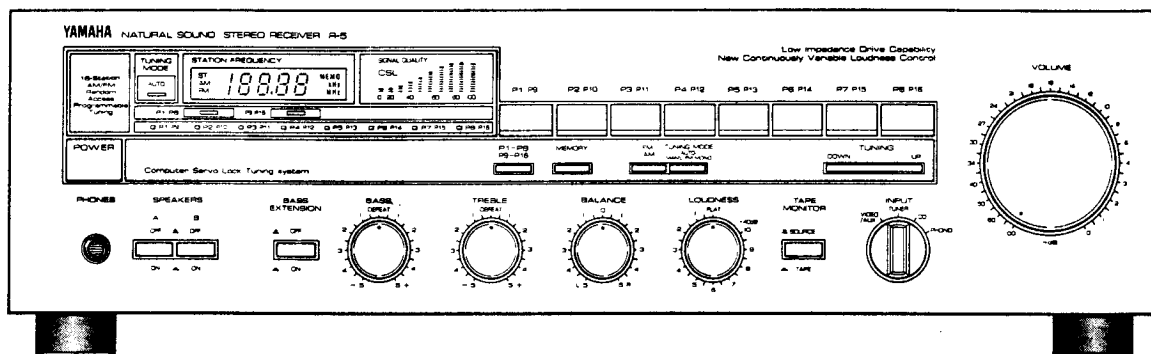


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STEREO RECEIVER

R-5

SERVICE MANUAL



R-5

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
 8 Cherry Tree Rd, Chinnor
 Oxon OX9 4QY
 Tel:- 01844-351694 Fax:- 01844-352554
 Email:- enquiries@mauritron.co.uk

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.

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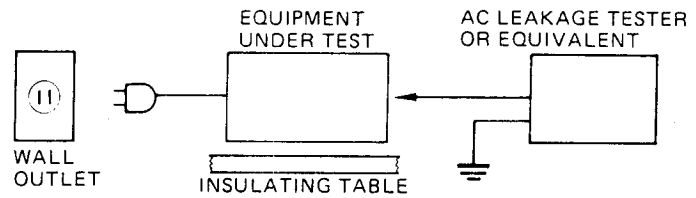
YAMAHA

NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN

0.1k-087 Printed in Japan '86.4

■ 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	50W (U)(C) 48W (R)(A)(G)(B)
0.05% THD, 6 Ω	55W (U)(C) 53W (R)(A)(G)(B) 57W (R)(A)(G)(B) 67W (R)(A)(G)(B)
1kHz, 0.01% THD, 8 Ω (IEC Rated Power) 6 Ω	
DIN Standard Output Power Per Channel	
1kHz, 1% THD, 4 Ω	65W (R)(A)(G)(B)
Dynamic Headroom	
8 Ω	1.76dB
Dynamic Power Channel	
8 Ω	75W
6 Ω	90W
4 Ω	100W
2 Ω	110W
Power Band Width	
0.1% THD, 25W, 8 Ω	10Hz ~ 50kHz
Damping Factor	
1kHz, 8 Ω	50
Input Sensitivity/Impedance	
Phono MM	2.5mV/47k Ω
CD/TAPE/VIDEO	150mV/50k Ω
Input Sensitivity (New IHF)	
Phono MM	0.42mV
CD/TAPE/VIDEO	25mV
Maximum-Input Signal	
1kHz, 0.01% THD, Phono	120mV
Output Level/Impedance	
REC OUT	150mV/1.5k Ω Except (G) 150mV/3k Ω (G)
Headphone Jack Rated Output/Impedance	
0.015% THD, 8 Ω	0.7V/220 Ω
Frequency Response	
20Hz ~ 20kHz, CD/TAPE/VIDEO	± 0.5 dB
RIAA Equalization Deviation	
20Hz ~ 20kHz, Phono MM	± 0.5 dB
Total Harmonic Distortion	
Phono to Rec Out 3V	0.01%
CD/TAPE/VIDEO to SP Out 25W/8 Ω	0.015%
Intermodulation Distortion	
CD/TAPE/VIDEO Rated Output /8 Ω	0.01%
Signal to Noise Ratio (IHF-A-Network)	
Phono (5mV, Input Shorted)	88dB (R)(U)(C) 82dB (A)(G)(B)
CD/TAPE/VIDEO (Input Shorted)	103dB
Signal to Noise Ratio (New IHF)	
Phono MM	74dB (R)(U)(C)
CD/TAPE/VIDEO	84dB (R)(U)(C)
Residual Noise (IHF-A-Network)	
110 μ V	
Channel Separation	
Phono 1kHz, (Input Shorted)	55dB
CD/TAPE/VIDEO 1kHz (5.1k Ω Shorted)	52dB
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	
Bass Extension	60Hz +8dB
Continuous Loudness Control (Level-related equalization)	
Max. Attenuation	-40dB (at 1kHz)
Gain Tracking Error (0dB ~ -60dB)	
	2dB

■ FM SECTION

Tuning Range	87.5 to 108.0 MHz
--------------	-------------------

50dB Quieting Sensitivity (IHF)

Mono, 75 Ω	1.55 μ V (15.1dBf) Except (G)
Stereo, 75 Ω	21 μ V (37.7dBf) Except (G)
Usable Sensitivity	
30dB S/N Quieting 75 Ω	0.8 μ V (9.3dBf) Except (G)
Usable Sensitivity (DIN)	
Mono, 75 Ω (S/N 26dB)	1.4 μ V (G)
Stereo, 75 Ω (S/N 46dB)	30 μ V (G)
Image Response Ratio	
40dB Except (G) 75dB (G)	
IF Response Ratio	
90dB Except (G) 75dB (G)	
Spurious Response Ratio	
70dB	
AM Suppression Ratio	
55dB	
Capture Ratio	
1.5dB	
Alternate Channel Selectivity	
55dB (R, U, C, A, B)	
Selectivity (two Signals)	
DIN 40kHz DEV. ± 300 kHz	60dB (G)
Signal to Noise Ratio	
Mono	85dB (R, U, C, A, B)
Stereo	81dB (R, U, C, A, B)
Signal to Noise Ratio	
(DIN-Weighted) Mono	80dB (G)
Stereo	76dB (G)
Harmonic Distortion	
Mono 1kHz	0.07% (R, U, C, A, B)
Stereo 1kHz	0.1% (G)
(40kHz Dev) 1kHz	0.1% (R, U, C, A, B)
	0.2% (G)
Stereo Separation	
1kHz	50dB/40dB (G)
Frequency Response	
30Hz to 13kHz	± 0.5 dB
Output Level Impedance (Rec Out)	
100% MOD, 1kHz	500mV/2.8k Ω Except (G)
40kHz DEV. 1kHz	400mV/4.4k Ω (G) (40kHz Dev.)

■ AM SECTION

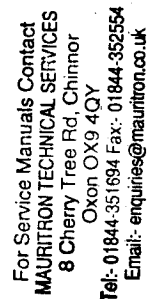
Tuning Range	
510 to 1620kHz (U)(C)	
513 to 1620kHz (G)(A)(B)	
510 to 1620kHz or	
513 to 1620kHz (R)	
Usable Sensitivity	
250 μ V/m	
Selectivity	
24dB	
Signal to Noise Ratio	
50dB	
Image Response Ratio	
40dB	
Spurious Response Ratio	
50dB	
Harmonic Distortion 400Hz	
0.3%	
Output Level/Impedance (Rec Out)	
30% MOD 400Hz	150mV/2.8k Ω Except (G) 150mV/4.4k Ω (G)

■ GENERAL

Power Supply	
U.S.A. & Canadian models	120V AC, 60Hz
General model	110V/120V/220V/240V AC, 50Hz/60Hz
European model	220V AC, 50Hz
Australian & British models	240V AC, 50Hz
Power Consumption	
U.S.A. & Canadian models	210W, 250VA
General model	210W
Australian, European & British models	350W
AC Outlet (U) (C) (R)	
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	
	5.6 kg (12 lbs 5 oz)

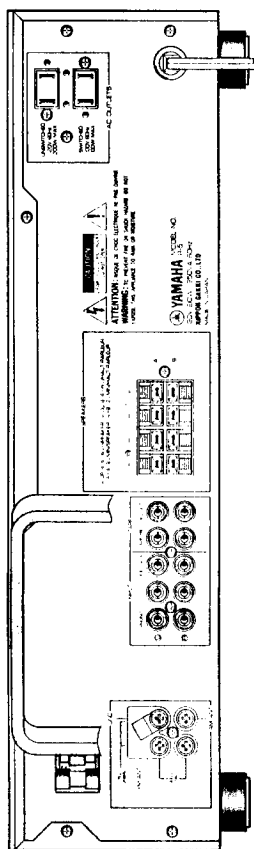
*Specifications subject to change without notice.

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

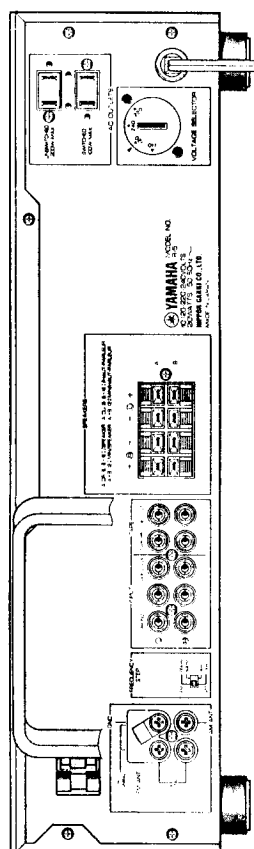


REAR PANELS

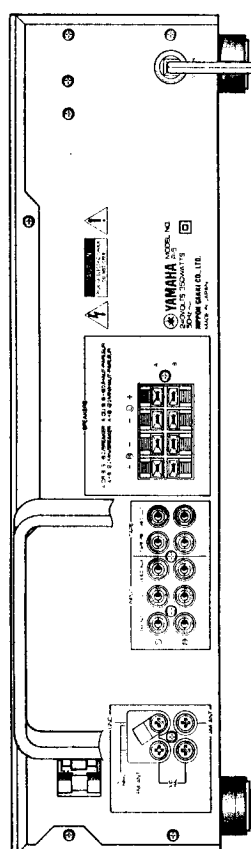
▼ U.S.A. & Canadian models



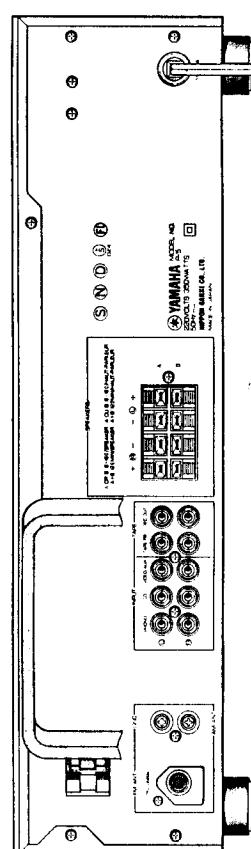
▼ General model



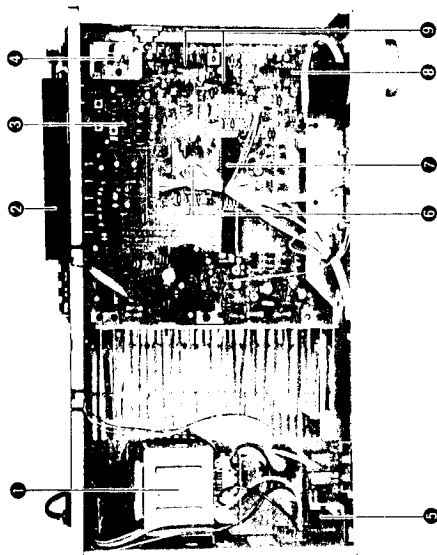
▼ Australian & British models



▼ European model



INTERNAL VIEW



1. POWER TRANSFORMER

- U.S.A. model: GA68850
- Canadian model: GA68860
- General model: GA68870
- European model: GA68880
- Australian & British models: GA68890
- 2. AM LOOP ANTENNA
- 3. AM IC: LA1245
- 4. FRONT END PACK
- 5. POWER SWITCH
- 6. CSL CONTROLLER IC: IC14770 (LC6510C-695)
- 7. PLL IC: LC7210
- 8. MPX IC: LA3400
- 9. 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.
2. Removal of Front Panel
Remove 4 screws and 4 hooks in Fig. 1, and pull the Front Panel forward.

3. Check of Main Circuit Board (1) & replacement of parts.

- a. Remove 12 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 to check the Main Circuit Board (1) and replace the parts.

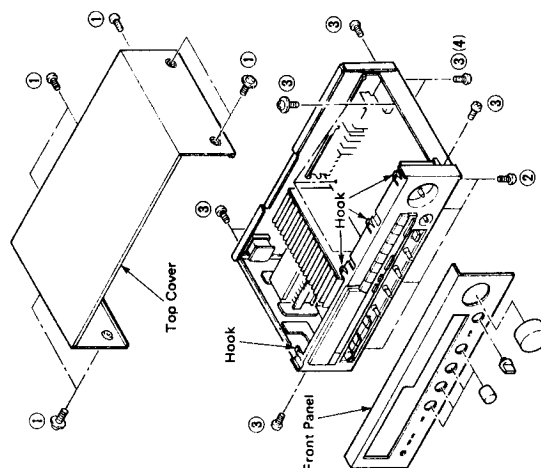


Fig. 1

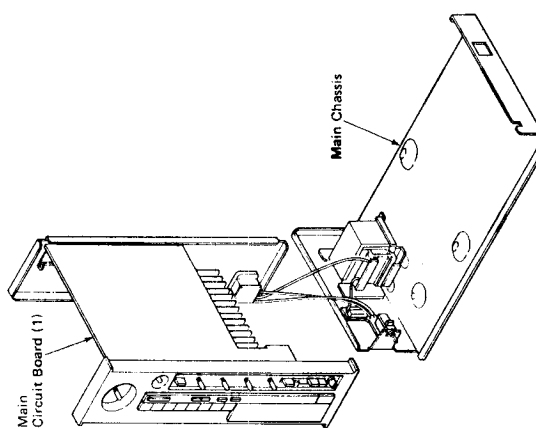


Fig. 2

ADJUSTMENTS

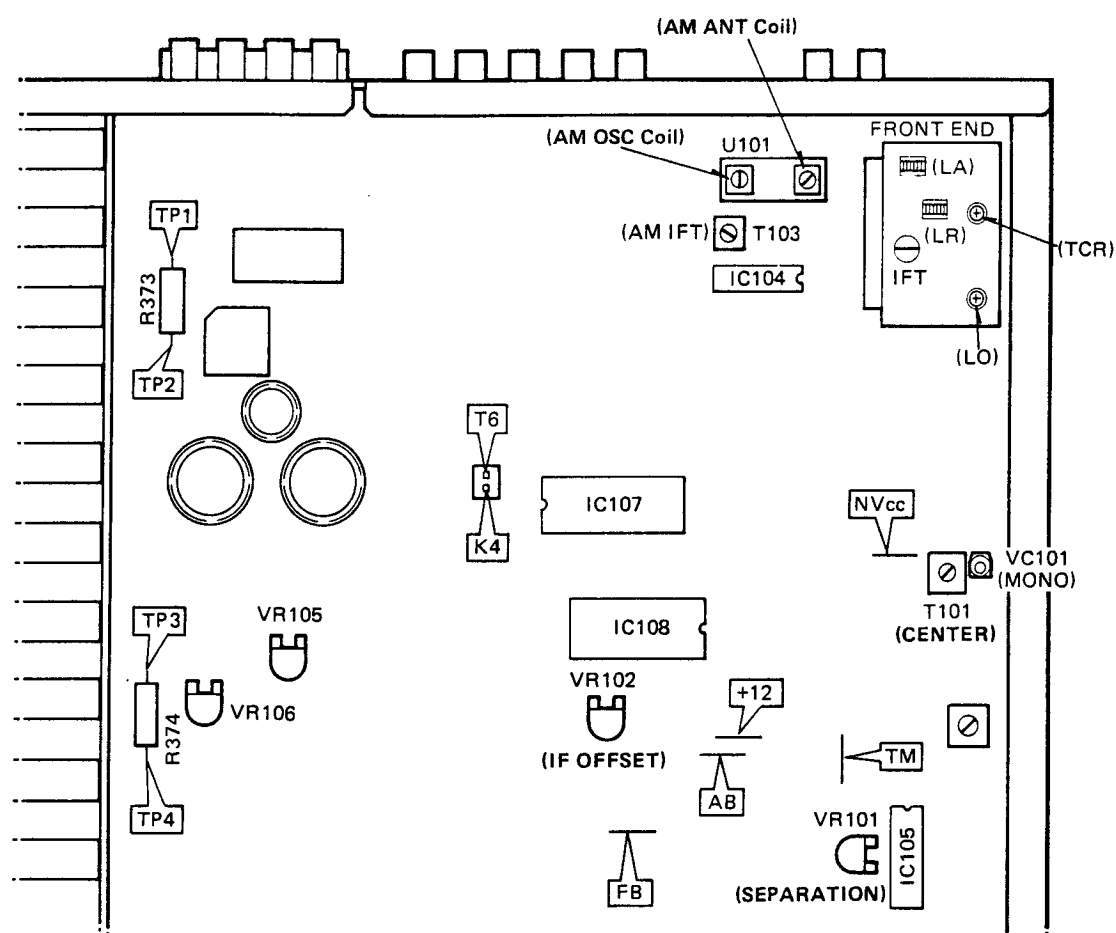
1. Before adjustment

- 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
- 4) Proceed with the AM section adjustments after having finish the FM section adjustment.
- 5) $0\text{dB}\mu = 1\mu\text{V}$ $\text{Ex: } 60\text{dB}\mu = 1\text{mV}$

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

TEST POINTS



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<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
+12	+12.0V $\pm$ 1.0V	Make sure that AC line voltage comes within
+5.6	+5.6V $\pm$ 0.5V	
-12	-12V $\pm$ 1.0V	
FB	At FM reception mode +12V $\pm$ 1V	
	At AM reception mode 0V	
AB	At FM reception mode 0V	
	At AM reception mode +12V $\pm$ 1V	

Models	AC line voltage
U, C	120V $\pm$ 10%
G	220V $\pm$ 10%
A, B	240V $\pm$ 10%

<AUDIO SECTION>

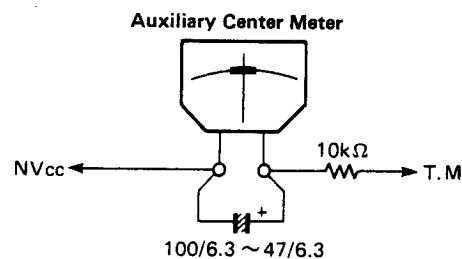
● Idling Current Adjustment

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 VR105 (Lch) and VR106 (Rch) so that the voltage across the terminals of R373 (TP1 - TP2) and R374 (TP3 - TP4) come to 8mV $\sim$ 15mV DC.

Test points	Adjustment points	Rating
Lch Across the terminals of R373 (TP1 - TP2)	VR105	8mV $\sim$ 15mV DC.
Rch Across the terminals of R374 (TP3 - TP4)	VR106	8mV $\sim$ 15mV DC.

< 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 $\sim$ T.M	Auxiliary center meter	T101 (CENTER)	Adjust the pointer of the auxiliary center meter point 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 $\pm$ 1kHz 70dB μ (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 $\sim$ T.M	Auxiliary center meter				
3	Monaural distortion	300Ω FM ANT	FM SG [98MHz $\pm$ 1kHz 70dB μ (75.2dBf) MONO 100Hz 100% MOD]	VC101 (MONO)	Reduce distortion to minimum.	Less than -55dB	
		OUTPUT L, R	DIST. M L.P.F.			(G model only) Less than -46dB.	
4	Stereo distortion	300Ω FM ANT	FM SG, SSG [98MHz $\pm$ 1kHz 70dB μ (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.
		OUTPUT L, R	DIST. M L.P.F.			(G model only) Less than -36dB	
5	Separation	300Ω FM ANT	FM SG, SSG [98MHz $\pm$ 1kHz 70dB μ (75.2dBf) STEREO L, R 1kHz, 100% MOD]	VR101 (SEPARATION)	Reduce output level to minimum.	Separation more than 40dB	
		OUTPUT L, R	A.C.V.M L.P.F.			(G model only) more than 30dB	

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

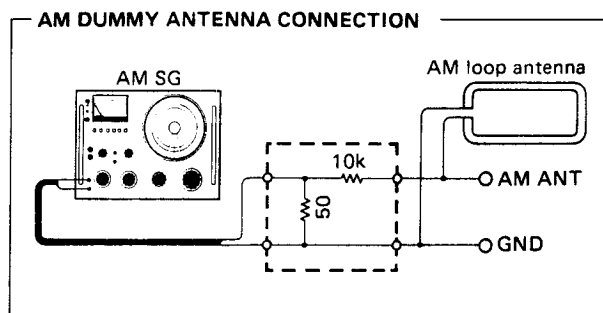
- Shorting K4 and T6 while set at FM will result in automatic memory of each preset from P1/P9 to P9/P16 as given in the right table. This is convenient when making an adjustment.

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 OUTPUT	AM SG AM dummy antenna [630kHz ± 0.1kHz 50dBμ 400Hz, 30% MOD] A.C.V.M.	T103	Adjust T103 to maximize detector output.	
2	Confirmation of sensitivity	AM ANT OUTPUT	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	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.

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LSI DATA

• IC108 : 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 ~ 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 ~ 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 MW. 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	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	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.

● IC107 : iG14770 CSL Controller V4.0 695 (LC6510C-695)

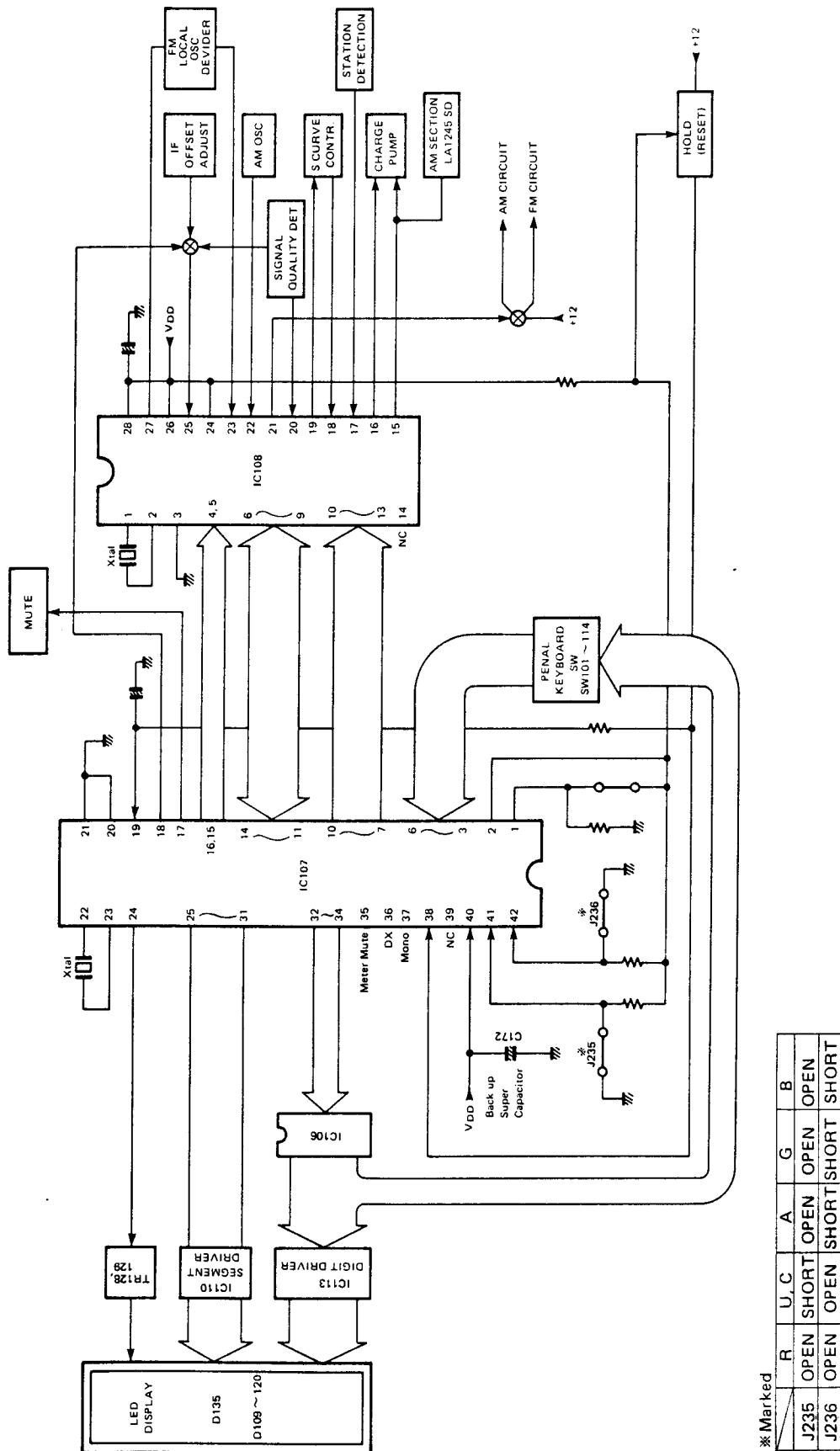
1-chip type 4-bit microcomputer which incorporates 4096 x 8 bit ROM (for programming) and 256 x 4 bit RAM (for data memory)

Terminal No.	Description	I/O	Function
1	PA2 AWAM9K	IN	Destination symbol. 42 Pin = "1" : U model AM in 10kHz increments.
2	PA3 REM REQ	IN	Destination symbol. REM REQ = "1" : Remote Control Request
3	PB ₀ K1	IN	Key matrix input. Judges the switches 101 to 114.
4	PB ₁ K2	IN	
5	PB ₂ K3	IN	
6	PB ₃ K4	IN	
7	PC ₀ C0	OUT	Control output. Specifies 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 _n 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	Vss	—	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	Vdd	—	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		

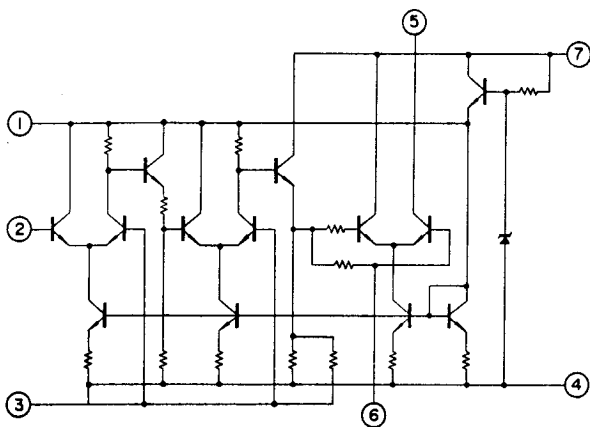
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● Block Diagram of Microcomputer Peripheral Circuit

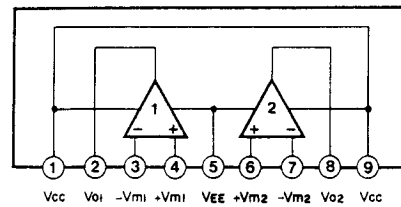


IC BLOCK

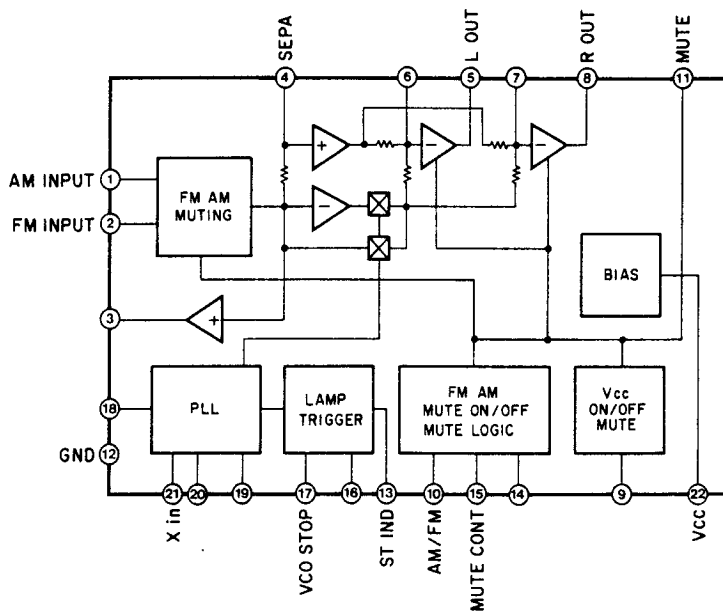
IC101, 102 : μ PC577H (E, F)



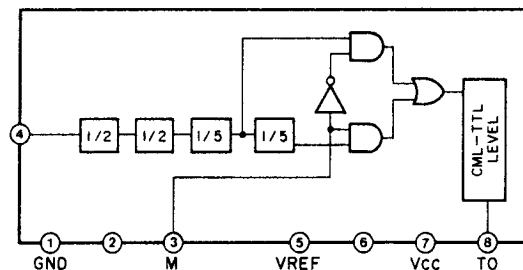
IC103 : AN6551, NJM4558S or BA715
IC301 : NJM2043S, AN6557 or M5220L



IC105 : LA3400

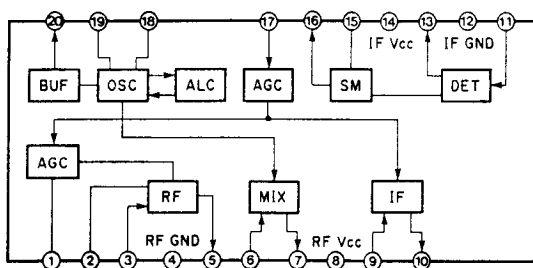


IC109 : M54459L

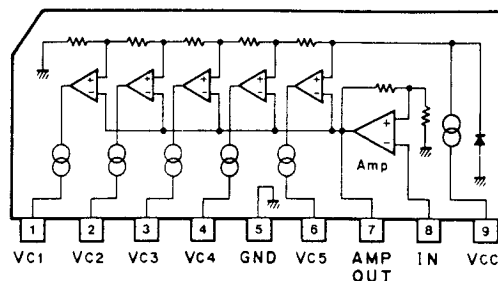


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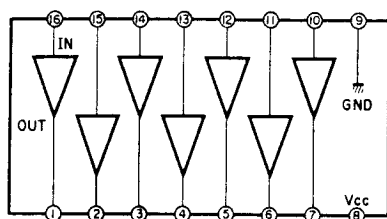
IC104 : LA1245



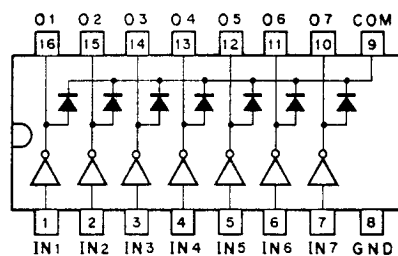
IC112 : LB1413



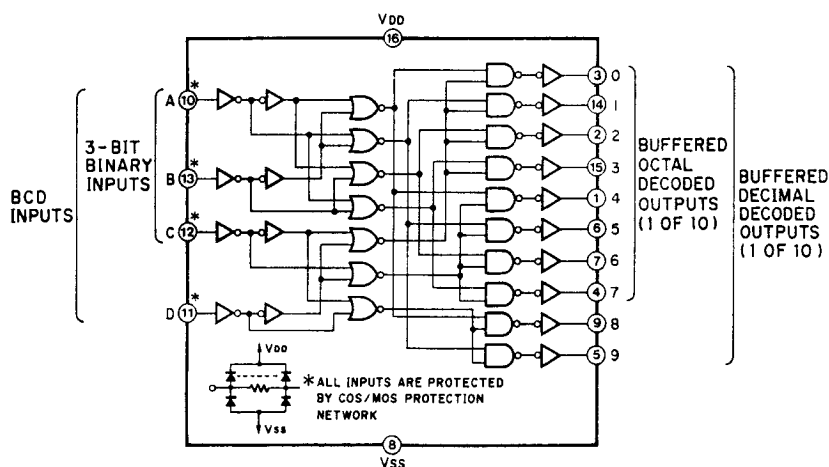
IC110 : BA618



IC113 : M54526P, LB1234 or BA12004



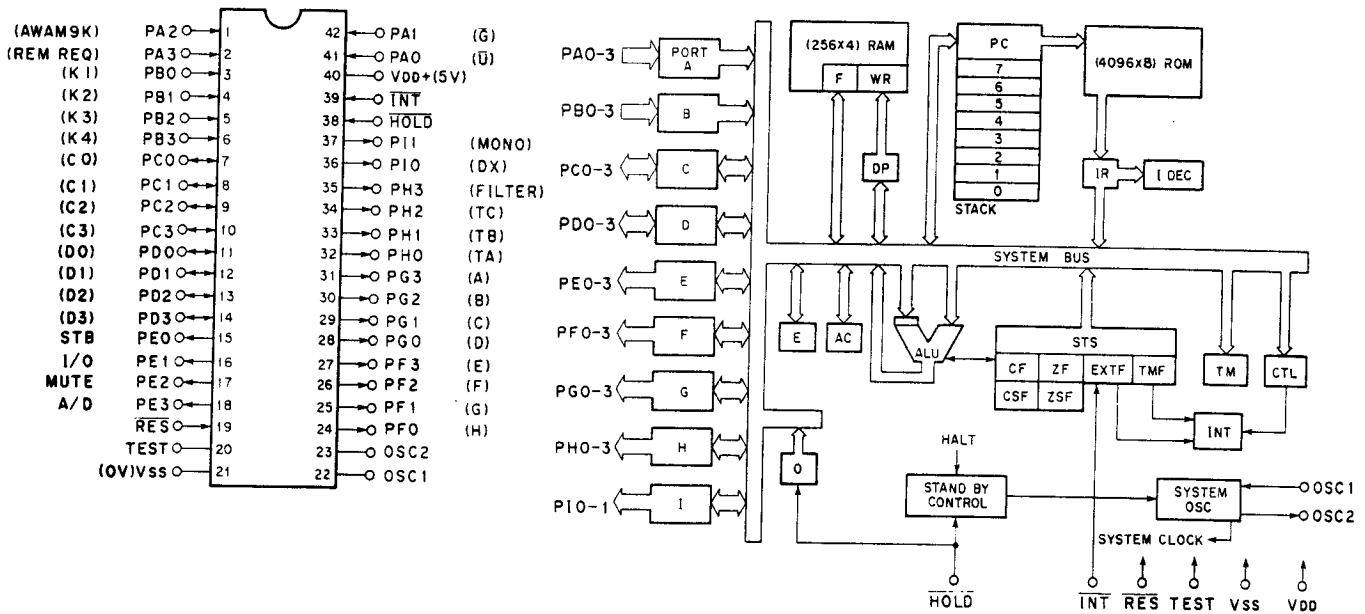
IC106 : TC4028BP or BU4028B



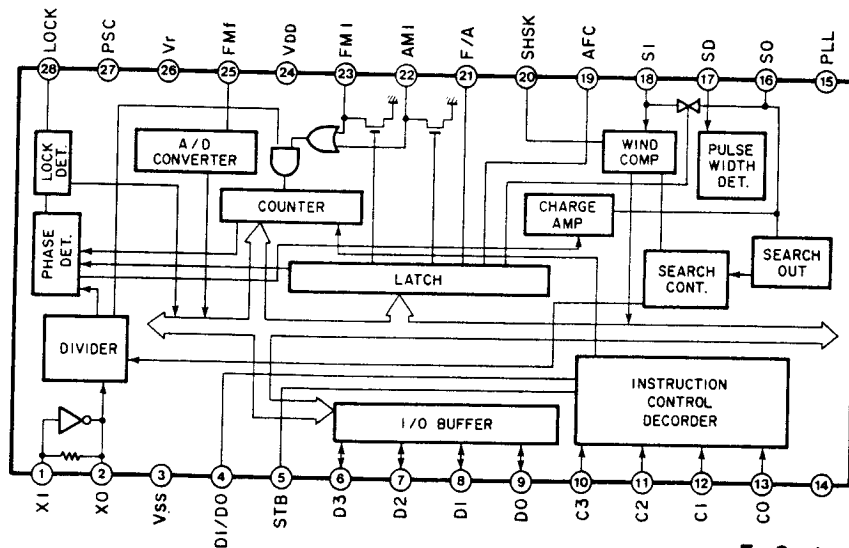
Data Table

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	1	0	0	0	0	0	0	1	0	0	0	0
0	1	1	1	0	0	0	0	0	0	1	0	0	0
1	0	0	0	0	0	0	0	0	0	0	1	0	0
1	0	1	0	0	0	0	0	0	0	0	0	1	0
1	0	1	1	0	0	0	0	0	0	0	0	0	1
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

IC107 : LC6510C-695



IC108 : LC7210



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PRINTED CIRCUIT BOARD (Pattern side)

FM ANT GND
300Ω BAL AM ANT
75Ω UNBAL

FREQUENCY—
STEP

100KHz—FM—50KHz
10KHz—AM—3KHz

Main Circuit Board (1)

TO: MAIN (3)
INPUT

PHONO CD VIDEO/AUX TAPE PB REC OUT

TAPE — + (R) — - (L) +

FROM: MAIN (4)

TO: MAIN (6)

Main Circuit Board (5)

FROM: MAIN (1)

TO: MAIN (3)

TO: MAIN (5)

TO: MAIN (6)

TO: MAIN (7)

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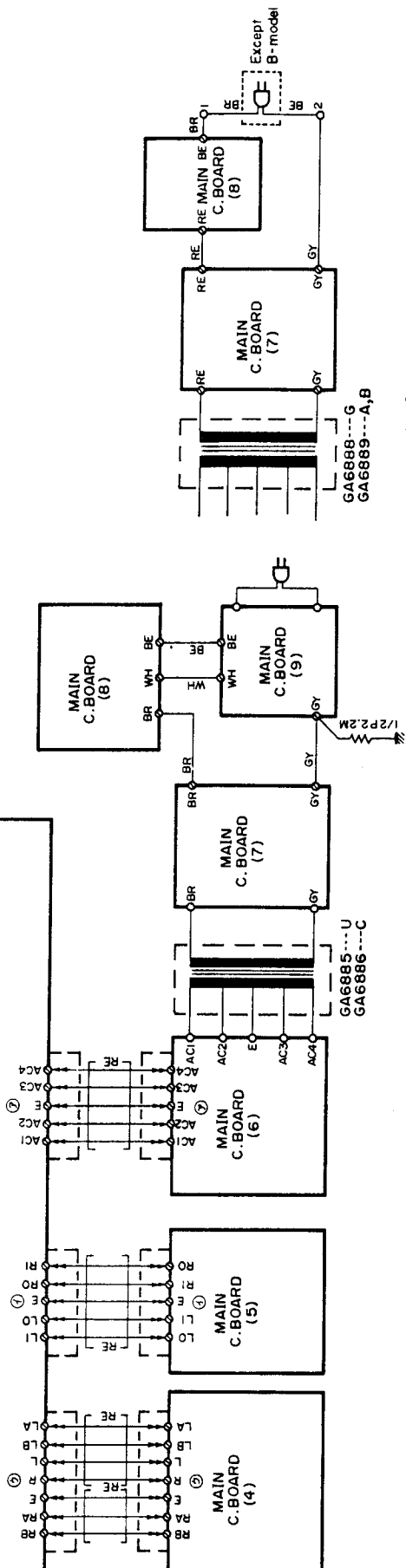
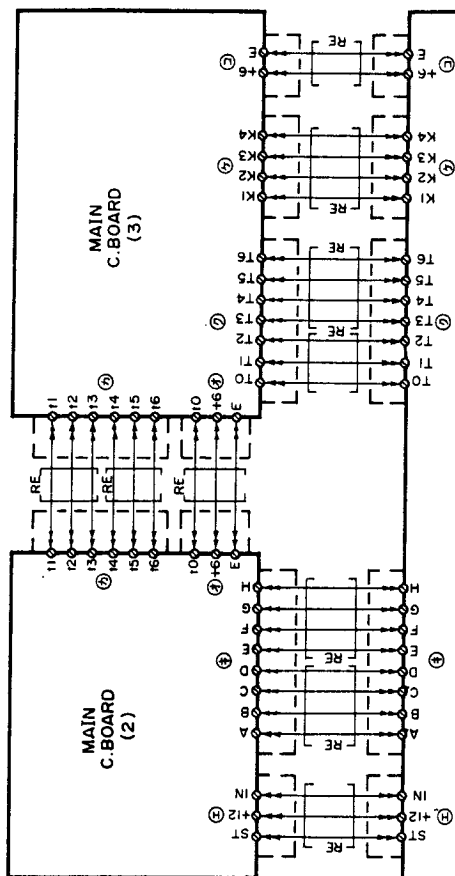
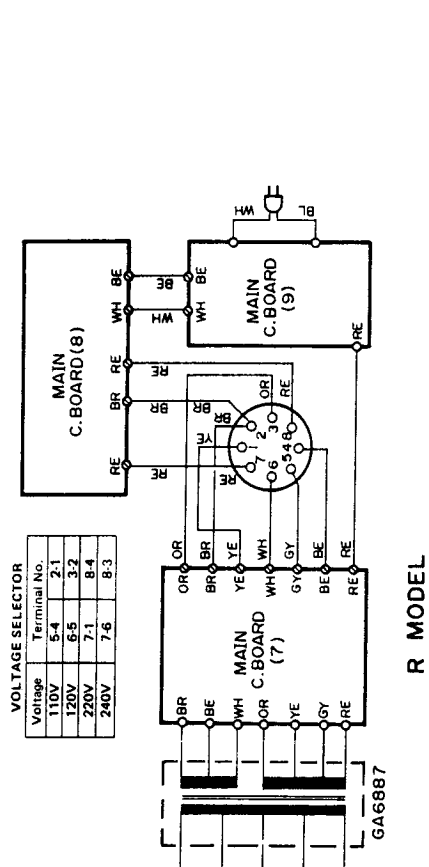
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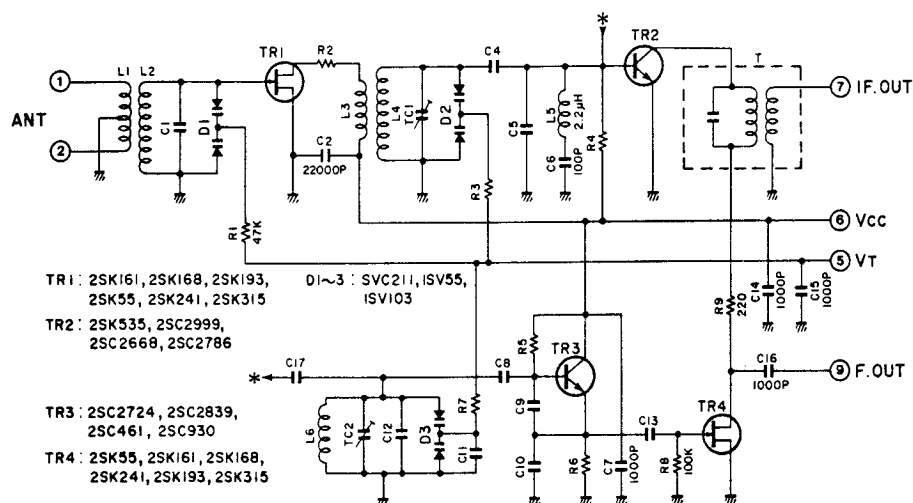
WIRING



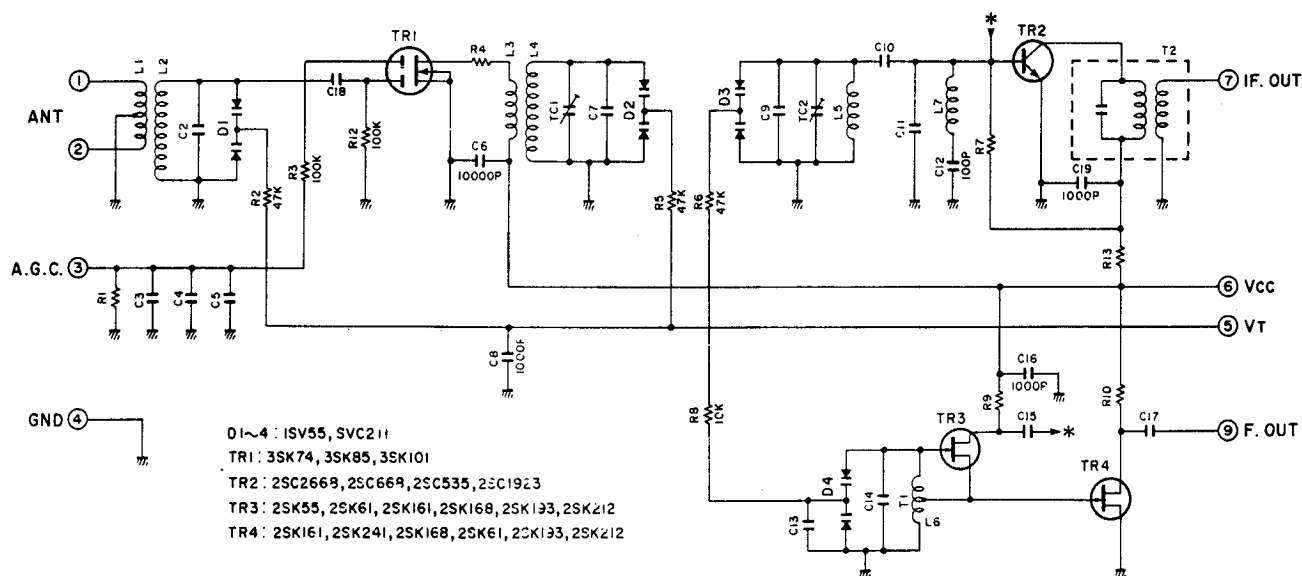
SCHEMATIC DIAGRAM

FRONT END PACK (PK101)

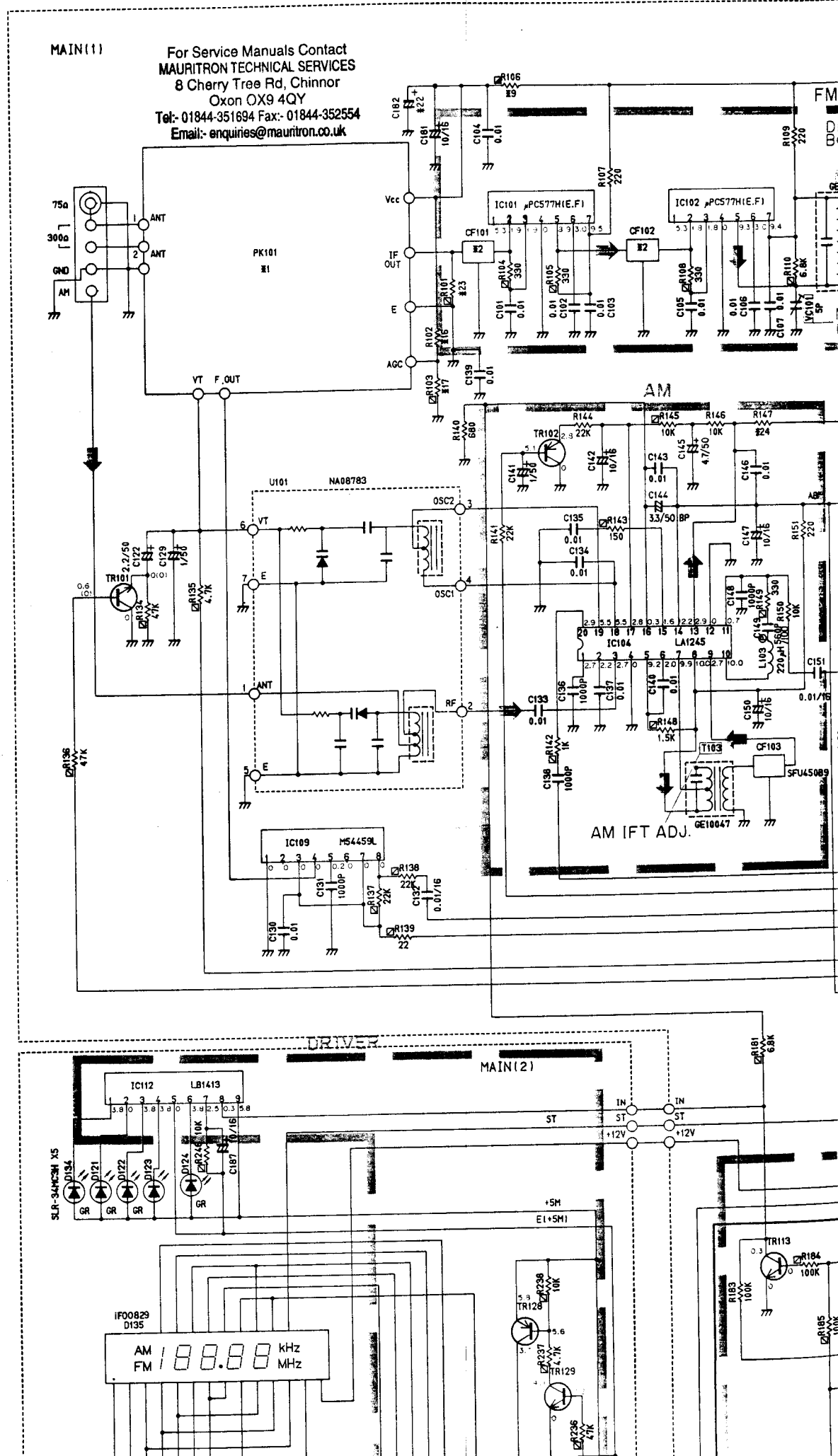
R, U, C, A, B models (PA00081)

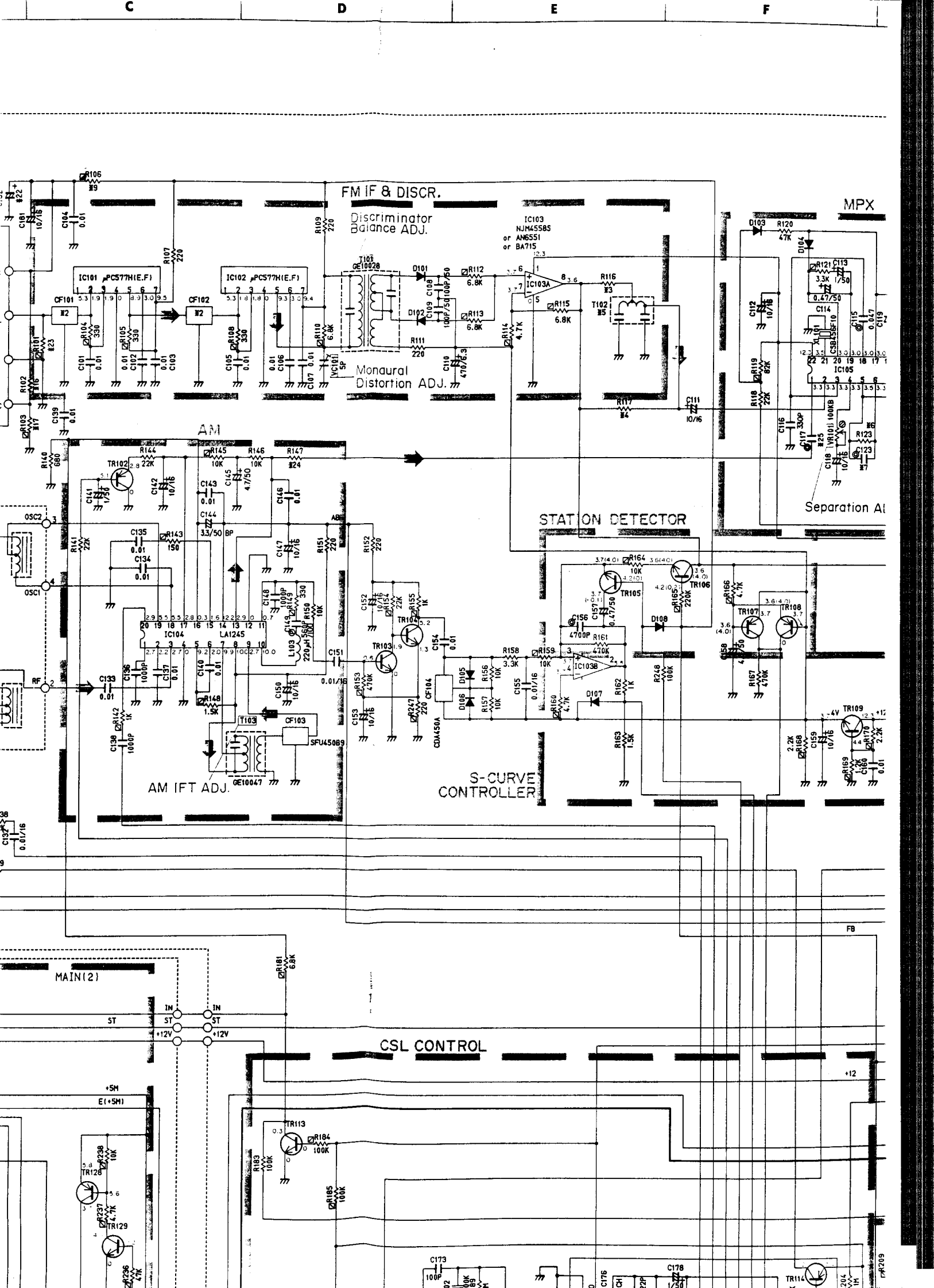


G model (PA00085)

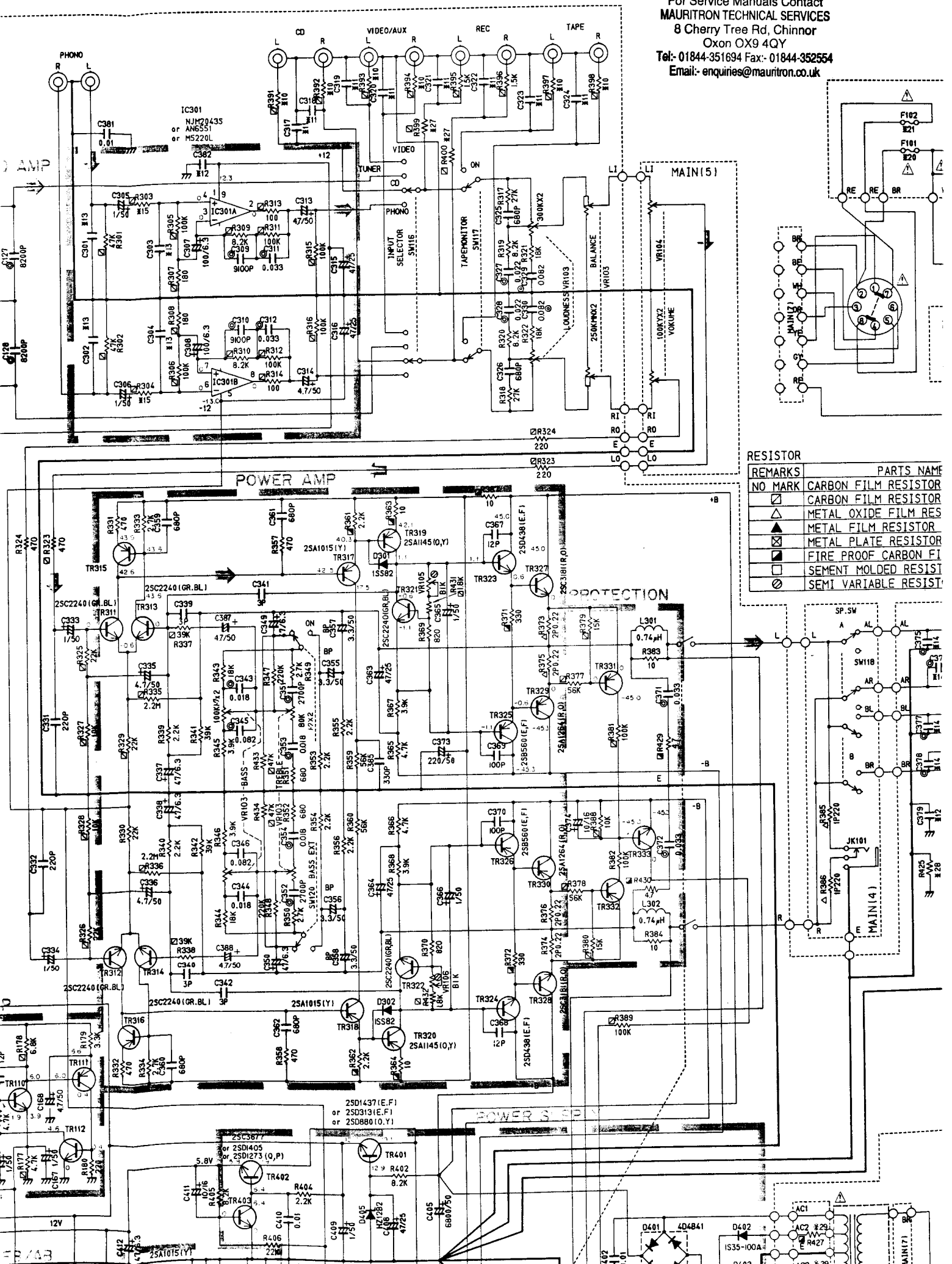


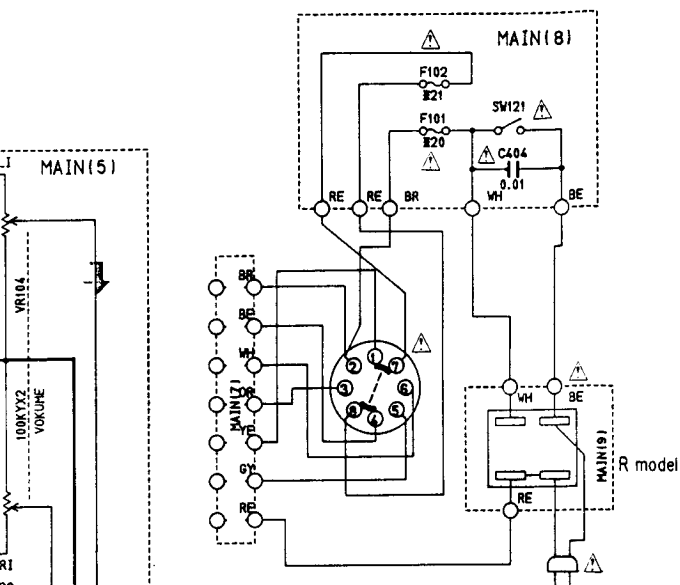
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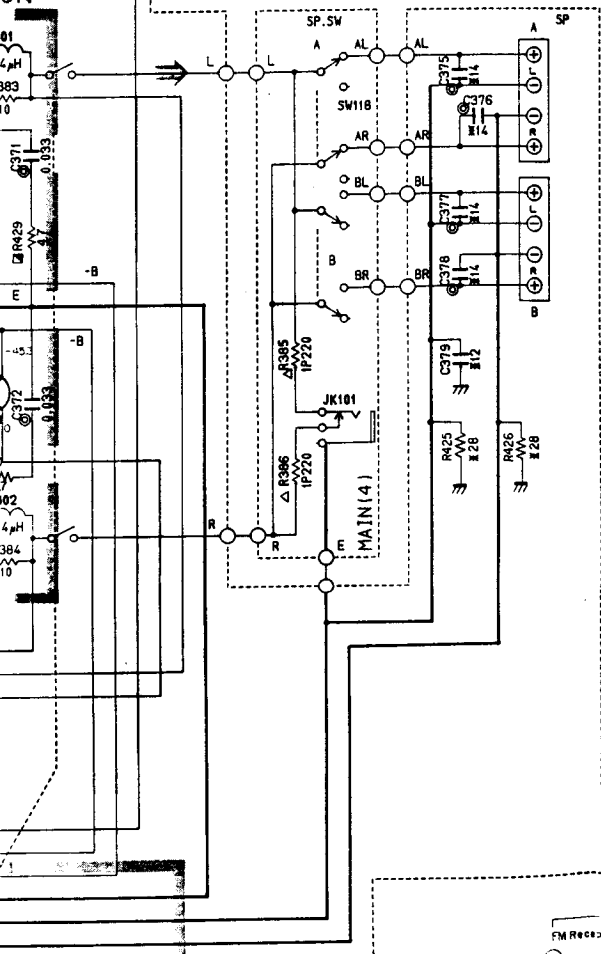
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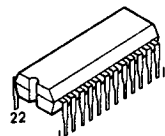
RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR
□	CARBON FILM RESISTOR (1/6W)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
■	FIRE PROOF CARBON FILM RESISTOR
□	SEMENT MOLDED RESISTOR
⊗	SEMI VARIABLE RESISTOR

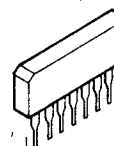


IC107					
FM Reception mode		Detuned mode		AM Reception mode	
①	0	③	2.3	⑤	0
②	5.2	④	2.1	⑥	2.3
③	0	⑤	0	⑦	0
④	0	⑥	0	⑧	0
⑤	0	⑦	0	⑨	0
⑥	0	⑧	0	⑩	0
⑦	0	⑨	0	⑪	0
⑧	0	⑩	0	⑫	0
⑨	0	⑪	0	⑬	0
⑩	0	⑫	0	⑭	0

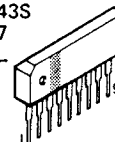
LA3400



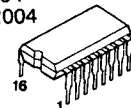
μPC577H (E, F)



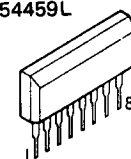
AN6551
NJM4558S
BA715
LB1413
NJM2043S
AN6557
M5220L



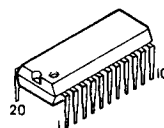
TC4028BP
BU4028B
BA618
M54526P
LB1234
BA12004



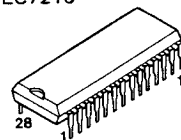
M54459L



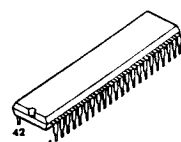
LA1245



LC7210



LC6510C-695



2SA1115 (E, F)
2SA1310 (R, S, T)
2SA1145 (O, Y)
2SA1015 (Y)
2SC1815 (O, Y)
2SC2240 (GR, BL)

5

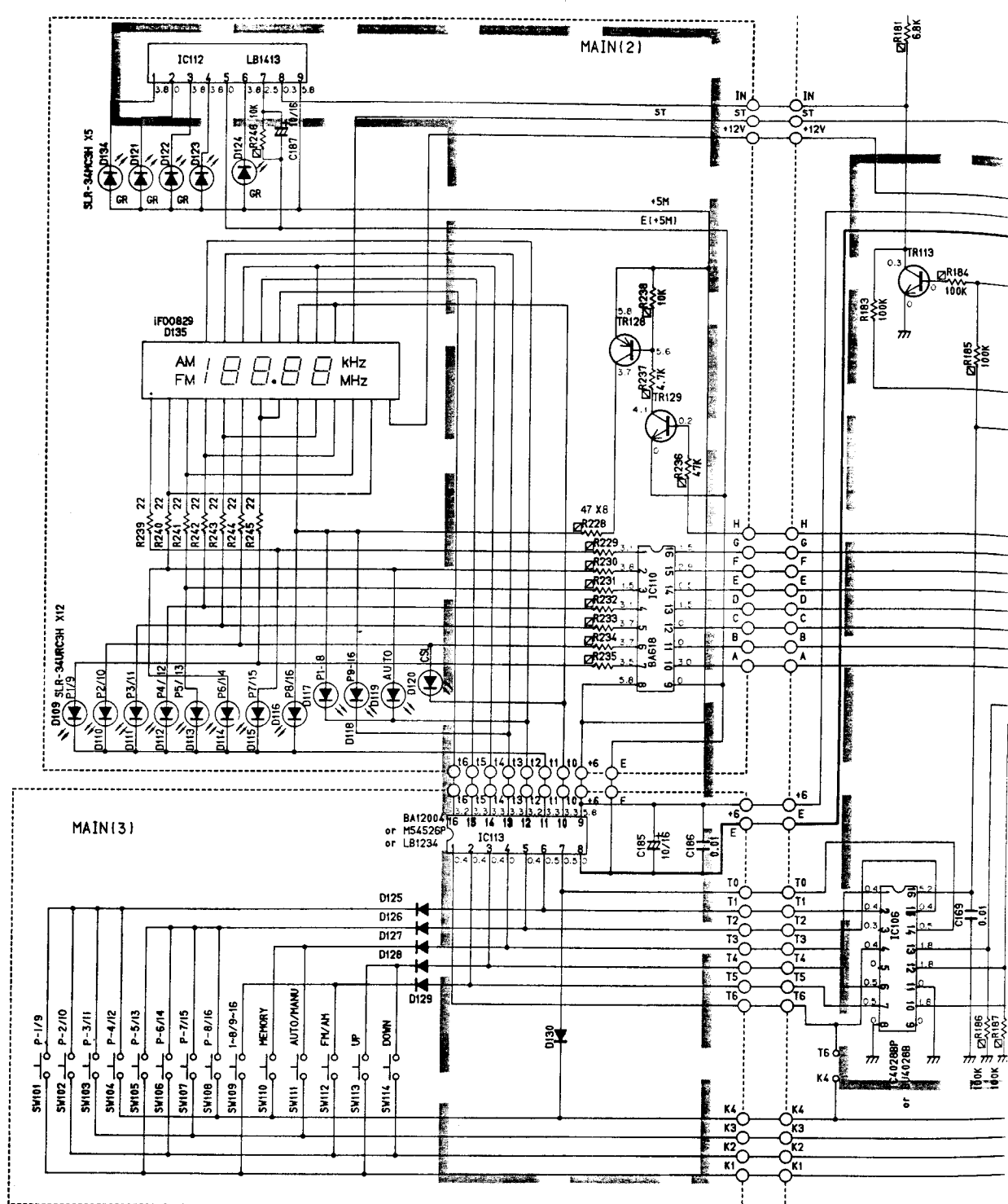
6

7

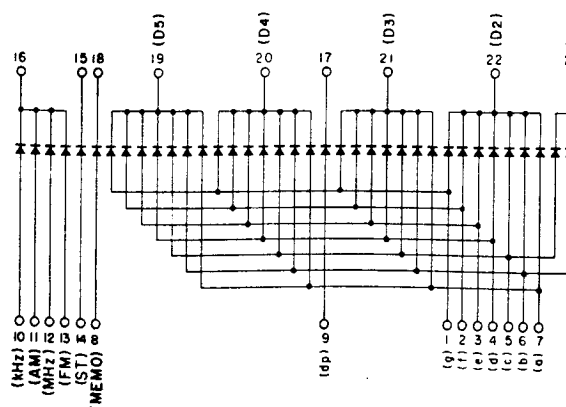
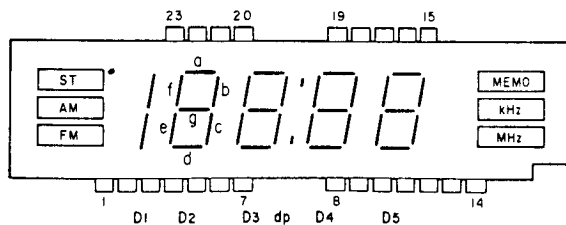
8

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10



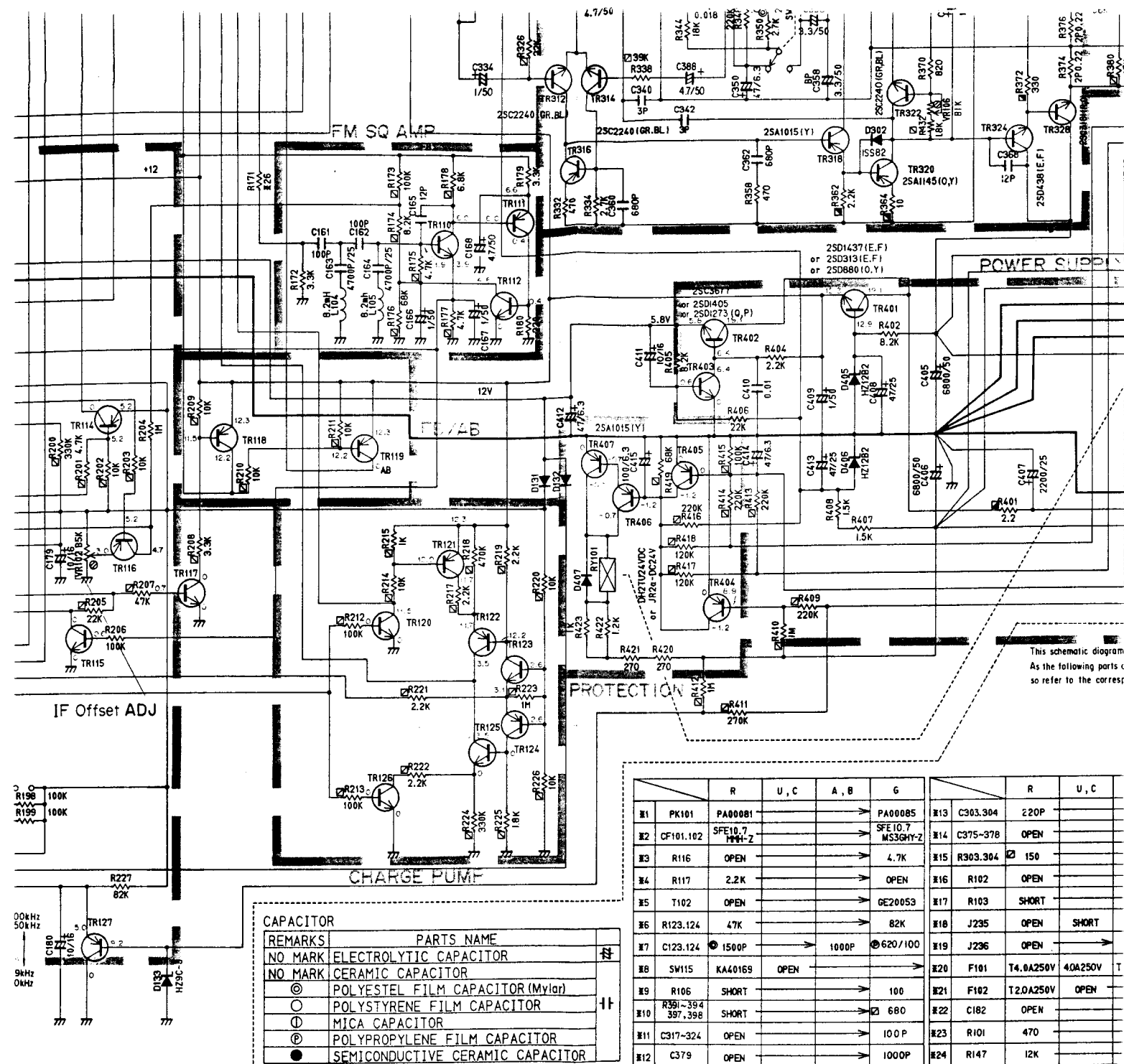
• D135 (Frequency Display)



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UNLESS OTHERWISE
DIODES ARE 1S155E
PNP TRANSISTORS
NPN TRANSISTORS

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



D109 ~ D120)

D [28 Pin]	E [27 Pin]	F [26 Pin]	G [25 Pin]	H [24 Pin]
D5 d	D5 e	D5 f	D5 g	
D4 d	D4 e	D4 f	D4 g	
D3 d	D3 e	D3 f	D3 g	FM DOT
D2 d	D2 e	D2 f	D2 g	P9-16 (D118)
		AUTO (D119)		P1-8 (D117)
P-4/12 (D112)	P-5/13 (D113)	P6/14 (D114)	P-7/15 (D115)	P-8/16 (D116)
AM	MHz	FM		

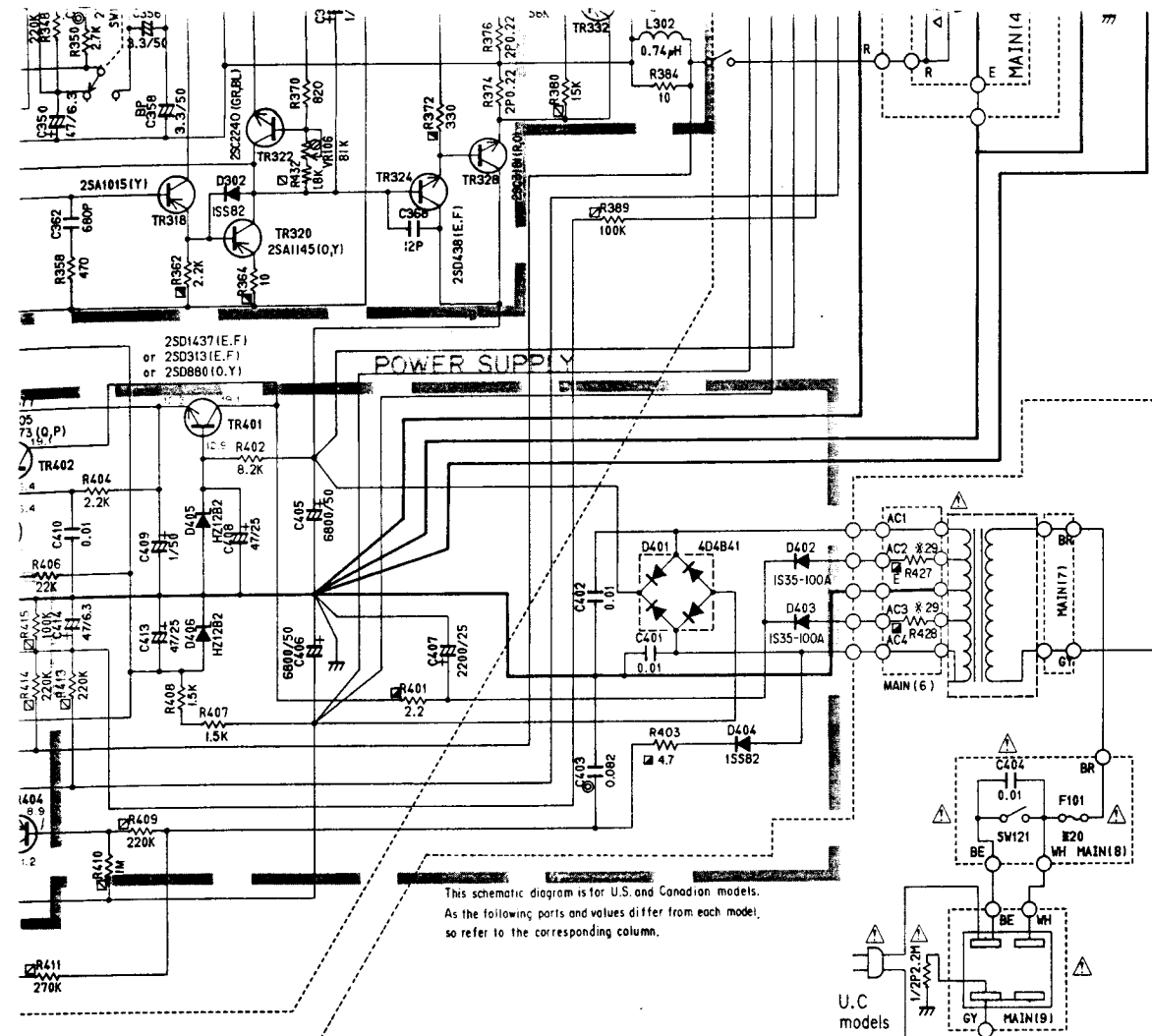
• MATRIX OF INPUT KEY

IC106 IC107	T1 [2 Pin]	T2 [15 Pin]	T3 [1 Pin]	T4 [6 Pin]	T5 [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			
K4 [6 Pin]	P4/12	P8/16	MEMORY			TEST (OFFSET)

• IC106 D/A

INP1 TC [12 Pin]	INP2 TE [13 Pin]
0	0
0	0
0	1
0	1
1	0
1	0
1	1
1	1

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel: 01844-351694 Fax: 01844-352554
Email: enquiries@mauritron.co.uk



This schematic diagram is for U.S. and Canadian models.
As the following parts and values differ from each model,
so refer to the corresponding column.

IC 107											
FM Reception mode				Detuned mode				AM Rec			
1	0	22	2.3	1	0	22	2.3	1	0		
2	5.2	23	2.1	2	5.1	23	2.1	2	5.2		
3	0	24	1.0	3	0	24	1.0	3	0		
4	0	25	1.5	4	0	25	1.5	4	0		
5	0	26	2.9	5	0	26	2.9	5	0		
6	0.5	27	1.0	6	0.5	27	1.0	6	0.5		
7	5.2	28	1.5	7	5.1	28	1.5	7	0		
8	0	29	2.9	8	0	29	2.9	8	5.2		
9	0	30	2.9	9	1.5	30	1.5	9	5.2		
10	5.1	31	1.6	10	1.9	31	1.5	10	0		
11	5.2	32	1.8	11	1.4	32	1.8	11	0.6		
12	0.9	33	1.8	12	0.7	33	1.8	12	0.4		
13	0.9	34	1.9	13	0.7	34	1.6	13	0.2		
14	1.1	35	5.2	14	0.9	35	5.2	14	1.0		
15	0	36	5.2	15	0	36	5.2	15	0		
16	5.2	37	0	16	5.2	37	5.2	16	5.1		
17	0	38	5.1	17	0	38	5.0	17	2.2		
18	5.2	39	5.2	18	5.2	39	5.1	18	5.2		
19	5.1	40	5.2	19	4.9	40	5.2	19	4.9		
20	0	41	0	20	0	41	0	20	0		
21	0	42	5.2	21	0	42	5.1	21	0		

IC 109											
FM Reception mode				Detuned mode				AM Rec			
1	1.6	15	0	1	1.7	15	5.1	1	1.6		
2	2.7	16	1.8	2	2.7	16	2.4	2	2.7		
3	0	17	0	3	0	17	0	3	0		
4	5.2	18	1.9	4	5.2	18	0.8	4	5.2		
5	0	19	5.2	5	0	19	0	5	0		
6	0.9	20	0	6	1.0	20	5.1	6	1.0		
7	0.7	21	5.0	7	0.8	21	5.1	7	0.7		
8	0.1	22	0.1	8	0.8	22	0.1	8	0.7		
9	0.1	23	0	9	0.8	23	2.5	9	0.8		
10	0	24	5.2	10	1.6	24	5.1	10	0		
11	0	25	4.7	11	1.5	25	1.1	11	5.2		
12	0	26	5.2	12	1.7	26	5.1	12	5.2		
13	5.1	27	5.2	13	5.1	27	0.3	13	0		
14	0	28	0	14	0	28	4.7	14	5.2		

R	U, C	A, B	G
PA00081			PA00085
SFE10.7			SFE10.7
MS3GHY-2			MS3GHY-2
OPEN			4.7K
2.2K			OPEN
OPEN			GE20053
47K			82K
1500P			1000P
KA40169			OPEN
SHORT			100
SHORT			680
OPEN			100P
OPEN			1000P

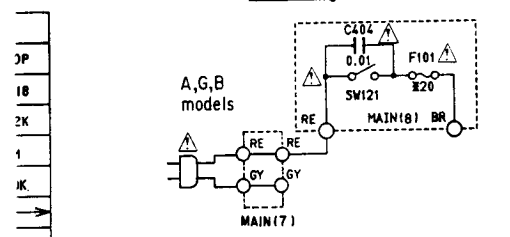
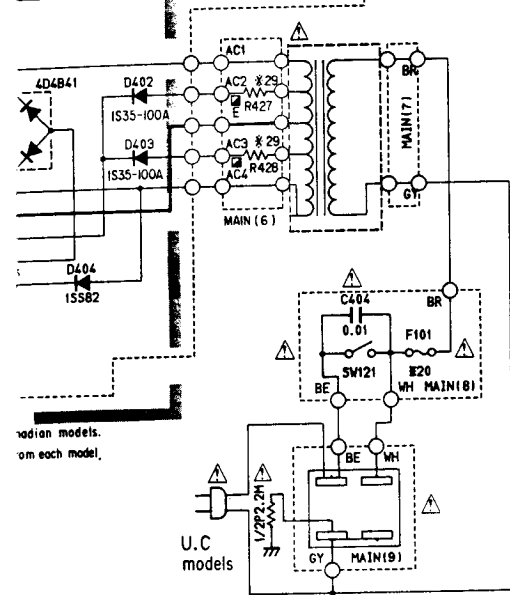
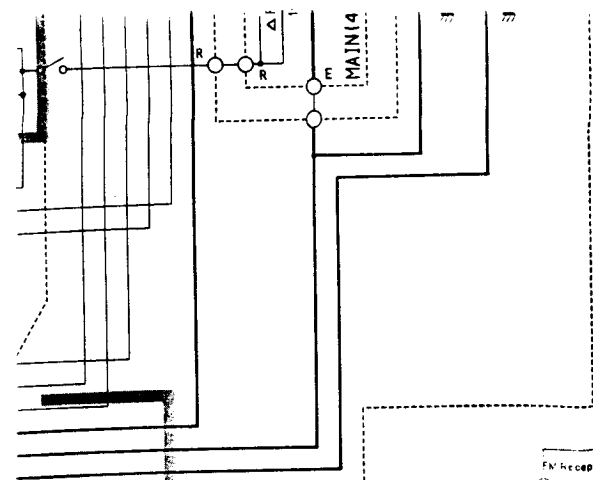
R	U, C	A, B	G
X13 C303.304	220P		330P
X14 C375-378	OPEN		0.01B
X15 R303.304	150		2.2K
X16 R102	OPEN		1M
X17 R103	SHORT		100K
X18 J235	OPEN	SHORT	OPEN
X19 J236	OPEN		SHORT
X20 F101	T4.0A250V	40A250V	T1.6A250V
X21 F102	T2.0A250V	OPEN	
X22 C182	OPEN		10/16
X23 R101	470		OPEN
X24 R147	12K		47K
X25 C117	0.047		0.022
X26 R171	22K		10K
X27 R399,400	SHORT		1.5K
X28 R425,426	OPEN		1
X29 R427,428	SHORT	1	

• IC106 DATA TABLE

F3 Pin	T4 [6 Pin]	T5 [7 Pin]	T6 [4 Pin]
	UP	P1-8/ P9-16	
	DOWN	FM/AM	
TO/ N'L			
MEMORY			TEST (OFFSET)

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	1	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

- All voltages me condition.
- The voltages ar detuned mode, reception mode
- Components ha with parts havi
- Schematic Diag



IC 107											
FM Reception mode				Detuned mode				AM Reception mode			
1	0	22	2.3	1	0	22	2.3	1	0	22	2.3
2	5.2	23	2.1	2	5.1	23	2.1	2	5.2	23	2.1
3	0	24	1.0	3	0	24	1.0	3	0	24	0.5
4	0	25	1.5	4	0	25	1.5	4	0	25	1.0
5	0	26	2.9	5	0	26	2.9	5	0	26	3.0
6	0.4	27	1.0	6	0.5	27	1.0	6	0.5	27	1.0
7	5.2	28	1.5	7	5.1	28	1.5	7	0	28	1.5
8	0	29	2.9	8	3.5	29	2.9	8	5.2	29	3.6
9	0	30	2.9	9	1.5	30	1.5	9	5.2	30	3.0
10	5.1	31	1.6	10	1.9	31	1.5	10	0	31	1.0
11	0.9	32	1.8	11	1.4	32	1.8	11	0.6	32	1.8
12	0.9	33	1.8	12	0.7	33	1.8	12	0.4	33	1.9
13	0.9	34	1.9	13	0.7	34	1.8	13	0.2	34	1.9
14	1.1	35	5.2	14	0.9	35	5.2	14	1.0	35	5.2
15	0	36	5.2	15	0	36	5.2	15	0	36	0
16	5.2	37	0	16	5.2	37	5.2	16	5.1	37	5.2
17	0	38	5.1	17	0	38	5.0	17	2.2	38	5.1
18	5.2	39	5.2	18	5.2	39	5.1	18	5.2	39	5.2
19	5.1	40	5.2	19	4.9	40	5.2	19	4.9	40	5.2
20	0	41	0	20	0	41	0	20	0	41	0
21	0	42	5.2	21	0	42	5.1	21	0	42	5.1

IC 109											
FM Reception mode				Detuned mode				AM Reception mode			
1	1.8	15	0	1	1.7	15	5.1	1	1.8	15	5.1
2	2.7	16	1.8	2	2.7	16	2.4	2	2.7	16	2.6
3	0	17	0	3	0	17	0	3	0	17	0.6
4	5.2	18	1.9	4	5.2	18	0.8	4	5.2	18	0.8
5	0	19	5.2	5	0	19	0	5	0	19	0
6	0.6	20	0	6	1.0	20	5.1	6	1.0	20	0
7	0.7	21	5.0	7	0.8	21	5.1	7	0.7	21	0
8	0.8	22	0.1	8	0.8	22	0.1	8	0.7	22	2.6
9	0.5	23	0	9	0.8	23	2.5	9	0.8	23	0.1
10	5.1	24	5.2	10	1.6	24	5.1	10	0	24	5.2
11	0	25	4.7	11	1.5	25	1.4	11	5.2	25	0.1
12	0	26	5.2	12	1.7	26	5.1	12	5.2	26	5.2
13	5.1	27	5.2	13	5.1	27	0.3	13	0	27	5.2
14	0	28	0	14	0	28	4.7	14	5.2	28	4.7

LC7210

LC6510C-695

2SA1115 (E, F)
2SA1310 (R, S, T)
2SA1145 (O, Y)
2SA1015 (Y)
2SC1815 (O, Y)
2SC2240 (GR, BL)
2SC2603 (E, F)
2SC3312 (R, S, T)

2SC3677
2SD1405
2SD1437 (E, F)
2SD313 (E, F)
2SD880 (O, Y)

2SB560 (E, F)
2SD438 (E, F)

4D4B41

1S2473
1S1555
HZ12B-2
HZ9C-3
1SS82
1SR35-100A

BLE

OUTPUT							
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
1	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	1	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	1	0
0	0	0	0	0	0	0	1

- All voltages measured with a 10MΩ/VDC electric volt meter, under no-signal condition.
- The voltages are measured at FM reception mode. The voltages () are at detuned mode, but the voltages at TR102 ~ TR104 and IC104 are at AM reception model.
- Components having special characteristics are marked and must be replaced with parts having specifications equal to those originally installed.
- Schematic Diagram is subject to change without notice.

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
 8 Cherry Tree Rd, Chinnor
 Oxon OX9 4QY
 Tel:- 01844-351694 Fax:- 01844-352554
 Email:- enquiries@mauritron.co.uk

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 discription about them in this parts list. Use the "Part No." HF850000 or equivalent.

R-5

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA 08 69 40	Main Circuit Board	メ イ ン シ ー ト			R	
※	NA 08 69 60	"	"			U	
※	NA 08 69 70	"	"			C	
※	NA 08 69 80	"	"			A,B	
※	NA 08 70 00	"	"			G	
	FG 20 03 00	Ceramic Cap.	セ ラ コ ン	C339~342			
	FG 21 11 20	"	"	C165,367,368			
	FG 21 21 00	"	"	C161,162,173,174,369,370			
	FG 21 22 20	"	"	C331,332			
	FG 21 22 20	"	"	C303,304		R,U,C,A,B	
	FG 21 23 30	"	"	"		G	
	FG 21 23 30	"	"	C385,116			
	FG 21 21 00	"	"	C317~324		G	
	FG 21 26 80	"	"	C325,326,359~362			
	FG 21 31 00	"	"	C379		G	
	FG 21 31 00	"	"	C131,136,138,148			
	FG 24 41 00	"	"	C101~107,130,133~135,137,140,143,410,146,154,160,169,170,186,381,401,402			
	Fi 19 12 20	"	"	C176,177			
	Fi 41 41 00	"	"	C404			Δ
	Fi 19 21 00	"	"	C108,109			
	Fi 17 34 70	"	"	C163,164			
	FG 44 41 00	"	"	C132,151,155			
	FZ 00 35 80	Electrolytic Cap.	ス ー パ ー キ ャ パ シ タ	C172	Inter-changeable		
	FZ 00 64 00	"	"	"			
	UA 25 32 70	Mylar Cap.	マ イ ラ ー コ ン	C351,352			
	UA 25 34 70	"	"	C156			
	UA 25 38 20	"	"	C127,128			
	UA 25 39 10	"	"	C309,310			
	UA 25 41 80	"	"	C375~378		G	
	UA 25 41 80	"	"	C343,344,353,354			
	UA 25 42 20	"	"	C327,328			
	UA 25 43 30	"	"	C311,312,371,372			
	UA 25 44 70	"	"	C115			
	UA 25 42 20	"	"	C117		G	
	UA 25 44 70	"	"	"		R,U,C,A,B	
	FA 15 48 20	"	"	C345,346,329,330,403			
	FG 21 31 00	Ceramic Cap.	セ ラ コ ン	C123,124		A,B	
	UA 25 31 50	Mylar Cap.	マ イ ラ ー コ ン	"		R,U,C	
	UT 45 26 20	Polypropylene Film Cap.	ポ リ プ ロ コ ン	"		G	
	UT 45 25 60	"	"	C149			
	FZ 00 39 40	Electrolytic Cap.	ブ ロ ッ ク ケ ミ コ ン	C405,406			
	Ui 91 84 70	"	超 小 型 ケ ミ コ ン	C110			
	UK 16 63 30	"	B P コ ン	C355~358,144			
	UK 16 54 70	"	"	C157			
	UL 46 61 00	"	ローノイズケミコン	C129			
	UL 46 62 20	"	"	C122			
	UW 91 74 70	"	ケ ミ コ ン	C337,338,349,350,412,414			
	UW 91 81 00	"	"	C307,308,415			
	UW 93 71 00	"	"	C182		G	
	UW 93 71 00	"	"	C112,118,121,142,147,150,152,153,159,171,179~181,185,187,374,411,111			
	UW 94 74 70	"	"	C315,316,363,364,408,413			
	UW 96 54 70	"	"	C114			
	UJ 16 61 00	"	"	C113,119,120,125,126,141,166,167,178,305,306,365,366,409,333,334			

※ New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	UW 96 64 70	Electrolytic Cap.	4.7 μ F 50V	ケ ミ コ ン	C145,158,168,175,313,314,335,336,387,388		
	UW 84 92 20	"	2200 μ F 25V	"	C407		
	UW 86 82 20	"	220 μ F 50V	"	C373		
	FY 00 01 90	Variable Cap.	5pF	ト リ マ ー コ ン	VC101		
	GD 90 06 80	Coil	0.74 μ H	空 芯 コ イ ル	L301,302		
	GE 90 06 90	"	8.2mH	固 定 コ イ ル	L104,105		
	GE 90 05 50	"	18mH	"	L101,102		
	GE 30 04 30	RF Inductor	220 μ H	R F イ ン ダ ク タ ー	L103		
	GE 10 02 80	Discri. Coil	FM	FMディスクリコイル	T101		
	GE 10 04 70	AM IFT Coil	AM	AM IFTコ イ ル	T103		
	GE 20 05 30	Anti-Birdie Filter	114kHz	アンチバーディーフィルター	T102	G	
	GG 00 04 20	AM Ceramic Discriminator	CDA450A	AMセラミックディスクリ	CF104		
	GG 00 06 20	FM Ceramic Filter	SFE 10.7MS3GHY-Z	FMセラミックフィルター	CF101,102	G	
	GG 00 06 30	"	SFE 10.7MMH-Z	"	"	R,U,C,A,B	
	GG 00 06 60	AM Ceramic Filter	SFU 450B9	AMセラミックフィルター	CF103		
	GG 00 07 40	Ceramic Resonator	CSB456F10	セラミック振動子	XL101		
	GG 00 07 60	"	CSB800K	"	XL102		
	QU 00 39 00	Quartz Crystal Unit	32kHz	水 晶 振 動 子	XL103		
	HJ 35 41 00	Carbon Resistor	10 Ω 1/4W	カーボン抵抗	R383,384		
	HJ 35 42 20	"	22 Ω "	"	R239~245		
	HJ 35 52 20	"	220 Ω "	"	R107,109,111,151,152,180		
	HJ 35 52 70	"	270 Ω "	"	R420,421		
	HJ 35 54 70	"	470 Ω "	"	R331,332		
	HJ 35 56 80	"	680 Ω "	"	R140,351,352		
	HJ 35 58 20	"	820 Ω "	"	R369,370		
	HJ 35 61 20	"	1.2k Ω "	"	R422		
	HJ 35 61 00	"	1k Ω "	"	R423,162		
	HJ 35 61 50	"	1.5k Ω "	"	R133,407,408,163		
	HJ 35 62 20	"	2.2k Ω "	"	R339,340,353~356,404		
	HJ 35 62 70	"	2.7k Ω "	"	R333,334,349,350		
	HJ 35 63 30	"	3.3k Ω "	"	R158,172,179		
	HJ 35 64 70	"	4.7k Ω "	"	R116	G	
	HJ 35 64 70	"	4.7k Ω "	"	R365,366		
	HJ 35 63 90	"	3.9k Ω "	"	R345,346,367,368		
	HJ 35 62 20	"	2.2k Ω "	"	R117	R,U,A,C,B	
	HJ 35 68 20	"	8.2k Ω "	"	R319,320,402		
	HJ 35 71 00	"	10k Ω "	"	R146,150,156,157,		
	HJ 35 72 20	"	22k Ω "	"	R118,141,144,330,406		
	HJ 35 72 70	"	27k Ω "	"	R317,318		
	HJ 35 73 90	"	39k Ω "	"	R341,342		
	HJ 35 74 70	"	47k Ω "	"	R120		
	HJ 35 75 60	"	56k Ω "	"	R359,360		
	HJ 35 78 20	"	82k Ω "	"	R227		
	HJ 35 71 80	"	18k Ω "	"	R321,322,343,344		
	HJ 35 81 00	"	100k Ω "	"	R122,183,198,199,206,248,382		
	HJ 35 74 70	"	47k Ω "	"	R123,124	R,U,A,C,B	
	HJ 35 78 20	"	82k Ω "	"	"	G	

*New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	リンク
	HJ 35:82:20	Carbon Resistor	220kΩ 1/4W	カーボン抵抗	R347,348		
	HJ 35:84:70	"	470kΩ "	"	R167		
	HJ 35:72:20	"	22kΩ "	"	R171	R,U,A,C,B	
	HJ 35:71:00	"	10kΩ "	"	"	G	
	HJ 35:91:00	"	1MΩ "	"	R102	G	
	HJ 35:91:00	"	1MΩ "	"	R204		
	HJ 35:71:20	"	12kΩ "	"	R147	R,U,A,C,B	
	HJ 35:74:70	"	47kΩ "	"	"	G	
	HL 71:52:20	Metal Oxide Film Resistor	220Ω 1W	酸化金抵抗	R385,386		
	HL 32:22:20	"	0.22Ω 2W	"	R373~376		
	HV 45:32:20	Flame Proof Carbon Resistor	2.2Ω ERD25FV	不燃化カーボン抵抗	R401		
	HV 45:41:00	"	10Ω "	"	R363,364,387		
	HV 45:34:70	"	4.7Ω "	"	R403,429,430		
	HV 45:51:00	"	100Ω "	"	R106	G	
	HV 45:53:30	"	330Ω "	"	R371,372		
	HV 45:31:00	"	1Ω "	"	R425,426	G	
	HV 45:31:00	"	1Ω "	"	R427,428	U,C,A,B,G	
	HV 45:62:20	"	2.2kΩ "	"	R361,362		
※	HS 41:25:40	Potentiometer	100kY×2	可変抵抗器	VR104 VOL.		
※	HS 41:25:30	" (4-Ganged)	250kMN,300kY×2×2 100kY×2,30kY×2×2	"	VR103 LOOD BAL. TPE BAS.		
	HT 37:03:70	Pre-Set Potentiometer	85K	半固定抵抗	VR102		
	HT 37:04:20	"	B100K	"	VR101		
	HT 37:03:40	"	B1K	"	VR105,106		
	iA 11:15:10	Transistor	2SA1115 (E,F)	トランジスタ	TR102,107,108,111,114,116,118,119,121,122, 124,127,128,315,316,331,332,404~406	Inter-changeable	
	iX 60:31:70	"	2SA1310 (R,S,T)	"	"		
	iA 11:45:00	"	2SA1145 (φ,Y)	"	TR319,320		
	iA 10:15:20	"	2SA1015 (Y)	"	TR317,318,407		
	iC 18:15:20	"	2SC1815 (Y)	"	TR321,322		
	iC 22:40:00	"	2SC2240 (GR,BL)	"	TR311~314		
	iC 26:03:10	"	2SC2603 (E,F)	"	TR101,103~106,109,110,112,113,115, 117,120,123,125,126,129,333,403	Inter-changeable	
	iX 60:31:80	"	2SC3312 (R,S,T)	"	"		
※	iC 36:77:00	"	2SC3677	"	TR402	Inter-changeable	
※	iD 14:05:00	"	2SD1405	"	"		
	iD 14:37:00	"	2SD1437 (E,F)	"	TR401	Inter-changeable	
	iD 03:13:00	"	2SD313 (E,F)	"	"		
	iD 08:80:20	"	2SD880 (φ,Y)	"	"		
	iB 05:60:10	"	2SB560 (E,F)	"	TR325,326		
	iD 04:38:10	"	2SD438 (E,F)	"	TR323,324		
	iF 00:06:70	Diode	IS2473	ダイオード	D101~108,125~132, 407	Inter-changeable	
	iF 00:00:40	"	IS1555	"	"		
	iF 00:14:00	"	ISS82	"	D301,302,304		
	iH 00:14:30	"	ISR35-100	"	D402,403		
	iF 00:35:50	Zener Diode	HZ12-B-2	ツェナーダイオード	D405,406		
	iF 00:33:20	"	HZ9C-3	"	D133		
	iH 00:08:70	Diode	4D4B41	ダイオードブリッジ	D401		
※	iF 00:87:30	LED (Red)	SLR-34URC3H	L E D	D109~120		
※	iF 00:87:40	" (Green)	SLR-34MC3H	"	D121~124,134		
※	iF 00:82:90	Frequency Display		周波数表示器	D135		
	iG 03:45:00	IC	UPC577H	I C	IC101,102		

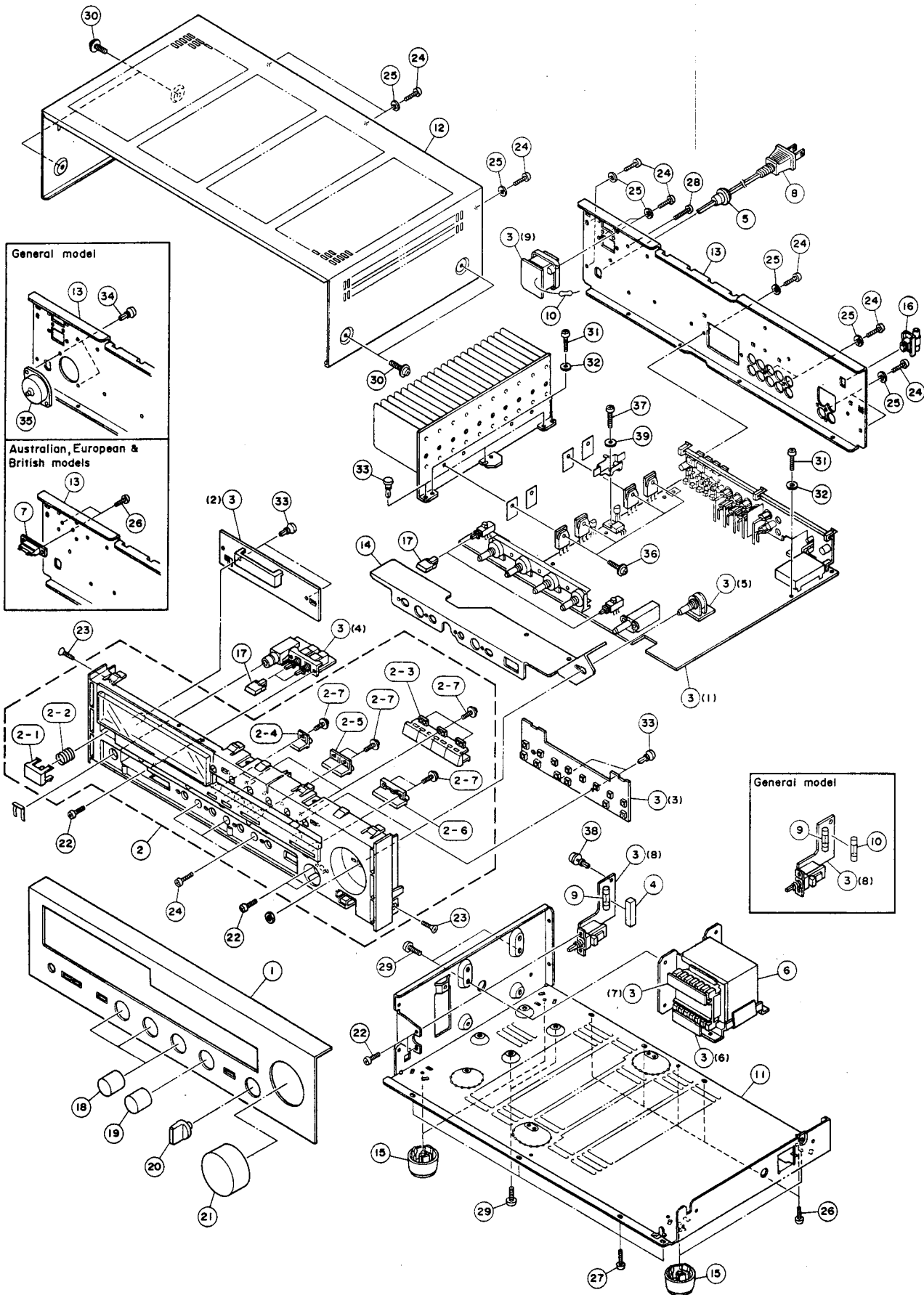
※New Parts (新規部品)

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
 8 Cherry Tree Rd, Chinnor
 Oxon OX9 4QY
 Tel: 01844-351694 Fax: 01844-352554
 Email: enquiries@mauritron.co.uk

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	iG 03:47:00	IC	AN6551	I C	IC103		
	iG 07:68:00	"	NJM4558S	"	"		
	iG 13:22:00	"	BA715	"	"		
	iG 03:55:00	"	TC4028BP	"	IC106		
	iG 14:87:00	"	BU4028B	"	"		
	iG 04:14:00	"	M54459L	"	IC109		
	iG 04:78:00	"	LA1245	"	IC104		
	iG 04:91:00	"	LC7210	"	IC108		
	iG 08:02:00	"	NJM2043S	"	IC301		
	iG 08:52:00	"	AN6557	"	"		
	iG 09:20:00	"	M5220L	"	"		
	iG 11:71:00	"	M54526P	"	IC113		
	iG 14:54:00	"	LB1234	"	"		
	iG 14:72:00	"	BA12004	"	"		
	iG 13:20:00	"	BA618	"	IC110		
	iG 14:25:00	"	LA3400	"	IC105		
	iG 14:67:00	"	LB1413	"	IC112		
	iG 14:77:00	"	LC6510C-695	"	IC107		
	KA 40:16:90	Slide Switch		スライドスイッチ	SW115	R	
	KA 50:20:80	Rotary Switch	SRZ-2 4-4NS	ロータリースイッチ	SW116		
	KA 80:37:90	Push Switch		プッシュスイッチ	SW118		
	KA 80:51:10	"	SUN 2-2NS	"	SW117		
	KA 80:51:20	"	SUN 2-2S	"	SW120		
	KA 80:32:10	"	SDL 1P	"	SW121		
	KA 90:63:80	"	EVQ-QRB-04M	ライトタッチスイッチ	SW101~114		
	KC 00:19:40	Relay	DH2TU24VDC	リ レ ー	RY401		
	KC 00:20:00	"	JR2a-DC24V	"	"		
	LB 30:17:20	Jack, Head Phone		ホ ー ン ジャ ッ ク	JK101		
	NA 08:78:30	Coil Pack	AM	A M コ イ ル パ ッ ク	U101		
	PA 00:08:10	FM Front End Pack	FE343U	F M フ ロ ン ト エ ン ド パ ッ ク	PK101	R,U,C,A,B	
	PA 00:08:50	"	BFE446U16	"	"	G	
	iX 60:35:60	Transistor	2SA1264 (O,R)	ト ラ ン ジ ス タ	TR329,330		
	iX 60:35:70	"	2SC3181 (O,R)	"	TR327,328		
	iL 00:05:70	Insulation Washer	MT-100	マ イ カ ベ ー ス			
	BA 09:22:70	Heat Sink		放 熱 板			
	EZ 00:13:50	Cup Screw	3×14FCM3-BI	カ ッ プ ス ク リ ュ ー			
	LA 00:54:90	Terminal	834T-1100	ボ ー ド イ ン タイ		R	
	LB 20:14:80	Voltage Selector		電 圧 切 換 器		R	
	LB 40:14:50	AC Outlet		A C ア ウ ト レ ッ ト		R,U	
	LB 40:14:60	"		"		C	
	LB 20:13:90	Base Pin	B2P-SHF TE Type	2.5 ピ ッ チ ベ ー ス ピ ン			
	LB 20:18:80	Pin, Fuse Holder	PC-FHI	ヒ ュ ー ズ ホ ル ダ ー ピ ン			
	NB 62:58:50	Terminal Unit		ターミナルユニット		R,U,C,A,B	
	NB 62:58:60	"		"		G	
	BB 06:83:70	Metal, Earth		ア ー ス 金 具			
	BB 07:09:10	TR Pusher		T R プ ッ シ ャ ー			
	CB 60:56:20	Plastic Rivet		プ ラ ス チ ッ ク リ ヱ ッ ト			

* New Parts (新規部品)

EXPLODED VIEW



MECHANISM PARTS

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
* 1	NB 62 57 40	Panel Unit	パ ネ ル ユ ニ ッ ト	Silver			
* "	NB 62 57 50	"	"	Black			
* 2	NB 62 57 60	Sub Chassis Unit	サブシャーシユニット	Silver			
* "	NB 62 57 70	"	"	Black			
2-1	CB 63 51 20	Button	ボ タ ン	POWER Silver	A-520		
"	CB 63 51 30	"	"	" Black	A-520		
2-2	AA 61 78 80	Spring	ス プ リ ン グ				
2-3	CB 63 99 00	Button, Push	ボ タ ン プ ッ シ ュ	P1~P8 Silver	R-3		
"	CB 63 99 10	"	"	" Black	R-3		
2-4	CB 63 99 20	"	"	MEMORY Silver	R-3		
"	CB 63 99 30	"	"	" Black	R-3		
2-5	CB 63 99 40	"	"	TUNING MODE Silver	R-3		
"	CB 63 99 50	"	"	" Black	R-3		
2-6	CB 63 99 60	Button, Seesaw	ボ タ ン シ ー ソ ー	TUNING Silver	R-3		
"	CB 63 99 70	"	"	" Black	R-3		
* 2-7	EX 60 02 00	Cup Screw	2x6 FCM3-BI カ ッ プ ス ク リ ュ ー				
* 3	NA 08 69 40	Main Circuit Board	メ イ ン シ ー ト			R	
* "	NA 08 69 60	"	"			U	
* "	NA 08 69 70	"	"			C	
* "	NA 08 69 80	"	"			A,B	
* "	NA 08 70 00	"	"			G	
4	CB 09 95 80	Fuse Holder	SB-0664U ヒ ュ ー ズ ホ ル ダ ー			LA	
5	CB 61 68 10	Cord Stopper	CM-22A コ ー ド ス ト ッ パ ー	Inter-changeable		U	
"	CB 62 01 90	"	CM-22B "			R,A,G,B	
"	CB 62 02 00	"	CM-22C "	Inter-changeable		C	
* 6	GA 68 85 00	Power Transformer	電 源 ト ラ ン ス			U	△
* "	GA 68 86 00	"	"	Inter-changeable		C	△
* "	GA 68 87 00	"	"			R	△
* "	GA 68 88 00	"	"			G	△
* "	GA 68 89 00	"	"			A,B	△
7	LA 00 29 50	Terminal Board	2P 中 継 端 子 台			A,G,B	
8	MG 00 08 40	Power Cord	10A125V 2 m 電 源 コ ー ド	Inter-changeable		U	△
"	MG 00 12 40	"	10A125V 2 m "			U	△
"	MG 00 09 20	"	7.5A250V 2.5m "	Inter-changeable		A	△
"	MG 00 14 90	"	7.5A250V 2.5m "			A	△
"	MG 00 09 60	"	2.5A250V 2 m "	Inter-changeable		G	△
"	MG 00 16 20	"	2.5A250V 2 m "			G	△
"	MG 00 18 60	"	2.5A250V 2 m "			B	△
"	MG 00 16 30	"	6A250V 2 m "			R	△
"	MG 00 22 20	"	10A250V 1.98m "		R-3	C	△
9	KB 00 03 80	Fuse	T4.0A 250V ヒ ュ ー ズ			R	△
"	KB 00 07 40	"	T1.6A 250V "			A,G,B	△
"	KB 00 25 70	"	4.0A 250V "			U,C	△
"	KB 00 03 50	"	T2.0A 250V "			R	△
10	HG 30 92 20	Carbon Resistor	2.2MΩ 1/2W カ ー ボ ン 抵 抗			U,C	
11	AA 62 55 00	Chassis	シ ャ ー シ		R-3		
12	AA 62 55 10	Top Cover	ト ッ プ カ バ ー	Silver	R-3		
"	AA 62 55 20	"	"	Black	R-3		
* 13	AA 62 55 80	Rear Panel	リ ア パ ネ ル			R	
* "	AA 62 55 90	"	"			U,C	
* "	AA 62 56 00	"	"			G	
* "	AA 62 56 10	"	"			A,B	
14	AA 62 56 30	Plate, Shield	シ ー ル ド プ レ ー ト		R-3		

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