SERVICE MANUAL

AM/FM STEREO DC TUNER-AMPLIFIER R-2040

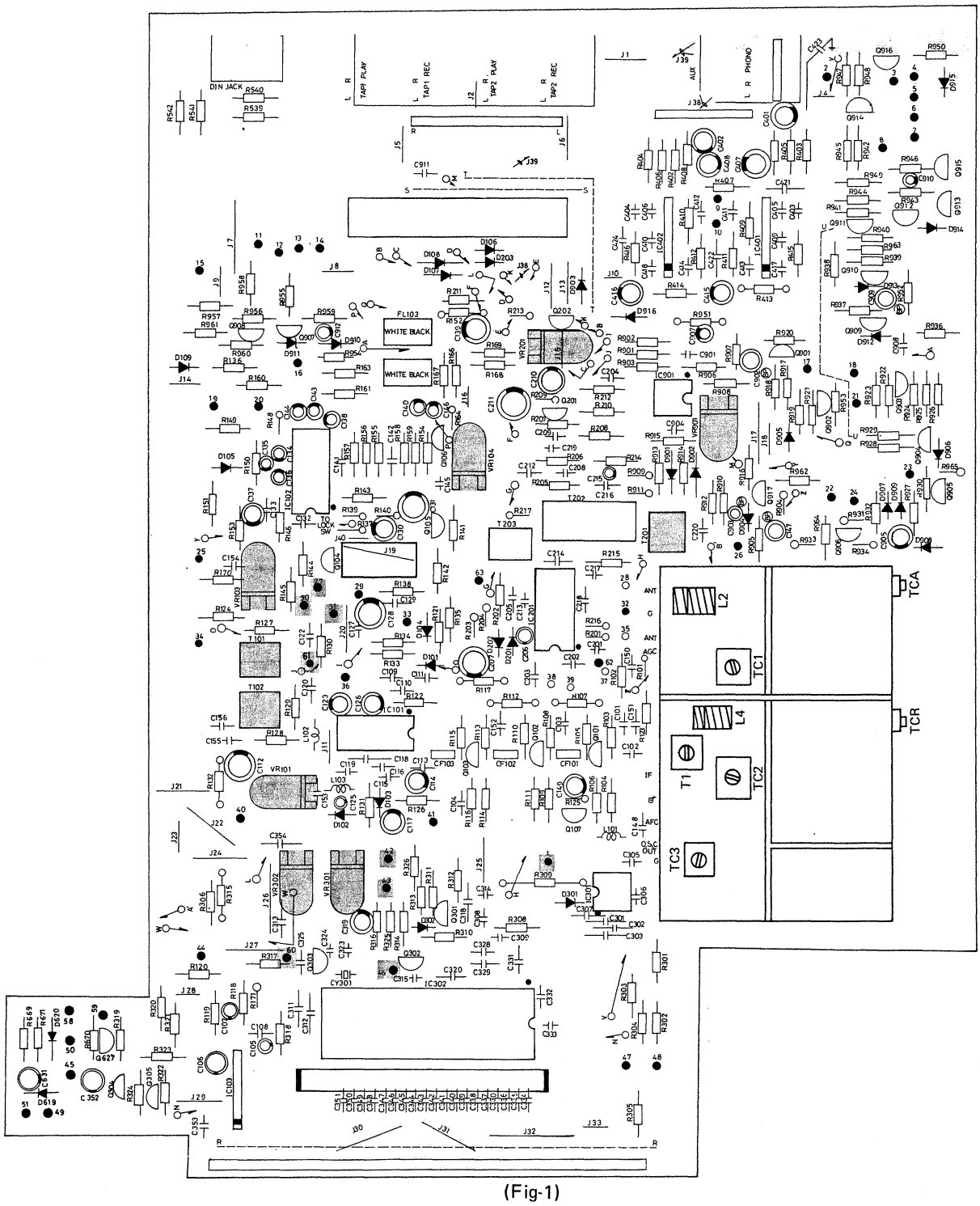
CONTENTS

STEP	SIGNAL GENERATOR		DIAL (DISPLAY)	OUTPUT INDICATOR	ADJUST	ADJUST FOR
	CONECTION TO	SET SIGNAL TO	SETTING	CONNECTED TO		
1	Set Function Switch to 'FM' and Accutouch Switch off.					
2	FM tracking					
3	FM Signal generator across FM antenna connector (300 ohm) through matching network	Reduce the output level to minimum (interstion receiving condition)	Quiet	Tuning meter (Fig. 2) Pin 61 and 31.	T102	Indicate center.
4		106 MHz at 1 KHz 100% (75 KHz) modulation, output level 3 μV.	106 MHz	Oscilloscop, AC voltage meter, Tape out.	TC3 (OSC) TCR TCA	Maximum output level.
5		87.5 MHz at 1 KHz 100% (75 KHz) modulation, output level 3 μV.	87.5 MHz		L2 L4 (TC3)	Maximum output level.
6		98 MHz at 1 KHz 100% (75 KHz) modulation, output level 3 μV.	98 MHz		T1	Maximum output level.
7	Repeat step 3 thru 7, till the most accurate tracking and the maximum sensitivity be secured.					

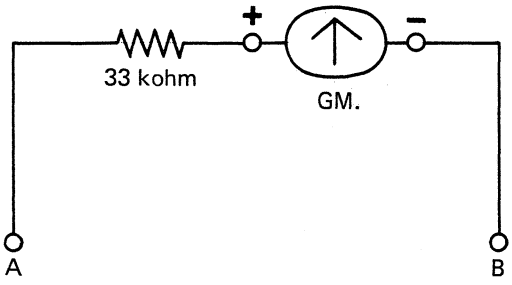
STEP	SIGNAL GENERATOR		DIAL (DISPLAY)	OUTPUT INDICATOR	ADJUST	ADJUST FOR
	CONECTION TO	SET SIGNAL TO	SETTING	CONNECTED TO		
	T. H. Distortion.					
8	MF Signal generator across FM antenna connector through (300 ohm) matching network.	98 MHz at 1 KHz 100% (75 KHz) modulation, output level minimum.	98 MHz	Tuning meter (Fig. 2) Pin 61 and 31.	T102	Indicate center.
9		Output level 1 mV.		Oscilloscope, AC Voltage meter, Tape out.	T101	Minimum distortion.
10	Repeta step 8–9 to obtain corect T.H.D. minimum.					
11	FM Signal strength indicator.					
12	FM Signal generator across FM antenna connector through (300 ohm) matching network.	98 MHz at 1 KHz 100% (75 KHz) modulation, output level 350 μV.,	98 MHz		VR101	Set lighting of signal strengh FL display to '5' segments.
13	M.P.X.					
14	FM Signal generator across FM antenna connect through (300 ohm) matching network.	98 MHz no modulation output level 1 mV.	98 MHz	Frequency counter Pin 27 and 30 (GND).	VR103	Adjust at 76 KHz the frequency of PLL oscillation. (± 75 KHz)
15		98 MHz at 19 KHz 10%, 1 KHz 90%, Left Chn.		Oscilloscope AC Viltage meter, Tape out.	VR104	Right Chn. output level to minimum.
16		98 MHz at 19 KHz 10%, 1 KHz 90%, Right Chn.				Left Chn. output level to minimum.
17	Repeat step 14–16 so as to get Balanced Separation.					

STEP	SIGNAL GENERATOR		DIAL (DISPLAY)	OUTPUT INDICATOR	ADJUST	ADJUST FOR
	CONECTION TO	SET SIGNAL TO	SETTING	CONNECTED TO		
18	C.L.L. (Close loop locked) Tuning System.					
19	Set Accutouch Switch to OFF position.					
20	FM Signal generator across FM antenna connector (300 ohm) through matching network.	98 MHz at 1 KHz 100% modulation, output level 1 mV.	98 MHz	Tuning metter (Fig. 2) Pins 61 and 31.		
21		Shift thr frequency of the FM signal generator to let tuning meter sway by +30 μA.			VR901	Tuning Flywheel is magnetic locked. When the Accutouch switch ON.
22	Shift the frequency of the FM signal generator to let the Tuning meter sway by −30 μA in the same manner. Make sure . . . When Accutouch Switch is ON, CLL surely works. If not, Adjust VR901 and repeat step 19 thru 21.					
23	Digital Frequency Display (FM IF Offset).					
24	Accutouch switch-OFF.					
25	Connect with a wire Pins 60 and 1 (GND), Pins 43 and 42 (GND).					
26	FM signal generatoe across FM antenna connector (300 ohm) through matching network.	98 MHz at 1 KHz 100% modulation, output level 1 mV.	98 MHz	Tuning meter (Fig. 2) Pins 61 and 31.	VR301	The last-digit display flashes during FM IF offset is being misaligned. Adjust VR301 slowly CW or CCW, till the flashing.

STEP	SIGNAL GENERATOR		DIAL (DISPLAY)	OUTPUT INDICATOR	ADJUST	ADJUST FOR
	CONECTION TO	SET SIGNAL TO	SETTING	CONNECTED TO		
27	Set Function to AM.					
28	Bar Antenna at right angle to rear panel.					
29	AM tracking					
30	Standard radiating EXT antenna	1400 KHz at 400 Hz 30% modulation, Field strangth 50 dB/m–80 dB/m	1400 KHz	Oscilloscope, AC Vol Voltage Meter, Tape out.	TC2 TC1	Maximum AC Voltage Mater.
31		600 KHz at 400 Hz 30% modulation, Field strength 50 dB/m–80 dB/m	600 KHz		T201 Bar Antenna coil	Maximum AC Voltage Mater.
32	Repeat steps 30 – 31 until the maximam sensitivity can be obtained.					
33	Signal strength indication.					
34	Standard radiating EXT antenna	1000 KHz at 400 Hz 30% modulation, Field strengh 80 dB/m	1000 KHz		VR201	Set lighting of signal streghth FL display to the '5' segments.
35	Digital Frequency Display (AM IF offset)					
36	Connect with a wire Pins 43 and 42 (GND.), Pin 46 and 42 (GND.).					
37	Standard radiating EXT antenna.	1000 KHz at 400 Hz 30% modulation, Field strength 50 dB/m–80 dB/m	1000 KHz		VR302	The last-digit display flashes during AM IF offset is being misallingned. Adjust VR302 slowly CW or CCW, till the flashing ceases.



(Fig-1)

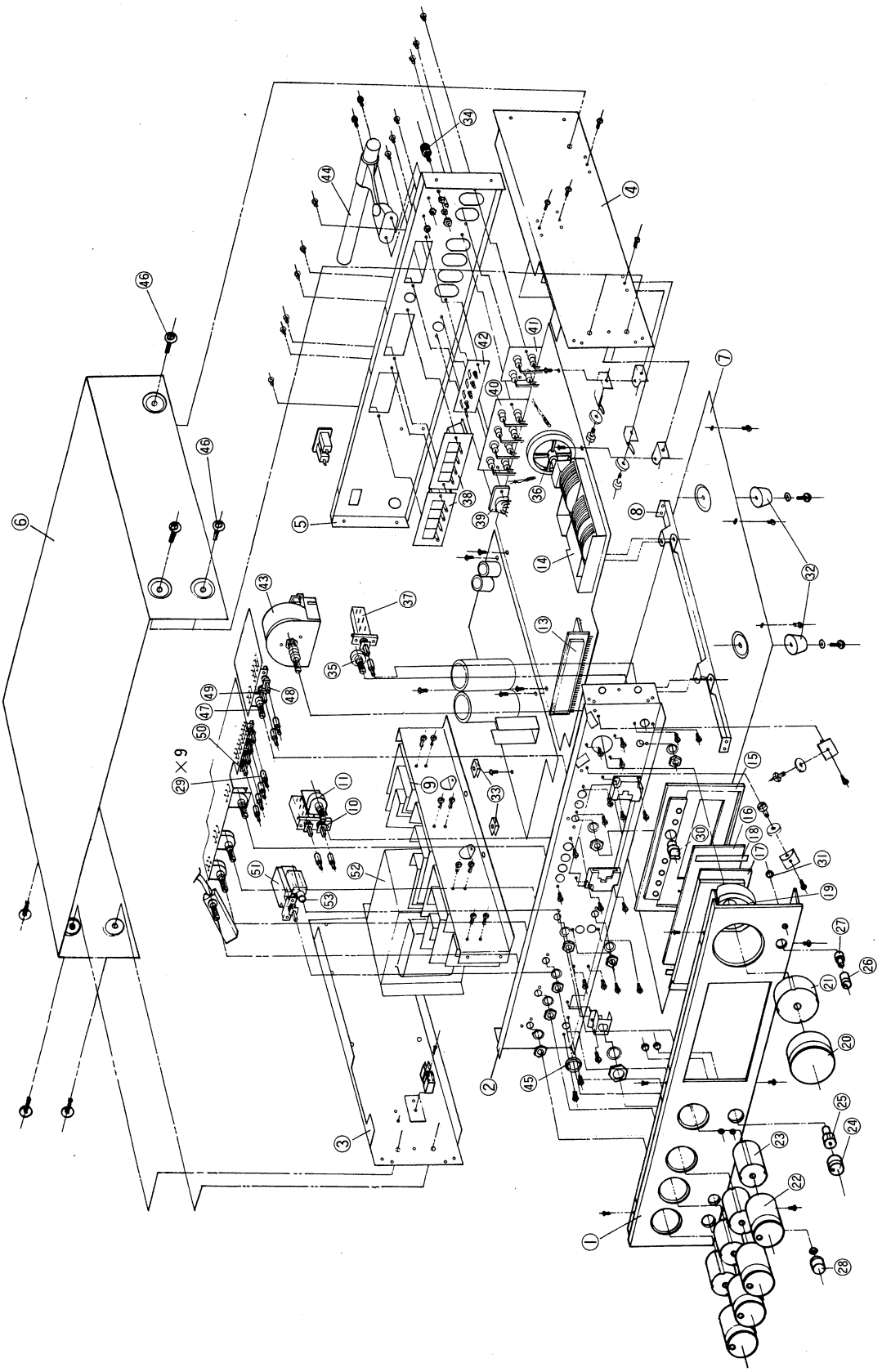


GM: Galvanometer (±100μA)

(Fig-2)

REPLACEMENT PARTS

EXPLODED VIEW



PCB-19-1111 (RF)

SYMBOL NO.	PARTS NO.	DESCRIPTION
C214	17-5D203M	0.02μ 50V Ce
C215	17-1.6E227Y	220μ 16V El
C216	17-5D473M	0.047μ 40V Ce
C217, C218	17-5D203M	0.02μ 50V Ce
C219	17-5F152J	0.0015μ 50V My
C220	17-2.5E107Y	100μ 25V El
C301--303	17-5D104M	0.1μ 50V Ce
C305	17-5D101K	100p 50V Ce
C306--308	17-5D104M	0.01μ 50V Ce
C309	17-5D680K	68p 50V Ce
C311--313	17-5D104M	0.1μ 50V Ce
C314	17-5D103M	0.01μ 50V Ce
C315	17-5D104M	0.02μ 50V Ce
C318	17-5D104M	0.1μ 50V Ce
C319	17-5E474Y	0.47μ 50V El
C320	17-5D104M	0.1μ 50V Ce
C323	17-5D330K	33p 50V Ce
C324	17-5D390K	39p 50V Ce
C325	17-5D104M	0.1μ 50V Ce
C326--351	17-5D204M	0.02μ 50V Ce
C 401, C402	17-1.6E474Y	47μ 16V El
C403, C404	17-5D470K	47p 50V Ce
C405, C406	17-5D121K	120p 50V Ce
C407, C408	17-0.63E107Y	100μ 6.3V El
C409, C410	17-5D220K	22p 50V Ce
C411, C412	17-5F272J	0.0027μ 50V My
C413, C414	17-5D103M	0.01μ 50V Ce
C415, C416	17-2.5E475Y	4.7μ 25V El
C417, C418	17-5D101K	100p 50V Ce
C421--424	17-5D104M	0.1μ 50V Ce
C901	17-5D104M	0.01μ 50V Ce
C902	17-1.6E225Y	2.2μ 16V El
C903	17-5E474Y	0.47μ 50V El
C904	17-5D104K	1000p 50V El
C905	17-2.5E335Y	3.3μ 25V El
C907	17-1.6E476Y	47μ 16V El
C908	17-5D473M	0.047U 50V Ce
C909, C910	17-1.6E106Y	10μ 16V El
C911	17-5D473M	0.047μ 50V Ce
C912	17-1.6E106Y	10μ 16V El
[Transistor]		
Q101	TR-0233	2SC535
Q102, Q103	TR-0085	2SC1923
Q104	TR-0198	2SC1815
Q105	30-2084-3	BC549C
Q106, Q107	TR-0085	2SC1923
Q201, Q202	TR-0198	2SC1815
Q301	30-2019	2SC930
Q302, Q303 Q304	TR-0198	2SC1815
Q901-Q905	TR-0198	2SC1815
Q906	TR-0043	2SA733
Q907-Q913	TR-0198	2SC1815
Q914	TR-0043	2SA733
Q915	TR-0198	2SC1815
Q916	TR-0147	2SC1741
Q917	TF-0010	2SK40

SYMBOL NO.	PARTS NO.	DESCRIPTION
Q221	30-2078	2SD330
[IC]		
IC101	TC-0089	LA1231N
IC102	TC-0094	upc1161C
IC103	TC-0085	BA656
IC201	TC-0021	HA1197
IC301	TC-0143	DS8629
IC302	TC-0144	LC7253
IC401, 402	TC-0120	HA1457W
[Variable Resistor]		
VR101	29-4023	50K ohm B
VR103	29-4022	5K ohm B
VR104	29-4056	200K ohm B
VR201	29-4082	50K ohm B
VR301, 302	29-4077 10	10K ohm B
V901	29-4082	50K ohm B
[Diode]		
D101--107	30-1019	Diode BAW 62
D108	30-1002	Diode IN4002
D109	30-1019	Diode BAW 62
D201--203	30-1019	Diode BAW 62
D301	30-1058	Zener Diode RD 5.1EB3 0.5W
D302	30-1019	Diode BAW 62
D901, D902	30-1010	Diode IN60
D903--D909	30-1019	Diode BAW 62
D910	30-1010	Diode IN 60
D911	30-1058	Zener diode RD5.1EB3 0.5W
D912--915	30-1019	Diode BAW 62
[Coil, Filter]		
L101	29-1038	Inductor 40μH
L102	29-1039	Inductor 18μH
L103	29-1038	Inductor 40μH
L202	29-1051	Inductor 2.2μH
CF101--102	29-3040	Ceramic filter, SFE10.7MM
CF103	29-3044	Ceramic filter, SFL10.7ML
T101	29-3047	FM Det. transformer, secondary
T102	29-3046	FM Det, transformer, primary
T201	29-3045	AM OSC
T202	29-3032	AM IFT with ceramic filter
T203	29-3029	AM IFT
FL102--103	29-3049	Low pass filter, 19.38MHz
SW1	31-1117A	Function sw.
	12-2076	Din jack
CY301	30-4001	Crystal 4MHz

PCB-19-1111 (RF)

SYMBOL NO.	PARTS NO.	DESCRIPTION
R318	16-1/4CM123J	12K ohm
R319	16-1/4CM473J	47K ohm
R320	16-1/4CM103J	10K ohm
R321	16-1/4CM821J	820 ohm
R322	16-1/4CM560J	56 ohm
R323, R324	16-1/4CM103J	10K ohm
R401, R402 R403, R404	16-1/4CM104J	100K ohm
R405, R406	16-1/4CM222J	2.2K ohm
R407, S408	16-1/4CM471J	470 ohm
R409, R410	16-1/4CM273J	27 ohm
R411, R412	16-1/4CM334J	340K ohm
R413, R414	16-1/4CM471J	470 ohm
R415, R416	16-1/4CM104J	100K ohm
R539, R540	16-1/4CM154J	150K ohm
R541, R542	16-1/4CM154J	150K ohm
R669	16-1/4CM123J	12K ohm
R670	16-1/4CM683J	68K ohm
R671	16-1/4CM103J	10K ohm
R901, R902	16-1/4CM104J	100K ohm
R903	16-1/4CM684J	680K ohm
R904	16-1/4CU105J	1M ohm
R905	16-1/4CM104J	100K ohm
R906	16-1/4CM684J	680K ohm
R907, R908	16-1/4CM472J	4.7K ohm
R909	16-1/4CU102J	1K ohm
R910	16-1/4CM153J	15K ohm
R911, R912	16-1/4CM123J	12K ohm
R913, R914	16-1/4CM103J	10K ohm
R915	16-1/4CM154J	150K ohm
R916, R917	16-1/4CM223J	22K ohm
R918	16-1/4CM182J	1.8K ohm
R919	16-1/4CM153J	15K ohm
R920	16-1/4CM560J	56 ohm
R921	16-1/4CM473J	47K ohm
R922	16-1/4CM102J	1K ohm
R923, R924	16-1/4CM103J	10K ohm
R925, R926	16-1/4CM473J	47K ohm
R927	16-1/4CM104J	100K ohm
R928, R929	16-1/4CM103J	10K ohm
R930	16-1/4CM153J	15K ohm
R930	16-1/4CU333J	33K ohm
R932	16-1/4CM472J	4.7K ohm
R933	16-1/4CM223J	22K ohm
R934, R936	16-1/4CM103J	10K ohm
R937	16-1/4CM472J	4.7K ohm
R938, R939	16-1/4CM104J	100K ohm
R940	16-1/4CM473J	47K ohm
R941	16-1/4CM103J	10K ohm
R942	16 -1/4CM473J	47K ohm
R943	16-1/4CM103J	10K ohm
R944	16-1/4CM474J	470K ohm
R945	16-1/4CM103J	10K ohm
R946	16-1/4CM101J	100 ohm
R947, R948	16-1/4CM103J	10K ohm
R949, R950	16-1/4CM103J	10K ohm
R951	16-1/4CM101J	100 ohm
R952	16-1/4CM473J	47K ohm
R953	16-1/4CM183J	1.8K ohm
R954	16-1/4CM224J	220K ohm
R955	16-1/4CM103J	10K ohm

SYMBOL NO.	PARTS NO.	DESCRIPTION
R956	16-1/4CM472J	4.7K ohm
R957, R958	16-1/4CM103J	10K ohm
R959	16-1/4CM471J	470 ohm
R960	16-1/4CM103J	10K ohm
R961	16-1/4CM472J	4.7K ohm
R962	16-1/4CU564J	560K ohm
R963	16-1/4CM472J	4.7K ohm
R964	16-1/4CM103J	10K ohm
R965	16-1/4CU104J	100K ohm

[Capacitor]

C101	17-5D473M	0.047μ	50V	Ce
C102	17-5D103M	0.1μ	50V	Ce
C103, C104	17-5D473M	0.047μ	50V	Ce
C105	17-1.6E106Y	10μ	16V	El
C106, C107	17-2.5E335Y	3.3μ	25V	El
C108	17-5D203M	0.02μ	50V	Ce
C109, C110, C 111	17-5D473M	0.047μ	50V	Ce
C112	17-5E474Y	0.47μ	50V	El
C113	17-5D473M	0.047μ	50V	Ce
C114	17-1.6E106Y	10μ	16V	El
C115, C116 C118, C119, C120, C122	17-5D473M	0.047μ	50V	Ce
C123	17-5E474Y	0.47μ	50V	El
C125	17-1.6E476Y	47μ	16V	El
C126	17-2.5E476Y	4.7μ	25V	El
C127	17-5D201K	200p	50V	Ce
C128	17-1.6E226Y	22μ	16V	El
C129	17-5U331J	330p	50V	St
C130	17-2.5E475Y	4.7μ	25V	El
C131	17-1.6E226Y	22μ	16V	El
C132	17-5F473J	0.047μ	50V	My
C133	17-5U471J	470p	50V	St
C134	17-1.60224M	0.22μ	16V	Ta
C135	17-1.60335M	3.3μ	16V	Ta
C136	17-1.60155M	1.5μ	16V	Ta
C137	17-5E474Y	0.47μ	50V	El
C138	17-1.6E226Y	22μ	16V	El
C139	17-1.6E227Y	220μ	16V	El
C140	17-1.6E226Y	22μ	16V	El
C141, C142	17-5F182J	0.0018μ	50V	My
C143, C144	17-5E105Y	1μ	50V	El
C145	17-5D121K	120p	50V	Ce
C146	17-5E476Y	47μ	16V	El
C147	17-5E474Y	0.47μ	50V	NON
C148	17-5D473M	0.047μ	50V	Ce
C149	17-1.6E476Y	47μ	16V	El
C150--154	17-5D473M	0.047μ	50V	Ce
C155, C156	17-5D203M	0.02μ	50V	Ce
C201	17-5D203M	0.02μ	50V	Ce
C202--204	17-5D473M	0.047μ	50V	Ce
C205	17-5D102K	1000p	50V	Ce
C206, C207	17-2.5E475Y	4.7μ	25V	El
C208, C209	17-5F183J	0.018μ	50V	My
C210	17-2.5E475Y	4.7μ	25V	El
C211	17-1.6E106Y	10μ	16V	El
C212	17-5D473M	0.047μ	50V	Ce
C213	17-5D104M	0.01μ	50V	Ce

PARTS LIST . . . (P.C.B.)

REMARKS

Capacitor: My . . . Mylar, El . . . Electrolitic, St . . . Styrol, Ce . . . Ceramic
Mi . . . Mica, Ta . . . Tantalum, Lp . . . Line pass (AC Cap.)
Tm . . . Trimmer, Ac . . . AC Capacitor, Fi . . . Film Cap.
Resistor: Rd . . . Carbon, Rc . . . Cement, Rm . . . Metal Film, Rf . . . Flame proof
Ro . . . Oxid Metal,
±5%, 0.25W, unless specified otherwise.

PCB-19-1111 (RF)

SYMBOL NO.	PARTS NO.	DESCRIPTION
[Resistor]		
R101	16-1/4CU823J	82K ohm
R102	16-1/4CM124J	120K ohm
R103	16-1/4CM562J	5.6K ohm
R104	16-1/4CM471J	470 ohm
R105	16-1/4CM331J	330 ohm
R106	16-1/4CM101J	100 ohm
R107	16-1/4CN560J	56 ohm
R108	16-1/4CM562J	5.6K ohm
R109	16-1/4CM471J	470 ohm
R110	16-1/4CM331J	330 ohm
R111	16-1/4CM101J	100 ohm
R107	16-1/4CN560J	56 ohm
R108	16-1/4CM562J	5.6K ohm
R109	16-1/4CM471J	470 ohm
R110	16-1/4CM331J	330 ohm
R111	16-1/4CM101J	100 ohm
R112	16-1/4CN560J	56 ohm
R113	16 -1/4CM272J	2.7K ohm
R114	16-1/4CM471J	470 ohm
R115	16-1/4CM331J	330 ohm
R116	16-1/4CM821J	820 ohm
R117	16-1/4CN560J	56 ohm
R118	16-1/4CM122J	1.2K ohm
R119, R120	16-1/4CM472J	4.7K ohm
R121	16-1/4CN560J	56 ohm
R122	16-1/4CM331J	330 ohm
R123	16-1/4CM104J	100K
R124	16-1/4CM153J	15K ohm
R125	16-1/4CU102J	1K ohm
R126	16-1/4CU103J	10K
R127	16-1/4CM152J	1.5K ohm
R128	16-1/4CM153J	15K ohm
R129	16-1/4CM221J	220 ohm
R130	16-1/4CM153J	15K ohm
R131	16-1/4CM101J	100 ohm
R132	16-1/4CN820J	82 ohm
R133	16-1/4CM563J	56K ohm
R134	16-1/4CM123J	12K ohm
R135	16-1/4CM473J	47K ohm
R136	16-1/4CM682J	6.8K ohm
R137	16-1/4CU473J	47K ohm
R138	16-1/4CM562J	5.6K ohm
R139	16-1/4CU103J	10K ohm
R140	16-PCU824J	820K ohm
R141	16-1/4CM682J	6.8K ohm
R142	16-1/4CM332J	3.3K ohm
R143	16-1/4CM333J	33K ohm
R144	16-1/4CM104J	100K ohm
R145	16-1/4CM103J	10K ohm
R146	16-1/4CM153J	15K ohm

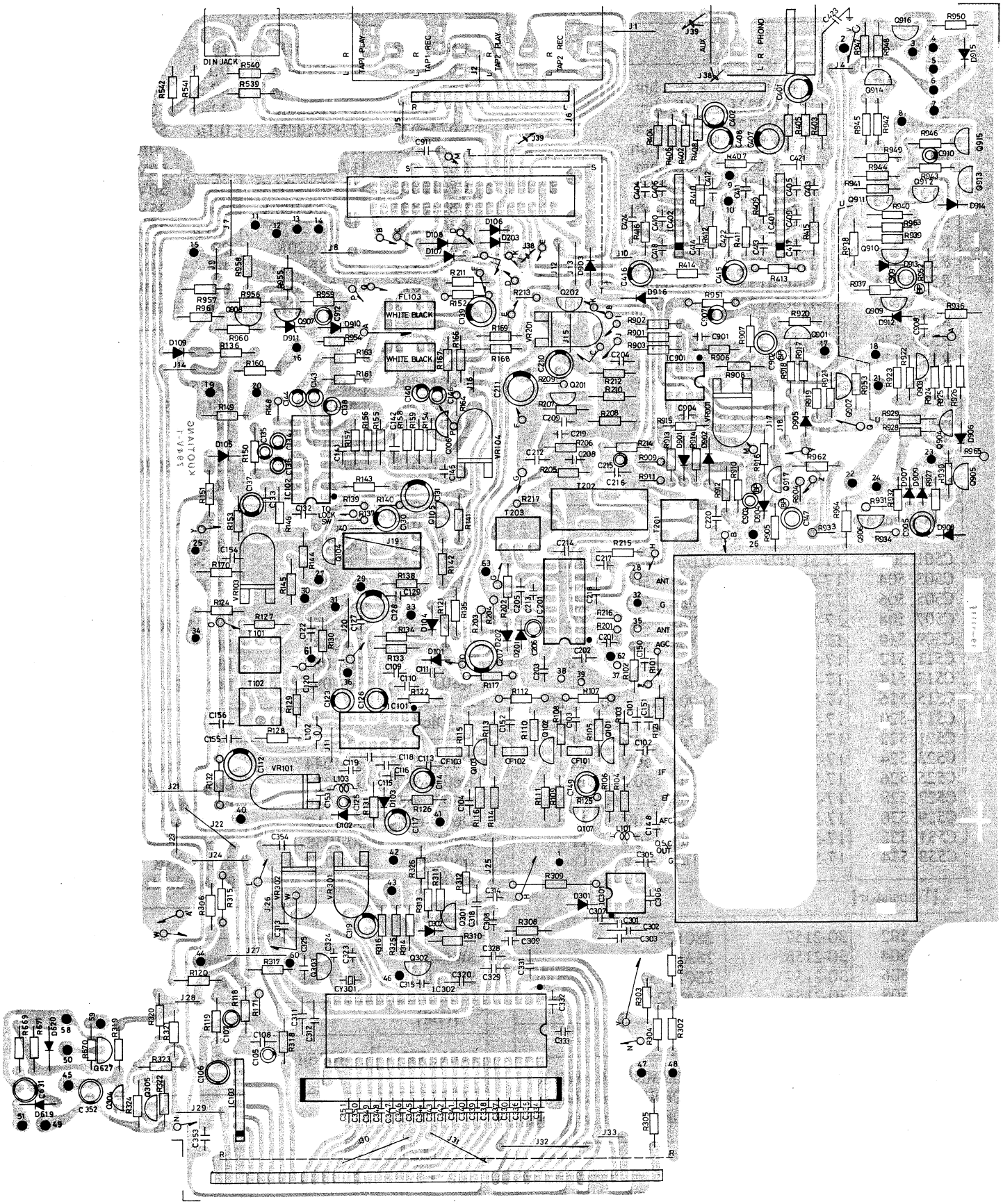
SYMBOL NO.	PARTS NO.	DESCRIPTION
R148	16-1/4CM222J	2.2K ohm
R149	16-1/4CM562J	5.6K ohm
R150	16-1/4CM102J	1K ohm
R151	16-1/4CM473J	47K ohm
R152	16-1/4CN101J	100 ohm
R153	16-1/4CM104J	100K ohm
R154, R155	16-1/4CM822J	8.2K ohm
R156	16-1/4CM273J	27K ohm
R157, R158	16-1/4CM333J	33K ohm
R159	16-1/4CM273J	27K ohm
R160	16-1/4CM682J	6.8K ohm
R161	16-1/4CM332J	3.3K ohm
R163	16-1/4CM332J	3.3K ohm
R164	16-1/4CU682J	6.8K ohm
R166, R167	16-1/4CM392J	3.9K ohm
R168, R169	16-1/4CM102J	1K ohm
R170	16-1/4CM473J	47K ohm
R172	16-1/4CU562J	5.6K ohm
R201	16-1/4CU151J	150 ohm
R202	16-1/4CM331J	330 ohm
R023, R204	16-1/4CU103J	10K ohm
R205	16-1/4CM272J	2.7K ohm
R206	16-1/4CM273J	27K ohm
R207	16-1/4CM154J	150K ohm
R208	16-1/4CM273J	27K ohm
R209	16-1/4CU122J	1.2K ohm
R210	16-1/4CM271J	270 ohm
R211	16-1/4CN221J	220 ohm
R212	16-1/4CM104J	100K ohm
R213	16-1/4CU473J	47K ohm
R214	16-1/4CN221J	220 ohm
R215	16-1/4CM470J	47 ohm
R216	16-1/4CU151J	1.5K ohm
R301, R302	16-1/4CM102J	1K ohm
R303	16-1/4CM821J	820 ohm
R304	16-1/4CM102J	1K ohm
R305	16-1/4CN220J	22 ohm
R306	16-1/4CM822J	8.2K ohm
R308	16-1/4CM392J	3.9K ohm
R310	16-1/4CM471J	470 ohm
R311	16-1/4CM332J	3.3K ohm
R312	16-1/4CM473J	47K ohm
R313	16-1/4CM154J	150K ohm
R314	16-1/4CM103J	10K ohm
R315	16-1/4CM561J	560 ohm
R316	16-1/4CM104J	100K ohm
R317	16-1/4CM473J	47K ohm

PARTS LIST . . . (Cosmetic)

ITEM	PARTS NO.	DESCRITPION
1	11-8104	Front panel
2	11-6058	Sub panel
3	11-6057	Side panel, left
4		Side panel, right
5	11-8110	Rear panel
6	50-1021	Bonnet
7	11-6059	Bottom plate
8	11-6056	Channel
9	11-5049	Heat sink Ass'y
10	31-1119F	Switch, Speaker
11	29-4071	Variable resistor, Balance
12	31-1117A	Switch, Function
13	TT-0027	Display
14	33-2016	Front End, FF233U12
15	11-8129	Dressing plate
16	11-8126	Filter
17	11-8127	Protector (Transparent cover)
18	28-2063	Spacer
19	28-2053	Masking, Tuning Knob
20	12-3063	Knob, Tuning (out side)
21	12-3064	(in side)
22	12-3065	Knob, Volume (out side)
23	12-3066	(in side)
24	12-3061	Knob, Balance (out side)
25	12-3062	(in side)
26	12-3077	Knob, Muting (out side)
27	12-3078	(in side)
28	WJ-1090	knob, Power
29	WJ-1129	Knob, Mono, Subsonic, High cut, Loudness Monitor, Tape selector, Speaker, Accutouch
30	WJ-1067	Knob, Tape dubbing
31	28 -1036	Protector, Accutouch
32	28-1029	Foot
33	11-2183	Bracket for heat sink
34	11-2183	Terminal, GND Ass'y
35	29-4093F	Variable resistor, Muting threshold
36	13-5006	Drum, Dial cord
37	31-111F	Switch, Accutouch
38	12-2007	Terminal, Speaker
39	12-2052	Treminal, DIN
40	12-2052	Treminal, (8P)
41	12-2074	(4P)
42	12-2080	Terminal, Antenna
43	UX-1009	Fly wheel
44	29-5010	Bar antenna
45	28-1037	Protector, Power switch
46	15-2051	Special screw
47	31-1051	Switch, Dubbing
48	31-1123F	Switch, Tape selector
49	31-1123F	Switch, Tape monitor
50	31-1107F	Switch, Mono, Sub sonic, Loudness, High cut
51	31-1129A	Switch, Power

ITEM	PARTS NO.	DESCRIPTION
52	29-2050-5	Power transfomer, E(220V-240V)
	29-2050-6	Power teansfomer, U (120V)
53	12-2078	Head phone jack

PCB-19-1111

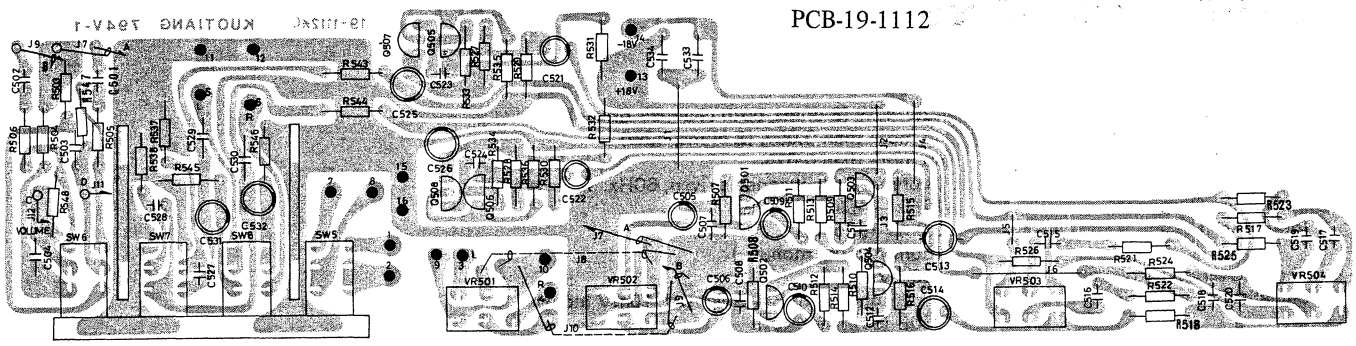

DIN JACK
TAP1 PLAY
TAP1 REC
TAP2 PLAY
TAP2 REC
AUX
PHONO
WHITE BLACK
WHITE BLACK
ANT
AGC
IF
AFC
OSC OUT
SANYO

PCB-19-1112 (Audio, Pre Amp.)

SYMBOL NO.	PART NO.	DESCRIPTION
[Resistor]		
R501, 502	16- 1/4CM222J	2.2K ohm
R503, 504	16-1/4CM332J	3.3K ohm
R505, 506	16-1/4CM472J	4.7K ohm
R507, 508	16-1/4CM334J	330K ohm
R509, 510	16-1/4CM682J	6.8K ohm
R511, 512	16-1/4CM681J	680 ohm
R513, 514	16-1/4CM472J	4.7K ohm
R515, 516	16-1/4CM332J	3.3K ohm
R517, 518	16-1/4CM123J	12K ohm
R521, 522	16-1/4CM822J	8.2K ohm
R523, 524	16-1/4CM153J	15K ohm
R525, 526	16-1/4CM123J	12K ohm
R527, 528	16-1/4CM155J	1.5M ohm
R529, 530	16-1/4CM224J	220K ohm
R531, 532	16-1/4CM332J	3.3K ohm
R533, 534	16-1/4CM562J	5.6K ohm
R535, 536	16-1/4CM390J	39 ohm
R537, 538	16-1/4CM474J	470K ohm
R543, 544	16-1/4CM472J	4.7Kωhm
R545, 546	16-1/4CM683J	68K ohm
R547, 548	16-1/4CM474J	470K ohm
[Capacitor]		
C501, 502	17-5F102J	0.001μ 50V 1My
C503, 504	17-5D104M	0.1μ 50V Ce
C505, 506	17-2. 5E335Y	3.3μ 25V El
C507, 508	17-5D221K	220p 50V Ce
C509, 510	17-0.63E107Y	100μ 6.3V El
C511, 512	17-5D220K	22p 50V Ce
C513, 514	17-1.6E476Y	47μ 16V El
C515, 516	17-5F222J	0.0022μ 50V My
C517--520	17-5F333J	0.033μ 50V My
C521, 522	17-2.5E475Y	4.7μ 25V El
C523, 524	17-5D220K	22p 50V Ce
C525, 526	17-5E225Y	2.2μ 50V El
C527, 528	17-5F562J	0.0056μ 50V My
C529, 530	17-5F154J	0.15μ 50V My
C531, 532	17-5E225Y	2.2μ 50V El
C533, 534	17-5D104M	0.1μ 50V Ce
[Transistor]		
Q501, 502	30-2157	2SC1775
Q503, 504	30-2158	2SA872
Q505, 506	30-2157	2SC1775
Q507, 508	30-2158	2SA872
[Bariable Resistor]		
VR501	29-4071	VR50KMNX2 for balance
VR502	29-4097F	VR50KBX2 for volume
VR503, 504	29-4028	VR50KBX2 for treble,bass
[Capacitor]		
C601, 602	17-2.5E475Y	4.7μ 25V El
C605, 606	17-1.6E476Y	47μ 16V El

SYMBOL NO.	PARTS NO.	DESCRIPTION
C607, 608	17-5D101K	100p 50V Ce
C612	17-5D104M	0.1μ 50V Ce
C613, 614	17-1.6E476Y	47μ 16V El
C617, 618	17-5D220K	22p 50V Ce
C623--626	17-5D104M	0.1μ 50V Ce
C627--630	17-5F104J	10μ 50V My
C631	17-5E105Y	1μ 50V El
C801, 802	17-5E588Y-S1	6800μ 50V El
C803, 804	17-3.5E108 Y	1000μ 35V El
C807, 808	17-3.5E107Y	100 μ 35V
C809	17-5D220K	22p 50V Ce
C810--812	17-2.5E106Y	10μ 25V El
C815, 816	17-25F104K	0.1μ 250V Ce
C817, 818	17-5D222K	2200p 50V Ce
[Transistor]		
Q 601--604	30-2096	BC556A
Q605	30-2156	2SC1815
Q607, 608	20-2090-2	BC546B
Q609, 610	30-2170	2N6556
Q611, 612	30-2156	2SC1815GR
Q613, 614	30-2090-2	BC546B
Q615, 616	30-2169	2N6553
Q617, 618	30-2185	2SD845
Q619, 620	30-2096	BC556
Q621, 622	30-2170	2N6553
Q263 , 624	31-2184	2SB755
Q625, 626	30-2096	BC556
Q627, 628	30-2156	2SC1815GR
Q801	30-2083	BD139
Q802	30-2082	BD140
Q803	30-2090-2	BC546B
[Diode]		
D220, 221	30-1044	Zener diode, 15V 0.5W
D601--606	30-1052	Diode BAW 62
D607, 608	30-1050	Zener diode, 6.2V
D613--618	30-1019	Diode BAW 62
D801	30-1038	Zener diode, 18V
D802--805	30-1017- 1	Diode G3B
D806	30-1035	Bridge diode W005
[Switch]		
SW5--8	31-1107F	Push sw. 4 key 2U
SW9, 10	31-1119F	Speaker sw.
[Coil]		
L601, 602	29-1036-1	Inductor 3.3 μH

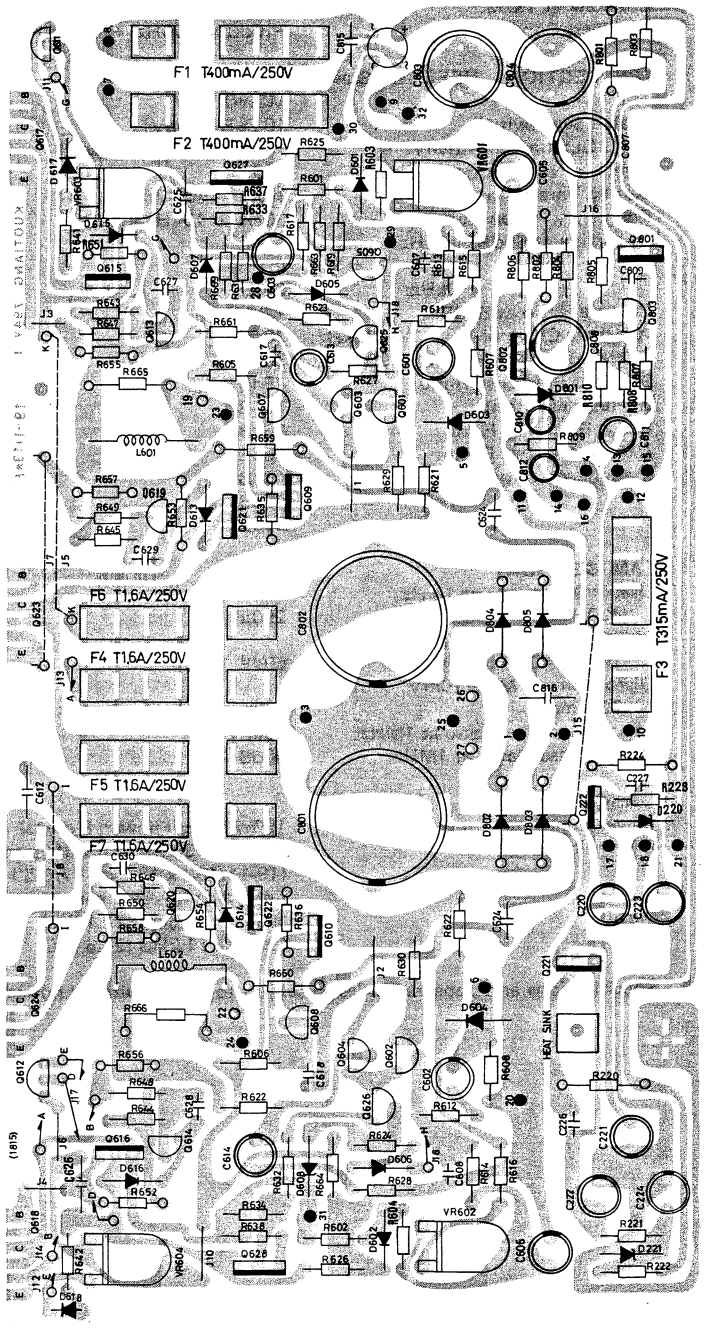
PCB-19-1112



PCB-19-1113 (Power Amp.)

SYMBOL NO.	PARTS NO.	DESCRIPTION	
[Resistor]			
R220	16-1A100J	10 ohm	1W Rm
R221	16-1/4CM221J	820 ohm	
R222	16-1/4CM152J	1.5K ohm	
R223	16-1/4CM182J	1.8K ohm	
R224	16-1A220J	22 ohm	1W Rm
R601, R602	16-1/4CM273J	27K ohm	
R603, R604	16-1/4CM152J	1.5K ohm	
R607, R608	16-1/4CM184J	180K ohm	
R609	16-1/4CM684J	680K ohm	
R611, R612	16-1/4CM684J	680K ohm	
R613, R614	16-1/4CM223J	22K ohm	
R615, R616	16-1/4CM152J	1.5K ohm	
R617	16-1/4CM104J	100K ohm	
R619	16-1/4CM223J	22K ohm	
R621, R622	16-1/4CM273J	27K ohm	
R623, R624	16-1/4CM223J	22K ohm	
R625, R626	16-1/4CM103J	10K ohm	
R627, 628	16-1/4CM102J	1K ohm	
R629, R630	16-1/4CM152J	1.5K ohm	
R631, R632	16-1/4CM332J	3.3K ohm	
R634, R633	16-1/4CM122J	1.2K oh,	
R635, R636	16-1/4CM150J	15 ohm	
R637, 638	16-1/4CM470J	47 ohm	
R641, R642	16-1/4CM561J	560 ohm	
R643--646	16-1/4CM181J	180 ohm	
R647, R648	16-1/4CM121J	120 ohm	
R649, R650	16-1/4CM101J	100 ohm	
R651, R652	16-1/2CM680J	68 ohm	1/2W
R653, R654	16-1/2CN680J	68 ohm	1/2W
R655--658	16-1003	0.22 ohm	5W
R659, 660	16-1A100J	10 ohm	1W Rm
R661, R662	16-1/4CM223J	22K ohm	
R663, R664	16-1/4CM103J	10K ohm	
R665, R666	16-1A100J	10 ohm	1W Rm
R801, R802	16-1A100J	10 ohm	1W Rm
R803	16-1/4CM102J	1K ohm	
R804	16-1/4CM681J	680 ohm	
R805	16-1/4CM102J	1K ohm	
R806	16-1/4CM681J	680 ohm	
R807	16-1/4CM102J	1K ohm	
R808, R809	16-1/4CM103J	10K ohm	
R810	16-1/4CM184J	180K ohm	

PCB-19-1113



SPECIFICATIONS

[AUDIO SECTION]

RMS Output Power:	42W/42W (8 ohms, both channels driven)
Total Harmonic Distortion:	no more than 0.05% (8 ohms, 42W)
Rated I.M.:	no more than 0.07% (8 ohms, both channels driven, 60Hz: 7kHz = 4:1)
Frequency Response:	15Hz – 40kHz (–1dB)
Input Sensitivity:	2.2mV (phono) 150mV (aux., monitor)
Phono Overload Voltage:	130mV
Signal-to-Noise Ratio:	85dB (phono, IHF-A weighted, 10mV input) 95dB (aux, monitor)
Residual Noise:	0.5mV
Tone Control:	Bass; ±10dB at 100Hz Treble; ±10dB at 10kHz
Filters:	Subsonic; 45Hz (6dB/oct) High cut; 7kHz (6dB/oct)
Crosstalk at 1kHz:	–60dB (aux, monitor)
Loudness Control:	+10dB at 100Hz, +7dB at 10kHz (VR: –30dB)

[FM SECTION] (IEEE/IHF Standard)

	MONO	STEREO
Usable Sensitivity:	10.8dB (1.9μV)	
50dB Quieting Sensitivity:	16dBf (3.5μV) (50μ sec.)	
Signal-to-Noise Ratio at 65dBf:	75dB	
Muting Threshold:	10μV – 500μV	
Frequency Response:	30Hz to 15kHz (±1dB)	
Distortion at 65dBf 100Hz:	0.2%	0.3%
1kHz:	0.15%	0.2%
6kHz:	0.4%	0.4%
Capture Ratio at 65dBf:	1.3dB	
Alternate Channel ±400kHz:	70dB	
Selectivity 40kHz dev. ±300kHz:	60dB	
Spurious Response Ratio:	75dB	
IF Response Ratio:	75dB	
Image Response Ratio:	55dB	
AM Suppression Ratio:	55dB	
Stereo Separation 100Hz:	40dB	
1kHz:	45dB	
10kHz:	35dB	

[AM SECTION]

Usable Sensitivity at 1MHz, 400Hz 30% mod.:	250μV/m
Signal-to-Noise Ratio at 1MHz, 10mV, 400Hz, 30% mod:	50dB
Distortion at 1MHz 10mV, 400Hz 30% mod:	0.5%
Image Response Ratio at 1MHz:	50dB
IF Response Ratio at 1MHz:	40dB

[GENERAL]

Power Consumption:	180W (at full power, 8 ohms)
Dimensions:	500(W) x 330(D) x 115(H)mm (19-11/16" x 13" x 4-17/32") (including legs and rear protrusions)
Weight:	Net 9.6kgs (21.1 lbs.) Gross 11.2kgs (24.6 lbs.)

Specifications and appearance design subject to change without notice.

R-2040 SCHEMATIC DIAGRAM

SW1abcdef	FUNCTION SW.
SW2	TAPE MONITOR SW
SW3	MONITOR SELECT SW
SW4ab	COPY SELECT SW
SW5ab	MONO SW
SW6ab	LOUDNESS SW
SW7ab	HI CUT SW
SW8ab	SUBSONIC SW
SW9 10	SPEAKER SW
SW11abcd	POWER SW
SW12abcde	LOCK RELEASE SW

BOTTOM VIEW

BA656 — LC7253 LC7258

LA1231N UPC1161C HA1197 — CA1458 SP8629 — BD139 BD140 — 2SD330E

2SD845 2SB755 — 2N6553 2N6556 — BC546 BC556A BC549C — 2SC930D 2SC1815GR 2SC1775 2SA872 2SC535B 2SC19230 2SA733P 2SC1741RM

SW11cd SHORTING TYPE

SW11cd NON SHORTING TYPE

FOR : E1 E2
F1,F2:T400mA
F4~F7: T1,6A
F3: T315 mA

FOR:U2 C1
F1,F2:T400mA
F4 F7 : T2A
F3 : T 300 mA

R-2040

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