eurovox

SERVICE MANUAL

AUTOREVERSE CASSETTE STEREO PLAYER

& ELECTRONIC SEEK TUNE AM/FM STEREO RADIO

MCC-6616V

Printed in Japan Aug. '92 Modification Reserved

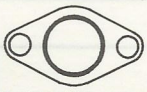
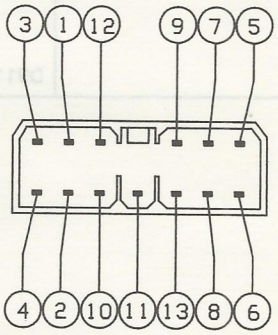
GENERAL INFORMATION

SEMICONDUCTORS: 9 ICs, 2 FETs, 29 Transistors, 43 Diodes, 1 LCD, 1 LED

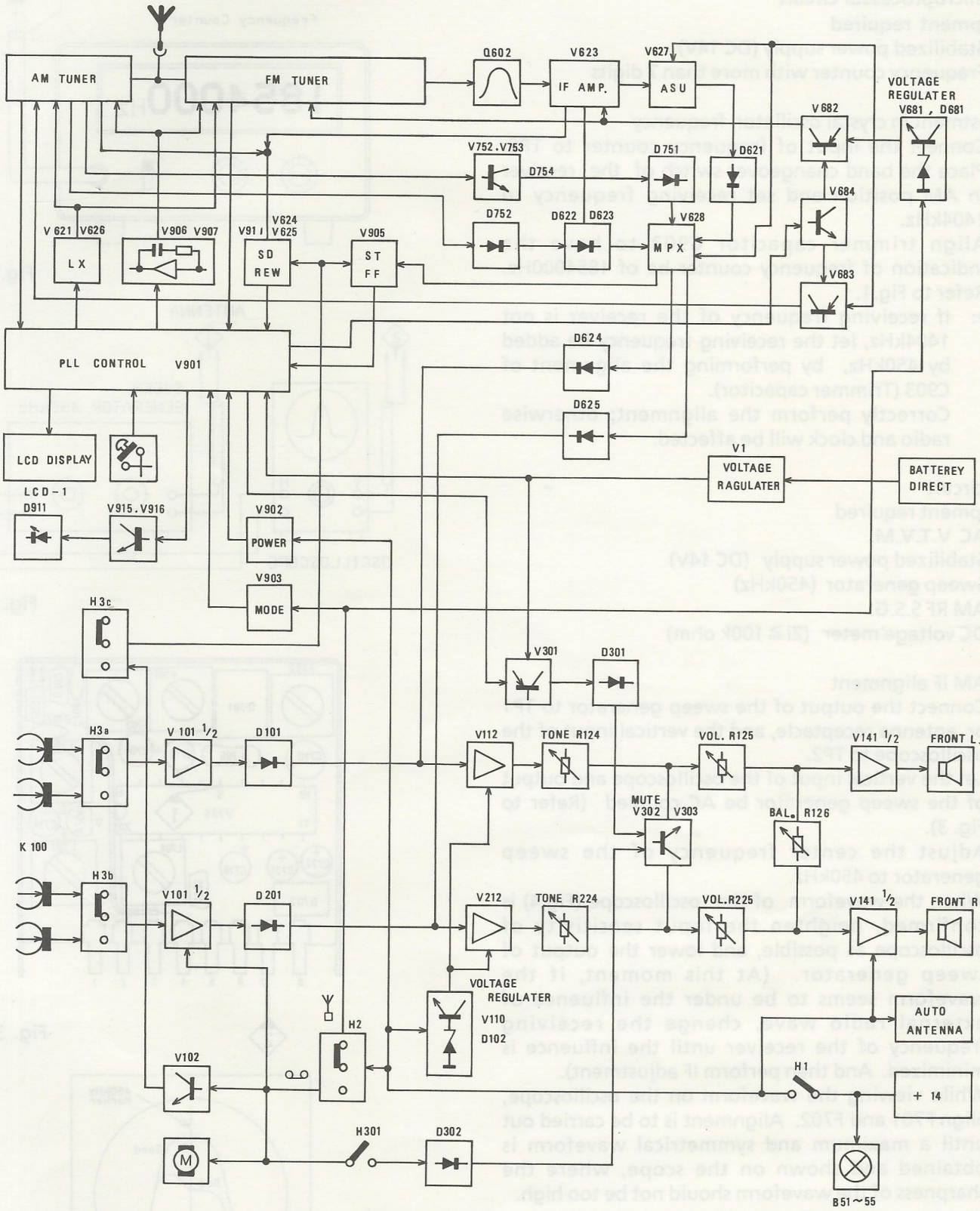
DESCRIPTION	REF. NO.	Q'TY	EQUIVALENT
(AM radio)			
AM IC LA1135	V705	1	
RF amplifier FET 2SK163 (M)	V704	1	2SK523
Switching transistor DTC114TK	V701	1	
RF AGC transistor 2SC2814 (F4)	V702, 703	2	2SC2716, 2SC2619
Switching transistor DTC125TS	V752, V753	2	
Varactor diode SVC321SP	D701, 702, 703	3	1SV149
Switching diode MA165	D750, 751, 752, 753, 754	5	
(FM radio)			
FM front end IC LA1175M	V602	1	
IF IC LA1140B	V623	1	
NB IC LA2110	V627	1	
MPX IC LA3370	V628	1	
RF amplifier FET 3SK126	V601	1	
Switching transistor UN4212	V621, 626	2	
Switching transistor 2SC2603(F)	V624	1	
Switching transistor DTC114YS	V625	1	
OSC buffer amplifier transistor 2SC2786(L)	V913	1	
Switching diode 1SV128	D601	1	HVM14
Varactor diode HVM55	D602, 603, 604	3	SVC212
Switching diode MA165	D621, 622, 623, 624, 625	5	
(Pre amplifier)			
Pre amplifier IC LA3161	V101	1	
Switching transistor UN4212	V102	1	DTC124ES
Switching diode MA165	D101, 201	2	
(AF amplifier)			
AF amplifier transistor 2SC2603(F)	V112, 212	2	2SC2603(E)
(Power amplifier)			
Power amplifier IC LA4445	V141	1	
Switching diode MA165	D141	1	
(Control)			
PLL IC uPD1708AG-863	V901	1	
Switching transistor DTC125TS	V902, 903	2	
Switching transistor DTA125TS	V904, 905	2	
Low pass filter transistor 2SC2458L(BL)	V906, 907	2	
Switching transistor DTA124EL	V915	1	
Switching transistor DTC124EL	V916	1	
Switching diode MA165	D901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 912, 913, 915, 916, 917, 918, 919	17	
(Muting)			
Muting transistor UN411D	V301	1	
Muting transistor 2SC2603(F)	V302, 303	2	2SC2603(E)
Muting diode MA165	D301, 302	2	
(Regulator)			
Regulator IC AN8005	V1	1	
Regulator transistor 2SC2603(F)	V110	1	2SC2603(E)
Regulator transistor 2SD973(R)	V681	1	2SD973(S)
Switching transistor DTB123YS	V682	1	
Switching transistor DTA114TS	V683	1	
Switching transistor 2SC2603(F)	V684	1	2SC2603(E)

DESCRIPTION	REF. NO.	Q'TY	EQUIVALENT
Protector diode ERB12(02)	D1	1	DS135(D)
Voltage shift diode MA165	D2	1	
Zener diode HZS10N(B1)	D102, 681	2	
(Display)			
LCD display	LCD-1	1	
(Indicator)			
LED PR2434D	D911	1	TLR226

INPUT AND OUTPUT

Indication	For Connection of:	Sensitivity	Impedance	Type of Socket	Connections
Antenna receptacle	Car radio aerial	1μV-3V	75 ohm		Aerial
13P plug	Output speaker Left CH and Right CH	1-2. 7.5W 3-4. 7.5W 5-6. 7.5W 7-8. 7.5W	4 ohm		1. Front Left speaker (+) 2. Front Left speaker (−) 3. Front Right speaker (+) 4. Front Right speaker (−) 5. Rear Left speaker (+) 6. Rear Left speaker (−) 7. Rear Right speaker (+) 8. Rear Right speaker (−) 13.Ground
	Small light switch	–	–		9. Back light
	Power supply +14V (Ignition switch)	–	–		12. +14V DC
	Power supply +14V (Car battery)	–	–		10.Car battery +14V DC
	Automatic aerial	14V DC (Max, 500mA)	–		11.Automatic aerial

CIRCUIT FUNCTION DIAGRAM



SERVICE ALIGNMENT PROCEDURE

PLL microprocessor circuit

Equipment required

1. Stabilized power supply (DC 14V)
2. Frequency counter with more than 7 digits

Adjustment in crystal oscillator frequency

(a) Connect the input of frequency counter to TP8. Place the band changeover switch of the receiver in AM position and set receiving frequency to 1404kHz.

(b) Align trimmer capacitor C903 to have the indication of frequency counter be of 1854000Hz. Refer to Fig.1.

Note: If receiving frequency of the receiver is not 1404kHz, let the receiving frequency be added by 450kHz, by performing the alignment of C903 (Trimmer capacitor).
Correctly perform the alignment; otherwise radio and clock will be affected.

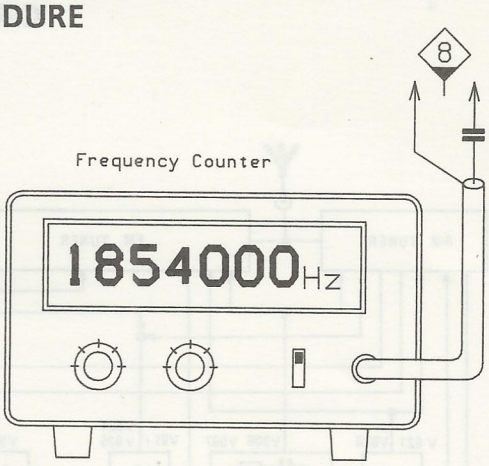


Fig. 1

AM circuit

Equipment required

1. AC V.T.V.M.
2. Stabilized power supply (DC 14V)
3. Sweep generator (450kHz)
4. AM RF S.S.G.
5. DC voltage meter (Zi ≧ 100k ohm)

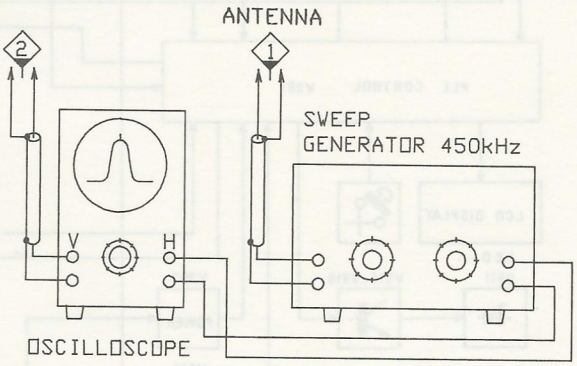


Fig. 2

(A) AM IF alignment

(a) Connect the output of the sweep generator to TP1 or antenna receptacle, and the vertical input of the oscilloscope to TP2.
Let the vertical input of the oscilloscope and output of the sweep generator be AC coupled (Refer to Fig. 3).

(b) Adjust the center frequency of the sweep generator to 450kHz.

(c) When the waveform of the oscilloscope (Fig.4) is confirmed, heighten the input sensitivity of oscilloscope as possible, and lower the output of sweep generator. (At this moment, if the waveform seems to be under the influence of external radio wave, change the receiving frequency of the receiver until the influence is minimized. And then perform IF adjustment).

(d) While viewing the waveform on the oscilloscope, align F701 and F702. Alignment is to be carried out until a maximum and symmetrical waveform is obtained and shown on the scope, where the sharpness of the waveform should not be too high.

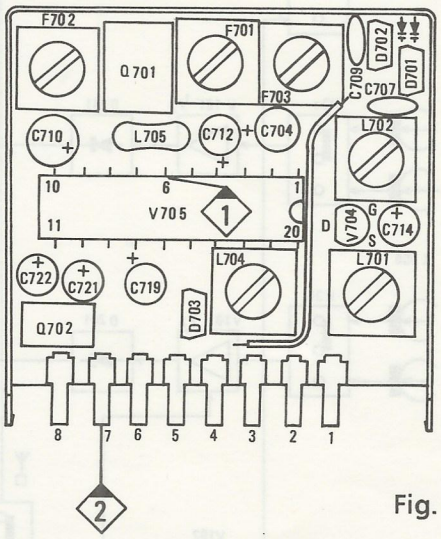


Fig. 3

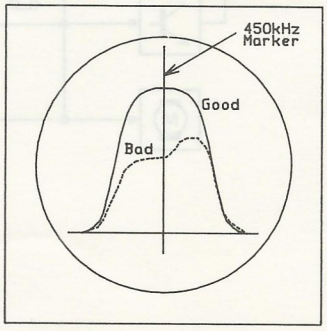


Fig. 4

(B) AM RF (Tracking) alignment

(a) Connect the V.T.V.M. to the speaker output of either channel, and the output of AM RF S.S.G. to antenna through dummy antenna (Fig. 5).

(b) Tuning voltage calibration
Connect DC voltage meter to 4 pin of AM board.
Read the indications of DC voltage meter at the lower limit (522kHz) and upper limit (1629kHz).
Confirm that the voltage values (lower limit and upper limit) are approximately 1.5V and 7V, respectively. If the values obtained are greatly deviated from the standard ones, adjust L704 and C717.

(c) Set the frequency of S.G. to 603kHz exactly. Let the output level be the level of AGC being not working (less than 30uV).

(d) Align L702 (RF coil) and L703 (RF coil) to obtain the maximum output. At this moment, the core positions of L702 and L703 should be memorized.

(e) Set the frequency of S.G. to 1404kHz, and the tuning of the receiver to 1404kHz also. Move C707 and C709 to observe the direction in which the output becomes great.

(f) Repeat the above mentioned procedure several times. (Ensure that quieting sensitivity is within the specification).

Note:

1. If L702 and L703 are shifted slightly, align L703 to obtain the maximum sensitivity. And at this moment, ensure that the upper limit and lower limit of tuning voltage should be in the range of 1V-8.5V.
2. Since D701, D702 and D703 are used as a single set, these three components should be replaced at the same time even if only one of the three is defective.

(C) AM stop signal circuit alignment

Note: In the case of AM, confirmation is made by only performing the alignment of IF and RF.

(a) Connect the output of AM RF signal generator to the antenna, set the frequency of signal generator to 999kHz exactly, perform auto search, change the output level of signal generator, and then confirm whether search stop is conducted correctly or not.

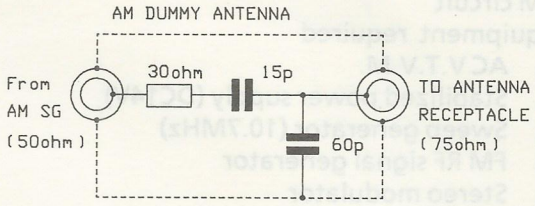


Fig. 5

FM circuit

Equipment required

1. AC V.T.V.M.
2. Stabilized power supply (DC14V)
3. Sweep generator (10.7MHz)
4. FM RF signal generator
5. Stereo modulator
6. DC voltage meter (Zi ≧ 100k ohm)

(A) FM IF alignment

(a) Connect the output of sweep generator to the antenna, and the vertical input of oscilloscope to the TP6. (Refer to Fig.6).

(b) Set the center frequency of sweep generator to 10.7MHz.

Note: Heighten the input sensitivity of oscilloscope as much as possible. The output level of sweep generator should be set at the level at which the limiter of IF amplifier can not be working.

(c) Align F601 in order that the waveform of the oscilloscope may be the same as that shown in Fig.7. The amplitude of the waveform should be maximum and symmetrical with respect to the vertical axis, and the end portion should be round shaped.

(d) Place C.R circuit in Fig.8 to the vertical input of oscilloscope, and connect the input to TP6. At this moment, the input sensitivity of oscilloscope is lower than that in procedure (b), and the output level of sweep generator will lower further.

(e) Align F621 to have the waveform shown on the oscilloscope be the same as that shown in Fig.9.

(f) Connect the output of FM RF signal generator to the antenna through dummy antenna. Set the frequency of FM RF sweep generator to 98.1MHz exactly, and tune the receiver to 98.1MHz as well. Let the output level of FM RF sweep generator be 1mV. Refer to Fig.10.

(g) Connect DC voltage meter to TP3 and TP4. The voltage range of the meter should be set lower than 0.5V and then align F621 until the indication of voltage meter is at 0V.

(B) FM RF board alignment

(a) Connect FM RF S.G. to the antenna of the receiver through dummy antenna, and AC V.T.V.M. to the speaker output of either channel.

(b) Set the output level of FM RF signal generator to 3uV, and modulation to 1kHz deviation (30%). Adjust VOL of the receiver to the adequate position in accordance with indication of AC V.T.V.M.

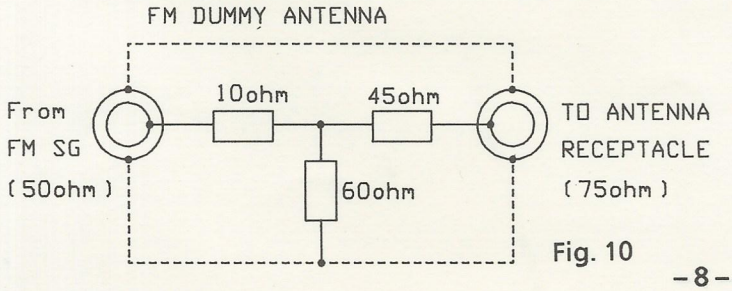


Fig. 10

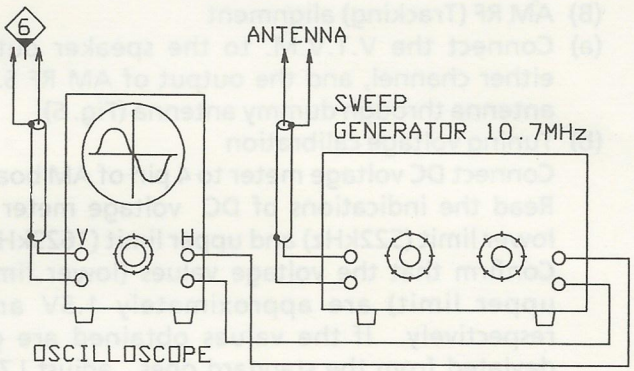


Fig. 6

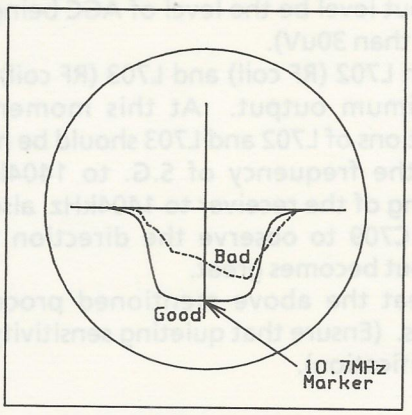


Fig. 7

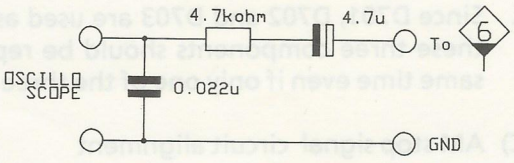


Fig. 8

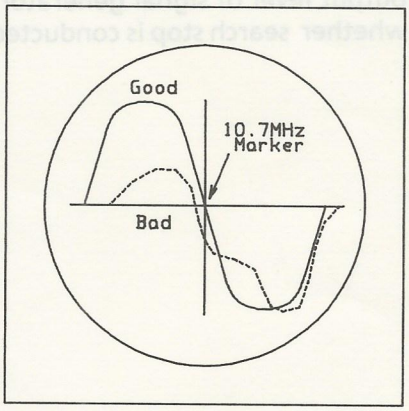


Fig. 9

(c) Tuning voltage calibration
Connect DC voltage meter to terminal No.4 of FM RF. Set the tuning of the receiver to 87.5MHz. Record the reading of DC voltage meter, then change the tuning of the receiver to 108.0MHz and in turn record the reading of DC voltage meter. Confirm that the two voltage values are to be approximately 1.5V and 7V, respectively. If the values indicated are greatly deviated from the standard ones, adjust L604 and C623.

Note: Since 1.2V and 9V are the allowably extreme values, reconfirmation must be made should L604 or C623 be moved for further alignment.

(d) Tune the frequency of FM RF signal generator to 88.1MHz exactly, and the tuning of the receiver to 88.1MHz as well. Align L601 (Antenna coil) and L603 (RF coil) to obtain the maximum indication of the V.T.V.M.

(e) Tune the frequency of FM RF signal generator to 107.9MHz, and the tuning of the receiver to 107.9MHz as well. Move L601 and L603 to observe the reading of the V.T.V.M. If the indication of the V.T.V.M. increases when the density of coils winding decreases (becomes coarse), replace C604 and C615 with other capacitors having smaller capacity, and then perform the alignment of procedure (d). To the contrary, when the density of coils winding increases (becomes dense), replace C604 and C615 with other capacitors having larger capacity.

(f) Repeat the alignment of procedure (d) and (e) to obtain the maximum indication of the V.T.V.M.

Note: Since C604, C615 and C623 are chip capacitors, soldering iron used in soldering should be less than 30W, and the temperature of the iron tip should be less than 280°C.
Do not touch ceramic part directly with iron tip when performing operation.

Note:

1. If the change of indication of the V.T.V.M. is only a bit when moving L601 and L603 for adjustment, adjust L604 at 88.1MHz to obtain maximum sensitivity.
2. The characteristics of D601, D602 and D603 are similar so that the three components should be replaced at the same time even if only one of the three is defective or damaged. Otherwise, the specified performance may not be obtained even the above mentioned adjustments are performed repeatedly.
3. Whenever (B) FM RF board alignment is done, it must be followed by (A) FM IF alignment.

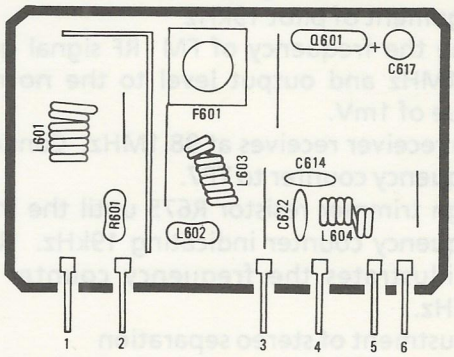


Fig. 11

(C) FM MPX circuit alignment

(a) Alignment of pilot 19kHz

(1) Tune the frequency of FM RF signal generator to 98.1MHz and output level to the no modulation value of 1mV.
The receiver receives at 98.1MHz. Connect a digital frequency counter to TP7.

(2) Align trimmer resistor R675 until the indication of frequency counter indicating 19kHz. Refer to Fig. 12 illustrates the frequency counter indicating 19kHz.

(b) Adjustment of stereo separation

(1) Connect MPX filter (19kHz, 38kHz Null filter) between the speaker output and AC V.T.V.M.
Set the output level of FM RF signal generator to 1mV, and set the modulator to 75kHz deviation (10% for pilot signal and 90% for 1kHz main signal L + R).

(2) Tune the mode selector of the stereo modulator to the R channel. Align trimmer resistor R667 to obtain maximum separation.
In case L channel is selected by the mode selector, also perform the adjustment similarly. If the trimmer resistor R667 of the mode selector is set in different positions for R and L channels, align it so that equal separation can be obtained on both channels.

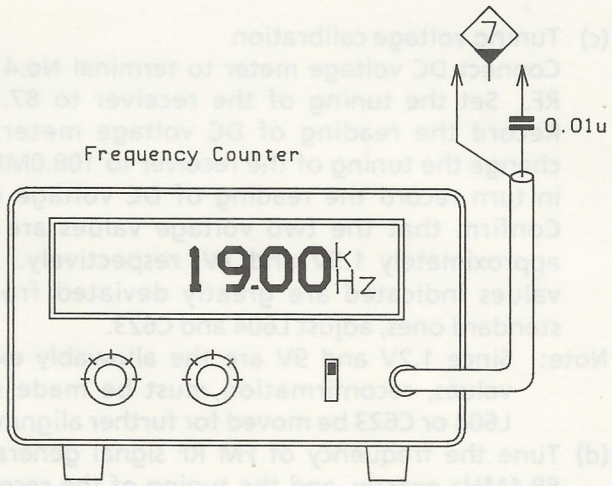


Fig. 12

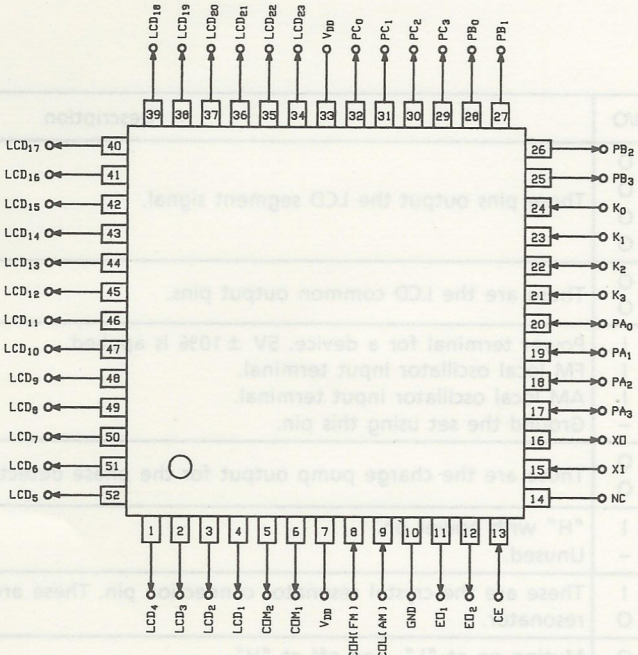
CIRCUIT DESCRIPTION

μPD1708AG-863 (V901)

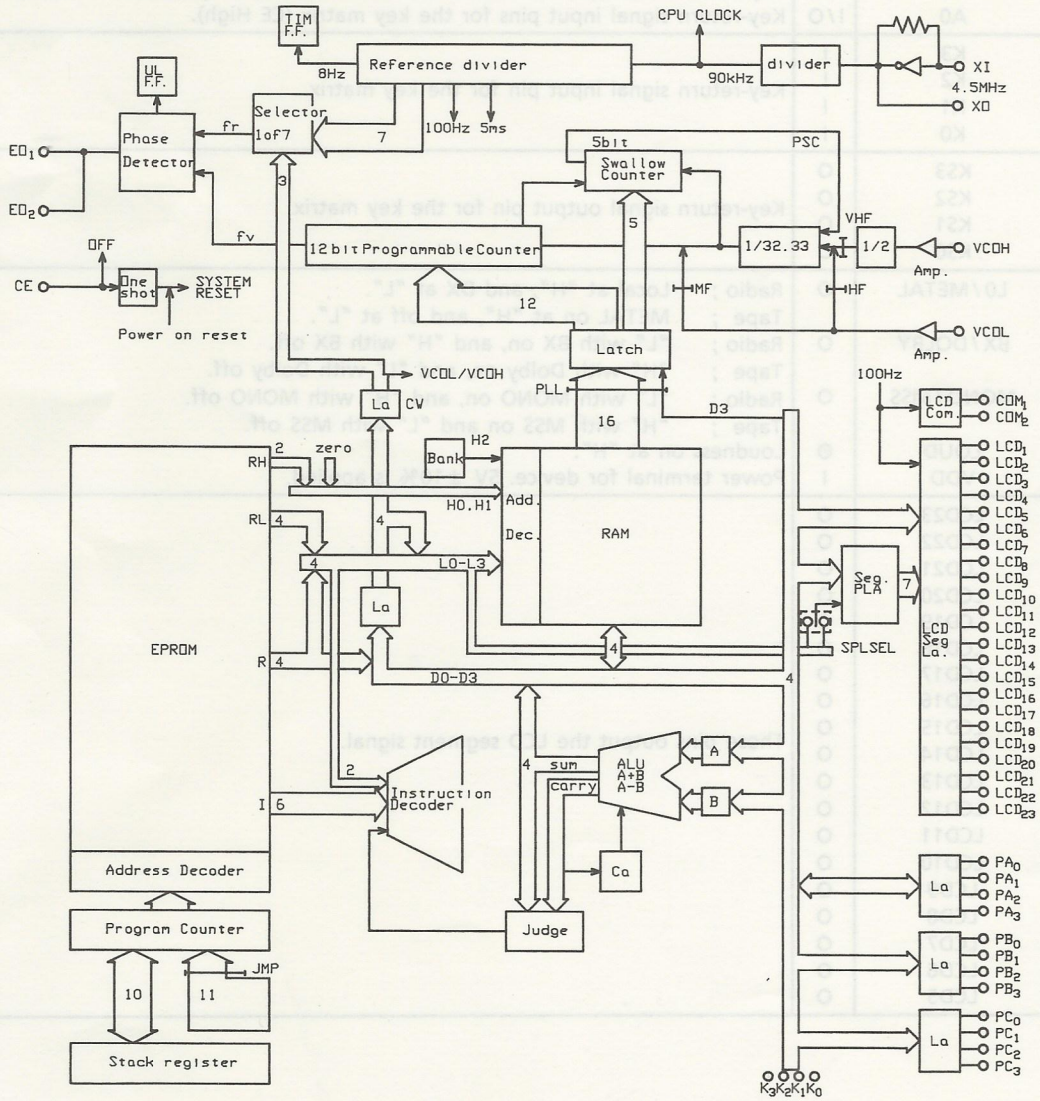
a. Description

No.	Name	I/O	Description
1	LCD4	O	Those pins output the LCD segment signal.
2	LCD3	O	
3	LCD2	O	
4	LCD1	O	
5	COM2	O	Those are the LCD common output pins.
6	COM1	O	
7	VDD	I	Power terminal for a device. 5V ±10% is applied.
8	VCOH	I	FM local oscillator input terminal.
9	VCOL	I	AM local oscillator input terminal.
10	GND	–	Ground the set using this pin.
11	EO1	O	Those are the charge pump output for the phase detector making up the PLL.
12	EO2	O	
13	CE	I	"H" with power on.
14	NC	–	Unused.
15	X1	I	These are the crystal resonator connection pin. These are connected to a 4.5MHz crystal resonator.
16	X0	O	
17	MUTE	O	Muting on at "L", and off at "H".
18	BAND	O	AM at "L", and FM at "H".
19	A1	I/O	Key-return output pins for the initialization diode matrix (CE low → High).
20	A0	I/O	Key-return signal input pins for the key matrix (CE High).
21	K3	I	Key-return signal input pin for the key matrix.
22	K2	I	
23	K1	I	
24	K0	I	
25	KS3	O	Key-return signal output pin for the key matrix.
26	KS2	O	
27	KS1	O	
28	KS0	O	
29	L0/METAL	O	Radio ; Local at "H", and DX at "L". Tape ; METAL on at "H", and off at "L".
30	BX/DOLBY	O	Radio ; "L" with BX on, and "H" with BX off. Tape ; "H" with Dolby on, and "L" with Dolby off.
31	MONO/MSS	O	Radio ; "L" with MONO on, and "H" with MONO off. Tape ; "H" with MSS on and "L" with MSS off.
32	LOUD	O	Loudness on at "H".
33	VDD	I	Power terminal for device. 5V ±10% is applied.
34	LCD23	O	Those pins output the LCD segment signal.
35	LCD22	O	
36	LCD21	O	
37	LCD20	O	
38	LCD19	O	
39	LCD18	O	
40	LCD17	O	
41	LCD16	O	
42	LCD15	O	
43	LCD14	O	
44	LCD13	O	
45	LCD12	O	
46	LCD11	O	
47	LCD10	O	
48	LCD9	O	
49	LCD8	O	
50	LCD7	O	
51	LCD6	O	
52	LCD5	O	

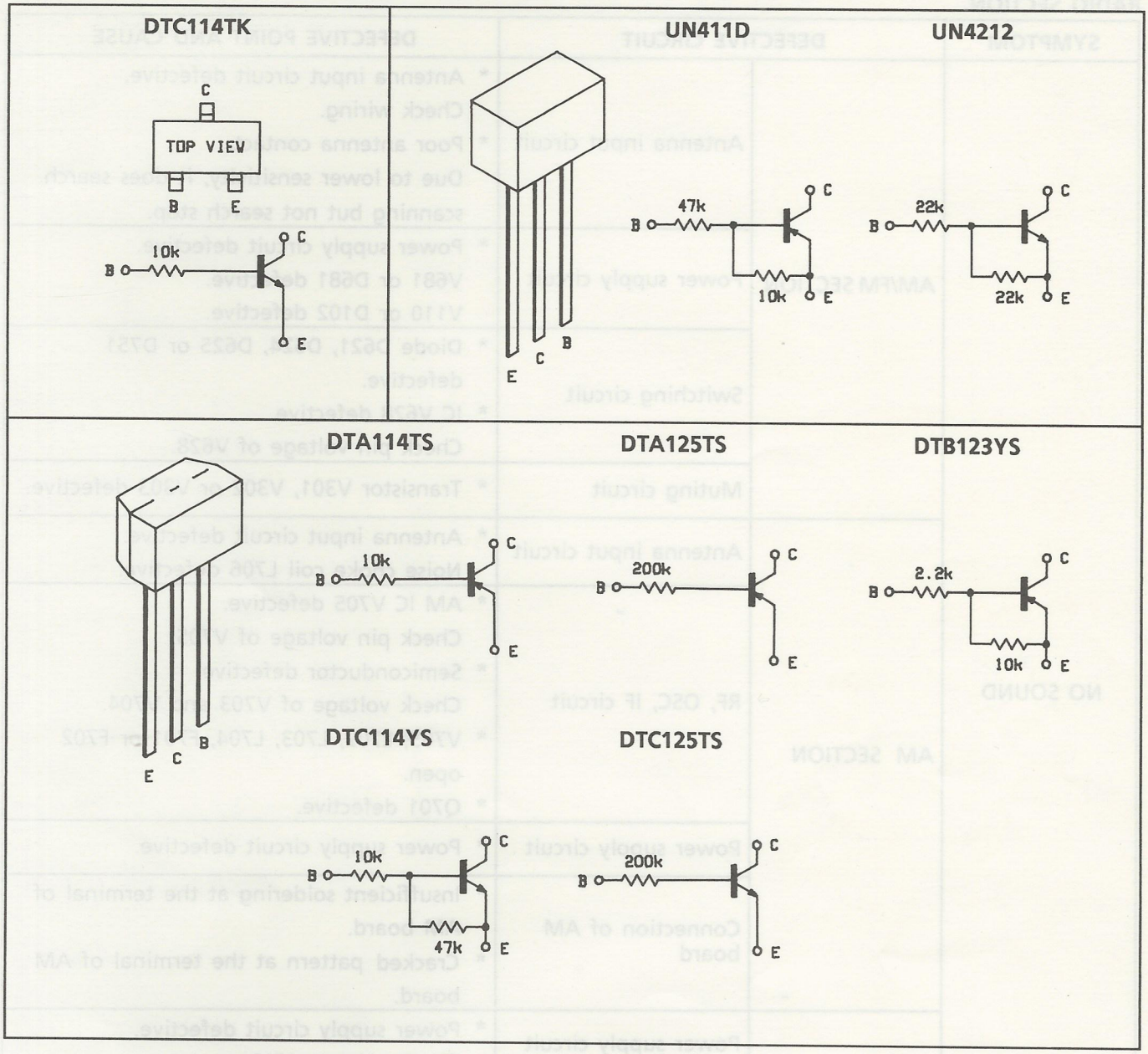
b. Pin configuration



c. Block diagram



DIGITAL TRANSISTOR



TROUBLESHOOTING

RADIO SECTION

SYMPTOM	DEFECTIVE CIRCUIT		DEFECTIVE POINT AND CAUSE
NO SOUND	AM/FM SECTION	Antenna input circuit	* Antenna input circuit defective. Check wiring. * Poor antenna contact. Due to lower sensitivity, it does search scanning but not search stop.
		Power supply circuit	* Power supply circuit defective. V681 or D681 defective. V110 or D102 defective.
		Switching circuit	* Diode D621, D624, D625 or D751 defective. * IC V628 defective. Check pin voltage of V628.
		Muting circuit	* Transistor V301, V302 or V303 defective.
	AM SECTION	Antenna input circuit	* Antenna input circuit defective. Noise choke coil L706 defective.
		RF, OSC, IF circuit	* AM IC V705 defective. Check pin voltage of V705. * Semiconductor defective. Check voltage of V703 and V704. * V703, L702, L703, L704, F701 or F702 open. * Q701 defective.
		Power supply circuit	* Power supply circuit defective.
		Connection of AM board	* Insufficient soldering at the terminal of AM board. * Cracked pattern at the terminal of AM board.
	FM SECTION	Power supply circuit	* Power supply circuit defective. Check voltage V682.
		RF, OSC circuit	* Semiconductor defective. Check voltage of V601 and V602. * Diode D601, D602 or D603 defective. * L601, L603, L604 or F601 open or insufficient soldering.
		IF circuit	* Semiconductor defective. Check pin voltage of IF IC V623. * F621, Q601 or Q602 defective.
		ASU circuit	* ASU circuit defective. Check pin voltage of ASU IC V627.

TROUBLESHOOTING

SYMPTOM	DEFECTIVE CIRCUIT		DEFECTIVE POINT AND CAUSE
INSUFFICIENT SOUND	AM/FM SECTION	Antenna input circuit	* Poor antenna contact. * Capacitor C600 defective.
		MPX circuit	* MPX circuit defective. Check pin voltage of IC V628.
	AM SECTION	RF, IF circuit	* Deviation in tracking alignment (L702, L703). * Deviation in IF transformer F701 or F702. * Transistor V702, V703 or FET V704 defective. * Diode D701 or D702 defective.
	FM SECTION	RF, IF circuit	* Deviation in tracking alignment (L601, L603). * RF amplifier V601 defective. * Diode D602 or D603 defective. * IF transformer F601 defective. * Front end IC V602 or IF IC V623 defective. Check for voltage of V602 and V623. * F601 misalignment. * Capacitor C600 defective.
		ASU circuit	* ASU circuit defective. Check pin voltage of IC V627.
DISTORTED SOUND	AM SECTION	IF circuit	* Q701 defective. * AM IC V705 defective. * F701 or F702 misalignment.
OSCILLATION	FM SECTION	IF circuit	* Misalignment or defective of F621. * Q601 or Q602 defective.
	AM/FM SECTION	Power supply circuit	* Capacitor C681 defective.
	AM SECTION	RF, IF circuit	* Capacitor C705, C720, C723 or C725 defective.
	FM SECTION	RF, IF circuit	* RF circuit defective. Capacitor C605, C606, C613, C616, C618 or C627 defective. * IF circuit defective. Capacitor C629, C632, C633 or C634 defective.
POOR NB		NB circuit	* NB IC V627 defective. Check pin voltage of V627. * Capacitor C657, C658, C659 or C660 defective. * Capacitor C663 defective.

TROUBLESHOOTING

SYMPTOM	DEFECTIVE CIRCUIT		DEFECTIVE POINT AND CAUSE
POOR MUTE IN SEARCH SCANNING AND AM/FM SWITCH POP NOISE	MUTE SECTION		* Semiconductor defective. Transistor V301, V302 or V303 defective. Diode D301 defective. * Capacitor C301 open.
POOR STEREO EFFECT		NB circuit	* NB IC V627 defective. Check pin voltage of V627. * Capacitor C653, C654, C655 or C656 defective.
		MPX circuit	* MPX IC V628 defective. Check pin voltage of V628. * R667 and R674 misalignment.
INDICATOR DOES NOT LIGHT	LCD SECTION		* Check the wiring of indicator circuit. * Regulator IC V1 defective. Check pin voltage of V1. * Insufficient soldering at the terminal of LCD panel. * PLL IC V901 defective. * LCD panel defective.
	STEREO INDICATOR		* Check the wiring of stereo indicator circuit. * Transistor V904 or diode D909 defective. * MPX IC V628 defective. * PLL IC V901 defective.
LESS SENSITIVITY DRIFT OCCURS WITH AIR CONDITIONER IS ON			* If the set was installed near the blower of the air conditioner, the sensitivity drift will be created by the temperature (Hot or Cold). Avoid installing the set near air conditioner is unavoidable, isolate the set by isolating material from the air conditioner.
ENGINE NOISE IS EXTREME	MOTOR COMPARTMENT		* Missing or poor connection of resistor wire on high tension coil of car. Insert noise preventing resistor between ignition coil and distributor of car. * Missing or poor connection of noise silencer by alternator of car. Install specified noise silencer on the alternator. * Missing or poor connection of grounding wire between engine chassis and engine, transmission and engine chassis of car.
	ANTENNA GROUND CIRCUIT		* Missing or poor connection of grounding wire for antenna to grounding point of the car chassis.

TROUBLESHOOTING

TAPE SECTION

SYMPTOM	DEFECTIVE CIRCUIT	DEFECTIVE POINT AND CAUSE
NO SOUND	Power supply circuit	* Switch H2 defective.
	Mechanism or motor	* Motor does not run. Motor defective. Resistor R3 defective. * Mechanism defective. Check for running of tape.
	Pre amplifier circuit	* Pre amplifier defective. Check each pin voltage of pre amplifier IC V101. * Leakage of large amount of DC current into capacitor C104 or C204. * Head lead wire open. * Capacitor C106 short.
DISTORTED SOUND OR INSUFFICIENT SOUND	Pre amplifier circuit	* Pre amplifier circuit defective. Check each pin voltage of pre amplifier IC V101.
	Head	* Head surface dirty. * Head azimuth angle misalignment.
OSCILLATION	Pre amplifier circuit	* C101, C102, C105, C201, C202 OR C205 capacity insufficient or open.
ABNORMAL TAPE SPEED	Mechanism or motor	* Mechanism defective. * Motor defective.
WOW AND FLUTTER	Flywheel drive section	* Flywheel, capstan or intermediate gear defective. * Reel table defective. * Belt, pinchroller, idler, flyweel or pully defective. * Motor defective.
NO SELECTION	Cassette program selection circuit	* Cassette program selection defective.
DOES NOT WORK FUNCTION SWITCHES	ATR mechanism	* H3 defective. * Does not reverse when program selector is depressed. * ATR mechanism defective. * Does not reverse when the end of tape comes.

TROUBLESHOOTING

RADIO AND TAPE SECTION

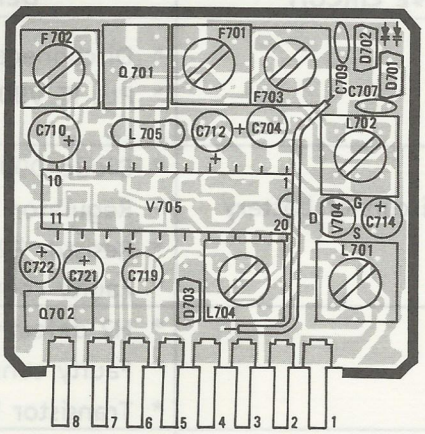
SYMPTOM	DEFECTIVE CIRCUIT	DEFECTIVE POINT AND CAUSE
NO SOUND	Power supply circuit	* Fuse open. * Faulty connection between battery. * Switch H1 defective. * Choke transformer L1 lead wire cold soldered.
	Output circuit	* Speaker voice coil open. * Faulty connection between speaker and connection core. * Power amplifier IC V141 defective. Check each pin voltage of IC V141.
	Control circuit	* Variable resistor R124, R125, R126, R224 or R225 defective.
	Flat amplifier circuit	* Flat amplifier circuit defective. Check voltage of transistor V112 and V212.
	Switching circuit	* Diode D101, D201, D624 or D625 defective.
	Muting circuit	* Transistor V301, V302 or V303 defective.
DISTORTED SOUND OR INSUFFICIENT SOUND	Output circuit	* Power amplifier circuit defective. Check each pin voltage of V141. * Capacitor C145 or C245 defective.
	Control circuit	* Variable resistor R124, R125, R126, R224 or R225 defective.
	Flat amplifier circuit	* Flat amplifier circuit defective. Check voltage of transistor V112 and V212.
OSCILLATION	Output circuit	* C1 or C246 capacitor insufficient or open. C143 or C243 capacity insufficient. R142 or R242 resistance insufficient.
ENGINE NOISE IS EXTREME	Power supply circuit	* Missing or poor connection of ground wire. * C1, C2, C3, C106, C115, C116, C146 or C246 capacity insufficient. * R1 resistance insufficient. * Transistor V110 or zener diode D102 defective. Check voltage of transistor V110.

TROUBLESHOOTING

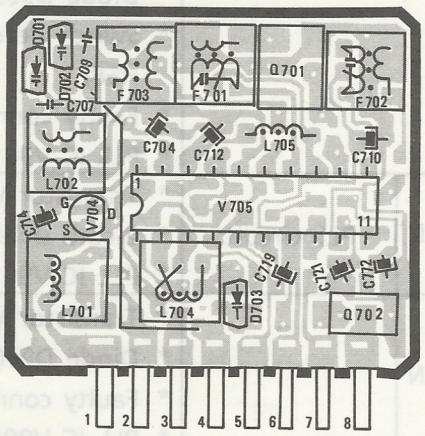
CONTROL SECTION

SYMPTOM	DEFECTIVE CIRCUIT		DEFECTIVE POINT AND CAUSE
CONTENTS OF THE MEMORY IS LOST			* Disconnection of back-up wire. * PLL IC V901 defective.
DISPLAY NEITHER TIME NOR FREQUENCY	Power supply circuit or battery back-up circuit		* Diode D901, D902 defective. * Regulator IC V1 defective. * Resistor R2 defective. * Faulty connection to the 4-pin socket (N4).
DISPLAY DOES NOT CHANGE			* H2 defective. * Faulty connection to the 11-pin socket (N5). * Transistor V903 or D908 defective.
MANUAL TUNING INOPERATIVE			* Faulty connection to the 11-pin socket (N5). * H51 or H52 defective.
PRESETTING OR SELECTION OF PRESET STATIONS INOPERATIVE			* Diode D903, D904, D905, D906 defective. * Switch defective (H53, H54, H55, H56, H57, H58). * Faulty connection to the 11-pin socket (N5). * PLL IC V901 defective.
NO SEARCH SEEKING	AM / FM SECTION	PLL circuit	* Transistor V906, V907 defective. * 2-core shielding wire cold soldered. * PLL IC V901 defective.
THE UNIT SEARCH SEEKS BUT DOES NOT STOP	AM / FM SECTION	Stop circuit	* Transistor V625 or V905 defective. * Diode D910 defective. * Faulty connection to the 6-pin socket (N3). * PLL IC V901 defective.
	AM SECTION		* C753, D750 or D753 defective. * AM IC V705 defective. * Ceramic filter Q702 defective.
	FM SECTION		* Transistor V624 defective. * IF IC V623 defective.

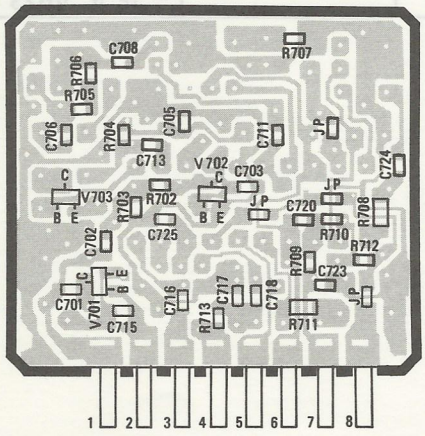
AM CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW



BOTTOM VIEW

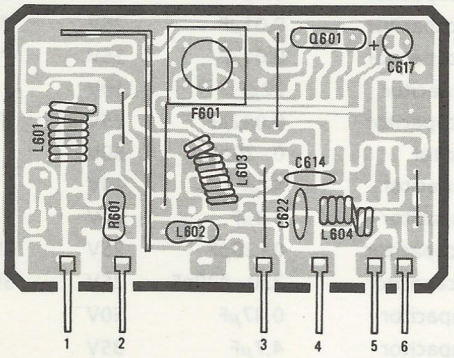


CHIP VIEW

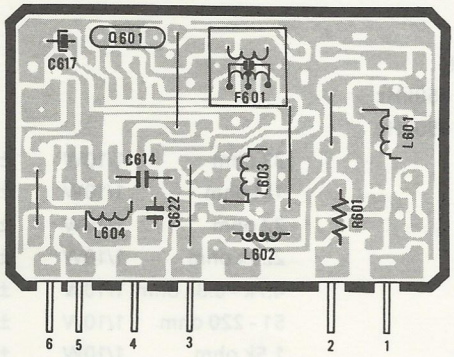
REF. NO. 25 AR-0210-1 AM CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION				PART NO.	MFR'S NO.
-	AM printed circuit board					440-1658-0000
C701	Chip ceramic capacitor	0.0018μF	25V	YF		265-182M-1EJF-200
C702, 711, 713, 720	Chip ceramic capacitor	0.01μF	25V	YB		265-103K-1EJB-200
C703, 706, 708, 715, 724	Chip ceramic capacitor	0.01μF	25V	YF		265-103M-1EJF-200
C704, 714	Electrolytic capacitor	22μF	10V			250-220M-1A00-012
C705, 716	Chip ceramic capacitor	0.022μF	25V	YF		265-223M-1EJF-201
C707, 709	Ceramic capacitor	0 - 20pF	50V			265-7R0K-1HTH-200
C710	Electrolytic capacitor	47μF	10V			250-470M-1A00-021
C712, 721	Electrolytic capacitor	3.3μF	50V			250-3R3M-1H00-010
C717	Chip ceramic capacitor	0 - 20pF	25V	SH		265-120K-1ESH-200
C718	Chip ceramic capacitor	330 - 430pF	25V	SH		265-391K-1ESH-200
C719	Electrolytic capacitor	0.47μF	50V			250-R47M-1H00-010
C722	Electrolytic capacitor	4.7μF	35V			250-4R7M-1F00-010
C723 725	Chip ceramic capacitor	0.022μF	25V	YB		265-223K-1EJB-201
D701, 702, 703	Variable capacitance diode SVC321SP				ETD-SVC321SP	305-0014-1000
F701	AM 1st IFT				ELD-0309	351-0309-1300
F702	AM 2nd IFT				ELD-0310	351-0310-1300
L701	ANT coil				ELD-0330	351-0330-1300
L702	1st RF coil				ELD-0346	351-0346-1300
L703	2nd RF coil				ELD-0332	351-0332-1300
L704	OSC coil				ELD-0333	351-0333-1300
L705	Inductor 56uH				ELD-0343	351-0343-1200
Q701	Ceramic filter 450kHz				EOP-0016	360-0016-0400
Q702	Ceramic filter 450kHz				EOP-0017	361-0017-0400
R702	Chip resistor	33 ohm	1/10W	±5%		202-330J-2A00-050
R703	Chip resistor	1M ohm	1/10W	±5%		202-105J-2A00-050
R704	Chip resistor	22 ohm	1/10W	±5%		202-220J-2A00-050
R705, 706	Chip resistor	220k ohm	1/10W	±5%		220-224J-2A00-050
R707	Chip resistor	4.7k - 6.8k ohm	1/10W	±5%		202-682J-2A00-050
R708	Chip resistor	51 - 220 ohm	1/10W	±5%		202-101J-2A00-050
R709	Chip resistor	1.5k ohm	1/10W	±5%		202-152J-2A00-050
R710	Chip resistor	10k ohm	1/10W	±5%		202-103J-2A00-050
R711, 712	Chip resistor	82 ohm	1/10W	±5%		202-820J-2A00-050
R713	Chip resistor	100k ohm	1/10W	±5%		202-104J-2A00-050
V701	Transistor DTC114TK				ETTC-DTC114TK	302-0152-0000
V702, 703	Transistor 2SC2814(F4)				ETTC-2SC2814	302-0083-1200-006
V704	FET 2SK163(M)				ETTF-2SK163	300-0043-1200
V705	AM IC LA1135				ETI-LA1135	310-0148-0000

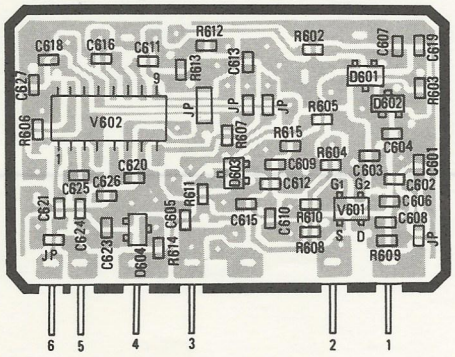
FM RF CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW



BOTTOM VIEW

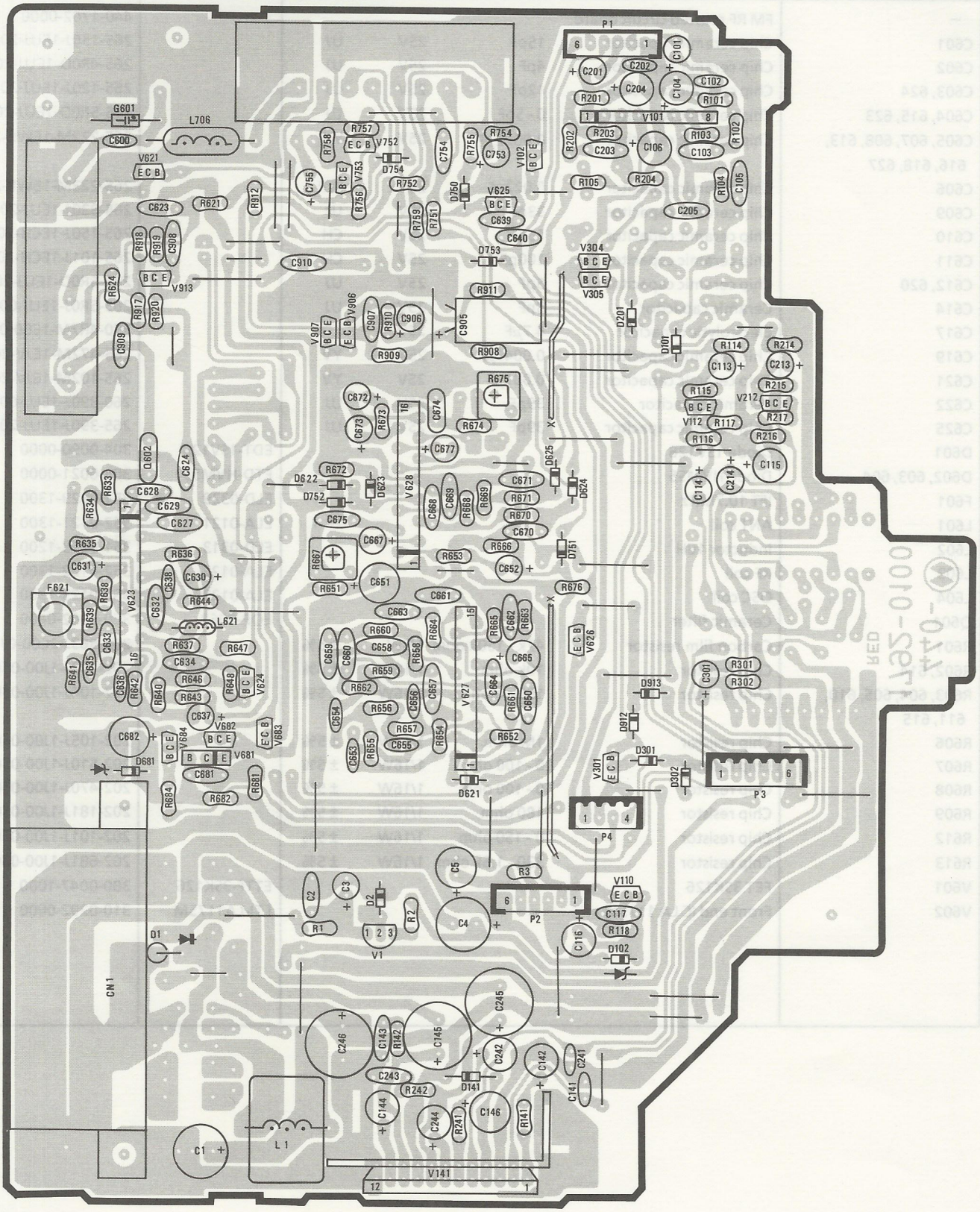


CHIP VIEW

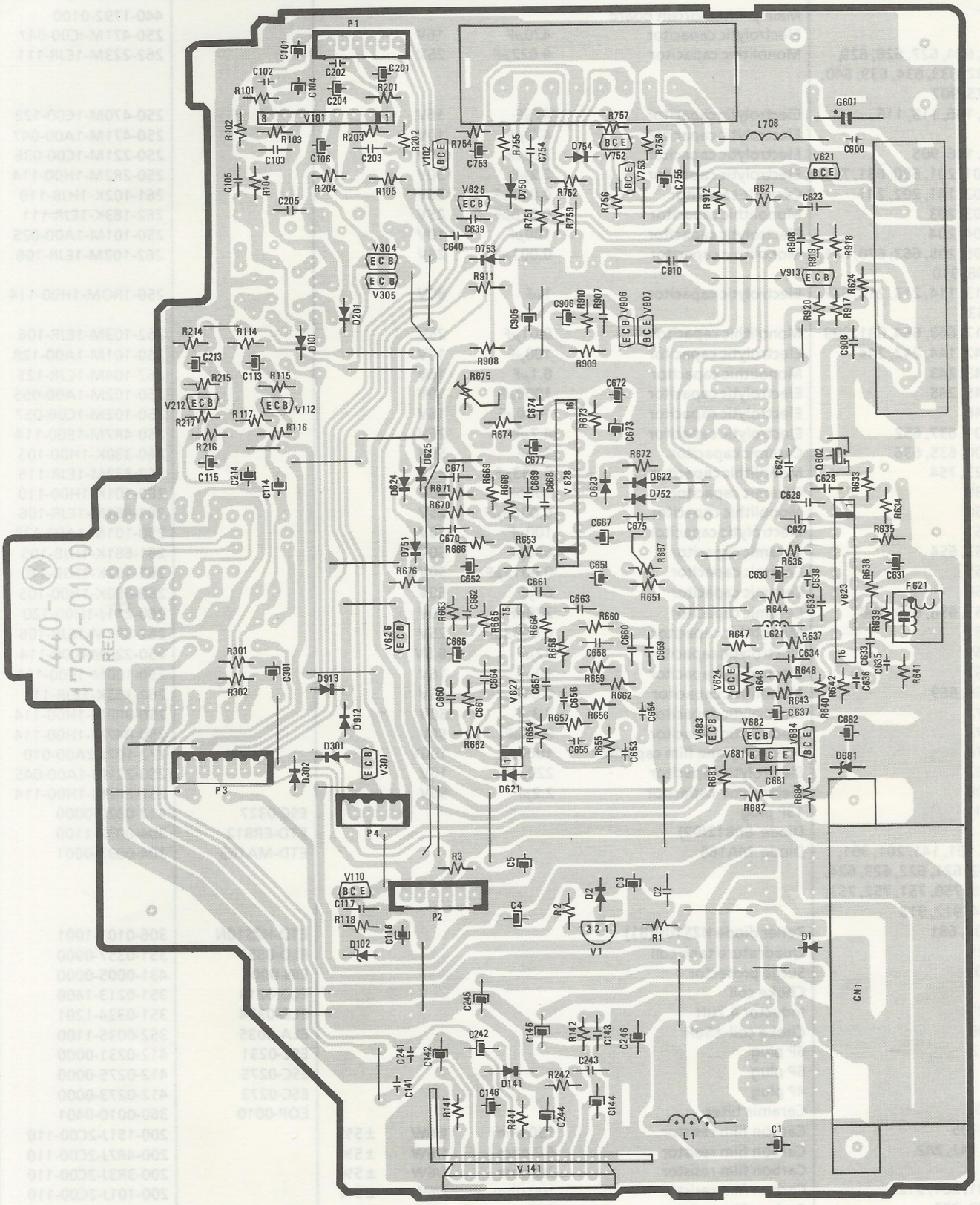
REF. NO. 26 AR-0217-1 FM RF CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION				PART NO.	MFR'S NO.
–	FM RF printed circuit board					440-1702-0000
C601	Chip ceramic capacitor	15pF	25V	UJ		265-15QJ-1EUJ-200
C602	Chip ceramic capacitor	4pF	25V	UJ		265-4R0D-1EUJ-200
C603, 624	Chip ceramic capacitor	12pF	25V	UJ		265-120J-1EUJ-200
C604, 615, 623	Chip ceramic capacitor	0 - 5pF	25V	UJ		265-5R0D-1EUJ-200
C605, 607, 608, 613, 616, 618, 627	Chip ceramic capacitor	0.0022μF	25V	WR		265-222M-1EWR-200
C606	Chip ceramic capacitor	0.022μF	25V	WR		265-223M-1EWR-200
C609	Chip ceramic capacitor	33pF	25V	UJ		265-330J-1EUJ-200
C610	Chip ceramic capacitor	15pF	25V	CH		265-150J-1ECH-200
C611	Chip ceramic capacitor	100pF	25V	CH		265-101J-1ECH-200
C612, 620	Chip ceramic capacitor	5pF	25V	UJ		265-5R0D-1EUJ-200
C614	Ceramic capacitor	5pF	25V	UJ		265-5R0J-1EUJ-005
C617	Electrolytic capacitor	4.7μF	25V			250-4R7M-1E00-010
C619	Chip ceramic capacitor	0.0047μF	25V	YV		265-472M-1EJV-200
C621	Chip ceramic capacitor	0.001μF	25V	YV		265-102M-1EJV-200
C622	Ceramic capacitor	39pF	25V	UJ		260-390J-1EUJ-005
C625	Chip ceramic capacitor	39pF	25V	UJ		265-390J-1EUJ-200
D601	Diode 1SV128				EDT-1SV128	304-0090-0000
D602, 603, 604	Diode HVM55				ETD-HVM55	305-0021-0000
F601	IFT 10.7MHz				ELD-0329	351-0329-1300
L601	ANT coil				ELA-0121	352-0121-1300
L602	Inductor 1uH				ELD-0313	351-0313-1200
L603	RF coil				ELA-0122	352-0122-1300
L604	OSC coil				ELA-0123	352-0123-1300
Q601	Ceramic filter				EOP-0062	360-0062-0400
R601	Carbon film resistor	47k - 150k ohm	1/6W	±5%		200-563J-2C00-010
R602, 614	Chip resistor	10k ohm	1/16W	±5%		202-103J-1J00-050
R603, 604, 605, 610, 611, 615	Chip resistor	100k ohm	1/16W	±5%		202-104J-1J00-050
R606	Chip resistor	1M ohm	1/16W	±5%		202-105J-1J00-050
R607	Chip resistor	0 - 100 ohm	1/16W	±5%		202-510J-1J00-050
R608	Chip resistor	0 - 100 ohm	1/16W	±5%		202-470J-1J00-050
R609	Chip resistor	180 ohm	1/16W	±5%		202-181J-1J00-050
R612	Chip resistor	0 - 150 ohm	1/16W	±5%		202-101J-1J00-050
R613	Chip resistor	330 - 1.5k ohm	1/16W	±5%		202-681J-1J00-050
V601	FET 3SK126				ETTF-3SK126	300-0047-1000
V602	Front end IC LA 1175M				ETI-LA1175M	310-0292-0000

MAIN CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW


440-1792-0100
RED
P1
P2
P3
P4
V101
V102
V304
V305
V625
V626
V627
V628
V621
V623
V913
V907
V906
V752
V753
V212
V112
V301
V110
V141
V1
V624
V683
V682
V684
V681
CN1
G601
L706
C600
Q802
F621
L621
L1
C1
R1
R2
R3
D1
D2
C2
C3
C4
C5
D621
D102
D141
D301
D302
D912
D913
D201
D101
D625
D624
D622
D752
D753
D754
D750
D751
D623
D1
D2

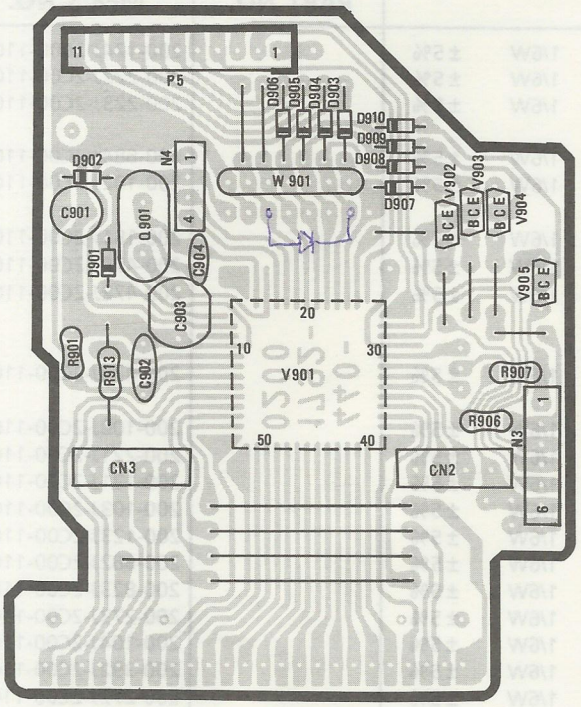
BOTTOM VIEW

REF. NO. 28 CTP-1822-3 MAIN CIRCUIT BOARD ASSEMBLY PARTS LIST

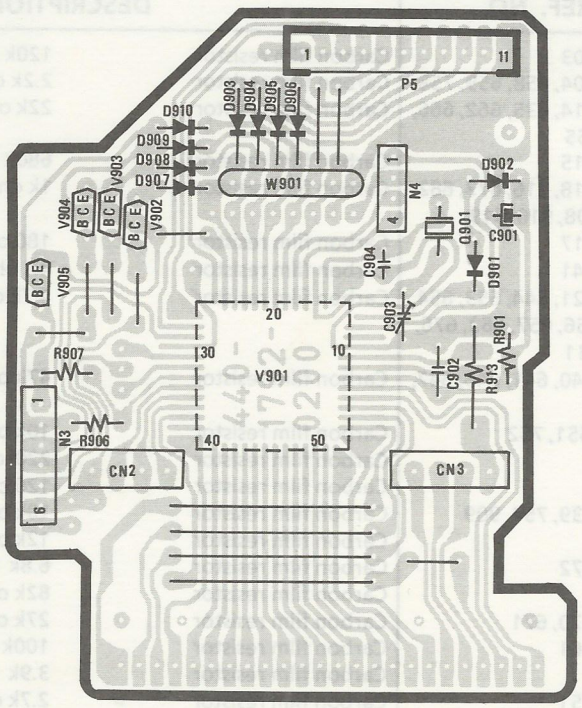
REF. NO.	DESCRIPTION				PART NO.	MFR'S NO.
—	Main printed circuit board					440-1792-0100
C1	Electrolytic capacitor	470μF	16V			250-471M-IC00-047
C2, 624, 627, 628, 629, 632, 633, 634, 639, 640, 675, 907	Monolithic capacitor	0.022μF	25V			262-223M-1EJR-111
C3, 106, 115, 116	Electrolytic capacitor	47μF	16V			250-470M-1C00-122
C4	Electrolytic capacitor	470μF	10V			250-471M-1A00-047
C5, 146, 905	Electrolytic capacitor	220μF	16V			250-221M-1C00-036
C101, 201, 630, 631, 755	Electrolytic capacitor	2.2μF	50V			250-2R2M-1H00-114
C102, 141, 202, 241	Ceramic capacitor	0.001μF	50V			261-102K-1HJB-110
C103, 203	Monolithic capacitor	0.018μF	25V			262-183K-1EJR-111
C104, 204	Electrolytic capacitor	100μF	10V			250-101M-1A00-025
C105, 205, 662, 670, 671, 908, 910	Monolithic capacitor	0.001μF	25V			262-102M-1EJR-106
C113, 114, 213, 214, 677, 753	Electrolytic capacitor	1μF	50V			250-1ROM-1H00-114
C117, 663, 664, 681, 909	Monolithic capacitor	0.01μF	25V			262-103M-1EJR-106
C142, 144, 242, 244	Electrolytic capacitor	100μF	10V			250-101M-1A00-128
C143, 243	Monolithic capacitor	0.1μF	16V			262-104M-1CJR-125
C145, 245	Electrolytic capacitor	1000μF	10V			250-102M-1A00-055
C246	Electrolytic capacitor	1000μF	16V			250-102M-1C00-057
C301, 637, 652	Electrolytic capacitor	4.7μF	25V			250-4R7M-1E00-114
C600, 635, 636	Ceramic capacitor	33pF	50V			260-330K-1H00-105
C623, 754	Monolithic capacitor	0.033μF	25V			262-333M-1EJR-116
C638	Ceramic capacitor	100pF	50V			260-101K-1H00-110
C650	Monolithic capacitor	0.0068μF	25V			262-682M-1EJR-106
C651	Electrolytic capacitor	100μF	10V			250-101M-1A00-133
C653, 654	Ceramic capacitor	680pF	50V			261-681K-1HJB-105
C655	Ceramic capacitor	0.0012μF	50V			261-122K-1HJB-110
C656	Ceramic capacitor	68pF	50V			260-680K-1H00-105
C657, 658, 659, 660	Ceramic capacitor	270pF	50V			260-271J-1H00-120
C661	Monolithic capacitor	0.0033μF	25V			262-332M-1EJR-106
C665	Electrolytic capacitor	22μF	6.3V			250-220M-0J00-114
C667	Electrolytic capacitor	10μF	16V			250-100M-1C00-114
C668, 669	Monolithic capacitor	0.015μF	25V			262-153K-1EJR-111
C672	Electrolytic capacitor	3.3μF	50V			250-3R3M-1H00-114
C673	Electrolytic capacitor	0.47μF	50V			250-R47M-1H00-114
C674	Polypropylene film capacitor	1000pF	100V			272-102J-2A00-010
C682	Electrolytic capacitor	220μF	10V			250-221M-1A00-045
C906	Electrolytic capacitor	2.2μF	50V			252-2R2M-1H00-114
CN1	13P plug				ESC-0327	412-0327-0000
D1	Diode ERB12(02)				ETD-ERB12	304-0032-1100
D2, 101, 141, 201, 301, 302, 621, 622, 623, 624, 625, 750, 751, 752, 753, 754, 912, 913	Diode MA165				ETD-MA165	304-0037-0001
D102, 681	Zener diode HZS10N(B1)				ETD-HZS10N	306-0101-1001
F621	Quadrature tank coil				ELD-0357	351-0357-0900
G601	Surge protector				EIN-0005	431-0005-0000
L1	Choke coil				ELD-0213	351-0213-1400
L621	Inductor 4.7uH				ELD-0334	351-0334-1201
L706	Choke coil 15uH				ELA-0035	352-0035-1100
P1, 2	6P plug				ESC-0231	412-0231-0000
P3	6P plug				ESC-0275	412-0275-0000
P4	4P plug				ESC-0273	412-0273-0000
Q602	Ceramic filter				EOP-0010	360-0010-0401
R1, 105	Carbon film resistor	150 ohm	1/6W	±5%		200-151J-2C00-110
R2, 142, 242	Carbon film resistor	4.7 ohm	1/6W	±5%		200-4R7J-2C00-110
R3	Carbon film resistor	3.3 ohm	1/6W	±5%		200-3R3J-2C00-110
R101, 201, 912	Carbon film resistor	100 ohm	1/6W	±5%		200-101J-2C00-110
R102, 202	Carbon film resistor	8.2k ohm	1/6W	±5%		200-822J-2C00-110

REF. NO.	DESCRIPTION				PART NO.	MFR'S NO.
R103, 203	Carbon film resistor	120k ohm	1/6W	±5%		200-124J-2C00-110
R104, 204, 658, 659, 758	Carbon film resistor	2.2k ohm	1/6W	±5%		200-222J-2C00-110
R114, 214, 635, 662, 666, 684, 755	Carbon film resistor	22k ohm	1/6W	±5%		200-223J-2C00-110
R115, 215	Carbon film resistor	680k ohm	1/6W	±5%		200-684J-2C00-110
R116, 118, 216, 673, 682, 757, 908, 910, 919	Carbon film resistor	1k ohm	1/6W	±5%		200-102J-2C00-110
R117, 217	Carbon film resistor	180 ohm	1/6W	±5%		200-181J-2C00-110
R141, 241	Carbon film resistor	47 ohm	1/6W	±5%		200-470J-2C00-110
R301, 621, 644, 653, 654, 655, 656, 657, 663, 676, 756, 911	Carbon film resistor	4.7k ohm	1/6W	±5%		200-472J-2C00-110
R302, 640, 641, 646, 647, 665	Carbon film resistor	47k ohm	1/6W	±5%		200-473J-2C00-110
R624, 651, 752	Carbon film resistor	10k ohm	1/6W	±5%		200-100J-2C00-110
R633	Carbon film resistor	220 ohm	1/6W	±5%		200-221J-2C00-110
R634	Carbon film resistor	120 ohm	1/6W	±5%		200-121J-2C00-110
R636, 639, 754, 909	Carbon film resistor	10k ohm	1/6W	±5%		200-103J-2C00-110
R637	Carbon film resistor	12k ohm	1/6W	±5%		200-123J-2C00-110
R638, 672	Carbon film resistor	6.8k ohm	1/6W	±5%		200-682J-2C00-110
R642	Carbon film resistor	82k ohm	1/6W	±5%		200-823J-2C00-110
R643, 670, 671	Carbon film resistor	27k ohm	1/6W	±5%		200-273J-2C00-110
R648, 661	Carbon film resistor	100k ohm	1/6W	±5%		200-104J-2C00-110
R652	Carbon film resistor	3.9k ohm	1/6W	±5%		200-392J-2C00-110
R660, 751	Carbon film resistor	2.7k ohm	1/6W	±5%		200-272J-2C00-110
R664	Carbon film resistor	18k ohm	1/6W	±5%		200-183J-2C00-110
R667	Trimmer resistor	20k ohm-B			ECRV-1006	340-1006-0200
R668, 669, 759, 917, 918	Carbon film resistor	3.3k ohm	1/6W	±5%		200-332J-2C00-110
R674	Carbon film resistor	16k ohm	1/6W	±5%		200-163J-2C00-110
R675	Trimmer resistor	5k ohm-B			ECRV-1004	340-1004-0200
R681	Carbon film resistor	2.2 ohm	1/6W	±5%		200-2R2J-2C00-110
R920	Carbon film resistor	330 ohm	1/6W	±5%		200-331J-2C00-110
V1	Regulator IC AN8005				ETI-AN8005	310-0243-0000
V101	Pre amplifier IC LA3161				ETI-LA3161	310-0071-0000
V102, 621, 626	Transistor UN4212				ETTC-UN4212	302-0216-0001
V110, 112, 212, 624, 684	Transistor 2SC2603 (F)				ETTC-2SC2603	302-0091-1201-006
V141	Power amplifier IC LA4445				ETI-LA4445	310-0317-0000
V301	Transistor UN411D				ETTA-UN411D	301-0095-0001
V304, 305	Transistor UN4215 (R)				ETTC-UN4215	302-0144-1101-066
V623	FM IF IC LA1140B				ETI-LA1140	310-0083-0000
V625	Transistor DTC114YS				ETTC-DTC114YS	302-0131-0001
V627	NB IC LA2110				ETI-LA2110	310-0145-0000
V628	MPX IC LA3370				ETI-LA3370	310-0084-0000
V681	Transistor 2SD973 (R)				ETTD-2SD973	302-0098-1100
V682	Transistor DTB123YS				ETTB-DTB123YS	301-0069-0001
V683	Transistor DTA114TS				ETTA-DTA114TS	301-0048-0001
V752, 753	Transistor DTC125TS				ETTC-DTC125TS	302-0206-0001
V906, 907	Transistor 2SC2458L (BL)				ETTC-2SC2458L	302-0078-1401
V913	Transistor 2SC2786 (L)				ETTC-2SC2786	302-0069-1101-006
	Holder - IC				PL-7404	100-7404-0000
	Jumper resistor					209-0012-0000
	Pan head screw 3 x 10 (P-tight)				006310PT	020-0300-1000-421
	Terminal lug				PP-0521	100-6521-0000

LCD DISPLAY CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW

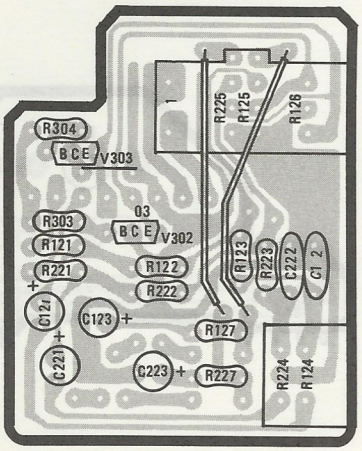


BOTTOM VIEW

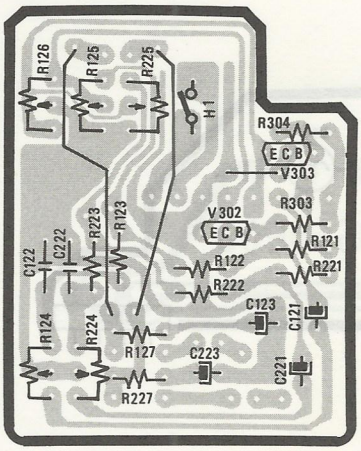
REF. NO.7 CTP-1824 LCD DISPLAY CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION				PART NO.	MFR'S NO.
–	LCD display printed circuit board					440-1792-0200
C901	Electrolytic capacitor	10μF	16V			250-100M-1C00-114
C902	Monolithic capacitor	0.022μF	25V			262-223M-1EJR-111
C903	Trimmer capacitor	28pF			ECCV-0101	345-0101-0100
C904	Ceramic capacitor	22pF	50V			260-220K-1HCH-105
CN4	2P plug				ESC-0478	412-0478-0000
CN5	8P plug				ESC-0479	412-0479-0000
D901, 902, 903, 904, 905, 906, 907, 908, 909,910	Diode MA165				ETD-MA165	304-0037-0001-006
P5	11P plug				ESC-0420	412-0420-0000
Q901	Crystal 4.5MHz				EOC-0022	361-0022-1900
R901	Carbon film resistor	3.3M ohm	1/6W	±5%		200-335J-2C00-110
R906, 907	Carbon film resistor	22k ohm	1/6W	±5%		200-223J-2C00-110
V901	PLL IC uPD1708AG-863				ETI-uPD1708AG-863	310-0390-0000
V902, 903	Transistor DTC125TS				ETTC-DTC125TS	302-0206-0001
V904, 905	Transistor DTA125TS				ETTA-DTA125TS	301-0101-0001
W901	Resistor array	33k ohm x 6			ECX-0065	370-0065-0100

VOLUME CONTROL CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW

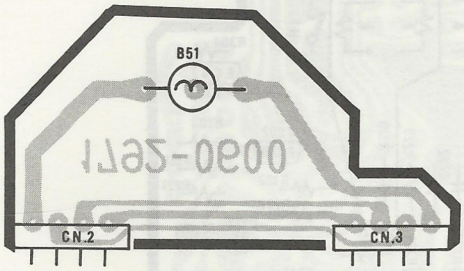


BOTTOM VIEW

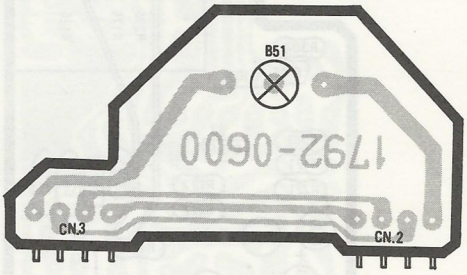
REF. NO.29 CAP-1823 VOLUME CONTROL CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION				PART NO.	MFR'S NO.
–	Volume control printed circuit board					440-1792-0300
C121, 221	Electrolytic capacitor	0.1μF	50V			250-R10M-1H00-114
C122, 222	Monolithic capacitor	0.047μF	25V			262-473M-1EJR-120
C123, 223	Electrolytic capacitor	0.15μF	50V			250-R15M-1H00-114
R121, 221	Carbon film resistor	1k ohm	1/6W	±5%		200-102J-2C00-110
R122, 127, 222, 227	Carbon film resistor	1.5k ohm	1/6W	±5%		200-152J-2C00-110
R123, 223	Carbon film resistor	2.2k ohm	1/6W	±5%		200-222J-2C00-110
	Variable resistor				ECRV-0063	341-0063-0100
R124, 224	Tone control	10k ohm-B				
	Variable resistor with switch				ECRV-0064	341-0064-0100
R125, 225	Volume control	50k ohm-A				
R126	Balance control	30k ohm-B				
H1	Power ON/OFF					
R303, 304	Carbon film resistor	4.7k ohm	1/6W	±5%		200-472J-2C00-110
V302, 303	Transistor 2SC2603 (F)				ETTC-2SC2603	302-0091-1201-006

LAMP CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW

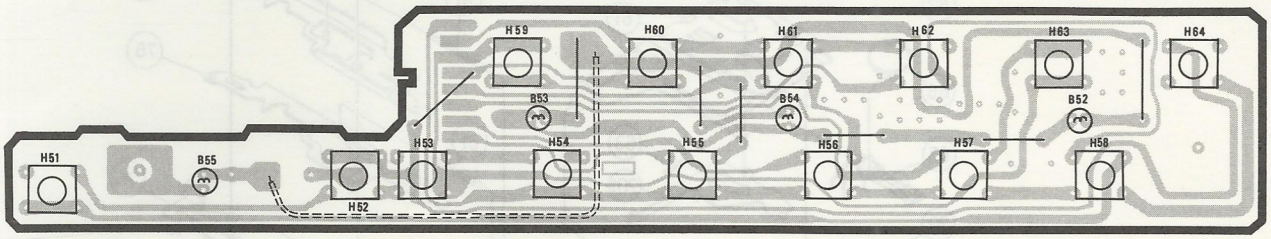


BOTTOM VIEW

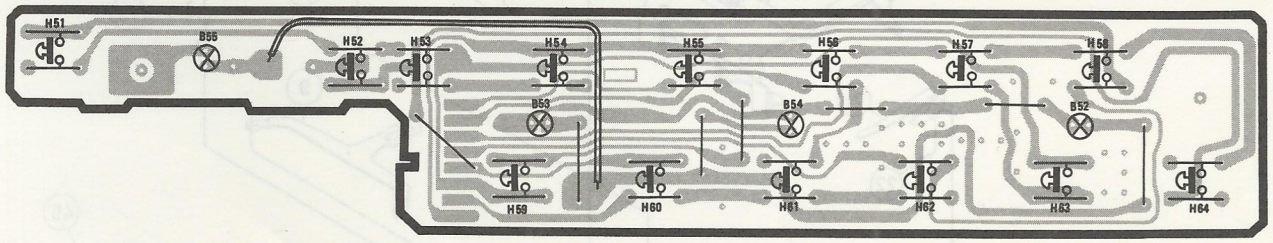
REF. NO.6 CTP-1825 LAMP CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
–	Lamp printed circuit board		440-1792-0600
B51	Pilot lamp	EIL-0229	430-0229-0000
CN2, 3	4P plug	ESP-0096	410-0096-0000

SWITCH CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW

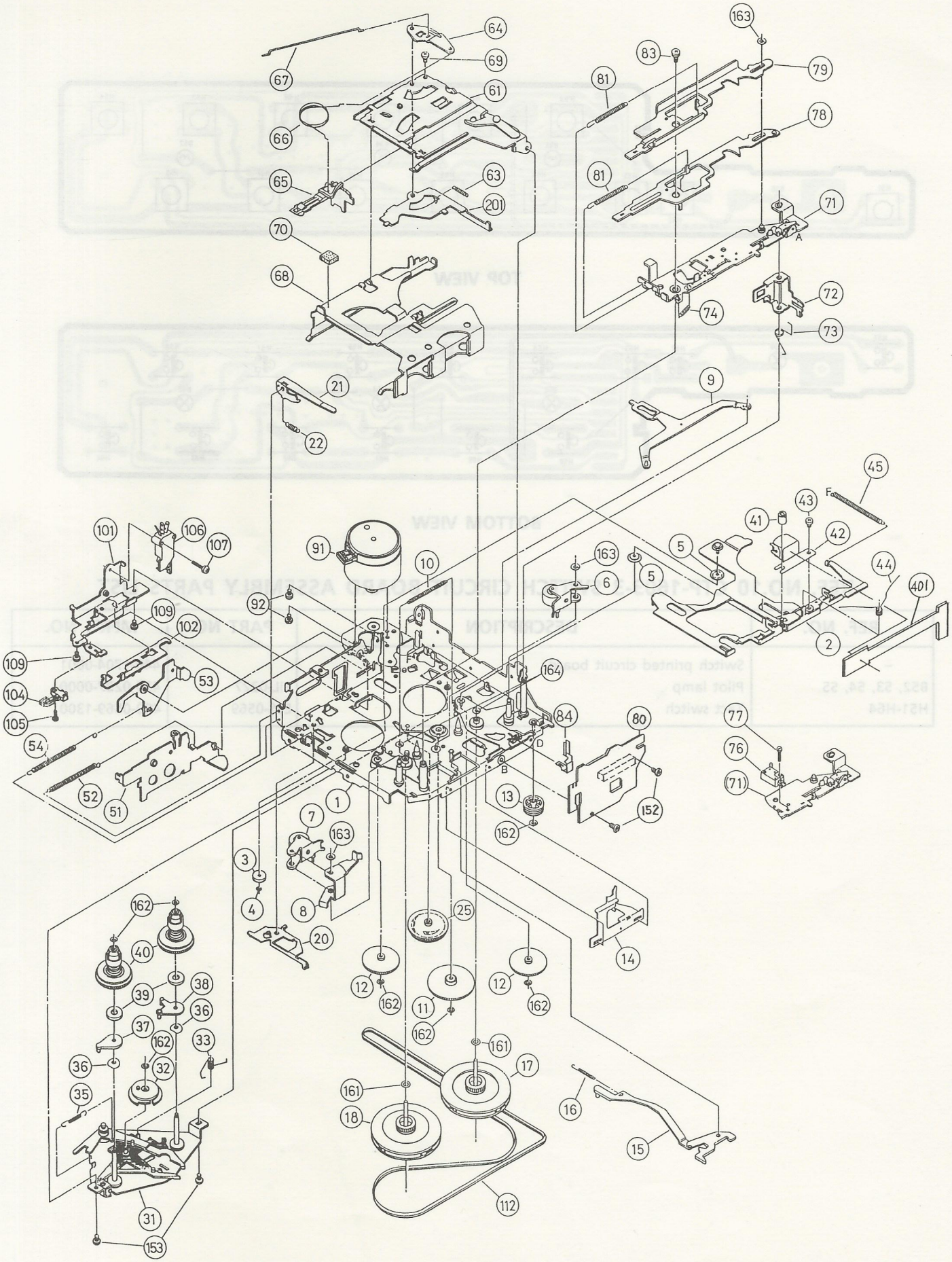


BOTTOM VIEW

REF. NO.10 CTP-1603-3 SWITCH CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
–	Switch printed circuit board		440-1704-0001
B52, 53, 54, 55	Pilot lamp	EIL-0227	430-0227-0000
H51-H64	Tact switch	ESS-0569	400-0569-1300

EXPLODED VIEW - MECHANISM

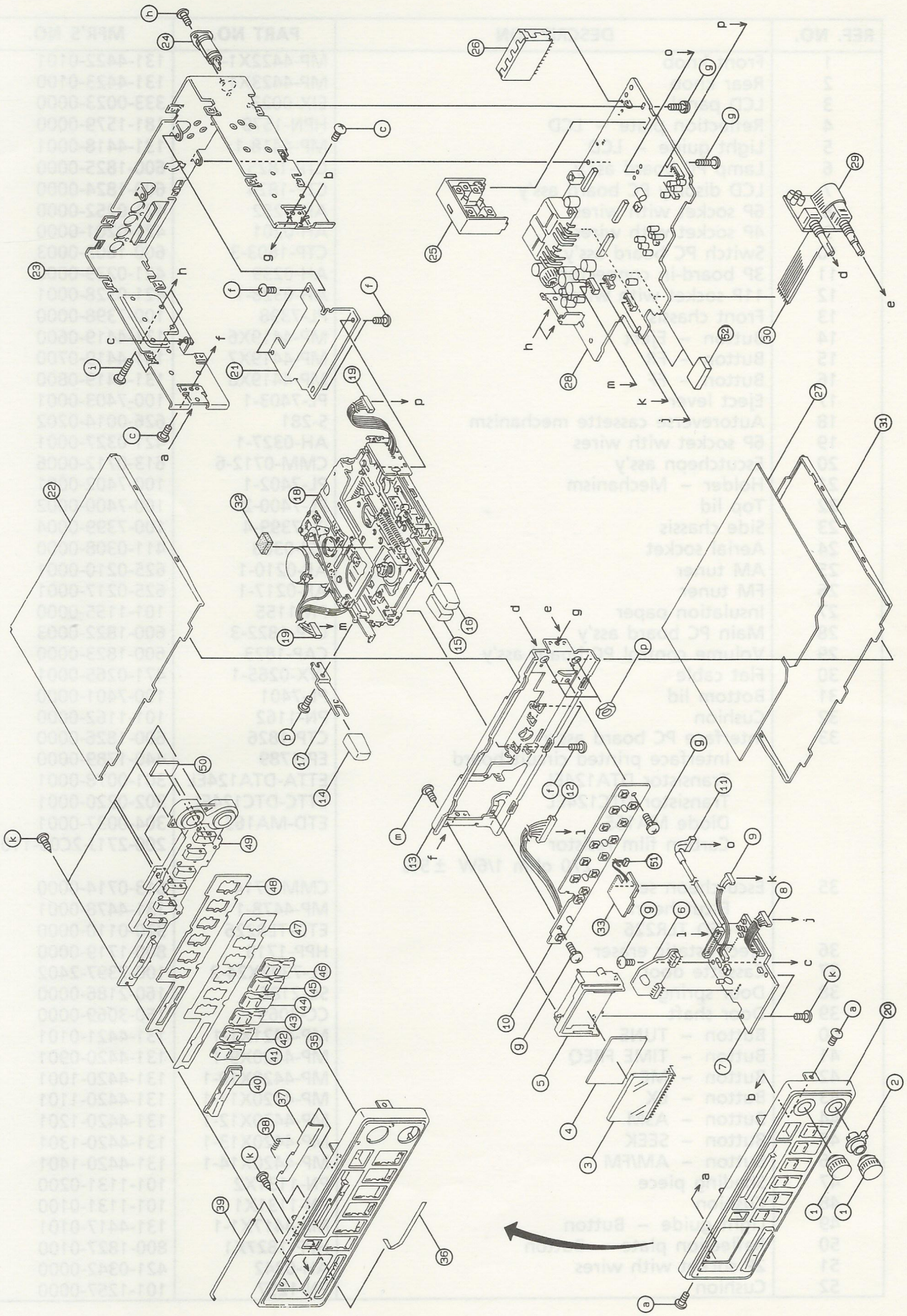


MECHANICAL PARTS LIST – MECHANISM

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
1	Main chassis ass'y	CMK-1608	610-1608-0000
2	Head panel ass'y	CMK-1598	610-1598-0000
3	Roller (A)	MP-4648	131-4648-0000
4	E-ring D1.2	030123	080-0120-0300
5	Roller (B)	MP-4649	131-4649-0000
6	Pinchroller ass'y (F)	AA-1262	179-1262-0000
7	Pinchroller ass'y (R)	AA-1263	179-1263-0000
8	FF/FR change cam	PL-7584	100-7584-0000
9	Take up gear connecting plate	PL-7585	100-7585-0000
10	Idler gear actuating lever spring	SC-2132	160-2132-0000
11	Center gear	MP-4440	131-4440-0000
12	Take up gear	MP-4439	131-4439-0000
13	Center pulley	MP-4476	131-4476-0000
14	Turn lever	PL-7586	100-7586-0000
15	Turn lever ass'y	AA-1264	179-1264-0000
16	Turn lever spring	SC-2096	160-2096-0000
17	Flywheel capstan ass'y	AA-0008	170-0008-0000
18	Flywheel capstan ass'y	AA-0009	170-0009-0000
20	Lock plate – Head panel ass'y	PL-7587	100-7587-0000
21	Timing plate	PL-7461	100-7461-0000
22	Timing plate spring	SC-2129	160-2129-0000
25	Trigger & stop arm actuator gear	MP-4446	131-4446-0000
31	Main gear plate ass'y	CMK-1599	610-1599-0000
32	Turn over gear	MP-4477	131-4477-0000
33	Turn over gear spring	SC-2100	160-2100-0000
35	Trigger arm spring	SC-2130	160-2130-0000
36	End detector spring washer	PL-7463	100-7463-0000
37	Senser actuator lever	MP-4442	131-4442-0000
38	Senser actuator lever (C)	MP-4650	131-4650-0000
39	Friction felt	PN-1138	101-1138-0000
40	Take up reel sub ass'y	AA-1270	179-1270-0000
41	Azimuth nut	CS-3113	150-3113-0000
42	Head	AHP-0316	464-0316-0000
43	Pan head screw 2 x 3 (S-tight)	006203ST	029-0012-0000
44	Pinch roller spring	SC-2153	160-2153-0000
45	Head panel spring	SC-2154	160-2154-0000
51	Push lever	PL-7588	100-7588-0000
52	Push lever spring	SC-2127	160-2127-0000
53	Lift up lever	PL-7459	100-7459-0000
54	Lift up lever spring	SC-2128	160-2128-0000
61	Case lifter ass'y	CMK-1517	610-1517-0000
63	Cassette detecting plate spring	SC-2098	160-2098-0000
64	Pack eject plate	PL-7430	100-7430-0000
65	Pack slider	MP-4447	131-4447-0000
66	Turn over spring	SC-2099	160-2099-0000
67	Pack eject spring	SC-2124	160-2124-0000
68	Cassette case	PL-7452	100-7452-0000
69	Pan head screw 2 x 4 (S-tight Precision)	006204ST	029-0009-0000
70	Cushion	PN-1139	101-1139-0000
71	FF/FR lever holder ass'y	CMK-1614	610-1614-0000
72	FF/FR lock holder	PL-7589	100-7589-0000
73	FF/FR lock holder spring	SC-2155	160-2155-0000
74	FF/FR check plate spring	SC-2126	160-2126-0000
76	Mute switch	ESS-0602	400-0602-3000
77	Pan head screw 1.7 x 6 (Precision)	006176	009-0023-0000
78	FR lever	PL-7590	100-7590-0000
79	FF lever	PL-7591	100-7591-0000
80	Switch PC board ass'y	CTP-1895	600-1895-0000
81	FF/FR lever spring	SC-2156	160-2156-0000
83	SEMS screw 2.6 x 4.5 (Precision)	0932645	059-0002-0000
84	Actuator – Slide switch	PL-7647	100-7647-0000

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
91	Motor ass'y	CTT-0582	608-0582-0000
92	Pan head screw 2.6 x 3 (Precision)	006263	000-0260-0300-122
101	Skeleton switch bracket	PL-7592	100-7592-0000
102	Actuator – Skeleton switch	PL-7457	100-7457-0000
104	Switch – Mute	ESS-0571	400-0571-3200
105	Pan head screw 1.7 x 4.5 (Precision)	0061745	009-0025-0000
106	Skeleton switch	ESS-0572	400-0572-0000
107	Bind head screw 2 x 8.5	091285	009-0016-0000
109	Pan head screw 2 x 3	006203	000-0200-0300-020
112	Main belt	MR-4448	131-4448-0000
152	Hat head screw 2 x 3 (S-tight)	097203ST	027-0200-0300-120
153	Pan head screw 2.6 x 3	006263	000-0260-0300-020
161	Polyslider washer 2.1 x 4 x 0.25	PN-0531	101-0531-0000
162	Polyslider washer (Cut) 1.2 x 3.5 x 0.25	PN-1140	101-1140-0000
163	Polyslider washer (Cut) 2.1 x 5 x 0.5	PN-1141	101-1141-0000
164	Polyslider washer (Cut) 1.6 x 3.5 x 0.5	PN-1142	101-1142-0000
201	Cassette detecting plate	PL-7458	100-7458-0000
401	Flexible PCB – Head	EP-1791	440-1791-0000

EXPLODED VIEW - CABINET



MECHANICAL PARTS LIST – CABINET

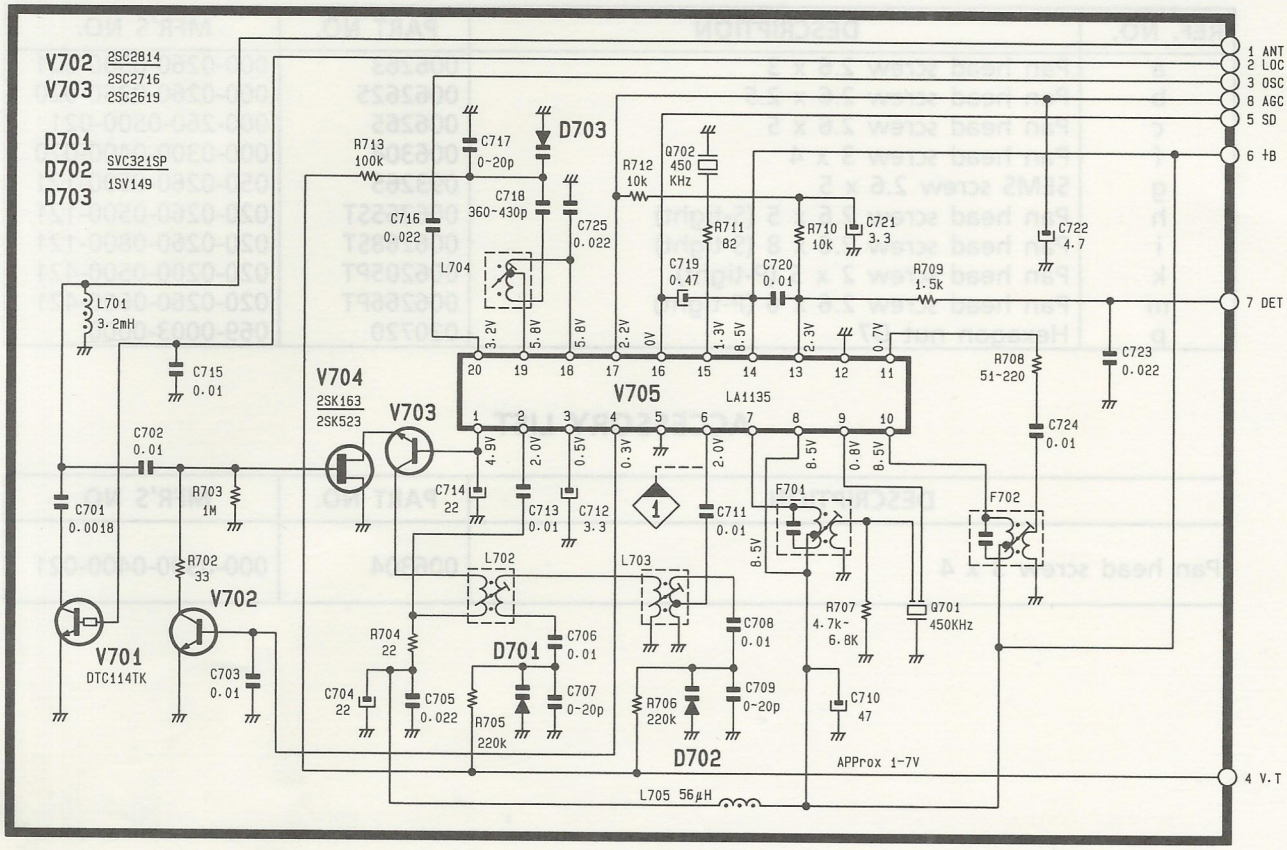
REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
1	Front knob	MP-4422X1-1	131-4422-0101
2	Rear knob	MP-4423X1	131-4423-0100
3	LCD panel	EIX-0023	333-0023-0000
4	Reflection plate – LCD	HPN-1579	181-1579-0000
5	Light guide – LCD	MP-4418-1	131-4418-0001
6	Lamp PC board ass'y	CTP-1825	600-1825-0000
7	LCD display PC board ass'y	CTP-1824	600-1824-0000
8	6P socket with wires	AH-0252	421-0252-0000
9	4P socket with wires	AH-0201	421-0201-0000
10	Switch PC board ass'y	CTP-1603-3	600-1603-0003
11	3P board-in connector	AH-0239	421-0239-0000
12	11P socket with wires	AH-0328-1	421-0328-0001
13	Front chassis	PL-7398	100-7398-0000
14	Button – Eject	MP-4419X6	131-4419-0600
15	Button – FR	MP-4419X7	131-4419-0700
16	Button – FF	MP-4419X8	131-4419-0800
17	Eject lever	PL-7403-1	100-7403-0001
18	Autoreverse cassette mechanism	S-281	626-0014-0202
19	6P socket with wires	AH-0327-1	421-0327-0001
20	Escutcheon ass'y	CMM-0712-6	613-0712-0006
21	Holder – Mechanism	PL-7402-1	100-7402-0001
22	Top lid	PL-7400-2	100-7400-0002
23	Side chassis	PL-7399-4	100-7399-0004
24	Aerial socket	ESJ-0308	411-0308-0000
25	AM tuner	AR-0210-1	625-0210-0001
26	FM tuner	AR-0217-1	625-0217-0001
27	Insulation paper	PN-1155	101-1155-0000
28	Main PC board ass'y	CTP-1822-3	600-1822-0003
29	Volume control PC board ass'y	CAP-1823	600-1823-0000
30	Flat cable	WX-0265-1	471-0265-0001
31	Bottom lid	PL-7401	100-7401-0000
32	Cushion	PN-1162	101-1162-0000
33	Interface PC board ass'y	CTP-1826	600-1826-0000
	Interface printed circuit board	EP-1789	440-1789-0000
	Transistor DTA124EL	ETTA-DTA124EL	301-0078-0001
	Transistor DTC124EL	ETTC-DTC124EL	302-0220-0001
	Diode MA165	ETD-MA165	304-0037-0001
	Carbon film resistor 270 ohm 1/6W ±5%		200-271J-2C00-110
35	Escutcheon set	CMM-0714	613-0714-0000
	Escutcheon	MP-4478-1	131-4478-0001
	LED TLR226	ETD-TLR226	320-0110-0000
36	Electrostatic eraser	HPP-1719	800-1719-0000
37	Cassette door	PL-7397X24-2	100-7397-2402
38	Door spring	SC-2186	160-2186-0000
39	Door shaft	CC-3069	150-3069-0000
40	Button – TUNE	MP-4421X1-1	131-4421-0101
41	Button – TIME FREQ	MP-4420X9-1	131-4420-0901
42	Button – ME	MP-4420X10-1	131-4420-1001
43	Button – LX	MP-4420X11-1	131-4420-1101
44	Button – ASM	MP-4420X12-1	131-4420-1201
45	Button – SEEK	MP-4420X13-1	131-4420-1301
46	Button – AM/FM	MP-4420X14-1	131-4420-1401
47	Shading piece	PN-1131X2	101-1131-0200
48	Cushion	PN-1131X1	101-1131-0100
49	Light guide – Button	MP-4417X1-1	131-4417-0101
50	Reflection plate – Button	HPP-1827X1	800-1827-0100
51	2P socket with wires	AH-0342	421-0342-0000
52	Cushion	PN-1257	101-1257-0000

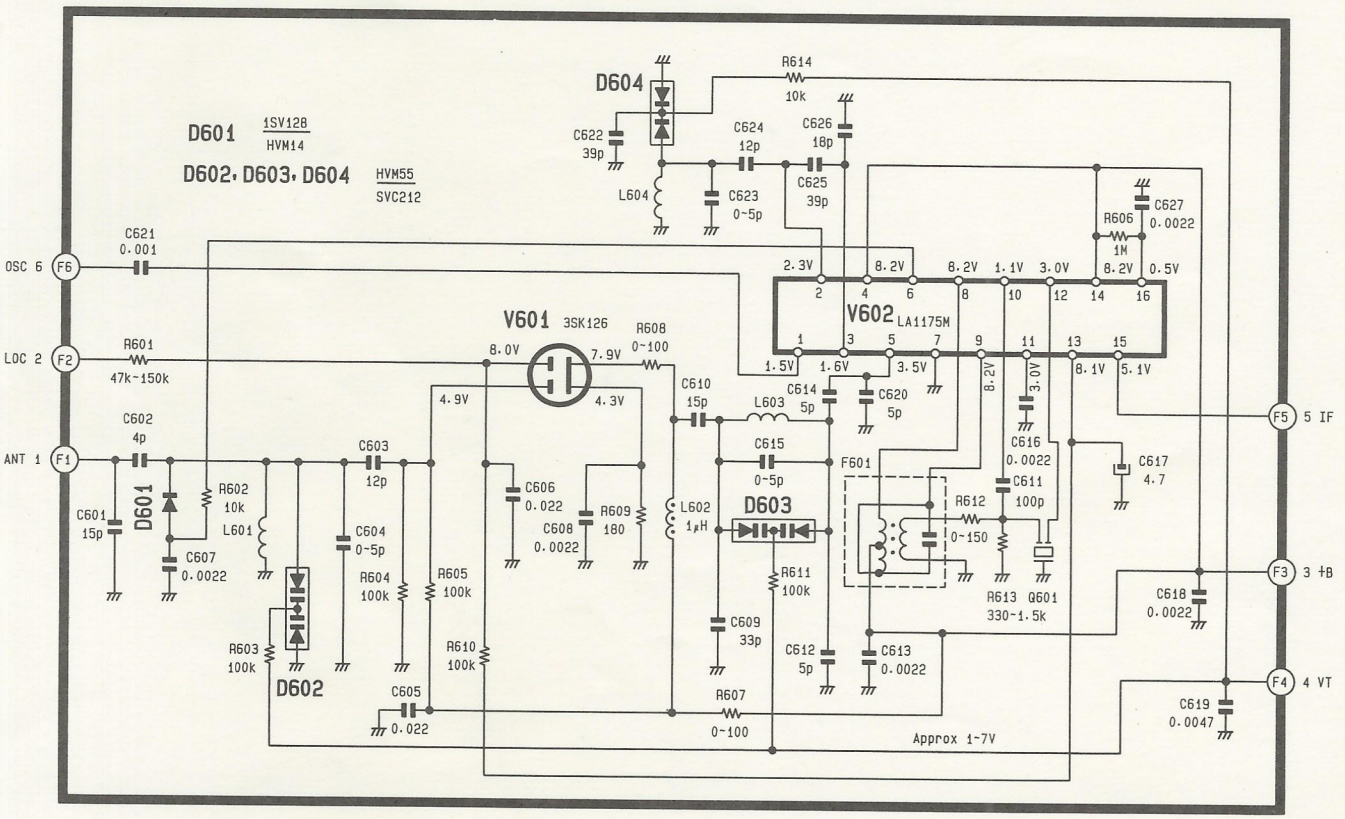
REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
a	Pan head screw 2.6 x 3	006263	000-0260-0300-021
b	Pan head screw 2.6 x 2.5	0062625	000-0260-0250-020
c	Pan head screw 2.6 x 5	006265	000-260-0500-021
f	Pan head screw 3 x 4	006304	000-0300-0400-020
g	SEMS screw 2.6 x 5	093265	050-0260-0500-121
h	Pan head screw 2.6 x 5 (S-tight)	006265ST	020-0260-0500-121
i	Pan head screw 2.6 x 8 (S-tight)	006268ST	020-0260-0800-121
k	Pan head screw 2 x 5 (P-tight)	006205PT	020-0200-0500-421
m	Pan head screw 2.6 x 6 (P-tight)	006266PT	020-0260-0600-421
p	Hexagon nut D7	020720	069-0003-0000

ACCESSORY LIST

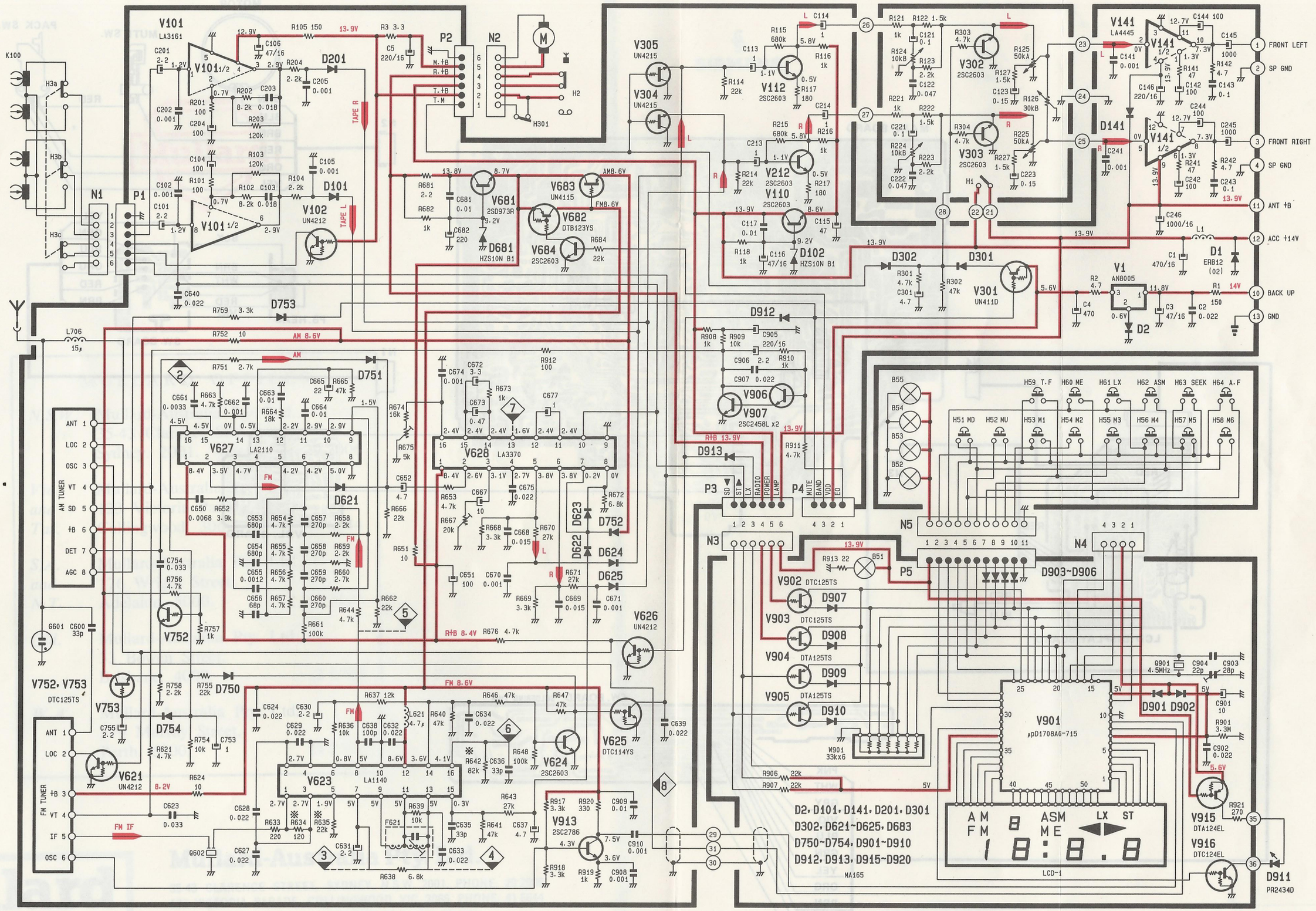
DESCRIPTION	PART NO.	MFR'S NO.
Pan head screw 3 x 4	006304	000-0300-0400-021

SCHEMATIC DIAGRAM

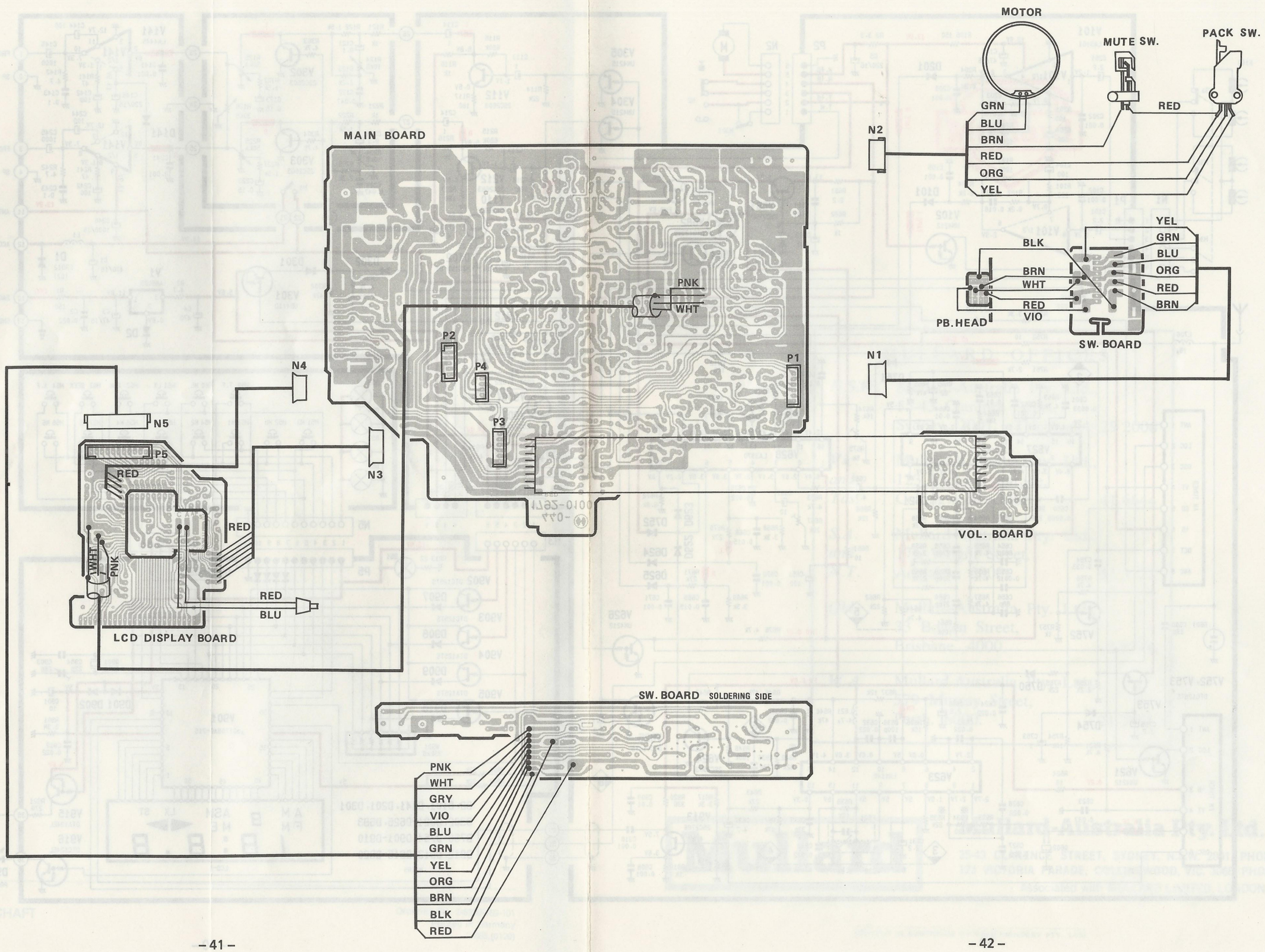




SCHEMATIC DIAGRAM

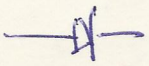


WIRING LAYOUT



to remove code!

Pin 3 → 7 link with diode



See LED Display PCB.

NO O/P. IC OK. CHECK MUTE TX V 112, 212 for 5V on Collector. if ZERO - CHECK V110 (NPN) for O/C.