



SANYO 4 CHANNEL STEREO RECEIVER DCX3300K SERVICE MANUAL



A PRODUCT OF SANYO ELECTRIC INC.

SPECIFICATION

GENERAL

IC	STK-023 x4 LA1201 x 1
FET	2SK41 x 1
Transistor	2SC693 x 14 2SC537 x 6 2SC668 x 2 2SC929 x 1 2SC930 x 1
Diode	1S188 x 21 DS-430 x 1 DS-118 x 2 SZ-9 x 1
Power Source	AC 120V 60Hz
Power Consumption	150W
AC Outlet	Unswitched 120W x 1
Dimension	APPROX. Width 530mm (21-1/4") Deep 390mm (15-3/4") Height 150mm (6")
Weight	Approx. 10.9Kg (24 lbs)

TUNER SECTION

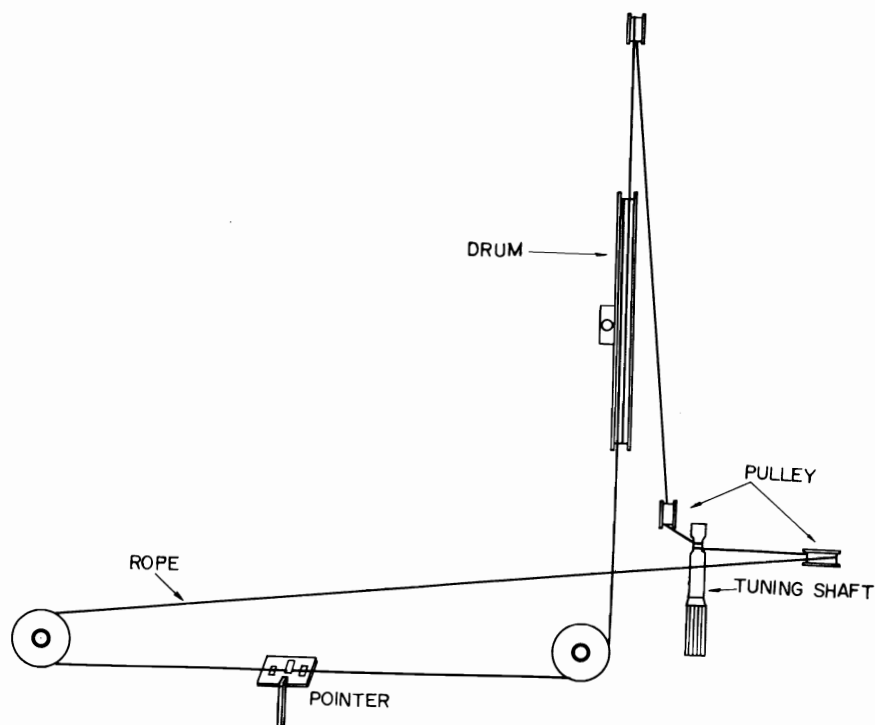
Frequency Range	AM 535 — 1,605KHz FM 88 — 108MHz
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Inter. Frequency	AM 455KHz FM 10.7MHz
Sensitivity	AM 300 μ V/m FM 20 μ V
FM MPX Separation	30dB (at 1,000Hz)
Signal to Noise	40dB

AUDIO SECTION

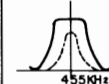
Power Output	20W (THD 10%)
Frequency Response	80 — 12,000Hz $\pm$ 3dB
Power Band Width	80 — 12,000Hz $\pm$ 3dB
Input Terminal	PHONO 5mV 50K Ω AUX 120mV 100K Ω TAPE PLAYBACK 300mV 100K Ω MIC -65dB 10K Ω
Output Terminal	SPEAKER 8 Ω HEAD PHONE 8 Ω
Tone Control	BASS $\pm$ 12dB at 100Hz TREBLE $\pm$ 12dB at 10KHz
Loudness Control	50Hz +12dB 10KHz +5dB

DIAL CORD STRINGING



ADJUSTMENT

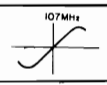
AM ADJUSTMENT

Step	Adjusting circuit	Connections		SG. frequency	Position of tuning dial	Adjustment	V.T.V.M. Oscilloscope
		Input	Output				
1	IF	Connect sweep generator to VC4.	Connect oscilloscope to test point TP2.	455 KHz (400Hz 30% modulation)	Near max. capacity of VC. at position with no unrequired signal.	AM 1st 9-20940 (Yellow) 9-20950 (White) AM 2nd 9-20960 (Black)	
2	RF	Connect standard loop antenna to output terminals of SG.	Connect V.T.V.M. to speaker terminals.	600 KHz (400Hz, 30% modulation)	600 KHz	AM ANT 9-20524 AM OSC 9-20700 (Red)	Max.
3		Place reciever 2 feet from loop antenna.		1400 KHz (400Hz, 30% modulation)	1400 KHz	TC4 TC5	Max.
4	Repeat adjustments.						

PREPARE

1. Variable capacitor completely closed.
2. Set the dial pointer to very left line dial scale.
3. Connect sweep generator, SG, V.T.V.M. and oscilloscope.
4. Selector switch to "AM".
5. Use a screwdriver with plastic grip for all adjustments.

FM ADJUSTMENT

Step	Adjusting circuit	Connections		SG frequency	Position of tuning dial	Adjustment	V.T.V.M. Oscilloscope
		Input	Output				
1	IF	Connect sweep generator to test point TP1 through 0.01μF.	Connect oscilloscope to test point TP3.	10.7 MHz (none modulation)	Near max. capacity of VC. at position with no unrequired signal.	FM 1st 9-20890 (Violet) 9-20900 (Orange) FM 2nd 9-20910 (Gray) 9-20920 (Brown) FM 3rd 9-20930 (Pink) 9-20920 (Blue)	
2	Ratio Det.		Connect oscilloscope to test point TP4.			FM DET 9-20850 9-20860	
3	RF	Connect FM SG. to FM ANT. terminals.	Connect V.T.V.M. to speaker terminal.	90 MHz (400Hz, 30% modulation)	90 MHz	FM ANT 9-20910 FM OSC 9-20460 FM Coil 9-20260	Max.
4				106 MHz (400Hz, 30% modulation)	106 MHz	TC1 TC2 TC3	Max.
5	Repeat adjustments.						

PREPARE

1. Variable capacitor completely closed.
2. Set the dial pointer to very left line of dial scale.
3. Connect sweep generator, FM SG, V.T.V.M. and oscilloscope. FM antenna input impedance is 300 ohm.
4. Selector switch to "FM"
5. Use a screwdriver with plastic grip for all adjustments.

FM MPX ADJUSTMENT

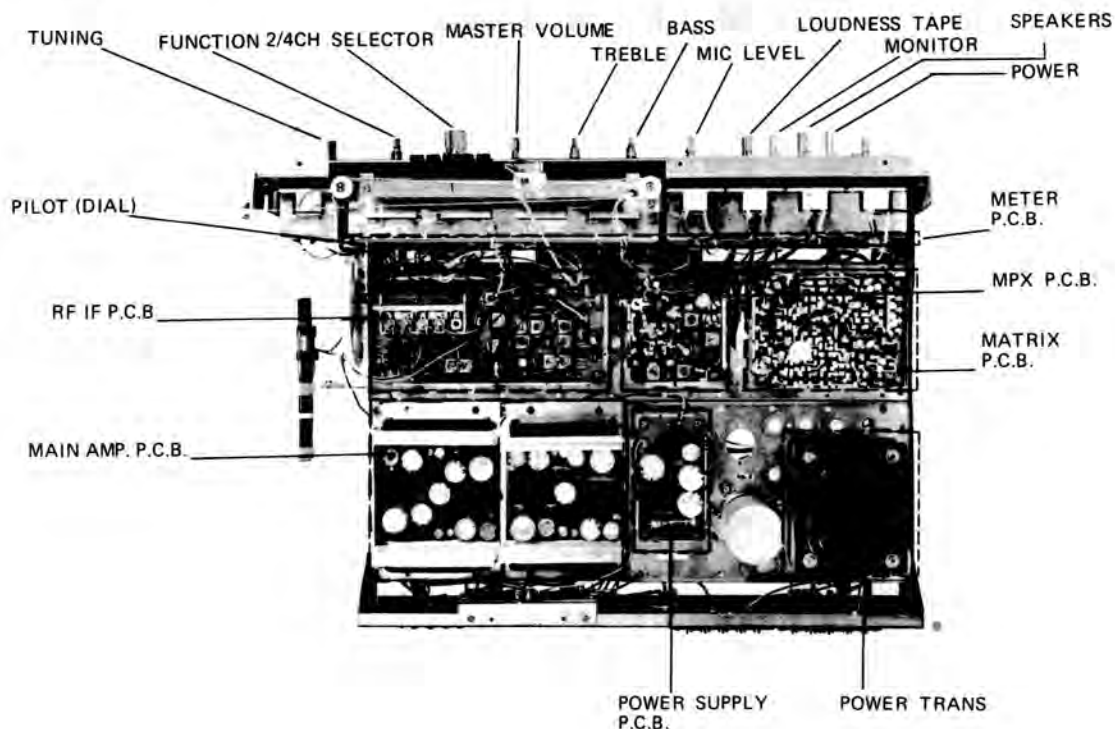
Step	Adjusting circuit	Connections		Position of tuning dial	Adjustment	V.T.V.M.
		Input	Output			
1	SCA signal filter (67 KHz)	Add SCA signal to FM stereo SG. to FM ANT. terminals. FM stereo signal OFF.	Connect V.T.V.M. to emitter of TR201.	Near max. capacity of VC. at position with no unrequired signal.	67KHz 9-20140 (Red)	Min.
2	19KHz pilot signal	Connect FM stereo SG. to FM ANT terminals. 19KHz signal ON. SCA signal OFF.	Connect V.T.V.M. to test point TP8.		19KHz 9-20160 (Blue)	Max.
			Connect V.T.V.M. to test points TP7 & TP9.		19KHz 9-20150 (Green)	Max.
3	38 KHz	Connect FM stereo SG to FM ANT terminals. 19KHz signal ON. Main channel, sub channel signal ON. Add 1000Hz signal from L Ch.	Connect V.T.V.M. to test point TP8.		38KHz 9-20170 (Yellow)	Max.
4	FM stereo signal separation		Connect V.T.V.M. to R speaker terminal.		Separation control SVR B-10K ohm	Min.
5			Connect FM stereo SG to FM ANT terminals. 19KHz signal ON. Main channel, sub channel signal ON. Add 1000Hz signal from R Ch.		Connect V.T.V.M. to L speaker terminal.	38KHz 9-20170 (Yellow)
6	Repeat steps 4 ~ 5. Set at position with max. channel separation.					

PREPARE

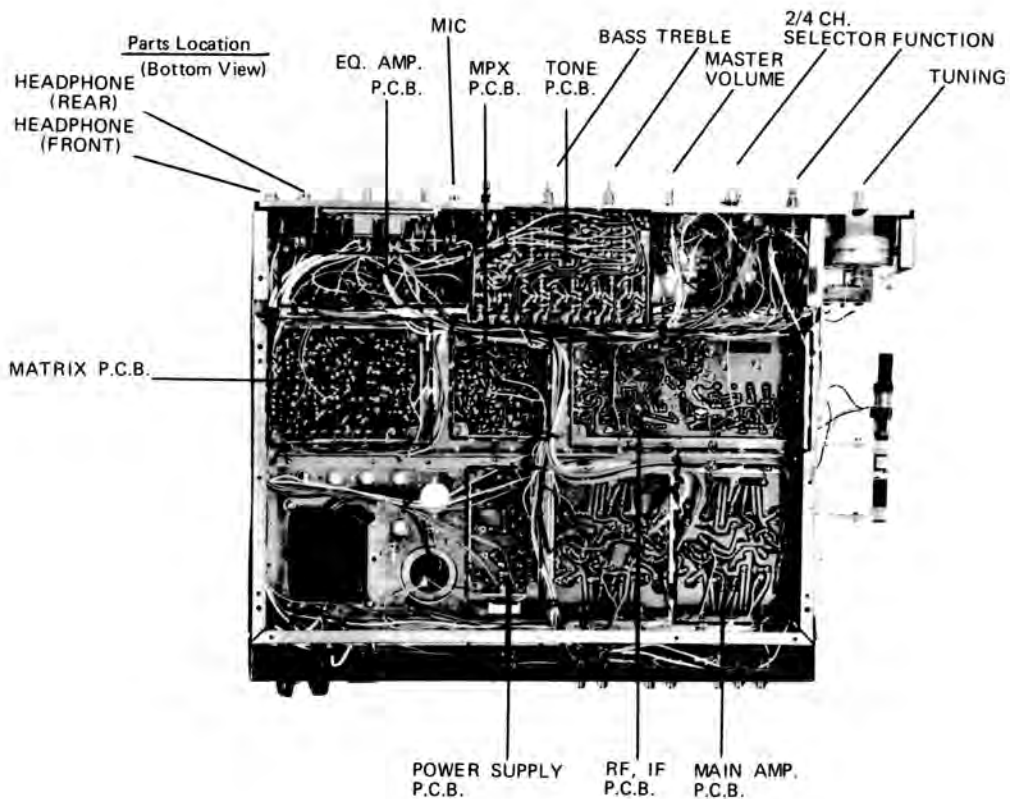
1. Variable capacitor completely closed.
2. Connect FM stereo SG. and V.T.V.M.
3. Selector switch to "FM AUTO"
4. Use a screwdriver with plastic grip for all adjustments.

PARTS LOCATION

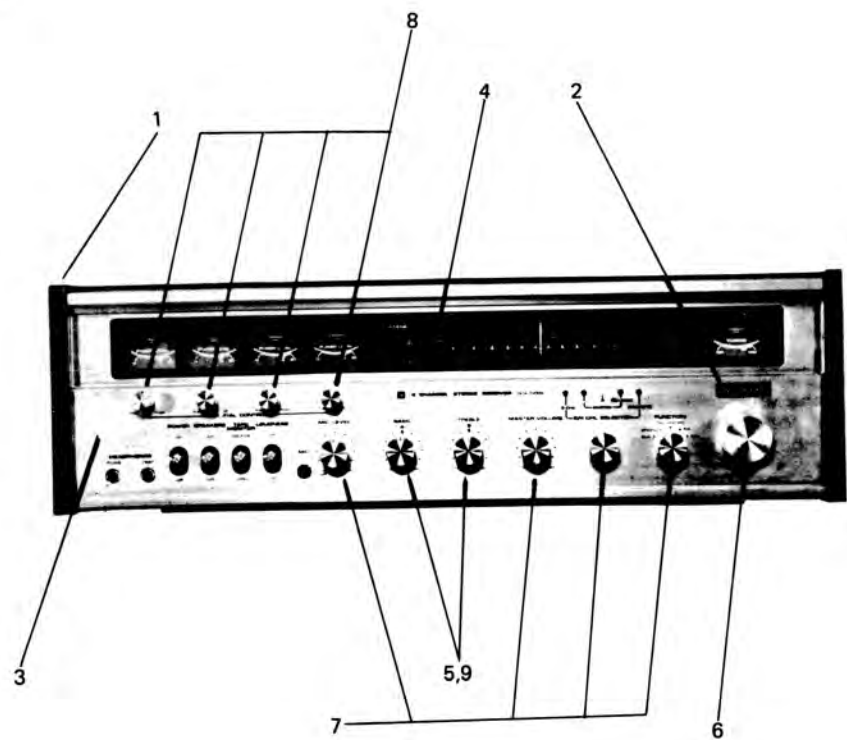
Parts Location
(Top View)



Parts Location
(Bottom View)



FRONT VIEW



REAR VIEW



PARTS LIST

Part orders must contain Part No. and Description.

Ref. No.	Part No.	Description	Q'ty
CABINET			
1	131 2 1101 20800	Cabinet	1
	131 2 3101 12500	Metal Mount	1
		Screw Truss Hd. Tapping 3x8	3
	131 2 1312 10101	Grill	1
		Washer 4.2x12x1t	8
	131 2 1804 10401	Leg Rubber, Stand	4
		Screw Truss Hd. Tapping 4x12	4
		Washer 4.2x12x1t	7
	131 2 4203 15200	Washer 1.6t	4
		Screw Pan Hd. 4x20	7
	131 2 6101 16700	Plate Shield (Alum, Hoil)	1
	131 2 3201 11600	Angle Reinforcement, Cabi Insid	4
		Screw Truss Hd. Tapping 3x8	16
3	131 2 1203 22601	Panel Control, Front Panel	1
		Screw Countersink Hd. Tapping 3x8	3
4	131 2 1205 10800	Decorate Plate Dial, Dial Grass	1
	131 2 6113 11700	Shelter, Switch Lever	4
	131 2 1504 10900	Plate Sign Lamp, 2/4 ch Selector	5
		Nut, Mic. V.R.Shift	
6	131 2 1601 22500	Knob, Tuning	1
7	131 2 1601 22600	Knob, MIC LEVEL, MASTER VOLUME, 2/4CHL SELECTOR, FUNCTION	4
8	131 2 1601 22700	Knob, SPATIAL CONTROL	4
9	131 2 1601 22800	Knob, BASS, TREBLE	2
5	131 2 1601 22900	Knob, BASS, TREBLE	2
	131 2 4201 12800	Loke-set Screw 3x5, Tun, Bass	3
		Treble Knob	
2	131 2 1301 13700	Badge	1
CHASSIS			
MECHANICAL PARTS			
	131 2 3301 17000	Chassis	1
		Pan Hd. Tapping Screw 3x8	17
	131 2 3617 11800	Metal Mount Trans	1
		Pan Hd. Tapping Screw 3x8	6
	131 2 3101 16400	Metal Mount	
		Pan Hd. Tapping Screw 3x8	2
	131 2 3603 12700	Metal Mount Antenna	1
		Pan Hd. Tapping Screw 3x8	2
	131 2 3306 15000	Panel Rear	1
		Pan Hd. Tapping Screw 3x8	6
	131 2 6111 11300	Bushing, AC Cord	1
		Pan Hd. Tapping Screw 3x8	8
		Countersink Hd. Screw 3x8	2
		Hexagon Nut M3	2
	131 2 3305 15000	Panel Front	1
		Button Hd. Tapping Screw 3x8	8
	131 2 4120 10500	Slide Rail Pointer	1
		Pan Hd. Tapping Screw 3x8	2
	131 2 4108 10300	Spindle Pulley	4
	131 2 4107 10300	Pulley	4
	131 2 4208 15400	Spacer (Alumi. Pipe)	4
	131 2 6103 12600	Cover Shield	4
		Pan Hd. Tapping Screw 3x8	2
	131 2 3614 13800	Mount P.C.B., EQ Amp. P.C.B.	1
		Pan Hd. Tapping Screw 3x8	4
	131 2 6101 14701	Plate Shield, SQ Amp. P.C.B.	
		Cover	1
		Pan Hd. Tapping Screw 3x8	2
	131 0 3020 01200	Pulley Assy	1
	131 2 4107 10200	Pulley	1
	131 2 4106 14000	Metal Mount Pulley	1
	131 2 4108 10500	Spindle Pulley	1
		Pan Hd. Tapping Screw 3x8	1
	131 0 3002 10201	Drum Assy	1
	131 2 4112 10200	Rope, Dial Cord	1
	131 2 4111 00200	Spring Rope	1
		Pan Hd. Tapping Screw 3x8	2
	131 0 3011 12800	Pointer Assy	1
	131 2 4113 11100	Metal Slide Pointer	1
	131 2 4101 15200	Pointer	1
	131 2 5205 10200	Cushion	1
	131 2 6308 12400	Filter	1
	131 2 1201 21300	Plate Dial	1
	131 2 1406 11200	Plate Color	1

Ref. No.	Part No.	Description	Q'ty
CHASSIS			
	131 2 6110 17900	Shelter Light	1
	131 2 6110 18000	Shelter Light	2
		Pan Hd. Tapping Screw 3x8	7
	131 0 3003 14400	Shaft Dial Assy	1
	131 2 4102 15100	Shaft Dial	1
	131 2 4114 10400	Bearing	1
	131 2 4206 11200	Ring E	2
	131 2 4116 10400	Flywheel	1
		Pan Hd. Tapping Screw 3x8	2
	131 2 6107 13900	Plate Sever, Pilot Holder	1
	131 2 6110 17600	Shelter Light, Dial	1
		Pan Hd. Tapping Screw 3x8	2
	131 2 6110 17900	Shelter Light, Level Meter	1
		Pan Hd. Tapping Screw 3x6	1
	131 2 5206 11300	Moldplane, Lever Meter (4), Tuning Meter (1)	5
	131 2 6111 11600	Bushing, Function	5
		Washer 42x12x1t, Power Trans	4
	131 2 4203 15300	Washer (Nylon)	4
	131 2 4203 15400	Washer (Nylon)	4
		Hexagon Nut M4	4
	131 2 6111 11500	Bushing, Stereo Indicator, Power SW, etc.	1
	131 2 6113 11400	Shelter, Lever S.W.	4
		Pan Hd. Tapping Screw 3x8,	8
		Plate Heat Sink	
	131 2 6110 17800	Shelter Light, Tuning	1
		Pan Hd. Tapping 3x8	1
	131 2 3608 11300	Crap Wire	12
	131 0 3016 10401	Crap Wire Assy, Antenna Read	1
		Pan Hd. Tapping Screw 3x8	1
ELECTRICAL PARTS			
	131 0 4001 35100	Printed Circuit Assy, RF.IF	1
	131 0 4001 18060	Printed Circuit Assy, MPX	1
	131 0 4001 32300	Printed Circuit Assy, MATRIX	1
	131 0 4001 31801	Printed Circuit Assy, PRE Amp.	1
	131 0 4001 32001	Printed Circuit Assy, METER Amp.	1
	131 0 4001 35000	Printed Circuit Assy, MAIN Amp.	2
	131 0 4001 32100	Printed Circuit Assy, PILOT DIAL	1
	131 0 4001 32200	Printed Circuit Assy, PILOT METER	1
	131 0 4001 34900	Printed Circuit Assy, EQ Amp.	1
	131 0 4001 34501	Printed Circuit Assy, LOUDNESS	1
	131 0 4001 34601	Printed Circuit Assy, POWER SUPPLY	1
	4 2229 22990	V.R. 200K-Bx4, MASTER VOLUME	1
	4 2229 23180	V.R. 1K-Bx1 (W/SW), MIC LEVEL	1
	4 2229 22990	V.R. 200K-Bx4,	1
	4 2229 23180	V.R. 1K-Bx1 (W/SW),	1
	4 2239 20370	Electrolytic 2200µF 63WV	1
	4 2319 22344	Switch Lever 12P, S.P. Tape Moni	2
	4 2319 22620	Switch Rotary 3-6-5, 2/4CH Select	1
	4 2319 22861	Switch Lever 3P, Power UL	1
	4 2349 20190	Fuse 2A	1
	4 2359 20160	Fuse Holder, Tuning Meter Lamp	1
	4 2359 20190	Socket DIN	1
	4 2359 21110	Fuse Holder, AC	1
	4 2359 21080	Jack Head Phone	2
	4 2359 21100	Socket AC, Outlet	1
	4 2359 21230	Socket Phono 4P, Rec, Tape	2
	4 2359 21250	Socket Phono 6P, AUX, Phono	1
	4 2359 21410	Jack Mic.	1
	4 2379 20020	Terminal Ant. 3P	1
	4 2439 20390	Power Cord (8feet)	1
	4 2519 22760	Power Trans	1
	4 2579 20524	Antenna Coil AM	1
	4 5119 20291	Meter VU	4
	4 5119 20301	Meter Tuning	1
	4 6129 20145	Pilot Lamp, Pointer	1
	4 6129 20147	Pilot Lamp, Stereo Indicator	1
	4 6129 20280	Pilot Lamp, Tuning Meter	1
	131 0 4001 34601	Printed Circuit Assy	1
	4 2319 22900	Switch Rotary 2-4-5, Function	1
	4 2379 20080	Terminal 4P	2
RESISTORS			
R807		Carbon 1K ohm ±10% 1/4W	1
R803		Carbon 820 ohm ±10% 1/4W	1
R804		Carbon 1.5K ohm ±10% 1/4W	1

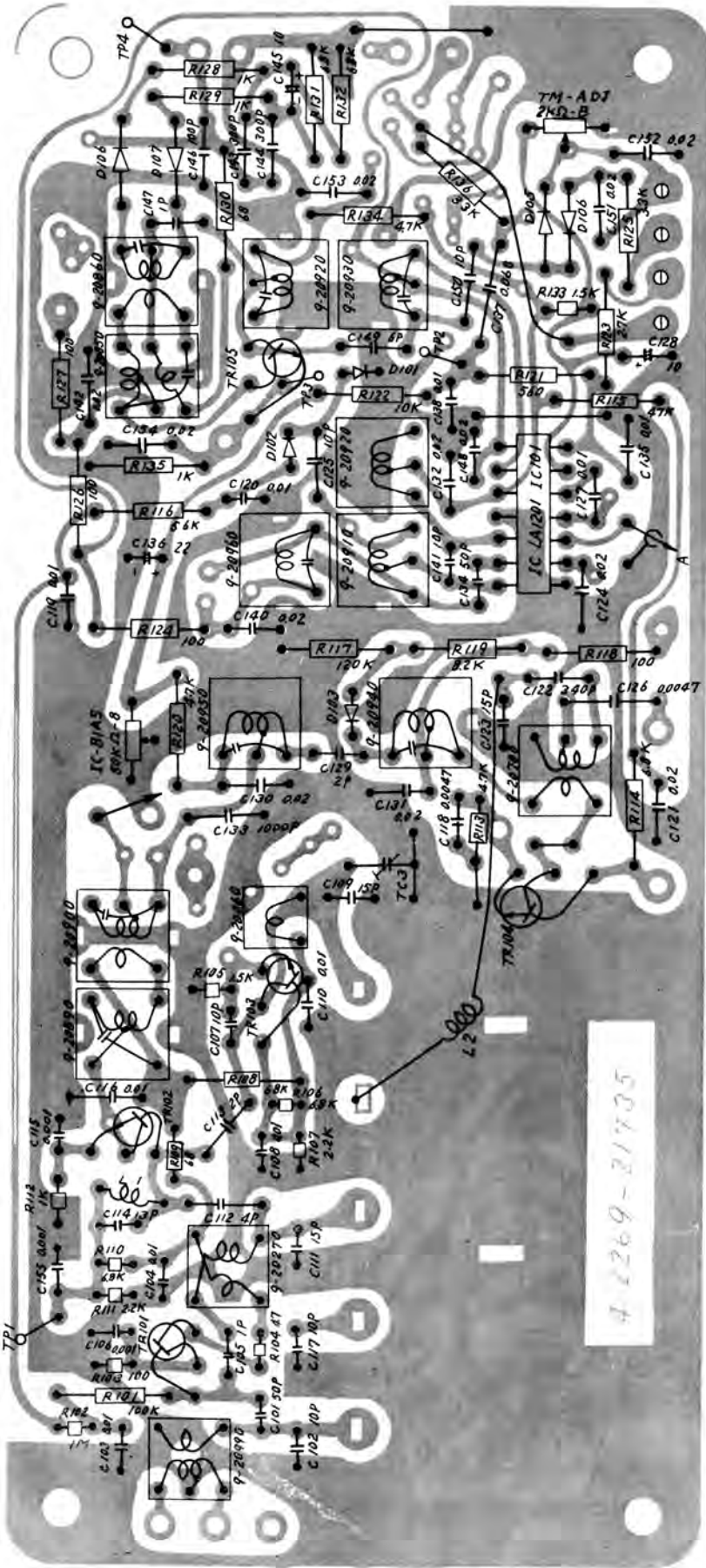
PARTS LIST

Part orders must contain Part No. and Description.

RF. IF. P.C.B. ASSEMBLY

Ref. No.	Part No.	Description	Q'ty
CHASSIS			
R801,802	Carbon 150K ohm ±10% 1/4W	2	
R805,806	Carbon 1.8M ohm ±10% 1/2W	2	
CAPACITORS			
C802	Oil 0.01μF ±20% 400WV	1	
RF. IF. P.C.B. ASSEMBLY			
L1	131-0-4001 35100	Printed Circuit Assy	1
	4 2269 21735	Printed circuit board	1
	4 2249 20410	Variable Capacitor	1
	4 2249 20310	Trimmer Capacitor, FM OSC	1
	4 2579 20990	Antenna Coil, FM	1
	4 2589 20460	OSC Coil FM	1
	4 2599 20270	RF Coil FM	1
	4 2569 20890	IFT, FM 1st	1
	4 2569 20900	IFT, FM 1st	1
	4 2569 20910	IFT, FM 2nd	1
L2	4 2569 20920	IFT, FM 2nd, 3rd	2
	4 2569 20930	IFT, FM 3rd	1
	4 2569 20850	IFT, FM Detector	1
	4 2569 20860	IFT, FM Detector	1
	4 2539 20130	RF Filter Choke	1
	4 2589 20700	OSC Coil, AM	1
	4 2569 20940	IFT, AM 1st	1
	4 2569 20950	IFT, AM 2nd	1
	4 2569 20960	IFT, AM 3rd	1
	4 2539 20020	Heater Choke	1
L2	4 2229 21800	Preset Resistor 2K-B, Tuning Meter	1
	4 2229 21810	Preset Resistor 50K-B, IC Bias	1
SEMI-CONDUCTORS			
IC101	IC LA 1201	1	
TR102	Transistor 2SC668 D, E	1	
TR103	Transistor 2SC668 D	1	
TR104	Transistor 2SC929 D, E	1	
TR105	Transistor 2SC930 D, E	1	
D101,102	Diode 1S188FM	7	
103,104			
105,106			
107			
TR101	Transistor FET 2SK41 F	1	
RESISTORS			
R108,130	Carbon 68 ohm ±10% 1/4W	2	
R118,124	Carbon 100 ohm ±10% 1/4W	4	
126,127			
R121	Carbon 560 ohm ±10% 1/4W	1	
R128,129	Carbon 1K ohm ±10% 1/4W	3	
135			
R123	Carbon 2.7K ohm ±10% 1/4W	1	
R125	Carbon 3.3K ohm ±10% 1/4W	1	
R120,134	Carbon 4.7K ohm ±10% 1/4W	2	
R114,131	Carbon 6.8K ohm ±10% 1/4W	3	
132			
R119	Carbon 8.2K ohm ±10% 1/4W	1	
R122	Carbon 10K ohm ±10% 1/4W	1	
R115	Carbon 47K ohm ±10% 1/4W	1	
R116	Carbon 56K ohm ±10% 1/4W	1	
R101	Carbon 100K ohm ±10% 1/4W	1	
R117	Carbon 120K ohm ±10% 1/4W	1	
R136	Carbon 330K ohm ±10% 1/4W	1	
R104	Carbon 47 ohm ±10% 1/4W	1	
R109	Carbon 68 ohm ±10% 1/4W	1	
R103	Carbon 100 ohm ±10% 1/4W	1	
R112	Carbon 1K ohm ±10% 1/4W	1	
R105,133	Carbon 1.5K ohm ±10% 1/4W	2	
R107,111	Carbon 2.2K ohm ±10% 1/4W	2	
	ELR		

Ref. No.	Part No.	Description	Q'ty
RF. IF. P.C.B. ASSEMBLY			
R113	Carbon 4.7K ohm ±10% 1/4W	1	
R106,110	Carbon 6.8K ohm ±10% 1/4W	2	
R102	Carbon 1M ohm ±10% 1/4W	1	
R102	ELR		
CAPACITOR			
C147	Ceramic 1pF ±0.25pF 50WV NPO	1	
C105	Ceramic 1pF ±0.25pF 50WV	1	
C129	Ceramic 2pF ±0.25pF 50WV	1	
C112	Ceramic 4pF ±0.25pF 50WV	1	
C149	Ceramic 6pF ±0.25pF 50WV	1	
C102,117	Ceramic 10pF ±0.25pF 50WV	1	
125,150	Ceramic 10pF ±0.5pF 50WV	1	
C107	Ceramic 10pF ±0.25pF 50WV NPO	1	
C141	Ceramic 10pF ±0.25pF 50WV	1	
C114	Ceramic 13pF ±0.25pF 50WV	1	
C109	Ceramic 15pF ±5% 50WV, N470	1	
C111	Ceramic 15pF ±5% 50WV	1	
C123	Ceramic 15pF ±5%, 50WV, N1500	1	
C101,134	Ceramic 50pF ±10% 50WV	2	
C146	Ceramic 100pF ±20% 50WV	1	
C143,144	Ceramic 300pF ±20% 50WV	2	
C122	Styrol 340pF ±5% 50WV	1	
C106,115	Ceramic 0.001μF +80 -20% 50WV	3	
155	Styrol 0.001μF ±10% 50WV	1	
C133	Mylar 0.0047μF ±20% 50WV	2	
C118,126	Mylar 0.01μF ±20% 50WV	3	
C138	Ceramic 0.01μF ±20% 50WV	1	
C110			
C103,104	Ceramic 0.01μF +80 -20% 50WV	6	
119,120			
116,127			
C121,124			
130,131			
132,140			
142,148			
151,152			
153,154	Ceramic 0.02μF +80 -20% 50WV	12	
C137	Mylar 0.068μF ±20% 50WV	1	
C128,145	Electrolytic 10μF +150 -10% 16WV	2	
C136	Electrolytic 22μF +150 -10% 16WV	1	
C113	Ceramic 2pF ±0.25pF 50WV	1	

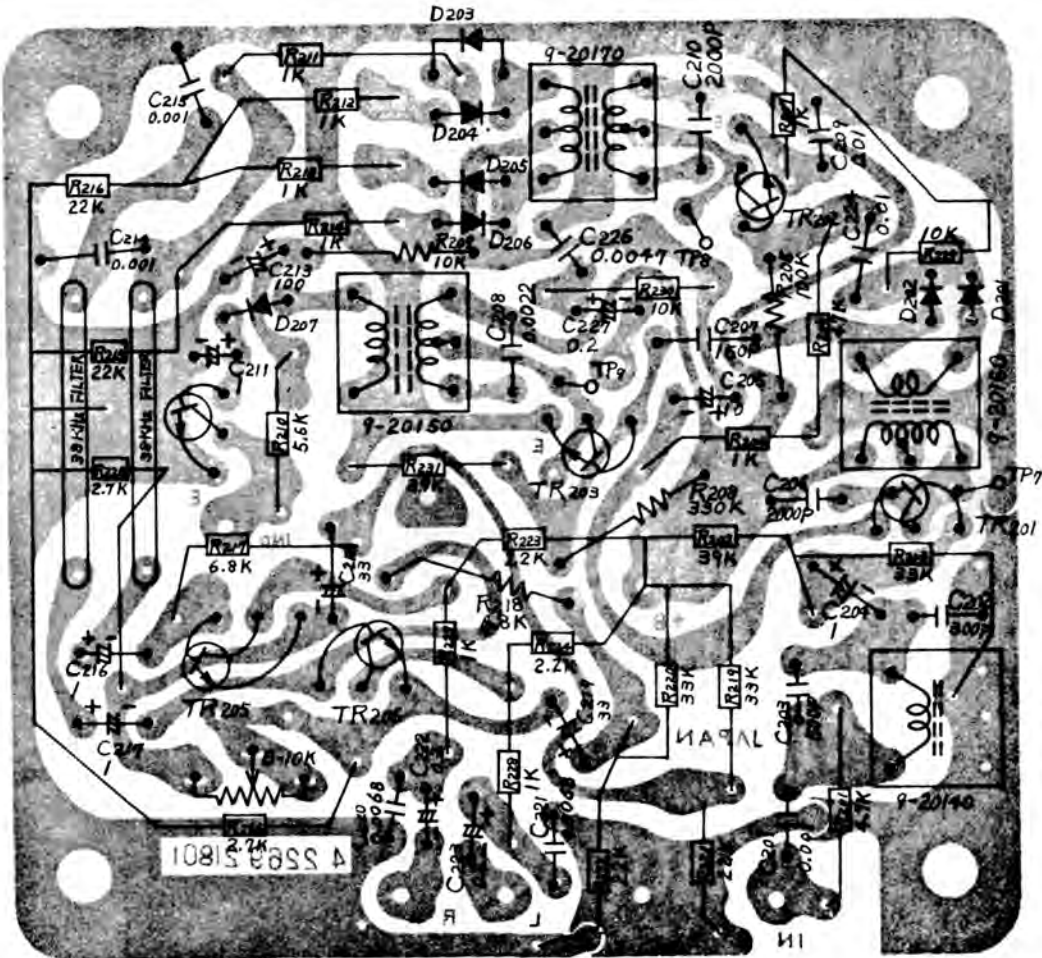


PARTS LIST

Ref. No.	Part No.	Description	Q'ty
MPX P.C.B. ASSEMBLY			
131 0 4001 18005	Printed circuit assy	1	
4 2269 80050	Printed circuit board	1	
4 2659 20140	Multiplex coil SCA (red)	1	
4 2659 20150	Multiplex coil, 19K Hz (green)	1	
4 2659 20160	Multiplex coil, 19K Hz (blue)	1	
4 2659 20170	Multiplex coil, 38K Hz (yellow)	1	
4 2229 21270	VR B-10K ohm, Separation control	1	
4 2279 20140	Rescap, 38K Hz Trap	2	
111 2 6220 11100	Wire Wrap terminal	2	
TR201,202,203, 205,206,	Transistor 2SC537	5	
TR204	Transistor 2SC537	1	
D201,202,203,204 205,206,207	Diode 1S188 FM1	7	
RESISTORS			
R218	Carbon P-type 6.8K ohm $\pm 10\%$ 1/4W	1	
R209	Carbon P-type 10K ohm $\pm 10\%$ 1/4W	1	
R205	Carbon P-type 100K ohm $\pm 10\%$ 1/4W	1	
R208	Carbon P-type 330K ohm $\pm 10\%$ 1/4W	1	

Ref. No.	Part No.	Description	Q'ty
MPX P.C.B. ASSEMBLY			
CAPACITORS			
C202	Styrol 300PF. $\pm 10\%$ 35WV	1	
C203	Styrol 500PF $\pm 10\%$ 35WV	1	
C206,210	Styrol 2000PF $\pm 10\%$ 35WV	2	
C214,215,201	Mylar 0.001 μ F $\pm 20\%$ 50WV	3	
C209,224,226	Mylar 0.01 μ F $\pm 20\%$ 50WV	3	
C220,221	Mylar 0.015 μ F $\pm 20\%$ 50WV	2	
C208	Mylar 0.0022 μ F $\pm 20\%$ 50WV	1	
C207	Ceramic 50PF $\pm 10\%$ 50WV	1	
C204,216,217,211	Electrolytic 1 μ F +150 $\sim$ -0% 10WV	4	
C205	Electrolytic 10 μ F +150 $\sim$ -0% 10WV	1	
C218,219	Electrolytic 33 μ F +150 $\sim$ -0% 6.3WV	2	
C213	Electrolytic 100 μ F +150 $\sim$ -0% 10WV	1	
C222,223,227	Alsicon 0.2 μ F +40 $\sim$ -20% 10WV	3	

MPX. P.C.B. ASSEMBLY

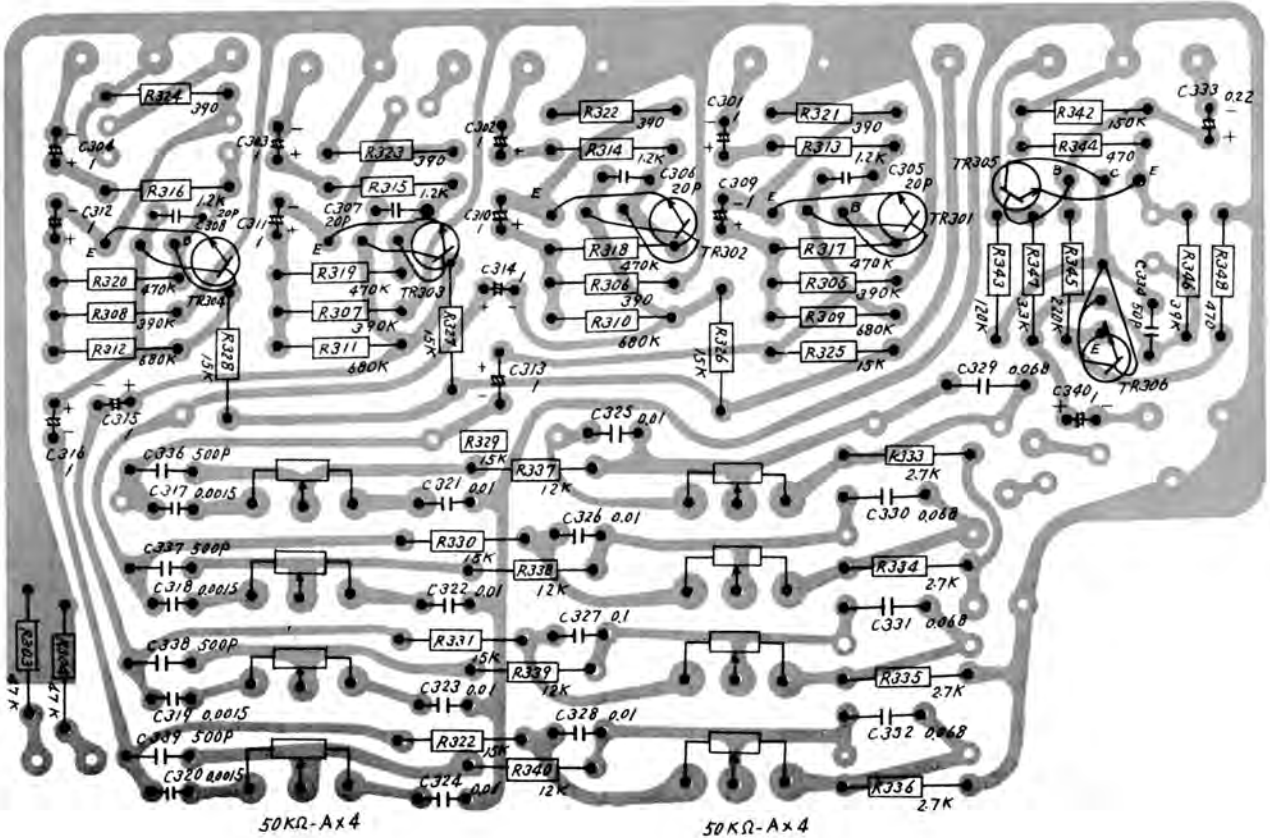


PARTS LIST

Ref. No.	Part No.	Description	Q'ty
PRE AMP. P.C.B. ASSEMBLY			
131 0 4001 31801	Printed Circuit Assy	1	
4 2269 23830	Printed Circuit Board	1	
4 2229 23000	V.R. 50K-Ax4, BASS, TREBLE	2	
111 2 6220 11100	Wire Wrap Terminal	14	
SEMI-CONDUCTORS			
TR301,302 303,304 306	Transistor 2SC693 F,G	5	
TR305	Transistor 2SC693 F α , Fu, G α , Gu	1	
RESISTORS			
R321,322 323,324	Carbon 390 ohm $\pm 10\%$ 1/4W	4	
R344,348	Carbon 470 ohm $\pm 10\%$ 1/4W	2	
R313,314 315,316	Carbon 1.2K ohm $\pm 10\%$ 1/4W	4	
R333,334 335,336	Carbon 2.7K ohm $\pm 10\%$ 1/4W	4	
R347	Carbon 3.3K ohm $\pm 10\%$ 1/4W	1	
R337,338 339,340	Carbon 12K ohm $\pm 10\%$ 1/4W	4	
R325,326 327,328 329,330 331,332	Carbon 15K ohm $\pm 10\%$ 1/4W	8	
R346	Carbon 39K ohm $\pm 10\%$ 1/4W	1	
R303,304	Carbon 47K ohm $\pm 10\%$ 1/4W	2	
R343	Carbon 120K ohm $\pm 10\%$ 1/4W	1	
R342	Carbon 150K ohm $\pm 10\%$ 1/4W	1	

Ref.No.	Part No.	Description	Q'ty
PRE AMP. P.C.B. ASSEMBLY			
R345	Carbon 220K ohm $\pm 10\%$ 1/4W	1	
R305,306 307,308	Carbon 390K ohm $\pm 10\%$ 1/4W	4	
R317,318 319,320	Carbon 470K ohm $\pm 10\%$ 1/4W	4	
R309,310 311,312	Carbon 680K ohm $\pm 10\%$ 1/4W	4	
CAPACITORS			
C305,306 307,308	Ceramic 20pF $\pm 10\%$ 50WV	4	
C334	Ceramic 50pF $\pm 10\%$ 50W	1	
C336,337 338,339	Ceramic 500pF $\pm 10\%$ 50WV	4	
C317,318 319,320	Mylar 0.0015 μ F $\pm 20\%$ 50WV	4	
C321,322 323,324 325,326	Mylar 0.01 μ F $\pm 20\%$ 50WV	8	
327,328			
C329,330 331,332	Mylar 0.068 μ F $\pm 20\%$ 50WV	4	
C333	Al.Si. 0.22 μ F +150-10% 10WV	1	
C301,302 303,304 313,314 315,316 340	Al.Si. 1 μ F +150-10% 25WV	9	
C309,310 311,312	Electrolytic 1 μ F +150-10% 10WV	4	

PRE AMP. P.C.B. ASSEMBLY.



PARTS LIST

Ref. No.	Part No.	Description	Q'ty
MAIN AMP. P.C.B. ASSEMBLY			
131 0 4001 35000		Printed circuit Assy	1
4 2269 24190		Printed Circuit Board	1
4 2359 20930		Fuse Holder	4
4 2349 20030		Fuse (2A)	2
111 2 6220 11100		Wire Wrap Terminal	9
131 2 6201 18500		Plate Heat Sink, Power Transistor	2
		Pan Hd. Tapping Screw 3 x 14	4
		Pan Hd. Screw 3 x 8	4
		Hexagon Nut M3	4
SEMI-CONDUCTORS			
IC501,502		STK-023	2
TR501,502		2SC693 FL, GL	2
RESISTORS			
R515,516		Carbon 220 ±10% 1/4W	2
R513,514		Carbon 560 ±10% 1/4W	2
R511,512		Carbon 1K ±10% 1/4W	2
R501,502		Carbon 1.2K ±10% 1/4W	2
R509,510		Carbon 3.3K ±10% 1/4W	2
R507,508		Carbon 15K ±10% 1/4W	2
R503,504		Carbon 220K ±10% 1/4W	4

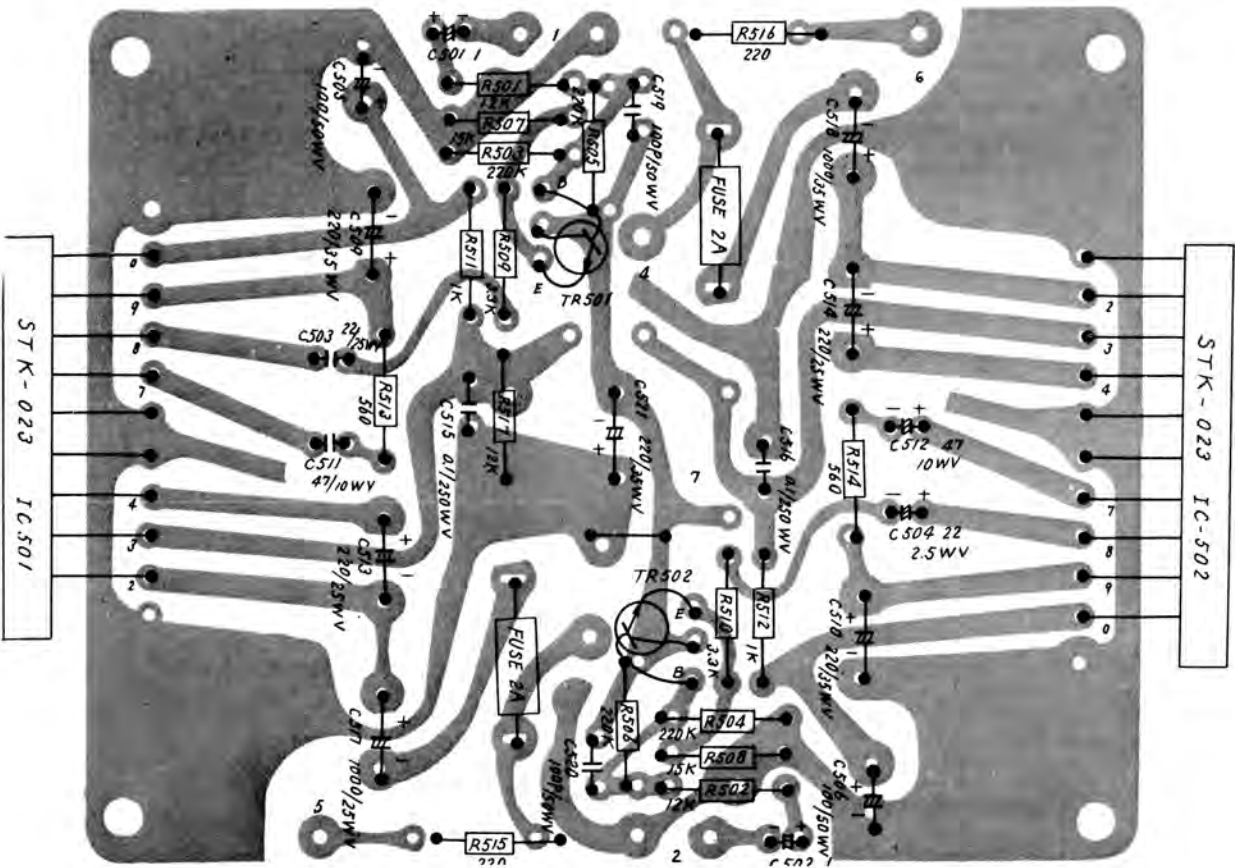
Ref. No.	Part No.	Description	Q'ty
MAIN AMP. P.C.B. ASSEMBLY			
CAPACITORS			
C503,504		Electrolytic 22μF +150 -10% 25WV	2
C511,512		Electrolytic 47μF +150 -10% 10WV	2
C505,506		Electrolytic 100μF +150 -10% 50WV	2
C513,514		Electrolytic 220μF +150 -10% 25WV	2
C509,510		Electrolytic 220μF +150 -10% 35WV	3
521		Electrolytic 1000μF +150 -10% 35WV	2
C517,518		Ceramic 100pF ±10% 50WV	2
C519,520		Ceramic 0.1μF +100 -0% 250WV	2
C515,516		Al.Si. 1μF ±20% 25WV	2

PARTS LIST

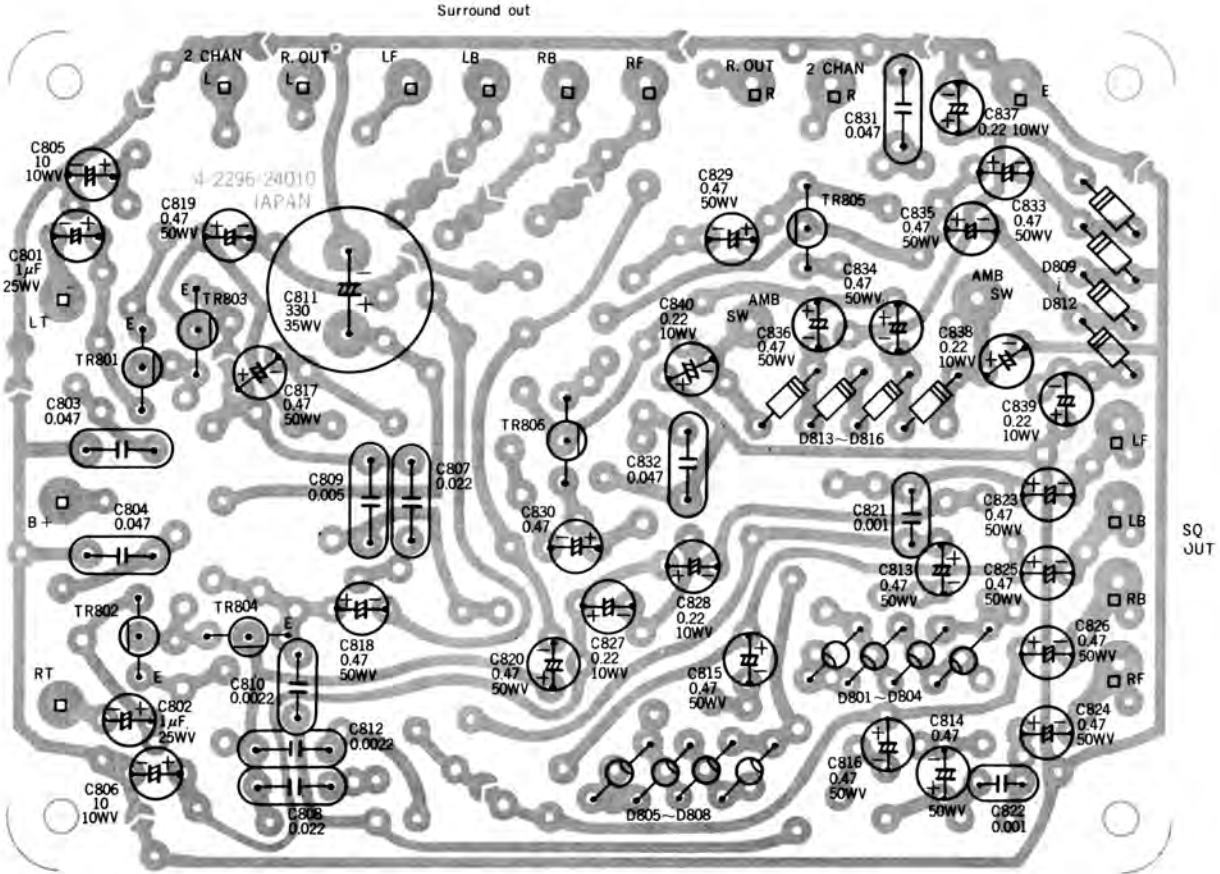
Ref. No.	Part No.	Description	Q'ty
MATRIX P.B.C. ASSEMBLY			
131 0 4001 32300		Printed Circuit Assy	1
4 2269 24010		Printed Circuit Board	1
111 2 6220 11100		Wire Wrap Terminal	18
SEMI-CONDUCTORS			
TR801,802		Transistor 2SC693 FL, GL	2
TR803,804		Transistor 2SA608 D,E,F	2
TR805,806		Transistor 2SC537 E, F	2
D801,802		Diode DS-430	8
803,804		Diode 1S188	8
805,806		Diode DS-430	8
807,808		Diode 1S188	8
D809,810		Diode DS-430	8
811,812		Diode 1S188	8
813,814		Diode DS-430	8
815,816		Diode 1S188	8
CAPACITORS			
C805,806		Electrolytic 10μF +150 -10% 10WV	2
C811		Electrolytic 330μF +150 -10% 35WV	1

Ref. No.	Part No.	Description	Q'ty
MATRIX P.C.B. ASSEMBLY			
C827,828		AL.Si. 0.22μF ±20% 10WV	6
837,838		AL.Si. 0.22μF ±20% 10WV	6
839,840		AL.Si. 0.22μF ±20% 10WV	6
C813,814		AL.Si. 0.22μF ±20% 10WV	6
815,816		AL.Si. 0.22μF ±20% 10WV	6
817,818		AL.Si. 0.22μF ±20% 10WV	6
819,820		AL.Si. 0.22μF ±20% 10WV	6
823,824		AL.Si. 0.22μF ±20% 10WV	6
825,826		AL.Si. 0.22μF ±20% 10WV	6
829,830		AL.Si. 0.22μF ±20% 10WV	6
833,834		AL.Si. 0.22μF ±20% 10WV	6
835,836		AL.Si. 0.22μF ±20% 10WV	6
SEMI-CONDUCTORS			
C821,822		AL.Si. 0.47μF +150 -10% 50WV	18
C810,812		AL.Si. 0.47μF +150 -10% 50WV	18
C809		AL.Si. 0.47μF +150 -10% 50WV	18
C807,808		AL.Si. 0.47μF +150 -10% 50WV	18
C803,804		AL.Si. 0.47μF +150 -10% 50WV	18
831,832		AL.Si. 0.47μF +150 -10% 50WV	18
C801,802		AL.Si. 0.47μF +150 -10% 50WV	18

MAIN AMP. P.C.B. ASSEMBLY



MATRIX P.C.B. ASSEMBLY

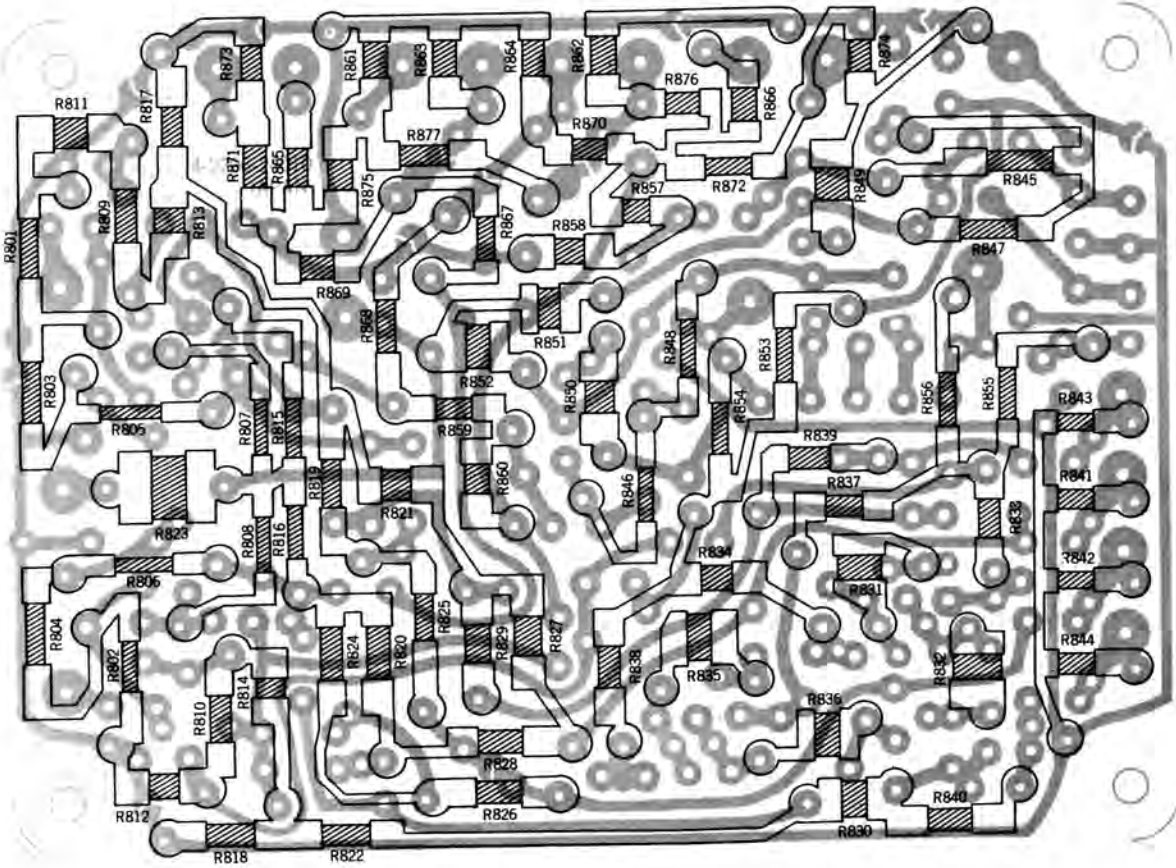


TR801, 802 2SC693 (FL) TR803, 804 2SA608 (D, E, F) TR805, 806 2SC537 (E, F)
D801~808 DS-430 D809~D816 1S188 FM1

MATRIX P.C.B. PRINTED RESISTORS. VALUE

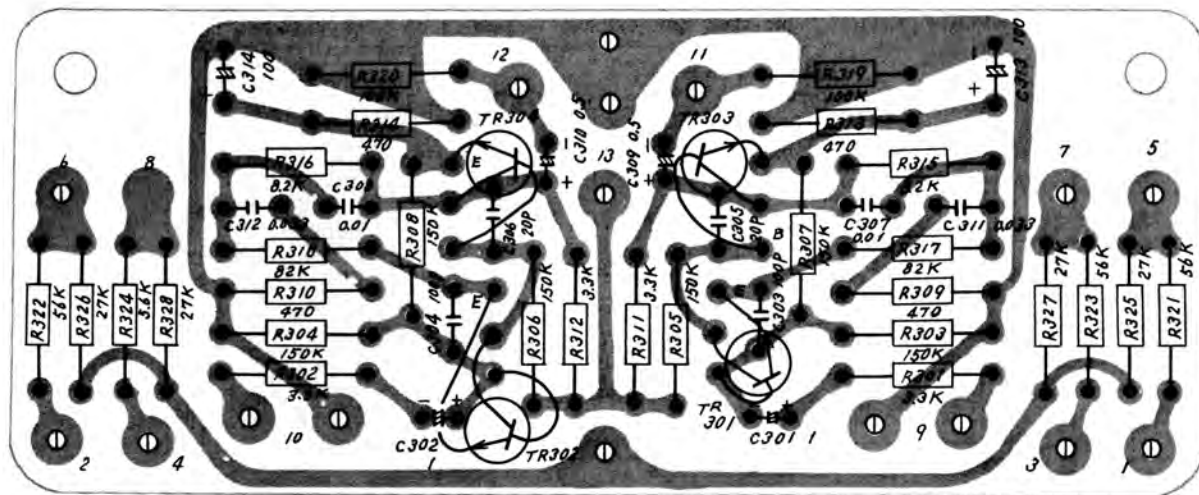
R801	330K	±20%	1/32W	R821	10K	±10%	1/32W	R840	22K	±15%	1/32W	R859	100K	±10%	1/32W
R802	330K	±20%	1/32W	R822	22K	±10%	1/32W	R841	120K	±15%	1/32W	R860	100K	±10%	1/32W
R803	330K	±20%	1/32W	R823	220K	±20%	1/16W	R842	120K	±15%	1/32W	R861	120K	±15%	1/32W
R804	330K	±20%	1/32W	R824	22K	±10%	1/32W	R843	120K	±15%	1/32W	R862	120K	±15%	1/32W
R805	330K	±20%	1/32W	R825	120K	±10%	1/32W	R844	120K	±15%	1/32W	R863	120K	±15%	1/32W
R806	330K	±20%	1/32W	R826	100K	±10%	1/32W	R845	330K	±20%	1/32W	R864	120K	±15%	1/32W
R807	220K	±20%	1/32W	R827	100K	±10%	1/32W	R846	330K	±20%	1/32W	R865	18K	±15%	1/32W
R808	220K	±20%	1/32W	R828	120K	±10%	1/32W	R847	220K	±20%	1/32W	R866	18K	±15%	1/32W
R809	2.2K	±10%	1/32W	R829	56K	±15%	1/32W	R848	220K	±20%	1/32W	R867	180K	±10%	1/32W
R810	2.2K	±10%	1/32W	R830	56K	±10%	1/32W	R849	470	±10%	1/32W	R868	180K	±10%	1/32W
R811	10K	±20%	1/32W	R831	4.7K	±20%	1/32W	R850	470	±10%	1/32W	R869	82K	±10%	1/32W
R812	10K	±20%	1/32W	R832	4.7K	±20%	1/32W	R851	4.7K	±10%	1/32W	R870	82K	±10%	1/32W
R813	6.8K	±10%	1/32W	R833	100K	±20%	1/32W	R852	4.7K	±10%	1/32W	R871	120K	±15%	1/32W
R814	6.8K	±10%	1/32W	R834	100K	±20%	1/32W	R853	27K	±10%	1/32W	R872	120K	±15%	1/32W
R815	1.8K	±10%	1/32W	R835	4.7K	±20%	1/32W	R854	27K	±10%	1/32W	R873	120K	±15%	1/32W
R816	1.8K	±10%	1/32W	R836	4.7K	±20%	1/32W	R855	27K	±10%	1/32W	R874	120K	±15%	1/32W
R817	2.2K	±10%	1/32W	R837	100K	±20%	1/32W	R856	27K	±10%	1/32W	R875	68K	±10%	1/32W
R818	2.2K	±10%	1/32W	R838	100K	±20%	1/32W	R857	100K	±10%	1/32W	R876	68K	±10%	1/32W
R819	22K	±10%	1/32W	R839	22K	±15%	1/32W	R858	100K	±10%	1/32W	R877	47K	±10%	1/32W
R820	22K	±10%	1/32W												

PRINTED RESISTERS LAYOUT

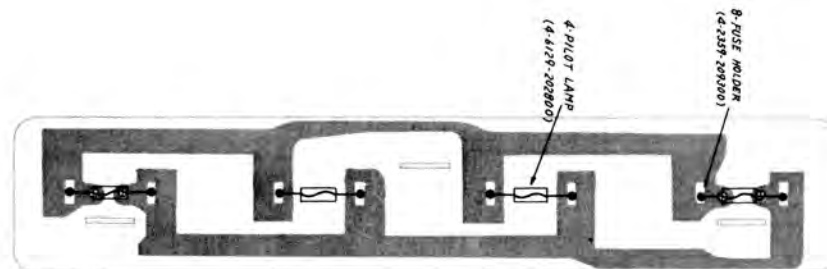


Ref. No.	Part No.	Description	Q'ty
EQ. AMP. P.C.B. ASSEMBLY			
	131 0 4001 34900	Printed Circuit Assy	1
	111 2 6220 11100	Wire wrap Terminal	18
	4 2269 24200	Printed Circuit Board	1
TR301,302		SEMI-CONDUCTOR	
TR303,304		Transistor 2SC693 FL, GL	2
		Transistor 2SC693 F, G	2
		RESISTORS	
R309,310		Carbon 470 ohm ±10% 1/4W	4
313,314		Carbon 3.3K ohm ±10% 1/4W	4
R301,302		Carbon 8.2K ohm ±10% 1/4W	2
311,312		Carbon 82K ohm ±10% 1/4W	2
R315,316		Carbon 100K ohm ±10% 1/4W	2
R317,318		Carbon 150K ohm ±10% 1/4W	2
R319,320		Carbon 27K ohm ±10% 1/4W	4
R303,304		Carbon 56K ohm ±10% 1/4W	4
305,306		CAPACITORS	
307,308		Ceramic 20pF ±10% 50WV	2
R325,326		Ceramic 100pF ±10% 50WV	2
327,328		Mylar 0.01µF ±20% 50WV	2
R321,323		Mylar 0.033µF ±20% 50WV	2
324,325		Al. Si. 0.5µF ±20% 25WV	2
		Al. Si. 1µF ±20% 25WV	2
		Electrolytic 100µF +150-10% 10WV	2
POWER SUPPLY P.C.B. ASSEMBLY			
	131 0 4001 34601	Printed Circuit Assy	1
	4 2269 24110	Printed Circuit Board	1
	111 2 6220 11100	Wire Wrap Terminal	6
D701,702		SEMI-CONDUCTORS	
D703		Diode DS-118	2
		Zener Diode SZ-9	1
		CAPACITORS	
C703,704		Electrolytic 470µF +150-10% 35WV	3
705		Electrolytic 470µF +150-10% 10WV	1
C706		Ceramic 0.01µF +80-20% 250W 250WV	2
C701,702		RESISTOR	
R702		Carbon 220 ohm 10% 1/4W	1
R704		Metal Film 220 ohm ±10% 1W	1
R705,706		Metal Film 470 ohm ±10% 1W	2
R701		Metal Film 560 ohm ±10% 1W	1
R703		Metal Film 820 ohm ±10% 3W	1
METER P.C.B. ASSEMBLY			
	131 0 4001 32001	Printed Circuit Assy	1
	4 2269 23850	Printed Circuit Board	1
	4 2229 22711	V.R. 100K-CxI, Spatial Control	4
	2 6220 11100	Wire Wrap Terminal	20
		SEMI-CONDUCTORS	
D601,602		1S188	4
603,604		DS430	4
D605,606			
607,608			

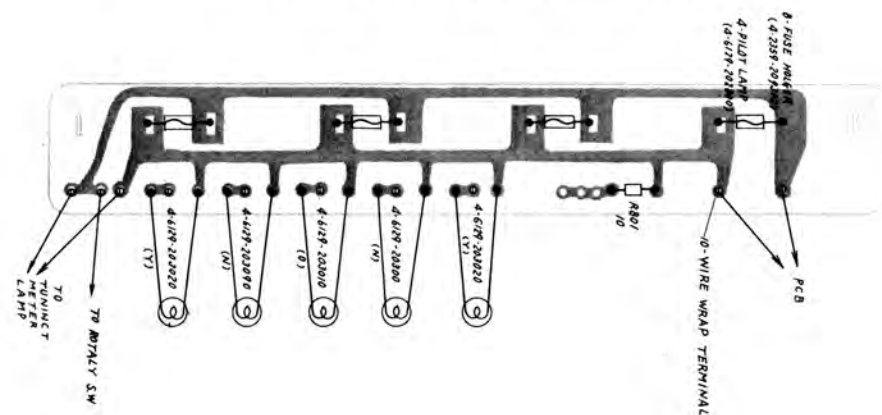
Ref. No.	Part No.	Description	Q'ty
METER P.C.B. ASSEMBLY			
		RESISTORS	
R605,606		Carbon 1K ohm ±10% 1/4W	8
607,608			
613,614			
615,616			
R609,610		Carbon 15K ohm ±10% 1/4W	4
611,612			
		CAPACITORS	
C601,602		Electrolytic 1µF +150 -10% 50W 50WV	4
603,604			
PILOT (METER) P.C.B. ASSEMBLY			
	131 0 4001 32200	Printed Circuit Assy	1
	4 2269 23990	Printed Circuit Board	1
	4 2359 20930	Fuse Holder	8
	4 6129 20280	Pilot Lamp	4
		Pilot Lamp	
PILOT (DIAL) P.C.B. ASSEMBLY			
	131 0 4001 32101	Printed Circuit Assy	1
	4 2269 23870	Printed Circuit Board	1
	4 2359 20930	Fuse Holder	8
	4 6129 20280	Pilot Lamp	4
	111 2 6220 11100	Wire Wrap Terminal	10
	4 6129 20300	Pilot Lamp (N)	2
	4 6129 20301	Pilot Lamp (O)	1
	4 6129 20302	Pilot Lamp (Y)	2
R801		Carbon 10 ohm ±10% 1/4W	1
LOUDNESS P.C.B. ASSEMBLY			
	131 0 4001 34501	Printed Circuit Assy	1
	4 2269 24430	Printed Circuit Board	1
	4 2319 22333	Switch Lever 6P, LOUDNESS	1
	111 2 6220 11100	Wire Wrap Terminal	5
R901,902		Carbon 39K ohm ±10% 1/4W	2
C903,904		Ceramic 390pF ±10% 50WV	2
C901,902		Mylar 0.01µF ±20% 50WV	2



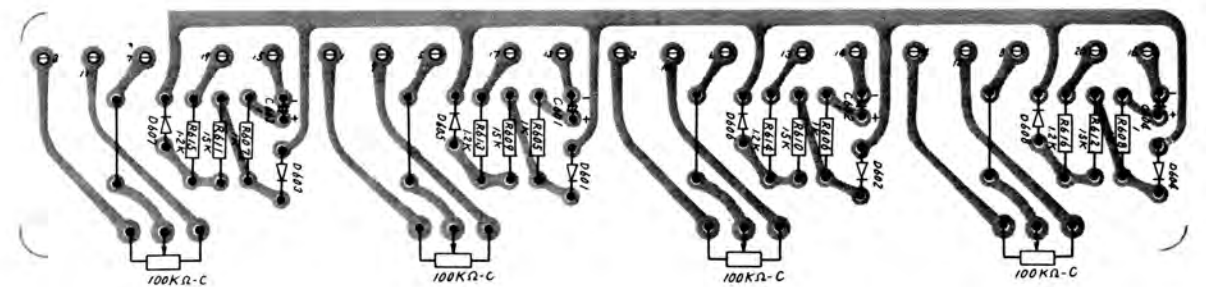
EQ. AMP. P.C.B. ASSEMBLY



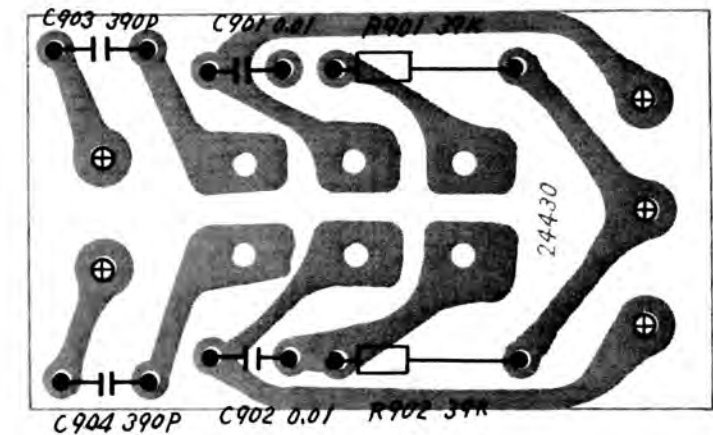
PILOT (METER) P.C.B. ASSEMBLY



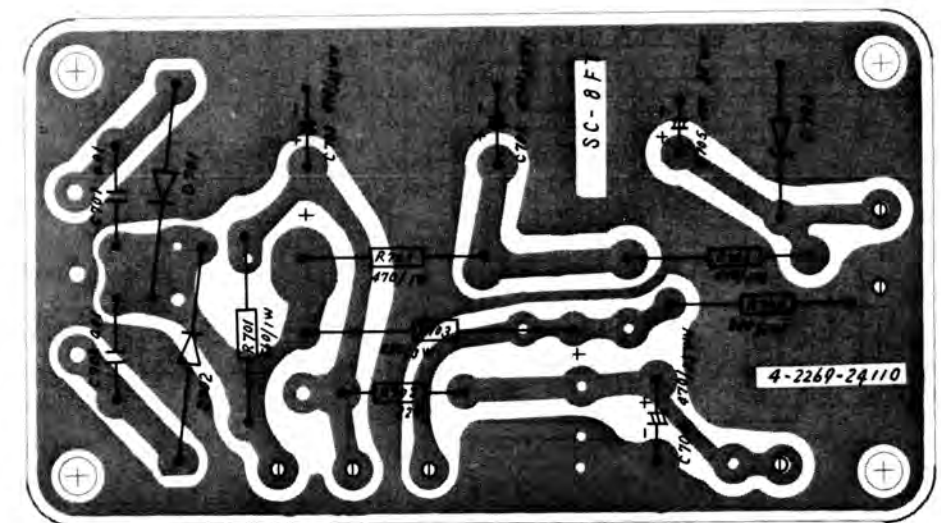
PILOT (DIAL) P.C.B. ASSEMBLY



METER P.C.B. ASSEMBLY

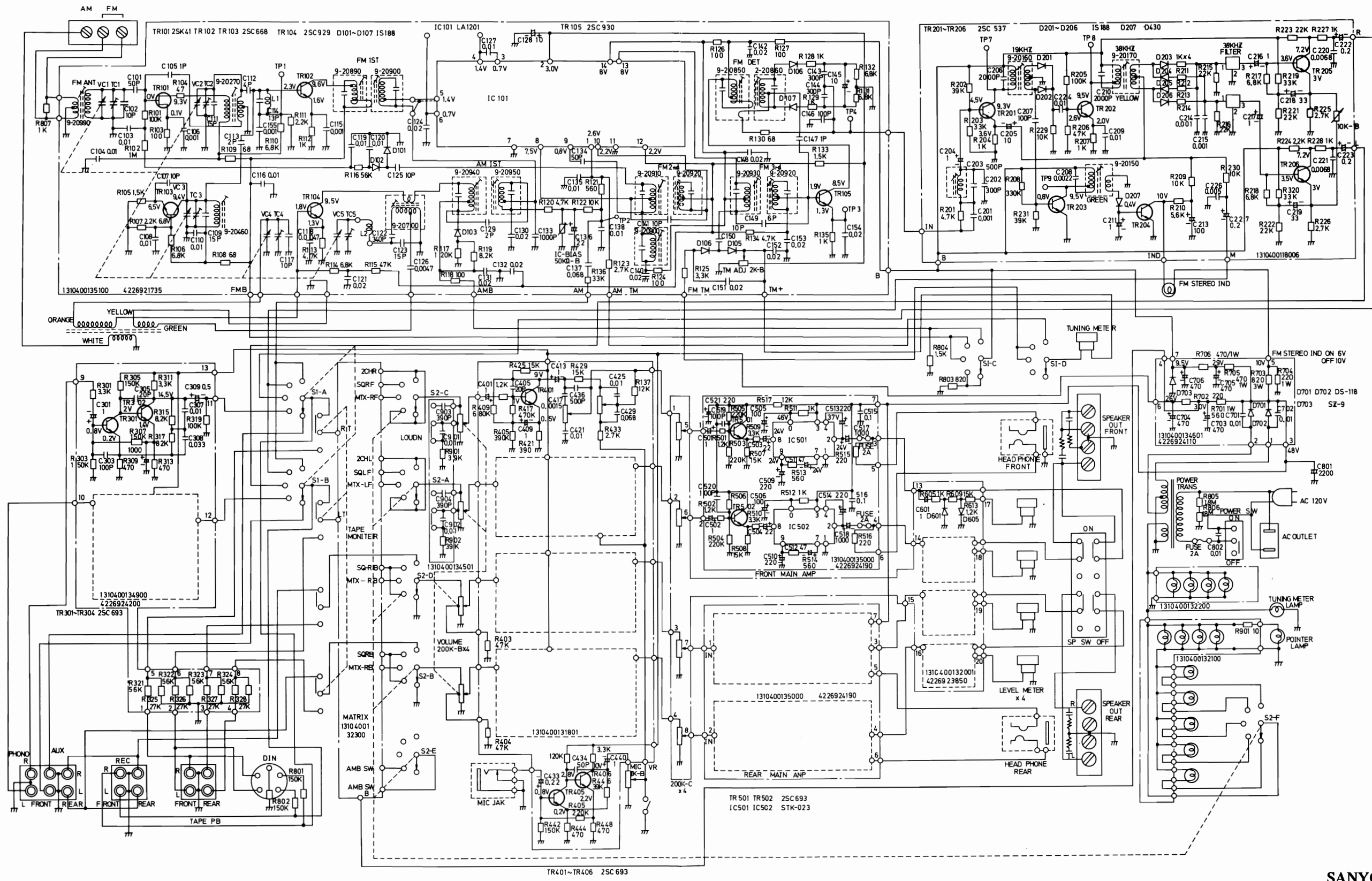


LOUDNESS P.C.B. ASSEMBLY



POWER SUPPLY P.C.B. ASSEMBLY

SCHEMATIC DIAGRAM



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