eurovox

SERVICE MANUAL

Computerised Logic System

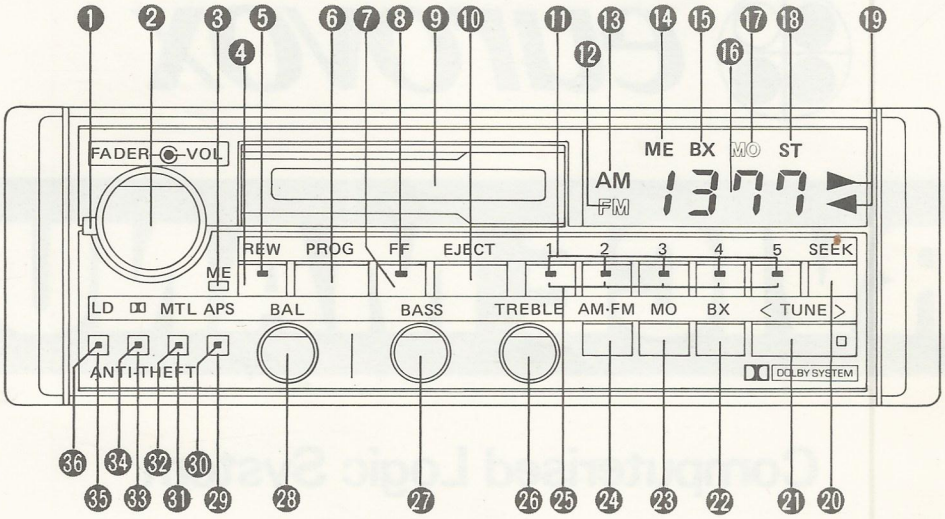
AUTOREVERSE CASSETTE STEREO PLAYER with Dolby NR & ELECTRONIC SEEK TUNE AM STEREO / FM STEREO RADIO with 12 Programmable Memories & Digital Display

MCC-2461A

FOR ADDITIONAL TECHNICAL DESCRIPTION, REFER TO THE SERVICE MANUAL FOR MCC-2460E

Printed in Japan Jan. '87 Modification Reserved

LOCATION OF CONTROLS



1. Fader Control
2. Volume Control/Radio On-Off switch
3. Memory Enable Switch (ME)
4. Fast Rewind Switch
5. Fast Rewind Indicator (REW)
6. Program Selector Switch
7. Fast Forward Switch
8. Fast Forward Indicator (FF)
9. Cassette Door
10. Manual Cassette Ejection Switch
11. Memory Address Indicator
12. FM Indicator
13. AM Indicator
14. Memory Enable Indicator (ME)
15. Wide/Narrow Indicator (BX)
16. Digital Frequency Readout
17. Mono Indicator (MO)
18. Stereo Indicator (ST)
19. Program Indicators
20. Automatic Seek Tuning Switch
21. Manual Tuning Switch
22. Wide/Narrow Selector
23. Stereo/Mono Selector
24. AM·FM Waveband Selector Switch
25. Memory Address Switches
26. Treble Control
27. Bass Control
28. Balance Control
29. Automatic Program Selection Switch
30. Automatic Program Selection Indicator (APS)
31. Tape Selection Switch
32. Tape Selection Indicator (MTL)
33. Dolby Noise Reduction Switch
34. Dolby Noise Reduction Indicator (DD)
35. Loudness Contour Switch
36. Loudness Indicator (LD)

GENERAL INFORMATION

SEMICONDUCTORS: 24 ICs, 3 FETs, 79 Transistors, 77 Diodes, 2 LEDs

DESCRIPTION	REF. NO.	Q'TY	EQUIVALENT
(AM Radio)			
AM IC LA1135	IC801	1	
AM stereo decoder IC MC13020P	IC851	1	
IF amplifier transistor 2SC2458L (BL)	Q301	1	2SC1815 (BL), 2SC2784 (K) or (E), 2SC2458 (BL)
RF AGC transistor 2SC2814 (F4)	Q801, 803	2	2SC2716 (O), 2SC2619 (B)
Radio frequency amplifier FET 2SK163 (M)	Q802	1	2SK523 (M)
Switching transistor, BX 2SA1342	Q804	1	2SA1344
IF amplifier 2SC2814 (F4)	Q805	1	2SC2716 (O), 2SC2619 (B)
Buffer transistor 2SC2458L (BL)	Q851	1	2SC1815 (BL), 2SC2784 (K) or (E), 2SC2458 (BL)
Switching transistor DTC144ES	Q852, 857	2	
Audio buffer transistor 2SC2603 (F) or (E)	Q853, 856	2	2SC2785 (E) or (F), 2SC536 (F) or (G), 2SC1740S (Q) or (R)
Switching transistor (MO/ST) 2SA1115 (E) or (F)	Q854	1	2SA1175 (E) or (H), 2SA933S (Q) or (R)
Buffer transistor 2SC2603 (F) or (E)	Q855	1	2SC2785 (E) or (F), 2SC536 (F) or (G), 2SC1740S (Q) or (R)
Varactor diode SVC321SP	D801, 802, 803	3	1SV149
Switching diode 1SS110	D804, 805, 806, 807	4	1SS133, 1S1555
Voltage shift diode 1SS110	D808	1	1SS133, 1S1555
(FM Radio)			
IF IC LA1140	IC601	1	
NB IC LA2110	IC602	1	
MPX IC LA3376	IC603	1	
Radio frequency amplifier FET 3SK101 (GR)	Q501	1	3SK74
Mixer transistor 2SC2714 (R)	Q502	1	2SC2714 (O) or (Y), 2SC2620
Oscillator transistor 2SC2714 (R)	Q503	1	2SC2714 (O) or (Y), 2SC2620
Oscillator buffer FET 3SK302	Q504	1	3SK360
IF amplifier transistor 2SC930 (D)	Q601	1	2SC2787 (K) or (L)
Audio amplifier and filter 2SC2458L (BL)	Q602, 603	2	2SC1815 (BL), 2SC2784 (K) or (E), 2SC2458 (BL)
Switching transistor DTC144ES	Q604	1	
Varactor diode 1SV103	D501, 502, 503	3	SVC211
Switching diode 1SS133	D601, 604, 605	3	1S1588, 1S2076, MA165, GMA-01
Voltage shift diode 1SS133	D602, 603	2	1S1588, 1S2076, MA165, GMA-01
(PLL Control)			
Prescaler IC μPB553AC	IC701	1	
LED driver M54517P	IC702, 705	2	
PLL LSI and controller μPD1710G-227	IC703	1	
LED driver M54562P	IC704	1	
Regulator IC μPC78L05	IC706	1	
Switching transistor DTA144ES	Q51, 719	2	
Switching transistor 2SA1115 (E) or (F)	Q52, 54, 55	3	
Switching transistor DTC144ES	Q53, 720	2	
Switching transistor, LOC/DX, Mute, BX 2SC2603 (F) or (E)	Q701, 702, 706, 711	4	2SC2785 (E) or (F), 2SC536 (F) or (G), 2SC1740S (Q) or (R)
OSC buffer amplifier transistor (AM, FM) 2SC930 (D)	Q703, 704	2	2SC2787 (K) or (L)
Switching transistor, W/N DTA124EF	Q705	1	
Switching transistor, W/N AGC cut DTC144ES	Q707, 708	2	
Low pass filter transistor 2SC2603 (F) or (E)	Q709, 710	2	2SC2785 (E) or (F), 2SC536 (F) or (G), 2SC1740S (Q) or (R)

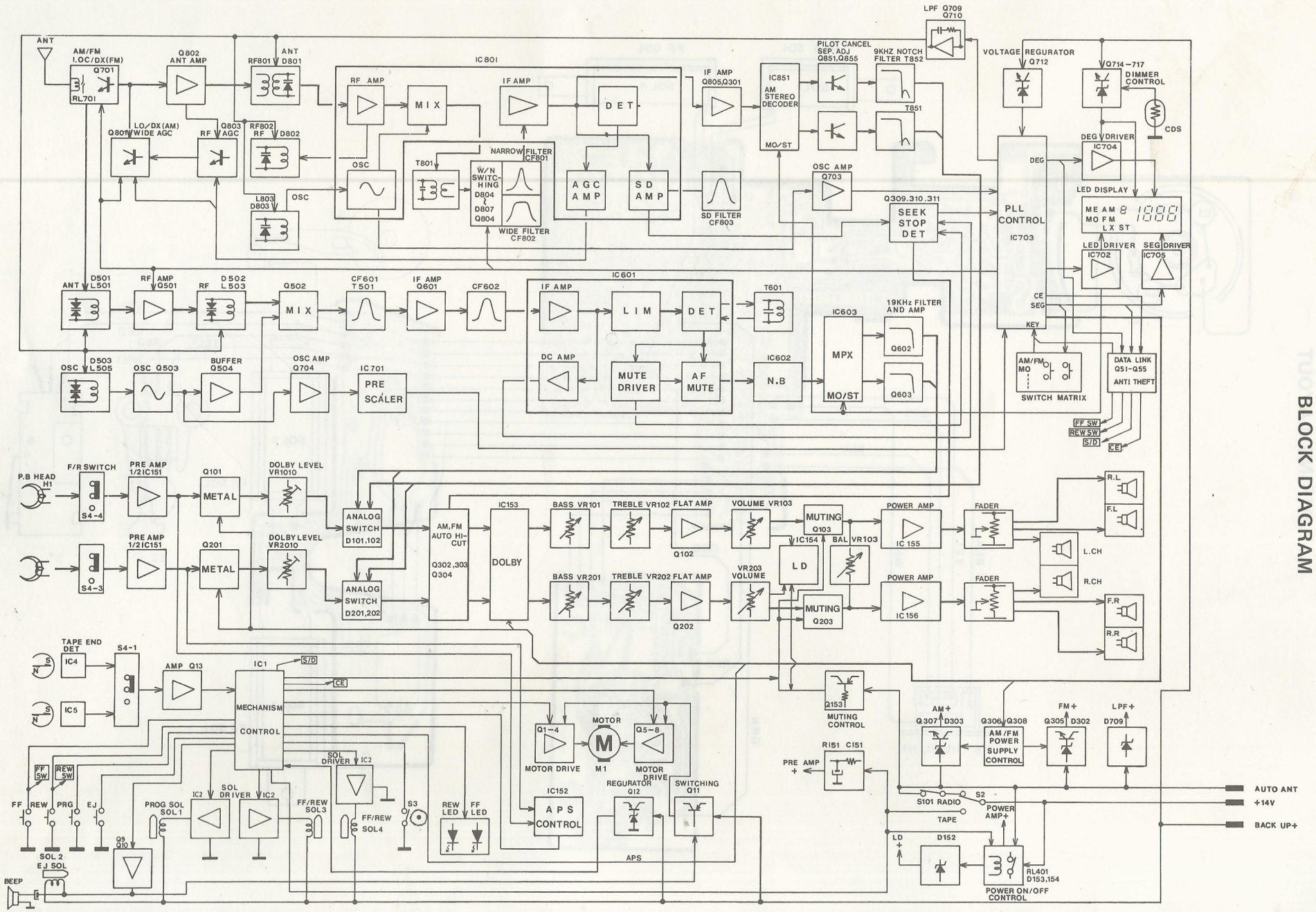
DESCRIPTION	REF. NO.	Q'TY	EQUIVALENT
Voltage regulator transistor 2SC2603 (F) or (E)	Q712	1	2SC2785 (E) or (F), 2SC536 (F) or (G), 2SC1740S (Q) or (R)
Switching transistor 2SA1115 (E) or (F)	Q713	1	2SA1175 (E) or (H), 2SA933 (Q) or (R)
Switching diode 1SS133	D701, 702, 703, 704, 705, 706, 707, 708, 710, 712, 713, 714, 715, 716, 717, 720, 721, 722, 723, 724	20	1S1588, 1S2076, MA165, GMA-01
Zener diode EQA02-09 (SA)	D709	1	MZ309, RD10E (B1), HZ9 (C2)
Zener diode HZ6 (C3)	D711	1	EQA02-06 (AB), MA306 (A), HZ6 (A3)
(Dimmer control)			
Dimmer control transistor 2SC1162 (C)	Q714	1	
Dimmer control transistor 2SC2603 (F) or (E)	Q715, 716, 717	3	2SC2785 (E) or (F), 2SC536 (F) or (G), 2SC1740S (Q) or (R)
Zener diode RD5.1E (B2)	D718	1	MTZ5.1 (B), EQA02-05 (EF)
(Regulator and mute)			
Switching transistor 2SA1115 (E) or (F)	Q153	1	2SA1175 (E) or (H), 2SA933S (Q) or (R)
Regulator transistor 2SD973 (R)	Q305, 307	2	
Switching transistor DTC144ES	Q306, 308	2	
Zener diode EQA02-09 (SA)	D302, 303	2	MZ309, RD10E (B1), HZ9 (C2)
Switching diode 1SS133	D306	1	1S1588, 1S2076, MA165, GMA-01
(Search stop and AM auto hi-cut)			
Band pass filter and amplifier transistor 2SC2458L (BL)	Q302, 303	2	2SC1815 (BL), 2SC2784 (K) or (E), 2SC2458 (BL)
Switching transistor 2SC2603 (F) or (E)	Q304, 310, 311	3	2SC2785 (E) or (F), 2SC536 (F) or (G), 2SC1740S (Q) or (R)
Switching transistor 2SA1115 (E) or (F)	Q309	1	2SA1175 (E) or (H), 2SA933S (Q) or (R)
Switching diode 1SS133	D304, 305, 307, 308, 309	5	1S1588, 1S2076, MA165, GMA-01
(Audio)			
Pre amplifier IC M51522L	IC151	1	
Cassette program selection IC M51143AL	IC152	1	
Dolby NR IC HA12046	IC153	1	
Analogue switch IC μPD4066BC	IC154	1	HFE4066BP, TC4066BP, HD14066BP
Power amplifier IC HA13001	IC155, 156	2	
Buffer amplifier IC M51522L	IC901, 902	2	
Switching transistor DTC144ES	Q101, 201	2	
Flat amplifier transistor 2SC2458L (BL)	Q102, 202	2	2SC1815 (BL), 2SC2784 (K) or (E), 2SC2458 (BL)
Muting transistor 2SD1021 (F) or (E)	Q103, 203	2	
Regulator transistor 2SC2458L (BL)	Q151	1	2SC1815 (BL), 2SC2784 (K) or (E), 2SC2458 (BL)
Switching transistor 2SC2603 (F) or (E)	Q152	1	2SC2785 (E) or (F), 2SC536 (F) or (G), 2SC1740S (Q) or (R)
Switching diode 1SS133	D101, 102, 104, 105, 151, 201, 202, 204, 205	9	1S1588, 1S2076, MA165, GMA-01
Zener diode RD5.1E (B2)	D152	1	MTZ5.1 (B), EQA02-05 (EF)

DESCRIPTION	REF. NO.	Q'TY	EQUIVALENT
Switching diode DS135 (D)	D153, 154	2	ERB12 (02)
Zener diode EQA02-09 (SA)	D157	1	MZ309, RD10E (B1), HZ9 (C2)
Protector diode DS135 (D)	D401, 402	2	ERB12 (02)
(Mechanism control)			
Mechanism control IC LC6523C-3021	IC1	1	
Transistor array M54567P	IC2	1	
System reset IC PST520F	IC3	1	
Hall IC DN6835	IC4, 5	2	
Motor drive transistor 2SC2812L6	Q1, 7	2	
Motor drive transistor 2SA1179M6	Q2, 8	2	
Motor drive transistor 2SB822 (Q) or (R)	Q3, 5	2	2SA881 (Q) or (R)
Motor drive transistor 2SC2673 (Q) or (P)	Q4, 6	2	2SD973 (R) or (S)
Switching transistor 2SC2812L6	Q9, 12, 13	3	
Solenoid drive transistor 2SC2673 (Q) or (P)	Q10	1	2SD973 (R) or (S)
Switching transistor 2SB822 (Q) or (R)	Q11	1	2SA881 (Q) or (R)
Switching transistor DTA124F	Q14	1	
Switching transistor DTC114EK	Q15, 17, 18	3	
Switching transistor DTC144ES	Q16	1	
Switching diode DAP202K	D1, 2, 8, 11, 12, 13	6	
Switching diode DS135 (D)	D3, 4	2	ERB12 (02)
Zener diode RD5.6E (B2)	D5	1	HZ6 (A3)
Switching diode DAN202K	D6, 10	2	
Switching diode DAN601	D7	1	
Zener diode HZ6 (C3)	D9	1	EQA02-06 (AB), MA306 (A), HZ6 (A3)
Switching diode 1SS133	D14	1	1S1588, 1S2076, MA165, GMA-01
Arc suppresser diode DS135 (D)	D15	1	ERB12 (02)
(Displays)			
LED Display with switches	DISP-1	1	
LED Display with switches	DISP-2	1	

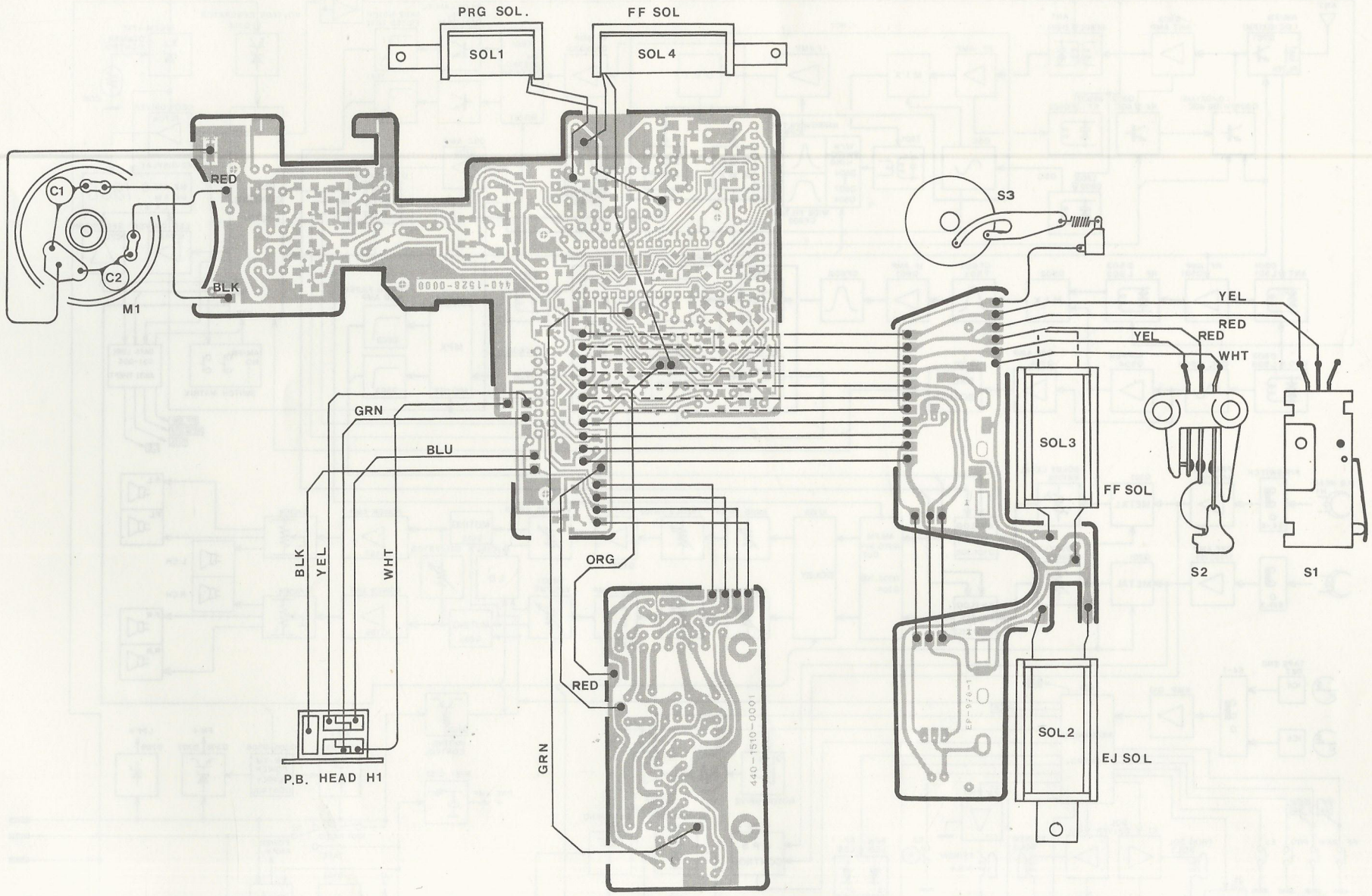
INPUT & OUTPUT

Indication	For Connection of:	Sensitivity	Impedance	Type of Socket	Connections
Antenna receptacle	Car radio aerial	1μV – 3V	75 ohm		Aerial
6P plug, 9P plug	Output Speaker Left CH and Right CH	1. 3W 2. 3W 3. ---- 4. 3W 5. 3W 6. ----	8 ohm		1. Rear Left Speaker (+) 2. Front Left Speaker (+) 3. Left Speaker (–) 4. Rear Right Speaker (+) 5. Front Right Speaker (+) 6. Right Speaker (–)
		7.] 25W 8.] 9.] 25W 10.]	4 ohm		7. Left Speaker (+) 8. Left Speaker (–) 9. Right Speaker (+) 10. Right Speaker (–)
	Power Supply +14V (Car battery)	----	----		11. Car battery +14V DC
	Automatic aerial	14V DC (Max. 500mA)	----		12. Automatic aerial
	Power supply +14V (Ignition switch)	----	----	RED ⑯	13. +14V DC
	Small light switch	----	----		14. Back light (in)
	Chassis of car (Ground)	----	----	ORG ⑱	15. Ground
	Small light switch	----	----	GRN ⑰	16. Back light (out) 17. Back light – Green (in) 18. Back light – Orange (in)

BLOCK DIAGRAM



WIRING LAYOUT



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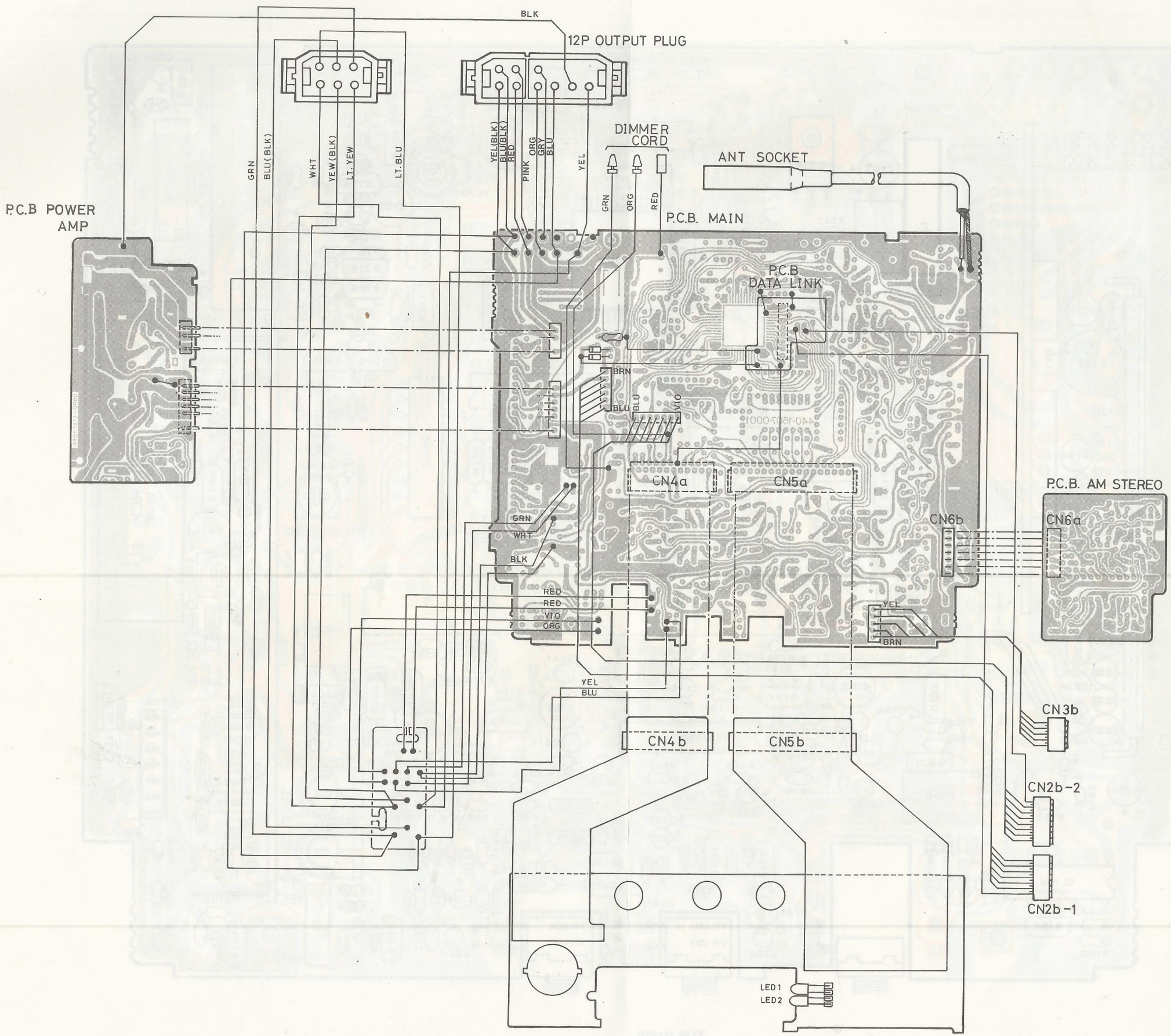
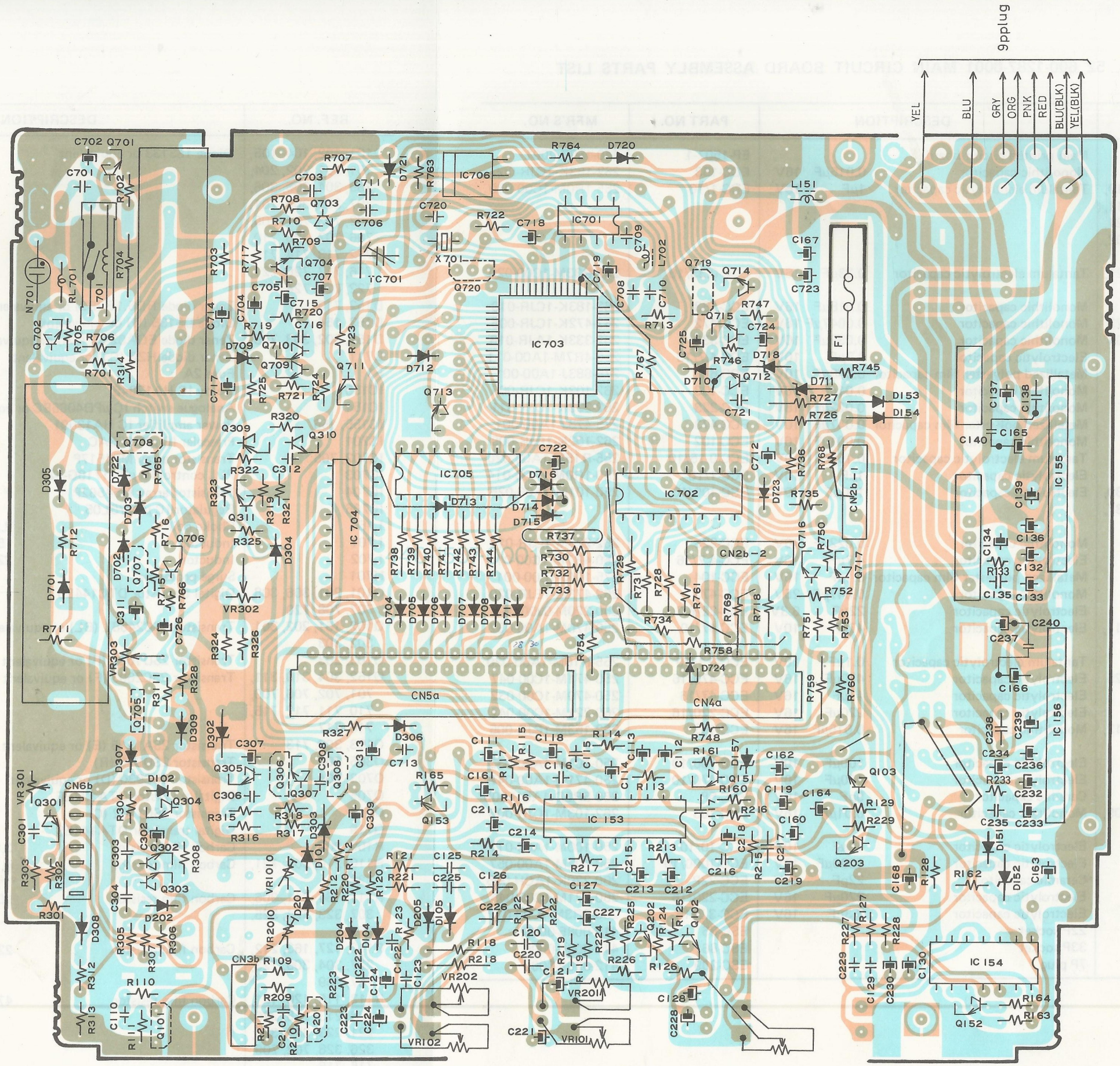




BOTTOM VIEW

Blue

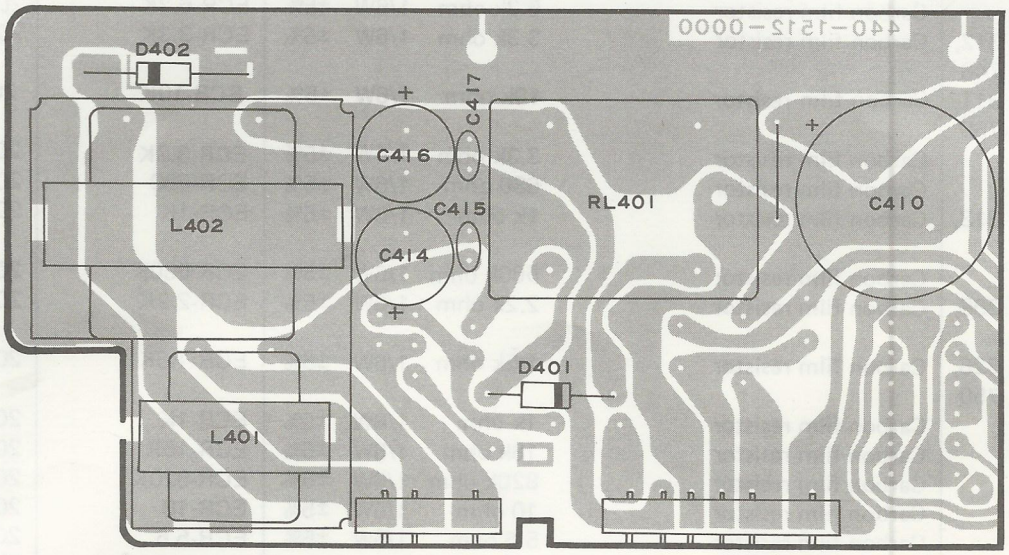
REF. NO. 52 600-1287-0001 MAIN CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION			PART NO.	MFR'S NO.
–	Main printed circuit board			EP-1507-1	440-1507-0001
C110, 210	Monolithic capacitor	0.015μF	16V	ECC-153	262-153K-1CJR-005
C111, 112, 114, 119, 124, 127, 128, 211, 212, 214, 219, 224, 227, 228, 313, 702, 715	Tantalum electrolytic capacitor	1μF	16V	ECC-1/16	255-1R0M-1C00-020
C113, 121, 213, 221, 714	Tantalum electrolytic capacitor	0.33μF	16V	ECC-0.33/16	255-R33M-1C00-020
C115, 215	Monolithic capacitor	0.018μF	16V	ECC-183	262-183K-1CJR-010
C116, 122, 216, 222	Monolithic capacitor	0.0047μF	16V	ECC-472	262-472K-1CJR-005
C117, 217, 303, 304	Monolithic capacitor	0.033μF	10V	ECC-333	262-333K-1AJR-016
C118, 218	Electrolytic capacitor	4.7μF	10V	ECC-4.7/10	250-4R7M-1A00-011
C120, 220	Metallized polyester film capacitor	0.068μF	10V	ECC-683	275-683J-1A00-001
C123, 223, 716	Monolithic capacitor	0.01μF	16V	ECC-103	262-103K-1CJR-005
C125, 225	Monolithic capacitor	0.022μF	16V	ECC-223	262-223K-1CJR-011
C126, 226	Metallized polyester film capacitor	0.047μF	10V	ECC-473	275-473J-1A00-001
C129, 229, 710	Monolithic capacitor	0.001μF	16V	ECC-102	262-102K-1CJR-005
C130, 230	Tantalum electrolytic capacitor	0.15μF	10V	ECC-0.15/10	255-R15M-1A00-020
C132, 232	Electrolytic capacitor	1μF	10V	ECC-1/10	250-1R0M-1A00-014
C133, 134, 137, 139, 163, 233, 234, 237, 239, 717	Electrolytic capacitor	100μF	10V	ECC-100/10	250-101M-1A00-025
C135, 235	Monolithic capacitor	0.022μF	16V	ECC-223	262-223M-1CJR-010
C136, 236	Electrolytic capacitor	4.7μF	16V	ECC-4.7/16	250-4R7M-1C00-014
C138, 238	Metallized polyester film capacitor	0.1μF	16V	ECC-104	275-104J-1C00-001
C140, 240	Monolithic capacitor	0.047μF	25V	ECC-473	262-473M-1EJR-020
C160	Electrolytic capacitor	22μF	6.3V	ECC-22/6.3	250-220M-0J00-011
C161, 162, 309, 311, 707	Electrolytic capacitor	47μF	10V	ECC-47/10	250-470M-1A00-032
C164, 704	Tantalum electrolytic capacitor	0.1μF	10V	ECC-0.1/10	255-R10M-1A00-020
C165, 166, 723, 725	Electrolytic capacitor	470μF	16V	ECC-470/16	250-471M-1C00-047
C167	Electrolytic capacitor	47μF	16V	ECC-47/16	250-470M-1C00-032
C168	Electrolytic capacitor	220μF	16V	ECC-220/16	250-221M-1C00-047
C301, 306, 308, 312, 713, 721	Monolithic capacitor	0.015μF	16V	ECC-153	262-153M-1CJR-005
C302	Electrolytic capacitor	100μF	10V	ECC-100/10	250-101M-1A00-033
C307, 719	Electrolytic capacitor	470μF	10V	ECC-470/10	250-471M-1A00-047
C701, 705	Ceramic capacitor	5pF	10V	ECC-5P	260-5R0D-1ACH-005
C703, 706, 708, 709, 711	Monolithic capacitor	0.01μF	16V	ECC-103	262-103M-1CJR-005
C712, 724	Electrolytic capacitor	10μF	10V	ECC-10/10	250-100M-1A00-011
C718	Electrolytic capacitor	1000μF	10V	ECC-1000/10	250-102M-1A00-057
C720	Ceramic capacitor	22pF	10V	ECC-22P	260-220K-1ACH-005
C722	Electrolytic capacitor	220μF	16V	ECC-220/16	250-221M-1C00-045
C726	Electrolytic capacitor	3.3μF	16V	ECC-3.3/16	250-3R3M-1C00-012
CN4a	22P socket			ESC-85	412-0085-0000
CN5a	33P socket			ESC-86	412-0086-0000
CN6b	7P plug			ESC-209	412-0209-0000

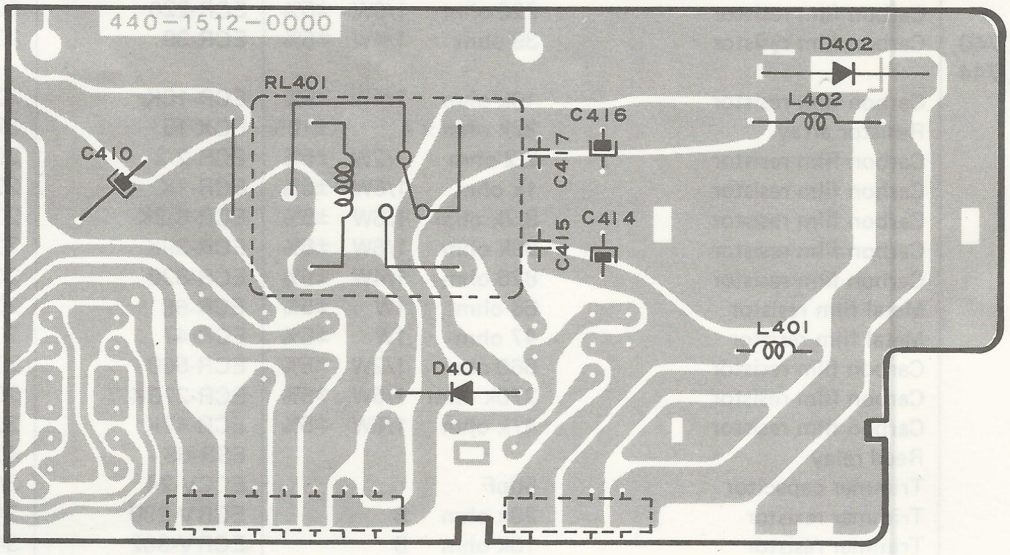
REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
D101, 102, 104, 105, 151, 201, 202, 204, 205, 304, 305, 306, 307, 308, 309, 701, 702, 703, 704, 705, 706, 707, 708, 710, 712, 713, 714, 715, 716, 717, 720, 721, 722, 723, 724	Diode 1SS133 or equivalent	ETD-1SS133	304-0033-0000
D152, 718	Zener diode RD5.1E (B2) or equivalent	ETD-RD5.1EB2	306-0041-1100
D153, 154	Diode DS135 (D) or equivalent	ETD-DS135D	304-0023-1000
D157, 302, 303, 709	Zener diode EQA02-09 (SA) or equivalent	ETD-EQA0209SA	306-0018-1000
D711	Zener diode HZ6 (C3) or equivalent	ETD-HZ6C3	306-0065-1200
F1	Fuse 2A	ESX-86	419-0086-0000
IC153	Dolby IC HA12046	ETI-109	310-0109-0000
IC154	Analogue switch IC μPD4066BC or equivalent	ETI-104	310-0104-0000
IC155, 156	Power amplifier IC HA13001	ETI-106	310-0106-0000
IC701	Prescaler IC μPB553AC	ETI-89	310-0089-0000
IC702, 705	Transistor array M54517P	ETI-57	310-0057-0000
IC703	PLL control IC μPD1710G-227	ETI-205	310-0205-0000
IC704	Transistor array M54562P	ETI-111	310-0111-0000
IC706	Regulator IC μPC78L05	ETI-58	310-0058-0000
L151	Choke coil 2.2mH	ELD-301	351-0301-1700
L701	Inductor 15uH	ELA-35	352-0035-1100
L702	Inductor 22μH	ELD-164	351-0164-1100
N701	Surge protector	EIN-5	431-0005-0000
Q101, 201, 306, 308, 707, 708, 720	Digital transistor DTC144ES	ETTC-DTC144ES	302-0115-0000
Q102, 151, 202, 301, 302, 303	Transistor 2SC2458L (BL) or equivalent	ETTC-2458LBL	302-0078-1400
Q103, 203	Transistor 2SD1021 (F) or equivalent	ETTD-1021F	302-0097-1300
Q152, 304, 310, 311, 701, 702, 706, 709, 710, 711, 712, 715, 716, 717	Transistor 2SC2603 (F) or equivalent	ETTC-2603F	302-0091-1200
Q153, 309, 713	Transistor 2SA1115 (E) or equivalent	ETTA-1115E	301-0033-1100
Q305, 307	Transistor 2SD973 (R)	ETTD-973R	302-0098-1100
Q703, 704	Transistor 2SC930 (D) or equivalent	ETTC-930D	302-0014-1000
Q705	Digital transistor DTA124EF	ETTA-DTA124EF	301-0023-0000
Q714	Transistor 2SC1162 (C)	ETTC-1162C	302-0018-1000
Q719	Digital transistor DTA144ES	ETTA-DTA144ES	301-0053-0000
R109, 209	Carbon film resistor 3.9k ohm 1/6W ±5%	ECR-3.9K	200-392J-2C00-010
R110, 210, 303, 721, 722	Carbon film resistor 4.7k ohm 1/6W ±5%	ECR-4.7K	200-472J-2C00-010
R111, 164, 211, 306, 307, 323, 324, 325, 751	Carbon film resistor 100k ohm 1/6W ±5%	ECR-100K	200-104J-2C00-010
R112, 127, 163, 212, 227, 304, 305, 723, 767, 769	Carbon film resistor 22k ohm 1/6W ±5%	ECR-22K	200-223J-2C00-010
R113, 115, 120, 121, 123, 213, 215, 220, 221, 223, 321, 322, 326, 328, 702, 709, 715, 716	Carbon film resistor 47k ohm 1/6W ±5%	ECR-47K	200-473J-2C00-010

REF. NO.	DESCRIPTION				PART NO.	MFR'S NO.
R114, 214	Carbon film resistor	6.2k ohm	1/6W	±5%	ECR-6.2K	200-622J-2C00-010
R116, 161, 216, 312, 319, 712, 724, 748	Carbon film resistor	3.3k ohm	1/6W	±5%	ECR-3.3K	200-332J-2C00-010
R117, 160, 217, 311, 703, 717, 764, 768	Carbon film resistor	10k ohm	1/6W	±5%	ECR-10K	200-103J-2C00-010
R118, 218	Carbon film resistor	3.3k ohm	1/4W	±5%	ECR-3.3K	200-332J-2E00-010
R119, 219	Carbon film resistor	680 ohm	1/6W	±5%	ECR-680	200-681J-2C00-010
R122, 162, 222, 313, 708, 711, 763	Carbon film resistor	1k ohm	1/6W	±5%	ECR-1K	200-102J-2C00-010
R124, 224	Carbon film resistor	560k ohm	1/6W	±5%	ECR-560K	200-564J-2C00-010
R125, 225, 301, 308, 316, 317	Carbon film resistor	2.2k ohm	1/6W	±5%	ECR-2.2K	200-222J-2C00-010
R126, 128, 129, 226, 228, 229, 320, 750	Carbon film resistor	1.5k ohm	1/6W	±5%	ECR-1.5K	200-152J-2C00-010
R133, 233	Carbon film resistor	1k ohm	1/6W	±5%	ECR-1K	200-102J-2C00-001
R165	Carbon film resistor	18k ohm	1/6W	±5%	ECR-18K	200-183J-2C00-010
R302	Carbon film resistor	820k ohm	1/6W	±5%	ECR-820K	200-824J-2C00-010
R314	Carbon film resistor	10 ohm	1/6W	±5%	ECR-10	200-100J-2C00-010
R315, 318	Carbon film resistor	5.6 ohm	1/6W	±5%	ECR-5.6	200-5R6J-2C00-010
R327, 720	Carbon film resistor	1.8k ohm	1/6W	±5%	ECR-1.8K	200-182J-2C00-010
R701	Carbon film resistor	100 ohm	1/6W	±5%	ECR-100	200-101J-2C00-010
R704	Carbon film resistor	22k ohm	1/4W	±5%	ECR-22K	200-223J-2E00-010
R705, 706	Carbon film resistor	15k ohm	1/6W	±5%	ECR-15K	200-153J-2C00-010
R707, 735, 736	Carbon film resistor	150k ohm	1/6W	±5%	ECR-150K	200-154J-2C00-010
R710, 725	Carbon film resistor	470 ohm	1/6W	±5%	ECR-470	200-471J-2C00-010
R713, 761	Carbon film resistor	220k ohm	1/6W	±5%	ECR-220K	200-224J-2C00-010
R718, 728, 729, 730, 731, 732, 733, 734	Carbon film resistor	330 ohm	1/4W	±5%	ECR-330	200-331J-2E00-010
R719	Carbon film resistor	220 ohm	1/6W	±5%	ECR-220	200-221J-2C00-010
R726, 738, 739, 740, 741, 742, 743, 744	Carbon film resistor	39 ohm	1/4W	±5%	ECR-39	200-390J-2E00-010
R727	Carbon film resistor	10k ohm	1/4W	±5%	ECR-10K	200-103J-2E00-010
R737	Resistor array	22k ohm x 4		±10%	ECX-15	370-0015-0100
R745	Carbon film resistor	2.2 ohm	1/2W	±5%	ECR-2.2	200-2R2J-2H00-010
R746	Carbon film resistor	1k ohm	1/6W	±5%	ECR-1K	200-102J-2C00-000
R747, 752	Carbon film resistor	8.2k ohm	1/6W	±5%	ECR-8.2K	200-822J-2C00-010
R753	Carbon film resistor	39k ohm	1/6W	±5%	ECR-39K	200-393J-2C00-010
R754	Carbon film resistor	820 ohm	1/4W	±5%	ECR-820	200-821J-2E00-010
R758	Metal film resistor	68 ohm	1W	±5%	ECR-68	202-680J-3A00-010
R759	Metal film resistor	47 ohm	1W	±5%	ECR-47	202-470J-3A00-010
R760	Carbon film resistor	560 ohm	1/2W	±5%	ECR-560	200-561J-2H00-010
R765	Carbon film resistor	270k ohm	1/6W	±5%	ECR-270K	200-274J-2C00-000
R766	Carbon film resistor	47k ohm	1/6W	±5%	ECR-47K	200-473J-2C00-000
RL701	Reed relay				ESR-68	402-0068-2600
TC701	Trimmer capacitor	50pF			ECCV-24	345-0024-0100
VR1010, 2010	Trimmer resistor	20k ohm	B		ECRV-290	340-0290-2400
VR301	Trimmer resistor	10k ohm	B		ECRV-362	340-0362-0100
VR302	Trimmer resistor	100k ohm	B		ECRV-404A	340-0404-0100
VR303	Trimmer resistor	10k ohm	B		ECRV-397	340-0397-0100
X701	Crystal	4.5MHz			EOC-22	361-0022-1900
—	Cord clamp				PP-544	100-6544-0000
—	Holder — Power amplifier IC				PL-7061	100-7061-0000

RELAY CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW

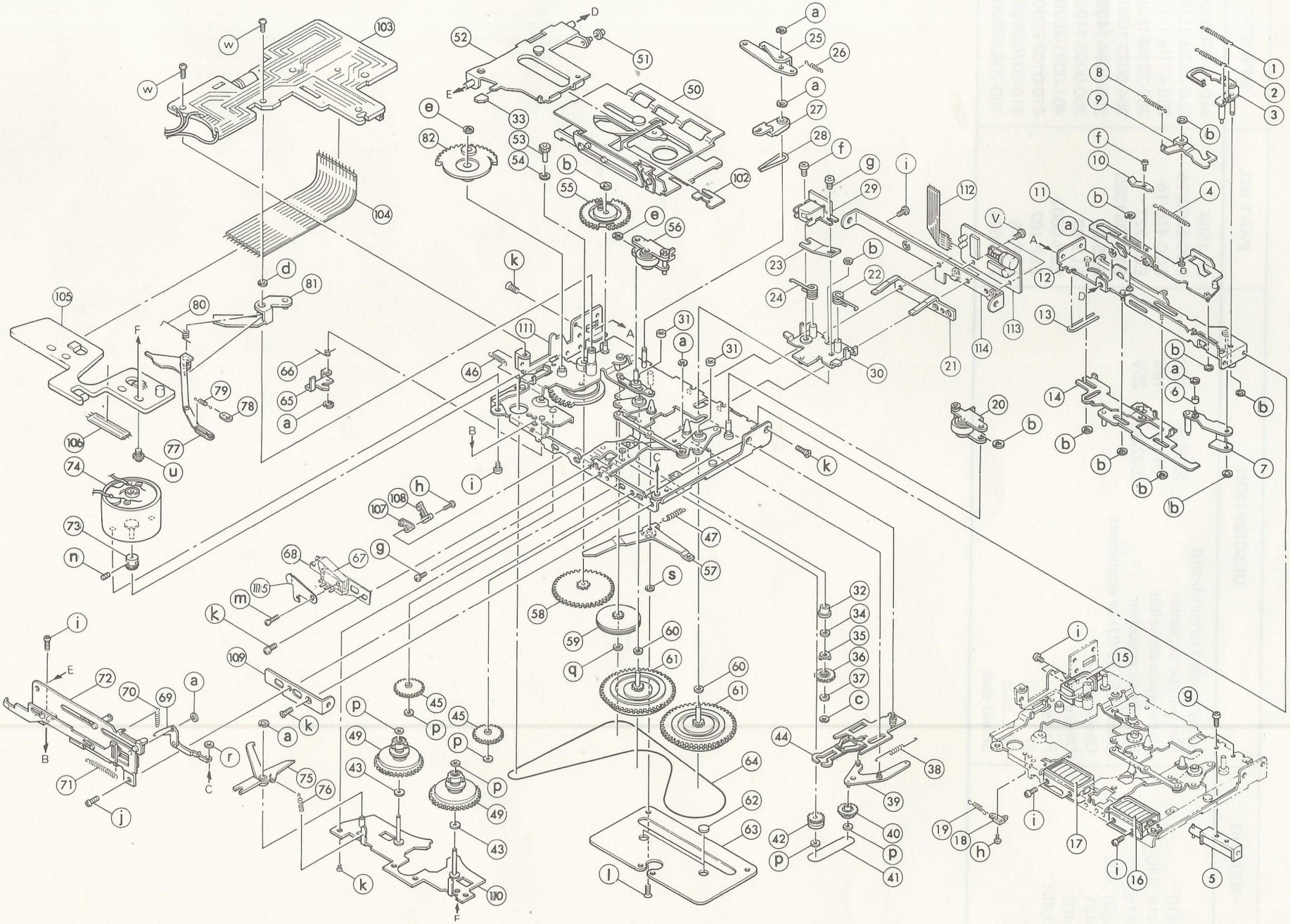


BOTTOM VIEW

REF. NO. 41 600-1286-0000 RELAY CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION			PART NO.	MFR'S NO.
–	Relay printed circuit board			EP-1566	440-1566-0000
C410	Electrolytic capacitor	2200μF	16V	ECC-2200/16	250-222M-1C00-073
C414, 416	Electrolytic capacitor	470μF	16V	ECC-470/16	250-471M-1C00-047
C415, 417	Monolithic capacitor	0.022μF	25V	ECC-223	262-223M-1EJR-010
D401, 402	Diode DS135 (D) or equivalent			ETD-DS135D	304-0023-1000
L401	Choke coil			ELS-94	350-0094-1400
L402	Choke coil			ELS-93	350-0093-1400
RL401	Relay			ESR-0001	401-0001-2600
–	3P L plug			ESP-102	410-0102-0000
–	6P L plug			ESP-76	410-0076-0000
–	Shield case			PL-7063	100-7063-0000

EXPLODED VIEW — MECHANISM



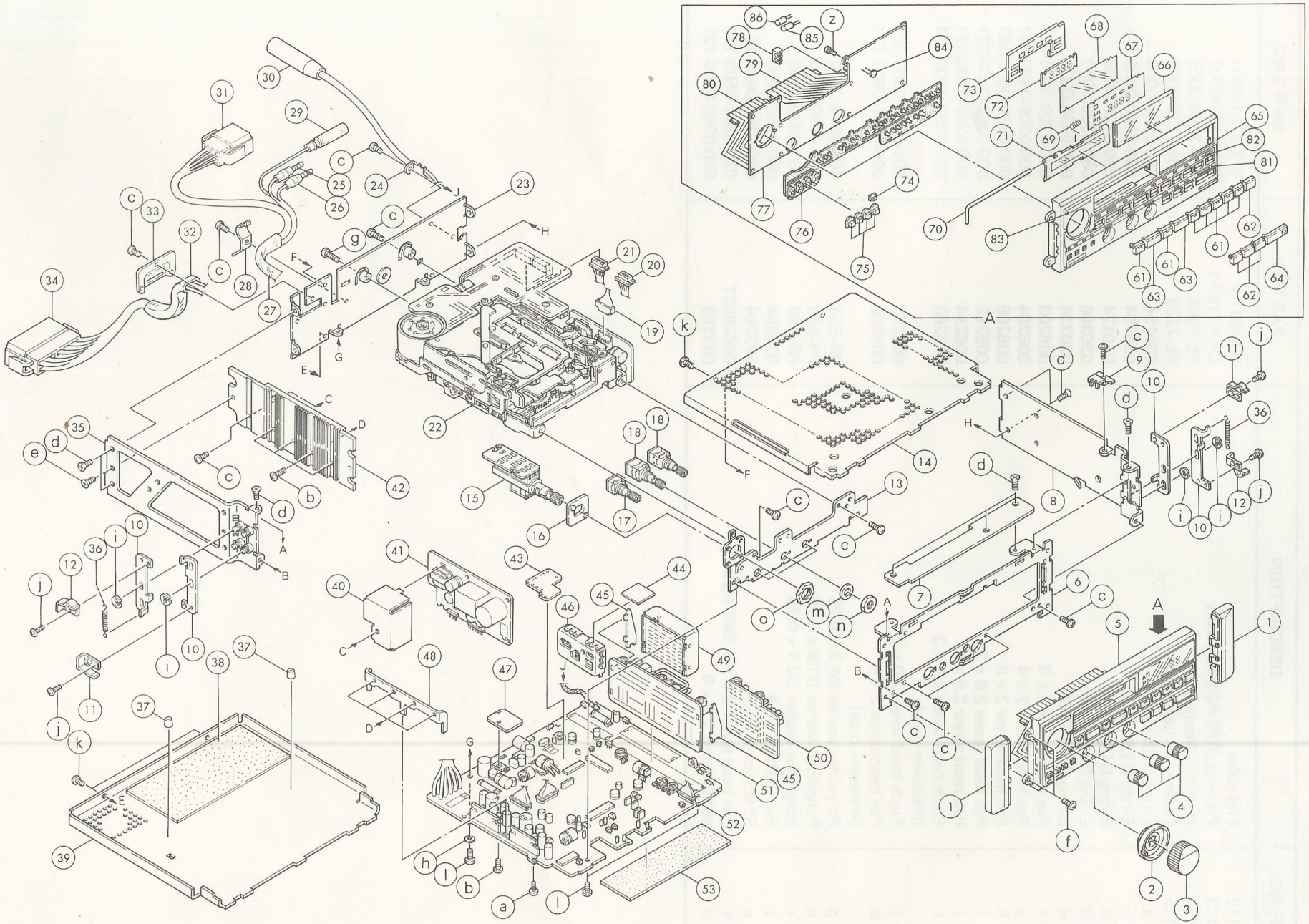
MECHANICAL PARTS LIST – MECHANISM

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
1	Spring	SC-323	160-0323-0000
2	Spring	SC-320	160-0320-0000
3	Lever lock guide ass'y	CMK-86	610-0086-0000
4	Spring	SC-321	160-0321-0000
5	Solenoid	ESR-74	402-0074-3700
6	Roller – Head chassis movement	CC-1059	150-1059-0000
7	Arm ass'y – Head chassis movement	CMK-87	610-0087-0000
8	Spring	SC-322	160-0322-0000
9	FF/REW actuation arm	PL-2481	100-2481-0000
10	Plate spring – Cassette tray arm	PL-2452	100-2452-0000
11	Eject lever ass'y	CMK-84	610-0084-0000
12	Eject base ass'y	CMK-83	610-0083-0000
13	Rod spring	ST-57	160-1057-0000
14	Auto reverse lever ass'y	CMK-85	610-0085-0000
15	Solenoid	ESR-67-1	402-0067-3701
16	Solenoid	ESR-66	402-0066-3700
17	Solenoid	ESR-66	402-0066-3700
18	Contact piece	MP-1534	131-1534-0000
19	Spring	SC-313	160-0313-0000
20	Pinch roller ass'y	AA-737	179-0737-0000
21	Holder – Head chassis	PL-2476	100-2476-0000
22	Pinch roller spring	ST-55	160-1055-0000
23	Plate – Head adjustment	PL-2451	100-2451-0000
24	Pinch roller spring	ST-56	160-1056-0000
25	Change-over arm	PL-2468	100-2468-0000
26	Spring	SC-314	160-0314-0000
27	Holder	MP-1529	131-1529-0000
28	Tension spring	ST-57	160-1057-0000
29	Autoreverse head	AHP-16A	464-0016-0000
30	Head chassis ass'y	CMK-75	610-0075-0000
31	Polyslider washer D2	PN-685	101-0685-0000
32	Roller – FF/REW gear	CC-1100	150-1100-0000
33	Plastic piece – Cassette tray	MP-1661	131-1661-0000
34	Polyslider washer D1.6 x 0.13	PN-608	101-0608-0000
35	Tension plate spring	PL-2449	100-2449-0000
36	FF/REW gear	MP-1522	131-1522-0000
37	Polyslider washer D1.6 x 0.13	PN-608	101-0608-0000
38	Spring	SC-324	160-0324-0000
39	Arm ass'y – FF/REW gear	CMK-77	610-0077-0000
40	FF/REW gear	MP-1521	131-1521-0000
41	Belt	MR-224	131-3224-0000
42	FF/REW gear	MP-1533	131-1533-0000
43	Polyslider washer D2.05 x 0.25	PN-622	101-0622-0000
44	FF/REW lever set ass'y	CMK-74	610-0074-0000
45	Inter-action gear	MP-1528	131-1528-0000
46	Spring	SC-327	160-0327-0000
47	Spring	SC-312	160-0312-0000
49	Reel table ass'y	AA-731-1	179-0731-0001
50	Cassette tray ass'y	CMK-80	610-0080-0000
51	Roller – Tray arm	CC-1035	150-1035-0000

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
52	Cassette tray tilter ass'y	CMK-79	610-0079-0000
53	Transmission gear	CC-1034	150-1034-0000
54	Polyslider washer D2.1 x 0.25	PN-531	101-0531-0000
55	Autoreverse gear	MP-1532	131-1532-0000
56	Pinch roller ass'y	AA-738	179-0738-0000
57	FF/REW arm	PL-2466	100-2466-0000
58	Main gear	MP-1530	131-1530-0000
59	Transmission gear	MP-1520	131-1520-0000
60	Polyslider washer	PN-531	101-0531-0000
61	Flywheel	CC-1204	150-1204-0000
62	Plastic plate — Capstan holding	PN-618	101-0618-0000
63	Flywheel holder	PU-190	100-5190-0000
64	Main belt	MR-225	131-3225-0000
65	Lock arm	PL-2750	100-2750-0000
66	Tension spring	ST-63	160-1063-0000
67	Micro switch	ESS-522	400-0522-0100
68	Switch holder	PL-7193	100-7193-0000
69	Lock release arm ass'y	CMK-81	610-0081-0000
70	Spring	SC-325	160-0325-0000
71	Spring	SC-317	160-0317-0000
72	Cassette insertion mechanism ass'y	CMK-82-1	610-0082-0001
	Motor ass'y	CMY-247	610-0547-0000
73	Motor pulley D11.10 mm	CS-481-1	150-2481-0100
73	Motor pulley D11.15 mm	CS-481-2	150-2481-0200
73	Motor pulley D11.20 mm	CS-481-3	150-2481-0300
73	Motor pulley D11.25 mm	CS-481-4	150-2481-0400
73	Motor pulley D11.30 mm	CS-481-5	150-2481-0500
73	Motor pulley D11.05 mm	CS-481-6	150-2481-0600
73	Motor pulley D11.00 mm	CS-481-7	150-2481-0700
73	Motor pulley D10.95 mm	CS-481-8	150-2481-0800
74	Motor	EMD-64	403-0064-4000
n	Slotted head screw 2.0 x 3	009203	030-0200-0300-311
75	Lock arm ass'y	CMK-76	610-0076-0000
76	Spring	SC-315	160-0315-0000
77	Cassette loading lever ass'y	CMK-128	610-0128-0000
78	Hook — Spring	PP-519	100-6519-0000
79	Spring	SC-352	160-0352-0000
80	Tension spring	ST-62	160-1062-0000
81	Eject arm ass'y	CMK-78	610-0078-0000
82	Gear — Eject	MP-1531	131-1531-0000
102	Anti-shock plate	PL-2947	100-2947-0000
103	Mechanism control PC board ass'y	CAP-1243-3	600-1243-0003
104	Flat cable	WX-71	471-0071-0000
105	Tape end sensor PC board ass'y	CAP-1244	600-1244-0000
106	Flat cable	WX-47	471-0047-0000
107	Switch holder ass'y	CMK-150	610-0150-0000
108	Skeleton switch	ESS-224	400-0224-3200
109	Mechanism holder (L)	PL-2782	100-2782-0000
110	Reel table chassis ass'y	CMK-155	610-0155-0000
111	Main frame ass'y	CMK-154	610-0154-0000

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
112	Flat cable	WX-201-1	471-0201-0001
113	Pre amp./APS PC board ass'y	CAP-1169-1	600-1169-0001
114	Holder – Mechanism	PL-7064	100-7064-0000
115	Cover – Switch	PL-7229	100-7229-0000
a	E-ring D1.5 x 0.4	030154	080-0150-0000
b	E-ring D1.9 x 0.4	030194	080-0190-0000
c	E-ring D1.2 x 0.4	030124	080-0120-0000
d	E-ring D3.0 x 0.6	030306	080-0300-0000
e	E-ring D2.3 x 0.4	030234	080-0230-0000
f	Pan head screw 2 x 3	006203	000-0200-0300-021
g	Pan head screw 2 x 4	006204	000-0200-0400-021
h	Pan head screw 2 x 6	006206	000-0200-0600-021
i	Pan head screw 2.6 x 3	006263	000-0260-0300-021
j	Pan head screw 2.6 x 4	006264	000-0260-0400-021
k	Flush head screw 2.6 x 3 (Precision type)	076263	001-0260-0300-121
l	Flush head screw 2.0 x 3	002203	001-0200-0300-021
m	Pan head screw 2 x 6 (Precision type)	006206	000-0200-0600-121
p	Polyslider washer D1.2 x 0.25	PN-514	101-0514-0000
q	Polyslider washer D1.6 x 0.25	PN-530	101-0530-0000
r	Polyslider washer D2.1 x 0.25	PN-639	101-0639-0000
s	E-ring D2.5 x 0.4	030254	080-0250-0000
u	SEMS screw 2 x 4	093204	050-0200-0400-121
v	Pan head screw 2.6 x 5 (Self tight)	006265ST	020-0260-0500-121
w	SEMS screw 2.6 x 5	093265	050-0260-0500-121

EXPLODED VIEW – CABINET

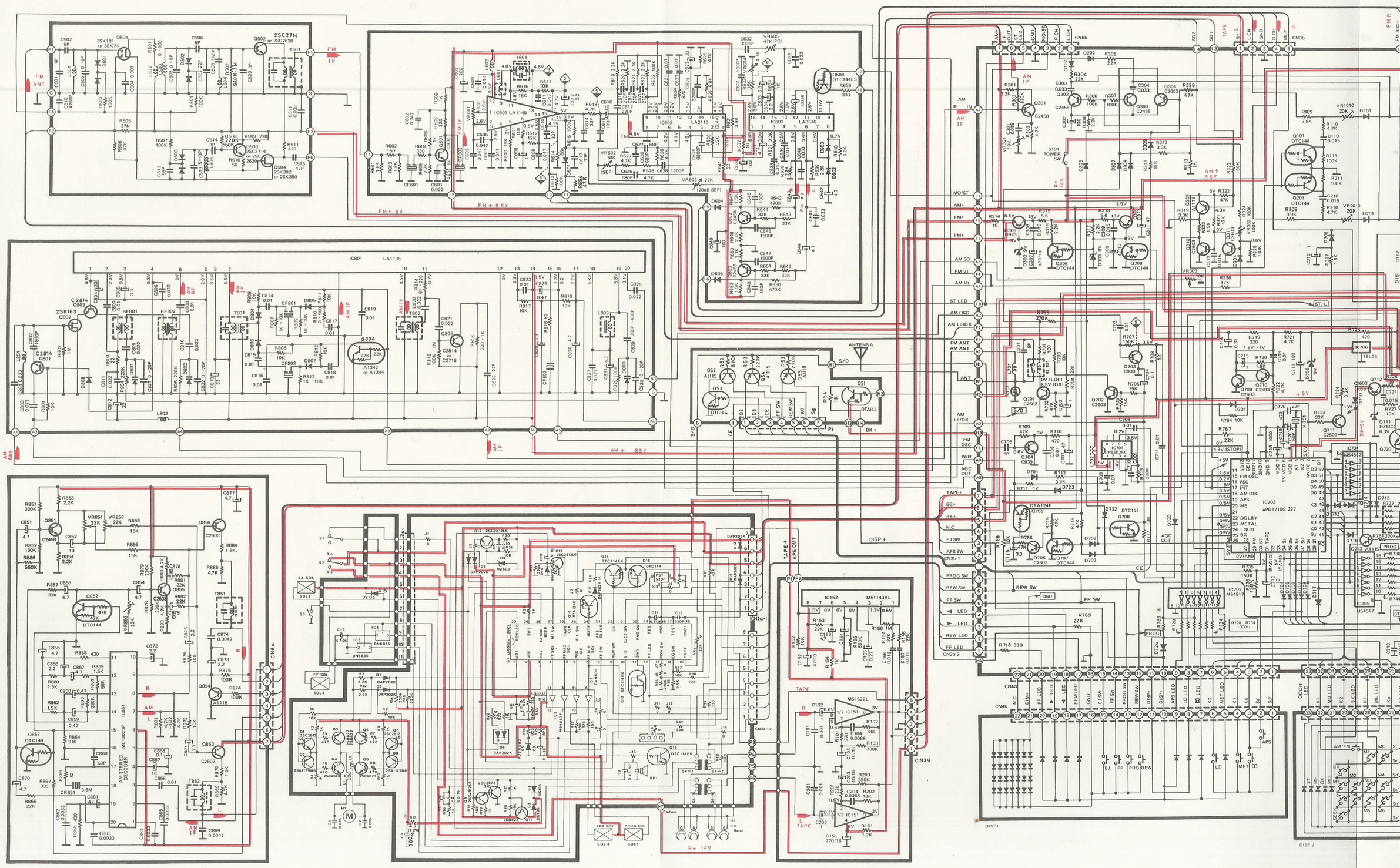


MECHANICAL PARTS LIST – CABINET

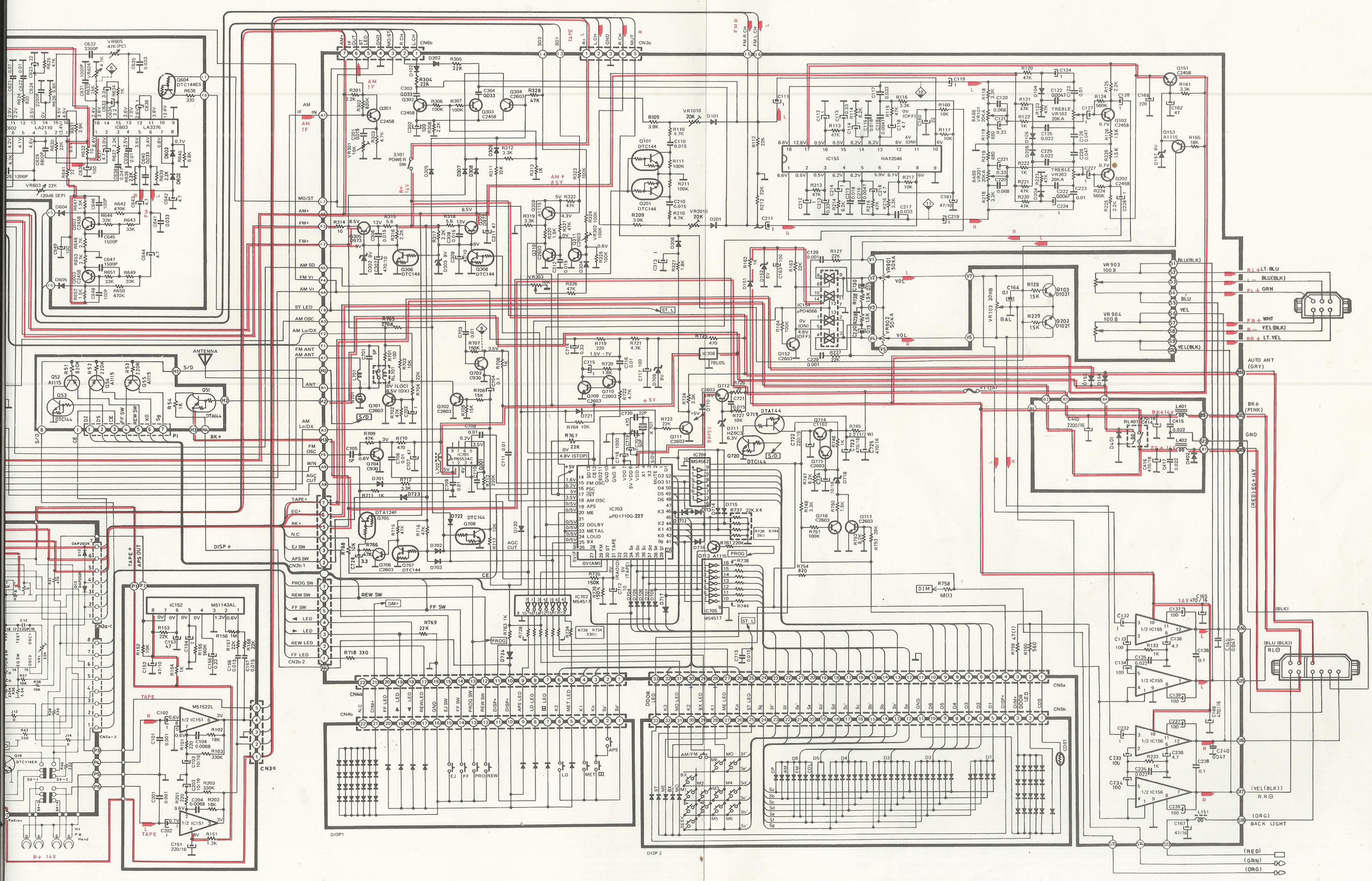
REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
1	Side cover (190)	MP-1824X3	131-1824-0300
2	Knob – Fader	MP-4194	131-4194-0000
3	Knob – Volume	MP-4193	131-4193-0000
4	Knob – Balance/Bass/Treble	MP-4195	131-4195-0000
5	Escutcheon ass'y	CMM-0444	613-0444-0000
6	Front chassis	PL-2766-4	100-2766-0004
7	Plate – Reinforcement	PP-525	100-6525-0000
8	Side panel ass'y (R)	CMK-0528-1	610-0528-0001
9	Holder – PCB	PL-7065	100-7065-0000
10	Holder – Slide-in spring	PL-2779	100-2779-0000
11	Spring – Slide-in (R)	PL-2781-1	100-2781-0001
12	Spring – Slide-in (L)	PL-2780-1	100-2780-0001
13	Sub front chassis	PL-7216	100-7216-0000
14	Lid – Top	PL-7227	100-7227-0000
15	Control PC board ass'y	CTP-1285	600-1285-0000
	Control PC board	EP-1562	440-1562-0000
	Variable resistor – Fader/Volume	ECRV-0022	341-0022-0100
16	Holder – control PCB	PP-7215	100-7215-0000
17	Variable resistor – Balance	ECRV-0024	341-0024-0100
18	Variable resistor – Bass/Treble	ECRV-0023	341-0023-0100
19	5P socket with wires	AH-0004	421-0004-0000
20	7P socket with wires	AH-0054-1	421-0054-0001
21	8P socket with wires	AH-0055-1	421-0055-0001
22	Autoreverse cassette mechanism	H-35CF-7	626-0035-3607
23	Rear panel ass'y	CMK-1318	610-1318-0000
24	Holder – Aerial socket	PL-2109	100-2109-0000
25	Dimmer wire (B)	AH-0122	421-0122-0000
26	Dimmer wire (C)	AH-0123	421-0123-0000
27	Vinyl tube	WTB-8-40	492-080Y-0040
28	Holder – Dimmer/6P wires	PL-2448	100-2448-0000
29	Dimmer wire (A)	AH-0121	421-0121-0000
30	Aerial socket with cable	AH-294	428-0294-0000
31	6P plug with wires	AH-0125-1	421-0125-0001
32	Vinyl tube	WTB-15-40	492-150Y-0040
33	Holder – 9P wires	PL-2966	100-2966-0000
34	9P plug with wires	AH-0126	421-0126-0000
35	Side panel ass'y (L)	CMK-0529-1	610-0529-0001
36	Spring – Slide-in	SC-353	160-0353-0000
37	Spacer	MP-4094	131-4094-0000
38	Insulation paper	PN-1022	101-1022-0000
39	Lid – Bottom	PL-7117	100-7117-0000
40	Shield case	PL-7063	100-7063-0000
41	Relay PC board ass'y	CTP-1286	600-1286-0000
42	Heatsink plate (A)	MM-201	130-0201-0000
43	Data link PC board ass'y	CTP-1245-1	600-1245-0001
44	Plate – Shield	PL-7186	100-7186-0000
45	Holder – PCB	PP-523	100-6523-0000
46	FM Tuner	AR-202	625-0202-0000
47	Heatsink plate	PL-2803	100-2803-0000
48	Holder (A) – IC	PL-7061	100-7061-0000

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
49	AM Tuner	AR-203	625-0203-0000
50	AM stereo PC board ass'y	CRP-1175-2	600-1175-0002
51	FM PC board ass'y	CRP-1176-6	600-1176-0006
52	Main PC board ass'y	CTP-1287-1	600-1287-0001
53	PC board – Shield	EP-1508	440-1508-0000
61	Button – FF/REW/Pre-sets	MP-4200	131-4200-0000
62	Button – AM-FM/MO/BX/Seek	MP-4201	131-4201-0000
63	Button – Prog/Eject	MP-4202	131-4202-0000
64	Button – Tune	MP-4203	131-4203-0000
65	Escutcheon	MP-4204	131-4204-0000
66	Filter – Display	MP-4205	131-4205-0000
67	Sheet – Display	HPN-1530	181-1530-0000
68	Backing sheet – Display	PN-1064	101-1064-0000
69	Spring – Cassette door	SC-2061	160-2061-0000
70	Shaft – Cassette door	CC-3081	150-3081-0000
71	Cassette door ass'y	CMT-0443	613-0443-0000
72	Reflector – Inner	MP-4206	131-4206-0000
73	Reflector – Outer	MP-4207	131-4207-0000
74	Button – ME	MP-4208	131-4208-0000
75	Button – LD/Dolby/MTL/APS	MP-4209	131-4209-0000
76	Rubber switch	MR-4210	131-4210-0000
77	PC board with LED chip	EP-1578	440-1578-0000
78	Holder – Lamp	MR-4211	131-4211-0000
79	Flexible PCB – Radio sect	EP-1579	440-1579-0000
80	Flexible PCB – Tape sect	EP-1580	440-1580-0000
81	Function indicate sheet (A) – Bal/Bass/Treble	HPN-1529-1	181-1529-0001
82	Function indicate sheet (B) – Tape/Mem/Seek	HPN-1528-1	181-1528-0001
83	Function indicate sheet (C) – Fader/Volume	HPN-1527-1	181-1527-0001
84	CdS photocell	ETX-1	321-0001-0000
85	Light emitting diode SLP-681C-50 (Orange)	ETD-SLP-681C-50	320-0087-0000
86	Light emitting diode SLP-281C-50 (Green)	ETD-SLP-281C-50	320-0086-0000
a	Pan head tapping screw 3 x 8	086308	010-0300-0800-221
b	Pan head screw 2.6 x 8	006268	000-0260-0800-021
c	Pan head screw 2.6 x 5 (Self tight)	006265ST	020-0260-0500-121
d	Flush head screw 2.6 x 4 (Self tight)	002264ST	021-0260-0400-121
e	Flush head screw 2.6 x 6	002266	001-0260-0600-021
f	Pan head screw 2.6 x 4	006264	000-0260-0400-021
g	Pan head screw 2.6 x 10	0062610	000-0260-1000-021
h	Inner toothed washer D2.6	0142632	071-0260-0000
i	E-ring D2.3	030234	080-0230-0000
j	Pan head screw 2 x 2	006202	000-0200-0200-021
k	Pan head screw 2.6 x 4 (Self tight)	006264ST	020-0260-0400-121
l	Pan head screw 2.6 x 6 (Self tight)	006266ST	020-0260-0600-121
m	Plain washer D7 (a part of pot.)	010705	070-0700-0000
n	Hexagon nut D7 (a part of pot.)	020720	064-0700-0000
o	Hexagon nut D10	0201020	064-1000-0002
z	Self tapping screw 1.7 x 5	099175	019-0170-0500-220

SCHEMATIC DIAGRAM



SCHEMATIC DIAGRAM



ACCESSORY LIST

DESCRIPTION	Q'TY	PART NO.	MFR'S NO.
Screw kit	1	AS-79	633-0079-0000
Contains;			
Plain washer D4	1	010408	070-0400-0104
Plain washer D5	1	010508	070-0500-0100
Spring washer D5	1	0115210	072-0500-0200
Hexagon nut D5	1	020540	060-0500-0101
SEMS hexagon screw 4 x 8	1	094408	055-0400-0800-120
SEMS hexagon screw 5 x 16	1	0945016	055-0500-1600-121
Bolt	1	CS-525	150-2525-0000
Rear suspension plug	1	MR-203	131-3203-0000
Removal lever ass'y	1	CMT-113	610-0763-0000
Removal lever	2	PP-524	100-6524-0000
Handbook	1	HPB-1059	801-1059-0000
Dealer list	1	HPC-209-1	803-0209-0001