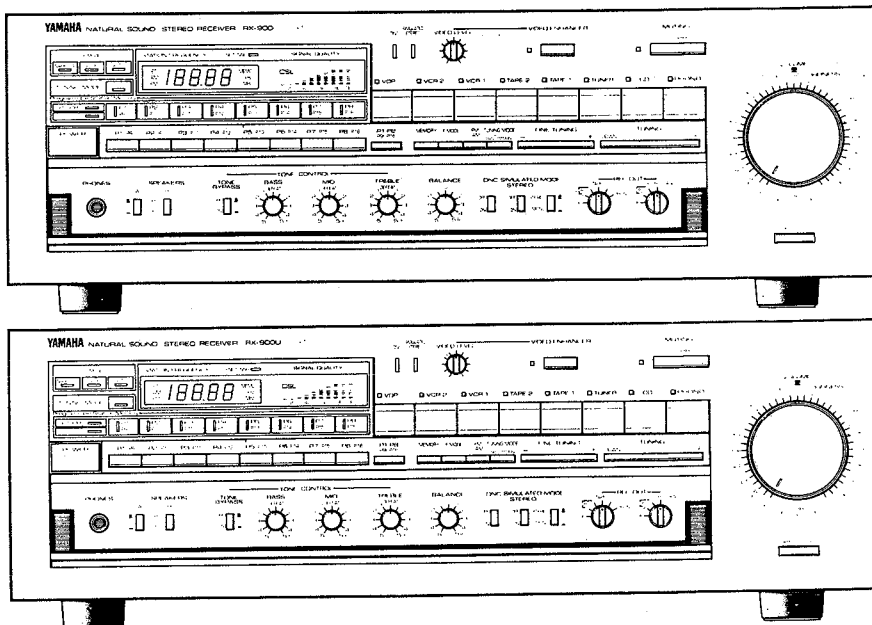
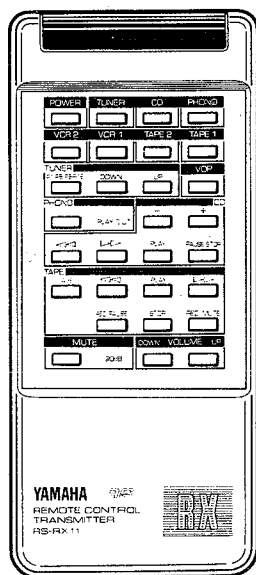


STEREO RECEIVER

RX-900/900U

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 specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

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

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


CONTENTS

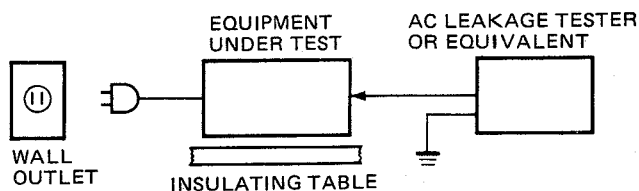
TO SERVICE PERSONNEL	1
REAR PANELS	1
SPECIFICATIONS	2
INTERNAL VIEW	3
DISASSEMBLY PROCEDURES	3
ADJUSTMENTS	4~7
μ.COM DATA	8~11
CIRCUIT DATA	12.13

IC BLOCK	14~17
BLOCK DIAGRAM	18.19
WIRING	20.21
PRINTED CIRCUIT BOARD	22~29
SCHEMATIC DIAGRAM	30~33
PARTS LIST	34~46
REMOTE CONTROL TRANSMITTER	47.48



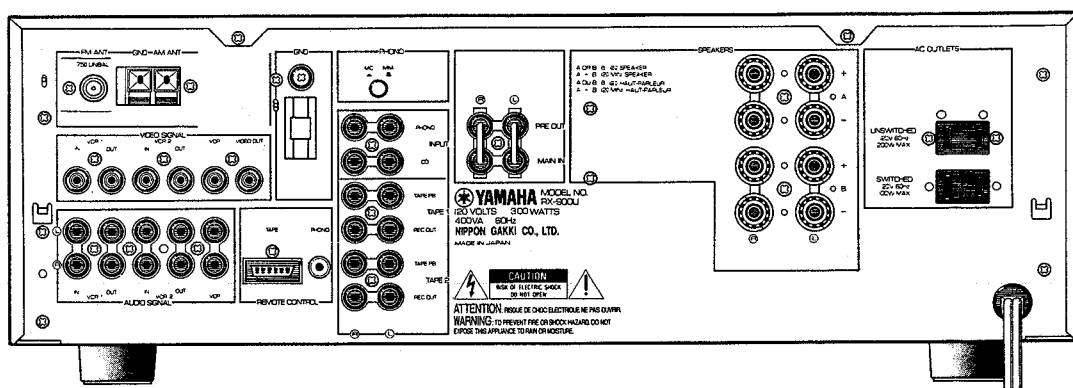
■ TO SERVICE PERSONNEL

1. Critical Components Information.
Components having special characteristics are marked  and must be replaced with parts having specifications equal to those originally installed.
2. Leakage Current Measurement (For 120V 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.

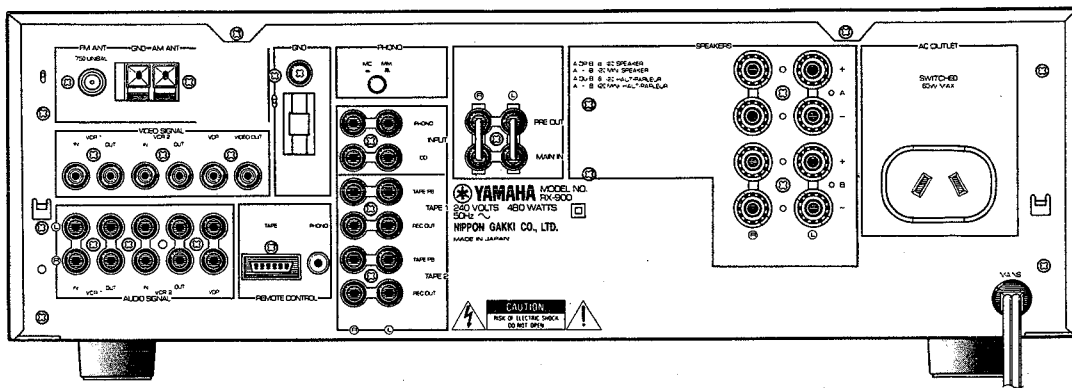


■ REAR PANELS

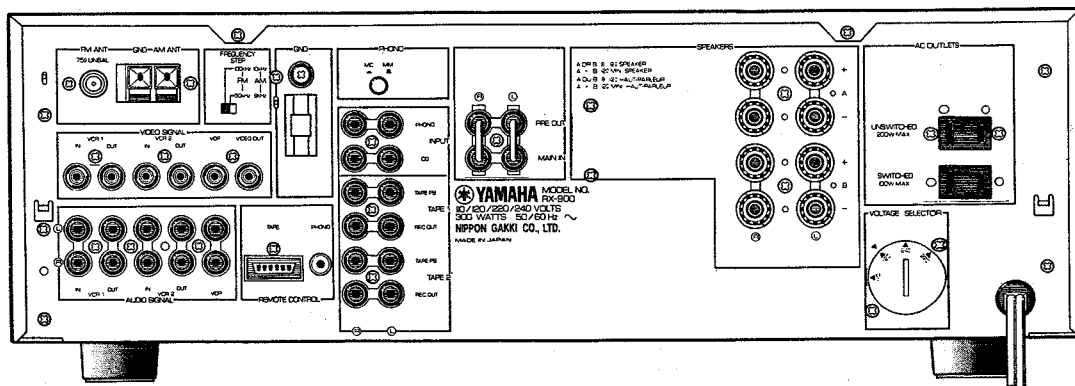
● U.S.A. & Canadian models



● Australian model



● Others model



SPECIFICATIONS

AUDIO SECTION

Minimum RMS Output Power Per Channel	
20Hz~20kHz, 0.015% THD, 8Ω	85W
0.03% THD, 6Ω	100W
Dynamic Power Per Channel	
8Ω	130W
6Ω	150W
4Ω	190W
2Ω	200W
Dynamic Headroom	
8Ω	1.84dB
Power Band Width	
0.1% THD, 42.5W, 8Ω	10Hz~50kHz
Damping Factor	
1kHz, 8Ω	60
Input Sensitivity/Impedance	
Phono MM	2.5mV/47kΩ
Phono MC	160μV/220Ω
CD/etc.	150mV/47kΩ
MAIN IN	1V/47kΩ
Input Sensitivity (New IHF)	
Phono MM	0.27mV
Phono MC	17μV
CD/etc.	16.3mV
Maximum Input Signal	
Phono, 1kHz, 0.01% THD MM	110mV
MC	8mV
Output Level/Impedance	
REC OUT	150mV/470Ω
PRE OUT	1V/1kΩ
Maximum Voltage Output	
20Hz~20kHz, 0.01% THD, PRE OUT	2.5V
Headphone Jack Rated Output/Impedance	
0.015% THD (8Ω)	0.75V/8Ω
Frequency Response	
20Hz~20kHz, CD/etc.	+0, -0.3dB
MAIN IN	+0, -0.3dB
RIAA Equalization Deviation	
20Hz~20kHz, Phono MM RIAA	0±0.3dB
30Hz~20kHz, Phono MC RIAA	0±0.5dB
Total Harmonic Distortion (20Hz~20kHz)	
Phono MM to Rec Out 3V	0.003%
Phono MC to Rec Out 3V	0.005%
CD/etc. to SP Out 42.5W/8Ω	0.006%
VIDEO to SP Out 42.5W/8Ω	0.006%
Intermodulation Distortion	
CD/etc. to Rated Output/8Ω	0.01%
Signal to Noise Ratio (IHF-A-Network)	
Phono MM (5mV Input Shorted)	92dB
Phono MC (500μV Input Shorted)	75dB
CD/etc. (Input Shorted)	103dB
VIDEO (Input Shorted)	91dB
Signal to Noise Ratio (New IHF)	
Phono, MM	75dB
MC	75.5dB
CD/etc.	81dB
Residual Noise (IHF-A-Network)	
	120μV
Channel Separation (Vol. -30dB)	
Phono Input Shorted, 1kHz	60dB
CD/etc. Input 5.1kΩ, 1kHz	60dB
Tone Control Characteristics	
BASS boost/cut	0±10dB (at 50Hz)
turnover frequency	350Hz
TREBLE boost/cut	0±10dB (at 20kHz)
turnover frequency	3.5kHz
MID control range	0±12dB (at 1kHz)
center frequency	1kHz
Filter Characteristics	
Low	10Hz (-12dB/Oct.)
Continuous Loudness Control (Level related equalization)	
Attenuation	-40dB (at 1kHz)
Audio Muting	-20dB

VIDEO SECTION

VIDEO Input Sensitivity/Impedance	
VCR/VDR	1V/75Ω
VIDEO maximum Input Signal	
VCR/VDP	2V
VIDEO Output Level/Impedance	
VCR OUT/VIDEO OUT	1V/75Ω

VIDEO Frequency Response	
10Hz~15MHz	0±1dB
VIDEO Signal to Noise Ratio	
White, 50%	dB
VIDEO Level Control	
	0±dB

FM SECTION

Tuning Range	
	87.5 to 108.0MHz
50dB Quieting Sensitivity (IHF)	
Mono, 75Ω	1.5μV (14.8dBf)
Stereo, 75Ω	20μV (37.3dBf)
Usable Sensitivity	
1kHz, 100% MOD, 75Ω	
(30dB S/N Quieting)	0.75μV (8.8dBf)
Image Response Ratio	
	40dB
IF Response Ratio	
	90dB
Spurious Response Ratio	
	70dB
AM Suppression Ratio	
	55dB
Capture Ratio	
	1.2dB (Local)
	2.5dB (DX)
Alternate Channel Selectivity	
	85dB
Signal to Noise Ratio (IHF)	
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	
50Hz	45dB
1kHz	54dB
10kHz	45dB
Frequency Response	
30Hz to 13kHz	0±0.5dB

AM SECTION

Tuning Range	
	530 to 1620kHz ((U)(C)
	531 to 1620kHz (A)(R)
Usable Sensitivity (IHF)	
	250μV/m
Selectivity	
	24dB
Signal to Noise Ratio	
	50dB
Image Response Ratio	
	40dB
Spurious Response Ratio	
	50dB
Harmonic Distortion (400Hz)	
	0.3%

GENERAL

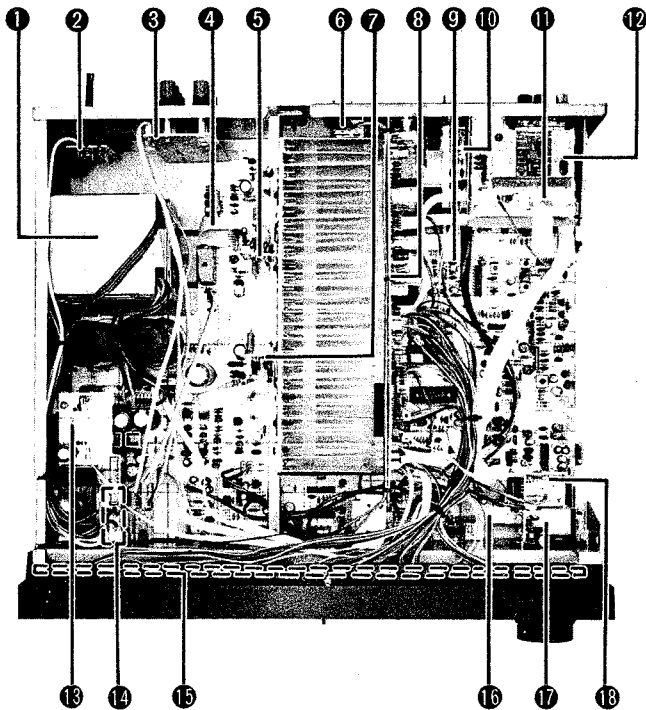
Power Supply	
U.S.A. & Canadian Models	120VAC, 60Hz
Australian Model	240VAC, 50Hz
Others Model	110/120/220/240V AC
	50/60Hz
Power Consumption	
	300W (R)(U)(C)
	480W (A)
AC Outlet	
Switched x 1	100W Max (U)(C)(R)
	60 W Max (A)
Unswitched x 1	200W Max (R)(U)(C)
Dimensions (W x H x D)	
	435 x 151 x 423mm
	(17-1/8" x 5-15/16" x 16-5/8")
Weight	
	11kg (24lbs 3 oz)

CD/etc. : CD/VIDEO/TUNER/AUX/TAPE/VCR

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

*Specifications subject to change without notice.

INTERNAL VIEW



- ① Power Transformer
- ② Main Circuit Board (6)
- ③ Main Circuit Board (2)
- ④ Main Circuit Board (1)
- ⑤ Main Circuit Board (5)
- ⑥ Main Circuit Board (10)
- ⑦ Main Circuit Board (4)
- ⑧ Control Circuit Board (2)
- ⑨ Control Circuit Board (1)
- ⑩ Main Circuit Board (7)
- ⑪ Main Circuit Board (8)
- ⑫ Front-end Pack
- ⑬ Main Circuit Board (3)
- ⑭ Main Circuit Board (9)
- ⑮ Front Panel Unit
- ⑯ Control Circuit Board (3)
- ⑰ Potentiometer with Motor
- ⑱ Control Circuit Board (5)

DISASSEMBLY PROCEDURES

(Remove parts in disassembly order as numbered)

1. Removal of Top Cover

Remove 6 screws (①) in Fig. 1, and slide the Top Cover back and up.

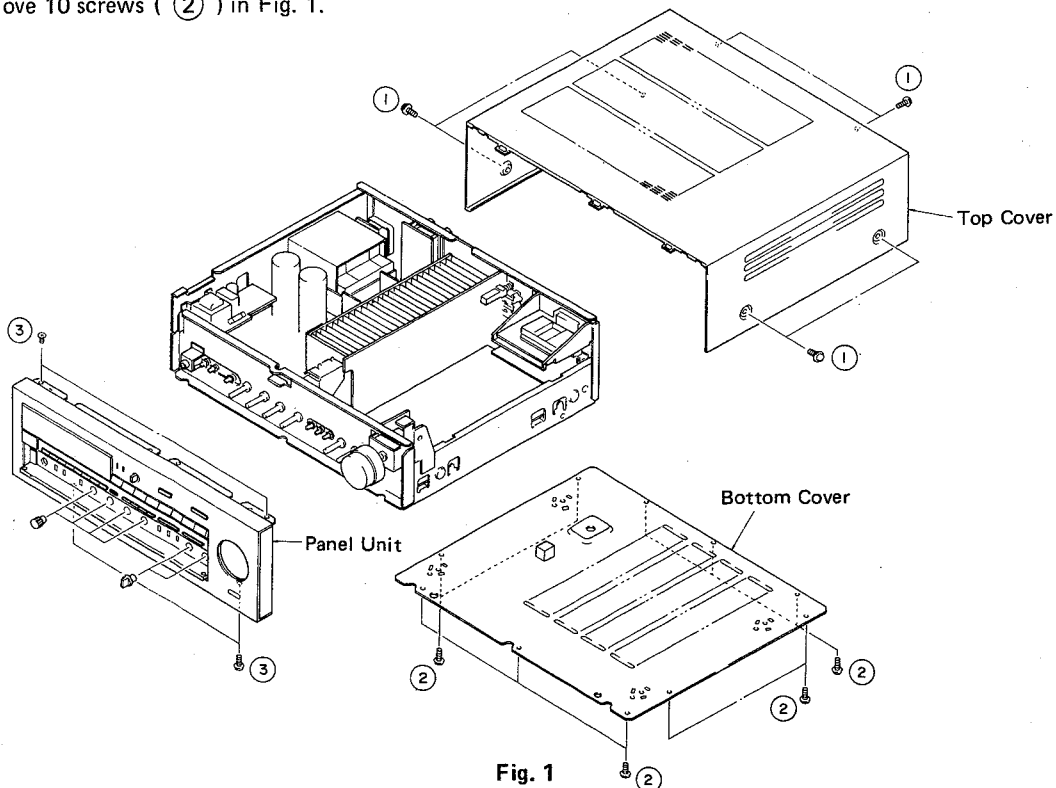
2. Removal of Bottom Cover

Remove 10 screws (②) in Fig. 1.

3. Removal of Panel Unit

a. Remove the knobs.

b. Remove 4 screws (③) in Fig. 1, and pull the Panel Unit forward.



■ 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) Proceed with the AM section adjustments after having finished the FM section adjustment.
- 4) $0\text{dB}\mu = 1\mu\text{V}$ 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
FC	: Frequency counter
A.C.V.M.	: AC voltagemeter
D.C.V.M.	: DC voltagemeter
F.C.	: Frequency counter

<POWER SUPPLY CHECK>

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

	Test point	Remark
Main	Q152 EMITTER	$+12 \pm 1\text{V DC}$
	Q153 EMITTER	$-12 \pm 1\text{V DC}$
	Q154 EMITTER	$+6.5 \pm 1\text{V DC}$
	Q155 EMITTER	$+6.5 \pm 1\text{V DC}$
Control	Q550 EMITTER	$+6 \pm 1\text{V DC}$

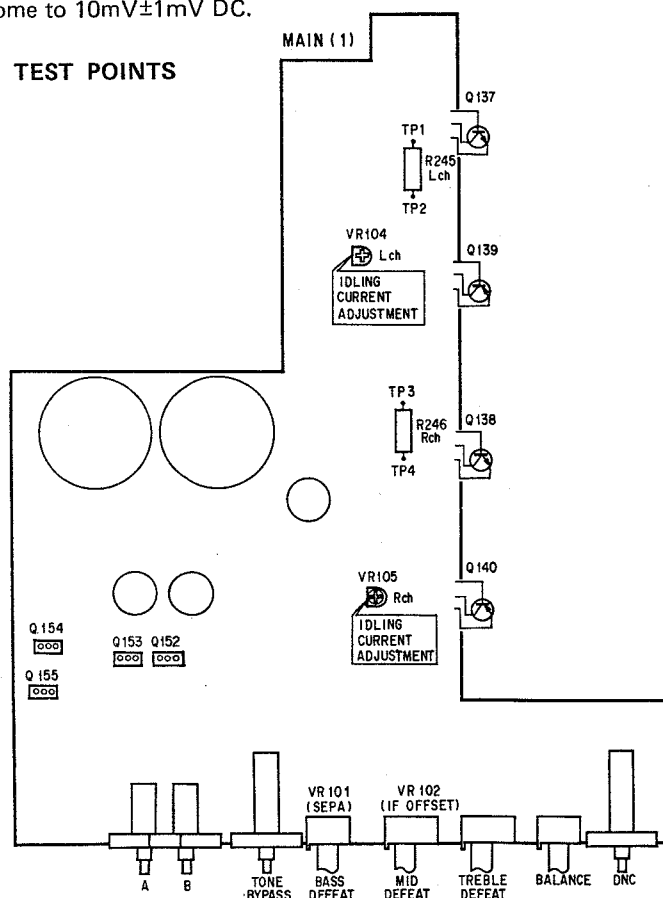
Make sure that AC line voltage comes within	
Modules	AC line voltage
U, C	$120\text{V} \pm 10\%$
G	$220\text{V} \pm 10\%$
A	$240\text{V} \pm 10\%$

<AUDIO SECTION>

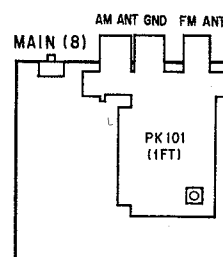
• IDLING CURRENT ADJUSTMENT

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 VR104 (Lch) and VR105 (Rch) so that the voltage across the terminals of R245 (TP1 - TP2) and R246 (TP3 - TP4) come to $10\text{mV} \pm 1\text{mV DC}$.

• TEST POINTS



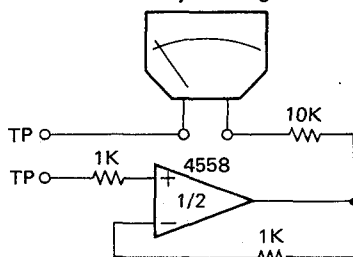
	Test point	Adjustment points	Raging
Lch	Across the terminals of R245 (TP1 - TP2)	VR104	$10\text{mV} \pm 1\text{mV}$
Rch	Across the terminals of R246 (TP3 - TP4)	VR105	$10\text{mV} \pm 1\text{mV}$



<FM TUNER SECTION>

- Use 19kHz L.P.F. to measure the REC OUT.
- Connect the auxiliary tuning meter (ji00036- or similar) to confirm the best tuned point.
- 100% modulation means that the Frequency Deviation is 75kHz. (R) (U) (C) (A)

Auxiliary Tuning Meter



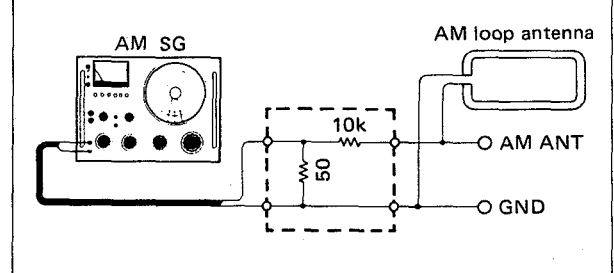
Step	Item to be adjusted	Connection terminal	Instrument required	Adjustment locations	Adjustment method	Rating or standard	Remarks
1	Discriminator balance	300Ω/75Ω FM ANT	FM SG 98MHz ± 1kHz 70dBμ (75.2dB) MONO 1kHz 100% MOD	T101 (CENTER)	Adjust the pointer of the auxiliary tuning meter points to "0" at detuned point.		
		TP ~ TP	Auxiliary tuning meter				
2	Confirmation of station tuned point set	300Ω/75Ω FM ANT	FM SG 98MHz ± 1kHz 70dBμ (75.2dBf) MONO 1kHz 100% MOD	TUNING Key AUTO → UP or DOWN	Confirm that the auxiliary tuning meter deflects to "0" when tuned to signal of FM SG.		
		NVcc ~ T.M	Auxiliary center meter				
3	Monaural distortion	300Ω/75Ω FM ANT	FM SG 98.1MHz ± 1kHz 70dBμ (81.2dBf) MONO 100Hz 100% MOD	VC101 (MONO)	Reduce distortion to minimum.	Less than -66dB	Local Mode
		REC OUT L, R	DIST. M L.P.F.				
4	Stereo distortion	300Ω/75Ω FM ANT	FM SG, SSG 98.1MHz ± 1kHz 70dBμ (81.2dBf) STEREO L, R 1kHz, 100% MOD	IFT in Front-end	Same as step 3	Less than -56dB	Confirm that Stereo indicator lights up. Local Mode
		REC OUT L, R	DIST. M L.P.F.				
5	Confirmation of monaural distortion	300Ω/75Ω FM ANT	FM SG 98.1MHz ± 1kHz 70dBμ (81.2dBf) MONO 1kHz 100% MOD			Less than -56dB	
		REC OUT L, R	DIST. M L.P.F.				
6	Separation	300Ω/75Ω FM ANT	FM SG SSG 98.1MHz ± 1kHz 70dBμ (81.2dBf) STEREO L, R 1kHz 100% MOD	VR 101 (SEPA)	Separation maximum. (L→R, R→L)	Less than 40dB	
		REC OUT L, R	ACVM L.P.F.				

Step	Item to be adjusted	Connection terminal	Instrument required	Adjustment locations	Adjustment method	Rating or standard	Remarks
7	Confirmation of discriminator balance	300Ω/75Ω FM ANT	FM SG 98.1kHz ± 1kHz 70dBμ (81.2dBf) MONO 1kHz 100% MOD		Confirm that the auxiliary tuning meter points to "0" at detuned point.		If not: Report from step 1.
		REC OUT L, R	Auxiliary center meter or DCVM				
8	Full-scale signal quality level	300Ω/75Ω FM ANT	FM SG, SSG 98.1MHz ± 1kHz 70dBμ (81.2dBf) MONO 1kHz, 30% MOD				
		REC OUT L, R	DCVM				
9	IF Offset	300Ω/75Ω FM ANT	FM SG 98MHz ± 1kHz 70dBμ (75.2dBf) STEREO L, R 1kHz 30% MOD	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.
		K4 ~ T6	Short				
10	Confirmation of auto search reception	300Ω/75Ω FM ANT	FM SG 98.1MHz ± 1kHz 20dBμ (31.2dBf/75Ω), MONO 1kHz 30% MOD			Confirm that auto search reception is possible with the tuning UP/DOWN key.	Confirm that muting is performed at auto reception.

<AM TUNER SECTION>

- Connect the AM loop antenna to the AM ANT terminals.
- Connect the AM dummy antenna for adjustment.
- Shorting K4 and T6 while set at FM will result in automatic memory of each preset from P1/P9 to P8/P16 as given in the right table. This is convenient when making an adjustment.

AM DUMMY ANTENNA CONNECTION



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

Step	Item to be adjusted	Connection terminal	Instrument required	Adjustment locations	Adjustment method	Rating or standard
1	Confirmation of sensitivity	AM ANT	AM SG AM dummy antenna 630kHz ± 0.1kHz 1080kHz ± 0.1kHz 1440kHz ± 0.1kHz 400Hz, 30% MOD	PRESET STATION key P1/P9 P2/P10 P3/P11	Obtain AM SG output level where distortion become 10%.	Less than 58dBμ (69.2dBf)
		OUTPUT	A.C.V.M. DST. M.			
2	Full-scale signal quality level					
3	Confirmation of auto search reception	AM ANT	AM SG AM dummy antenna 1080kHz ± 0.1kHz 60dBμ (71.2dBf) 400Hz, 30% MOD	TUNING key UP to DOWN	Confirm that auto search reception is possible with the tuning UP/DOWN key.	Confirm that muting is performed at auto reception.

< 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 (75.2dBf) STEREO, L, R 1kHz, 100% MOD]	FUNCTION key TUNING MODE key TUNING key (Up to DOWN) MEMORY key PRESET STATION key P1-P8/P9-P16	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]		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.
					8 Press P1 and P2 and check that content is read out. → P1 and P2 of PRESET STATION indicator lights.
		AM ANT	AM SG AM dummy antenna [1080kHz ± 0.1kHz 80dBμ (91.2dBf) 400Hz, 30% MOD]		9 Set P9-P16 → P9-P16 indicator flashes. 10 Press MEMORY key → MEMORY indicator flashes. 12 Press P9 → MEMORY indicator goes OFF. P9-P16 indicator lights. P9 indicator lights.
					13 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) PRESET STATION key P1, P2	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
					Check that tuning operation stops when tuned while AUTO searching. TUNING MODE indicator → lights up ST indicator → lights up
3	Fine Tuning	Same as step 1	Same as step 1	PRESET STATION key P1, P2 FINE TUNING key (+ or -)	1 Press P1 and content is read out (FM) 2 Press FINE TUNING key → FINE TUNING indicator lights. 3 Press FINE TUNING key and check that 10kHz step search. 4 Press P2 and content is read out (AM) 5 Press FINE TUNING key and check that 1kHz step search.
4	Receiving Mode			PRESET STA- TION 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 →
5	Last channel memory			POWER key	1 Read out P1. 2 Turn OFF POWER key. 3 Turn ON POWER key after 5 seconds. 4 P1 content should come on. P1 of PRESET STATION indicator lights.

μ -COM DATA

• IC506: 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)

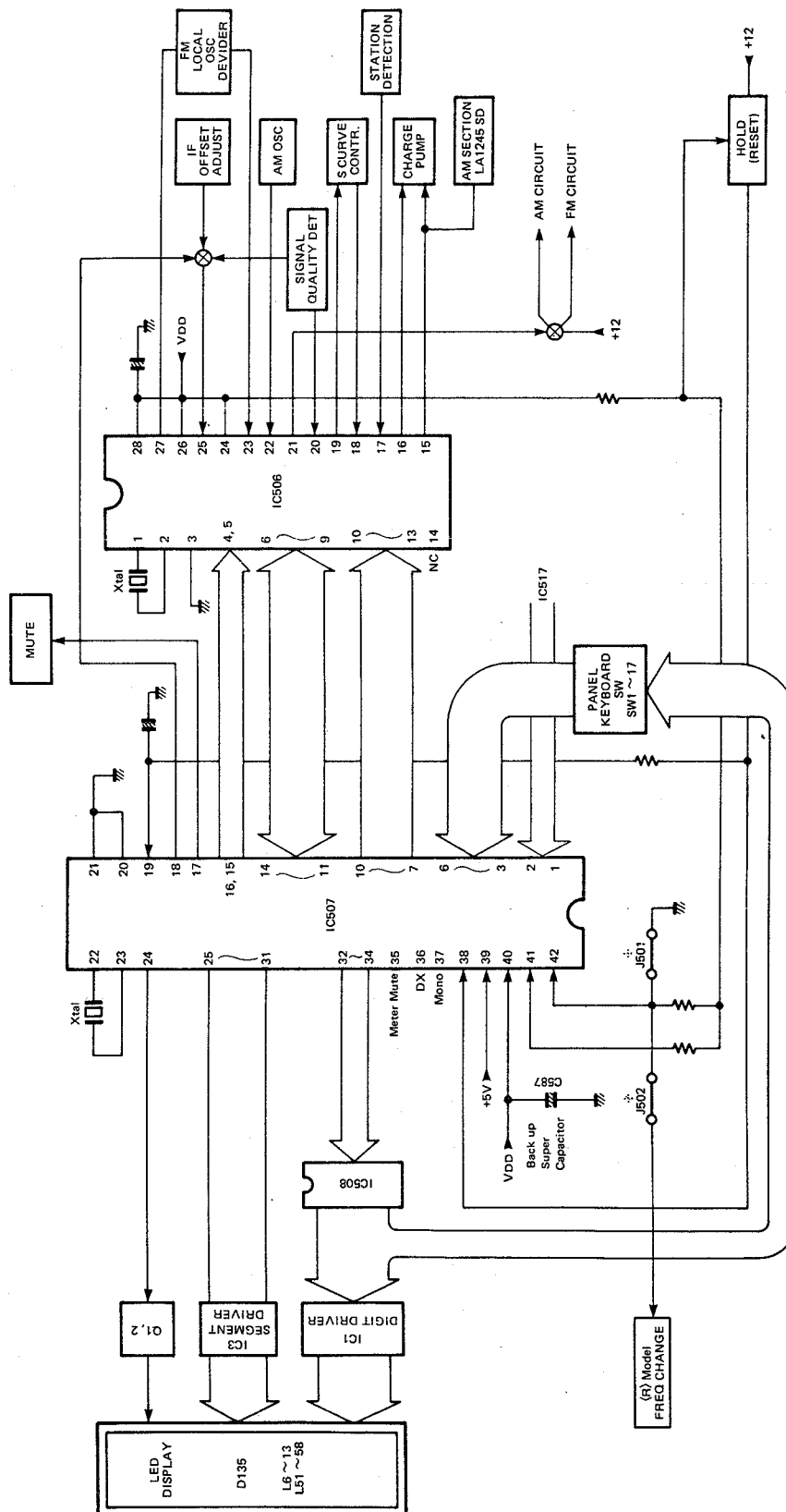
Terminal No.	Description	I/O	Function
1	Xin	IN	Oscillation terminals. By connecting Quartz across Xin and Xout, and load capacity across both terminals and Vss, basic clock signal is generated (32kHz).
2	Xout	OUT	
3	Vss	—	Ground terminal
4	DI/DO	IN	Pull-up feature. Input terminal which controls whether 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.

● IC507: CSL Controller 3232 (LC6505C-3232)

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 TU2	IN	REMOTE CONTROL SIGNAL INPUT	1 pin 2 pin	0	1
2	PA3 TU1	IN		0	NOT USED	CH UP
				1	CH DOWN	A/B CHANGE
3	PB ₀ K1	IN	Key matrix input. Judges the switches 1 to 17.			
4	PB ₁ K2	IN				
5	PB ₂ K3	IN				
6	PB ₃ K4	IN				
7	PC ₀ CO	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	V _{ss}	—	Power ground.			
22	OSC1	IN	Terminals for clock oscillating circuit.			
23	OSC2	OUT				
24	PF ₀ H	OUT	Display, segment output.		h segment.	
25	PF ₁ G	OUT			g segment.	
26	PF ₂ F	OUT			f segment.	
27	PF ₃ E	OUT			e segment.	
28	PG ₀ D	OUT			d segment.	
29	PG ₁ C	OUT			c segment.	
30	PG ₂ B	OUT			b segment.	
31	PG ₃ A	OUT		a segment.		
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	—	Not used (Pull up to +5V)			
40	V _{dd}	—	Power source +5V			
41	PA ₀ A0	IN	Destination symbol.	41 pin 41 pin	0	1
				0	(J)	G
42	PA ₁ A1	IN		1	U AM 9K	U AM 10K

● Block Diagram of Microcomputer Peripheral Circuit



* Marked

	R	U, C	A
J501	OPEN	OPEN	SHORT
J502	SHORT	OPEN	OPEN

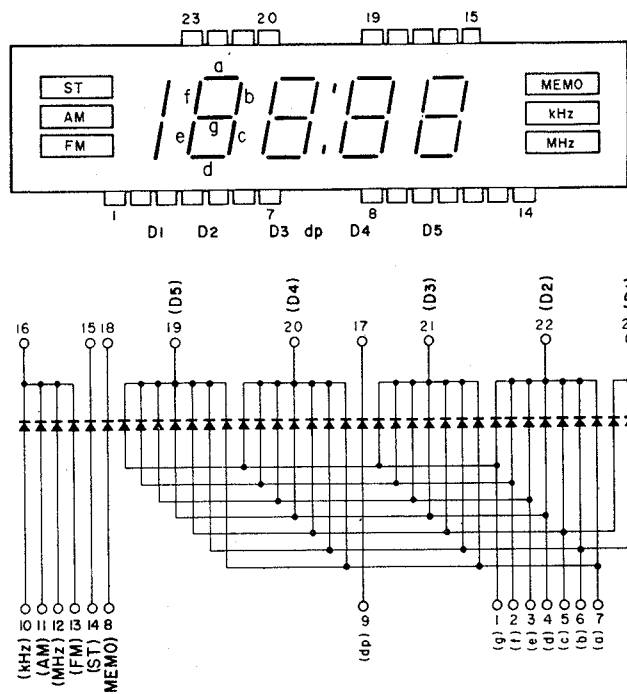
● IC517: A, V Controller 3203 (LC6505C-3203)

1-chip type 4-bit microcomputer which incorporates 1024 x 8 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 V _{ss} (0V).
21	V _{ss}	—	Connected to 0V of power supply.
22	OSC 1	IN	Used by supplying external clock. Also used with OSC 2 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	V _{DD}	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		

■ CIRCUIT DATA

● 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" "kHz" "MHz"	Cathode
17	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 (Frequency Display, L6 ~ L13, L51 ~ L58)

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 (L7)
T2 [15 Pin]	LOCAL (L8)	D1 b	D1 c	AUTO RX (L9)	DX (L10)	AUTO (L11)		P1-8 (L6)
T1 [2 Pin]	P-1/9 (L51)	P-2/10 (L52)	P-3/11 (L53)	P-4/12 (L54)	P-5/13 (L55)	P6/14 (L56)	P-7/15 (L57)	P8/16 (L58)
T0 [14 Pin]	MEMO	CSL (L12)	kHz	AM	MHz	FM		FINE (L13)

● MATRIX OF INPUT KEY

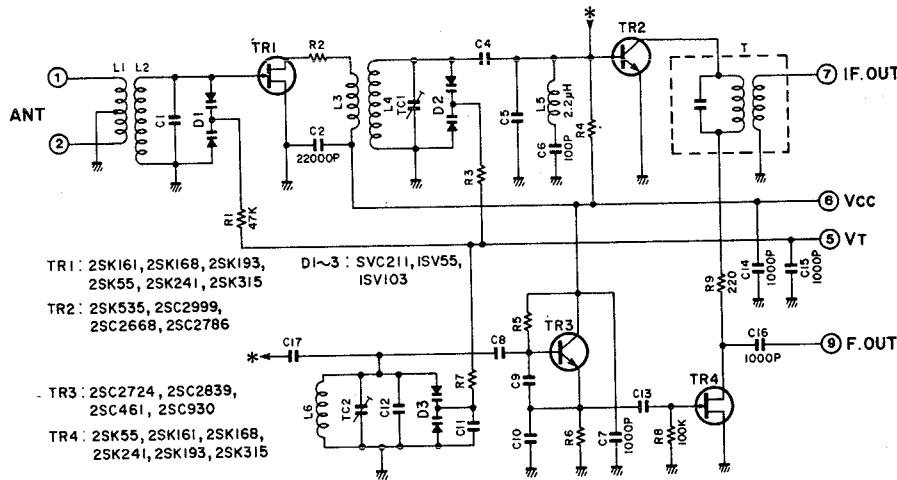
IC107 IC108	T1 [2 Pin]	T2 [15 Pin]	T3 [1 Pin]	T4 [6 Pin]	D5 [7 Pin]	T6 [4 Pin]
K1 [3 Pin]	P1/9	P5/13		UP	P1-8/ P9-16	
K2 [4 Pin]	P2/10	P6/14		DOWN	FM/AM	
K3 [5 Pin]	P3/11	P7/15	AUTO/ MAN'L	FINE UP	RECEIVING MODE	
K4 [6 Pin]	P4/12	P8/.6	MEMORY	FINE DOWN		TEST (OFFSET)

• IC107 DATA TABLE

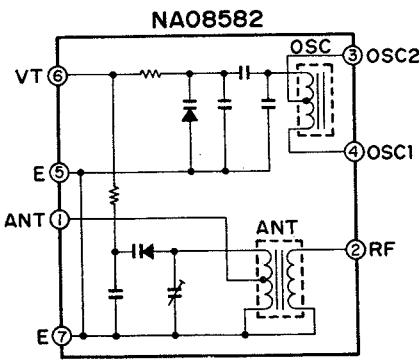
INPUT			OUTPUT						
TC [12 Pin]	TB [13 Pin]	TA [10 Pin]	T0 [14 Pin]	T1 [2 Pin]	T2 [15 Pin]	T3 [1 Pin]	T4 [6 Pin]	T5 [7 Pin]	T6 [4 Pin]
0	0	0	0	0	0	0	0	0	0
0	0	1	1	0	0	0	0	0	0
0	1	0	0	1	0	0	0	0	0
0	1	1	0	0	1	0	0	0	0
1	0	0	0	0	0	1	0	0	0
1	0	1	0	0	0	0	1	0	0
1	1	0	0	0	0	0	0	1	0
1	1	1	0	0	0	0	0	0	1

• FRONT END PACK (PK101)

PA00081

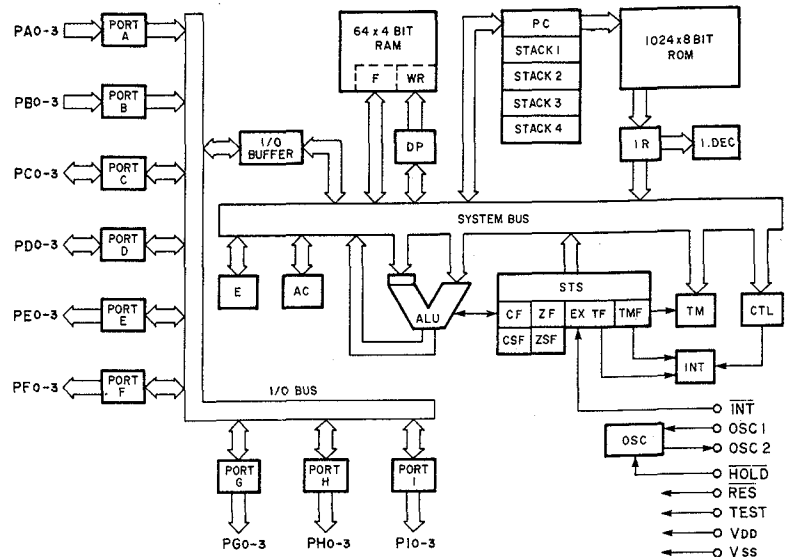
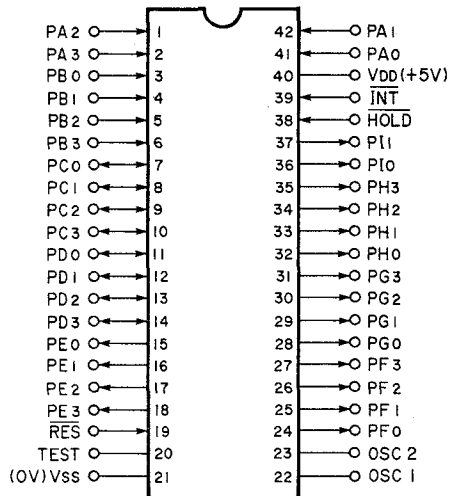


• AM Coil Pack (U101)

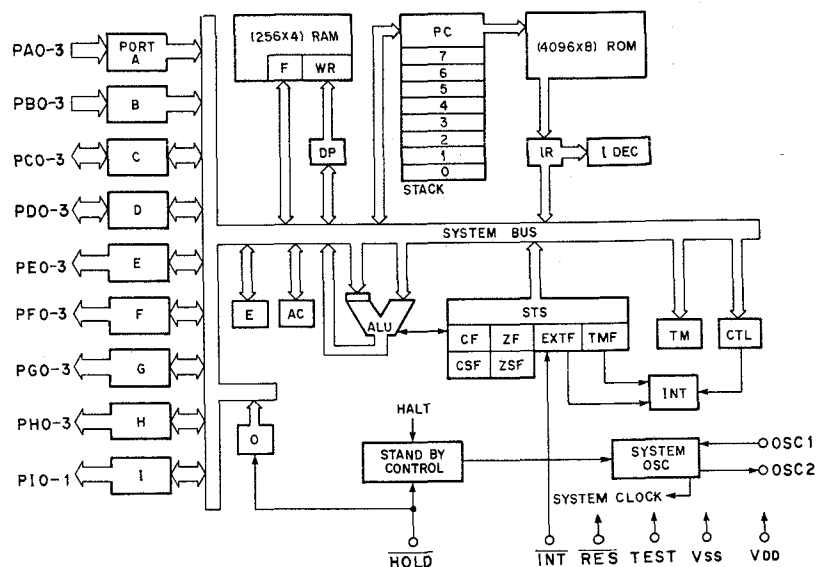
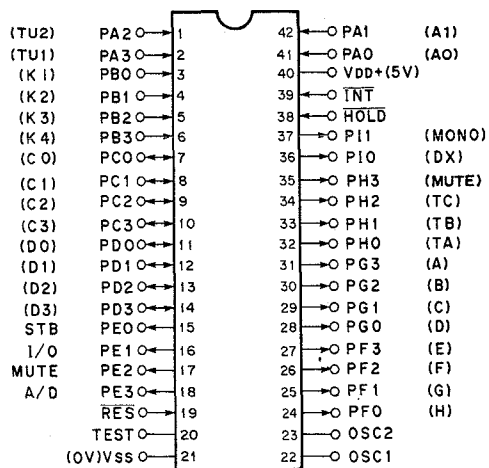


IC BLOCK

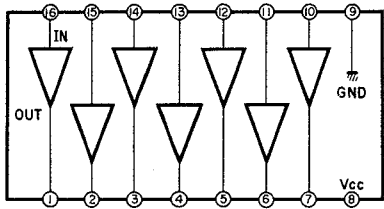
IC517: LC6505C-3203 (4 bit μ -COM)



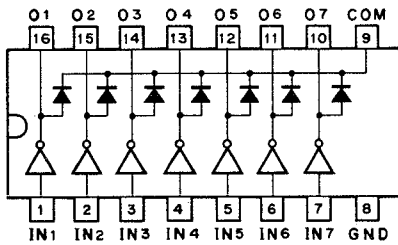
IC507: LC6510C-3232 (4 bit μ -COM)



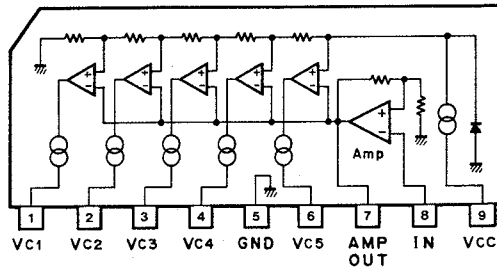
IC1: BA618 (LED Driver)



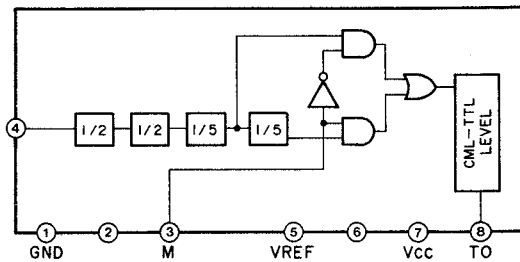
IC2: M54526 or LB1234 or BA12004 (LED Driver)



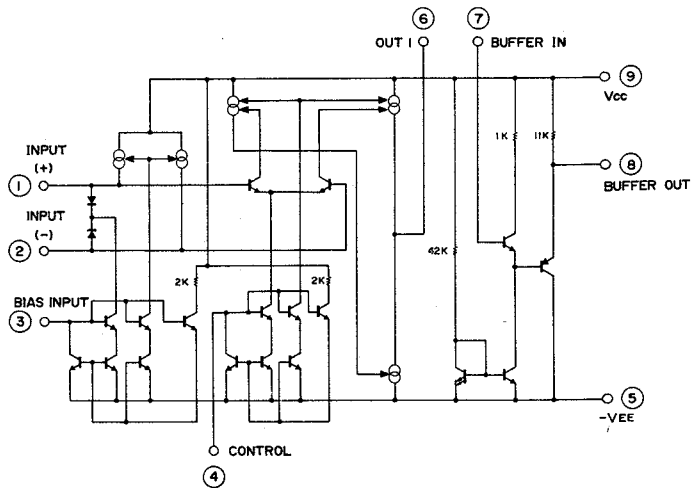
IC3: LB1413 (Level Meter)



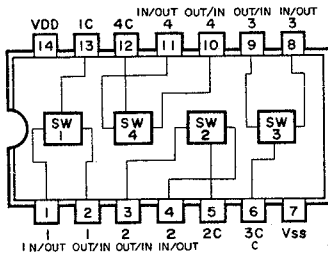
IC101: M54459L (Pre-scanner)



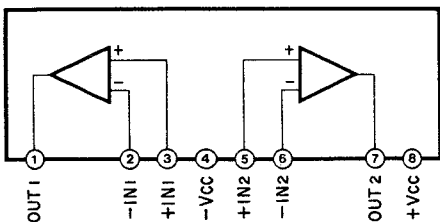
IC106, 107: BA6110 (V,C,A)



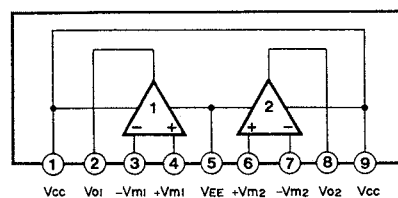
IC102~104, 510~513, 523~525: LC4966 (Switch)



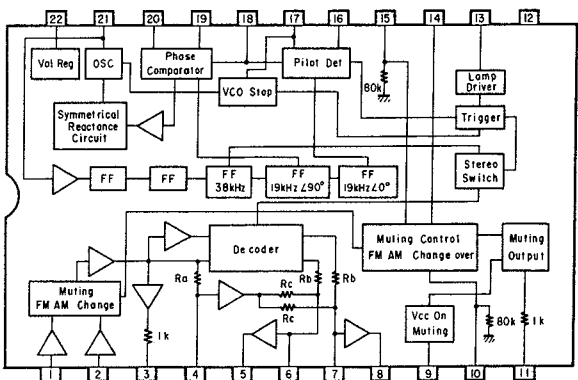
IC105: M5220L (Ope-amp)



IC503, 519~521: NJM4558S (Dual Ope-amp)

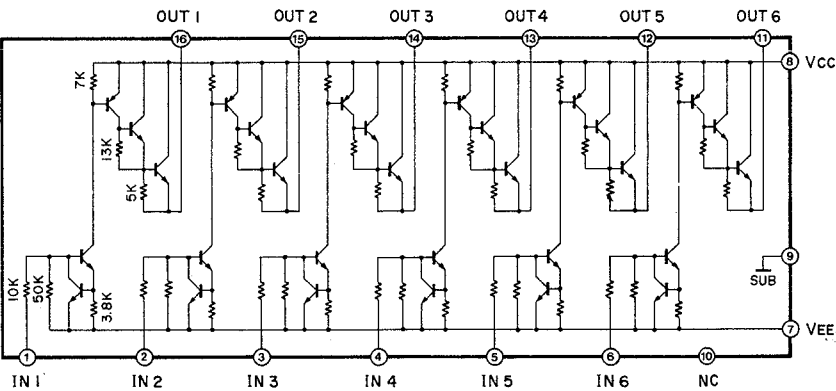


IC504: LA3401 (MPX)

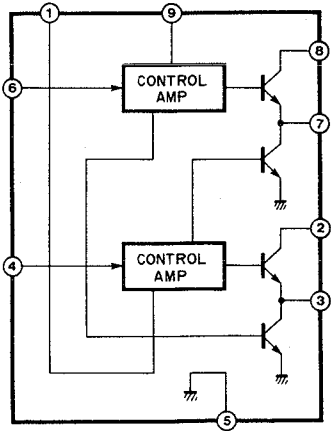


Pin No.	Function
1	Input (AM)
2	Input (FM)
3	Composite Amp Output
4	Separation Adj
5	Post Amp Output
6	Post Amp Input
7	Post Amp Input
8	Post Amp Output
9	Muting ON (Vcc)
10	AM/FM Select
11	Muting Output
12	GND
13	Stereo Indicator
14	Mute Select
15	Muting
16	Pilot Detector Filter
17	Pilot Detector Filter, VCO Stop
18	PLL Input
19	Loop Filter
20	Loop Filter
21	OSC
22	Vcc

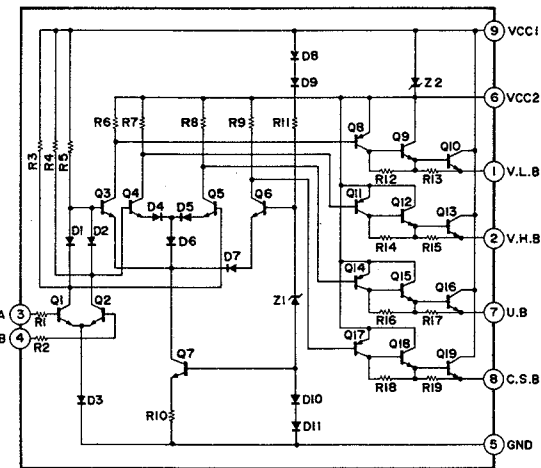
IC514, 515: LB1294 (LED Driver)



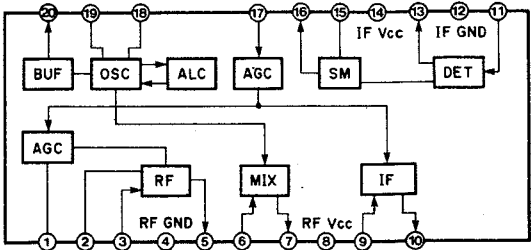
IC518: M54542 (Motor Driver)



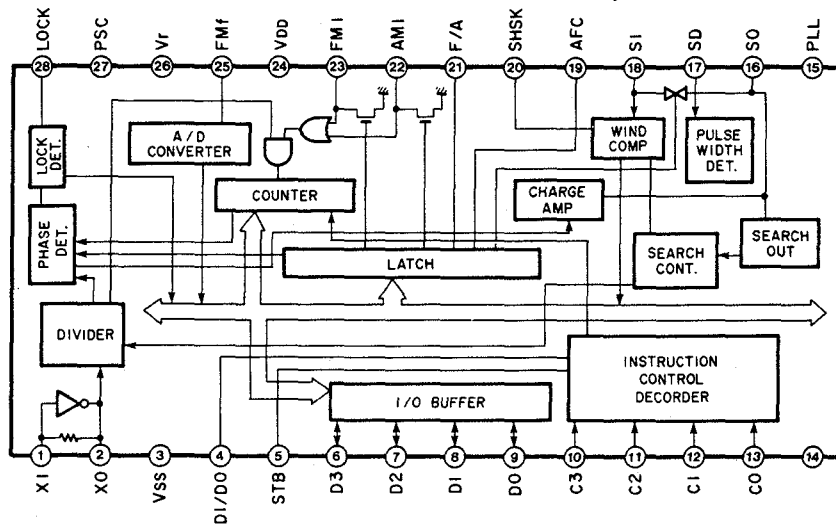
IC516: LA7910 (Switch)



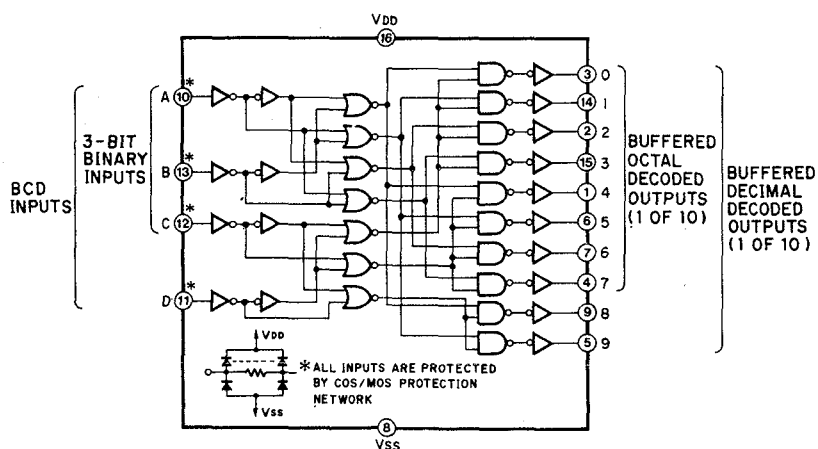
IC505: LA1245 (AM Tuning Control)



IC506: LC7210 (Tuning Control for CSL Synthesizer System)

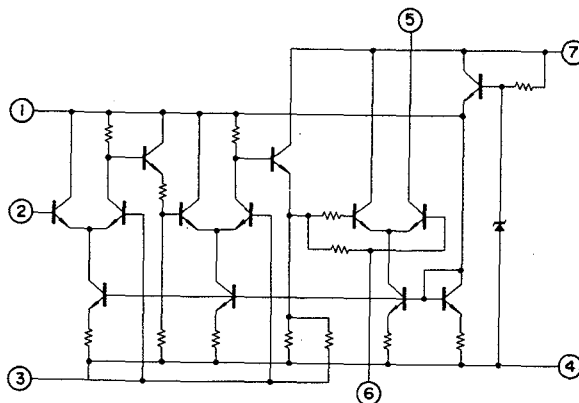


IC508: TC4028BP or BU4028B

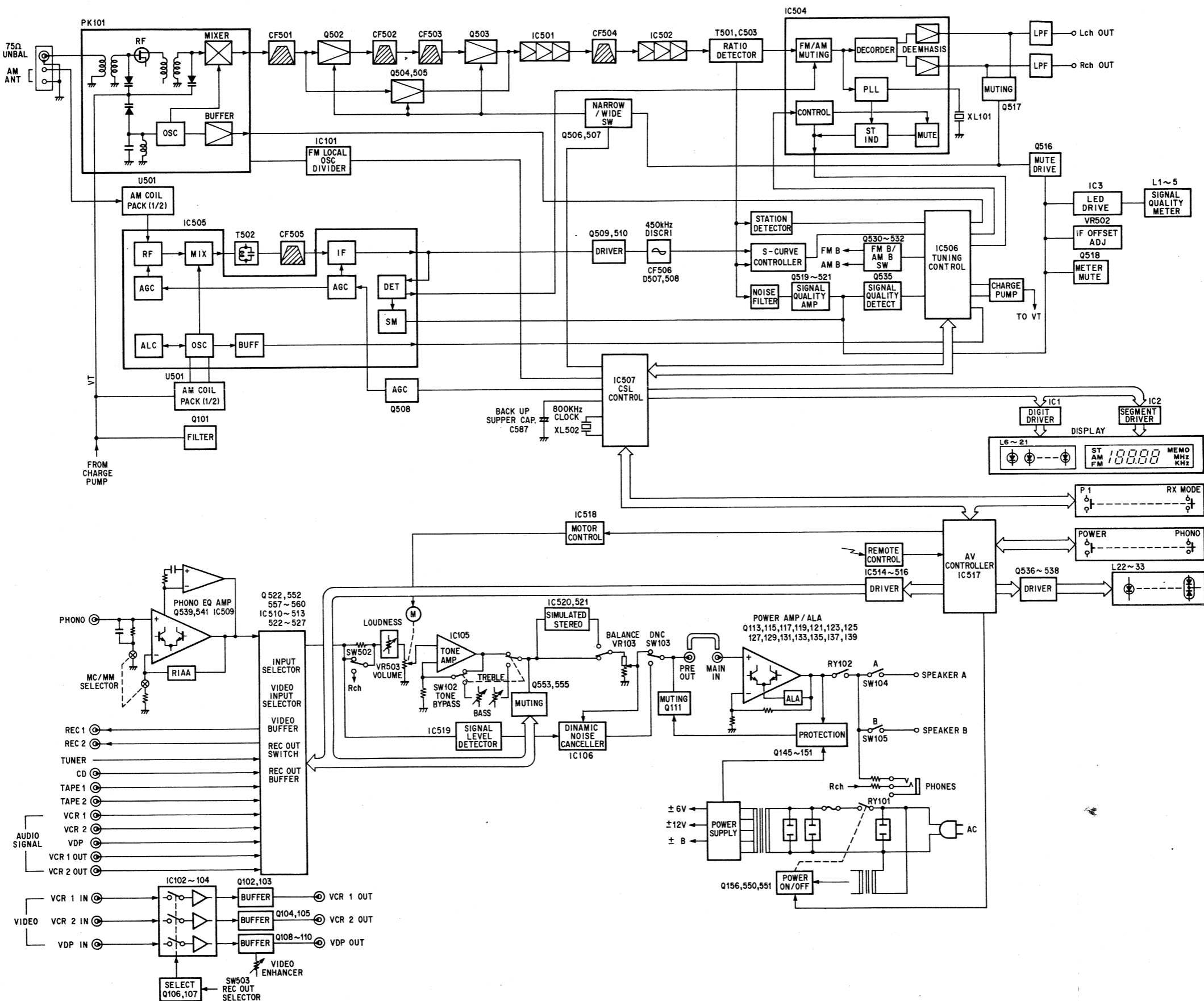


Data Table

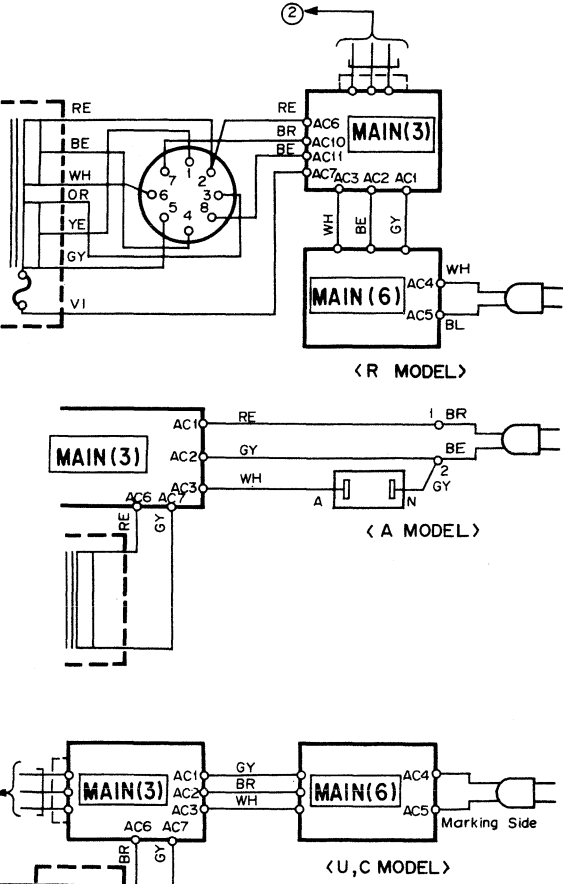
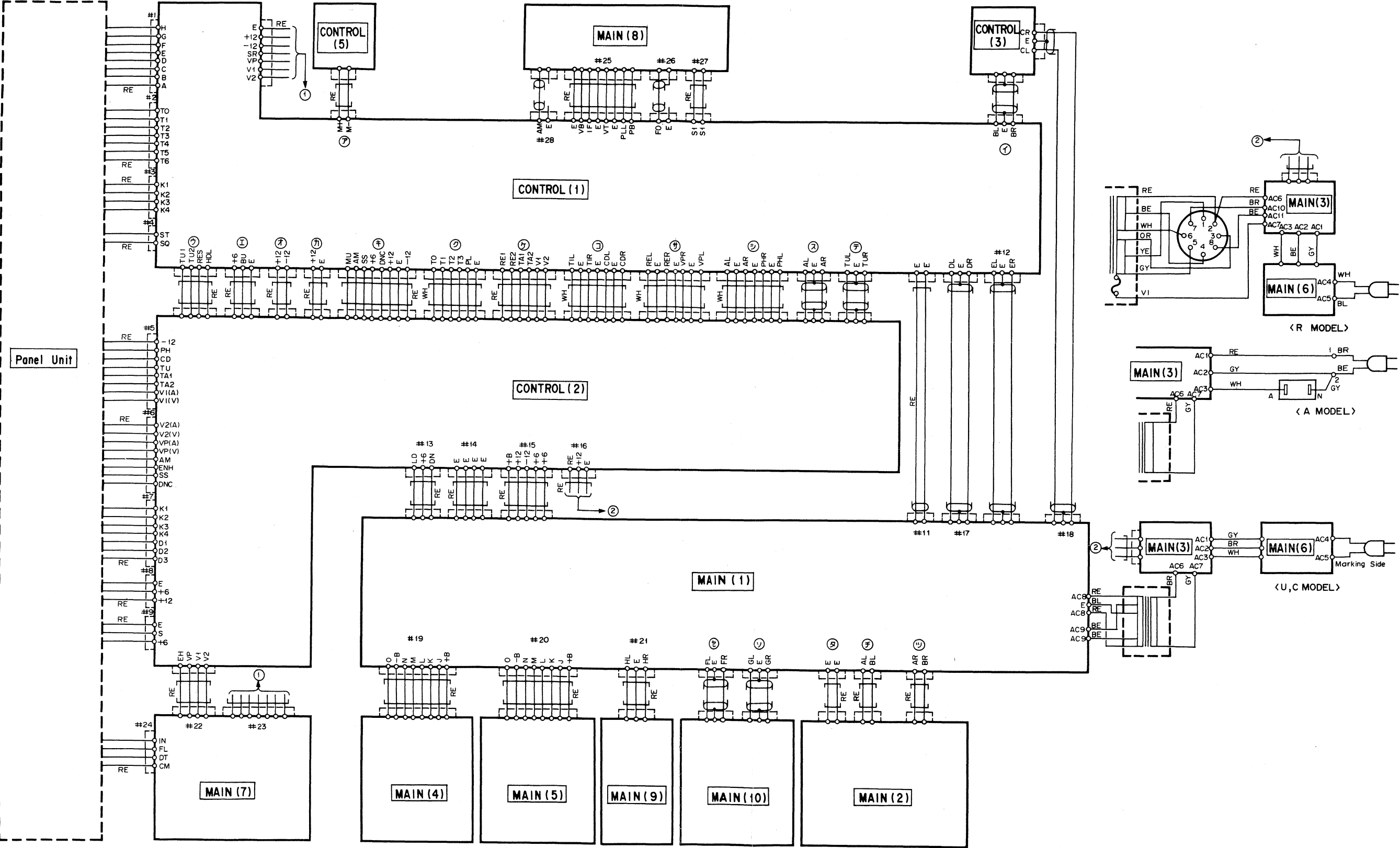
D	C	B	A	0	1	2	3	4	5	6	7	8	9
0	0	0	0	1	0	0	0	0	0	0	0	0	0
0	0	0	1	0	1	0	0	0	0	0	0	0	0
0	0	1	0	0	0	1	0	0	0	0	0	0	0
0	0	1	1	0	0	0	1	0	0	0	0	0	0
0	1	0	0	0	0	0	0	1	0	0	0	0	0
0	1	1	0	0	0	0	0	0	1	0	0	0	0
0	1	1	1	0	0	0	0	0	0	1	0	0	0
1	0	0	0	0	0	0	0	0	0	0	1	0	0
1	0	0	1	0	0	0	0	0	0	0	0	1	0
1	0	1	0	0	0	0	0	0	0	0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

IC501, 502: μ PC577H (E, F)

■ BLOCK DIAGRAM



■ WIRING

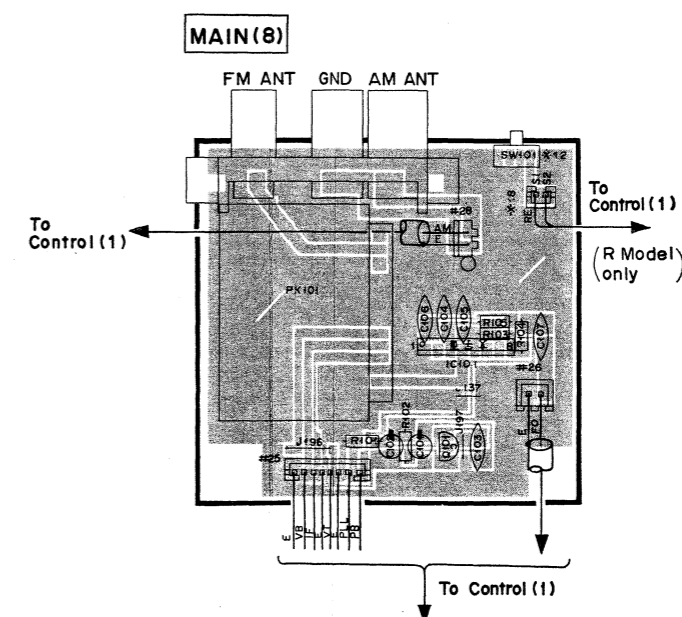


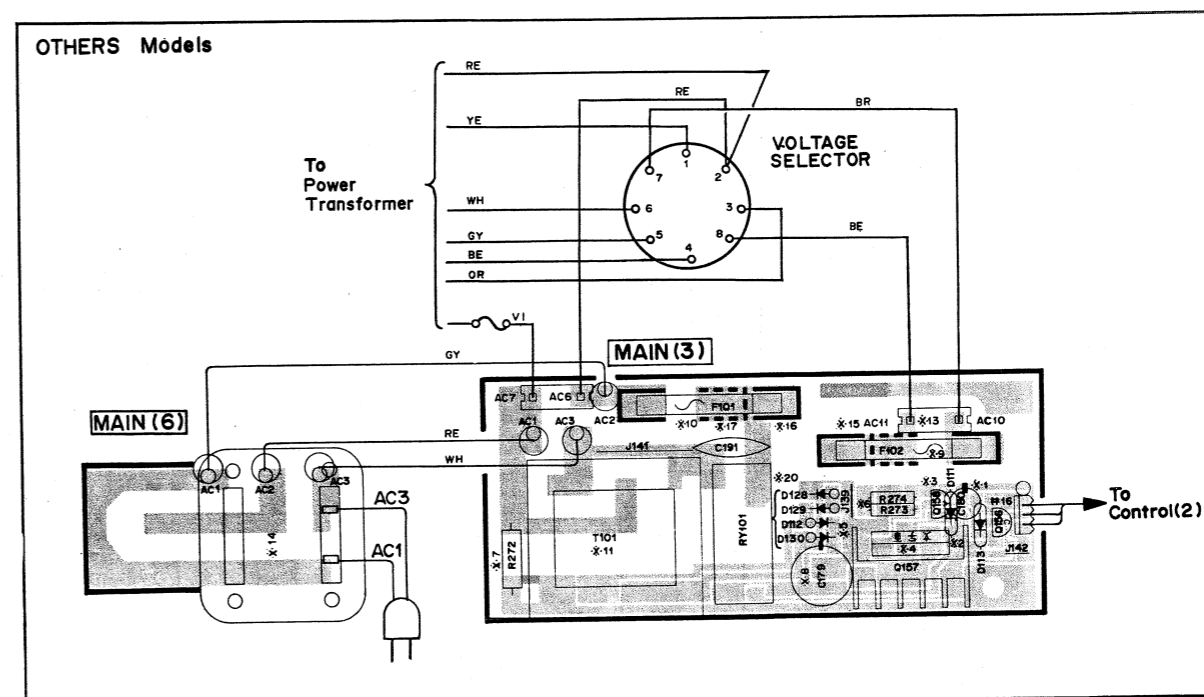
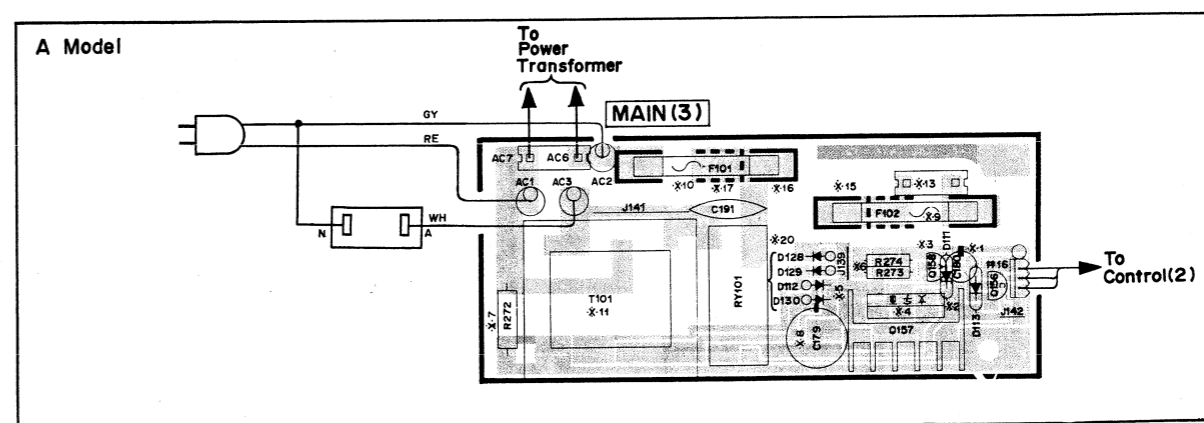
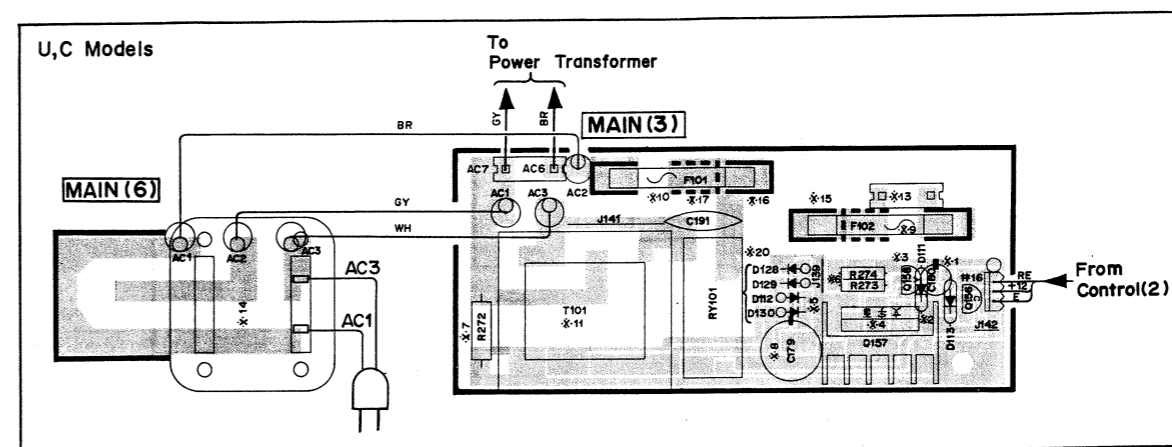
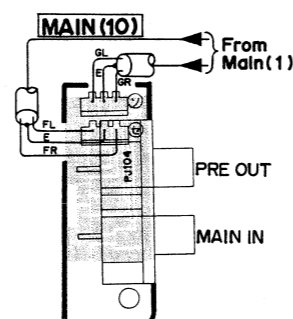
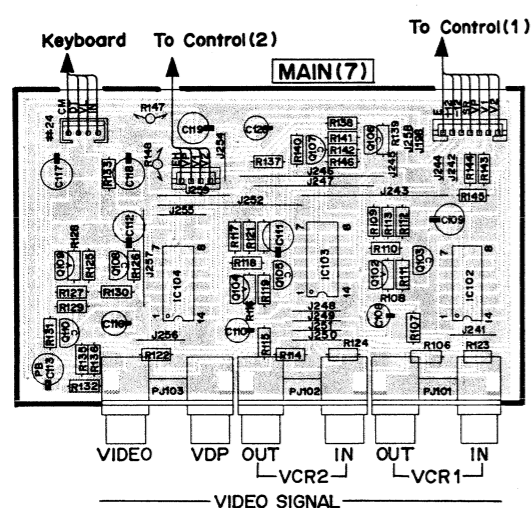
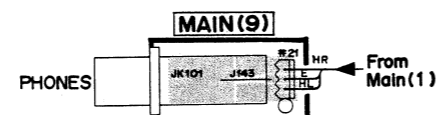
RX-900/900U

7



Note: * marked				
#		R	U.C	A
1	C180	10/16	OPEN	OPEN
2	D111	HZ12A3	OPEN	OPEN
3	Q158	2SA1015 (Y)	OPEN	OPEN
4	Q157	2SD1485	OPEN	OPEN
5	J139	OPEN	SHORT	SHORT
6	R273, 274	4.7K	OPEN	OPEN
7	R272	OPEN	1/2P 2.2M	OPEN
8	C179	100/63	470/25	470/25
9	F102	T3.5A250V	OPEN	OPEN
10	F101	T7.0A250V	7A125V	T3.15A250V
11	T101	XC115A0	XC116A0	XC117A0
12	SW101	KA40169	OPEN	OPEN
13	VD004600	○	—	—
14	AC Outlet	LB40145	LB40146	—
15	PC-FH1	○	—	—
16	PC-FH1	○	OPEN	—
17	PC-FH1	—	OPEN	○
18	24 Base Pin 2P	○	—	—
19	51 Heat Shink	○	—	—
20	D128~130	1SR35-100AT-93X	OPEN	OPEN





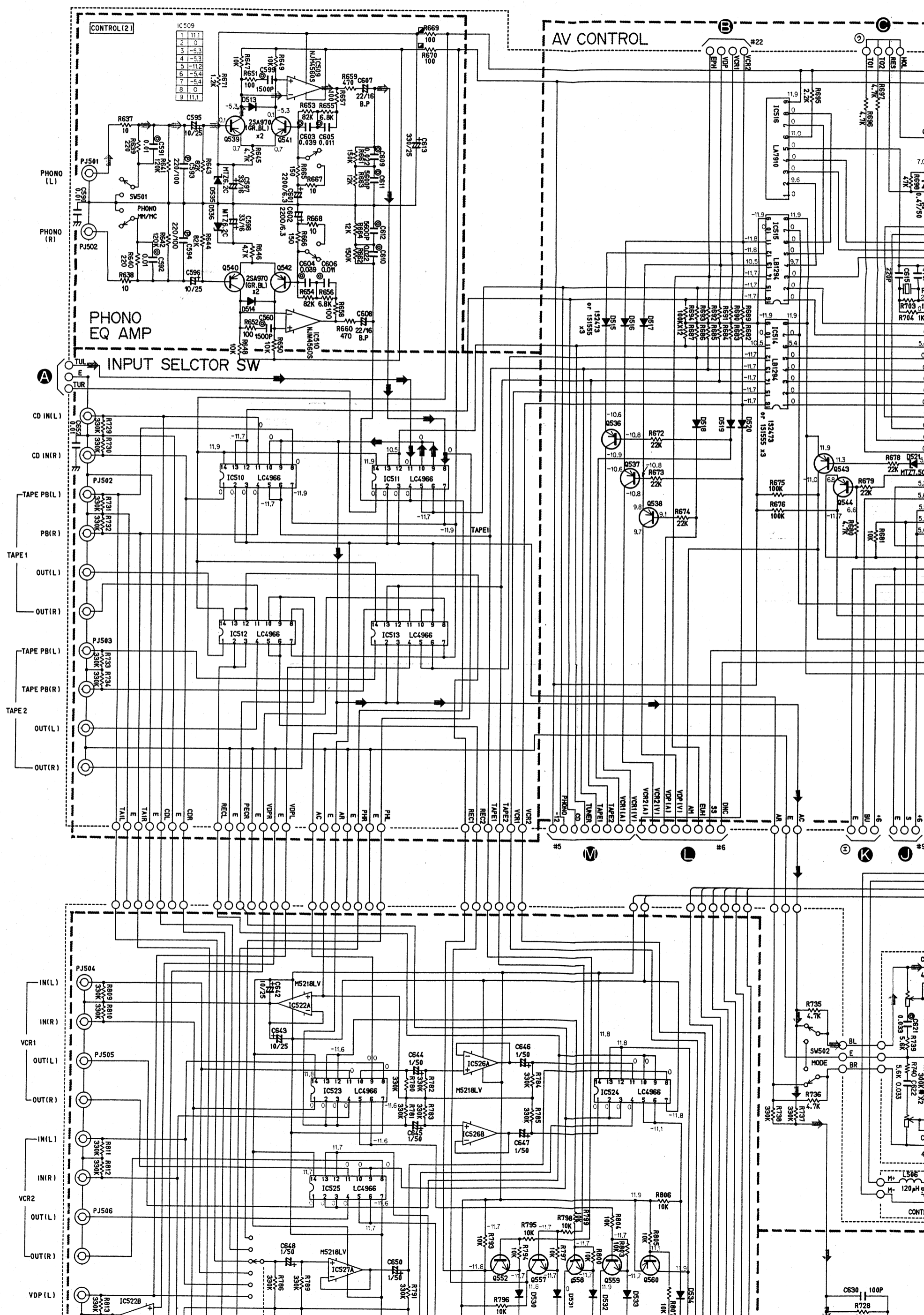


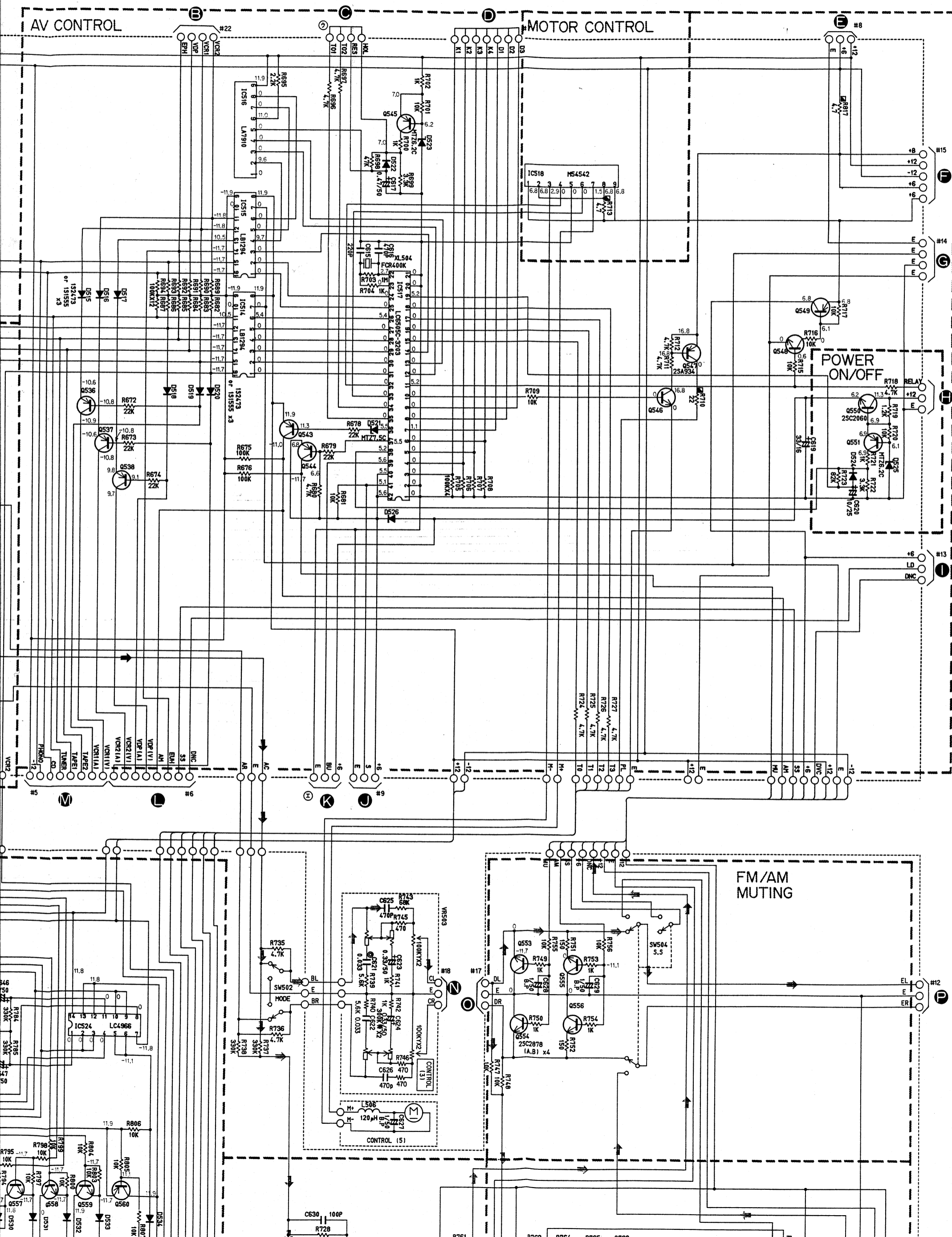
■ PRINTED CIRCUIT BOARD (Pattern Side)

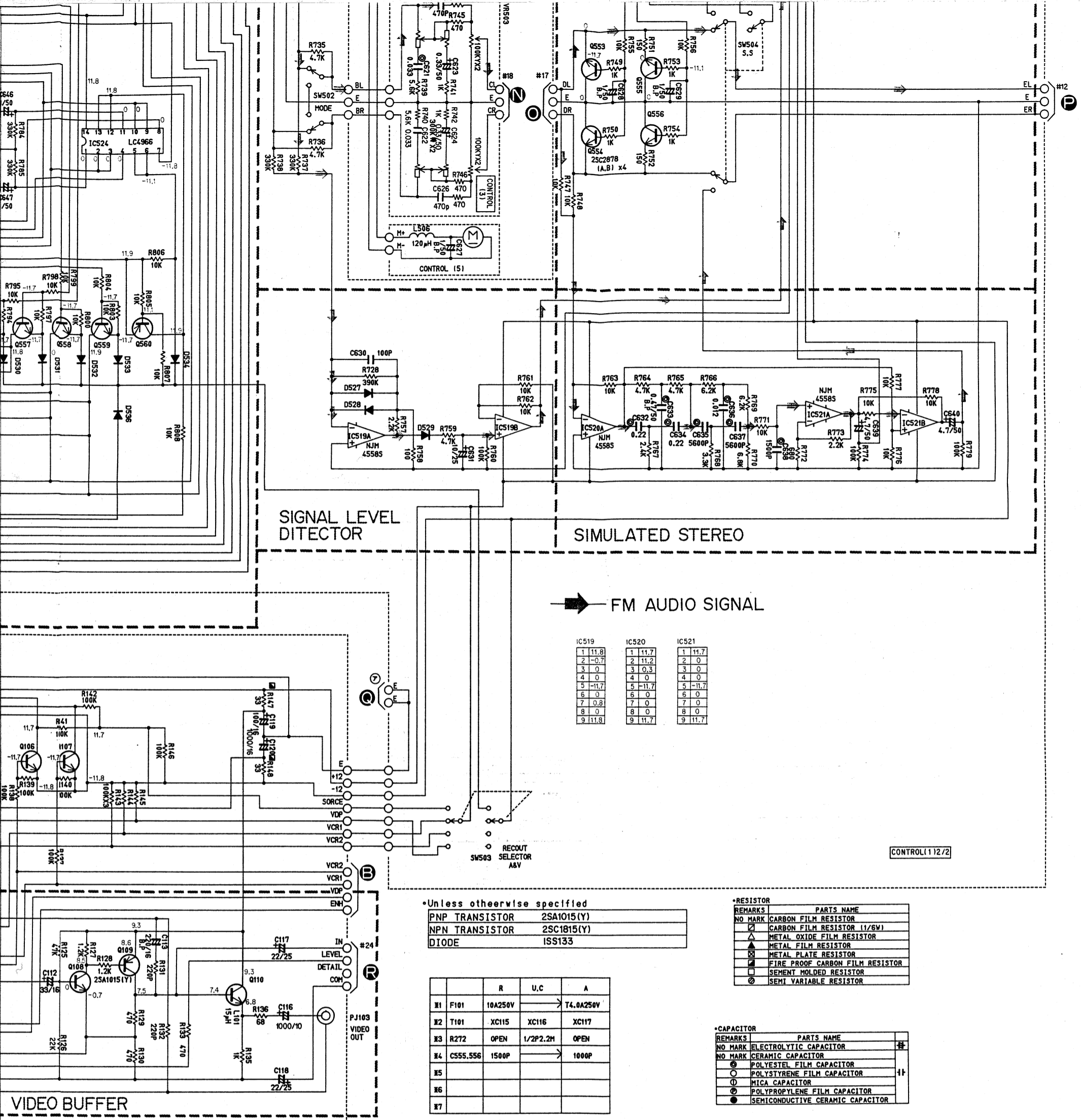
(Note) 文字面：Component Side



F







IC519	IC520	IC521
1 11.8	1 11.7	1 11.7
2 -0.7	2 11.2	2 0
3 0	3 0	3 0
4 0	4 0	4 0
5 -11.7	5 -11.7	5 -11.7
6 0	6 0	6 0
7 0.8	7 0	7 0
8 0	8 0	8 0
9 11.8	9 11.7	9 11.7

•Unless otherwise specified

PNP TRANSISTOR	2SA1015(Y)
NPN TRANSISTOR	2SC1815(Y)
DIODE	1SS133

	R	U.C	A
#1	F101	10A250V	T4.0A250V
#2	T101	XC115	XC116
#3	R272	OPEN	1/2P2.2M
#4	C555.556	1500P	1000P
#5			
#6			
#7			

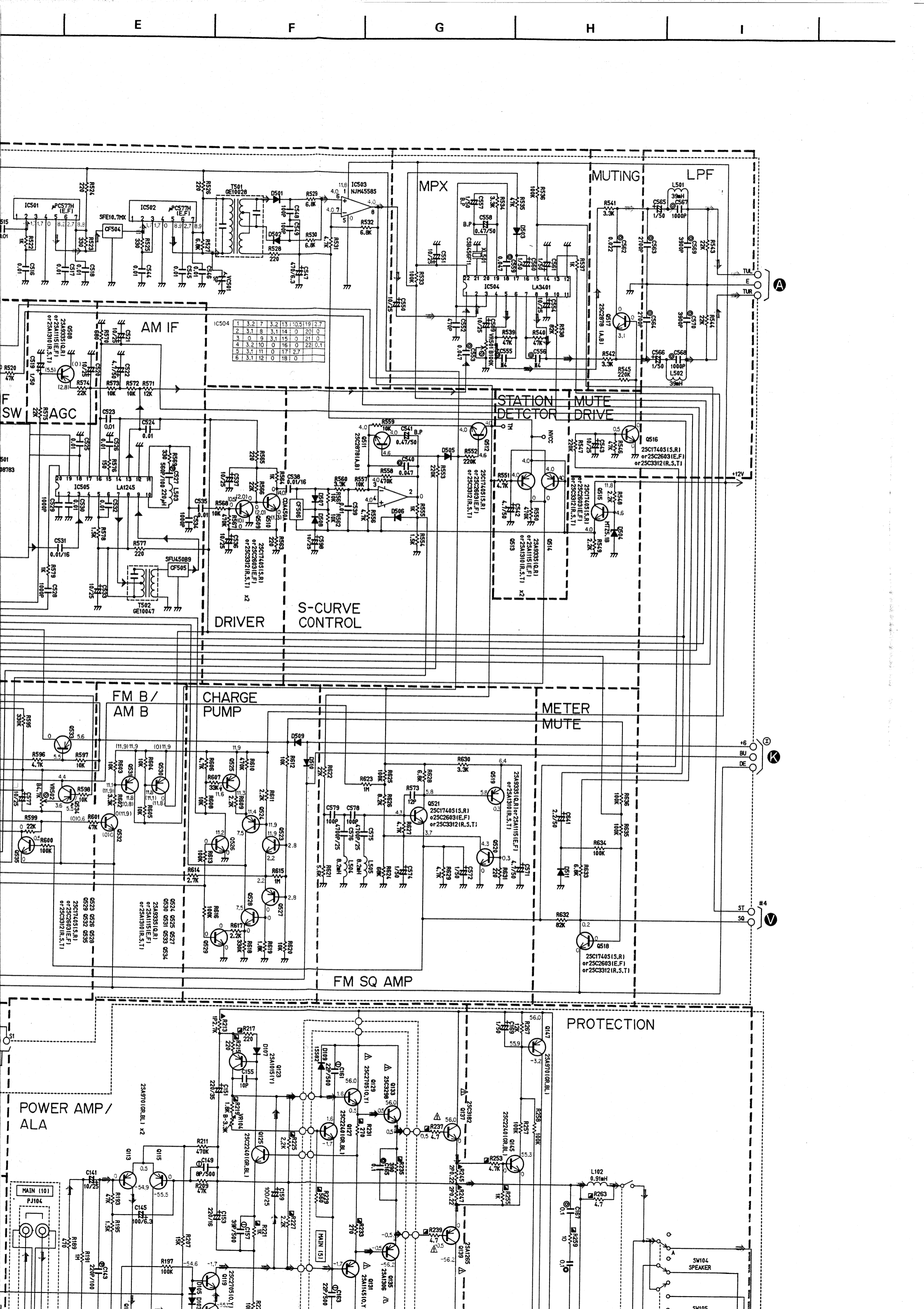
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR
□	CARBON FILM RESISTOR (1/8W)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
■	METAL PLATE RESISTOR
■	FIRE PROOF CARBON FILM RESISTOR
■	SEMENT MOLDED RESISTOR
⊗	SEMI VARIABLE RESISTOR

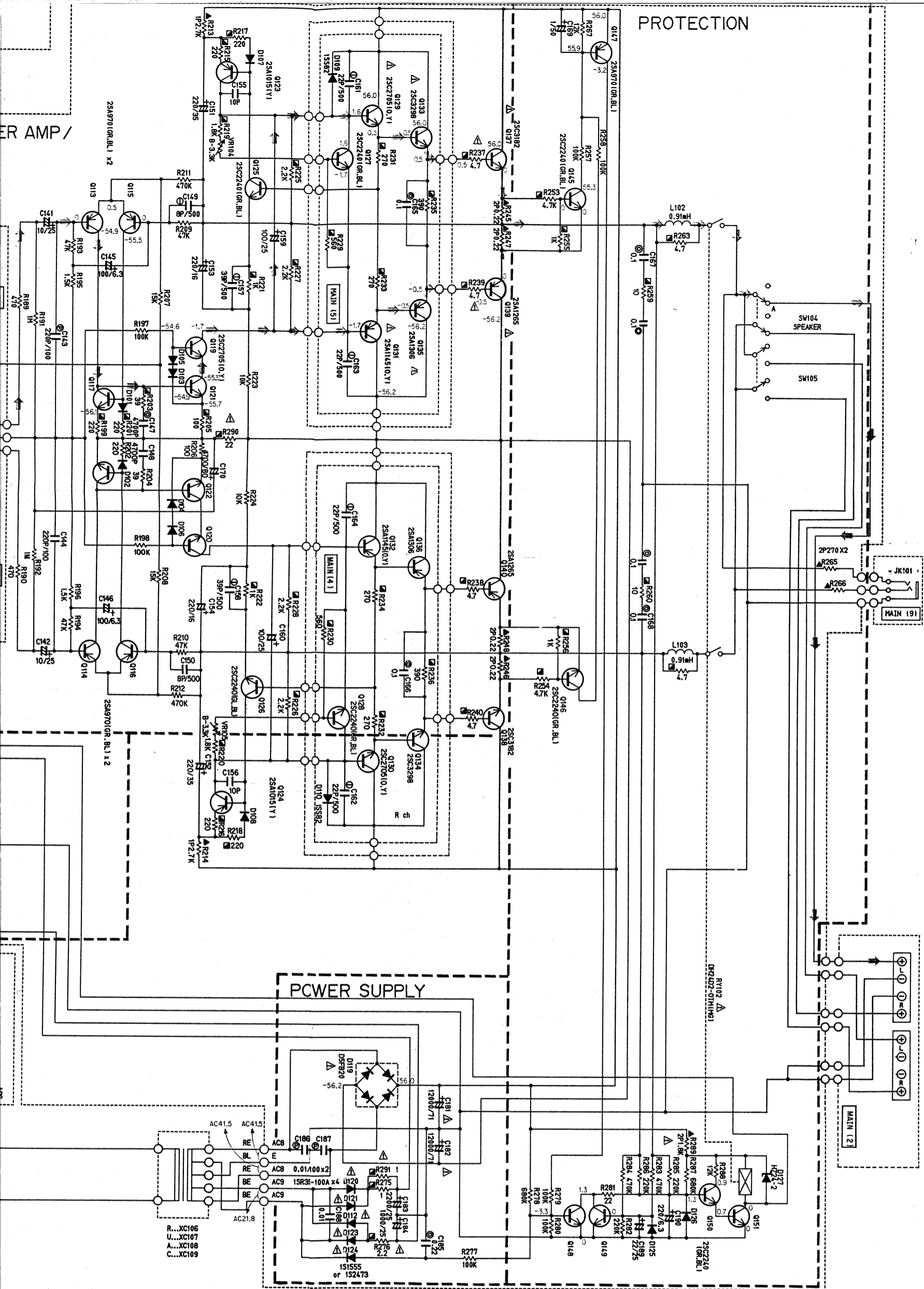
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
NO MARK	CERAMIC CAPACITOR
○	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
○	MICA CAPACITOR
○	POLYPROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR

M560S	M5220L M54459L M5218L	BA6110	NJM4558S	LB1413	M54542	LA7910	LC4966	BA618 BA12004 LB1234 M54526 LB1294	TC4028BP BU4028B	LA1245	LC7210	LA3401	LC6505C LC6510C
-------	-----------------------------	--------	----------	--------	--------	--------	--------	--	---------------------	--------	--------	--------	--------------------



1	(3.3)	11	(0.6)
2	(2.1)	12	(0)
3	(2.6)	13	(2.8)
4	(0)	14	(11.8)
5	(8.9)	15	(1.5)
6	(2.0)	16	(0.2)
7	(9.5)	17	(2.8)
8	(9.6)	18	(5.6)
9	(2.7)	19	(5.6)
10	(9.6)	20	(2.9)

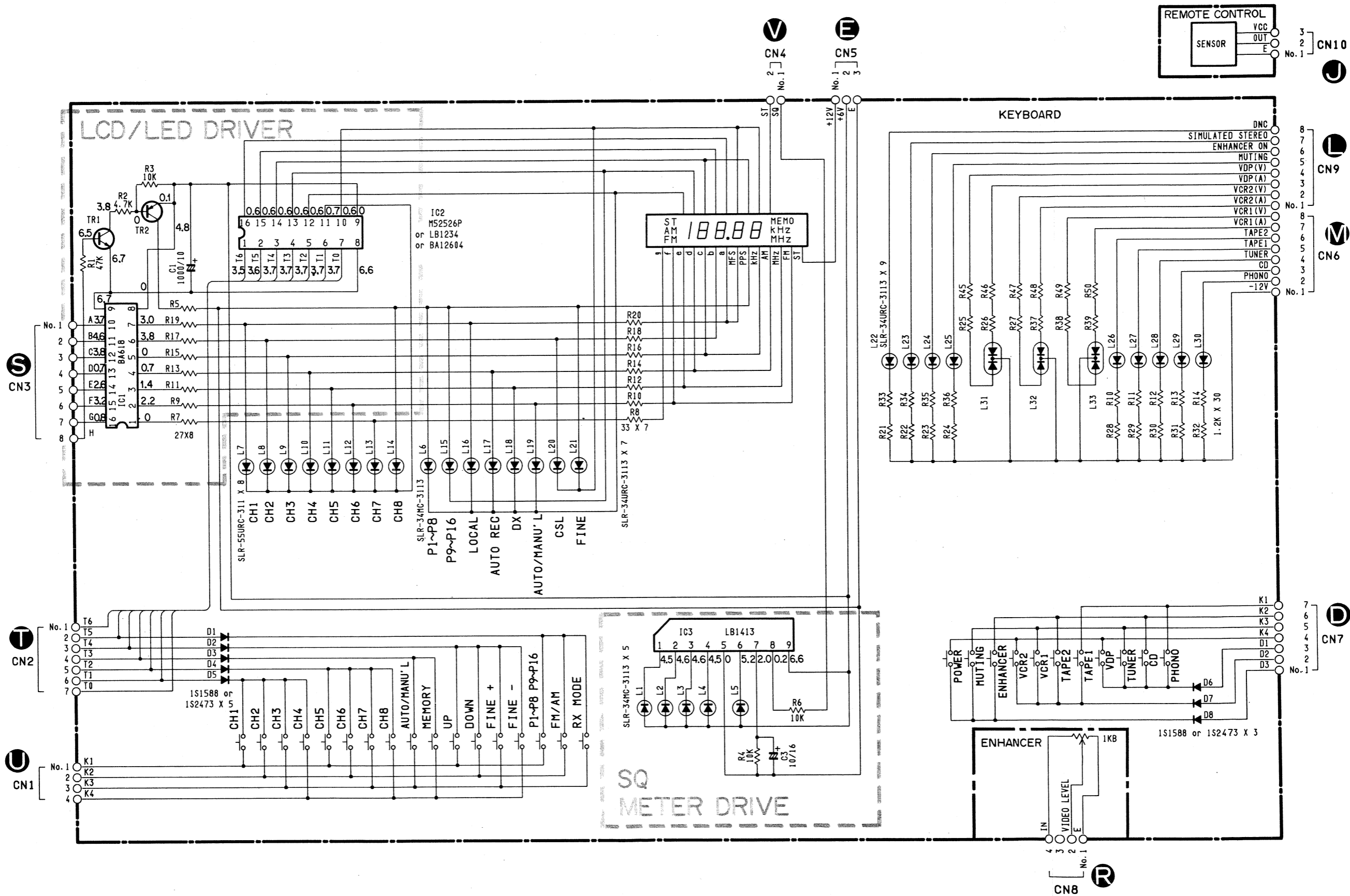




CAUTION

- Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
- * The Voltages are measured at FM reception mode.
The Voltages () are at AM reception mode.
- * All voltages are measured with a 10M Ω /V DC electric volt meter.
- * Schematic diagram is subject to change without notice.


■ SCHEMATIC DIAGRAM



RX-900/900U

PARTS LIST
ELECTRICAL PARTS

WARNING

Components having special characteristics are marked  and must be replaced with parts having specifications equal to those originally installed.
Carbon resistors 1/6 W are not included in the ELECTRICAL PARTS list.
For the parts No. of the carbon resistor, refer to P. 23.

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA:09:32:70	Main Circuit Board	メ イ ン シ ー ト			R	
※	NA:09:32:80	"	"			U,C	
※	NA:09:32:90	"	"			A	
	FG:41:11:00	Ceramic Cap.	セ ラ コ ン	C155,156			
	FG:41:31:00	"	"	C105			
	FG:41:33:30	"	"	C137,138			
	FG:74:41:00	"	"	C103,104,106,107 188,192,193			
	VA:89:08:00	"	ニ ン テ イ コ ン	C191			
	FU:35:08:00	Mica Cap.	マ イ カ コ ン	C149,150			
	FU:35:12:20	"	"	C161~164			
	FU:35:13:90	"	"	C157,158			
	UA:25:34:70	Mylar Cap.	マ イ ラ ー コ ン	C147,148			
	FA:15:51:20	"	"	C131,132			
	FA:15:43:30	"	"	C135,136			
	FA:15:44:70	"	"	C167,178			
	FA:15:51:00	"	"	C165,166			
	FA:15:52:20	"	"	C185			
	FZ:00:46:80	Electrolytic Cap.	ケ ミ コ ン	C170			
	FZ:00:42:00	"	ブ ロ ッ ク ケ ミ コ ン	C181,182			
	UJ:11:73:30	"	ケ ミ コ ン	C125,126			
	UJ:11:81:00	"	"	C145,146			
	UJ:11:82:20	"	"	C190			
	UJ:13:81:00	"	"	C180		U	
	UJ:13:73:30	"	"	C109,111,112,172,174			
	UJ:13:71:00	"	"	C119,171,173			
	UJ:13:82:20	"	"	C113,153,154			
	UJ:13:83:30	"	"	C177,178			
	UJ:14:71:00	"	"	C141,142			
	UJ:14:72:20	"	"	C117,118,129,130,189			
	UJ:14:81:00	"	"	C159,160			
	UJ:16:54:70	"	"	C133,134			
	UJ:16:61:00	"	"	C123,124,139,140,169			
	UH:12:91:00	"	"	C106,108,110			
	UL:46:61:00	"	ローノイズケミコン	C102			
	UL:46:62:20	"	"	C101			
	UJ:14:84:70	"	ケ ミ コ ン	C179		U,A,C	
	UW:67:81:00	"	"	C179		R	
	UJ:13:91:00	"	"	C120,175,176			
	UJ:14:91:00	"	"	C184			
	UJ:14:92:20	"	"	C183			
	UJ:15:82:20	"	"	C151,152			
	UT:65:22:20	Polypropylene Film Cap.	ポ リ プ ロ コ ン	C121,122,127,128 143,144			
	UT:65:41:00	"	"	C186,187			
※	XC:11:50:01	Power Transformer	電 源 ト ラ ン ス	T101		R	
※	XC:11:60:01	"	"	"		U,C	
※	XC:11:70:01	"	"	"		A	
	GD:90:03:70	Output Coil	出 カ コ イ ル	L102,103			
	GE:90:18:60	Coil	固 定 コ イ ル	L104,105			

※New Parts (新規部品) NR

RX-900/900U

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	HJ:35:53:30	Carbon Film Resistor	330Ω 1/4W	カーボン抵抗	R163,164		
	HJ:35:54:70	"	470Ω 1/4W	"	R165,166		
	HJ:35:61:00	"	1kΩ 1/4W	"	R268,269		
	HJ:35:61:50	"	1.5kΩ 1/4W	"	R270,271		
	HJ:35:63:30	"	3.3kΩ 1/4W	"	R161,162		
	HJ:35:64:70	"	4.7kΩ 1/4W	"	R273,274	R	
	HJ:35:65:60	"	5.6kΩ 1/4W	"	R159,160		
	HJ:35:66:80	"	6.8kΩ 1/4W	"	R157,158		
	HJ:35:71:00	"	10kΩ 1/4W	"	R223,224		
	HJ:35:71:50	"	15kΩ 1/4W	"	R207,208		
	HJ:35:73:90	"	39kΩ 1/4W	"	R209,210		
	HJ:35:81:00	"	100kΩ 1/4W	"	R197,198,277		
	HJ:35:84:70	"	470kΩ 1/4W	"	R211,212		
	HG:30:92:20	"	2.2MΩ 1/2W	"	R272	U,C	
	HL:31:62:70	Metal Oxide Film Resistor	2.7kΩ 1W	酸 金 抵 抗	R213,214		
	HL:32:52:70	"	270Ω 2W	"	R265,266		
	HL:32:61:50	"	1.5kΩ 2W	"	R289		
	VA:87:21:00	"	0.22Ω 3W	"	R245~248		
	HV:45:32:20	Flame Proof Carbon Resistor	2.2Ω 1/4W	不燃化カーボン抵抗	R276		
	HV:45:31:00	"	1Ω 1/4W	"	R275,291		
	HV:45:34:70	"	4.7Ω 1/4W	"	R237~240,259~264		
	HV:45:42:20	"	22Ω 1/4W	"	R290		
	HV:45:43:30	"	33Ω 1/4W	"	R147,148		
	HV:45:43:90	"	39Ω 1/4W	"	R203,204		
	HV:45:51:00	"	100Ω 1/4W	"	R205,206		
	HV:45:52:20	"	220Ω 1/4W	"	R199~202,215~218		
	HV:45:52:70	"	270Ω 1/4W	"	R231~234		
	HV:45:53:90	"	390Ω 1/4W	"	R235,236		
	HV:45:55:60	"	560Ω 1/4W	"	R229,230		
	HV:45:61:00	"	1kΩ 1/4W	"	R255,256		
	HV:45:61:20	"	1.2kΩ 1/4W	"	R221,222		
	HV:45:61:80	"	1.8kΩ 1/4W	"	R219,220		
	HV:45:62:20	"	2.2kΩ 1/4W	"	R225~228		
	HV:45:64:70	"	4.7kΩ 1/4W	"	R253		
	HS:41:25:60	Potentiometer	20kΩ×2	可 変 抵 抗 器	VR102,106		
	HS:41:25:70	"	16kΩ×2	"	VR101		
	HS:41:25:80	"	20kΩ MN	"	VR103		
※	VB:86:12:00	Pre-set Potentiometer	B2.2kΩ	半 固 定 抵 抗 器	VR104,105		
	iA:09:70:00	Transistor	2SA970(GR,BL)	ト ラ ン ジ ス タ ー	Q113~116,147		
	iA:10:15:10	"	2SA1015(Y)	"	Q102,104,109,123,124		
	iA:10:15:20	"	2SA1015(Y)	"	Q158	R	
	iA:11:45:00	"	2SA1145(O,Y)	"	Q131,132		
※	VC:61:40:00	"	2SB1274(Q,R,S)	"	Q153		
	iC:18:15:20	"	2SC1815(Y)	"	Q101,103,105~108,110,117,118 121,122,148,149,151,156		
	iC:22:40:00	"	2SC2240(GR,BL)	"	Q127,128		
	iC:22:40:00	"	2SC2240(GR,BL)	"	Q125,126,145,146,150		
	iC:28:78:20	"	2SC2878(A,B)	"	Q111,112		
	iC:27:05:00	"	2SC2705(O,Y)	"	Q119,120,129,130		
	VB:22:27:00	"	2SD1485	"	Q157	R	
※	VC:40:79:00	"	2SD1913(R,S)	"	Q152,154,155		

※New Parts (新規部品) NR

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	iX 60 85 10	Pair Transistor	2SA1358	ペアトランジスター	Q135,136		
	iX 60 85 20	//	2SC3421	//	Q133,134		
	iG 09 20 00	IC	M5220L	I C	IC105		
	XA 56 90 01	//	BA6110	//	IC106,107		
	iG 04 14 10	//	M54459L	//	IC101		
	iG 14 93 00	//	LC4966	//	IC102~104		
		//					
	iF 00 06 70	Diode	1S2473	ダイオード	D113,124	Inter-changeable	
	iF 00 00 40	//	1S1555	//	//		
	iF 00 34 50	//	1SS133	//	D101~108,118,125,126		
	iF 00 55 60	//	1SS82	//	D109,110		
	iF 00 84 80	//	1SR35-100A	//	D128~130	R	
	iF 00 84 80	//	1SR35-100A	//	D112,120~123		
	iH 00 11 60	Bridge Diode	4D4B41	ブリッジダイオード	D119		
	iF 00 19 40	Zener Diode	HZ24-2	ツェナーダイオード	D127		
	iX 60 42 90	//	HZ12A-3	//	D116,117		
	iX 60 42 90	//	HZ12A-3	//	D111	R	
	iF 01 08 10	//	MTZ7.5C	//	D114,115		
	KA 40 16 90	Slide Switch	SSJ312A	スライドスイッチ	SW101	R	
	KA 80 27 60	Push Switch	SUF2-2NS	プッシュスイッチ	SW104,105		
	KA 80 51 70	//	SUN4-2NS	//	SW103		
	KA 80 51 80	//	SUN4-2S	//	SW102		
	KB 00 03 70	Fuse	T3.5A 250V	ヒューズタイラッシュ	F102	R	
	KB 00 07 60	//	T3.15A 250V	ヒューズタイムラグ	F101	A	
	KB 00 13 00	//	T7.0A 250V	ヒューズタイラッシュ	//	R	
	KB 00 15 20	//	UL7.0A 125V	ヒューズ	//	U,C	
	KC 00 19 10	Relay	DH12D1-OM	リレー	RY101	Inter-changeable	
	VA 91 78 00	//	12V DC AJR32117	//	//		
	KC 00 19 40	//		//	RY102	Inter-changeable	
	KC 00 20 00	//	JR2a-DC24V	//	//		
	VC 27 86 00	//	24V G5R-2232P	//	//		
	LB 30 17 60	Phone Jack		ホーンジャック	JK101		
※	VC 36 44 00	Pin Jack	2P	ピンジャック	PJ101~103	RX-700	
	LB 40 10 30	//	4P	//	PJ104		
	PA 00 08 10	FM Front-end Pack	FE343U	FMフロントエンドバック	PK101		
	LA 00 58 00	Antenna Terminal		アンテナ端子			
※	VC 42 58 00	Speaker Terminal	8P i-Type	スピーカータンシ			
	LB 40 14 50	AC Outlet		ACアウトレット		R	
	LB 40 14 60	//		//		U,C	
	LB 20 18 80	Fuse Holder Pin	PC-FH1	ヒューズホルダーピン			
	VD 00 45 00	Base Pin	2P i-Type	ベースピン			
	VD 00 46 00	//	3P i-Type	//			
	VD 00 47 00	//	4P i-Type	//			

※New Parts (新規部品) NR

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	VD 00 50 00	Base Pin	7P i-Type	ベースピン			
	VD 00 51 00	//	8P i-Type	//			
	LB 91 80 20	//	2P i-Type	//			
	LB 91 80 30	//	3P i-Type	//			
※	VC 49 24 00	Connector	4P i-Type	コネクタ			
	BA 09 29 70	Heat Shink		放熱器	T-85		
	BA 08 40 00	//		//	K-1000		
	BB 06 95 10	Land Metal Fitting		ランド金具			
		Ground Metal					
	Ei 33 00 86	Binding Head Tapping Screw	3×8 FCRM3-BI	バインドタッピングネジ	PACK		
	ED 33 00 86	Binding Head Screw	3×8 FCRM3-BI	バインド小ネジ	PACK		
※	NA 09 35 80	Control Circuit Board		コントロールシート		R	
※	NA 09 33 10	//		//		U,C	
※	NA 09 33 21	//		//		A	
	VA 76 10 00	Ceramic Cap.	22pF 50V	セラコン	C581,582		
	Fi 22 21 00	//	100pF 50V	//	C548,549		
	Fi 22 31 00	//	1000pF 50V	//	C529,534		
	Fi 17 34 70	//	4700pF 25V	//	C575,576		
	Fi 54 41 00	//	0.01μF 16V	//	C503,505,506,515		
	FG 21 11 20	//	12pF 50V	//	523,531,538		
	FG 21 14 70	//	47pF 50V	//	C573		
	FG 21 21 00	//	100pF 50V	//	C514		
	FG 21 22 20	//	220pF 50V	//	C578,579,584,585,630		
	FG 21 24 70	//	470pF 50V	//	C615		
	FG 21 31 00	//	1000pF 50V	//	C552,616,625,626		
	FG 24 41 00	//	0.01μF 50V	//	C528		
					C501,508,510~513,516~518,524~526,530		
					532,535,539,544~546,586,588,590,652		
	FY 00 01 90	Variable Cap.	5pF	トリマーコン	VC501		
	FA 15 31 00	Mylar Cap.	1000pF 50V	マイラーコン	C567,568		
	FA 15 31 00	//	1000pF 50V	//	C555,556	A	
	FA 15 31 50	//	1500pF 50V	//	//	R,U,C	
	FA 15 31 50	//	1500pF 50V	//	C599,600,638		
	FA 15 32 70	//	2700pF 50V	//	C563,564		
	FA 15 33 90	//	3900pF 50V	//	C569,570		
	FA 15 35 60	//	5600pF 50V	//	C611,612,635,637		
	FA 15 41 00	//	0.01μF 50V	//	C591,592		
※	FA 15 41 10	//	0.011μF 50V	//	C605,606		
	FA 15 41 20	//	0.012μF 50V	//	C636		
	FA 15 42 20	//	0.022μF 50V	//	C562,609,610		
	FA 15 43 30	//	0.033μF 50V	//	C621,622		
	FA 15 43 90	//	0.039μF 50V	//	C603,604		
	FA 15 44 70	//	0.047μF 50V	//	C540,553,559		
	FA 15 52 20	//	0.22μF 50V	//	C632,634		
	UJ 11 84 70	Electrolytic Cap.	470μF 6.3V	ケミコン	C547		
	UJ 11 92 20	//	2200μF 6.3V	//	C601,602		
	VB 17 01 00	//	4700μF 5.5V	バックアップケミコン	C587		
	UJ 13 73 30	//	33μF 16V	ケミコン	C597,619		

※New Parts (新規部品) NR

RX-900/900U

RX-900/900U

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	UJ 13:81:00	Electrolytic Cap.	100μF 16V	ケ ミ コ ン	C614		
	UJ 14:71:00	//	10μF 25V	"	C502,508,520,521,533,536,537,543,550,551,554,577,598,599,595,596,620,631,642,643		
	UJ 44:83:30	//	330μF 25V	"	C613		
	UJ 16:53:30	//	0.33μF 50V	"	C583,623,624		
	UJ 16:54:70	//	0.47μF 50V	"	C617		
	UJ 16:61:00	//	1μF 50V	"	C504,519,560,561,565,566,572,574,580,644~651		
	UJ 16:62:20	//	2.2μF 50V	"	C507,641		
	UJ 16:64:70	//	4.7μF 50V	"	C522,542,571,639,640		
	UK 13:72:20	//	22μF 16V	B P ケ ミ コ ン	C607,608		
	UK 66:54:70	//	0.47μF 50V	"	C541,558,633		
	FM 11:61:00	//	1μF 50V	"	C557,627~629		
	UT 45:25:60	Polypropylene Film Cap.	560pF 100V	ボ リ プ ロ コ ン	C527		
	UT 45:22:20	//	220pF 100V	"	C593,594		
	GE 10:02:80	FM Discriminator Coil		F M ディ ス ク リ コ イ ル	T501		
	GE 10:04:70	AM IF-Coil		A M I F T コ イ ル	T502		
	VB 10:96:00	Coil	220μH	固 定 コ イ ル	L503		
	GE 90:19:80	//	120μH	"	L506		
	GE 90:06:90	//	8.2mH	"	L504,505		
	GE 90:18:50	//	39mH	"	L501,502		
	GG 00:04:20	AM Ceramic Discriminator	CDA450A	A M セ ラ ミ ッ ク ディ ス ク リ	CF506		
	GG 00:06:00	Ceramic Filter	KMFC264-M	セ ラ ミ ッ ク フ ィ ル タ ー	CF501~504 PACK		
	GG 00:06:60	AM Ceramic Filter	SFU450B9	A M セ ラ ミ ッ ク フ ィ ル タ ー	CF505		
	GG 00:07:00	Piezo Electric ceramic Vibrator	FCR400K	セ ラ ミ ッ ク 振 動 子	XL504		
	GG 00:07:50	//	CSB456F11	"	XL501		
	GG 00:07:60	//	CSB800K	"	XL502		
	HJ 35:52:20	Carbon Film Resistor	220Ω 1/4W	カ ー ボ ン 抵 抗	R510,528		
	HJ 35:61:00	//	1kΩ 1/4W	"	R515		
	HJ 35:61:20	//	1.2kΩ 1/4W	"	R671		
	HJ 35:65:60	//	5.6kΩ 1/4W	"	R621		
	HJ 35:66:80	//	6.8kΩ 1/4W	"	R628		
	HJ 35:71:00	//	10kΩ 1/4W	"	R598,815,709		
	HJ 35:71:20	//	12kΩ 1/4W	"	R571		
	HJ 35:74:70	//	47kΩ 1/4W	"	R520		
	HJ 35:81:00	//	100kΩ 1/4W	"	R518,682~687,689~694		
	HJ 35:82:20	//	220kΩ 1/4W	"	R545 553		
	HJ 35:91:00	//	1MΩ 1/4W	"	R623		
	HV 45:34:70	Flame Proof Carbon Resistor	4.7Ω 1/4W	不 燃 化 カ ー ボ ン 抵 抗	R713,817		
	HV 45:42:20	//	22Ω 1/4W	"	R710		
	HV 45:51:00	//	100Ω 1/4W	"	R669,670		
	VB 86:14:00	Pre-set Potentiometer	B 4.7kΩ	半 固 定 抵 抗	VR502		
	VB 86:19:00	//	B 100kΩ	"	VR501		
※	VC 59:23:00	Potentiometer with Motor	100kΩ×2 300kΩ×2	モ ー タ ー 付 可 変 抵 抗	VR503		
	iA 09:34:00	Transistor	2SA934	ト ラ ン ジ ス タ ー	Q547		
	iA 09:70:10		2SA970(BL)	"	Q539~542		
	iA 10:15:21		2SA1015(Y)	"	Q536~538,543~545,549,551,560		

※New Parts (新規部品) NR

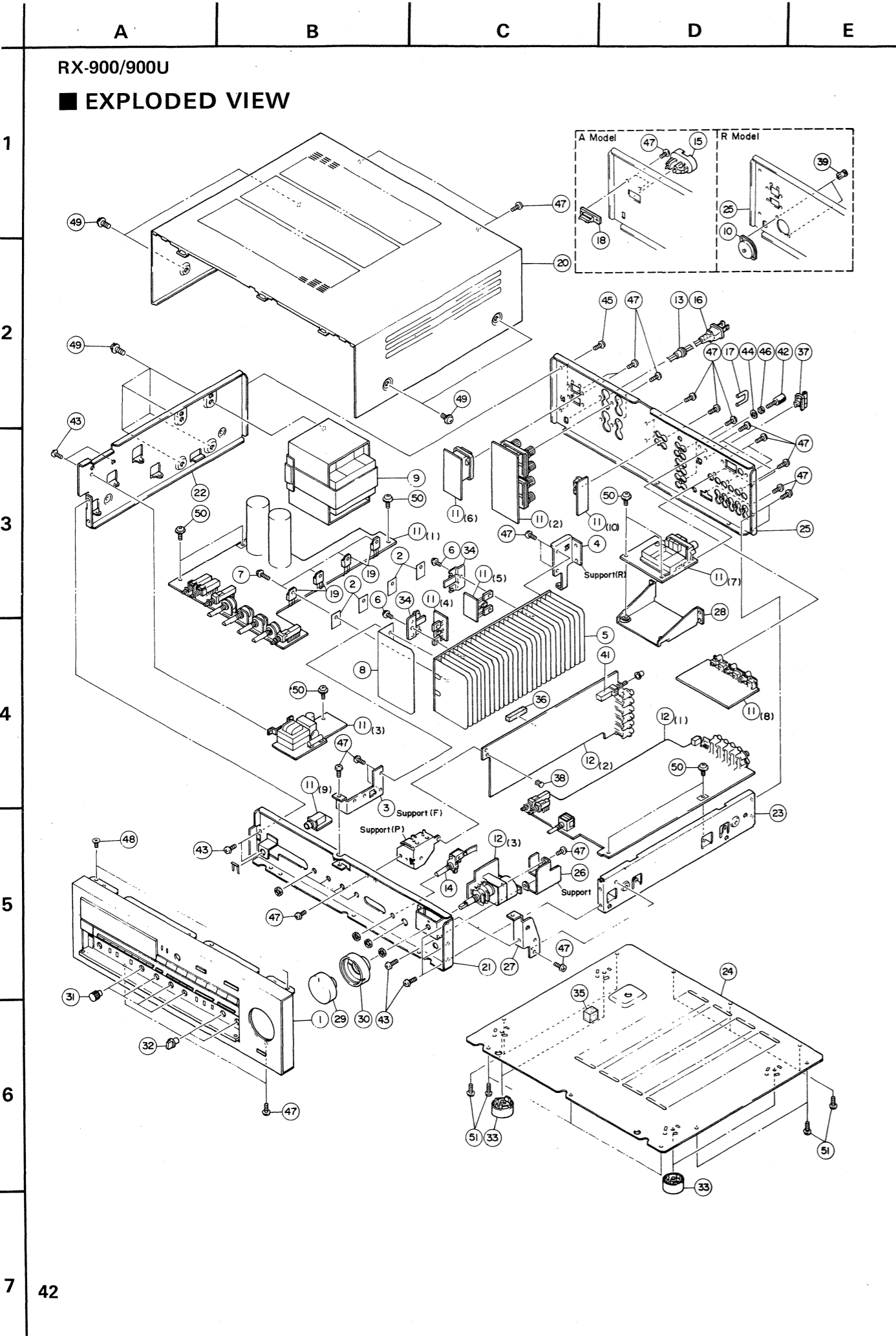
RX-900/900U

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	iA 09:33:70	Transistor	2SA933S(Q,R)	ト ラ ン ジ ス タ ー	Q508,513,514,519,524,525,527,530,531,533,534		
	iA 11:15:10	//	2SA1115(E,F)	"	//	Inter-changeable	
	iA 13:10:00	//	2SA1310(R,S,T)	"	//		
	iC 18:15:20	//	2SC1815(Y)	"	Q546,548,552,557~559,522		
	iC 19:23:00	//	2SC1923	"	Q502,503		
	iC 28:78:20	//	2SC2878(A,B)	"	Q511,553~556,517		
	iC 20:60:00	//	2SC2060	"	Q550		
	iC 17:40:70	//	2SC1740S(S,R)	"	Q501,504~507,509,510,512,515,516,518,520,521,523,526,528,529,532,535	Inter-changeable	
	iC 26:03:10	//	2SC2603(E,F)	"	//		
	iC 33:12:00	//	2SC3312(R,S,T)	"	//		
	iF 00:06:70	Diode	1S2473	ダ イ オ ード	D515~520	Inter-changeable	
	iF 00:00:40	//	1S1555	"	//		
	iF 00:34:50	//	1SS133	"	D501~503,505~511,513,514,522,524,526~534,536,537		
※	iF 01:06:90	Zener Diode	MTZ5.1B	ツ ェ ナ ー ダイ オ ード	D504		
	iF 01:07:50	//	MTZ6.2C	"	D523,525,535		
	iF 01:08:10	//	MTZ7.5C	"	D521		
	iG 03:45:00	IC	μPC577H(F)	I C	IC501,502		
	iG 03:55:00	//	TC4028BP	"	IC508	Inter-changeable	
	iG 14:87:00	//	BU4028B	"	//		
	iG 04:78:00	//	LA1245	"	IC505		
	iG 04:91:00	//	LC7210	"	IC506		
	iG 05:49:00	//	M54542	"	IC518		
	iG 07:68:00	//	NJM4558S	"	IC503,519~521		
	iG 08:57:00	//	M5218L(V)	"	IC522,526,529		
	iG 12:18:00	//	NJM4560S	"	IC509		
	iG 14:93:00	//	LC4966	"	IC510~513,523~525		
	iG 15:81:00	//	LA3401	"	IC504		
※	XA 54:90:01	//	LB1294	"	IC514,515		
※	XB 93:00:01	//	LA7910	"	IC516		
	XB 91:70:01	//	LC6505C-3203	"	IC517		
※	XB 91:80:01	//	LC6510C-3232	"	IC507		
	KA 80:51:10	Push Switch	SUN 2-2 NS	プ ッ シ ュ ス イ ッ チ	SW502		
	KA 80:51:70	//	SUN 4-2 NS	"	SW504		
	KA 80:52:00	//	SUF 4-2 S & NS	"	SW501		
	KA 90:10:70	Remote Switch	4-6	リ モ ー ト ス イ ッ チ	SW505		
※	VC 42:59:00	Rotary Switch	SRBU 2-4	ロ ー タ リ ー ス イ ッ チ	SW503		
	LB 10:07:30	Mini Jack	S-G8035	ミ ニ ジャ ッ ク	JK501		
	LB 60:83:90	ST Connector Socket	6P	SP コ ネ ク タ ー ソ ケ ッ ト	JK502		
	LB 20:22:70	Pin Jack	2P	ピ ン ジャ ッ ク	PJ504		
	LB 40:10:30	//	4P	"	PJ502,503,505,506		
	LB 40:10:40	//	4P	"	PJ501		
	NA 08:78:30	AM Coil Pack		A M 電 子 同 調 コ イ ル パ ッ ク	U501		
	QU 00:39:00	Quartz Crystal	32kHz	水 晶 振 動 子	XL503		
	LB 91:80:30	Base Pin	3P i-Type	ベ ー ス ピ ン			
	LB 91:80:20	//	2P i-Type	"			
	VA 72:56:00	Cable Holder	6P i-Type	パ ラ レ ル ケ ー ブ ル ホ ル ダ ー			

※New Parts (新規部品) NR

※ New Parts (新規部品) NR

※New Parts (新規部品) NR



RX-900/900U

MECHANISM PARTS

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※ 1	VC 63 82 00	Front Panel Unit	RX-900	フロントパネルユニット		R, A	
※ //	VC 63 83 00	//	RX-900/U	//		U, C	
2	VB 43 50 00	Sheet, Radiation		放 熱 シ ー ト			
3	AA 62 60 00	Support (F)		サ ポ ー ト (F)			
4	AA 62 60 10	// (R)		// (R)			
5	BA 09 24 70	Radiator		ラ ジ エ タ ー			
6	Ei 33 00 86	Binding Head Tapping Screw	3×8 FCRM3-BI	バインドタッピングネジ	PACK		
7	EZ 00 13 50	Cup Screw	3×14×φ8 FCRM3-BI	カップスクリュー (Bタイト)			
8	VC 66 88 00	Spacer		ス ペ ー サ ー			
※ 9	XB 93 20 01	Power Transformer		電 源 ト ラ ンス		U	
※ //	XB 93 30 01	//		//		A	
※ //	XB 93 40 01	//		//		C	
※ //	XB 93 10 01	//		//		R	
10	LB 20 14 80	Voltage Selector		電 圧 切 換 器		R	
※ 11	NA 09 32 70	Main Circuit Board		メ イ ン シ ー ト		R	
※ //	NA 09 32 80	//		//		U, C	
※ //	NA 09 32 90	//		//		A	
※ 12	NA 09 33 10	Control Circuit Board		コ ン ト ロールシート		U, C	
※ //	NA 09 33 20	//		//		A	
※ //	NA 09 35 80	//		//		R	
13	CB 62 01 90	Cord stopper	CM-22B	コ ー ド ス ト ッ パ ー		R, A	
//	CB 62 02 00	//	CM-22C	//		U, C	
14	KA 90 71 00	Remote Rotary Switch	ESA-33	リモートロータリースイッチ			
※ 15	VC 62 61 00	AC Outlet	2P	A C アウトレット		RX-700	A
16	MG 00 16 30	Power Cord	6A 250V 2m	電 源 コ ー ド		R	
//	MG 00 22 20	//	10A 125V1.98m	//		U, C	
//	MG 00 09 20	//	7.5A 250V2.5m	//	Interchangeable	A	
//	MG 00 23 10	//	// 2m	//		A	
17	LB 10 11 10	Short Plug		シ ョ ー ト プ ラ グ			
18	LA 00 29 50	Terminal Board	2P MA0092A	中 継 端 子 台		A	
19	iA 12 65 30	Pair Transistor	2SA1265	ペアトランジスタ	Q539, 540		
//	iC 31 82 30	//	2SC3182	//	Q537, 538		
20	AA 62 60 40	Top Cover		ト ッ プ カ バ ー	Silver	R-9	
//	AA 62 60 60	//		//	Black	R-9	
※ 21	VC 40 58 00	Sub Chassis		サ ブ シ ャ ー シ			
※ 22	VC 40 59 00	Frame (L)		フ レ ー ム (L)			
※ 23	VC 40 60 00	// (R)		// (R)			
※ 24	VD 26 72 00	Bottom Cover		ボ ト ム カ バ ー			
※ 25	VC 40 48 00	Rear Panel		リ ャ パ ネ ル		R	
※ //	VC 40 49 00	//		//		U, C	
※ //	VC 40 50 00	//		//		A	
※ 26	VC 40 34 00	Support		サ ポ ー ト			
27	AA 62 59 80	// (S)		// (S)		R-9	
※ 28	VC 40 33 00	Stay		ス テ イ			
29	BA 09 25 10	Knob	φ44	ノ ブ	Silver	R-8	
//	BA 09 25 20	//	φ44	//	Black	R-8	
30	BA 09 25 30	//	φ48	//	Silver	R-9	
//	BA 09 25 40	//	φ48	//	Black	R-9	
31	CB 62 08 20	Knob		//			
32	CB 62 08 40	Switch Knob		//			
33	CB 62 07 30	Leg		脚			
※ 34	VC 63 78 00	TR Pusher		T R プ ッ シ ャ ー			

※ New Parts (新規部品) NR

[illegible]

※New Parts (新規部品) NR

A

B

C

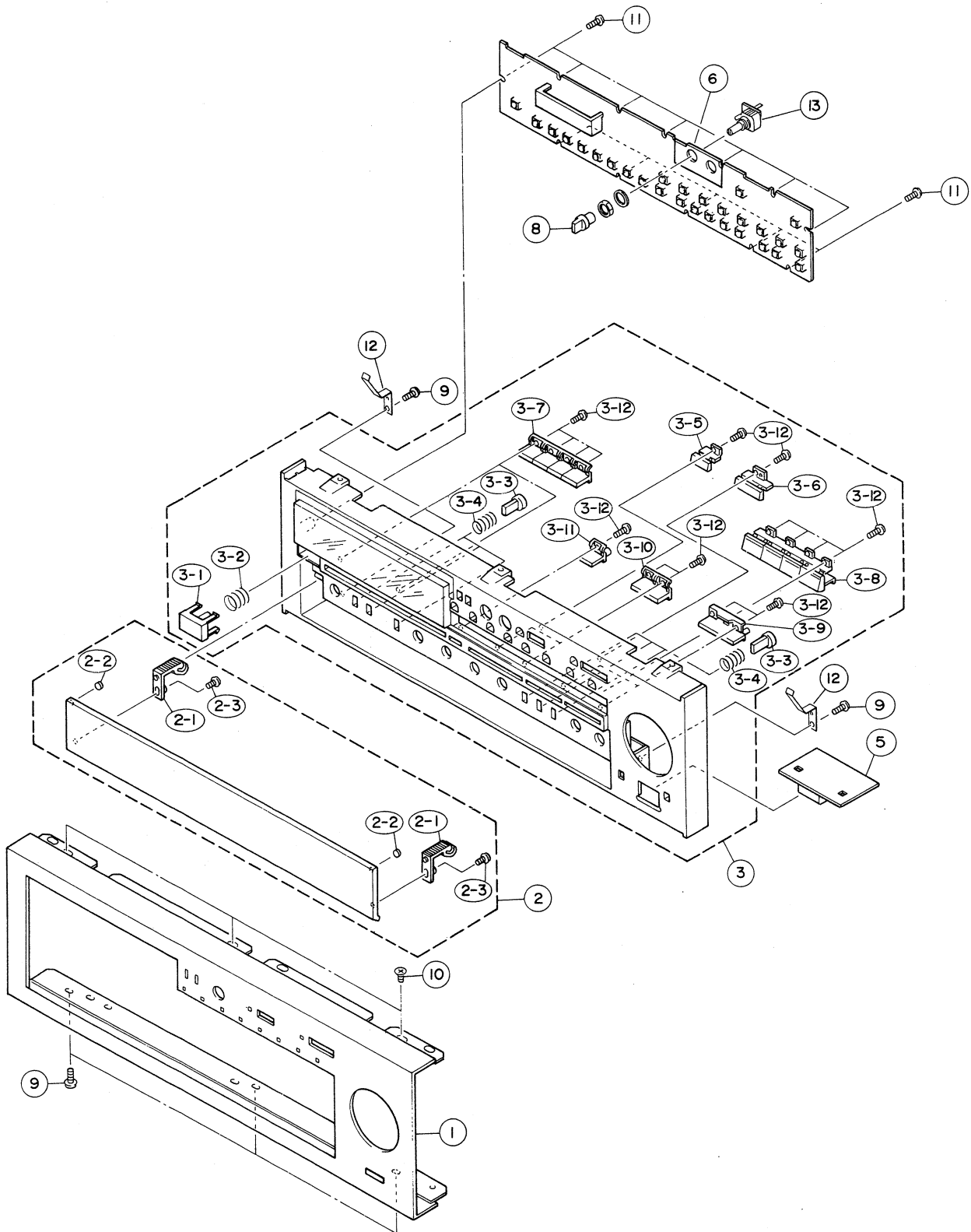
D

E

RX-900/900U

EXPLODED VIEW

● PANEL UNIT



MECHANISM PARTS

[illegible]

※New Parts (新規部品) NR

A

B

C

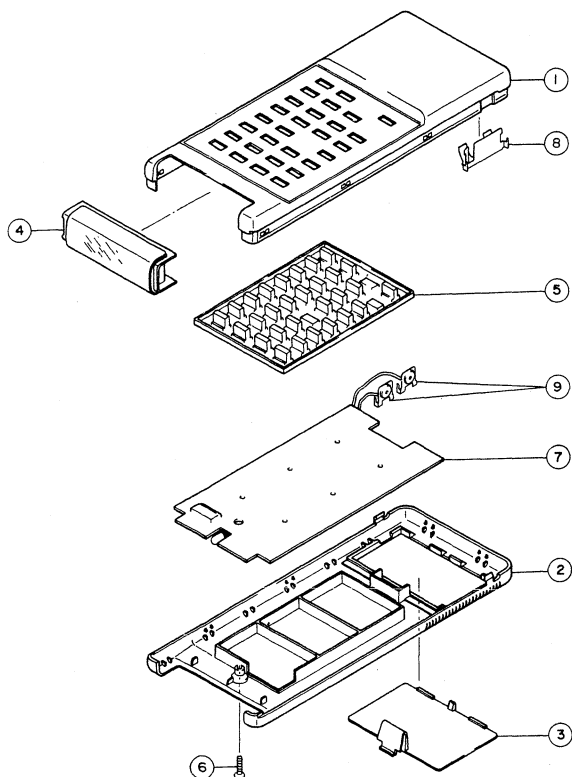
D

E

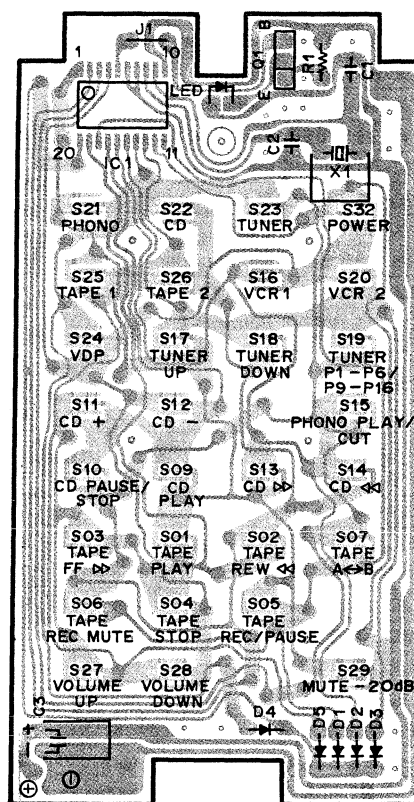
RX-900/900U

■ REMOTE CONTROL TRANSMITTER

● MECHANISM EXPLODED VIEW (RS-RX9)

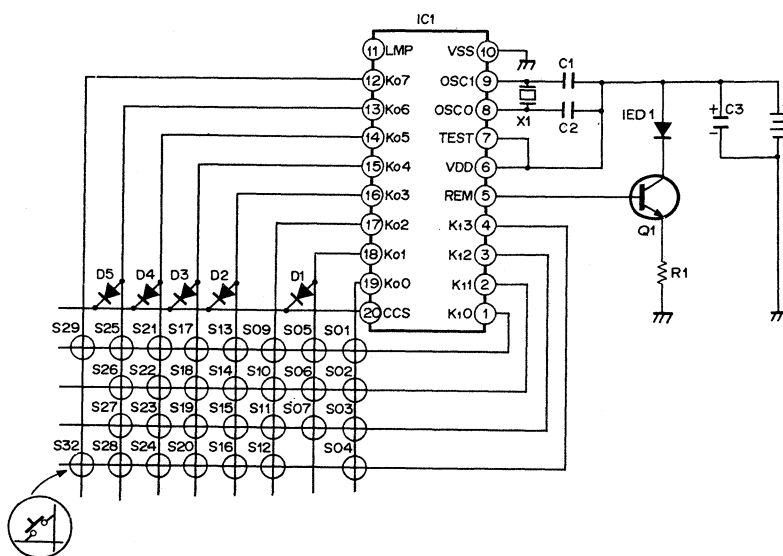


● PRINTED CIRCUIT BOARD (Pattern Side)



● SCHEMATIC DIAGRAM

Key No.	FUNCTION	DATA CODE								HEX CODE
S01	TAPE PLAY	0	1	2	3	4	5	6	7	0
S02	TAPE REW	0	0	0	0	0	0	0	0	1
S03	TAPE FF	0	1	0	0	0	0	0	0	2
S04	TAPE STOP	1	1	0	0	0	0	0	0	3
S05	TAPE REC/PAUSE	0	0	1	0	0	0	0	0	4
S06	TAPE REC MUTE	1	0	1	0	0	0	0	0	5
S07	TAPE A-B	0	1	1	0	0	0	0	0	6
S09	CD PLAY	0	0	0	1	0	0	0	0	8
S10	CD PAUSE/STOP	1	0	0	1	0	0	0	0	9
S11	CD +	0	1	0	1	0	0	0	0	A
S12	CD -	1	1	0	1	0	0	0	0	B
S13	CD	0	0	1	1	0	0	0	0	C
S14	CD	1	0	1	1	0	0	0	0	D
S15	PHONO PLAY/CUT	0	1	1	1	0	0	0	0	E
S16	VCR1	1	1	1	1	0	0	0	0	F
S17	TUNER UP	0	0	0	0	1	0	0	0	10
S18	TUNER DOWN	1	0	0	0	1	0	0	0	11
S19	TUNER P1-P8/P9-P16	0	1	0	0	1	0	0	0	12
S20	VCR2	1	1	0	0	1	0	0	0	13
S21	PHONO	0	0	1	0	1	0	0	0	14
S22	CD	1	0	1	0	1	0	0	0	15
S23	TUNER*	0	1	1	0	1	0	0	0	16
S24	VDP	1	1	1	0	1	0	0	0	17
S25	TAPE 1	0	0	0	1	1	0	0	0	18
S26	TAPE 2	1	0	0	1	1	0	0	0	19
S27	VOLUME UP	0	1	0	1	1	0	0	0	1A
S28	VOLUME DOWN	1	1	0	1	1	0	0	0	1B
S29	MUTE -20dB	0	0	1	1	1	0	0	0	1C
S32	POWER	1	1	1	1	1	0	0	0	1F
CUSTOM CODE C0-C7		0	1	0	1	1	1	1	0	7A



Parts List for Carbon Resistor

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ353100	※	12K Ω	HJ357120	HF857120
1.8 "	HJ353180	※	15 "	HJ357150	HF857150
2.2 "	HJ353220	HF853220	18 "	HJ357180	HF857180
3.3 "	HJ353330	HF853330	22 "	HJ357220	HF857220
4.7 "	HJ353470	HF853470	27 "	HJ357270	HF857270
5.6 "	HJ353560	HF853560	33 "	HJ357330	HF857330
10 "	HJ354100	HF854100	39 "	HJ357390	HF857390
15 "	HJ354150	HF854150	47 "	HJ357470	HF857470
22 "	HJ354220	HF854220	56 "	HJ357560	HF857560
27 "	HJ354270	HF854270	68 "	HJ357680	HF857680
33 "	HJ354330	HF854330	82 "	HJ357820	HF857820
39 "	HJ354390	HF854390	91 "	HJ357910	HF857910
47 "	HJ354470	HF854470	100 "	HJ358100	HF858100
56 "	HJ354560	HF854560	120 "	HJ358120	HF858120
68 "	HJ354680	HF854680	150 "	HJ358150	HF858150
82 "	HJ354820	HF854820	180 "	HJ358180	HF858180
100 "	HJ355100	HF855100	220 "	HJ358220	HF858220
110 "	HJ355110	HF855110	270 "	HJ358270	HF858270
120 "	HJ355120	HF855120	330 "	HJ358330	HF858330
150 "	HJ355150	HF855150	390 "	HJ358390	HF858390
160 "	HJ355160	※	470 "	HJ358470	HF858470
180 "	HJ355180	HF855180	560 "	HJ358560	HF858560
220 "	HJ355220	HF855220	680 "	HJ358680	HF858680
270 "	HJ355270	HF855270	820 "	HJ358820	HF858820
330 "	HJ355330	HF855330	1.0M Ω	HJ359100	HF859100
390 "	HJ355390	HF855390	1.2 "	HJ359120	※
470 "	HJ355470	HF855470	1.5 "	HJ359150	HF859150
510 "	※	HF855510	1.8 "	HJ359180	HF859180
560 "	HJ355560	HF855560	2.2 "	HJ359220	HF859220
680 "	HJ355680	HF855680	3.3 "	HJ359330	HF859330
820 "	HJ355820	HF855820	3.9 "	HJ359390	※
910 "	HJ355910	HF855910	4.7 "	HJ359470	※
1.0K Ω	HJ356100	HF856100			
1.2 "	HJ356120	HF856120			
1.5 "	HJ356150	HF856150			
1.8 "	HJ356180	HF856180			
2.0 "	HJ356200	HF856200			
2.2 "	HJ356220	HF856220			
2.4 "	HJ356240	HF856240			
2.7 "	HJ356270	HF856270			
3.0 "	HJ356300	HF856300			
3.3 "	HJ356330	HF856330			
3.6 "	HJ356360	HF856360			
3.9 "	HJ356390	HF856390			
4.7 "	HJ356470	HF856470			
5.1 "	HJ356510	HF856510			
5.6 "	HJ356560	HF856560			
6.8 "	HJ356680	HF856680			
8.2 "	HJ356820	HF856820			
9.1 "	HJ356910	HF856910			
10 "	HJ357100	HF857100			

