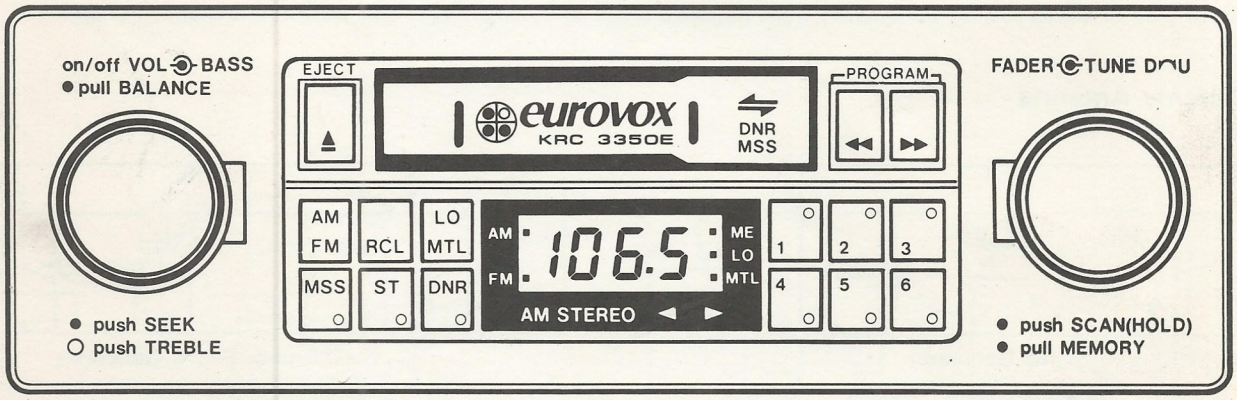
eurovox

Service Manual

KRC-3350E



FEATURES

- Quartz PLL Synthesized Tuner
- 12 Memory Presets
- Auto Tuning (scan & seek)
- Mono/Stereo Switch-AM/FM
- LO/DX Reception Control Switch
- Quartz Clock
- Auto Reverse Tape Deck Mechanism
- Key Off Stand-By Deck Mechanism
- Locking Fast Forward & Rewind
- Night Illumination
- Low Level Output RCA Jacks
- Fader Control
- Separate Bass & Treble Control
- 50W Max. Output (25W/Channel)
- Power Antenna Activator
- Compact Chassis For Domestic & Import Car
- Music Search System
- Normal/Metal Tape Selection
- DNR Switch & Indicator
- Time Recall Switch

SPECIFICATIONS

FM TUNER:

Frequency Range	87.9 ~ 107.9 MHz
Usable Sensitivity	3μV
Intermediate Frequency	10.7 MHz
Frequency Response	40 Hz ~ 10 kHz
Capture Ratio	2 dB at 65 dBf
Stereo Separation	> 30 dB at 1 kHz
Alternate Channel Selectivity	> 50 dB
Signal/Noise Ratio	> 55 dB
Image Response Ratio	> 45 dB
AM Suppression	> 50 dB

AM TUNER:

Frequency Range	522 ~ 1629 kHz
Usable Sensitivity	35μV
Intermediate Frequency	450 kHz
Image Rejection	> 40 dB

TAPE SECTION:

Tape Speed	4.75cm/sec. $^{+3}_{-2}$%
Wow and Flutter	< 0.35% WRMS
Cross Talk	> 40 dB
Signal-to-Noise Ratio	> 50 dB
Frequency Response	40Hz ~ 10 kHz
Channel Separation	> 30 dB
Fast Forward and Rewind Time	140 ± 20 sec.

GENERAL:

Power Supply Voltage	13.8V DC
Current Consumption	< 8A
Load Impedance	4 ohms
Output Power	25 Watts/Channel

Specifications are subject to change for improvement without notice.

ALIGNMENT PROCEDURE

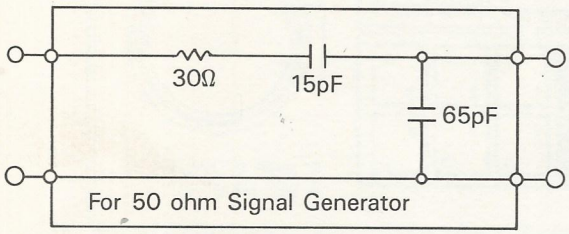
☐ INSTRUMENTS REQUIRED

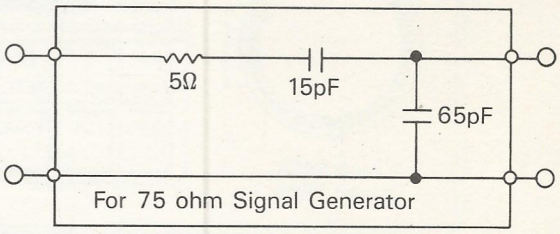
- AM Signal Generator
- FM Signal Generator
- FM Stereo Generator
- Frequency Counter
- DC Meter
- Output Meter (VTVM)
- Oscilloscope
- AM Dummy Ant.
- FM Dummy Ant.

☐ IMPORTANT

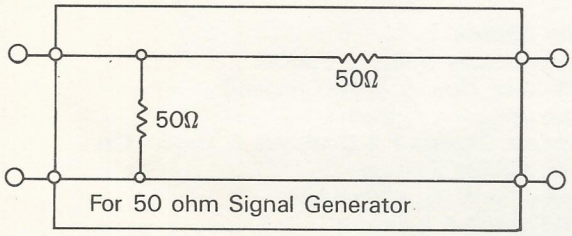
- Use-non-metallic tools for the following adjustments.
- Generator signal level should be kept as low as possible to avoid signal clipping or saturation.
- RF generator signal should be modulated 30% by 400kHz sine-wave signal.
- To ensure proper generator-to-receiver impedance matching, connect appropriative dummy antenna between generator and receiver.
- Do not put negative sides of L and R channels together, as this may result in damaging the unit.
- Test instrument negative sides of L and R channels should not be put together.
- Negative side of battery must be isolated from negative sides of speakers and test instrument L and R channels.

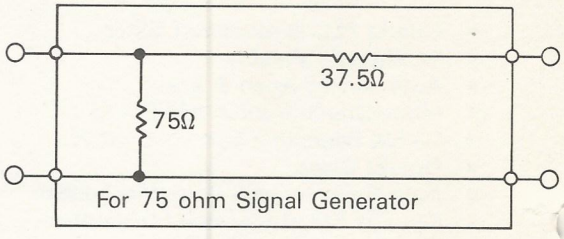
AM Dummy Antenna





FM Dummy Antenna



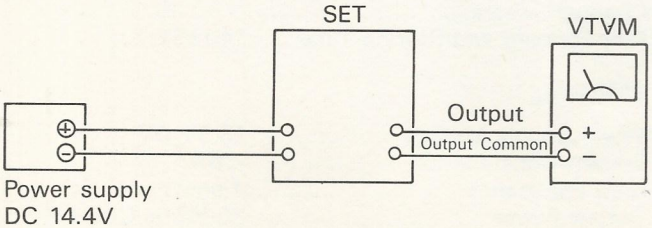


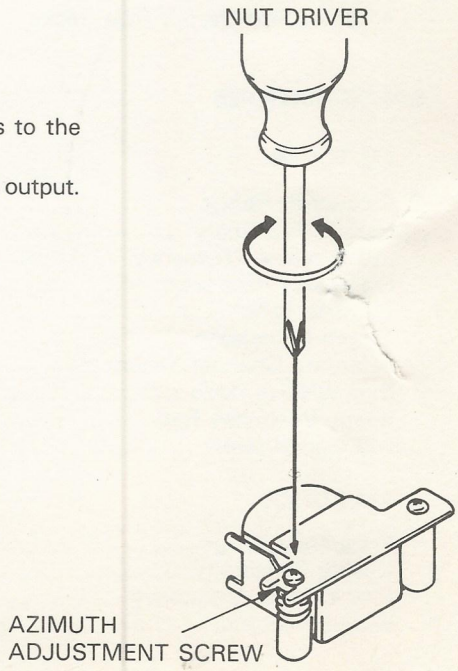
☐ TAPE DRIVE ADJUSTMENT

Head Azimuth Adjustment

Load the unit with a 10kHz test tape (MTT 114) Set the Volume and Tone controls to the maximum position and Balance control to the mechanical center.

Turn Azimuth adjustment nut for maximum output on the VTVM connected to the audio output.





☐ CONNECTIONS

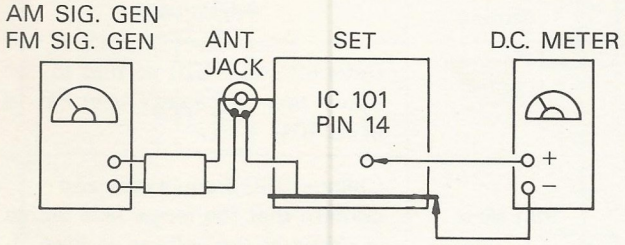


Fig. 1

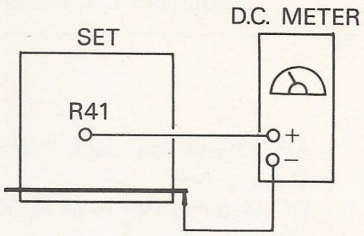


Fig. 2

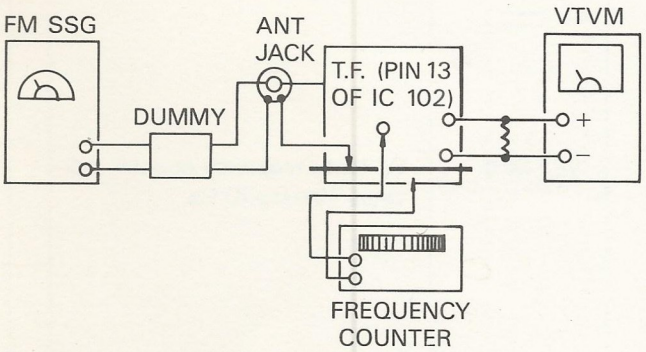


Fig. 3

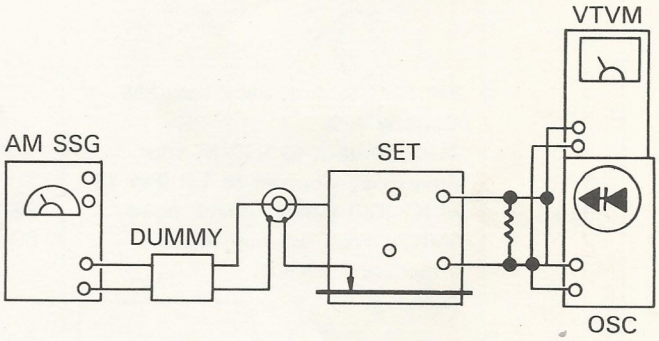


Fig. 4

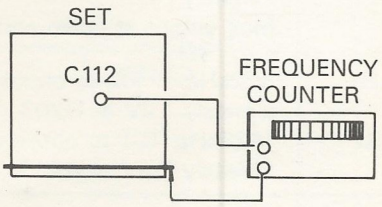


Fig. 5

NOTE
Normally when station is tuned in, reception is automatically in Stereo mode.
However, if the back-up lead is disconnected, then reconnected, reception will be in Mono until "Stereo" button is pressed. Providing the back-up lead is not disconnected, stereo reception will be automatic once the "Stereo" button has been pressed, even after unit is switched off at front panel or accessory switch.

□ ALIGNMENT

FM ALIGNMENT

Alignment	Instrument Connection	Instrument Setting	Dial Setting	Adjustment
IF	FM SSG to Ant. Jack thru FM Dummy Ant. DC Meter to Pin 14 of IC 101. (See Fig. 1)	98.1 MHz 60dB/μV	98.1 MHz	Detector coil (T101) so that to obtain approximately OV at Pin 14 of IC 101.
				Change SSG frequencies and confirm that the range falls within ±75kHz at the voltage of Step. 1.
				Confirm the S curve is symmetric.
Tracking	Front end is Factory adjusted: do not move trimmer and coil.			
19kHz Adjust	FM SSG to Ant. Jack thru FM Dummy Ant. Audio Output to V.T.V.M and Frequency Counter to T.P (Pin 13 of IC 102) (19kHz check point SVR2) (Freq. counter input impedance 100KΩ) (See Fig. 3)	98.1 60dB/μV	98.1 MHz	So that Frequency counter indicates 19kHz±10 Hz.

AM ALIGNMENT

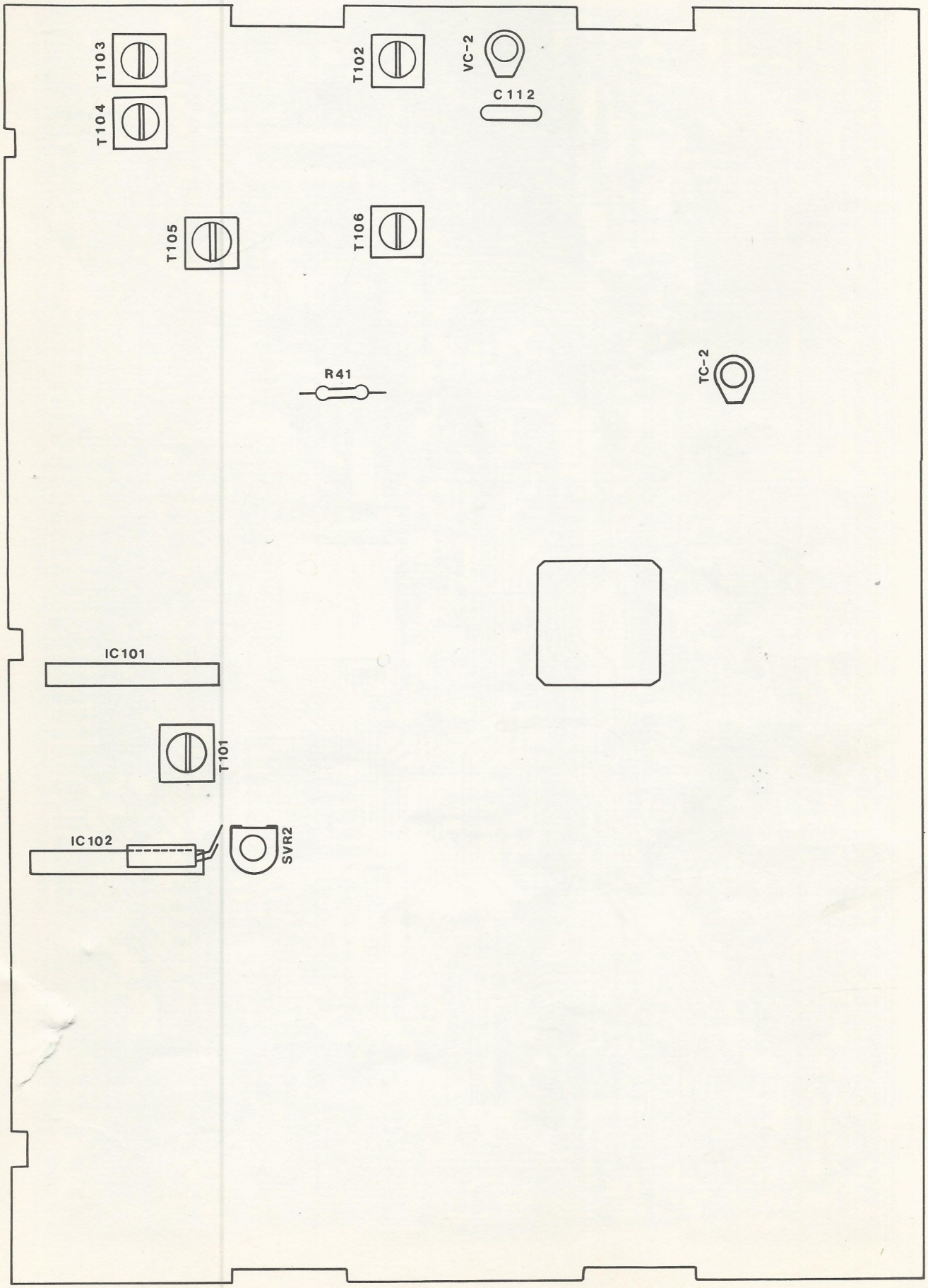
Alignment	Instrument Connection	General Frequency	Dial Setting	Adjustment
IF	AM SSG to Ant. Jack thru AM Dummy Ant. Audio output to VTVM.	612kHz 60 dB/μV	612kHz	If coil (T104, 105) to obtain approximately. Max output at audio output.
Band Coverage	DC Meter to R41 (See Fig. 2)	522kHz 1629kHz	522kHz 1629kHz	522kHz: T 102 to obtrain approximately 1.2V at R203 1629kHz: TC1 to obtain approximately 7.5V at R203.
Tracking	AM SSG to Ant. Jack turn AM Dummy Ant. Audio output to VTVM.	612kHz 35dB/μV	612kHz	Ant & RF coil (T103, 104) to obtain approximately. Max output at audio output.

PLL ALIGNMENT

Alignment	Instrument Connection	Instrument Setting	Dial Setting	Adjustment
PLL Control	Frequency counter to C112 (See Fig. 5)		999kHz	TC2 to obtain approximately 1449kHz

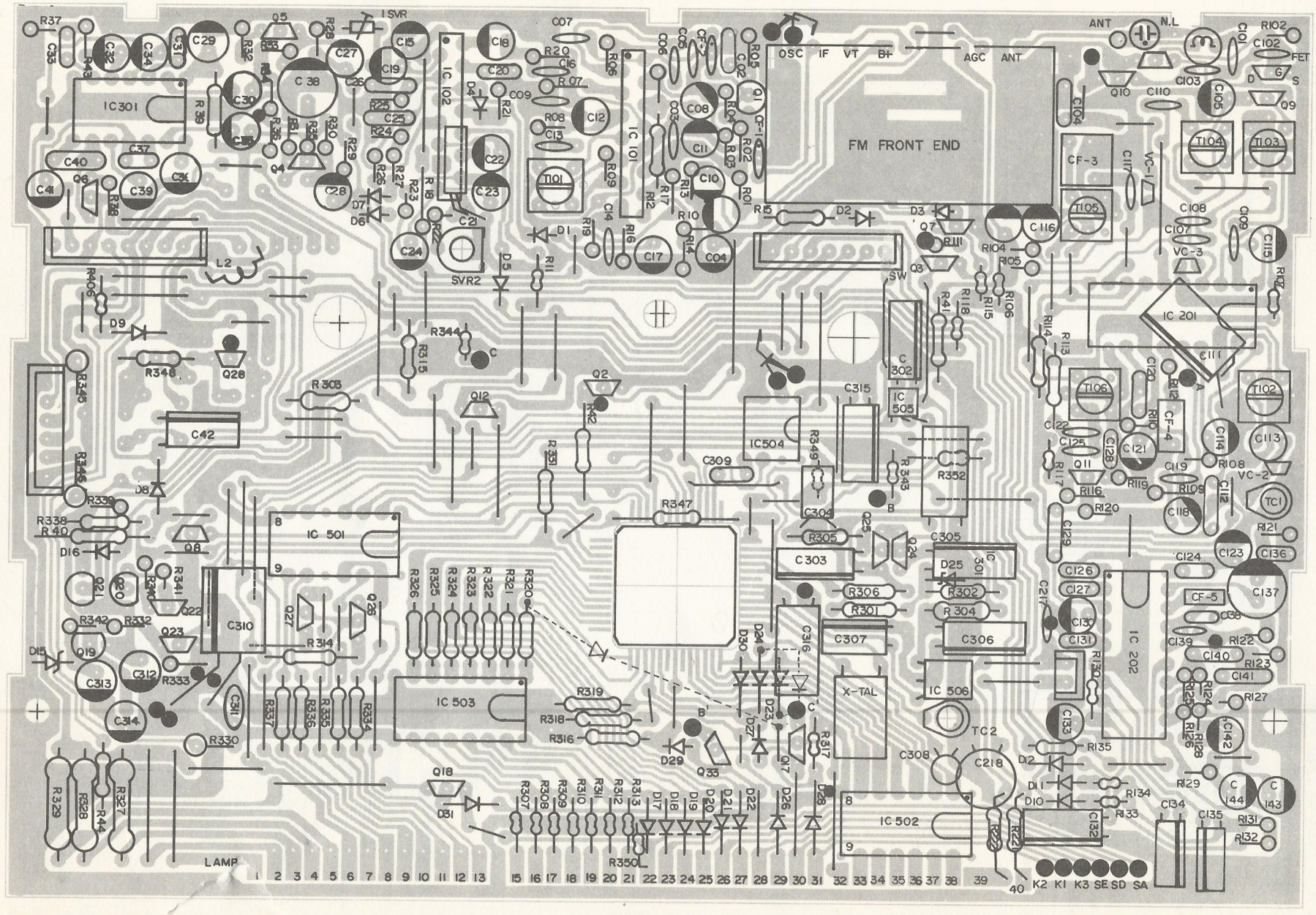
□ ALIGNMENT POINT

MAIN P. C BOARD (Top View)

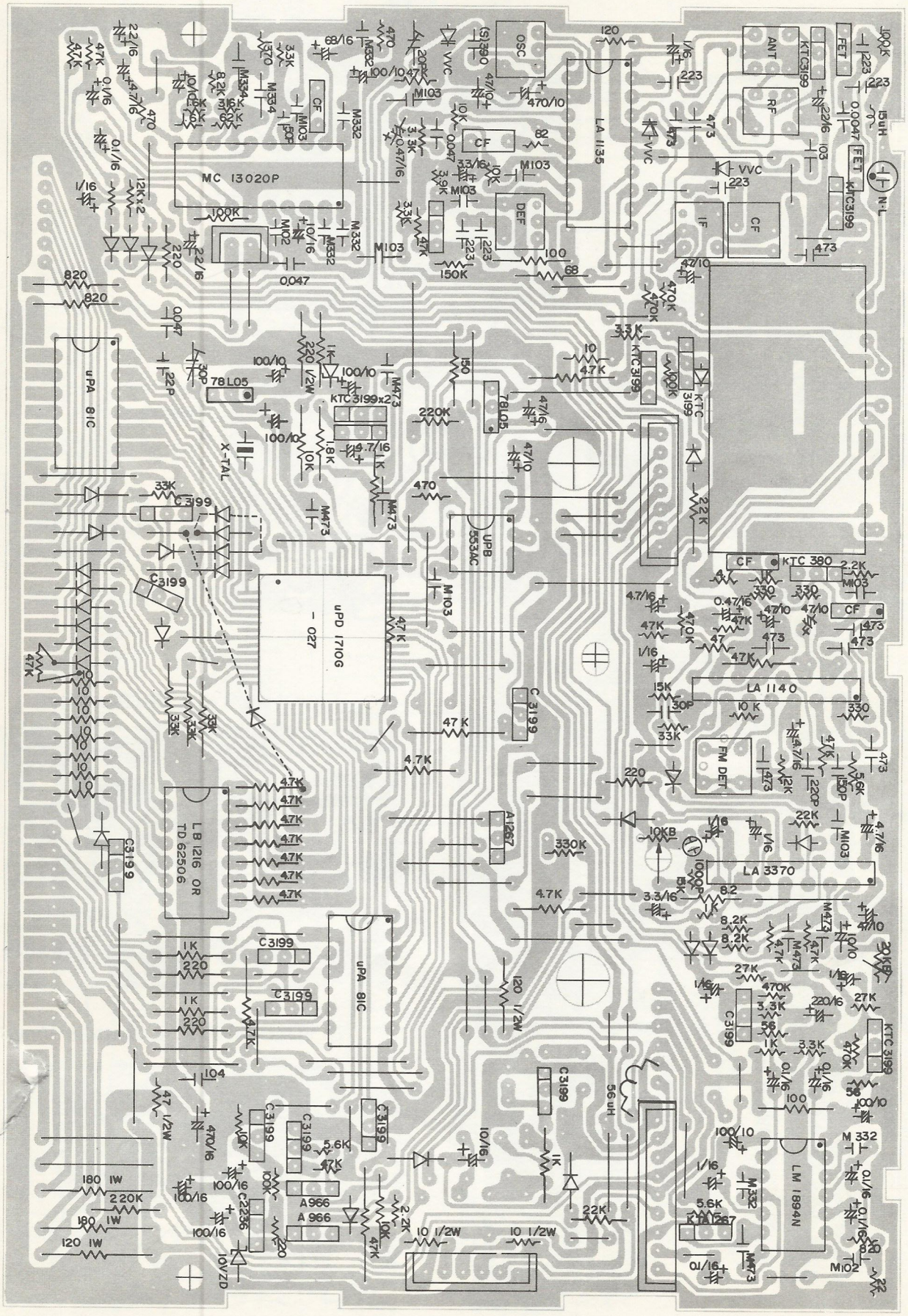


■ CIRCUIT BOARD

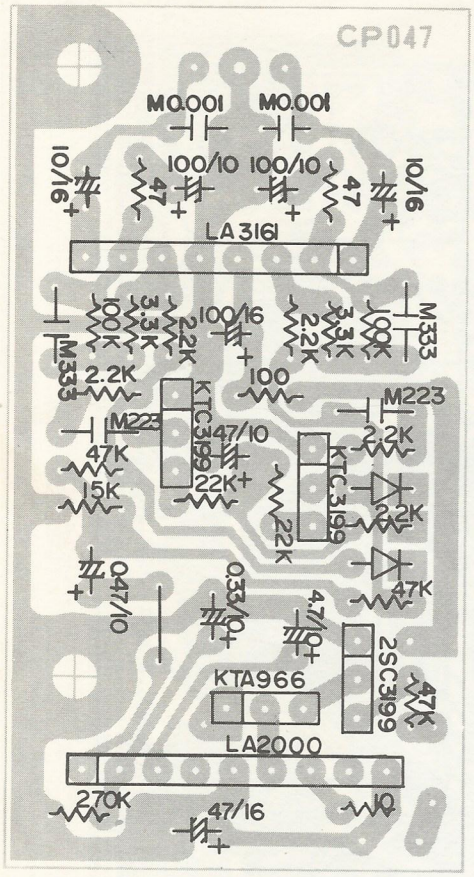
□ RADIO MAIN P. C. BOARD (Top View)



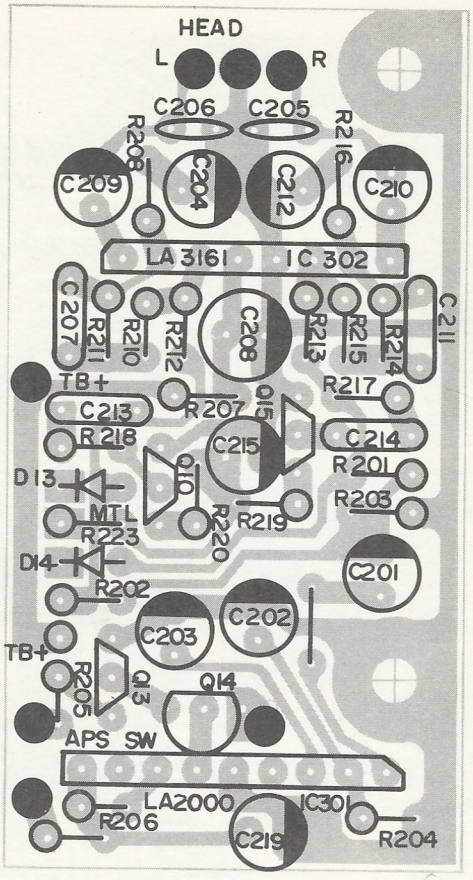
☐ RADIO MAIN P. C. BOARD (Bottom View)

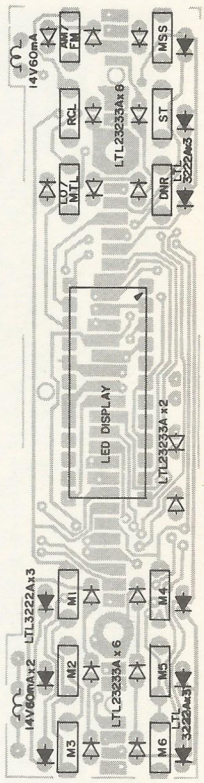


☐ EQ P. C. B (Bottom View)



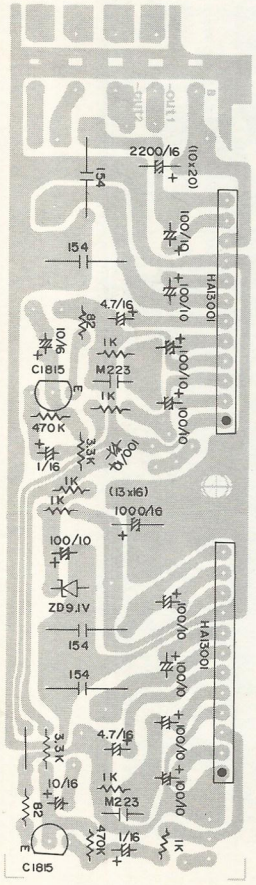
☐ EQ P. C. B (Top View)



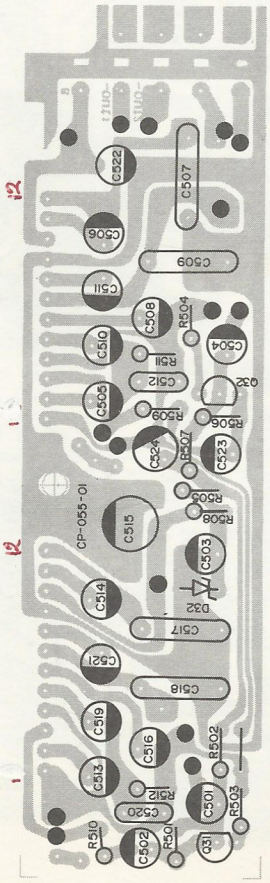


☐ SWITCH P. C. B (Bottom View)

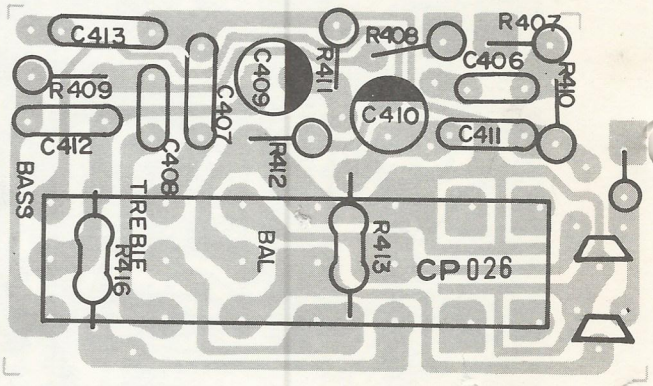
☐ POWER P. C. B (Bottom View)



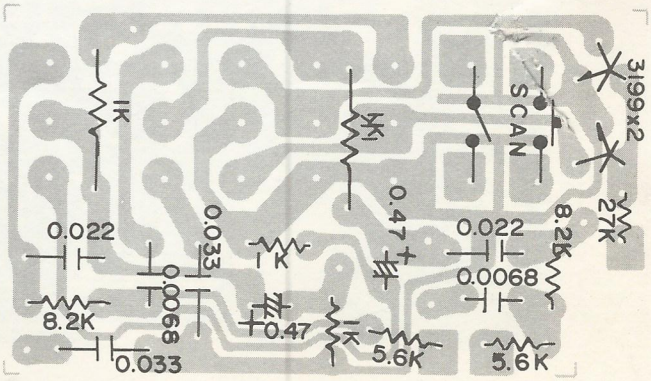
☐ POWER P. C. B (Top View)



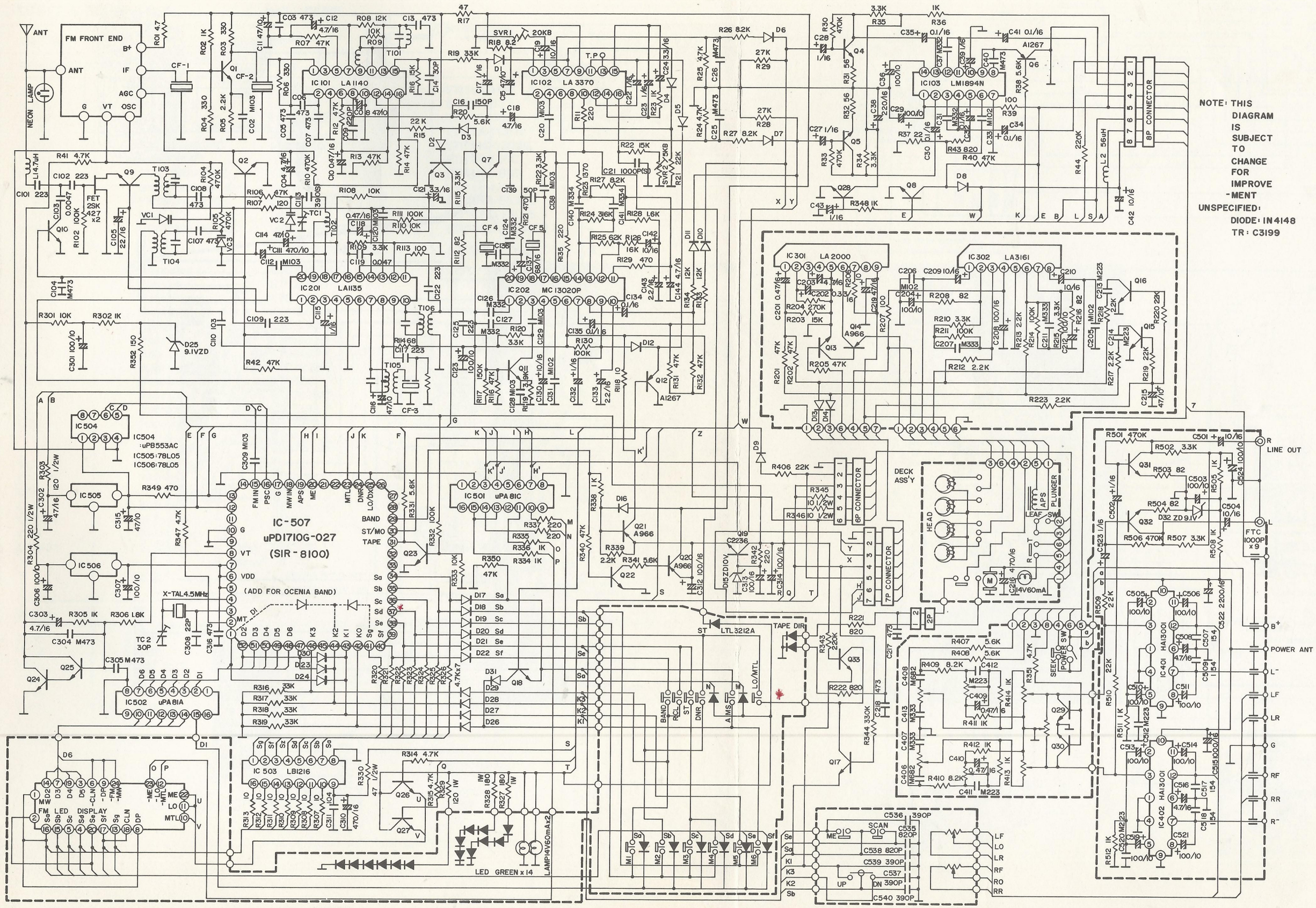
☐ VOLUME P. C. B (Top View)



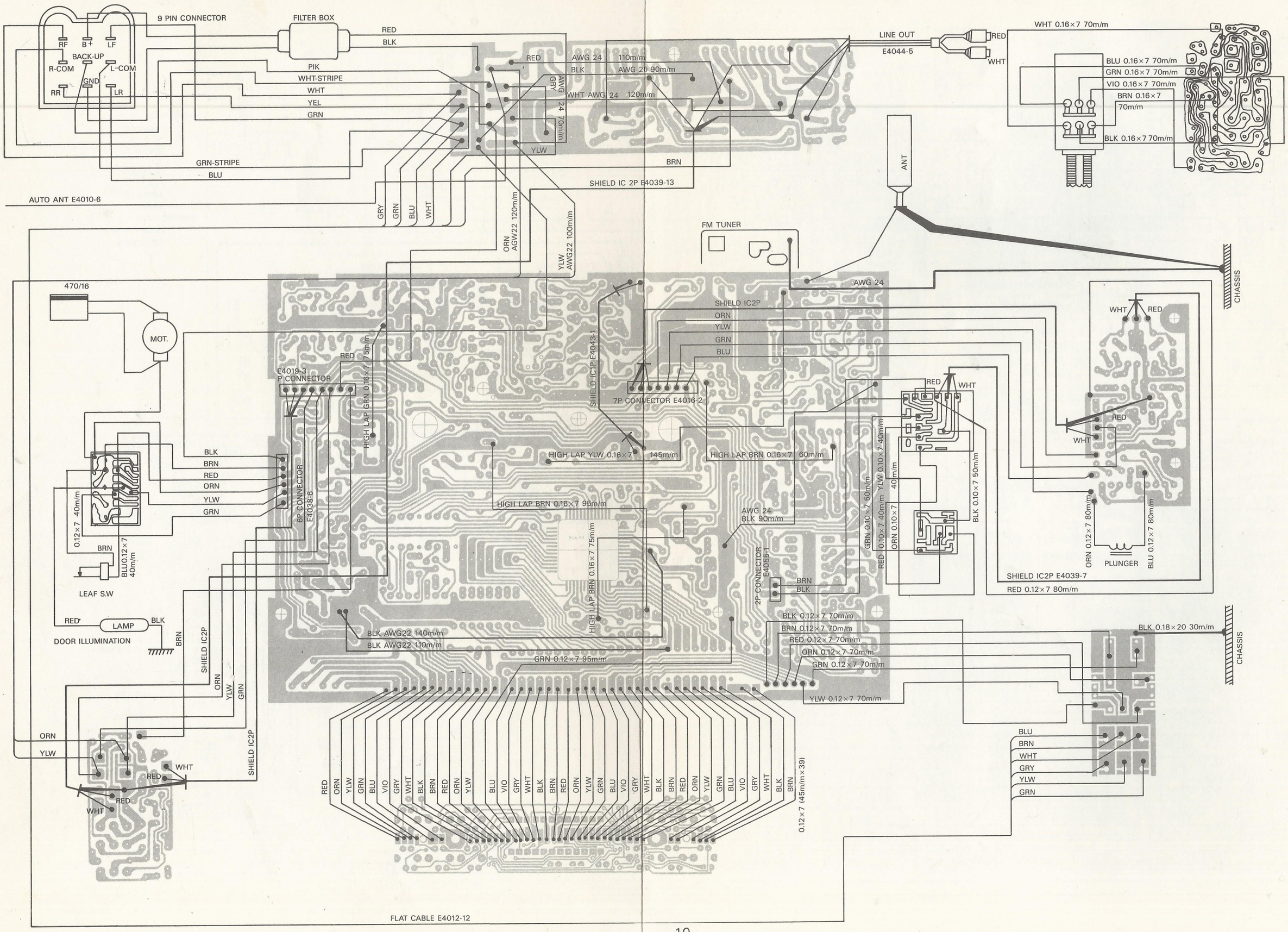
☐ VOLUME P. C. B (Bottom View)



■ SCHEMATIC DIAGRAM



■ WIRING DIAGRAM



■ PARTS LIST

□ TUNER & MAIN P. C. B

Ref. No.	Description		Part No.	Remarks
SEMICONDUCTORS				
IC101	FM IF IC	LA1140	ETI*LA-1140	
IC102	FM MPX IC	LA3370	ETI*LA-3370	
IC103	DNR IC	LM1894N	ETI*LM-1894	
IC201	AM IC	LA1135	ETI*LA-1135N	
IC202	AM STEREO IC	MC13020	ETI*MC-13020	
IC501	SWITCHING	UPA 8IC	ETI*UPA-81C	
IC502	SEG. DRIVER IC	UPA 8IC	ETI*UPA-81C	
IC503	DIGIT. DRIVER IC	LB1216	ETI*LB-1216	
IC504	PRESCALER IC	UPA 553AC	ETI*UPA-553AC	
IC505,506	REG. IC	78L05	ETI*UPC-78L05	
IC507	CONTROLLER IC	UPD 1710-027	ETI*UPD-1710G027	
	Tuner	CEA-5 (FE309-A02)	AR*001	
Q1	Transistor	KTC380TM-O	ETTC*25C-380TM	
Q2	Transistor	KTC3199-Y	ETTC*KTC-3199Y	
Q3-Q5	Transistor	KTC3199-Y	ETTC*KTC-3199Y	
Q6	Transistor	KTA1267-Y	ETTA*KTA-1267Y	
Q7-Q11	Transistor	KTC3199-Y	ETTC*KTC-3199Y	
Q12	Transistor	KTA1267-Y	ETTA*KTA-1267Y	
Q17-Q18	Transistor	KTC3199-Y	ETTC*KTC-3199Y	
Q19	Transistor	KTC2236-Y	ETTC*LTC-2236Y	
Q20-Q21	Transistor	KTA966	ETTA*KTA-966	
Q22-Q27	Transistor	KTC3199-Y	ETTC*KTC-3199Y	
Q28	Transistor	KTC3199-Y	ETTC*KTC-3199Y	
Q33	Transistor	KTC3199-Y	ETTC*KTC-3199Y	
	FET	2SK427 (2SK161)×2	ETTK*2SK-427	
VC1-3	VVC Diode	SVC321	ETD*SVC-321	
D1-D12	SI Diode	1N4148	ETD*1N-4148	
D15	Zener Diode	ZD10V	ETD*ZD-10V	
D16	SI Diode	1N4148	ETD*1N-4148	
D17-24	SI Diode	1N4148	ETD*1N-4148	
D25	Zener Diode	ZD9.1V	ETD*ZD-9.1V	
D26-31	SI Diode	1N4148	ETD*1N-4148	
	X-TAL	4.5MHz	EOC*001	
IFT				
T101	FM IF		ELD*001	
T102	OSC		ELD*002	
T103	AM ANT		ELD*003	
T104	AM RF		ELD*004	
T105	AM IF		ELD*005	
T106	AM DET		ELD*006	
FILTER				
CF1-2	Ceramic Filter	SFE 10.7MS3	EOP*003	
CF3	Ceramic Filter	SFP 450H	EOP*002	
CF4	Ceramic Filter	BFU 450C4N	EOP*001	
CF5	Ceramic Resonator	CSA 3.6M	EOP*005	
COIL				
L1		15μH	ELA*001	

Ref. No	Description		Part. No	Remarks
L2		56μH	ELS*007	
VARIABLE RESISTOR				
SVR1	SEMI-FIXED	20KB	ECRV-363	
SVR2	SEMI-FIXED	5KB	ECRV-361	
CAPACITORS				
TC1	Timmer Capacitor	20PF	ECCV*002	
TC2	Timmer Capacitor	30PF	ECCV*001	
CO2	Mylar Capacitor	0.01μF		
CO3	Ceramic Capacitor	0.047μF		
CO4	Electric Capacitor	4.7μF 16V		
CO5	Ceramic Capacitor	0.047μF		
CO6-07	Ceramic Capacitor	0.047μF		
CO8	Electric Capacitor	47μF 10V		
CO9	Ceramic Capacitor	220PF		
C10	Electric Capacitor	0.47μF 16V		
C11	Electric Capacitor	47μF 10V		
C12	Electric Capacitor	4.7μF 16V		
C13	Ceramic Capacitor	0.047μF		
C14	Ceramic Capacitor	30PF		
C15	Electric Capacitor	47μF 10V		
C16	Ceramic Capacitor	150PF		
C17	Electric Capacitor	1μF 16V		
C18	Electric Capacitor	4.7μF 16V		
C19	Electric Capacitor	10μF 16V		
C20	Mylar Capacitor	0.01μF		
C21	Styrol Capacitor	1000PF		
C22	Electric Capacitor	1μF 16V		
C23	Electric Capacitor	1μF 16V		
C24	Electric Capacitor	3.3μF 16V		
C25	Mylar Capacitor	0.047μF		
C26	Mylar Capacitor	0.047μF		
C27	Electric Capacitor	1μF 16V		
C28	Electric Capacitor	1μF 16V		
C29	Electric Capacitor	100μF 10V		
C30	Electric Capacitor	0.1μF 16V		
C31	Mylar Capacitor	0.0033μF		
C32	Electric Capacitor	0.1μF 16V		
C33	Mylar Capacitor	0.001μF		
C34	Electric Capacitor	0.1μF 16V		
C35	Electric Capacitor	0.1μF 16V		
C36	Electric Capacitor	100μF 10V		
C37	Mylar Capacitor	0.0033μF		
C38	Electric Capacitor	220μF 16V		
C39	Electric Capacitor	1μF 16V		
C40	Mylar Capacitor	0.047μF		
C41	Electric Capacitor	0.1μF 16V		
C42	Electric Capacitor	φ5×11 10μF 16V		
C43	Electric Capacitor	φ5×11 1μF 16V		
C101	Ceramic Capacitor	0.022μF		
C102	Ceramic Capacitor	0.022μF		
C103	Ceramic Capacitor	0.0047μF		
C104	Mylar Capacitor	0.047μF		
C105	Electric Capacitor	22μF 16V		
C107	Ceramic Capacitor	0.047μF		

Ref. No.	Description		Part No.	Remarks
C108	Ceramic Capacitor	0.047μF		
C109	Ceramic Capacitor	0.022μF		
C110	Ceramic Capacitor	0.01μF		
C111	Electric Capacitor	470μF 10V		
C112	Mylar Capacitor	0.01μF		
C113	Styrol Capacitor	390PF		
C114	Electric Capacitor	47μF 10V		
C115	Electric Capacitor	1μF 16V		
C116	Electric Capacitor	47μF 10V		
C117	Ceramic Capacitor	0.022μF		
C118	Electric Capacitor	0.47μF 16V		
C119	Ceramic Capacitor	0.047μF		
C120	Mylar Capacitor	0.01μF		
C121	Electric Capacitor	3.3μF 16V		
C122	Ceramic Capacitor	0.022μF		
C123	Electric Capacitor	100μF 10V		
C124	Mylar Capacitor	0.0033μF		
C125	Ceramic Capacitor	0.022μF		
C126	Mylar Capacitor	0.0033μF		
C127	Mylar Capacitor	0.0033μF		
C128	Mylar Capacitor	0.01μF		
C129	Mylar Capacitor	0.01μF		
C130	Electric Capacitor	10μF 16V		
C131	Mylar Capacitor	0.001μF		
C132	Electric Capacitor	1μF 16V		
C133	Electric Capacitor	2.2μF 16V		
C134	Electric Capacitor	0.1μF 16V		
C135	Electric Capacitor	0.1μF 16V		
C136	Mylar Capacitor	0.0033μF		
C137	Electric Capacitor	68μF 10V		
C138	Mylar Capacitor	0.01μF		
C139	Ceramic Capacitor	(CSC 500K7) 50PF		
C140	Mylar Capacitor	(5%) 0.33μF		
C141	Mylar Capacitor	(5%) 0.33μF		
C142	Electric Capacitor	10μF 16V		
C143	Electric Capacitor	2.2μF 16V		
C144	Electric Capacitor	4.7μF 16V		
C217	Ceramic Capacitor	0.047μF		
C218	Ceramic Capacitor	0.047μF		
C301	Electric Capacitor	100μF 10V		
C302	Electric Capacitor	47μF 16V		
C303	Electric Capacitor	4.7μF 16V		
C304	Mylar Capacitor	0.047μF		
C305	Mylar Capacitor	0.047μF		
C306	Electric Capacitor	100μF 10V		
C307	Electric Capacitor	100μF 10V		
C308	Ceramic Capacitor	22PF		
C309	Mylar Capacitor	0.01μF		
C310	Electric Capacitor	470μF 16V		
C311	Ceramic Capacitor	0.1μF		
C312	Electric Capacitor	100μF 16V		
C313	Electric Capacitor	100μF 16V		
C314	Electric Capacitor	100μF 16V		
C315	Electric Capacitor	47μF 10V		
C316	Mylar Capacitor	0.047μF		
NEON	NEON LAMP	NE-IML	EIN-3	

Ref. No.	Description		Part. No	Remarks
RESISTORS				
R01	Carbon PR	4.7 ohm 1/4W		
R02	Carbon PR	1K ohm 1/4W		
R03	Carbon PR	330 ohm 1/4W		
R04	Carbon PR	330 ohm 1/4W		
R05	Carbon PR	2.2K ohm 1/4W		
R06	Carbon PR	330 ohm 1/4W		
R07	Carbon PR	47K ohm 1/4W		
R08	Carbon PR	12K ohm 1/4W		
R09	Carbon PR	10K ohm 1/4W		
R10	Carbon PR	470K ohm 1/4W		
R11	Carbon PS	220 ohm 1/16W		
R12	Carbon PS	47K ohm 1/4W		
R13	Carbon PR	47K ohm 1/4W		
R14	Carbon PR	47K ohm 1/4W		
R15	Carbon PS	22K ohm 1/4W		
R16	Carbon PR	15K ohm 1/4W		
R17	Carbon PR	47 ohm 1/4W		
R18	Carbon PR	8.2 ohm 1/4W		
R19	Carbon PR	33K ohm 1/4W		
R20	Carbon PR	5.6K ohm 1/4W		
R21	Carbon PR	22K ohm 1/4W		
R22	Carbon PR	15K ohm 1/4W		
R23	Carbon PR	1K ohm 1/4W		
R24	Carbon PR	4.7K ohm 1/4W		
R25	Carbon PR	4.7K ohm 1/4W		
R26	Carbon PR	8.2K ohm 1/4W		
R27	Carbon PR	8.2K ohm 1/4W		
R28	Carbon PR	27K ohm 1/4W		
R29	Carbon PR	27K ohm 1/4W		
R30	Carbon PR	470K ohm 1/4W		
R31	Carbon PR	56 ohm 1/4W		
R32	Carbon PR	56 ohm 1/4W		
R33	Carbon PR	470K ohm 1/4W		
R34	Carbon PR	3.3K ohm 1/4W		
R35	Carbon PR	3.3K ohm 1/4W		
R36	Carbon PR	1K ohm 1/4W		
R37	Carbon PR	22 ohm 1/4W		
R38	Carbon PR	5.6K ohm 1/4W		
R39	Carbon PS	100 ohm 1/4W		
R40	Carbon PS	47K ohm 1/4W		
R41	Carbon PS	4.7K ohm 1/4W		
R42	Carbon PS	47K ohm 1/4W		
R43	Carbon PR	820 ohm 1/4W		
R44	Carbon PS	220K ohm 1/16W		
R102	Carbon PR	100K ohm 1/4W		
R104	Carbon PR	470K ohm 1/4W		
R105	Carbon PR	470K ohm 1/4W		
R106	Carbon PS	47K ohm 1/16W		
R107	Carbon PS	120 ohm 1/16W		
R108	Carbon PR	10K ohm 1/4W		
R109	Carbon PR	3.3K ohm 1/4W		
R110	Carbon PR	10K ohm 1/4W		
R111	Carbon PR	100K ohm 1/4W		
R112	Carbon PR	82 ohm 1/4W		
R113	Carbon PS	100 ohm 1/4W		
R114	Carbon PS	68 ohm 1/4W		
R115	Carbon PS	3.3K ohm 1/16W		
R116	Carbon PR	47K ohm 1/4W		

Ref. No.	Description		Part No.	Remarks
R117	Carbon PS	150K ohm 1/16W		
R118	Carbon PS	10 ohm 1/16W		
R119	Carbon PR	3.9K ohm 1/4W		
R120	Carbon PR	3.3K ohm 1/4W		
R121	Carbon PR	470 ohm 1/4W		
R122	Carbon PS	3.3K ohm 1/16W (1%)		
R123	Carbon PS	1.37K ohm 1/16W (1%)		
R124	Carbon PS	316K ohm 1/16W (1%)		
R125	Carbon PS	62K ohm 1/16W (1%)		
R126	Carbon PS	1.6K ohm 1/16W (1%)		
R127	Carbon PS	8.2K ohm 1/16W (1%)		
R128	Carbon PS	1.6K ohm 1/16W (1%)		
R129	Carbon PR	470 ohm 1/4W		
R130	Carbon PS	100K ohm 1/16W		
R131	Carbon PS	47K ohm 1/16W		
R132	Carbon PS	47K ohm 1/16W		
R133	Carbon PS	12K ohm 1/16W		
R134	Carbon PS	12K ohm 1/16W		
R135	Carbon PS	220 ohm 1/16W		
R301	Carbon PS	10K ohm 1/4W		
R302	Carbon PS	1K ohm 1/4W		
R303	Carbon PS	120 ohm 1/2W		
R304	Carbon PS	220 ohm 1/2W		
R305	Carbon PS	1K ohm 1/4W		
R306	Carbon Ps	1.8K ohm 1/4W		
R307	Carbon PS	10 ohm 1/16W		
R308	Carbon PS	10 ohm 1/16W		
R309	Carbon PS	10 ohm 1/16W		
R310	Carbon PS	10 ohm 1/16W		
R311	Carbon PS	10 ohm 1/16W		
R312	Carbon PS	10 ohm 1/16W		
R313	Carbon PS	10 ohm 1/16W		
R314	Carbon PS	4.7K ohm 1/4W		
R315	Carbon PS	4.7K ohm 1/4W		
R316	Carbon PS	33K ohm 1/4W		
R317	Carbon PS	33K ohm 1/16W		
R318	Carbon PS	33K ohm 1/4W		
R319	Carbon PS	33K ohm 1/4W		
R320	Carbon PS	4.7K ohm 1/4W		
R321	Carbon PS	4.7K ohm 1/4W		
R322	Carbon PS	4.7K ohm 1/4W		
R323	Carbon PS	4.7K ohm 1/4W		
R324	Carbon PS	4.7K ohm 1/4W		
R325	Carbon PS	4.7K ohm 1/4W		
R326	Carbon PS	4.7K ohm 1/4W		
R327	Carbon PS	180 ohm 1W		
R328	Carbon PS	180 ohm 1W		
R329	Carbon PS	120 ohm 1W		
R330	Carbon PS	47 ohm 1/2W		
R331	Carbon PS	5.6K ohm 1/4W		
R332	Carbon PR	100K ohm 1/4W		
R333	Carbon PR	10K ohm 1/4W		
R334	Carbon PS	1K ohm 1/4W		
R335	Carbon PS	220 ohm 1/4W		
R336	Carbon PS	1K ohm 1/4W		
R337	Carbon PS	220 ohm 1/4W		
R338	Carbon PS	10K ohm 1/4W		
R339	Carbon PR	2.2K ohm 1/4W		
R340	Carbon PR	47K ohm 1/4W		
R341	Carbon PR	5.6K ohm 1/4W		

Ref. No.	Description		Part. No.	Remarks
R342	Carbon PR	220 ohm 1/4W		
R343	Carbon PS	220K ohm 1/16W		
R344	Carbon PS	330K ohm 1/16W		
R345	Carbon PS	10 ohm 1/2W		
R346	Carbon PS	10 ohm 1/2W		
R347	Corbon PS	4.7K ohm 1/4W		
R349	Carbon PS	470 ohm 1/16W		
R221	Carbon PS	820 ohm 1/4W		
R222	Carbon PS	820 ohm 1/4W		
R350	Carbon PS	47K ohm 1/16W		
R352	Carbon PS	150 ohm 1/4W		
R406	Carbon PS	22K ohm 1/4W		
P.C.B	Main P.C.B	CP-046-01		

□ EQ. P. C. B

Ref. No.	Description		Part No.	Remarks
SEMICONDUCTORS				
IC301	MSS IC	LA2000	ETI*LA-2000	
IC302	EQ IC	LA3161	ETI*LA-3161	
Q13	Transistor	KTC3199-Y	ETTC*KTC-3199Y	
Q14	Transistor	KTA966A-Y	ETTA*KTA-966AY	
Q15	Transistor	KTC3199-Y	ETTC*KTC-3199Y	
Q16	Transistor	KTC3199-Y	ETTC*KTC-3199Y	
D13	SI Diode	1N4148	ETD*1N-4148	
D14	SI Diode	1N4148	ETD*1N-4148	
CAPACITORS				
C201	Electric Capacitor	ϕ5×11 0.47μF 16V		
C202	Electric Capacitor	ϕ5×11 0.33μF 16V		
C203	Electric Capacitor	ϕ5×11 4.7μF 16V		
C204	Electric Capacitor	ϕ5×11 100μF 10V		
C205	Mylar Capacitor	0.0047μF		
C206	Mylar Capacitor	0.0047μF		
C207	Mylar Capacitor	0.015μF		
C208	Electric Capacitor	ϕ6.3×11 100μF 16V		
C209	Electric Capacitor	ϕ5×11 10μF 16V		
C210	Electric Capacitor	ϕ5×11 10μF 16V		
C211	Mylar Capacitor	0.015μF		
C212	Electric Capacitor	ϕ5×11 100μF 10V		
C213	Mylar Capacitor	0.022μF		
C214	Mylar Capacitor	0.022μF		
C215	Electric Capacitor	47μF 10V		
C216	Electric Capacitor	470μF 16V		
C219	Electric Capacitor	ϕ5×11 47μF 16V		
RESISTORS				
R201	Carbon PR	47K ohm 1/4W		
R202	Carbon PR	47K ohm 1/4W		
R203	Carbon PR	15K ohm 1/4W		
R204	Carbon PR	270K ohm 1/4W		

Ref. No.	Description		Part No.	Remarks
R205	Carbon PR	47K ohm 1/4W		
R206	Carbon PR	10 ohm 1/4W		
R207	Carbon PR	100 ohm 1/4W		
R208	Carbon PR	82 ohm 1/4W		
R210	Carbon PR	3.3K ohm 1/4W		
R211	Carbon PR	100K ohm 1/4W		
R212	Carbon PR	2.2K ohm 1/4W		
R213	Carbon PR	2.2K ohm 1/4W		
R214	Carbon PR	100K ohm 1/4W		
R215	Carbon PR	3.3K ohm 1/4W		
R216	Carbon PR	82 ohm 1/4W		
R217	Carbon PR	2.2K ohm 1/4W		
R218	Carbon PR	2.2K ohm 1/4W		
R219	Carbon PR	22K ohm 1/4W		
R220	Carbon PR	22K ohm 1/4w		
R223	Carbon PR	2.2K ohm 1/4W		
P.C.B.				
	EQ P.C.B	CP-047		

□ POWER P. C. B

Ref. No.	Description		Part No.	Remarks
SEMICONDUCTORS				
IC401	Power IC	HA13001	ETI*HA-13001	
IC402	Power IC	HA13001	ETI*HA-13001	
D32	ZENER Diode	ZD 9.1V	ETD*ZD-9.1V	
P.C.B.				
	Power P.C.B	CP-055-01		
CAPACITORS				
C501	Electric Capacitor	ϕ5×11 10μF 16V		
C502	Electric Capacitor	ϕ5×11 1μF 16V		
C503	Electric Capacitor	ϕ5×11 100μF 10V		
C504	Electric Capacitor	ϕ5×11 10μF 16V		
C505	Electric Capacitor	ϕ5×11 100μF 10V		
C506	Electric Capacitor	ϕ5×11 100μF 10V		
C507	Mylar Capacitor	0.15μF		
C508	Electric Capacitor	ϕ5×11 4.7μF 16V		
C509	Mylar Capacitor	0.15μF		
C510	Electric Capacitor	ϕ5×11 100μF 10V		
C511	Electric Capacitor	ϕ5×11 100μF 10V		
C512	Mylar Capacitor	0.022μF		
C513	Electric Capacitor	ϕ5×11 100μF 10V		
C514	Electric Capacitor	ϕ5×11 100μF 10V		
C515	Electric Capacitor	ϕ13×16 1000μF 16V		
C516	Electric Capacitor	ϕ5×11 4.7μF 16V		
C517	Mylar Capacitor	0.15μF		
C518	Mylar Capacitor	0.15μF		
C519	Electric Capacitor	ϕ5×11 100μF 10V		
C520	Mylar Capacitor	0.022μF		
C521	Electric Capacitor	ϕ5×11 100μF 10V		
C522	Electric Capacitor	ϕ13×25 2200μF 16V		

Ref. No.	Description	Part. No.	Remarks
C523	Electric Capacitor $\phi 5 \times 11$ 1μF 16V		
C524	Electric Capacitor $\phi 5 \times 11$ 100μF 10V		
F.T.C1	Feed Through Capacitor 1000PF		
F.T.C2	Feed Through Capacitor 1000PF		
F.T.C3	Feed Through Capacitor 1000PF		
F.T.C4	Feed Through Capacitor 1000PF		
F.T.C5	Feed Through Capacitor 1000PF		
F.T.C6	Feed Through Capacitor 1000PF		
F.T.C7	Feed Through Capacitor 1000PF		
F.T.C8	Feed Through Capacitor 1000PF		
F.T.C9	Feed Through Capacitor 1000PF		
RESISTOR			
R501	Carbon PR 470K ohm 1/4W		
R502	Carbon PR 3.3K ohm 1/4W		
R503	Carbon PR 82K ohm 1/4W		
R504	Carbon PR 82K ohm 1/4W		
R505	Carbon PR 1K ohm 1/4W		
R506	Carbon PR 470K ohm 1/4W		
R507	Carbon PR 3.3K ohm 1/4W		
R508	Carbon PR 1K ohm 1/4W		
R509	Carbon PR 22K ohm 1/4W		
R510	Carbon PR 22K ohm 1/4W		
R511	Carbon PR 1K ohm 1/4W		
R512	Carbon PR 1K ohm 1/4W		

□ FADER, VOLUME P. C. B

Ref. No.	Description	Part No.	Remarks
Q29	Transistor KTC3199-Y	ETTC*KTC-3199Y	
Q30	Transistor KTC3199-Y	ETTC*KTC-3199Y	
CAPACITORS			
C406	Mylar Capacitor 0.0068μF		
C407	Mylar Capacitor 0.033μF		
C408	Mylar Capacitor 0.0068μF		
C409	Electric Capacitor $\phi 5 \times 11$ 0.47μF 16V		
C410	Electric Capacitor $\phi 5 \times 11$ 0.47μF 16V		
C411	Mylar Capacitor 0.022μF		
C412	Mylar Capacitor 0.022μF		
C413	Mylar Capacitor 0.033μF		
C535	Ceramic Capacitor 820PF		
C536	Ceramic Capacitor 390PF		
C537	Ceramic Capacitor 390PF		
C538	Ceramic Capacitor 820PF		
C539	Ceramic Capacitor 390PF		
C540	Ceramic Capacitor 390PF		

Ref. No.	Description		Part No.	Remarks
RESISTOR				
R351	Carbon PR	4.7K ohm 1/4W		
R407	Carbon PS	5.6K ohm 1/16W		
R408	Carbon PS	5.6K ohm 1/16W		
R409	Carbon PR	8.2K ohm 1/4W		
R410	Carbon PR	8.2K ohm 1/4W		
R411	Carbon PR	1K ohm 1/4W		
R412	Carbon PR	1K ohm 1/4W		
R413	Carbon PS	1K ohm 1/4W		
R414	Carbon PS	1K ohm 1/4W		
VOLUME				
CEP-172		Main Volume	ECRV*006	
CEP-110-01		Tuning Volume	ECRV*007	
P.C.B				
CP-026		Volume P.C.B		
CP-049		Fader Volume P.C.B		

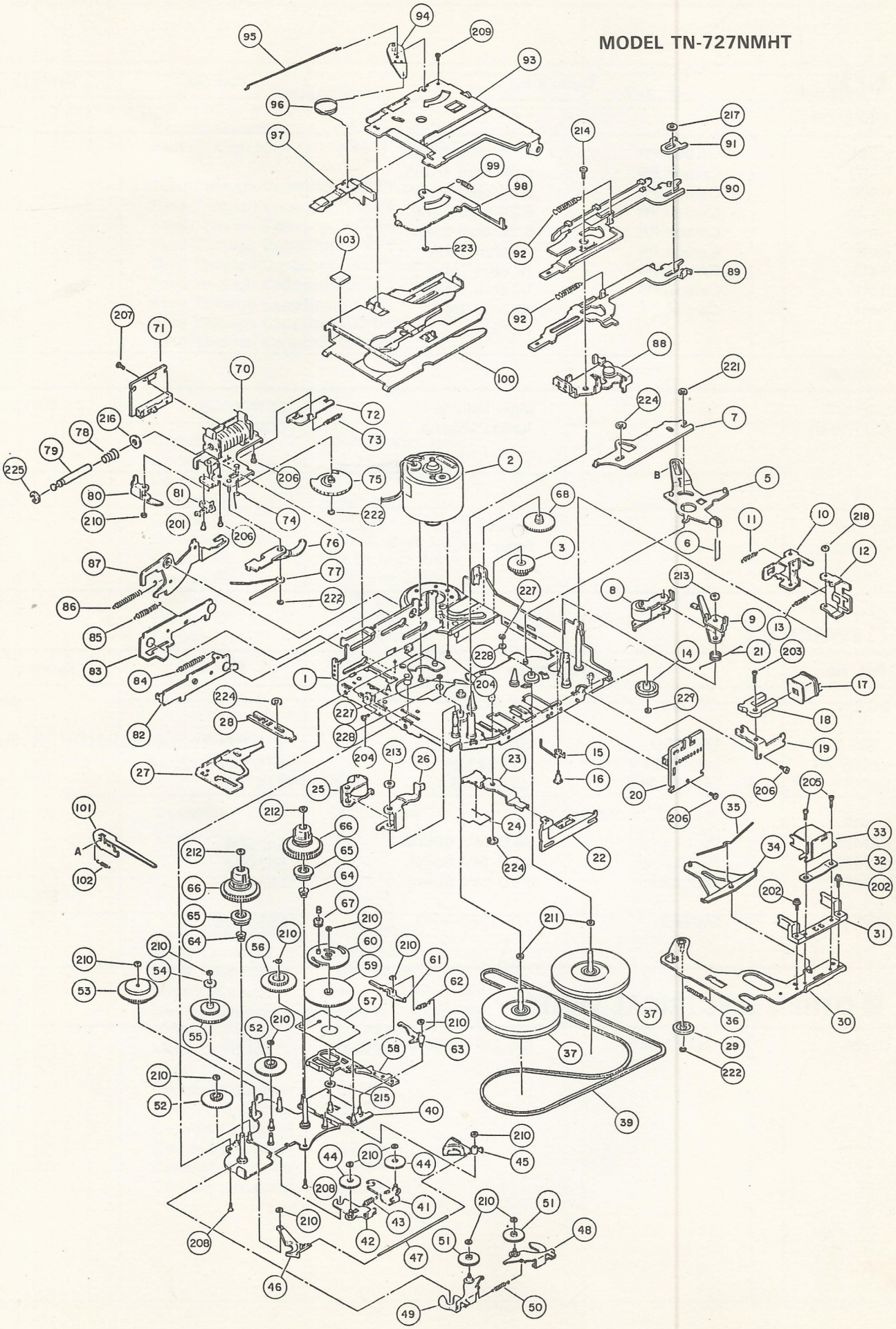
□ SWITCH P. C. B

Ref. No.	Description		Part No.	Remarks
P.C.B	CP-048	SW P.C.B		
LED1-9	LED RED	LTA3222A	ETD*LTA-3222A	
LED10-25	LED GREEN	LTL23233A	ETD*LTL-23233A	
LED	LED Display	LCD3718G	E1X*003	
LAMP				
LAMP1	Pilot Lamp	ϕ4.0 14V 60mA	EIL*004	
LAMP2	Pilot Lamp	ϕ4.0 14V 60mA	EIL*004	
LAMP3	Pilot Lamp	ϕ3.0 14V 60mA	EIL*003	
SW1-12	SW-Tact	JTP-1250M010	ESS*005	

■ OTHER ELECTRICAL PARTS

DECK	TN727-345	Key Off Stand-by Deck	AA*005	

■ EXPLODED VIEW – MECHANISM



■ PARTS LIST – MECHANISM

Ref. No.	Description	MFR's No.	Part No.
1	Chassis Ass'y	1840 01 507	
2	Motor Ass'y	1840 01 309	EMD-531
3	Main Gear	1840 01 56	MR-4167
4			
5	Change Plate Ass'y	1840 01 503	CMK-1230
6	Head Switch Spring	1840 01 27	SB-2023
7	Main Plate	1840 03 15	PL-7070
8	Pinch Roller Arm (F) Ass'y	1840 04 301	CMK-1231
9	Trigger & Stop Arm Actuator	1840 04 07	PL-7071
10	F.R. (FF. REW) Lock Plate	1840 05 05	PL-7072
11	F.R. (FF. REW) Lock Spring	1840 05 06	SB-2024
12	F.R. (FF. REW) Release Plate	1840 05 08	PL-7073
13	F.R. (FF. REW) Release Plate Spring	1840 05 09	SB-2025
14	Center Pulley	1840 01 21	MR-4050-1
15	Control Spring	1840 01 29	SB-2026
16	Collar Screw	1840 01 31	Z-90002
17	T.P.S. Coil Ass'y	1840 06 06	AA-1215
18	Core	1840 06 03	MM-203
19	Plunger Bracket	1840 06 07	PL-7074
20	Print Base Ass'Y (H)	1840 06 301	ARP-1167
21	Trigger & Stop Arm Actuator Spring	1840 04 08	SB-2027
22	F.R. (FF. REW) Slide Plate	1840 05 01	PL-7075
23	F.R. (FF. REW) Actuator	1840 05 04	PL-7076
24	F.R. (FF. REW) Actuator Spring	1840 05 02	SB-2028
25	Pinch Roller Arm (R) Ass'y	1840 04 302	CMK-1232
26	Pull Plate	1840 04 11N	PL-7077-1
27	T.G. (Take Up Gear) Actuator	1840 03 01	PL-7079
28	T.G. (Take Up Gear) Push Plate	1840 03 13	PL-7078
29	Head Panel Roller (K)	1840 03 18	MR-4095
30	Head Panel (K) Ass'y	1840 03 504	CMK-1273
31	Tape Guide	1840 03 08	MR-4051
32	Head Spring Plate	1840 03 10	PL-7080
33	Head		AHP-306
34	Pinch Roller Actuator	1840 03 11	PL-7081
35	Pinch Roller Spring	1730 03 23	SB-2029
36	Head Panel Spring (K)	1840 03 17	SB-2030
37	Flywheel Capstan	1840 04 20	AA-1220
38			
39	Main Belt	1840 04 17A	MR-4052-1
40	Main Gear Plate Ass'y	1840 02 501	CMK-1234
41	FF Gear Plate Ass'y	1840 02 502	CMK-1235
42	REW Gear Plate Ass'y	1840 02 503	CMK-1236
43	F.R. (FF. REW) Gear Plate Spring	1840 02 75	SB-2051
44	FF Gear	1840 02 12	MR-4053
45	E.D. (End Detector) Plate (F)	1840 02 38	MR-4062
46	E.D. (End Detector) Plate (R)	1840 02 39	MR-4063
47	End Senser Push Bar	1840 02 40	PL-7090
48	Take Up Gear Plate (F) Ass'y	1840 02 506	CMK-1237
49	Take Up Gear Plate (R) Ass'y	1840 02 507	CMK-1238
50	Take Up Gear Plate Spring	1840 02 47	SB-2032
51	T. (Take Up) Gear	1840 02 44	MR-4054
52	F.T. (FF & Take Up) Gear	1840 02 37	MR-4055
53	F.R. (FF. REW) Clutch Ass'y	1840 02 305	CMM-363
54	Device Gear (Upper)	1840 02 28	MR-4064
55	Device Gear (Lower)	1840 02 29	MR-4065
56	Device & Trigger/Stop Arm Gear	1840 02 27	MR-4056
57	Slip Sheet	1840 02 71	PN-1024
58	End Sensing Plate	1840 02 61N	MR-4066-1
59	Trigger & Stop Arm Actuator Gear	1840 02 72	MR-4096
60	Turn Over Gear	1840 02 20A	MR-4058

Ref. No.	Description	MFR's No.	Part No.
61	Stop Arm	1840 02 24	MR-4067
62	Trigger & Stop Arm Spring	1840 02 25	SB-2033
63	Trigger Arm	1840 02 23	MR-4068
64	End Detector Spring	1840 02 48	SB-2034
65	End Detector Piece	1840 02 50	MR-4069
66	Take Up Reel Sub-Ass'y	1840 02 308	AA-1212
67	Turn Over Gear Collar	1840 01 26	CS-1059
68	Drive Gear	1840 01 55	MR-4168
69			
70	Key-Off Bracket Ass'y	1840 07 501	AA-1214
71	Print Base (K) Ass'y	1840 07 302	ARP-1168
72	Switch Actuator	1840 07 09	PL-7082
73	Power Switch Spring	1840 07 10	SB-2035
74	Key-Off Gear Spring	1840 07 14	SB-2036
75	Key-Off Cam Gear	1840 07 15	MR-4059
76	Key-Off Plate Ass'y	1840 07 503	CMK-1245
77	Key-Off Spring	1840 07 28	SB-2037
78	Plunger Spring	1840 07 20	SB-2038
79	Key-Off Plunger Spring	1840 07 303	MM-204
80	Trigger Arm Plate	1840 07 29	PL-7120
81	Muting Switch (MSW-1547N)	6401 01 124	ESS-519
82	Push Lever Ass'y	1840 08 502	CMK-1239
83	Cassette Case & Head Panel Push Plate Ass'y	1840 08 505	CMK-1274
84	Push Lever Spring	1840 08 07	SB-2039
85	Cassette Case & Head Panel Spring	1840 08 03	SB-2040
86	Lift Up Lever Spring	1840 08 10	SB-2041
87	Lift Up Lever	1840 08 08	PL-7089
88	F.R. (FF. REW) Bracket Ass'y	1840 05 507	CMK-1241-1
89	Rew Lever	1840 05 34N	CMK-1242-1
90	FF Lever	1840 05 33N	CMK-1243-1
91	Program Change Plate	1840 05 20	PL-7085
92	F.R. (FF. REW) Lever Spring	1840 05 18	SB-2042
93	Case Liffter	1840 08 12	PL-7086
94	P.E. (Pack Eject) Plate Ass'y	1840 08 503	CMK-1244
95	P.E. (Pack Eject) Spring	1840 08 23	SB-2043
96	Turn Over Spring	1840 08 14	SB-2044
97	Pack Slider	1840 08 13	MR-4060
98	C.D. (Cassette Detecting) Plate	1840 08 18	PL-7087
99	C.D. (Cassette Detecting) Spring	1840 08 20	SB-2045
100	Cassette Case	1840 08 22	PL-7088
101	Timing Plate	1840 03 25	PL-7122
102	Spring	1710 02 16	SB-2052
103	Cushion Rubber	1840 08 21	MR-4061
104			
105			
106			
107			
108			
109			
201	Camera Screw 1.7×3.5	9862 00 00	Z-61735
202	Tams Screw 2.0×5	9078 00 00	Z-93205
203	Tapping Screw 2.0×6	9182 00 00	Z-86206
204	Camera Screw 2.0×2	9548 00 00	Z-6202S
205	Screw (⊕ ⊖) Special 2.0×4	9722 00 00	Z-6204S
206	Camera Screw (Tapping) S 2.0×3	9800 00 00	Z-86203
207	Camera Screw 2.0×2.5	9829 00 00	Z-6225
208	Camera Screw (Flat) 2.0×3.5	9809 00 00	Z-2235
209	Camera Screw (Tapping) S 2.0×4	9801 00 00	Z-862042
210	Polyslider Washer (Cut) 1.2×3.0×0.25	9421 00 00	PN-1008

Ref. No.	Description	MFR's No.	Part No.
211	Polyslider Washer 2.1 × 5.0 × 0.13	9429 00 00	PN-1009
212	Polyslider Washer (Cut) 1.6 × 3.4 × 0.3	9793 00 00	PN-1010
213	Polyslider Washer (Cut) 2.1 × 5.0 × 0.4	9744 00 00	PN-1011
214	Camera Screw (Tams) 2.6 × 4.5	9999 18 01	Z-932645
215	Lumilar Washer 3.1 × 4.8 × 0.1	9794 00 00	PN-1012
216	Lumilar Washer 3.6 × 8.0 × 0.2	9796 00 00	PN-1013
217	Polyslider Washer (Cut) 3.0 × 6.0 × 0.5	9872 00 00	PN-1014
218	Polyslider Washer (Cut) 1.6 × 3.8 × 0.3	9743 00 00	PN-1025
219			
220			
221	E Ring (B) Special 1.5	9497 00 00	Y-10153S
222	E Ring 1.2	9499 00 00	Y-30123
223	E Ring 1.5	9500 00 00	Y-10153
224	E Ring 2.0	9502 00 00	Y-30204
225	E Ring 2.5	9504 00 00	Y-30253
226			
227	Lumilar Washer (Cut) 1.55 × 3.5 × 0.5	9099 00 00	PN-1026
228	Polyslider Washer 2.0 × 3.5 × 0.2	9883 00 00	PN-1016
229	Polyslider Washer 0.85 × 2.8 × 0.25	9927 00 00	PN-1053
230			

■ PART LIST – CABINET & CHASSIS

Ref. No.	Description	Part No.	Remarks
1	Chassis	086-0611-03	–
2	Chassis Cover-Top	086-06121-00	–
3	Chassis Cover-Buttom	086-06122-00	–
4	Heat Sink	086-06131-00	–
5	IC Bracket	086-06042-00	–
6	Bracket-Deck	M3003	–
7	Spacer	086-06133-00	MP*034
8	Nose Piece	086-06041-03	PL*009
9	Eject-Lever		
10	Lamp-Guide		
11	Back Plate	086-05261-01	MP*037
12	Button-Preset (1-6)	086-04191-00	MP*048N053
13	Button-MSS	086-04192-00	MP*042
14	Button-AM/FM	086-04192-00	MP*043
15	Button-DNR	086-04192-00	MP*044
16	Button-LO/MTL	086-04192-00	MP*045
17	Button-ST	086-04192-00	MP*046
18	Button-RCL	086-04192-00	MP*047
19	Reflector (B)	086-04211-02	MP*056
20	Button-FF	086-05301-02	MP*039
21	Button-REW	086-05301-02	MP*040
22	Button-EJ	086-05311-00	MP*041
23	Display Window	086-04241-01	MP*059
24	Tape Door	086-05211-01	MP*058
25	Door Spring	086-06134-01	SC*006
26	Variable Washer	N4007	Z*003
27	PCB-Power		
28	PCB-Main		
29	PCB-Switch		
30	PCB-Volume		
31	PCB-Fader		
32	Switch Spring	086-06051-00	SC*008
33	Rear Panel	086-06132-00	–
34	Shaft Stopper	086-06141-00	MP*038
35	Switch Volume		ECRV*006
36	Tuning Volume		ECRV*007
37	Filter Box }		
38	F. Mail Jack }		{ AH*002
39	Mail		
40	Fuse Holder		{ AH*003
41	Fuse }		
42	Ant Jack		AH*001
43	Machine Screw	PH(+) M2.6×4	
44	Machine Screw	PH(+) M3×4	
45	Machine Screw	PH(+) M3×6	
46	Tapping Screw	PH(+) 3×6	
47	Tapping Screw	PH(+) 3×4	
48	Tapping Screw	PH(+) 2.6×4	
49	Hex Bolt		
50	Spring Washer		
51	Display Filter	086-08051-01	MP*065
52	Deck	TN-727NMHT	AA*005
53	Washer-ϕ3/8''		
54	Fiber Plate-Top	35×125×0.3t	
55	Fiber Plate-Buttom	162×118×0.3t	
56	EQ P.C.B		

ACCESSORY LIST

Knob Inner	MP*010
Knob Outer	MP*011
Trim Plate	MP*035
Trim Insert	MP*036
9 Pin Connector	AH*003
Operating Manual	HPB*3350E
Shaft Nut	Z*001
Shaft Washer	Z*002