	GE 90:06:90	Coil	8.2mH	コイル	L104,105		
※	GE 90:18:50	"	39mH	"	L101,102		
	GE 90:08:40	"	15 μ H	"	L107,108	G	
	GE 90:03:30	"	220 μ H	"	L109,110	G	

※New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	GG 00 04 20	AM Ceramic Discriminator	CDA450A	AMセラミックディスクリ	CF106		
	GG 00 06 00	Ceramic Filter	SFE10.7MX2	セラミックフィルター	CF101,104	} PACK	
			SFE10.7MS3G×2	"	CF102,103		
	GG 00 06 60	AM Ceramic Filter	SFU450B9	AMセラミックフィルター	CF105		
				"			
	GG 00 07 00	Ceramic Vibrator	FCR400K	セラミック振動子	XL301		
	GG 00 07 40	"	CSB456F10	"	XL101		
※	GG 00 07 60	"	CSB800K	"	XL102		
	QU 00 39 00	Quartz Crystal Unit	32kHz	水 晶 振 動 子	XL103		
	HJ 35 46 80	Carbon Resistor	68Ω 1/4W	カ ー ボ ン 抵 抗	R311,312		
	HJ 35 52 20	"	220Ω "	"	R110,128,173		
	HJ 35 53 90	"	390Ω "	"	R310		
	HJ 35 61 00	"	1kΩ "	"	R115,139,309,315,408,410 412,414		
	HJ 35 61 20	"	1.2kΩ "	"	R281,313		
	HJ 35 62 20	"	2.2kΩ "	"	R302		
	HJ 35 63 30	"	3.3kΩ "	"	R230,316		
	HJ 35 64 70	"	4.7kΩ "	"	R401,402,405,406		
	HJ 35 66 80	"	6.8kΩ "	"	R132,235,307		
	HJ 35 71 00	"	10kΩ "	"	R118,164,165,208,314,352		
	HJ 35 71 50	"	15kΩ "	"	R308		
	HJ 35 74 70	"	47kΩ "	"	R120,121,347		
	HJ 35 74 70	"	47kΩ "	"	R177	G	
	HJ 35 71 20	"	12kΩ "	"	"	R,U,A,C,B	
	HJ 35 78 20	"	82kΩ "	"	R342		
	HJ 35 81 00	"	100kΩ "	"	R138,156		
	HJ 35 81 00	"	100kΩ "	"	R241	G	
	HJ 35 82 20	"	220kΩ "	"	R142		
	HJ 35 91 00	"	1MΩ "	"	R231		
	HJ 35 91 00	"	1MΩ "	"	R245	G	
	HL 82 42 70	Metal Oxide Film Resistor	27Ω 2W	酸 金 抵 抗	R319		
	HL 32 61 80	"	1.8kΩ 2W	"	R305,306		△
	HV 45 31 00	Flame Ploof Carbon Resistor	1Ω RDF25SL	不燃化カーボン抵抗	R420		△
※	HS 41 25 90	Potentiometer	300Kトク×2	可 変 抵 抗 器	VR103 LOUDNESS		
※	HS 41 26 00	"	250KMN	"	VR104 BALANCE		
	HT 37 03 70	Pre-set Potentiometer	B5kΩ	半 固 定 抵 抗	VR102	} Inter-changeable	
	HT 77 02 30	"	B5kΩ	"	"		
	HT 37 04 20	"	B100kΩ	"	VR101		
	iA 09 33 00	Transistor	2SA933S(Q,R)	ト ラ ン ジ ス タ	TR109,114,115,120,121,123~125,127, 131,133,304,306~312,402	} Inter-changeable	
	iA 11 15 10	"	2SA1115 (E,F)	"	"		
	iX 60 31 70	"	2SA1310 (R,S,T)	"	"		
	iA 09 70 00	"	2SA970 (GR,BL)	"	TR137~140		
	iA 09 34 00	"	2SA934	"	TR302		
	iC 19 23 00	"	2SC1923	"	TR102,103		
	iC 26 03 10	"	2SC2603 (E,F)	"	TR101,104~108,110~113,116,117,119,122, 126,128~130,132,134,135,401	} Inter-changeable	
	iX 60 31 80	"	2SC3312 (R,S,T)	"	"		
	iC 17 40 00	"	2SC1740S(S,R)	"	"		
	iC 20 60 00	"	2SC2060	"	TR303		
	iC 28 78 00	"	2SC2878	"	TR118	} Inter-changeable	
	iD 06 55 10	"	2SD655(E,F)	"	"		
	iD 13 02 00	"	2SD1302	"	"		

※New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	iD 08:80:20	Transistor	2SD880 (O,Y)	ト ラ ン ジ ス タ	TR301		
	iD 14:37:00	"	2SD1437 (E,F)	"	"		
	iF 00:06:70	Diode	1S2473	ダ イ オ ード	D103~107,109~112,308,3401,402,409,415~419	2~316.	
	iF 00:00:40	"	1S1555	"	"		
	iF 00:00:40	"	1S1555	"	D101,102		
	iF 00:41:60	Zener Diode	HZ6C1L	ツェナーダイオード	D113,304~306		
	iF 00:14:70	"	RD6.2EB2	"	"		
	iF 00:06:40	"	HZ7B	"	D303		
	iF 00:68:00	"	MA1608H	"	"		
	iX 60:42:90	"	HZ12A3	"	D301,302		
	iF 00:33:20	"	HZ9C3	"	D310,311		
	iF 00:45:90	Photo Diode	TSP703	フ ォ ト ダ イ オ ード	D317		
	iF 00:47:10	"	PH302	"	"		
	iF 00:66:70	Zener Diode	MA1047M	ツェナーダイオード	D108		
	iF 00:67:20	"	MA1056L	"	D309		
※	iF 00:82:90	Frequency Display		周 波 数 表 示 器	D436		
※	iF 00:87:30	LED(Red)	SLR-34URC3H3	L E D	D403~408,420~435		
	iF 00:87:40	" (Green)	SLR-34MC3H3	"	D410~414		
	iG 03:45:00	IC	μPC577H (E,F)	I C	IC101,102		
	iG 03:47:00	"	AN6551	"	IC103		
	iG 07:68:00	"	NJM4558S	"	"		
	iG 13:22:00	"	BA715	"	"		
	iG 03:55:00	"	TC4028BP	"	IC107		
※	iG 14:87:00	"	BU4028B	"	"		
	iG 04:14:00	"	M54459L	"	IC106		
	iG 04:78:00	"	LA1245	"	IC105		
	iG 04:91:00	"	LC7210	"	IC109		
	iG 06:16:00	"	μPD4066	"	IC301,302		
	iG 08:92:00	"	LC4066B	"	"		
	iG 15:25:00	"	BA6229	"	IC304		
	iG 12:18:00	"	NJM4560S	"	IC110		
	iG 13:30:00	"	BA4561	"	"		
	iG 13:20:00	"	BA618	"	IC403		
	iG 14:25:00	"	LA3400	"	IC104		
※	iG 14:54:00	"	LB1234	"	IC402		
※	iG 14:67:00	"	LB1413	"	IC401		
※	iG 14:77:00	"	LC6510C-695	"	IC108		
※	iG 14:78:00	"	LC6505C-696	"	IC306		
※	iG 14:92:00	"	BA6340	"	IC305		
※	iG 14:93:00	"	LC4966	"	IC303		
※	KA 40:16:90	Slide Switch		ス ラ イ ド ス イ ッ チ	SW101		R
※	KA 80:51:90	Push Switch		プ ッ シ ュ ス イ ッ チ	SW102 PHONO		
	KA 90:10:70	Remote Switch		リ モ ー ト ス イ ッ チ	SW301 REC OUT		
	KA 90:63:80	Switch	EVQ-QRB-04M	ラ イ ト タ ッ チ ス イ ッ チ	SW401~421		
	LB 20:22:90	Pin Jack	2P	ピ ン ジャ ッ ク	PJ101		
	LB 40:10:30	"	4P	"	PJ301,303		
	LB 40:10:30	"	4P	"	PJ302		R,U,A,C,B
	LB 40:10:40	"	4P	"	"		G

※New Parts (新規部品)

※New Parts (新規部品)

1

EXPLODED VIEW

2

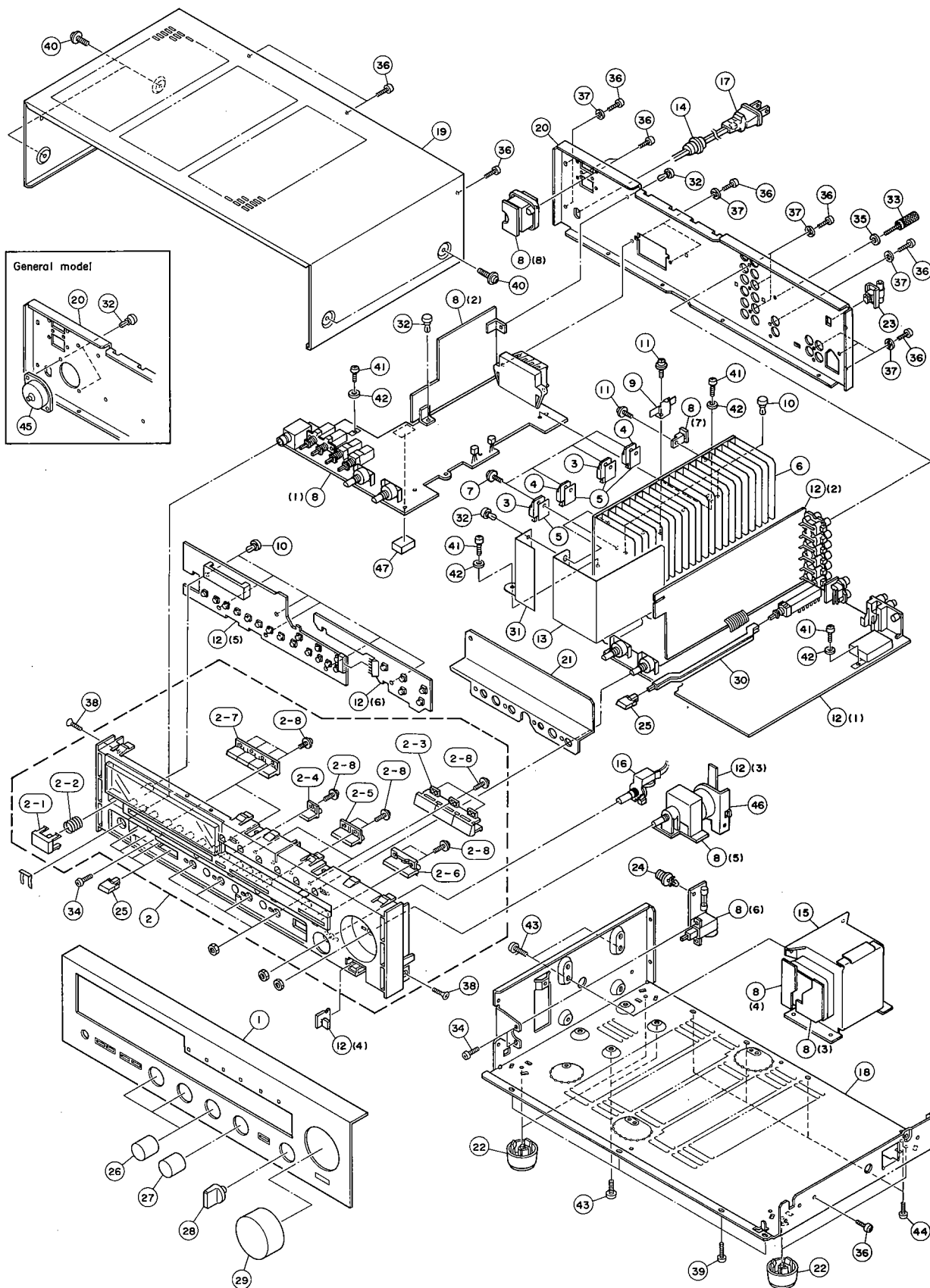
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7



MECHANISM PARTS

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※ 1	NB 62 63 30	Panel Unit	パネルユニット	Silver			
※ "	NB 62 63 40	"	"	Black			
※ 2	NB 62 63 50	Sub Chassis Unit	サブシャーシユニット	Silver			
※ "	NB 62 63 60	"	"	Black			
2-1	CB 63 51 20	Button	ボ タ ン	Silver POWER	A-520		
"	CB 63 51 30	"	"	Black POWER	"		
2-2	AA 61 78 80	Spring	ス プ リ ン グ		A-720		
※ 2-3	CB 64 01 20	Button, Push	ボ タ ン プ ッ シ ュ	Silver			
※ "	CB 64 01 30	"	"	Black			
2-4	CB 63 99 20	"	"	Silver	R-3		
"	CB 63 99 30	"	"	Black	"		
2-5	CB 63 99 40	"	"	Silver	"		
"	CB 63 99 50	"	"	Black	"		
2-6	CB 63 99 60	Button, Seesaw	ボ タ ン シ ー ソ ー	Silver	"		
"	CB 63 99 70	"	"	Black	"		
※ 2-7	CB 64 34 20	Button, Push	ボ タ ン プ ッ シ ュ	Silver			
※ "	CB 64 01 50	"	"	Black			
2-8	EX 60 02 00	Cup Screw	2×6 FCRM3-BI カップスクリュー				
3	iX 60 12 60	Transistor	2SA1106(O,P,Y) ト ラ ン ジ ス タ	TR521,522	Inter-changeable		
"	iX 60 32 40	"	2SA1265	"			
4	iX 60 12 70	"	2SC2581(O,P,Y)	TR519,520	Inter-changeable		
"	iX 60 32 50	"	2SC3182	"			
5	iL 00 04 60	Mica Base	AC-238 マ イ カ ベ ー ス				
6	BA 09 25 50	Heat Sink	放 熱 板				
7	EZ 00 13 50	Cup Screw	3×14FCRM3-BI カップスクリュー				
※ 8	NA 08 74 40	Main Circuit Board	メ イ ン シ ー ト			R	
※ "	NA 08 74 60	"	"			U	
※ "	NA 08 74 80	"	"			C	
※ "	NA 08 75 00	"	"			A,B	
※ "	NA 08 78 50	"	"			G	
※ 9	BB 07 09 60	TR Pusher	T R プ ッ シ ャ ー				
10	CB 60 56 20	Plastic Rivet	プ ラ ス チ ッ ク リ ベ ッ ト				
11	EX 60 02 50	Cup Tight Screw	3×10FCRM3-BI カップタイトスクリュー				
※ 12	NA 08 75 20	Tuner Circuit Board	チ ュ ー ナ ー シ ー ト			R	
※ "	NA 08 75 30	"	"			U,C	
※ "	NA 08 75 40	"	"			A,B	
※ "	NA 08 75 50	"	"			G	
※ 13	AA 62 80 60	Shield Plate	シールドプレート				
14	CB 62 01 90	Cord Stopper	CM-22B コードストッパー			R,A,G,B	
"	CB 62 02 00	"	CM-22C			U,C	
※ 15	GA 69 00 10	Power Transformer	電 源 ト ラ ン ス			U	△
※ "	GA 69 01 10	"	"			C	△
※ "	GA 69 02 10	"	"			G	△
※ "	GA 69 03 20	"	"			R	△
※ "	GA 69 04 20	"	"			A,B	△
※ 16	KA 90 70 90	Remote Rotary Switch	ESA-33 リモートロータリースイッチ				
17	MG 00 16 30	Power Cord	6A 250V 2m 電 源 コ ー ド			R	△
"	MG 00 14 50	"	10A 125V 1.98m	Inter-changeable		U	△
"	MG 00 14 60	"	10A 125V 2m			U	△
"	MG 00 09 60	"	2.5A 250V 2m	Inter-changeable		G	△
"	MG 00 16 20	"	2.5A 250V 2m			G	△
"	MG 00 09 20	"	7.5A 250V 2.5m	Inter-changeable		A	△
"	MG 00 14 90	"	7.5A 250V 2.5m			A	△

※New Parts (新規部品)