

Service Manual

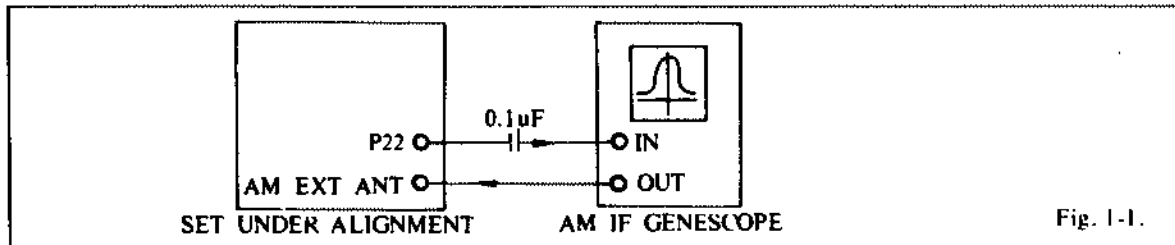
ADCOM TUNER GFT-2

ELECTRICAL ADJUSTMENT PROCEDURE

1. AM SECTION

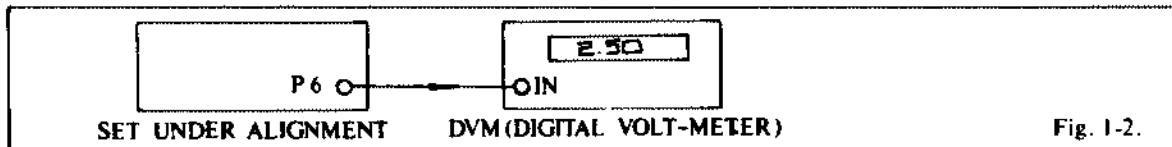
1-A. IF ALIGNMENT

- Set the Function switch to AM.
- Set up the test equipment as Fig. 1-1 and set the IF genescope output level to 80dB(10mV).
- Adjust T-201 and T-202 so that figure developed on the genescope becomes laterally symmetrical with the axis of symmetry at 450KHz and it has a maximum amplitude as well.



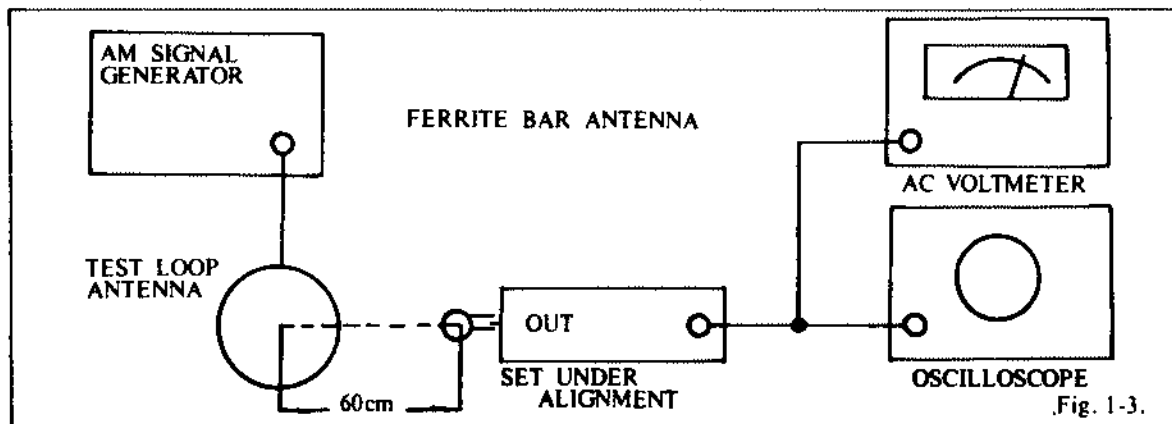
1-B. AM TUNING VOLTAGE ALIGNMENT

- Set the Function switch to AM.
- Set up the test equipment as Fig. 1-2.
- Set the frequency of the Tuner to the high end frequency.
- Adjust TC202 so that DVM reads DC 25V ± 0.1V.
- Set the frequency of the Tuner to the low end frequency.
- Adjust L201 so that DVM reads DC 2.2V ± 0.1V.
- Repeat steps c to f until DVM reads given voltage at given frequencies.



1-C. RF TUNING ALIGNMENT

- Set the Function switch to AM.
- Set up the test equipment as Fig. 1-3.
- Set the AM SG to 30% Modulation at 400Hz and 70~80dB output (3-10mV which gives field intensity 150~500µV/m to the bar antenna).
- Set AM SG to 600KHz and set the frequency of the Tuner to 600KHz, and then adjust L202 which is inside of ferrite bar antenna to maximize audio output level.



- e. Set AM SG to 1450KHz, and set the frequency of the Tuner to 1450KHz, and then adjust TC201 to maximize audio output level.
- f. Repeat steps d and e so that output is maximized at the given frequencies.

1-D. SIGNAL METER ALIGNMENT

- a. Set up the test equipment as Fig. 1-4.
- b. Set the AM SG to 1000KHz and adjust the output level control so that AM SG output level is 35 dB(56uV).
- c. Adjust VR201 so that the first LED of signal meter lights slightly.

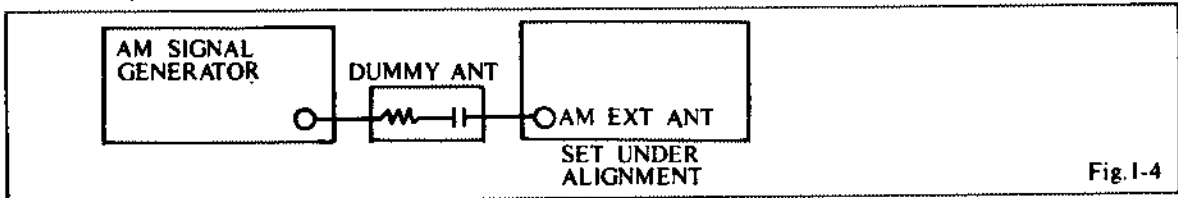


Fig. 1-4

2. FM SECTION

2-A. FM TUNING VOLTAGE ALIGNMENT

- a. Set the Function switch to FM.
- b. Set up the test equipment as Fig. 2-1.
- c. Set the frequency of the Tuner to 87.5MHz.
- d. Adjust L5 so that DVM reads $DC7V \pm 0.1V$.

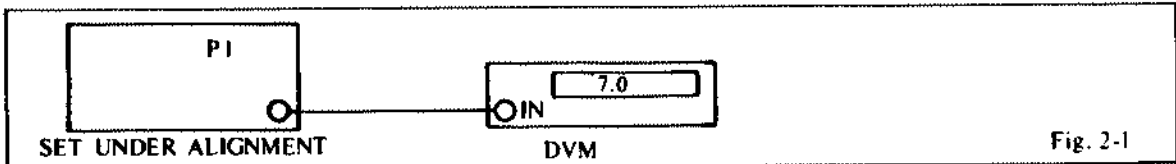


Fig. 2-1

2-B. IF ALIGNMENT

- a. Set the Function switch to FM.
- b. Set up the test equipment as Fig. 2-2.
- c. Adjust the cores of T101 so that the S-curve developed on the IF genescope becomes point symmetrical to the center frequency point of 10.7MHz with a maximum amplitude and the voltage between P3 and P4 is $0V \pm 50mV$.
- d. If the IF genescope is not available, set the tuner detuned and adjust the core of T101 which is near the I. C 101 so that noise output is maximized and the voltage between P3 and P4 is $0V \pm 50mV$.

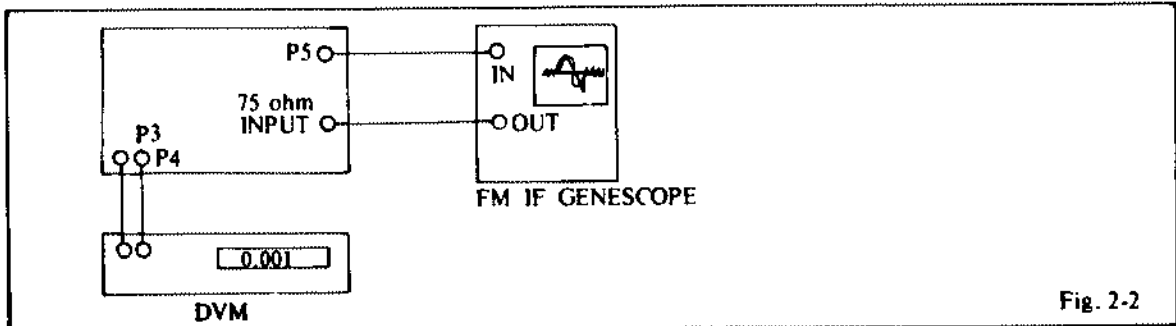
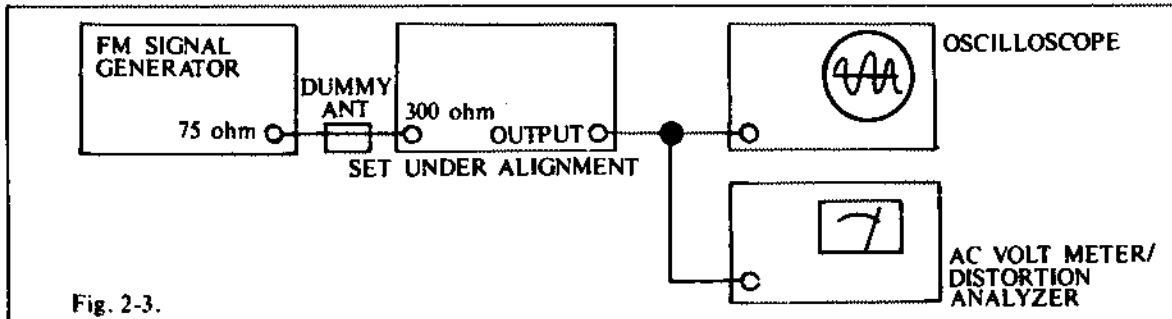


Fig. 2-2

2-C. RF TUNING ALIGNMENT

- a. Set up the test equipment as Fig. 2-3.
- b. Set FM SG to 75KHz deviation at 1KHz and 1-2uV output.
- c. Set the frequency of the Tuner to 90MHz and then adjust L1, L2 and L3 so that audio output is maximized.

- d. Set the frequency of the Tuner to 106MHz and adjust TC1 and TC2 so that audio output is maximized.
- e. Repeat steps c and d until no further improvement.
- f. Set the frequency of the Tuner to 98MHz and then adjust left core of T1 so that distortion is minimized.

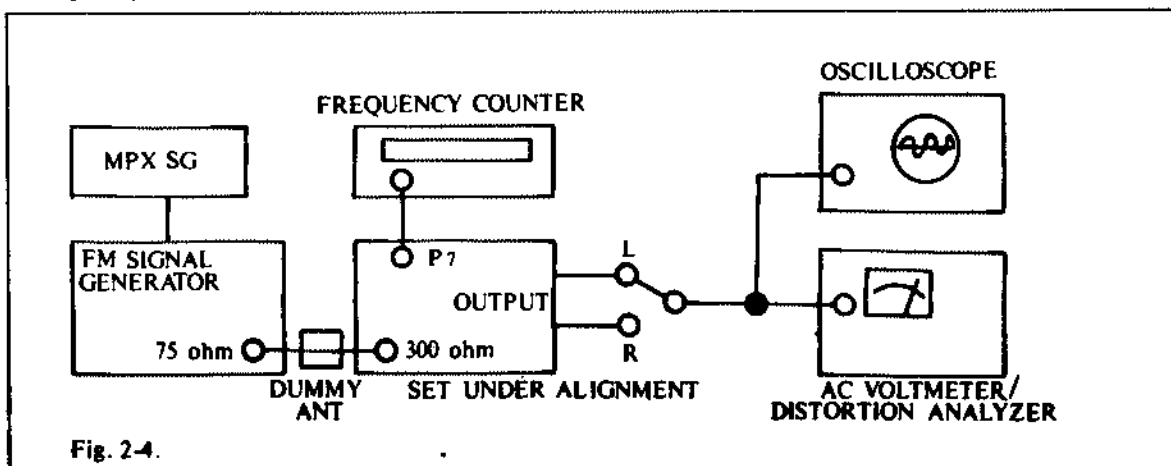


2-D. MUTE LEVEL ALIGNMENT

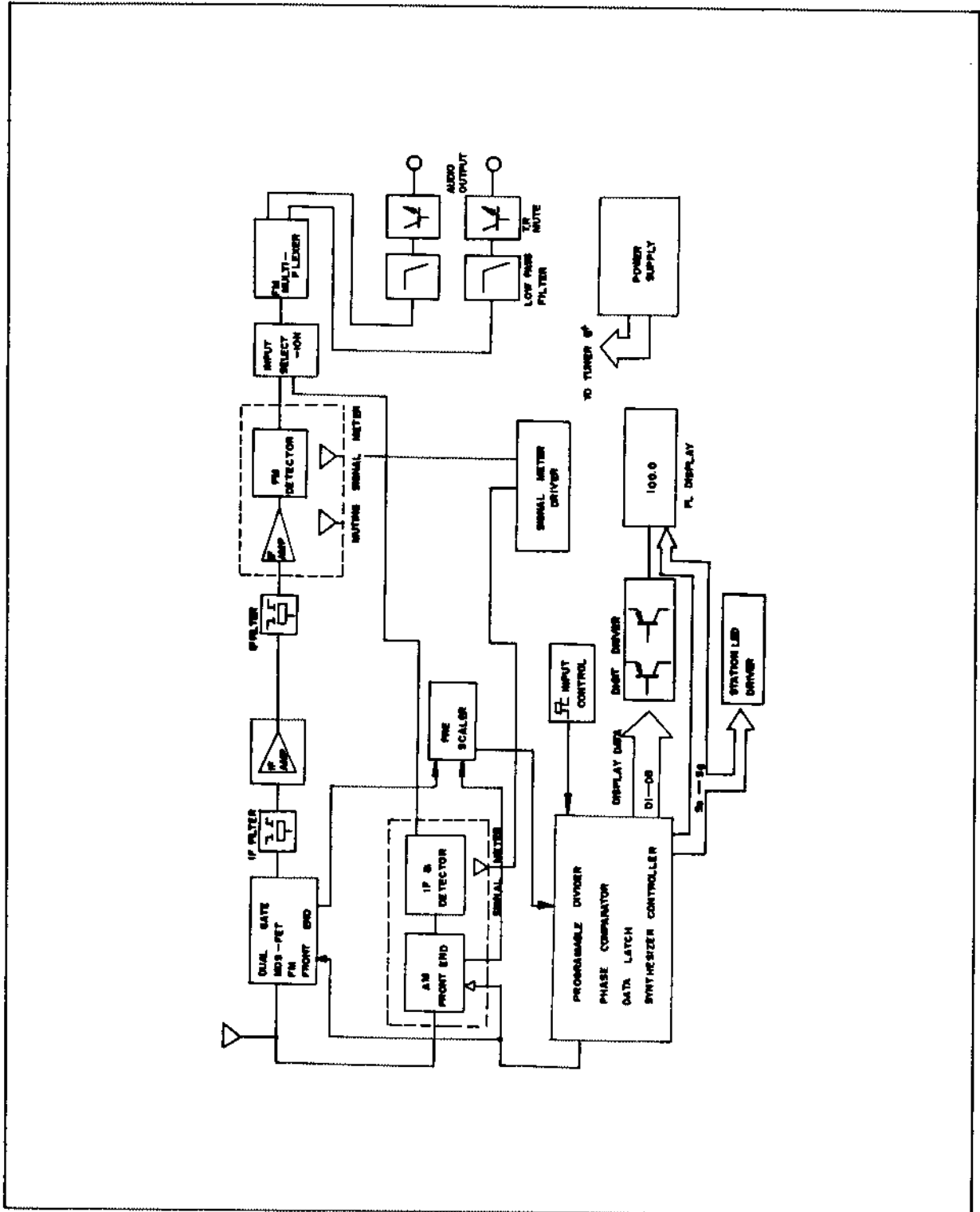
- a. Set the MUTE switch to ON position.
- b. Set the test equipment as Fig. 2-3.
- c. Set the FM SG to 7~10uV output.
- d. Tune FM SG and the Tuner to 98.0MHz and stop adjusting VR101 at the position where muting marginally occurs.

2-E. MPX ALIGNMENT

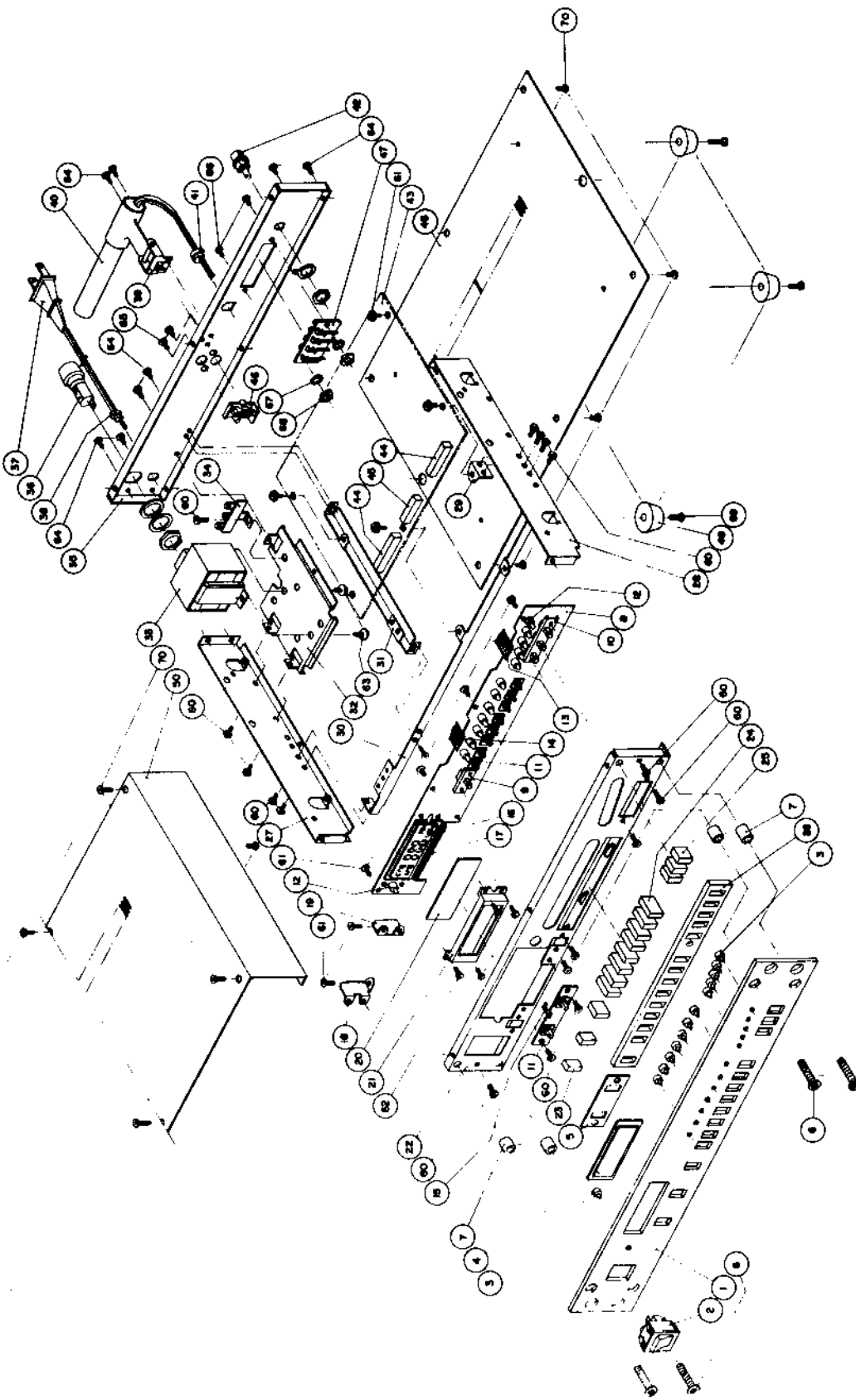
- a. Set the MODE switch to STEREO.
- b. Set up the test equipment as Fig. 2-4.
- c. Set FM SG to 60dB(1mV) and MPX SG to 75KHz deviation at 1KHz for left(right) channel and 7.5KHz deviation for 19KHz pilot signal.
- d. Set the frequency 98.0MHz.
- e. Set FM SG to modulation off position and adjust VR103 so that frequency counter reads 76KHz.
- f. Set FM SG to modulation ON position and adjust VR104 to minimize output of right(left) channel.
- g. Adjust T1 to minimize Distortion.



BLOCK DIAGRAM



EXPLODED VIEW OF CABINET AND CHASSIS



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PARTS LIST ACCORDING TO EXPLODED VIEW

NO.	PARTS NO.	DESCRIPTION	Q'ty	NO.	PARTS NO.	DESCRIPTION	Q'ty
1	PC-61138-02	PANEL FRONT	1	33	PD-35264	POWER TRANSFORMER	
2	AD-90431	SWITCH AC POWER	1	34	PE-77092A	LUG STATION	1
3	PE-71326	INDICATOR	13	35	PC-62518-05	CHASSIS BACK	1
4	PE-63178	WINDOW DISPLAY	1	36	PE-69099	HOLDER FUSE ASS'Y	1
5	PE-71330	GUIDE BUTTON	1	37	PD-67199	CORD AC POWER	1
6	PE-70075	SCREW PANEL MTG	4	38	PD-71344	STOPPER AC POWER	1
7	PE-65063-01	BUSHING	4	39	AE-10037A-01	HOLDER AM ANT ASS'Y	1
8	PC-K40486	P. C. BOARD SWITCH	1	40	PD-67072-01	AM BAR ANT	1
9	PE-90226	SWITCH PUSH(1KEY)	1	41	PD-71008	STOPPER ANT CORD	1
10	PE-90227	SWITCH PUSH(3KEY)	1	42	AE-95179	CONNECTOR FM ANT	1
11	PE-90279	SWITCH TACT(KHC10903)	10	43	PC-K40485	P. C. BOARD TUNER	1
12	PE-71213	SUPPORT LED	13	44	PE-95225	CONNECTOR(16P)	2
13	PE-67175-02	SLAT WIRE (16P)	2	45	PE-95164	CONNECTOR(12P)	1
14	PE-67198-03	SLAT WIRE (12P)	1	46	AE-95139	JACK R. C. A	1
15	PE-67205-02	SLAT WIRE (3P)	1	47	PE-76033	TERMINAL	1
16	FIP 7G8	F/L DISPLAY	1	48	PC-62519	COVER BOTTOM	1
17	PE-K40487	P. C. BOARD DISPLAY	1	49	PE-71175	RUBBER FOOT	4
18	PE-68934-01	BRACKET DISPLAY BOARD L	1	50	PC-74386-02	CABINET TOP	1
19	PE-68934-02	BRACKET DISPLAY BOARD R	1	60		SCREW # 3 BTC 3x6	14
20	PE-63171-02	FILTER DISPLAY	1	61		SCREW WPTC 3x6	8
21	PD-71328	CAP DISPLAY	1	62		SCREW #3 BTC 3x8	4
22	PC-62515-02	CHASSIS FRONT	1	63		SCREW WPM 4x10	2
23	PE-72360	BUTTON TACT	2	64		SCREW #3 PTC 3x6B	8
24	PE-72359	BUTTON TACT	8	65		SCREW PTC 3x8B	2
25	PE-72361	BUTTON PUSH	4	66		SCREW #3 PTC 3x8B	2
26	PD-71327	GUIDE BUTTON	1	67		WASHER SPRING #3	2
27	PD-62328A-04	FRAME MAIN "L"	1	68		NUT M3	2
28	PD-62328A-03	FRAME MAIN "R"	1	69		SCREW BTC 3x12	4
29	PE-68826	BRACKET P. C. BOARD	1	70		SCREW #3 BTC 3x6B	14
30	PC-62516-02	FRAME SUPPORT	1				
31	PD-62517	FRAME SUPPORT	1				
32	PE-68514-02	BRACKET P/T	1				

PARTS LIST

Ref. No.	Parts No.	Description	Q'ty	Ref. No.	Parts No.	Description	Q'ty
R401	3009132273	Resistor Carbon 1.3K ohm 1/4 W	1			For UL, CSA Version only	
R215	3009152273	Resistor Carbon 1.5K ohm 1/4 W	1		3009273273	Resistor Carbon 27K ohm 1/4 W	1
R226	3009182273	Resistor Carbon 1.8K ohm 1/4 W	1			For Europe Version only	
R157, R225	3009222273	Resistor Carbon 2.2K ohm 1/4 W	7	R139	3009273273	Resistor Carbon 27K ohm 1/4 W	1
R318, R156				R404	3039151472	Resistor Metal Oxide 150 ohm(1W)	1
R323, R327				C305, C306	3529270210	Capacitor Ceramic 27PF/50WV(CH)	2
R402				C123	3509101130	Capacitor Ceramic 100PF/50WV	1
R105, R115	3009332273	Resistor Carbon 3.3K ohm 1/4 W	5	C114	3509221130	Capacitor Ceramic 220PF/50WV	1
R134, R135				C316, C317	3509331130	Capacitor Ceramic 330PF/50WV	7
R137				C318, C319			
R331, R332	3009392273	Resistor Carbon 3.9K ohm 1/4 W	3	C320, C321			
R333				C322			
R406	3009562273	Resistor Carbon 5.6K ohm 1/4 W	1	C117	3509471130	Capacitor Ceramic 470PF/50WV	1
R123, R322	3009682273	Resistor Carbon 6.8K ohm 1/4 W	3	C219	3509102130	Capacitor Ceramic 0.001μF/50WV	1
R323				C315	3509202130	Capacitor Ceramic 0.002μF/50WV	1
R407, R408	3009822273	Resistor Carbon 8.2K ohm 1/4 W	2	C213, C220	3509103130	Capacitor Ceramic 0.01μF/50WV	9
R110, R116	3009103273	Resistor Carbon 10K ohm 1/4 W	11	C307, C308			
R132, R133				C309, C312			
R220, R221				C314, C324			
R326, R328				C325			
R334, R403				C102, C104	3509203130	Capacitor Ceramic 0.02μF/50WV	13
R405				C105, C106			
R126, R143	3009153273	Resistor Carbon 15K ohm 1/4 W	2	C107, C109			
R120, R121	3009223273	Resistor Carbon 22K ohm 1/4 W	9	C112, C202			
R130, R131				C216, C217			
R141, R142				C228, C411			
R152, R201				C412		Capacitor	
R225				C103, C108	3509473130	Capacitor Ceramic 0.047μF/50WV	11
R119, R318	3009333273	Resistor Carbon 33K ohm 1/4 W	5	C110, C111			
R319, R320				C203, C204,			
R321				C206, C221			
R111, R118	3009473273	Resistor Carbon 47K ohm 1/4 W	14	C311, C323			
R124, R144				C327			
R145, R148				C402, C406	3509104130	Capacitor Ceramic 0.1μF/50WV	3
R149, R154				C407			
R301, R302				C122, C130	3409222870	Capacitor Elect. 0.22μF/50WV	2
R303, R304				C113, C119	3409210970	Capacitor Elect. 1μF/50WV	8
R305, R336				C128, C129			
R128, R129	3009513273	Resistor Carbon 51K ohm 1/4 W	2	C131, C223			
R150	3009563273	Resistor Carbon 56K ohm 1/4 W	1	C310, C313			
R140, R147	3009104273	Resistor Carbon 100K ohm 1/4 W	20	C132	3409222970	Capacitor Elect. 2.2μF/50WV	1
R151, R158				C120, C135	3409233970	Capacitor Elect. 3.3μF/50WV	3
R218, R227				C227			
R306, R307				C115, C224	3409247940	Capacitor Elect. 4.7μF/25WV	2
R308, R309				C126, C127	3409210040	Capacitor Elect. 10μF/25WV	6
R310, R311				C134, C136			
R312, R313				C218, C222			
R314, R315				C414	3409210070	Capacitor Elect. 10μF/50WV	1
R316, R317				C326, C404	3409222060	Capacitor Elect. 22μF/35WV	3
R322, R335				C405			
R146, R202	3009224273	Resistor Carbon 220K ohm 1/4 W	2	C101	3409247030	Capacitor Elect. 47μF/16WV	1
R109	3009564273	Resistor Carbon 560K ohm 1/4 W	1	C401, C403	3409247070	Capacitor Elect. 47μF/50WV	2
R112	3009123273	Resistor Carbon 12K ohm 1/4 W	1	C302, C304	3409210120	Capacitor Elect. 100μF/10WV	3
R113	3009123273	Resistor Carbon 12K ohm 1/4 W	1	C409			

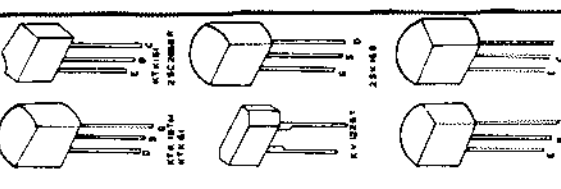
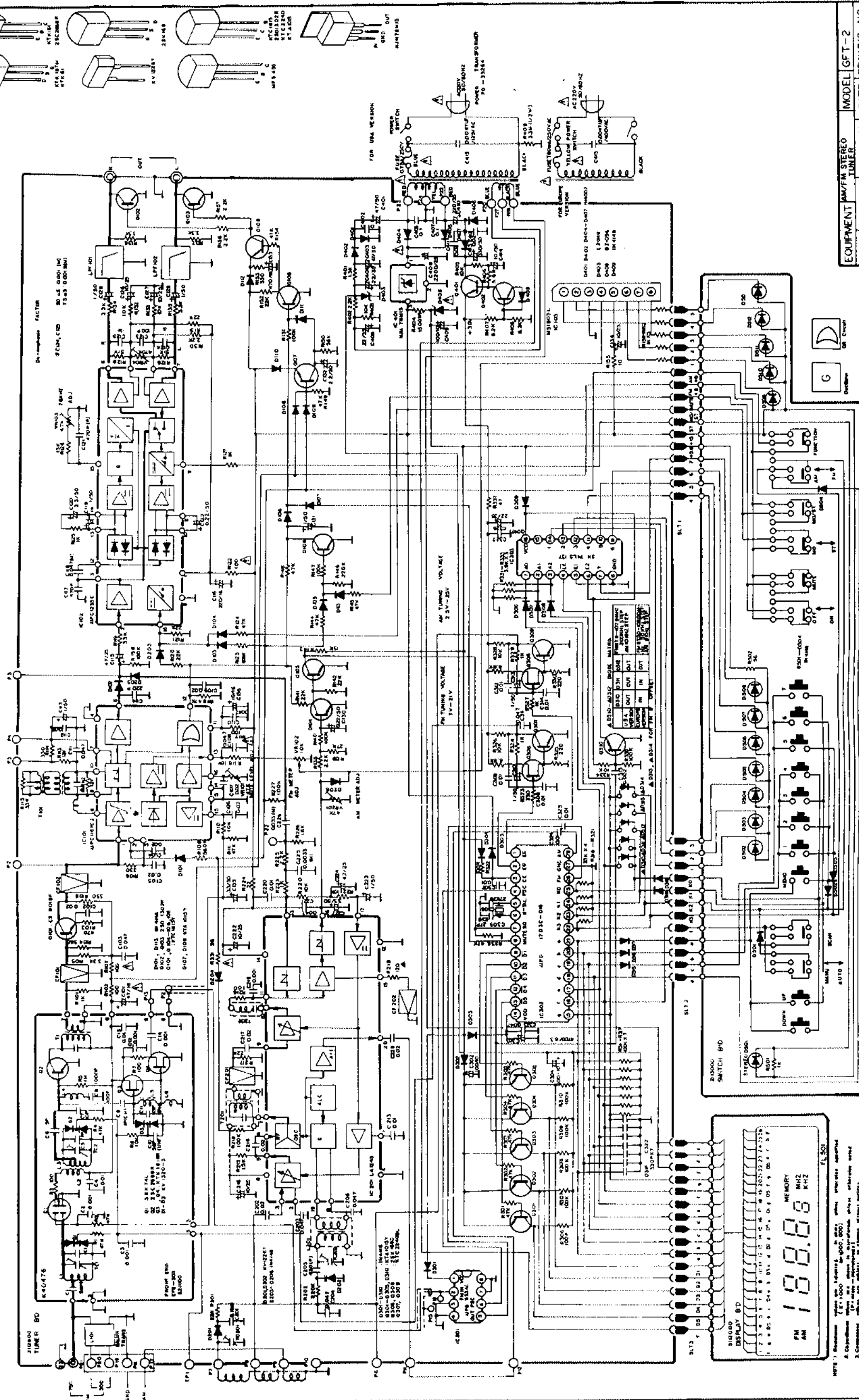
PARTS LIST

Ref. No.	Parts No.	Description	Q'ty	Ref. No.	Parts No.	Description	Q'ty
5211100 FRONT-END BOARD							
Q1	2018213100	FET 3SK74L	1	D103, D104			
Q3, Q4	2018206111	FET KTK161GR	2	D105, D106			
Q2	2008406104	Transistor 2SC2668R	1	D107, D108			
D1, D2, D3	2058819104	Diode Varactor KV1320-3	1	D109, D110			
L1	2608001030	Coil FM ANT	1	D111, D112			
L2	2618001050	Coil FM RF(A)	1	D113, D204			
L3	2618001060	Coil FM RF(B)	1	D205, D206			
L4	2648601340	Coil Inductor 2.2μH	1	D301, D302			
L5	2638001030	Coil FM OSC W/CORE	1	D303, D304			
L6	2638001040	Coil FM OSC	1	D305, D306			
T1	2838001030	Coil FM IFT	1	D307, D308			
R1, R2, R4	3009473173	Resistor Carbon 47K ohm 1/8 W	3	D309, D315			
R3, R7	3009101173	Resistor Carbon 100 ohm 1/8 W	2	D316, D317			
R5	3009105173	Resistor Carbon 1M ohm 1/8 W	1	D409			
R6	3009103173	Resistor Carbon 10K ohm 1/8 W	1	D403	2058520120	Diode Zener EZ-249	1
C1	3509560130	Capacitor Ceramic 56PF/50WV	1	D408	2058520119	Diode Zener BZ-056	1
C2, C3, C12, C14	3509102130	Capacitor Ceramic 0.001μF/50WV	4	D201, D202	2058819103	Varactor KV-1226Y (Dual)	1
C4, C13	3509103130	Capacitor Ceramic 0.01μF/50WV	2	CF101, CF102	3908011001	Filter Ceramic SFE 10.7MA8-A	2
C5	3509709130	Capacitor Ceramic 7PF/50WV	1	D310, D311	2058306101	Diode 1N4148 For Europe Version only	2
C6	3509509130	Capacitor Ceramic 5PF/50WV	1	CF201	3908001010	Filter Ceramic SFP450H	1
C7	3509100130	Capacitor Ceramic 10PF/50WV	1	CF202	3908001020	Filter Ceramic BFL 450C4N	1
C8	3509101130	Capacitor Ceramic 100PF/50WV	1	X-301	3908101050	Crystal 4.50MHz	1
C9	3529109210	Capacitor Ceramic 1PF/50WV (CH)	1	TC201, TC202	3838001010	Trimmer Capacitor TZ03-200F	2
C10	3529560510	Capacitor Ceramic 56PF/50WV (UH)	1	L101	2868601000	Balun Trans 75:300	1
C11	3529150410	Capacitor Ceramic 15PF/50WV (PH)	1	T101	2838501050	Coil Qued Det	1
TC1, TC2	3838001000	Trimmer Capacitor TZ03-110F	1	L201	2638201049	Coil AM OSC	1
2112900 TUNER BOARD							
IC101	2168013100	IC MPC1167C2	1	T201	2848001090	Coil AM IFT	1
IC102	2168013101	IC MPC1235C	1	T202	2848001070	Coil AM IFT	1
IC103	2168015100	IC M51903L	1	LPF101	2658001020	Coil FM MPX	2
IC201	2168417100	IC LA-1245	1	LPF102			
IC301	2108013100	IC MPB-553 AC	1	VR103	3248347220	Semifixed Resistor 4.7K (B)	1
IC302	2138013100	IC MPD1703C-018	1	VR102	3248310320	Semifixed Resistor 10K (B)	1
IC303	2108014101	IC SN741S137	1	VR101	3248347320	Semifixed Resistor 47K (B)	2
IC401	2168620102	IC NJM 78M15	1	VR201			
Q101	2008409101	Transistor CS9018F	1	VR104	3248347420	Semifixed Resistor 470K (B)	1
Q102, Q103	2008610100	Transistor 2SD1302R	2	R155	3009100273	Resistor Carbon 10 ohm 1/8 W	1
Q104, Q105	2008606104	Transistor KTC1815Y	5	R224	3009220273	Resistor Carbon 22 ohm 1/8 W	1
Q106, Q108				R337	3009470273	Resistor Carbon 47 ohm 1/8 W	1
Q401				R231	3009560273	Resistor Carbon 56 ohm 1/8 W	1
Q107, Q109	2008206105	Transistor KTA1015Y	8	R102, R107	3009101273	Resistor Carbon 100 ohm 1/8 W	5
Q301, Q302				R117, R122			
Q303, Q304				R216			
Q305, Q310				R219	3009121273	Resistor Carbon 120 ohm 1/8 W	1
Q306, Q308	2018211100	FET 2SK168D	2	R325, R330	3009221273	Resistor Carbon 220 ohm 1/8 W	2
Q307, Q309	2008606108	Transistor KTC 2240B	3	R106, R108	3009331273	Resistor Carbon 330 ohm 1/8 W	4
Q402				R114, R153			
D401, D402	2058106100	Diode Rect 1N4002	6	R103	3009471273	Resistor Carbon 470 ohm 1/8 W	1
D404, D405				R104	3009561273	Resistor Carbon 560 ohm	1
D406, D407				R101, R125	3009102273	Resistor Carbon 1K ohm 1/8 W	11
D101, D102	2058306101	Diode 1N4148	29	R127, R158			
				R159, R160			
				R161, R162			
				R223, R324			
				R329			

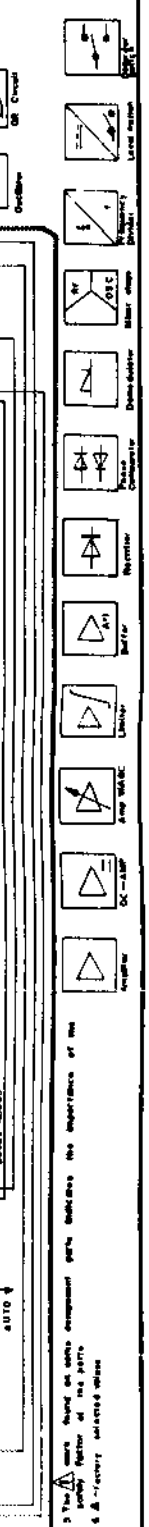
PARTS LIST

Ref. No.	Parts No.	Description	Qty
C116	3409222130	Capacitor Elect. 220 μ F/16WV	1
C410	3409222160	Capacitor Elect. 220 μ F/25WV	1
C413	3409233170	Capacitor Elect. 330 μ F/50WV	1
C133	3409247130	Capacitor Elect. 470 μ F/16WV	1
C408	3409222240	Capacitor Elect. 2200 μ F/25WV	1
C303	3409247210	Capacitor Elect. 4700 μ F/6.3WV	1
C205	3619431110	Capacitor Poly. 43PF/50WV	1
C121	3619471110	Capacitor Poly. 470PF/50WV	1
C225	3609332120	Capacitor Mylar 0.0033 μ F/100WV	1
C226	3609333120	Capacitor Mylar 0.033 μ F/100WV	1
C118	3609473120	Capacitor Mylar 0.047 μ F/100WV	1
C201	3609104120	Capacitor Mylar 0.1 μ F/100WV	1
C124, C125	3609152120	Capacitor Mylar 0.0015 μ F/100WV For UL, CSA Version only	2
	3609102120	Capacitor Mylar 0.001 μ F/100WV For Europe Version only	2
2113000 SWITCH BOARD			
D501, D502	2058306101	Diode 1N4148	4
D503, D504	2308220109	LED SLR54UR C3	13
D501, D502			
D503, D504			
D505, D506			
D507, D508			
D509, D510			
D511, D512			
D513			
R502	3009560273	Resistor Carbon 56 ohm $\frac{1}{4}$ W	1
R501	3009102273	Resistor Carbon 1K ohm $\frac{1}{4}$ W	1
5112000 DISPLAY BOARD			
FL501	2328130903	FL Display FIP708	1
CHASSIS MTG			
R409	2828026401	Power Transformer	1
	3009105372	Resistor Carbon 3.3M ohm $\frac{1}{2}$ W For UL, CSA Version only	1
C415	3549472407	Capacitor Ceramic 0.0047 μ F 400VAC	1
F1	5508211831	Fuse, STD 0.75A/250V (31.8mm) For UL, CSA Version only	1
	5508300634	Fuse, Time Lag T80mA 250V (20mm) For Europe Version only	1

SCHEMATIC DIAGRAM



EQUIPMENT	AM/FM STEREO TUNER	MODEL	GFT-2
DRAWN	83	DATE	2 10
CHECKED		APPROVED	
NO.		DRAWING	NO. 9910040



NOTE 1: Refer to the component list for part numbers and quantities of the components of the radio.

NOTE 2: The radio is designed to operate on 120V AC, 60 Hz. It is not recommended to operate it on other voltages.

NOTE 3: The radio is designed to operate on 120V AC, 60 Hz. It is not recommended to operate it on other voltages.

NOTE 4: The radio is designed to operate on 120V AC, 60 Hz. It is not recommended to operate it on other voltages.

NOTE 5: The radio is designed to operate on 120V AC, 60 Hz. It is not recommended to operate it on other voltages.