


FM/AM TRANSISTOR PORTABLE RADIO
with CASSETTE TAPE RECORDER
MODEL TRK-1211H
SERVICE MANUAL

NO. 444

1972

SPECIFICATIONS

CIRCUIT SYSTEM.....FM/AM superheterodyne
 TUNING RANGE.....FM: 88~108MHz
 AM: 530~1,605KHz
 INTERMEDIATE FREQUENCY...FM: 10.7MHz
 AM: 455KHz

IC

IC101 TRY1002.....FM IF Amp. & AM Conv.
 IC201 TRM1202.....FM/AM IF Amp. & Voltage
 stabilizer
 IC301 FA6004.....Pre-amp.
 IC302 HA1312.....AF Amp. & Power Amp.

TRANSISTORS

TR 1 2SC535.....FM RF Amp.
 TR 2 2SC535.....FM Conv.
 TR301 2SB77.....Bias osc.

DIODES

D001 HV-80.....FM Limiter
 D002 1N60.....FM Limiter
 D003 1S85.....AFC
 D101 1N60.....AM AGC
 D201 HV-80.....FM Limiter
 D202 HV-80.....AM Det.
 D203 1N60P.....FM Discr
 D204 1N60P.....FM Discr
 D301 1N34A.....Levelmatic
 CR301 MVA-05A.....Rectifier

SENSITIVITY.....FM: 3 dB (Max.)
 10 dB (Practical)
 AM: 38 dB (Max.)
 47 dB (Practical)
 SPEAKER.....3 $\frac{5}{16}$ " (10cm) PM 8 ohm
 AUDIO OUTPUT.....2.0W (Max.)
 POWER SUPPLY.....DC 6V (UM-1×4)
 AC 120V, 60Hz
 CURRENT CONSUMPTION.....25mA (with no signal)
 ANTENNA.....FM: Telescopic antenna
 AM: Built-in ferrite-core
 antenna
 TAPE SPEED.....1 $\frac{7}{8}$ ips (4.75cm/s)
 RECORDING OR PLAYING TIME...60 min. (using C-60)
 RECORDING SYSTEM.....AC bias
 ERASING SYSTEM.....DC erase
 TRACK SYSTEM.....Monaural dual track
 MOTOR.....Micromotor with governor
 TERMINALS
 Microphone jack (MIC.).....2K ohm
 Input jack (AUX. IN).....100K ohm
 Speaker terminal (EXT. SP).....8 ohm
 DIMENSIONS.....8 $\frac{3}{16}$ "(H)×11 $\frac{3}{16}$ "(W)×3 $\frac{1}{8}$ "(D)
 (20.8×30×8cm)
 WEIGHT.....7 lbs. 11 oz. (3.5kg)
 Including batteries

ACCESSORIES

Dynamic microphone (NDM-27S)
 (with remote control switch) (5420362)..... 1
 Magnetic earphone (0592101)..... 1
 Compact cassette (C-30)..... 1
 Power cord (5741851)..... 1

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CONTROLS

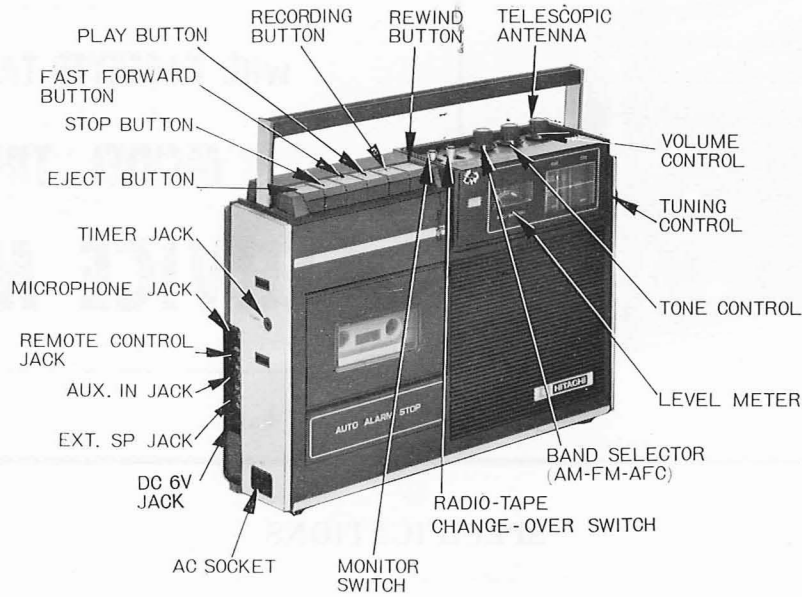


Fig. 1

BLOCK DIAGRAM

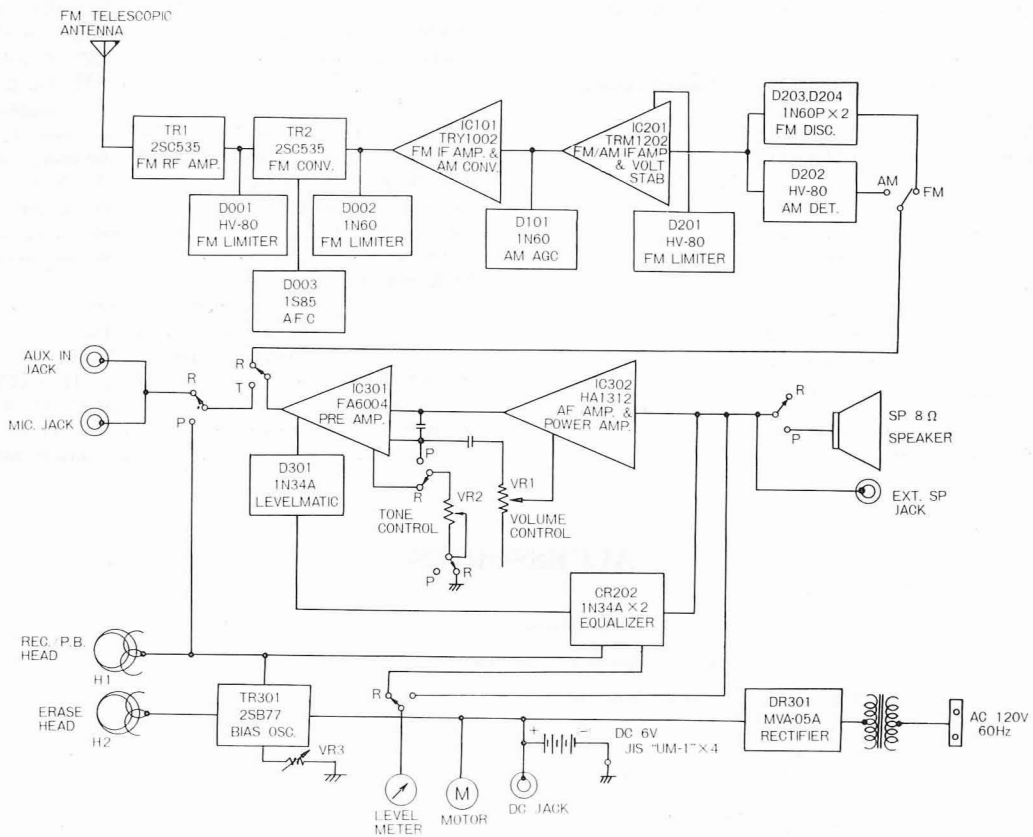
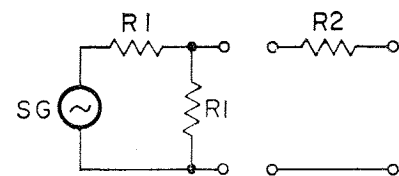


Fig. 2

Adjusted circuit	Meter and Connection	Step	Dial pointer setting	Sig. Gen. Frequency	Adjust for Max. Output	
FM-IF (Set band selector to FM)	OSCILLOSCOPE.....Connect VERT. terminal of oscilloscope to TP3. SWEEP GENERATOR.....Connect to TP 1. Be sure to cut off direct current by putting suitable capacitor between sweep generator and TP1. MARKER GENERATOR.....Connect to TP1. Then, adjust as follows until the waveform shown in Fig. 15 is obtained.	①	High freq. end	10.7MHz ±1MHz sweep	Remove T203 core and adjust T202, T201, T101, T001	
		②			Repeat step ①	
FM-DISC. (Set band selector to FM)	OSCILLOSCOPE.....Connect to TP3 SWEEP GENERATOR Same as FM-IF. MARKER GENERATOR..... Same as FM-IF. Then, adjust as follows until the waveform shown in Fig. 16 is obtained.	③	High freq. end	10.7MHz ±1MHz sweep	T203 core for waveform centered at 10.7MHz maker	
AM-IF (Set band selector to AM)	SIGNAL GENERATOR..... Connect output terminal of AM signal generator to loop antenna. VACUUM TUBE VOLTMETER..... Connect AC probe of vacuum tube voltmeter to speaker terminal of output jack. Adjust as follows to gain maximum on voltmeter.	④	High freq. end	455KHz	After removing T204 core, adjust T102	
		⑤			Repeat step ④	
FM-RF (Set band selector to FM)	SIGNAL GENERATOR.....Connect output terminal of FM signal generator to telescopic antenna using a dummy antenna as shown in Fig. 14. VACUUM TUBE VOLTMETER..... Same as AM-IF. Adjust as follows to gain maximum on voltmeter.	⑥	Low freq. end	87.0MHz	L004	
		⑦	High freq. end	109MHz	CT2	
		⑧	Repeat steps ⑥ and ⑦			
		⑨	90MHz signal	90MHz	L002	
		⑩	106MHz signal	106MHz	CT 1	
⑪	Repeat steps ⑨ and ⑩					
AM-RF (Set band selector to AM)	Same as AM-IF Adjust as follows to gain maximum on voltmeter.	⑫	Low freq. end	500KHz	L102	
		⑬	High freq. end	1,670KHz	CT4	
		⑭	Repeat steps ⑫ and ⑬			
		⑮	600KHz signal	600KHz	L101	
		⑯	1,400KHz signal	1,400KHz	CT3	
⑰	Repeat steps ⑮ and ⑯					

R1.....Signal generator's output impedance

$$R2 \dots \left(75 - \frac{R1}{2}\right)$$



Dummy antenna

Fig. 14

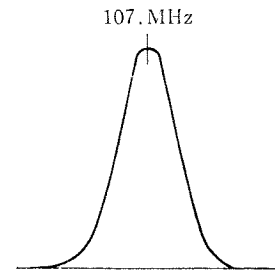


Fig. 15

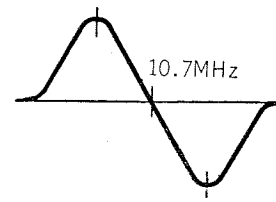


Fig. 16

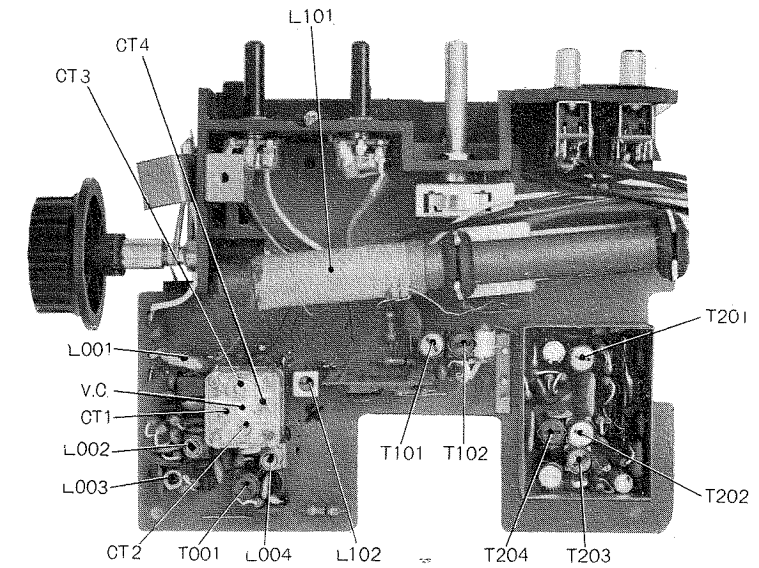
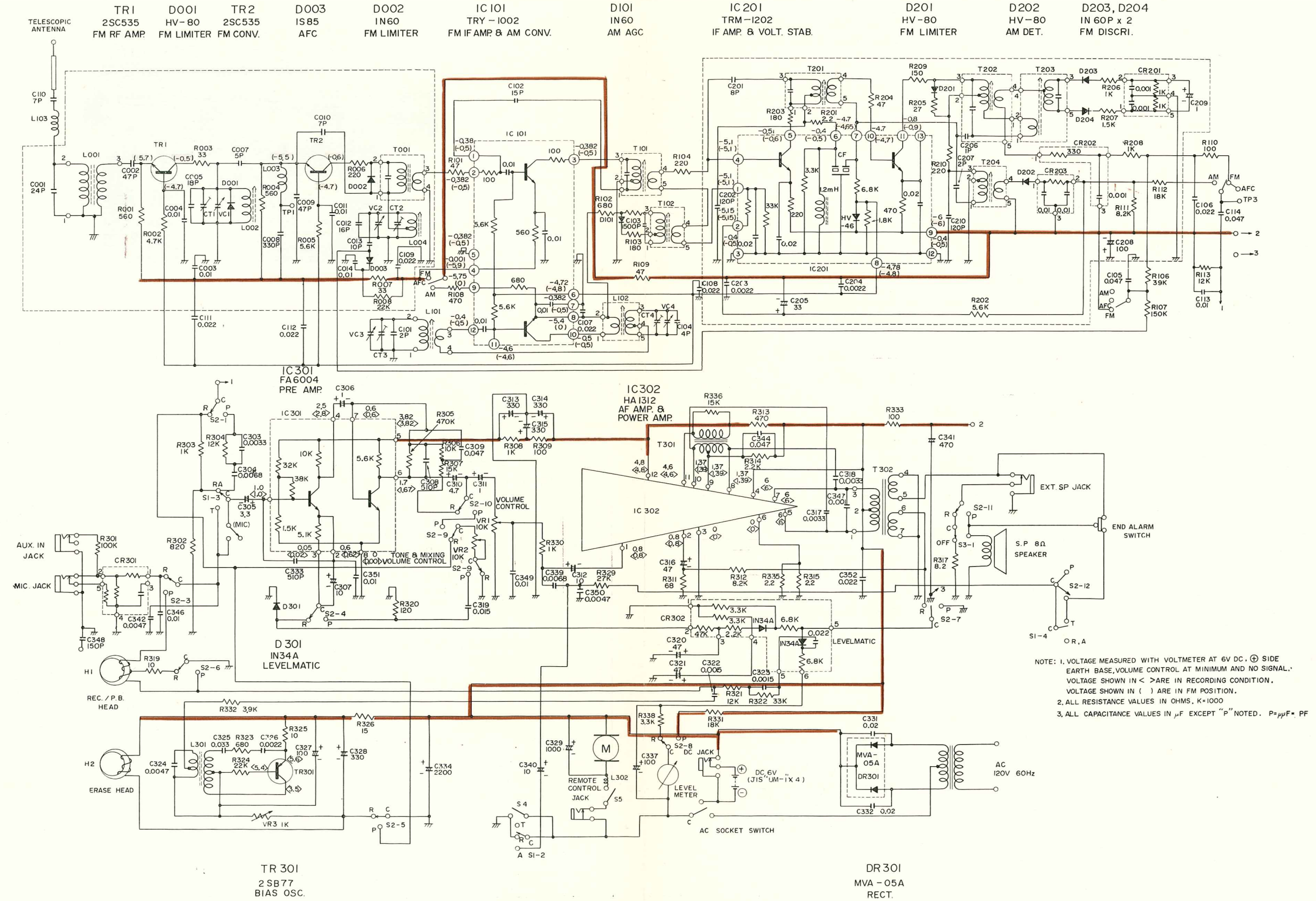


Fig. 17

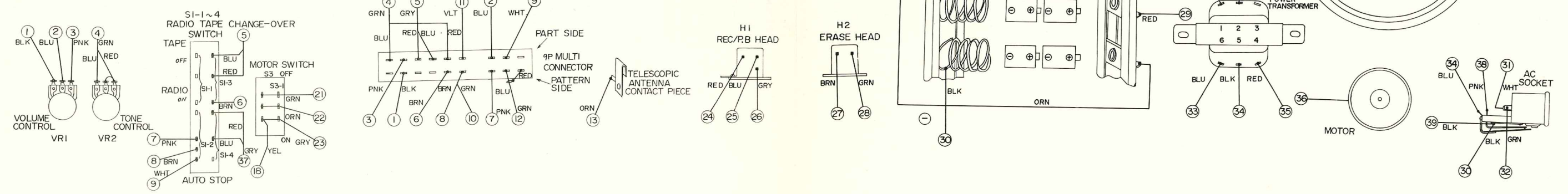
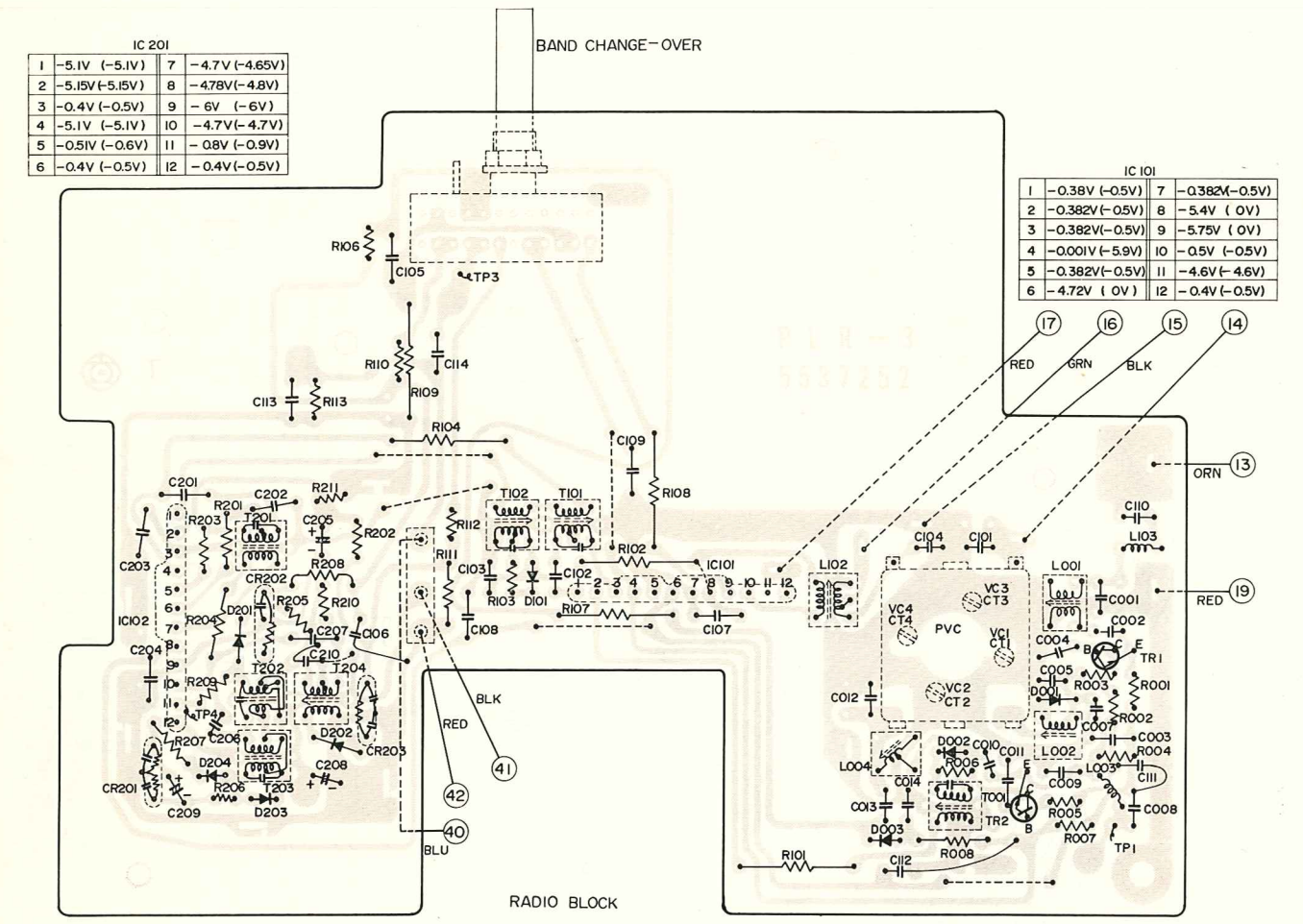
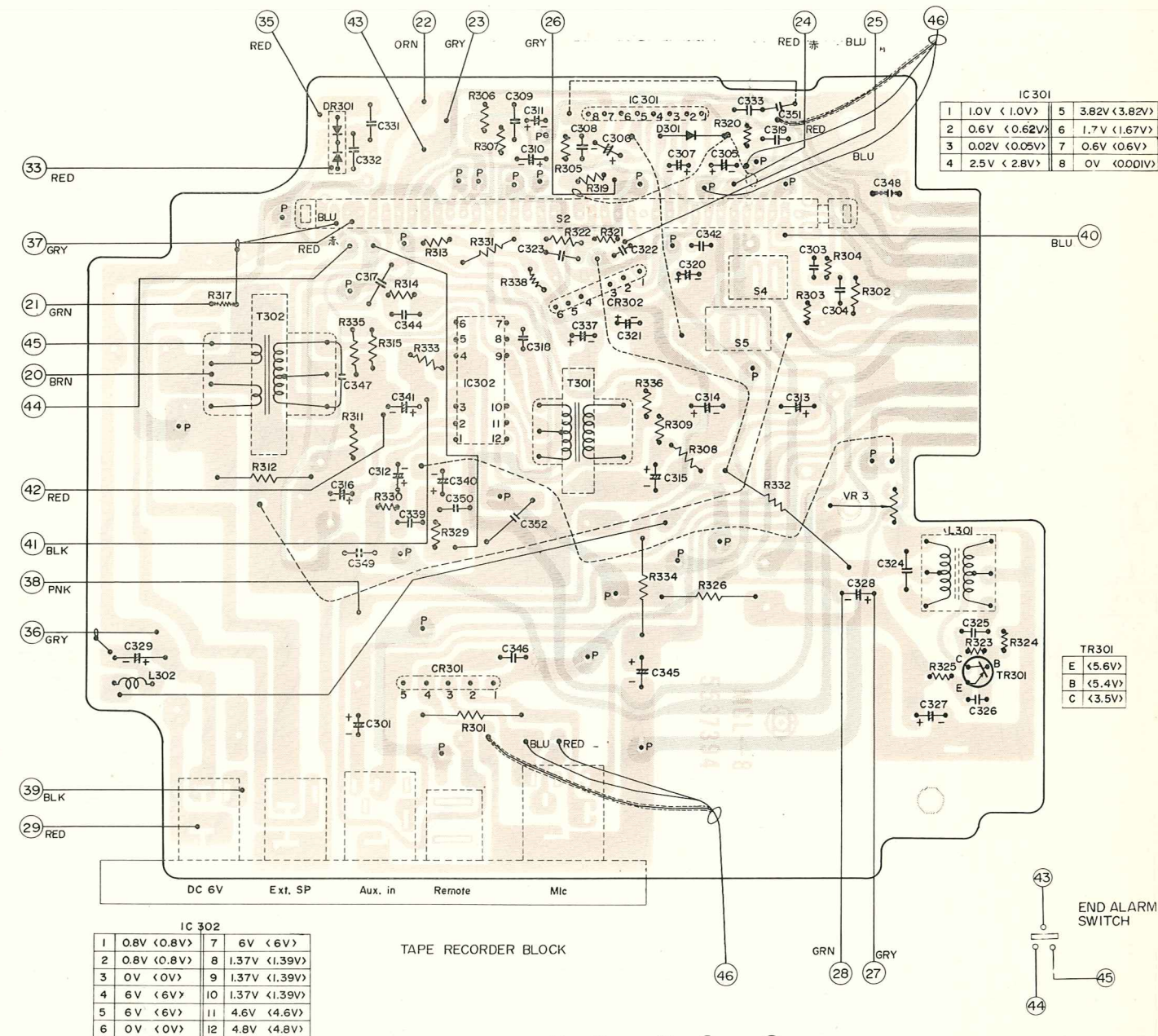
REPLACEMENT PARTS

Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
CAPACITORS:					
C 001	0248669	Ceramic, discal	C 205	0252223	Electrolytic
C 002	0248716	Ceramic, discal	C 206	0248631	Ceramic, discal
C 003	0245017	Ceramic, discal	C 207	0248632	Ceramic, discal
C 004	0245017	Ceramic, discal	C 208	0252231	Electrolytic
C 005	0248706	Ceramic, discal	C 209	0252611	Electrolytic
C 007	0248635	Ceramic, discal	C 210	0248726	Ceramic, discal
C 008	0248736	Ceramic, discal	C 303	0274114	Mylar
C 009	0248716	Ceramic, discal	C 304	0274116	Mylar
C 010	0248647	Ceramic, discal	C 305	0252613	Electrolytic
C 011	0245017	Ceramic, discal	C 306	0252611	Electrolytic
C 012	0246445	Ceramic, discal	C 307	0252621	Electrolytic
C 013	0246430	Ceramic, discal	C 308	0249515	Ceramic, discal
C 014	0245017	Ceramic, discal	C 309	0275115	Mylar
C 101	0248632	Ceramic, discal	C 310	0252615	Electrolytic
C 102	0248704	Ceramic, discal	C 311	0252611	Electrolytic
C 103	0221339	Styrol	C 312	0252621	Electrolytic
C 104	0248634	Ceramic, discal	C 313	0252233	Electrolytic
C 105	0275115	Mylar	C 314	0252233	Electrolytic
C 106	0275113	Mylar	C 315	0252233	Electrolytic
C 107	0244173	Ceramic, discal	C 316	0252525	Electrolytic
C 108	0244173	Ceramic, discal	C 317	0274114	Mylar
C 109	0244173	Ceramic, discal	C 318	0274114	Mylar
C 110	0248647	Ceramic, discal	C 319	0275112	Mylar
C 111	0244173	Ceramic, discal	C 320	0252525	Electrolytic
C 112	0244173	Ceramic, discal	C 321	0252525	Electrolytic
C 113	0275111	Mylar	C 322	0274112	Mylar
C 114	0275115	Mylar	C 323	0274112	Mylar
C 201	0248648	Ceramic, discal	C 324	0274115	Mylar
C 202	0248726	Ceramic, discal	C 325	0275114	Mylar
C 203	0275113	Mylar	C 326	0274113	Mylar
C 204	0275113	Mylar	C 327	0252231	Electrolytic
			C 328	0252233	Electrolytic
			C 329	0259670	Electrolytic
			C 331	0244173	Ceramic, discal
			C 332	0244173	Ceramic, discal
			C 333	0249515	Ceramic, discal
			C 334	0259670	Electrolytic

SCHMATIC DIAGRAM



CIRCUIT BOARD DIAGRAM



DISASSEMBLED DIAGRAM

