

# Service Manual

 Closer Relations through  
"Clarion Service Manual"

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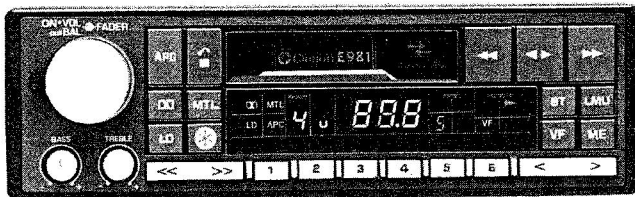
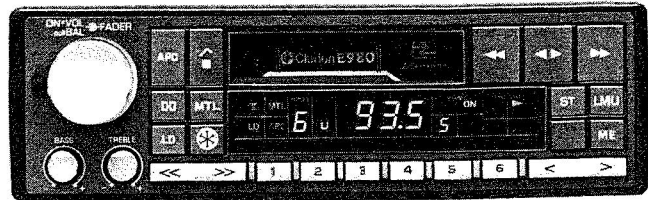
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Model **E981** (PE-9057A)  
**E980** (PE-9058A)


**E981**

**E980**

## SPECIFICATIONS:

### Radio section

Circuit system: Superheterodyne  
Tuning system: Electronic tuning  
Receiving frequency: LW 155kHz to 281kHz  
MW 531kHz to 1,602kHz  
UKW(FM)  
87.5MHz to 108MHz

### Intermediate frequency:

LW, MW 459kHz  
UKW(FM) 10.7MHz

### Tape section

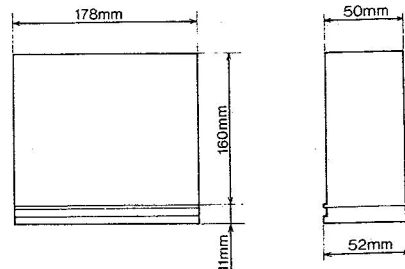
Reproduction system: Auto reversing  
4 track, 2 channel stereo  
cassette tape playback  
(Monaural also capable)  
Tape speed: 4.76cm/sec. (1 7/8 ips)

### Composite

Output impedance: 10kΩ  
Output level: More than 250mV  
(at TAPE mode, 1kHz,  
OVU, max. output)

Power supply voltage: DC 14.4V(10.8V to 15.6V)  
Negative ground  
Power consumption: Less than 2.5A  
(at max. output)

### Dimensions:



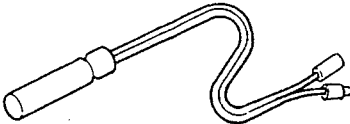
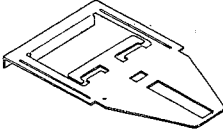
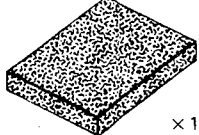
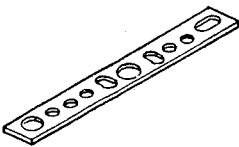
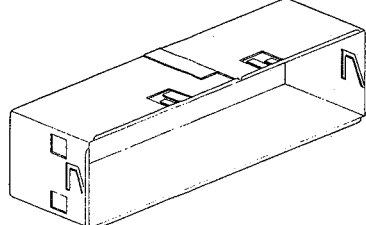




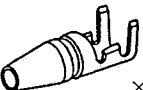
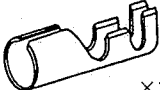

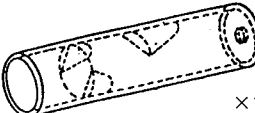

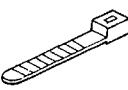
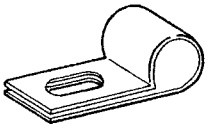




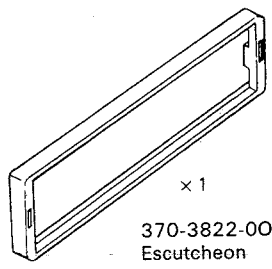
Weight: 1.6kg

- Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

## COMPONENT VIEW:

● E981 (PE-9057A-A)

● E980 (PE-9058A-A)

Main unit		1	Parts bag	921-8022-00	1
Thermistor	002-0199-00	1			
Mounting bracket	300-6954-00	1	 ×2  ×1 330-8216-00 Hook plate 345-2934-00 Cushion		
Mounting bracket	300-7110-00	1			
Mounting bracket	300-7110-00	1			
Parts bag	921-7555-00	1	 ×1  ×1  ×1  ×1 345-3653-01 Spacer 725-0181-00 Plate nut 700-5016-10 Tap screw 722-0314-00 Nut		
Parts bag	921-8058-00	1	 ×1  ×1  ×1  ×1  ×1 073-0635-00 Terminal 073-0636-00 Terminal 348-0136-00 Terminal cover 348-0137-00 Terminal cover 852-8728-00 Extension lead		
Parts bag	922-1396-00	1	 ×5  ×1  ×1  ×1  ×1  ×1 335-0833-01 Lead holder 330-7761-00 Lead holder 700-5016-10 Tap screw 723-5000-11 Hex-nut 734-5016-31 D-sems hex-bolt 740-5000-10 Flat washer		
			 ×1 370-3822-00 Escutcheon		

## FEATURES:

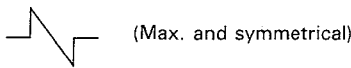

- MW/LW/FM-MPX electronic tuner with auto reverse stereo deck (Full feather tape mechanism).
- Provided radio traffic information (VF) system. (E981)
- Dolby NR (□□).

- Tape selector (MTL).
- Loudness (LD).
- Separate Bass/Treble controls.
- Automatic Program Control (APC).
- Ice Warning indicator.

# ADJUSTMENT:

## [CAUTION]

1. All adjustment should be made at room temperature.
2. Do not remove "Lower case" for adjustment.

Adjustment item	Adjustment point	Procedure
S curve	IFT1 and IFT101	<ol style="list-style-type: none"> <li>1. Connect the output of an IF sweep generator to TP1 and the input of the vertical hold of an oscilloscope to TP105.</li> <li>2. Ground TP104.</li> <li>3. Adjust the S curve by means of IFT1 and IFT101.</li> </ol> 
OV fine adjustment	VR102	<ol style="list-style-type: none"> <li>1. Tune at 98.0MHz (98.000MHz) and input a 40dB non-modulated SSG signal.</li> <li>2. Connect a digital volt meter between TP103 ⊕ and TP102 ⊖.</li> <li>3. Adjust VR102 so that the voltage between TP103 and TP102 is 0V±50mV.</li> <li>4. May adjust OV by receiving broadcasting signal.</li> </ol>
Stop seek sensitivity	VR101	<ol style="list-style-type: none"> <li>1. Tune at 98.0MHz (98.000MHz), input a 25dB non-modulated SSG signal.</li> <li>2. Adjust VR101 so that the voltage of TP106 is in the range 0V to 7V.</li> </ol>
SASC	VR103	<ol style="list-style-type: none"> <li>1. Tune at 98.0MHz (98.000MHz), input an 55dB, 7kHz modulation frequency, 30% modulation degree SSG signal, and then turn on ST. SW.</li> <li>2. Adjust the output level of the volume controller to 0dBm (0.775V).</li> <li>3. Set the SSG output to 40dB and adjust VR103 so that the output level is -3dBm.</li> </ol>
MPX Pilot canceller	VR105	<ol style="list-style-type: none"> <li>1. Tune at 98.0MHz (98.000MHz), input a 55dB, modulation (PL 10%).</li> <li>2. Adjust VR105 so that output of the set is minimum.</li> </ol>
	VR104	<ol style="list-style-type: none"> <li>1. Tune at 98.0MHz (98.000MHz), connect the output of a stereo modulator to the external modulation terminal, and input a 65dB SSG signal.</li> <li>2. Set the stereo modulator to the L or R ch and adjust VR104 so that the maximum separation is obtained.</li> </ol>
DK VCO (E981)	VR1	<ol style="list-style-type: none"> <li>1. Tune at 98.0MHz (98.000MHz), input a 55dB non-modulated SSG signal, and turn on VF. SW.</li> <li>2. Connect the frequency counter to TP7 through a 22kΩ resistor and adjust VR1 so that the counter indicates 125Hz. In the case, 25sec. later, seeking occurs.</li> </ol>
Temperature	VR801	<ol style="list-style-type: none"> <li>1. Connect a resistor of 3.87kΩ to sensor terminal.</li> <li>2. Adjust VR801 to a point where  lamp begins blinking.</li> </ol>
Dolby NR	VR301 and VR302	Insert a Dolby level test tape (400Hz-200nWb/m), connect the milli-volt meter to TP301 and TP302, and adjust VR301 and VR302 to obtain an output of 300mV.

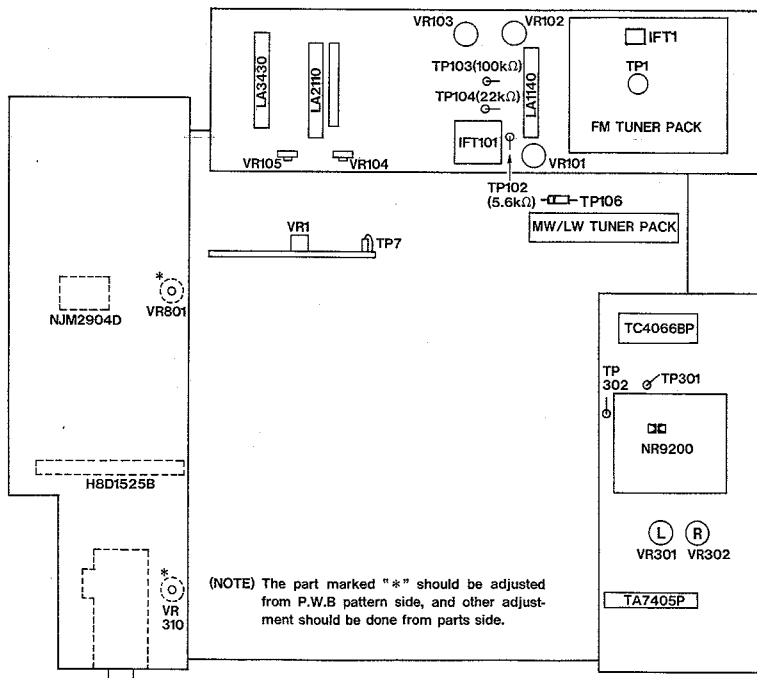
[NOTE] After the adjustment of frequency range, be sure that:

- (1) Band edge frequency of LW shall be 148.5kHz -20kHz
- (2) Band edge frequency of UKW shall be 87.5MHz +100kHz  
-160kHz

at low end. And shall be lower than 108.16MHz at upper end.

- SPECIFICATION -LIMIT- Quieting sensitivity: MW Less than 33dB (at 20dB S/N)  
LW Less than 42dB (at 20dB S/N)  
UKW Less than 12dB (at 30dB S/N)
- Stereo separation: UKW More than 20dB

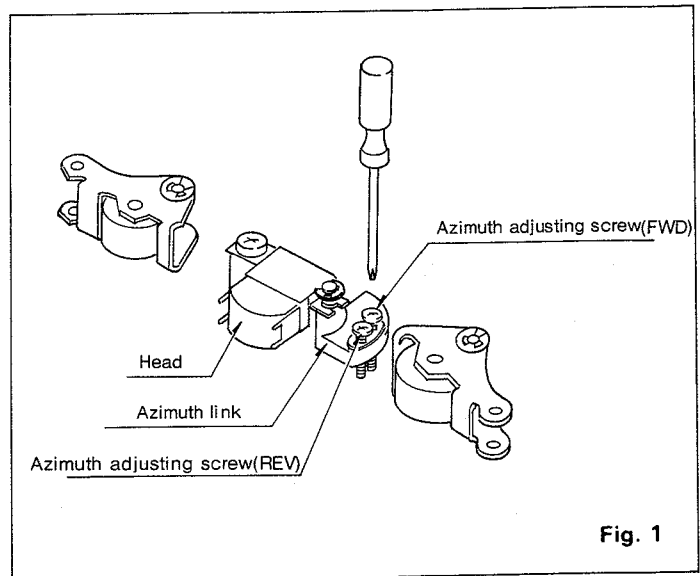
## ADJUSTMENT POINT



## ■ ADJUSTMENT: < TAPE MECHANISM >

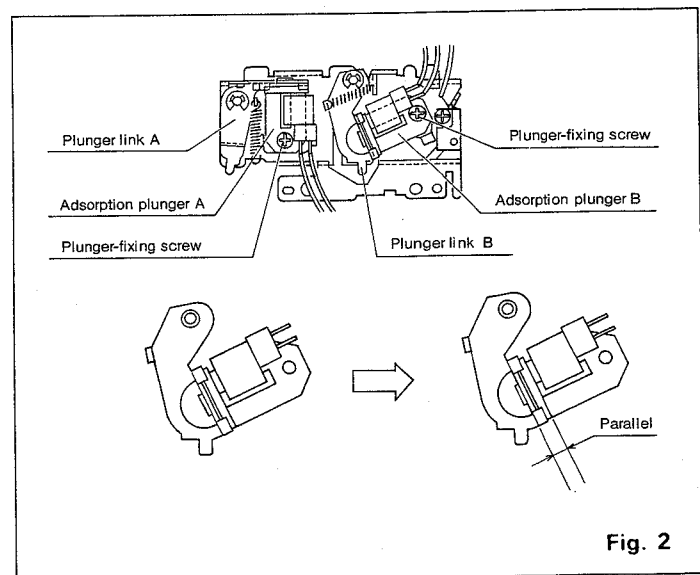
### 1. Head-azimuth Adjustment

Make playback for the azimuth-tape (8kHz, -10VU), and turn each azimuth-adjusting screw to make each FWD & REV maximum. After adjustment, make adhesion with bond.



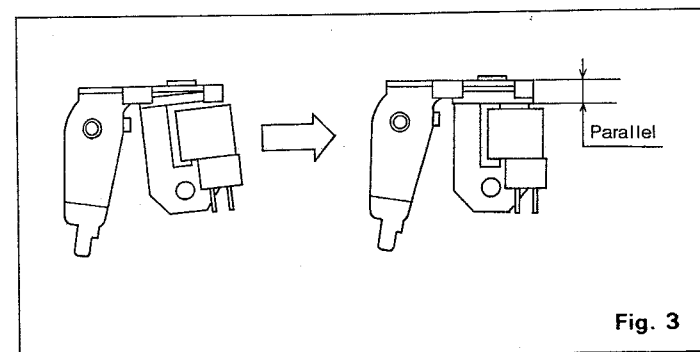
### 2. Adjustment of Adsorption Plunger B

Under FF-operation, when adsorption plunger is released, mount the plunger to make the adsorption-surface of adsorption plunger B in parallel to the bent surface of plunger link B, and make adhesion of the rear side of the screw with bond.



### 3. Adjustment of Adsorption Plunger A

Under REW-operation, when adsorption plunger is released, mount the plunger to make the adsorption-surface of adsorption plunger A in parallel to the bent surface of plunger link A, and make adhesion of the rear side of the screw with bond.

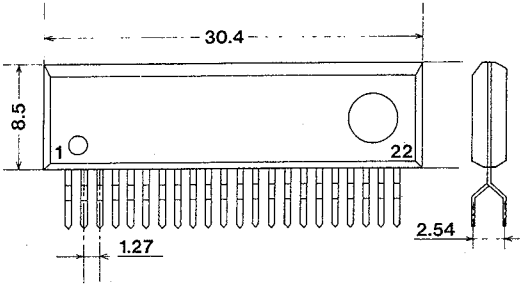


● SPECIFICATION —LIMIT— Wow & flutter : Less than 0.25%(W.R.M.S.)

# EXPLANATION OF IC's:

LA2220 051-0739-00 ARI System SK TYPE  
(Tentative Standard)

Figure



## Functions

- (1) SK operation : LED display through AND using 57kHz (SK) and 23.75 to 53.98Hz (BK).  
Voice output control (Muting) through AND using above frequencies.
- (2) MUTING SW : When Pin 4 is set to GND, signal is put in the through mode regardless existence of SK and BK. LED display is available in the SK and BK operations.
- (3) OSC-STOP SW : When voltage (5V to Vcc -1.4V) is applied to Pin 20, the oscillating circuit stops and signal is put in the through mode. (LED turns OFF).
- (4) DK and BK output : The system contains a 57kHz AM detect circuit to send DK and BK signals. In the OSC-STOP mode, the system stops detect operation.
- (5) SK-STOP : When frequency of 57kHz (SK) exists, voltage at Pin 16 turns LOW. This function is used as the STOP signal in the auto search mode.  
(When 57kHz (SK) exists: V16=0V)  
(When 57kHz (SK) does not exist: V16=3.6V)
- (6) Turn-ON level control : When voltage is applied to Pin 17, 57kHz (SK) detect level goes upward.  
This function is used to prevent LEDs from turning ON with weak signals.

## Feature

- (1) The system uses 456kHz ceramic oscillator and 57kHz BPF, which have materialized no need of adjustment of the free-run frequency and coil.
- (2) The system contains BK signal detect circuit displaying with LED in the AND operations of SK and BK, in order to prevent malfunction when RDS (or PJ system) is received.
- (3) Turn-ON level may be altered by changing C.R installed outside the BPF.
- (4) Only SK can be detected in the auto search mode (through SK-STOP terminal at Pin 16).
- (5) Turn-ON level may be raised by applying DC voltage (through VL-CONT terminal at Pin 17).

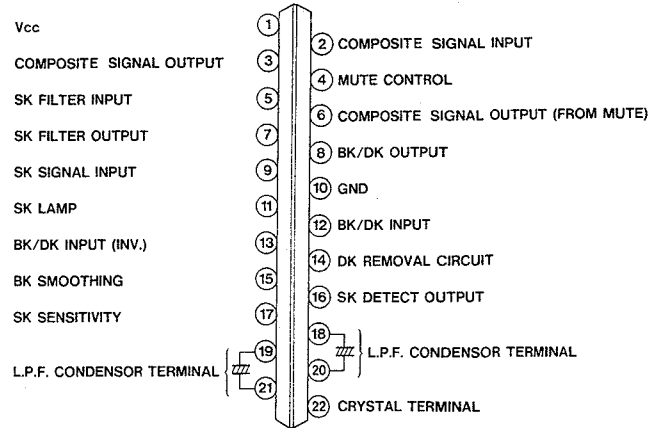
## Absolute Maximum Ratings (Ta=25°C)

Supply Voltage	Vcc	$\begin{cases} V_{1-10} & 16V \\ V_{1-11} & 16V \end{cases}$
Input Current	Id	1mA
Lamp Drive Current	I <sub>D</sub>	30mA
Power Dissipation	P <sub>D</sub>	574mW

## Electrical Characteristics (Ta=25°C, Vcc=8V, Vin=200mV, L+R=85%, 19kHz=10%, 57kHz=5%, f=1kHz)

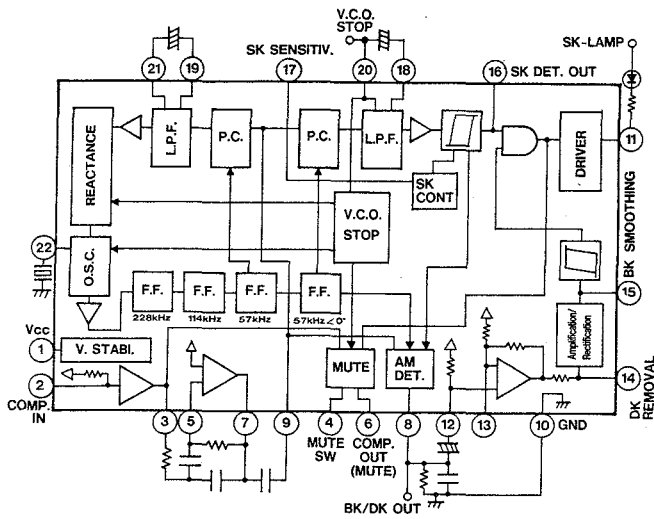
Item	Symbol	Condition	SPEC			Unit
			MIN.	TYP.	MAX.	
Non-signal current	I <sub>CCO</sub>		17	24	34	mA
Input resistance	r <sub>i</sub>		—	40k	—	Ω
SK detect level	V <sub>SK</sub>	f=57kHz, Input Pin 2	2.5	3.6	5.5	mV
SK Hysteresis	h <sub>SK</sub>	f=57kHz, Input Pin 2	—	5.5	—	dB
BK detect level	V <sub>BK</sub>	f=23.75Hz, Input Pin 12	—	17	—	mV
BK hysteresis	h <sub>BK</sub>	f=23.75Hz, Input Pin 12	—	3	—	dB
Capture range	C.R.	f=57kHz, V <sub>IN</sub> =10mV	—	±1.2	—	%
Output level	V <sub>OUT</sub>	f=1kHz, V <sub>IN</sub> =200mV	147	210	294	mV
DK output level	V <sub>DK</sub>	f=57kHz, V <sub>IN</sub> =10mV, 125Hz, 30%mod.	27	38	54	mV
Total harmonic distortion	THD	f=1kHz, V <sub>IN</sub> =200mV	—	0.13	0.5	%
Signal attenuation degree	MUTE	f=1kHz, V <sub>IN</sub> =200mV, DIV/AUDIO filter	-60	-75	—	dB
Free-run frequency	F <sub>0</sub>	Pin2: C=GND at CSB456F11(TYP)	451	454.8	458.5	kHz

## Terminal Connection



No.	Name of terminal	Function
1	Vcc	Supply terminal. The recommended voltage is 8V.
2	COMPOSITE SIGNAL INPUT	Input of a composite signal.
3	COMPOSITE SIGNAL OUTPUT	Output of a composite signal amplified in the IC.
4	MUTE CONTROL	When no BK/DK signal exists with this terminal set to OPEN, mute is applied to the composite signal output at Pin 6. When this terminal is set to GND, no mute operation is performed.
5	SK FILTER INPUT	Input terminal of filter amplifier for SK signal detection.
6	COMPOSITE SIGNAL OUT (FROM MUTE)	Muting output terminal of composite signal (See description on Pin 4).
7	SK FILTER OUTPUT	Output terminal of filter amplifier for SK signal detection.
8	BK/DK OUTPUT	Output of SK signal detected in the AM mode.
9	SK SIGNAL INPUT	Receives SK signal separated from composite signal.
10	GND	For grounding.
11	SK LAMP	Turns a lamp on when SK and BK signals are detected simultaneously.
12	BK/DK INPUT	Receives BK and DK signals.
13	BK/DK INPUT (INV.)	Inverted input terminal of BK and DK signals. Normally not used.
14	DK removal terminal	Connects L.P.F. condenser to reject DK signal.
15	BK smoothing	Connects L.P.F. condenser to smooth a rectified BK signal.
16	SK DETECT OUTPUT	Sends "High" when SK signal exists.
17	SK SENSITIVITY	Normally set to OPEN. When voltage is applied, SK signal detect sensitivity drops.
18 19 20 21	L.P.F. condenser terminal	Terminal used to connect a condenser constituting L.P.F. When DC voltage of 5V to Vcc -1.4V is applied to Pin 20, V.C.O. stops.
22	Crystal terminal	Connects crystal or ceramic resonator.

**Block Diagram**

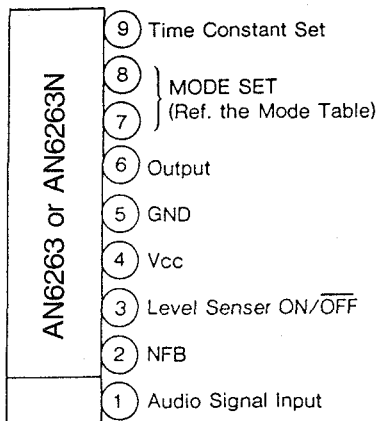


**AN6263 051-0561-00**  
**AN6263N 051-0561-01** Audio Level Sensor for APC

**Absolute Maximum Ratings (Ta=25°C)**

Supply Voltage	Vcc	16V
Power Dissipation	Pd	420mW (AN6263) 450mW (AN6263N)
Supply Current	Ii	23mA (AN6263) 28mA (AN6263N)

**Terminal Structure**



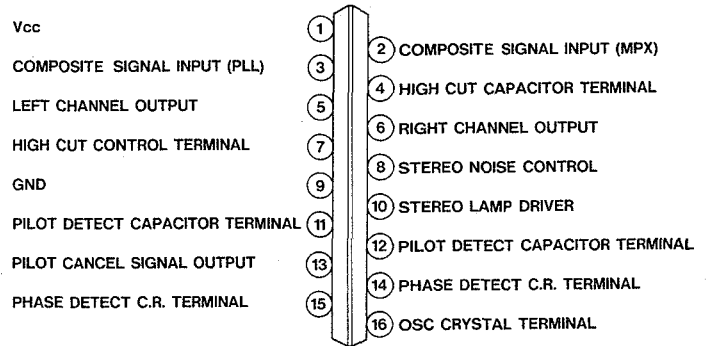
**Mode Table**

7pin	8pin	Mode
L	L	OFF
H	L	FF/REW
L	H	PLAY
H	H	OFF

**Electrical Characteristics (Ta=25°C, Vcc=10V, Vi=300mV, f=1kHz, L+R=90%, PILOT=10%)**

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Non-signal current	Icco	No input		28	38	mA
Channel separation	Sep		40	50		dB
Total harmonic distortion	THD	Monaural		0.07	0.2	%
		Main		0.07	0.2	%
Lamp turn-ON level	V <sub>L</sub>	L+R=90%, PILOT=10%	60	85	120	mV
Lamp hysteresis	hy			3	6	dB
Capture range	CR			±1		%
Output signal level	V <sub>o</sub>	sub	150	215	300	mV
Signal/noise ratio	S/N	Rg=20kΩ	68	74		dB
		Rg=10kΩ	70	78		dB
Input resistance (Pin 2)	ri			20		kΩ
SCA reject ratio	SCA <sub>rej</sub>			80		dB
Allowable input voltage	V <sub>i</sub>	THD=1% Rg=20kΩ	700	900		mV
		THD=1% Rg=10kΩ		450		mV
SNC output attenuation degree	Att SNC	V <sub>B</sub> =0.6V L+R=90%, PILOT=10%	-8.5	-3.0	-0.3	dB
SNC output voltage	V <sub>o sub</sub>	V <sub>B</sub> =0.3V L+R=90%, PILOT=10%			5	mV
HCC output attenuation degree	Att HCC(1)	V <sub>7</sub> =0.6V L+R=90%, PILOT=10%	-15.0	-6.0	-0.5	dB
	Att HCC(2)	V <sub>7</sub> =1V L+R=90%, PILOT=10%	-2.0		0	dB
Supply voltage ripple rejection	R <sub>r</sub>			35		dB
VCC STOP voltage				7.3		V
Channel balance				0.5	1.5	dB
Pilot cancelling degree				20	27	dB
Stereo amplifier current		Minimum stereo operating current		1.0		mA
Saturation voltage (Pin 10)		I <sub>L</sub> =10mA		1.0		V

**Terminal Connection**

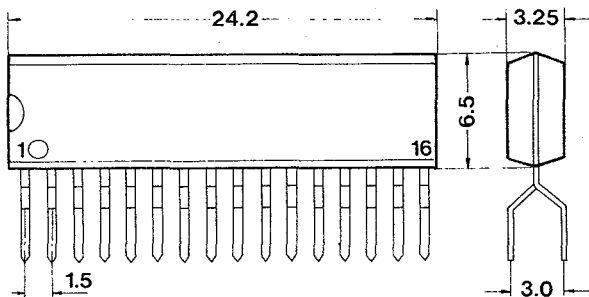


**LA3430 051-0733-00 FM MPX (Tentative Standard)**

**Feature**

FM stereo multiplexer built in functions as pilot canceller, stereo noise controller, high frequency cut controller and automatic changer between stereo and monaural.

**Figure**



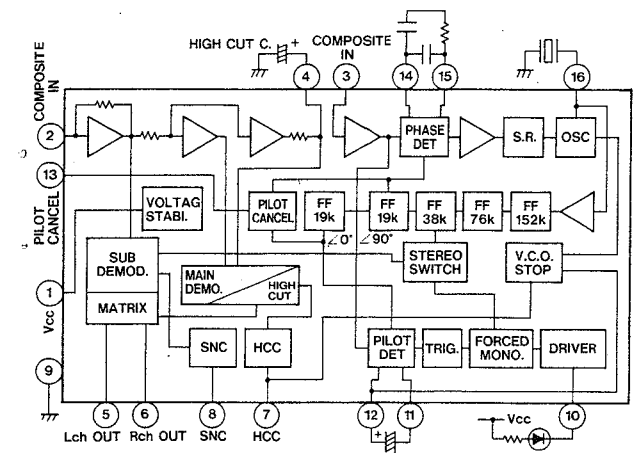
**Absolute Maximum Ratings (Ta=25°C)**

Supply Voltage	Vcc	16V
Lamp Drive Current	I <sub>p</sub>	30mA
Power Dissipation	P <sub>D</sub>	520mW

No.	Name of terminal	Function
1	Vcc	Connected to power supply.
2	Composite signal input (MPX)	Composite signal input terminal to MPX unit.
3	Composite signal input (PLL)	Composite signal input terminal to PLL unit.
4	High-cut condensor terminal	Connects a condensor to improve S/N ratio on audio sensitivity by attenuating high-pass of voice signal in the weak electric field.
5	Left channel output	Generates voice signal in the left channel.
6	Right channel output	Generates voice signal in the right channel.
7	High-cut control (HCC)	When voltage applied to this terminal is dropped down to about 1.0V or less (when Vcc=10V), 7kHz or more of the main signal (Monaural signal) is dropped, so that S/N ratio for the audio sensitivity may be improved. When voltage of 7V or more is applied to this terminal, V.C.O. oscillation is stopped, putting the system in the forcible monaural mode. In this case, HCC and SNC become not operatable.
8	Stereo noise control (SNC)	As voltage applied to this terminal is decreased gradually, output of SUB DETECTOR (differential signal) drops gradually, so that the voice signal output is put nearly in the monaural mode, providing the favourable S/N ratio in the weak electric field.
9	GND	For grounding
10	Stereo lamp driver	Absorbs the stereo lamp drive current of up to 30mA.
11	Pilot detect condensor terminal	Connects a condensor for detection of the pilot signal.
12	Pilot detect condensor terminal	Connects a condensor for detection of the pilot signal.

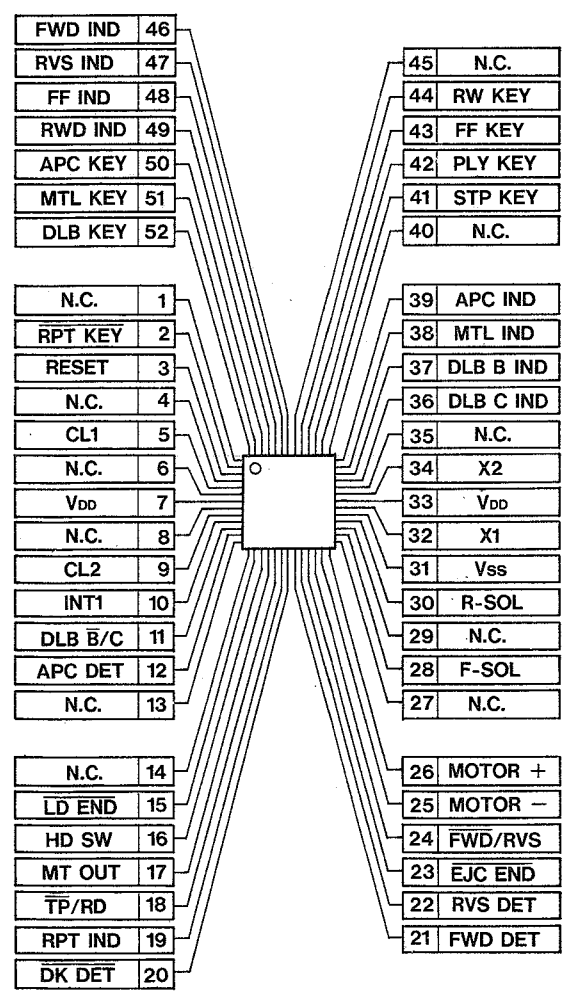
13	Pilot cancel signal output	Generates a false triangular wave of 19kHz to cancel the pilot signal.
14	Phase detect C.R. terminal	Connects C.R. for phase detection.
15		
16	OSC CRYSTAL terminal	Connects an oscillating crystal or ceramic resonator.

**Block Diagram**



■ PD7507G(M)805-01 051-0734-00 Cassette mechanism controller (TENTATIVE STANDARD)

**Terminal Connection**

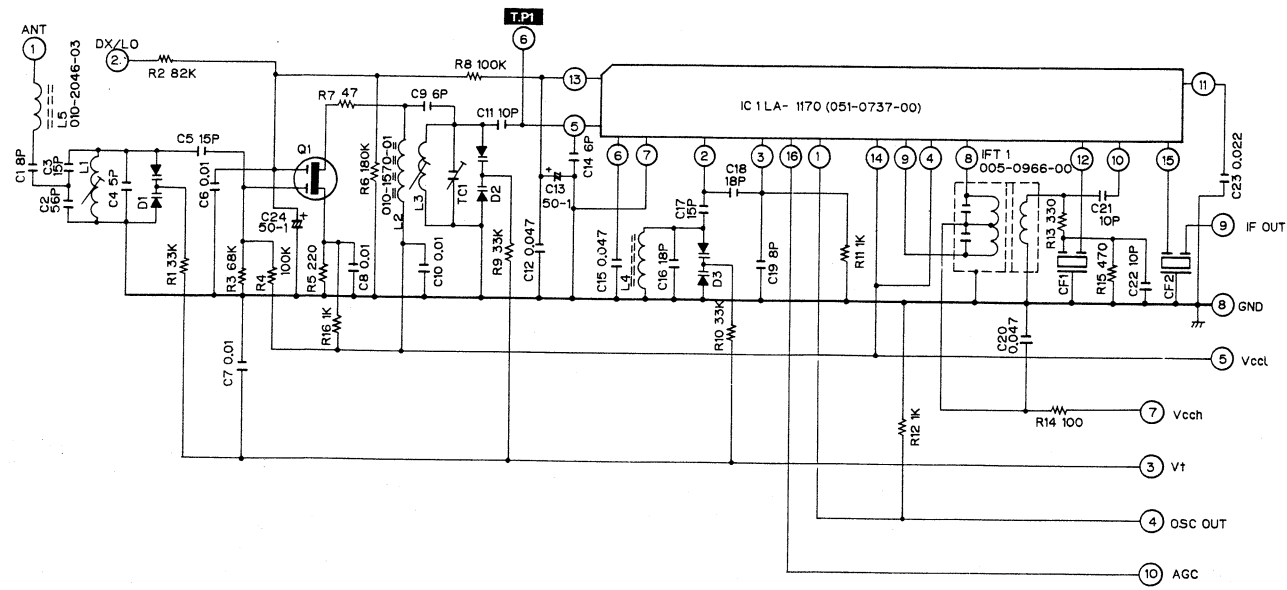


No.	Abbreviation	Terminal Name	I/O	Description on Function
1	N.C.	NO-CONNECTED Terminal	—	This is not connected to IC chips in the package.
2	RPT KEY	REPEAT KEY IN	I	A repeat mode is set or reset each time "L" is input to this terminal.
3	RESET	RESET	I	This is a reset terminal for a microcomputer.
4	N.C.	—————	—	Refer to the Pin 1
5	CL1	CLOCK 1	—	This is a system clock terminal.
6	N.C.	—————	—	Refer to the Pin 1
7	V <sub>DD</sub>	Power Terminal	—	This is connected to the specified voltage source.
8	N.C.	—————	—	Refer to the Pin 1
9	CL2	CLOCK 2	—	This is a system clock terminal.
10	INT1	Interrupt Terminal	I	This is pulled up because this is not used by this unit.
11	DLB B/C	Dolby Selection Terminal	I	This terminal is set to "L" when Dolby Type B only is used. When both Dolby Types B and C are used, this terminal should be set to "H".
12	APC DET	Music Interval Signal In	I	A music interval signal is to be input here. (Active="H")
13	N.C.	—————	—	Refer to the Pin 1
14	N.C.	—————	—	Refer to the Pin 1
15	LD END	Loading End	I	This terminal detects the completion of loading. (Active="L")
16	HD SW	HEAD SW	I	This terminal detects the position of a head. When the head is at the back, input "L" and when it is at the front, input "H".
17	MT OUT	MUTE OUT	O	"L" is output when muting is applied to signal system of the tape deck section.
18	TP/RD	TAPE/RADIO	O	This outputs a changeover switch for AUDIO signals. TAPE ..... "L" RADIO ..... "H"
19	RPT IND	Repeat Indicator	O	"H" is output in repeat mode.
20	DK DET	DK DETECT	I	"L" is input at detection of a DK signal.
21	FWD DET	FWD Reel Rotation Detect	I	Detects rotation of a reel on forward side.
22	RVS DET	RVS Reel Rotation Detect	I	Detects rotation of a reel on reverse side.
23	EJC END	EJECT END Detect	I	Connects eject completion detecting switch.
24	FWD/RVS	PLAY Direction Detect	I	FWD → Low, RVS → High
25	MOTOR +	MOTOR +	O	Motor Control Terminal
26	MOTOR -	MOTOR -	O	Motor Control Terminal
27	N.C.	—————	—	Refer to the Pin 1
28	F SOL	F-SOLENOID	O	Solenoid Control Terminal
29	N.C.	—————	—	Refer to the Pin 1
30	R SOL	R-SOLENOID	O	Solenoid Control Terminal
31	V <sub>SS</sub>	GND Terminal	—	To be grounded.
32	X1	Crystal 1	—	Connects a crystal
33	V <sub>DD</sub>	Power Supply	—	Power Terminal
34	X2	Crystal 2	—	Connects a crystal
35	N.C.	—————	—	Refer to the Pin 1
36	DLB C IND	Dolby C Indicator	O	Dolby C Control Output. Active="High"
37	DLB B IND	Dolby B Indicator	O	Dolby B Control Output. Active="High"
38	MTL IND	Metal Indicator	O	Metal Control Output. Active="High"
39	APC IND	APC Indicator	O	APC Indicator Control Output. Active="High"
40	N.C.	—————	—	Refer to the Pin 1
41	STP KEY	STOP/EJECT KEY	I	KEY Input Terminal. Active="Low"
42	PLY KEY	PLAY/PROGRAM KEY	I	
43	FF KEY	FF KEY	I	
44	RW KEY	Rewind KEY	I	
45	N.C.	—————	—	Refer to the Pin 1
46	FWD IND	Forward Indicator	O	Indicator Control Output. Active="High"
47	RVS IND	Reverse Indicator	O	
48	FF IND	FF Indicator	O	
49	RWD IND	Rewind Indicator	O	
50	APC KEY	APC KEY	O	KEY Input Terminal. Active="Low"
51	MTL KEY	Metal KEY	O	
52	DLB KEY	Dolby KEY	O	

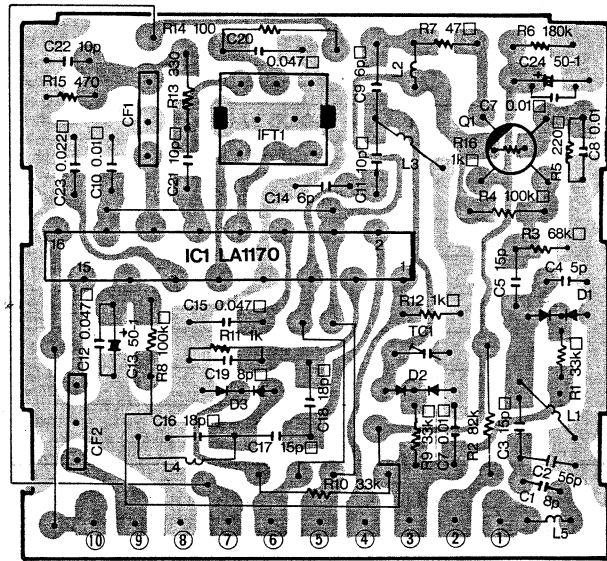




**970-0304-01 FM TUNER PACK:**  
**CIRCUIT DIAGRAM:**



**PRINTED WIRING BOARD:**

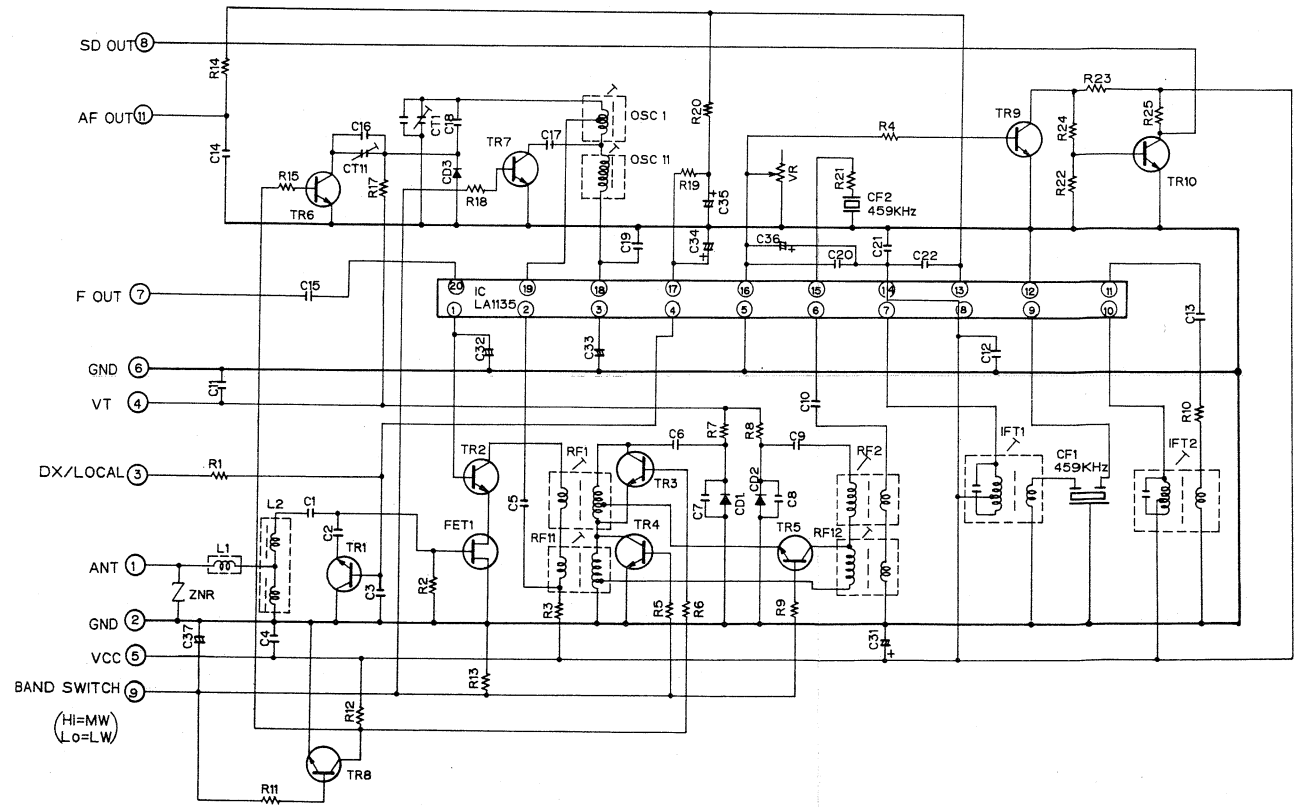


**PARTS LIST:**

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY	REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
D <sub>1-3</sub>	001-0442-00	Diode (1SV147)	3	R <sub>3</sub>	117-6831-10	Chip resistor (1/8W68kΩ) S	1
TC <sub>1</sub>	004-1567-00	Trimmer	1	C <sub>8</sub>	171-1033-06	Ceramic capacitor (0.01μF) SC	1
IFT <sub>1</sub>	005-0966-00	IF-transformer	1	C <sub>22</sub>	174-1000-13	Ceramic capacitor (10pF) TC	1
CF <sub>1,2</sub>	005-0967-00	IF-transformer (MS310.7LK)	2	C <sub>4</sub>	174-5090-13	Ceramic capacitor (5pF) TC	1
L <sub>2</sub>	010-1570-01	Coil	1	C <sub>2</sub>	174-5600-13	Ceramic capacitor (56pF) TC	1
L <sub>5</sub>	010-2046-03	Coil	1	C <sub>14</sub>	174-6090-13	Ceramic capacitor (6pF) TC	1
L <sub>4</sub>	010-2104-00	Coil	1	C <sub>1</sub>	174-8090-13	Ceramic capacitor (8pF) TC	1
L <sub>1</sub>	010-2105-00	Coil	1	C <sub>11,21</sub>	175-1007-00	Ceramic chip capacitor (10pF) TC	2
L <sub>3</sub>	010-2106-00	Coil	1	C <sub>3,5,17</sub>	175-1501-00	Ceramic chip capacitor (15pF) TC	3
IC <sub>1</sub>	051-0737-00	IC (LA-1170)	1	C <sub>16,18</sub>	175-1801-00	Ceramic chip capacitor (18pF) TC	2
Q <sub>1</sub>	124-0114-10	FET (3SK-114)	1	C <sub>9</sub>	175-6097-00	Ceramic chip capacitor (6pF) TC	1
R <sub>4,8</sub>	116-1041-10	Chip resistor (1/8W100kΩ)	2	C <sub>19</sub>	175-8097-00	Ceramic chip capacitor (8pF) TC	1
R <sub>13</sub>	116-3311-10	Chip resistor (1/8W330Ω)	1	C <sub>7</sub>	177-1032-05	Ceramic chip capacitor (0.01μF) HD	1
R <sub>11,9</sub>	116-3331-10	Chip resistor (1/8W33kΩ)	2	C <sub>12,15,20</sub>	177-4732-05	Ceramic chip capacitor (0.047μF) HD	3
R <sub>12,16</sub>	117-1021-10	Chip resistor (1/8W1kΩ) S	2	C <sub>6,10</sub>	178-1032-05	Ceramic chip capacitor (0.01μF) HD,S	2
R <sub>5</sub>	117-2211-10	Chip resistor (1/8W220Ω) S	1	C <sub>23</sub>	178-2232-05	Ceramic chip capacitor (0.022μF) HD,S	1
R <sub>7</sub>	117-4701-10	Chip resistor (1/8W47Ω) S	1	C <sub>13,24</sub>	183-1053-62	Electrolytic capacitor (50V1μF) USS	2

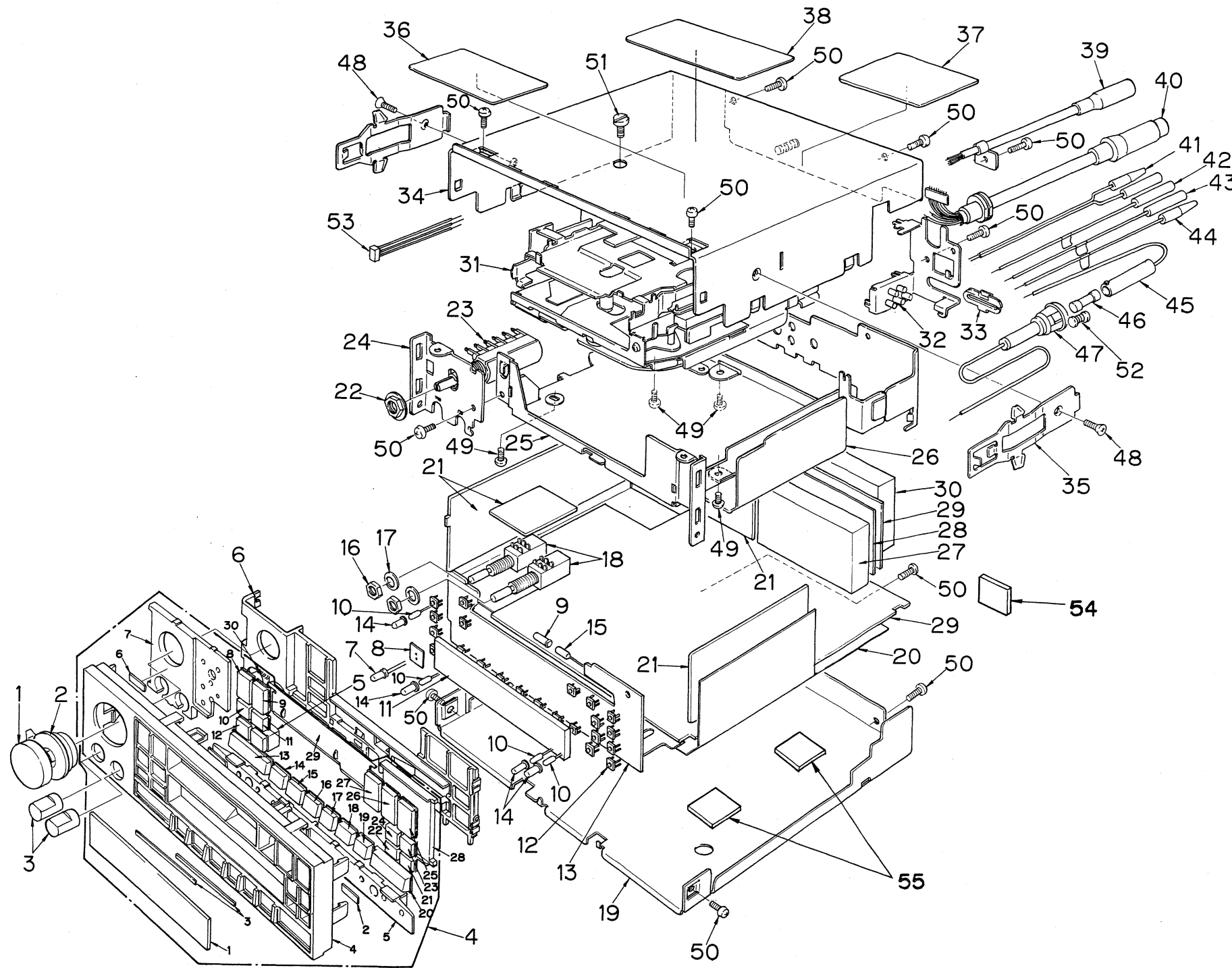
Note : OM (Oxidized Metal)      SS (Super Small)  
 S (Small)                              TC (Temperature-Compensating)  
 HD (Higher Dielectric)              LL (Low Leak)  
 SC (Semi-Conductor)                USS (Ultra Super Small)

**941-0146-00 MW/LW TUNER PACK:**  
**CIRCUIT DIAGRAM:**



# EXPLODED VIEW • PARTS LIST:

©Main section



REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
4-30	750-2309-01	Spring	1
5	382-0864-00	Button (WARNING)	1
6	374-0880-00	Back plate	1
7	001-0207-00	Diode	1
8	347-1868-00	Insulator	1
9	345-2830-07	P.L. cap	1
10	017-0338-06	Pilot lamp	4
11	379-0051-18	Indicator	1
12	013-3694-00	Switch (E981) (E980)	22 21
13	099-7410-01	P.W.B	1
14	345-3619-00	P.L. cap	4
15	017-0349-00	Pilot lamp	1
16	722-0332-00	Nut	2
17	745-0560-00	Washer	2
18	012-4070-00	Variable resistor (BASS, TREBLE)	2
19	304-0382-00	Lower cover	1
20	347-1871-00	Insulator	1
21	099-7470-01	P.W.B	1
22	722-0417-00	Nut	1
23	012-4375-00	Variable resistor (VOL)	1
24	330-8228-00	VR holder	1
25	312-0257-00	Chassis	1
26	347-1869-00	Insulator	1
27	941-0146-00	MW/LW tuner pack	1
28	347-1870-00	Insulator	1
29	099-7469-00	P.W.B	1
30	970-0304-01	FM tuner pack	1
31	930-0530-00	Tape mechanism	1
32	944-0705-00	Filter ass'y	1
33	335-0818-00	Lead holder	1
34	310-1231-00	Upper case	1
35	750-2486-00	Spring	2
36	285-1000-00	Guide label (LOCK SCREW)	1
37	286-5629-00 286-5639-00	Set plate (E981) (E980)	1
38	285-0915-00	Guide label (SERVICE)	1
39	092-0582-00	Antenna receptacle	1
40	852-8687-00	Extension lead (12P)	1
41	851-2136-01	Speaker lead (TEMP)	1
42	852-6652-01	Extension lead (AUTO-ANT)	1
43	852-8734-00	Extension lead (REMOCON)	1
44	850-1580-01	A-lead (ILLUMI)	1
45	850-1822-00	A-lead (POWER)	1
46	120-0030-03 120-0030-00	Fuse (3A) (E981) (E980)	1
47	850-2321-00 850-2258-00	A-lead (E981) (POWER) (E980)	1
48	714-3006-49	Machine screw (M3x6)	2
49	714-3004-81	Machine screw (M3x4)	4
50	731-3005-80	Tap tight (M3x5)	11
51	716-0523-00	Screw	1
52	010-1610-02	Coil (E981)	1
53	852-8716-00	Extension lead	1
54	345-4163-00	Spacer	1
55	345-4162-00	Spacer	2

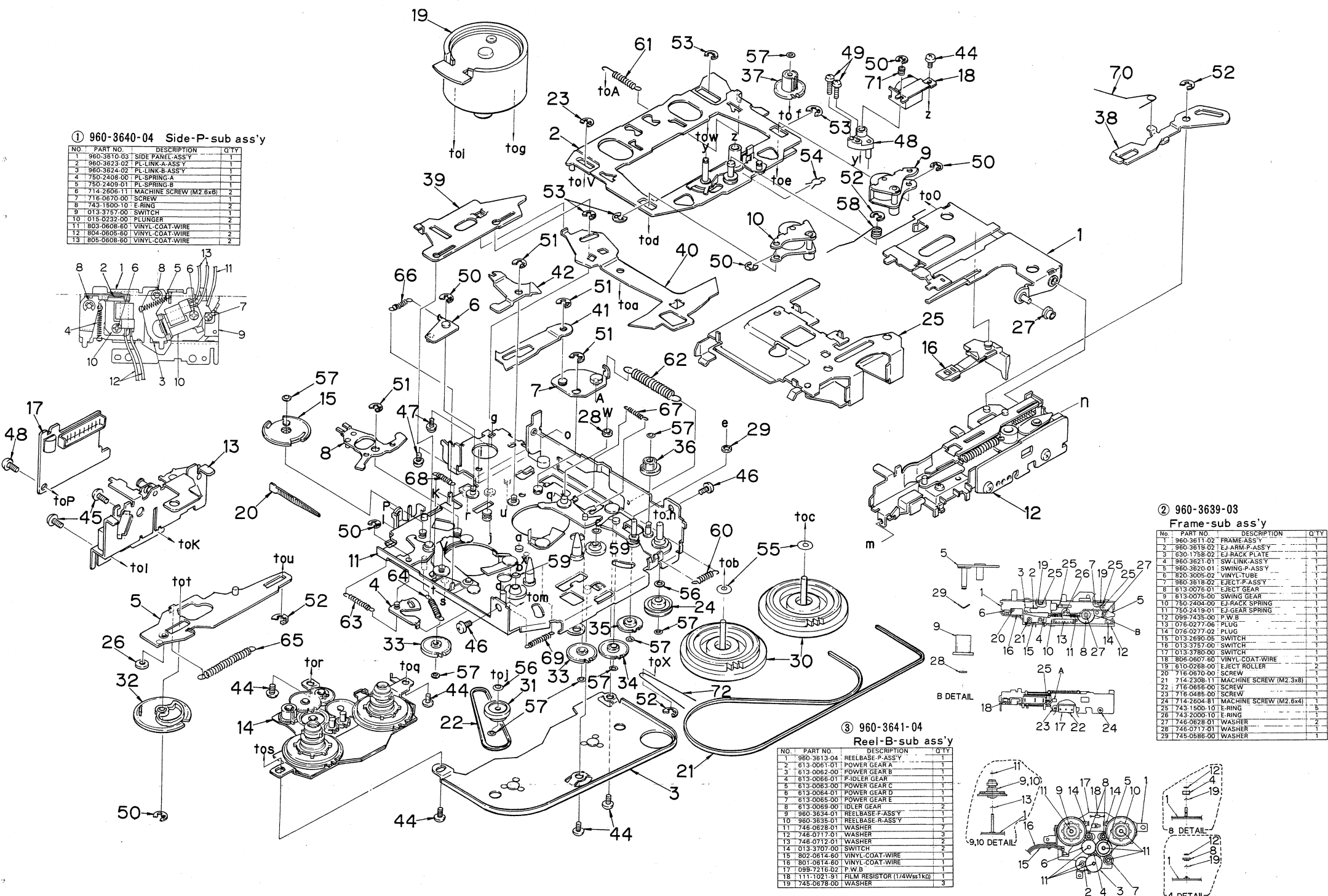
REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
1	380-4293-01	Knob (VOL)	1
2	380-4295-00	Knob (FAD)	1
3	380-4294-01	Knob (BASS/TREB)	2
4	940-2867-04 940-2867-05	Escutcheon (E981) ass'y (E980)	1
4-1	373-0364-15	Dial cover	1
4-2	347-0772-00	Adhesive tape	2
4-3	347-1896-00	Adhesive tape	2
4-4	370-3837-00	Escutcheon	1
4-5	371-3270-00	Trim plate	1
4-6	347-0872-00	Adhesive tape	2
4-7	371-3269-00	Trim plate	1

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
4-8	382-0860-00	Button (APC)	1
4-9	382-0860-01	Button (EJECT)	1
4-10	382-0862-04	Button (DOLBY)	1
4-11	382-0862-06	Button (MTL)	1
4-12	382-0862-05	Button (LD)	1
4-13	382-0858-00	Button (SEEK)	1
4-14	382-0859-00	Button (1)	1
4-15	382-0859-01	Button (2)	1
4-16	382-0859-02	Button (3)	1
4-17	382-0859-03	Button (4)	1
4-18	382-0859-04	Button (5)	1

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
4-19	382-0859-05	Button (6)	1
4-20	382-0858-01	Button (MANUAL)	1
4-21	382-0862-01	Button (ME)	1
4-22	382-0862-03 382-0863-00	Button (E981, VF) (E980, DUMMY)	1
4-23	382-0862-00	Button (LMU)	1
4-24	382-0862-02	Button (ST)	1
4-25	382-0861-00	Button (FF)	1
4-26	382-0861-01	Button (PRO)	1
4-27	382-0861-00	Button (REW)	1
4-28	371-3271-01	Trim plate	1
4-29	320-0326-63 320-0326-64	Dustproof (E981) cover (E980)	1

# EXPLODED VIEW • PARTS LIST:

◎Tape mechanism section



① 960-3640-04 Side-P-sub ass'y

NO.	PART NO.	DESCRIPTION	Q'TY
1	960-3610-03	SIDE PANEL ASS'Y	1
2	960-3623-02	PL-LINK-A ASS'Y	1
3	960-3624-02	PL-LINK-B ASS'Y	1
4	750-2408-00	PL-SPRING-A	1
5	750-2409-01	PL-SPRING-B	1
6	714-2606-11	MACHINE SCREW (M2.6x3)	1
7	716-0670-00	SCREW	1
8	743-1500-10	E-RING	2
9	013-3157-00	SWITCH	1
10	015-0232-00	PLUNGER	2
11	803-0608-60	VINYL-COAT-WIRE	1
12	804-0605-60	VINYL-COAT-WIRE	2
13	805-0608-60	VINYL-COAT-WIRE	2

② 960-3639-03 Frame-sub ass'y

NO.	PART NO.	DESCRIPTION	Q'TY
1	960-3611-02	FRAME ASS'Y	1
2	360-3619-02	EJ-ARM-F ASS'Y	1
3	630-1758-02	EJ-RACK PLATE	1
4	960-3621-01	SW-LINK ASS'Y	1
5	960-3620-01	SWING-F ASS'Y	1
6	820-3095-02	VINYL-TUBE	1
7	960-3618-02	EJECT-F ASS'Y	1
8	813-0076-01	EJECT GEAR	1
9	813-0075-00	SWING GEAR	1
10	750-2404-00	EJ-RACK SPRING	1
11	750-2419-01	EJ-GEAR SPRING	1
12	099-7435-00	P.W.B	1
13	076-0277-06	PLUG	1
14	076-0277-02	PLUG	1
15	013-2690-05	SWITCH	1
16	013-3757-00	SWITCH	1
17	013-3758-00	SWITCH	1
18	806-0607-60	VINYL-COAT-WIRE	1
19	610-0268-00	EJECT ROLLER	2
20	716-0610-00	SCREW	1
21	714-2398-11	MACHINE SCREW (M2.6x3)	1
22	716-0656-00	SCREW	1
23	716-0485-00	SCREW	1
24	714-2604-81	MACHINE SCREW (M2.6x4)	1
25	743-1500-10	E-RING	5
26	743-2000-10	E-RING	1
27	746-0628-01	WASHER	2
28	746-0717-01	WASHER	1
29	745-0658-00	WASHER	1

③ 960-3641-04 Reel-B-sub ass'y

NO.	PART NO.	DESCRIPTION	Q'TY
1	960-3613-04	REEL-BASE-F ASS'Y	1
2	613-0061-01	POWER GEAR A	1
3	613-0062-00	POWER GEAR B	1
4	613-0066-01	POWER GEAR C	1
5	613-0063-00	POWER GEAR D	1
6	613-0064-01	POWER GEAR E	1
7	613-0065-00	POWER GEAR F	1
8	613-0069-00	POWER GEAR G	1
9	960-3634-01	REEL-BASE-F ASS'Y	1
10	960-3635-01	REEL-BASE-F ASS'Y	1
11	745-0678-01	WASHER	1
12	746-0717-01	WASHER	3
13	746-0712-01	WASHER	2
14	013-3707-00	SWITCH	2
15	802-0614-60	VINYL-COAT-WIRE	1
16	807-0614-60	VINYL-COAT-WIRE	1
17	089-7216-02	P.W.B	1
18	111-1021-31	FILM RESISTOR (1/4Wx1K)	1
19	745-0678-00	WASHER	3

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
1	960-3609-01	Guide arm ass'y	1
2	960-3612-03	Head plate ass'y	1
3	960-3617-00	Flywheel-P ass'y	1
4	960-3626-01	Timing-P ass'y	1
5	960-3627-03	Power-P ass'y	1
6	960-3628-01	P-lock-P ass'y	1
7	960-3631-02	Power link ass'y	1

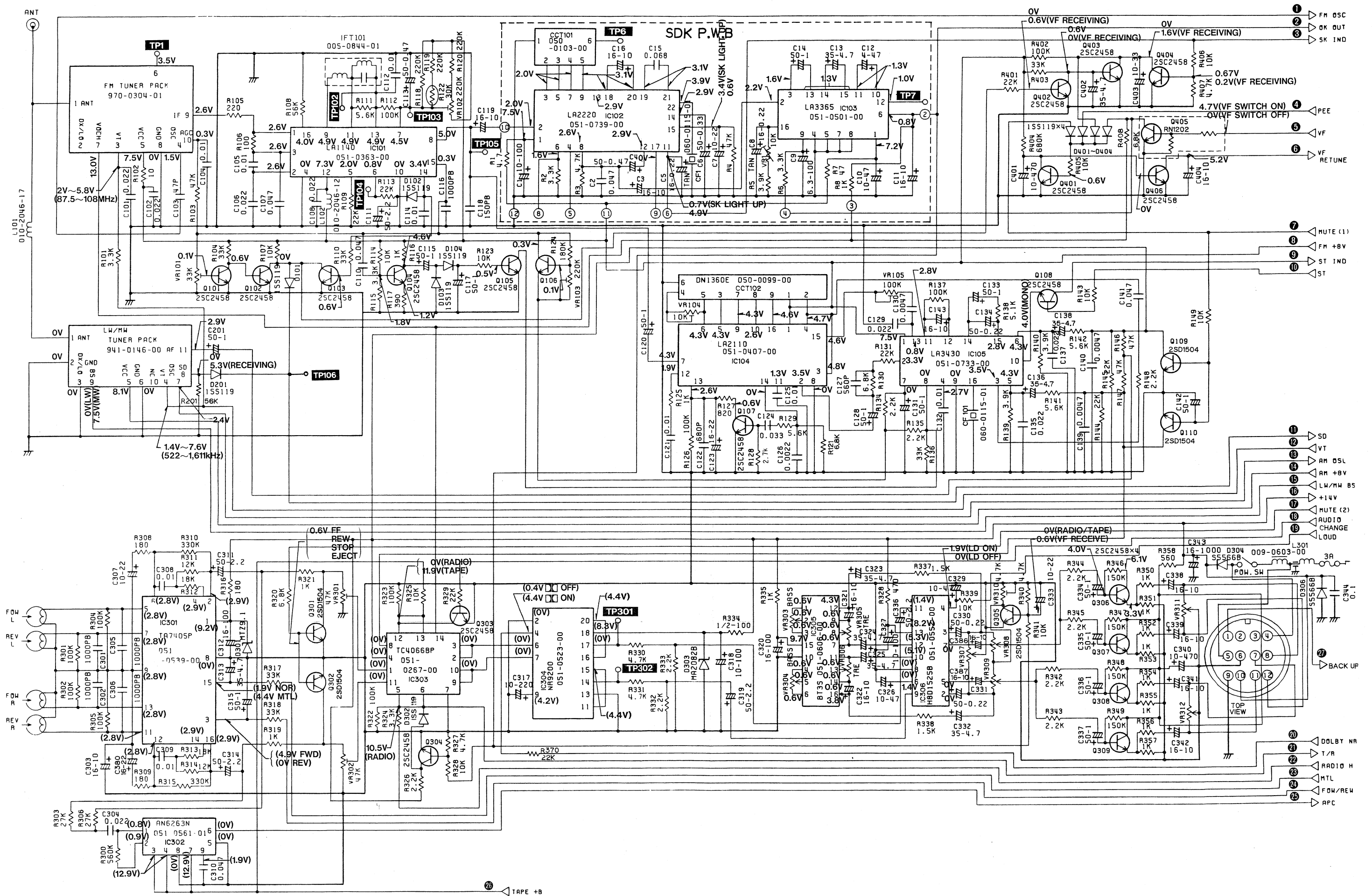
REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
8	960-3632-02	REW-link ass'y	1
9	960-3738-00	Roller-F ass'y	1
10	960-3739-00	Roller-R ass'y	1
11	960-3638-04	Deck plate ass'y	1
12	960-3639-03	Frame-sub ass'y ②	1
13	960-3640-04	Side-P-sub ass'y ①	1
14	960-3641-04	Reel-B-sub ass'y ③	1

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
15	960-3642-02	CH-gear ass'y	1
16	960-3643-02	Pack-ST ass'y	1
17	990-0614-00	P.W.B ass'y	1
18	011-0291-00	Head	1
19	SMA-105-100	DC motor ass'y	1
20	335-0833-01	Lead holder	1
21	602-0091-01	Belt-A	1

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
22	602-0092-02	Belt-B	1
23	744-0024-01	E-ring	1
24	604-0029-01	Tension pulley	1
25	606-0079-03	Pack guide	1
26	610-0266-00	Cam roller	1
27	610-0267-00	Guide roller	1
28	610-0281-00	Head-P-roller	1
29	610-0282-00	H-P-roller B	1
30	611-0072-02	Flywheel	2
31	613-0060-00	Pulley gear	1
32	613-0067-03	Cam gear	1
33	613-0070-00	FF-gear	2
34	613-0071-00	Loading gear-A	1
35	613-0072-00	Loading gear-B	1
36	613-0073-00	Loading gear-C	1
37	613-0074-00	Loading gear-D	1
38	630-1759-01	Eject arm	1
39	630-1760-02	Change plate	1
40	630-1761-00	Change arm	1
41	630-1762-02	Head lock plate	1
42	630-1763-01	FF-link	1
43	631-0461-01	Azimuth link	1
44	714-2003-81	Machine screw (M2x3)	6
45	714-2603-81	Machine screw (M2.6x3)	2
46	714-2604-81	Machine screw (M2.6x4)	2
47	716-0347-00	Screw (MOTOR)	2
48	716-0485-00	Screw (P.W.B)	1
49	716-0654-01	Screw (AZIMUTH)	2
50	743-1500-10	E-ring	6
51	743-2000-10	E-ring	4
52	743-2500-10	E-ring	4
53	744-0031-10	E-ring	4
54	744-0028-00	Snap retainer	1
55	745-0646-00	Washer (FLYWHEEL)	2
56	746-0624-00	Washer	2
57	746-0628-01	Washer	9
58	750-2422-03	Roller spring	1
59	746-0747-00	Washer (BEARING)	2
60	750-2405-01	Loading spring	1
61	750-2406-02	Head-P-spring	1
62	750-2407-02	P-link spring	1
63	750-2410-00	G-lock spring	1
64	750-2411-00	Timing spring	1
65	750-2412-00	Power-P-spring	1
66	750-2413-00	P-lock spring	1
67	750-2414-02	FF-spring	1
68	750-2415-01	REW-spring	1
69	750-2416-00	Brake spring	1
70	750-2418-00	EJ-arm spring-B	1
71	750-2420-00	Azimuth spring	1
72	750-2421-00	Change-A-spring	1

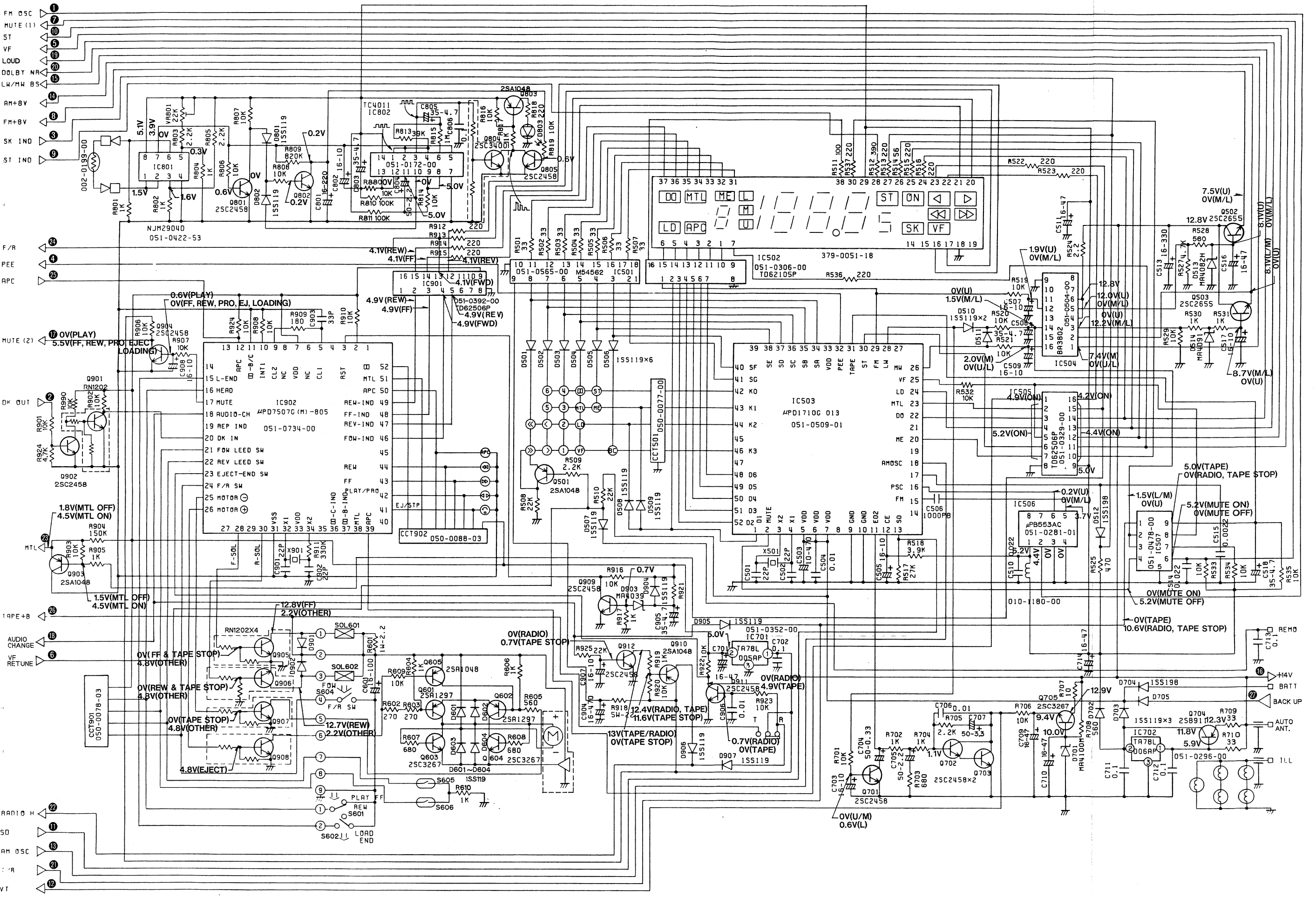
# CIRCUIT DIAGRAM:

• E981 (PE-9057A)



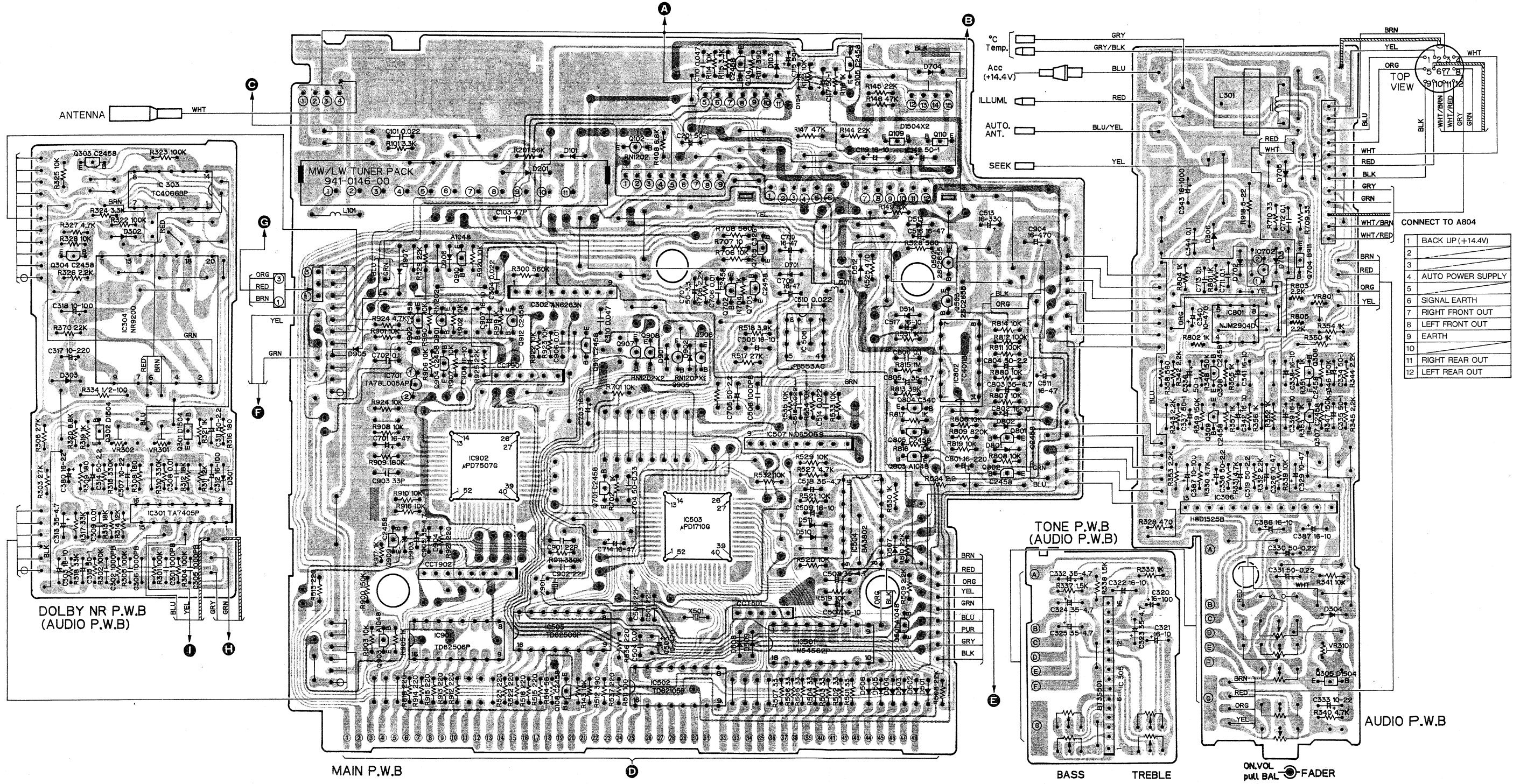
# CIRCUIT DIAGRAM:

● E981 (PE-9057A)

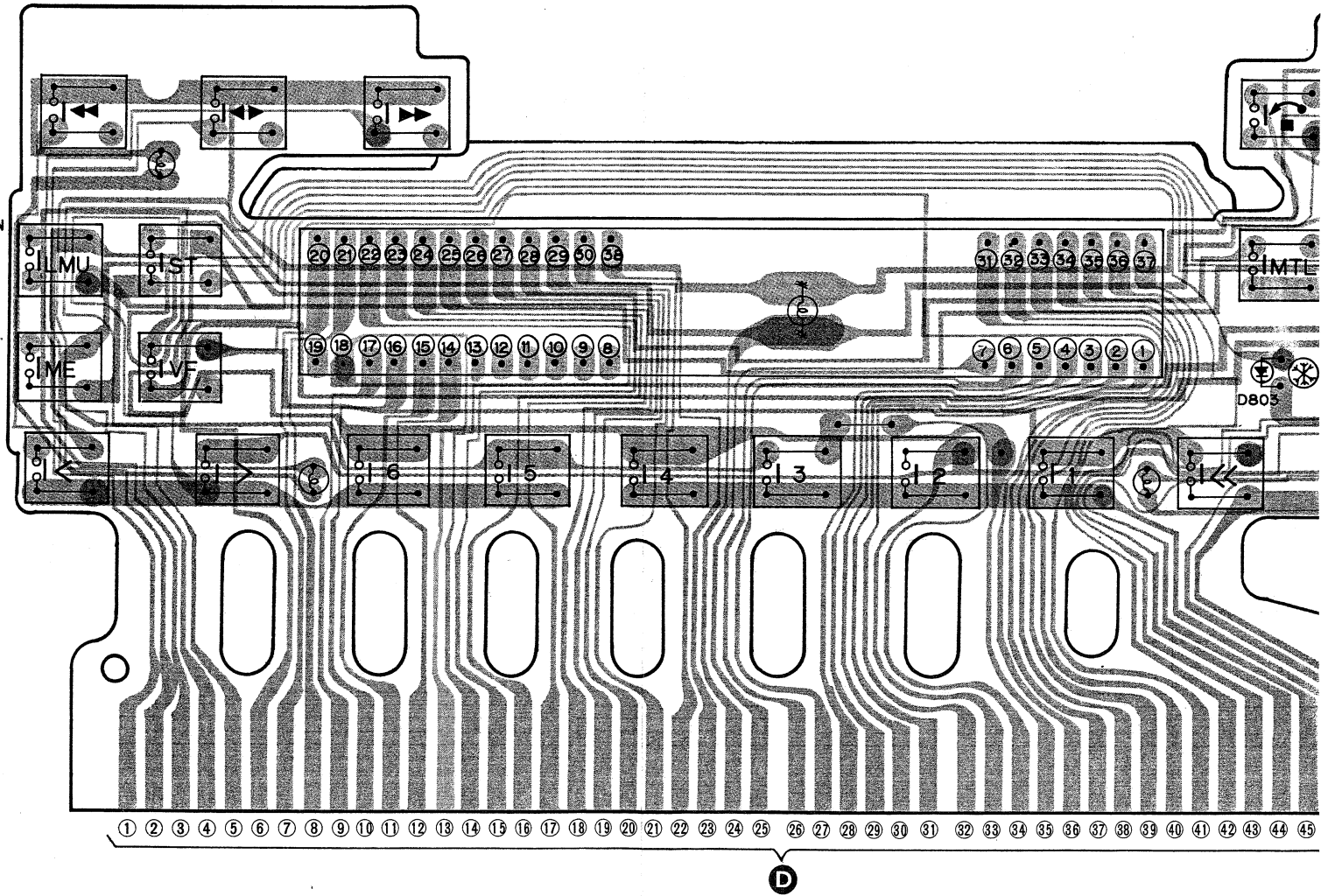
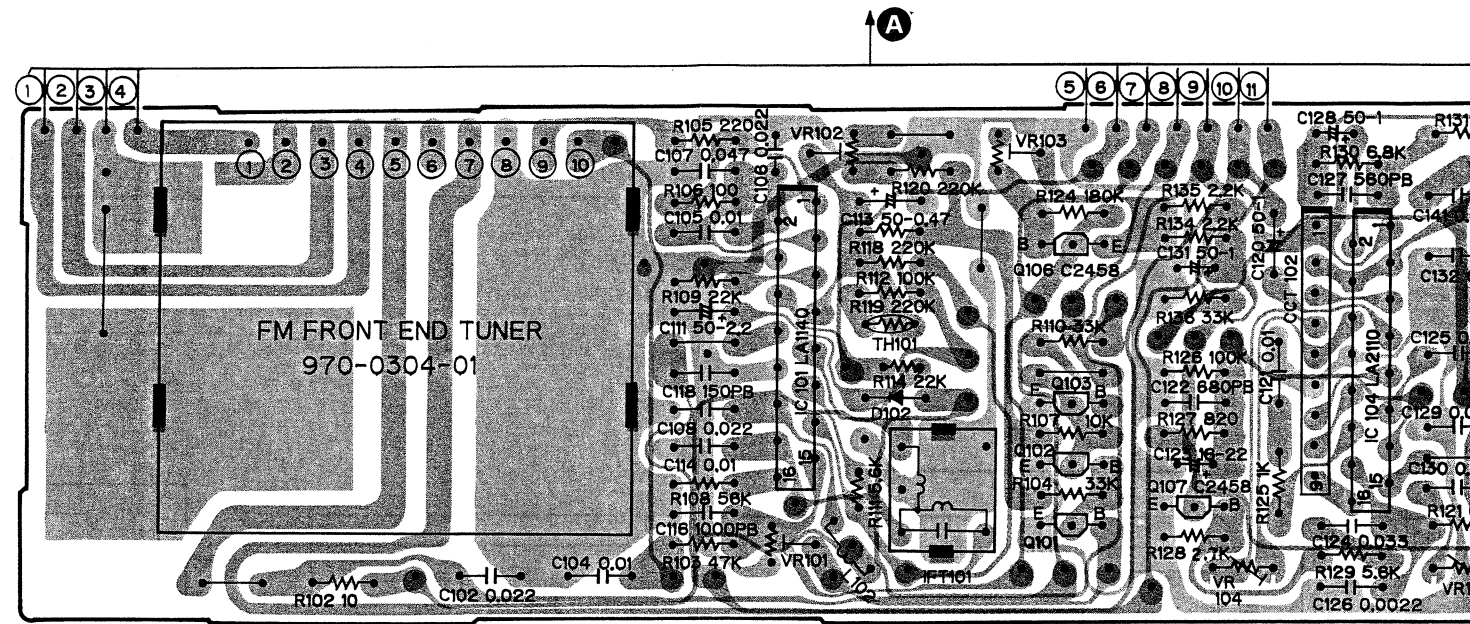
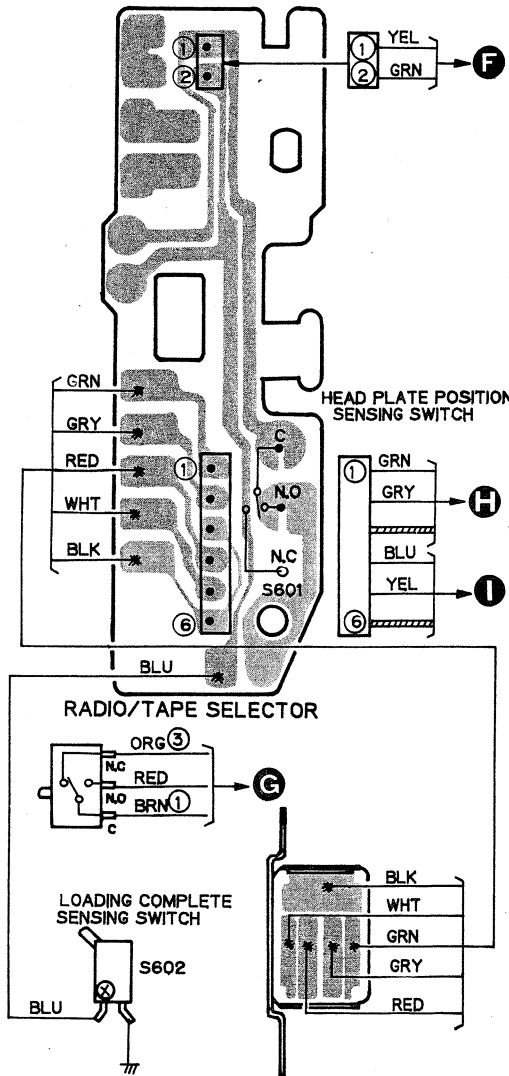
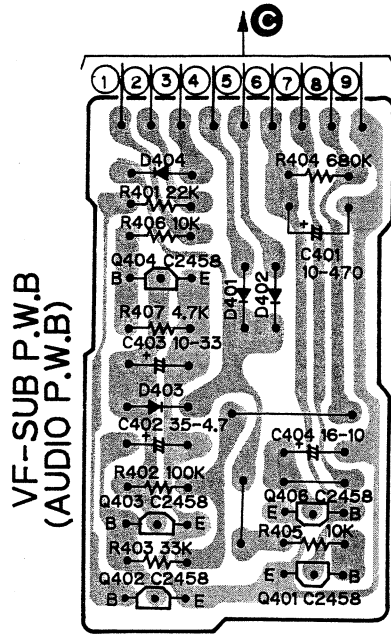
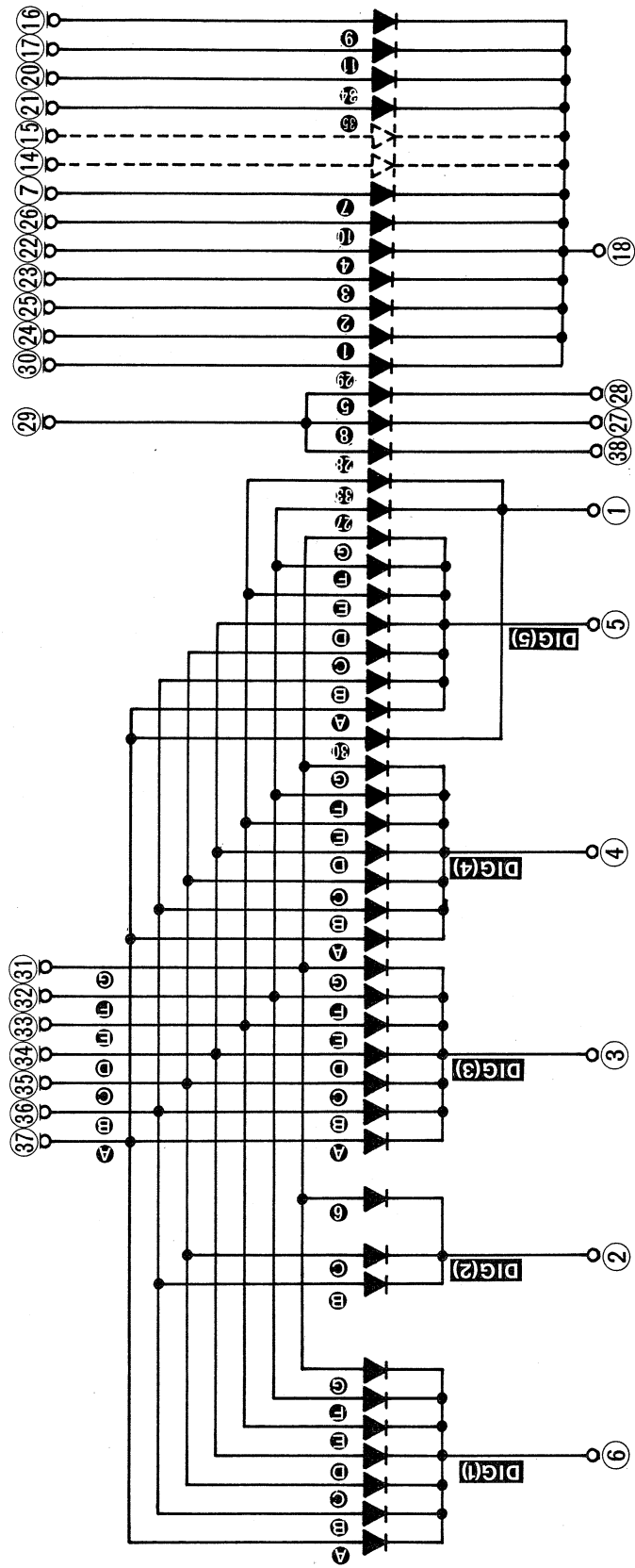
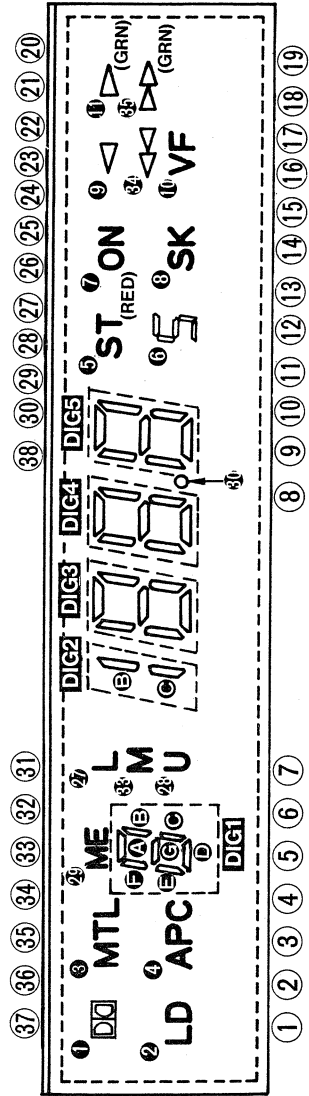


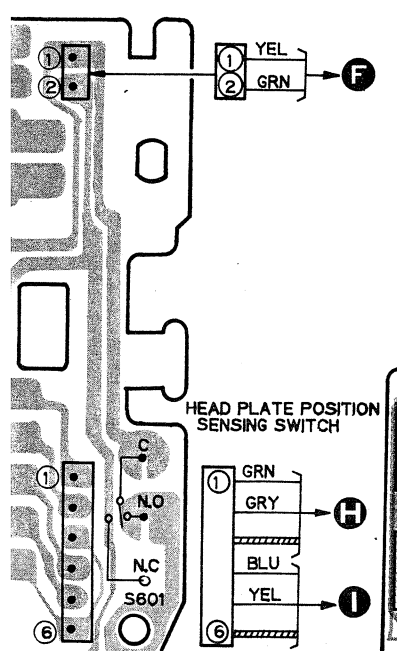
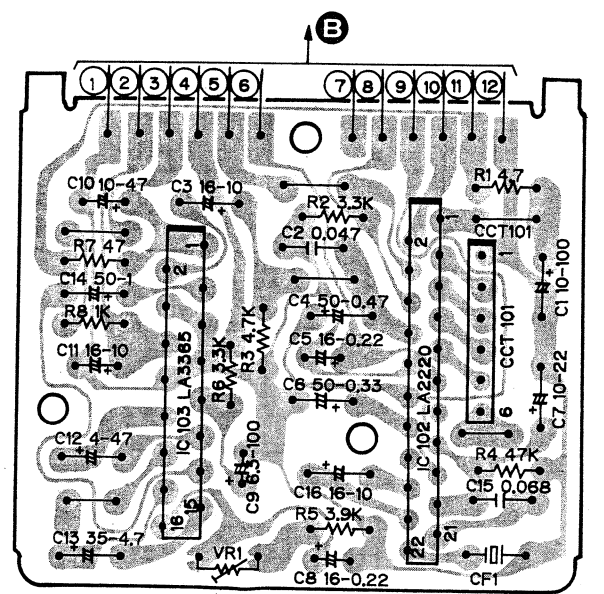
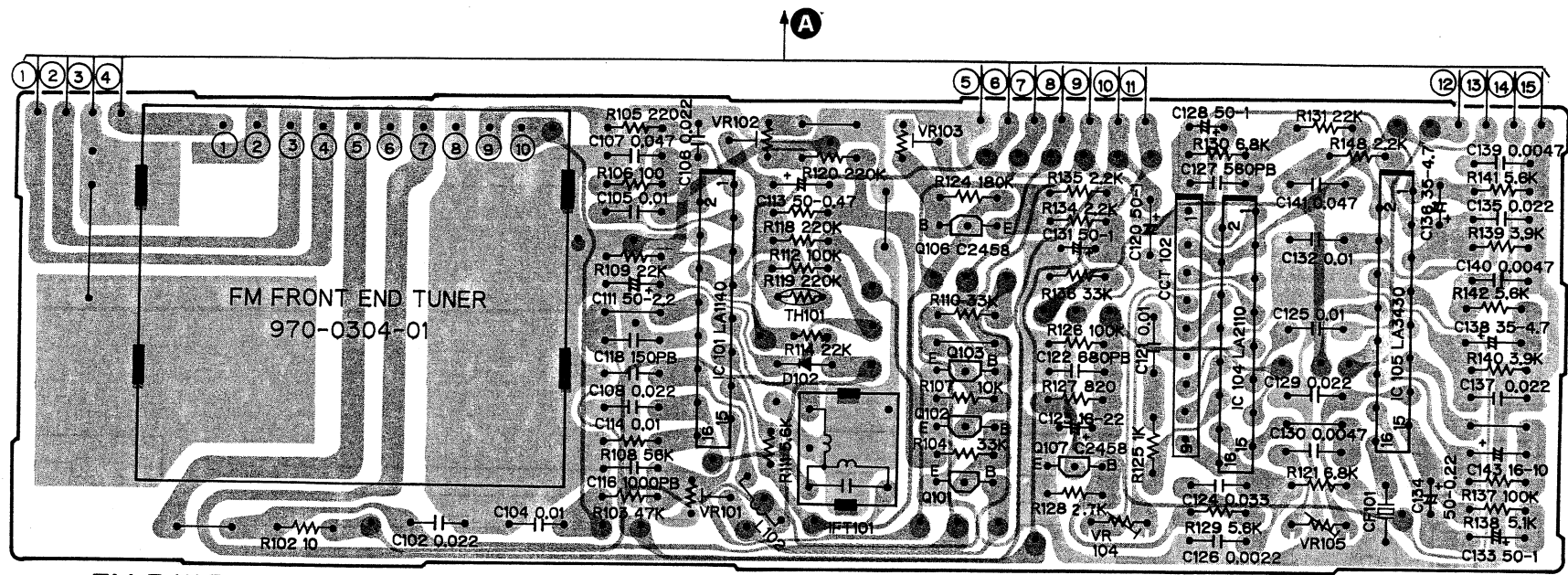
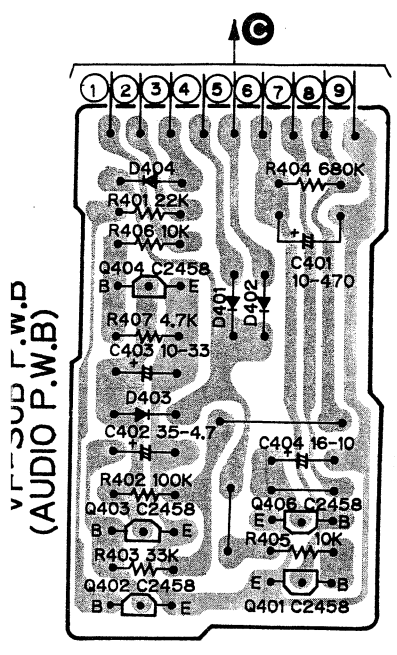
PRINTED WIRING BOARD:

● E981 (PE-9057A)

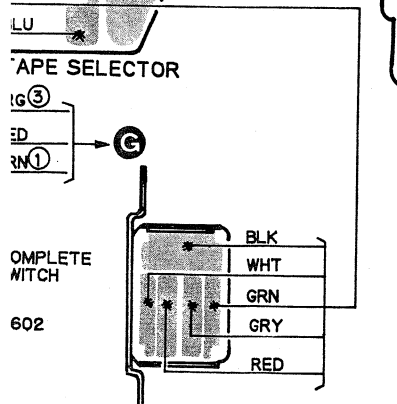
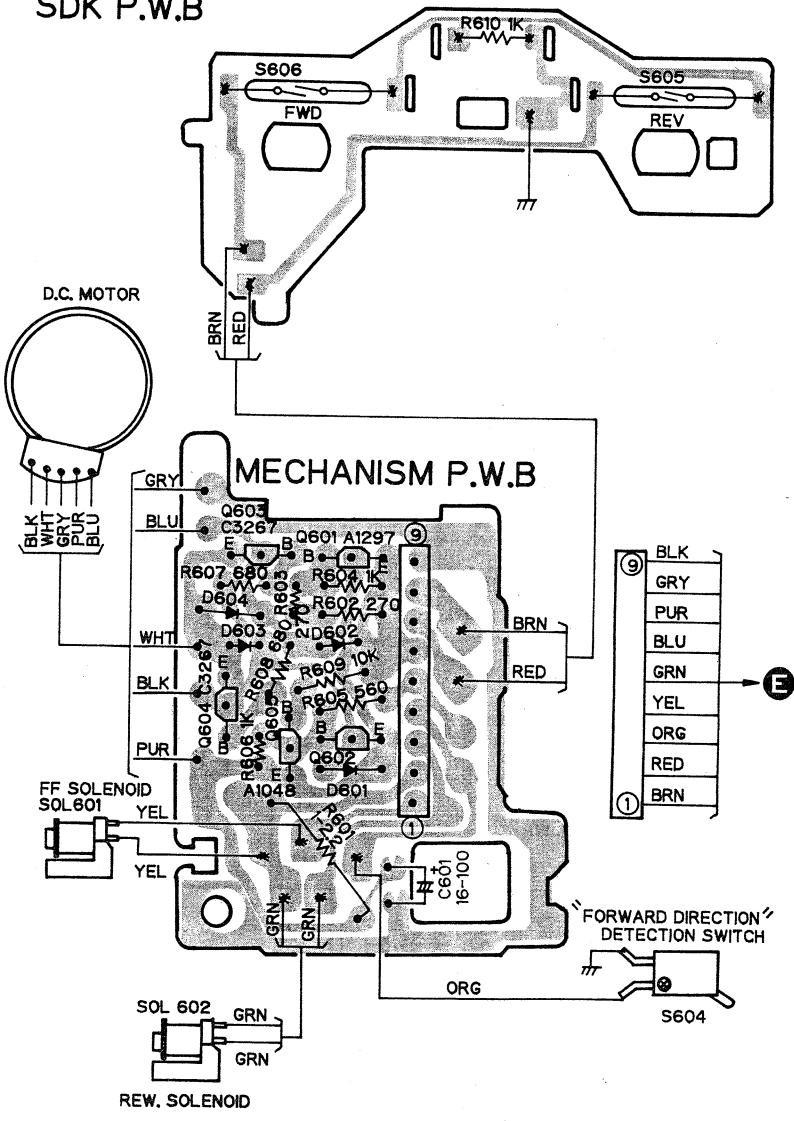
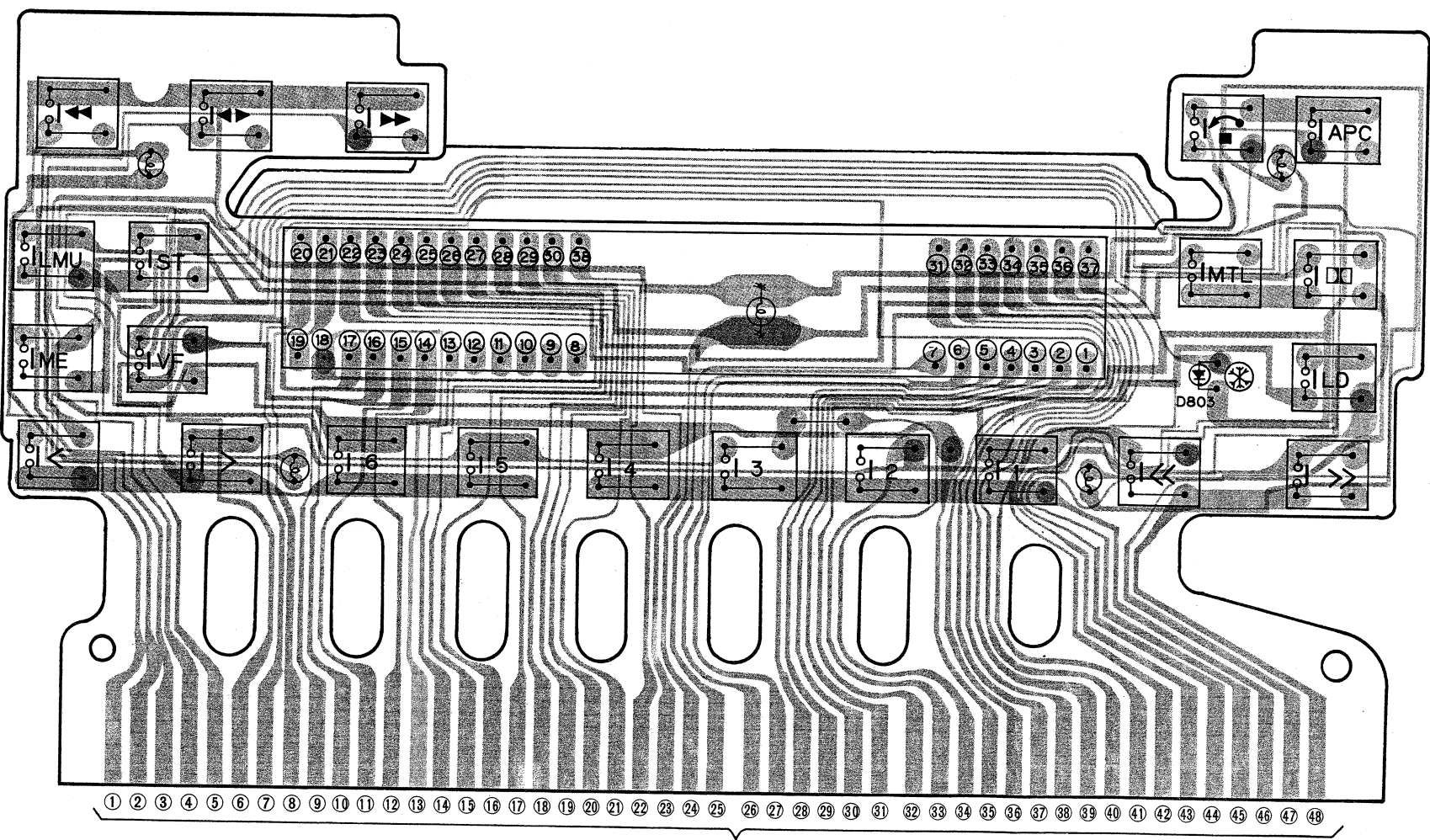


- CONNECT TO A804
- |    |                   |
|----|-------------------|
| 1  | BACK UP (+14.4V)  |
| 2  |                   |
| 3  |                   |
| 4  | AUTO POWER SUPPLY |
| 5  |                   |
| 6  | SIGNAL EARTH      |
| 7  | RIGHT FRONT OUT   |
| 8  | LEFT FRONT OUT    |
| 9  | EARTH             |
| 10 |                   |
| 11 | RIGHT REAR OUT    |
| 12 | LEFT REAR OUT     |





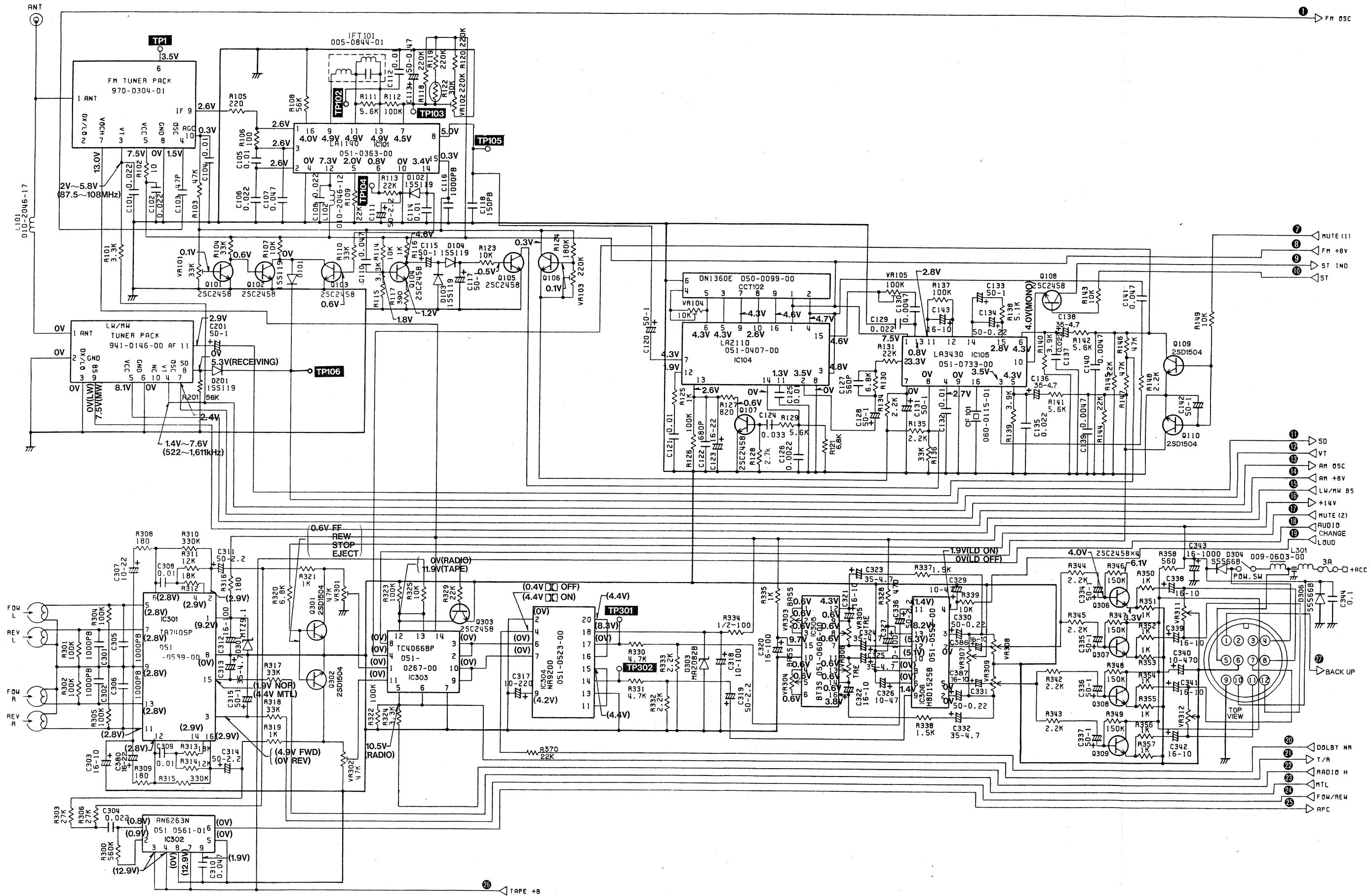
FM P.W.B  
(MAIN P.W.B)



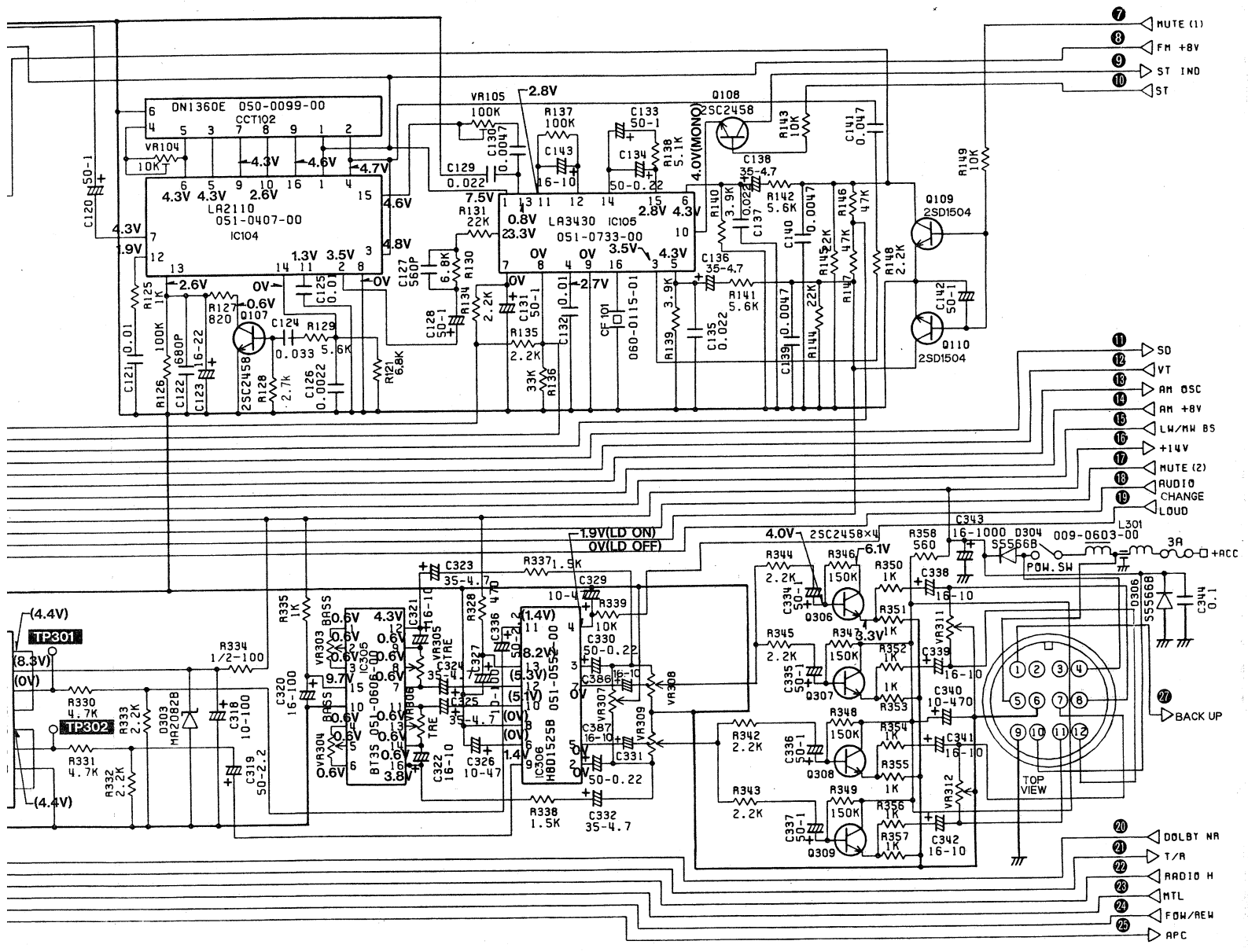


# CIRCUIT DIAGRAM:

● E980 (PE-9058A)

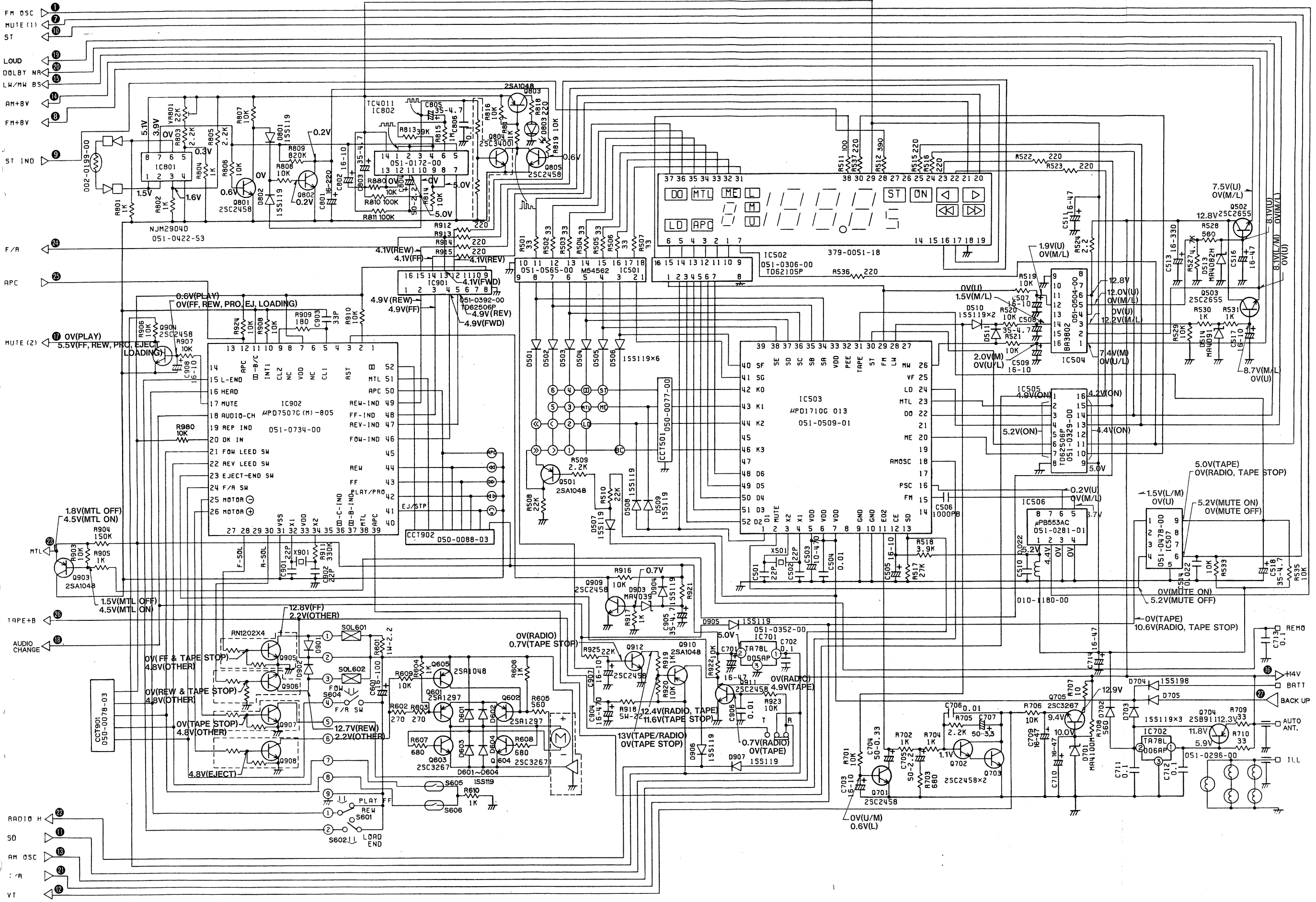


FN OSC



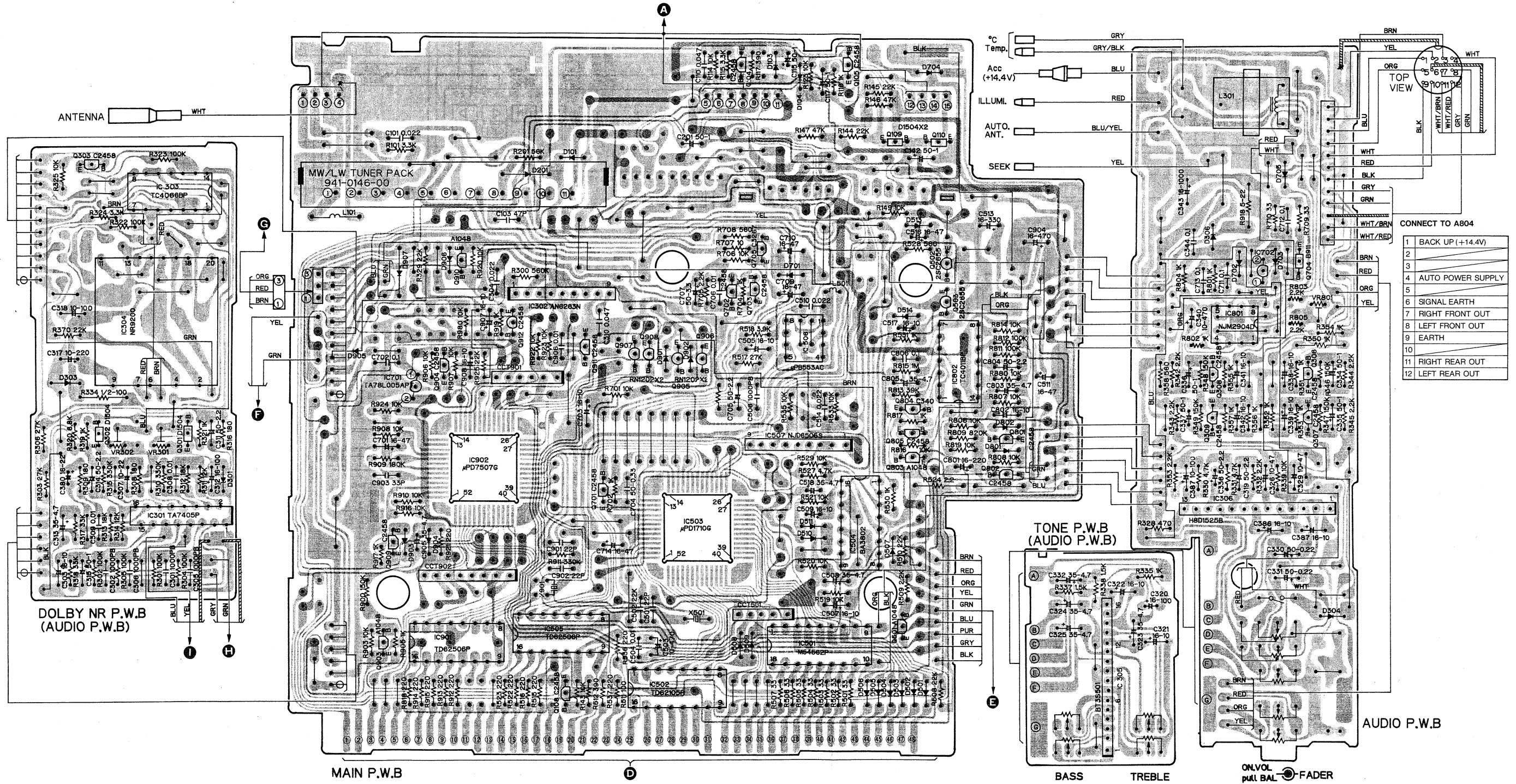
# CIRCUIT DIAGRAM:

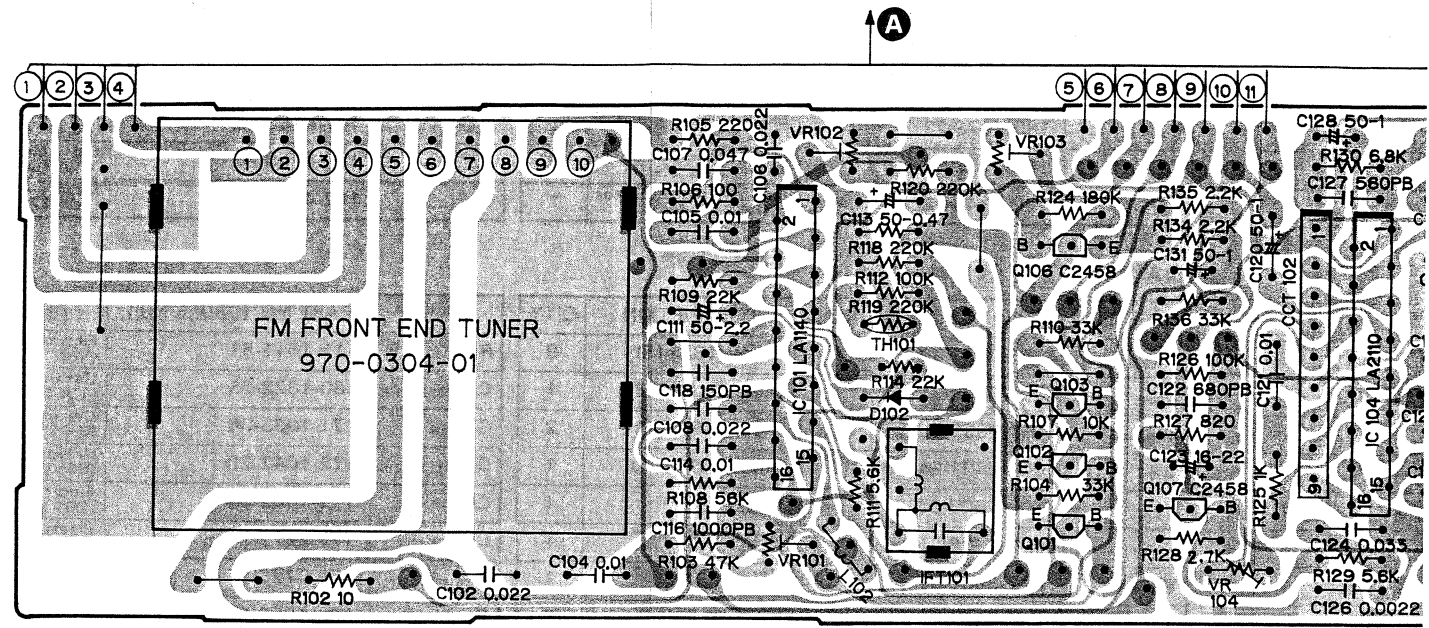
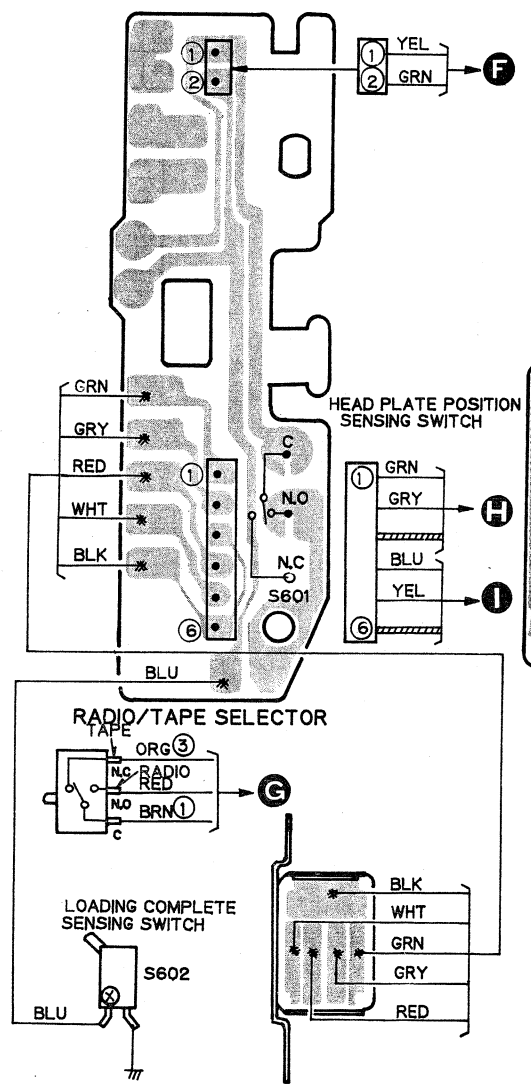
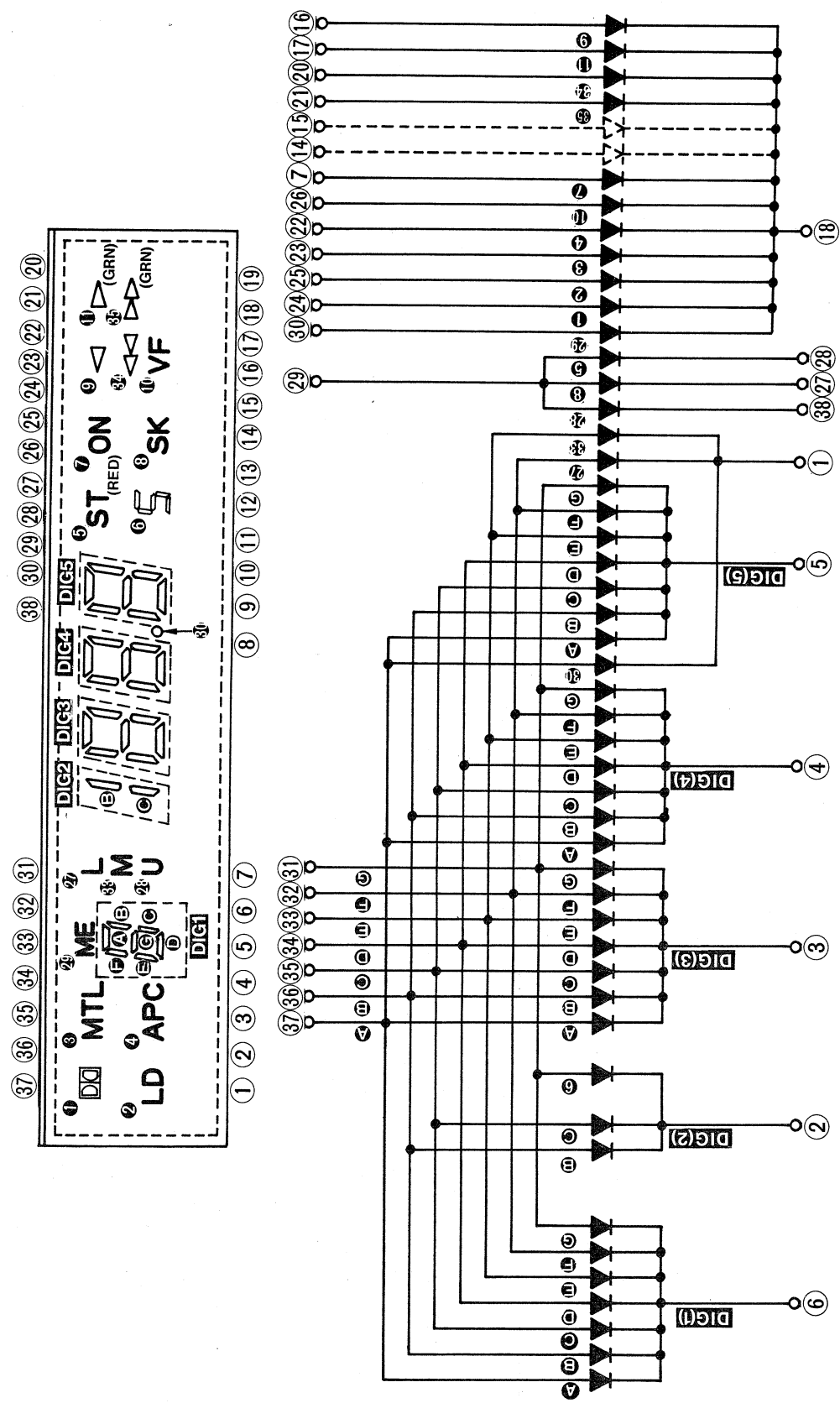
• E980 (PE-9058A)

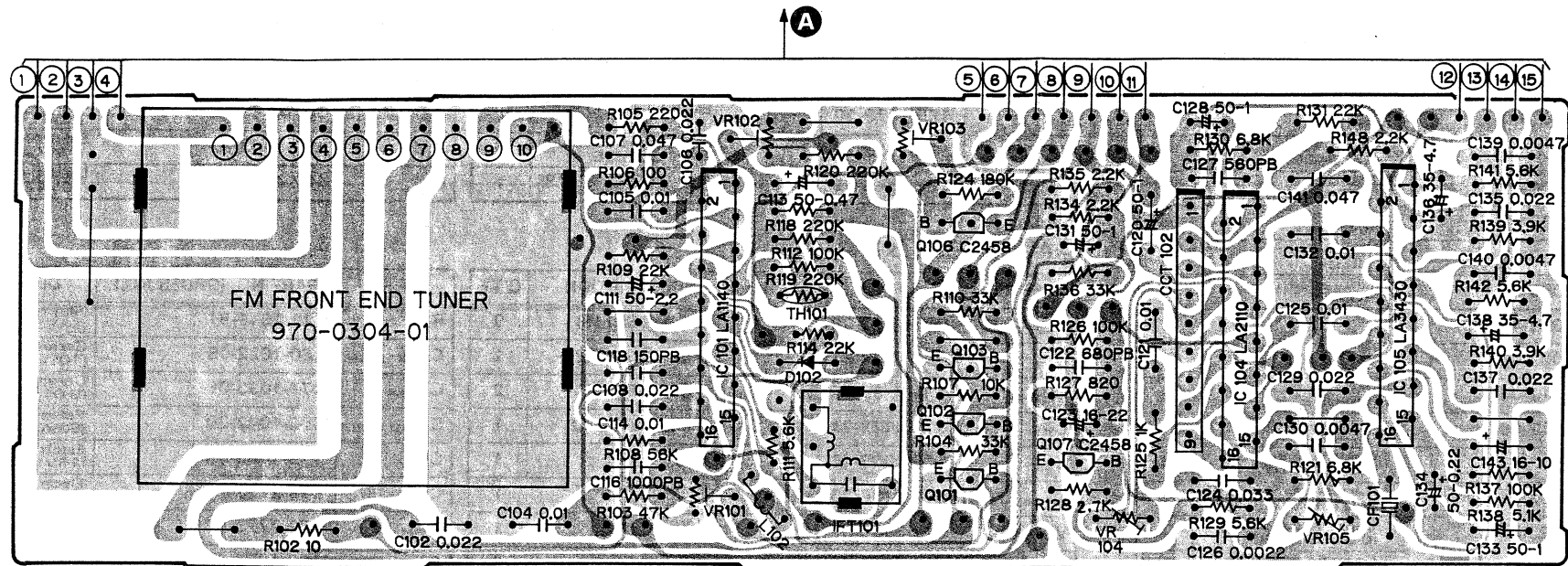


**PRINTED WIRING BOARD:**

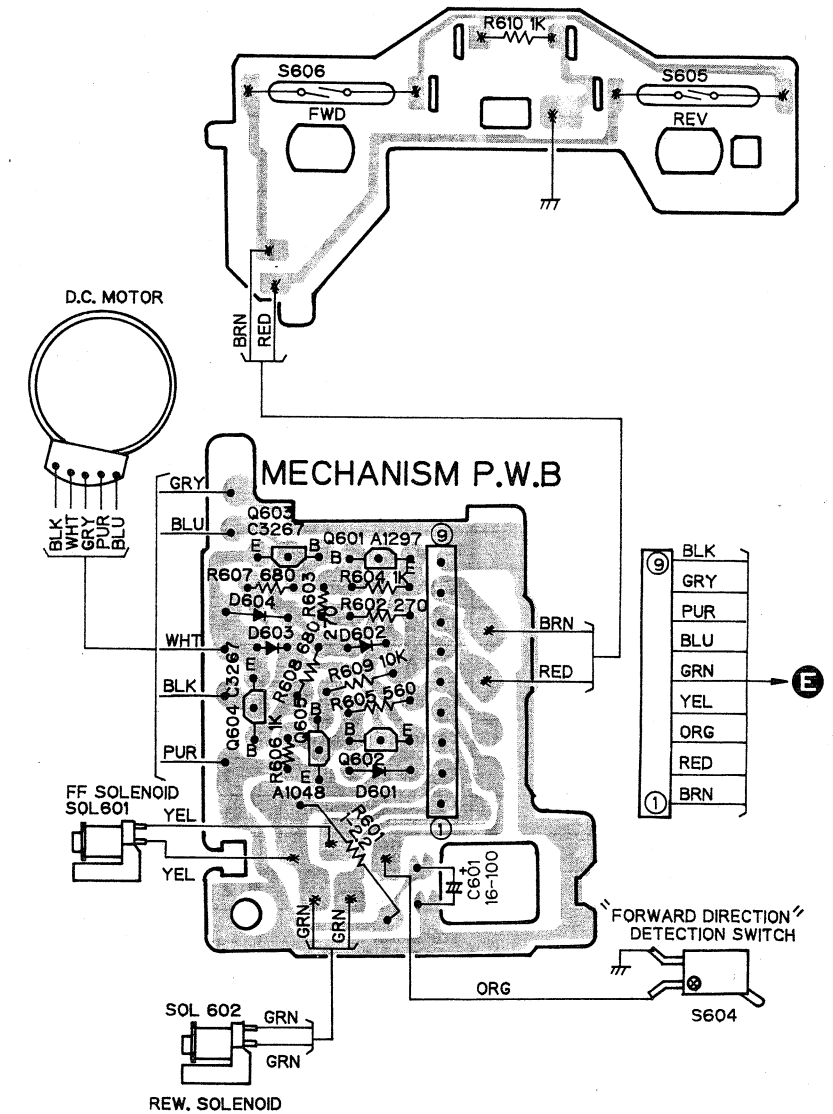
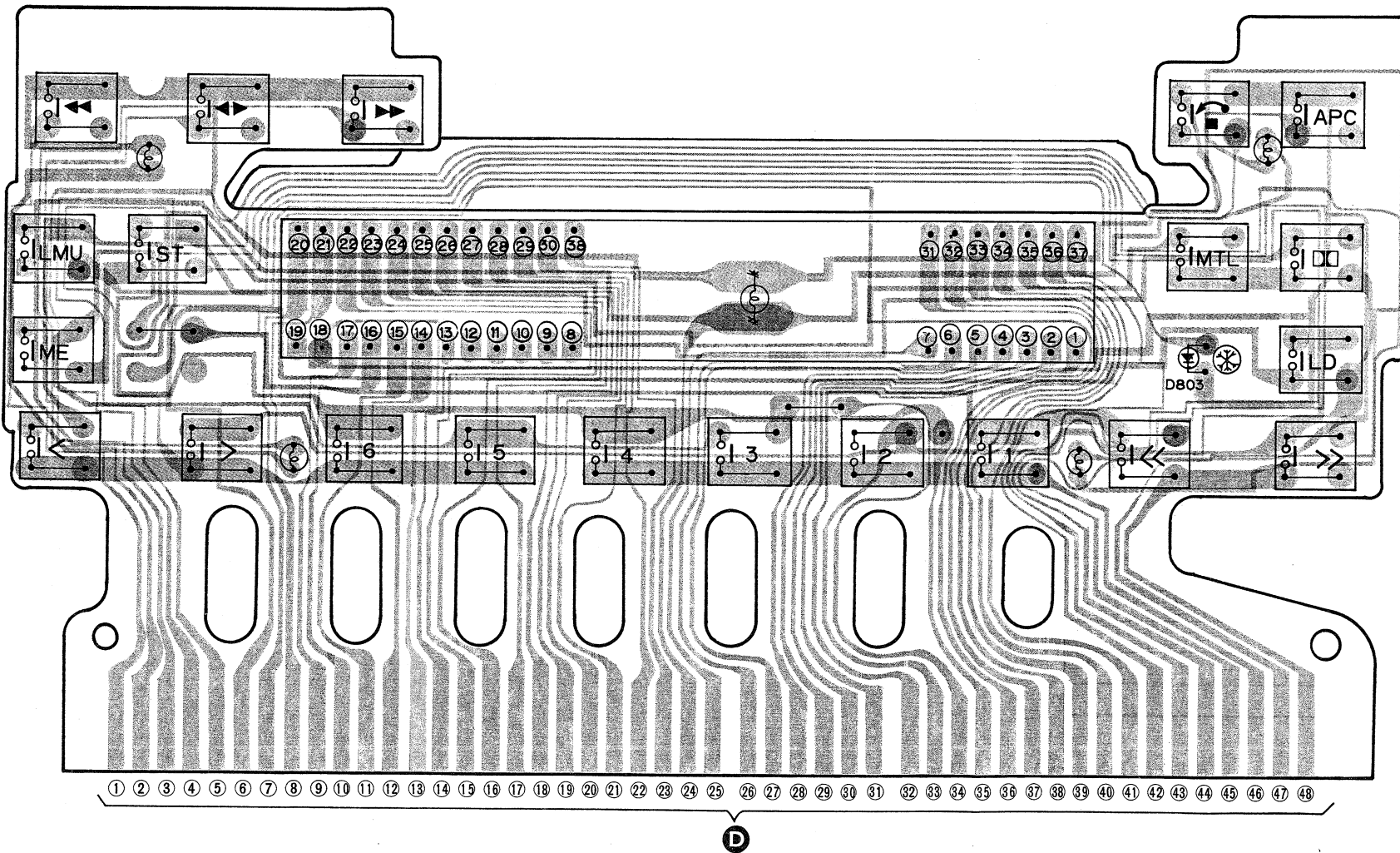
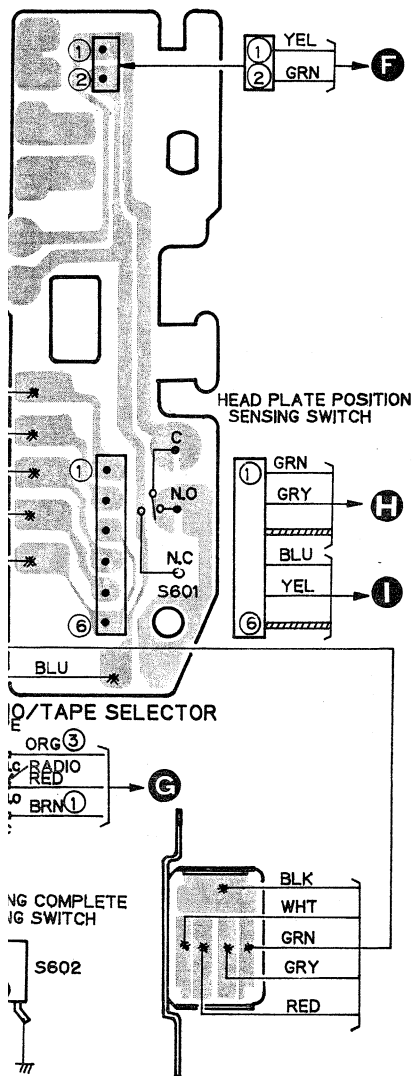
● E980 (PE-9058A)







FM P.W.B  
(MAIN P.W.B)



# PARTS LIST:

ⓄElectrical section  
ⓄMAIN P.W.B

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
D <sup>101,102,103,104,201,501-506,507,508,509,510,511,801,802,901,902,905,906,907</sup>	001-0330-00	Diode (1SS119)	23
D <sup>512,704</sup>	001-0361-00	Diode (1SS198)	2
D <sup>701</sup>	001-0377-49	Diode (MA4100L)	1
D <sup>903</sup>	001-0423-15	Diode (MA4039)	1
D <sup>513</sup>	001-0423-23	Diode (MA4082)	1
D <sup>514</sup>	001-0423-24	Diode (MA4091)	1
TH <sup>101</sup>	002-0184-00	Thermistor	1
IFT <sup>101</sup>	005-0844-02	IF-transformer	1
L <sup>501</sup>	010-1180-00	Coil	1
L <sup>102</sup>	010-2046-12	Coil (2.2μH)	1
L <sup>101</sup>	010-2046-17	Coil (5.6μH)	1
VR <sup>104</sup>	012-3707-05	Variable resistor (10kΩ SEP)	1
VR <sup>105</sup>	012-3707-08	Variable resistor (100kΩ PILT)	1
VR <sup>101</sup>	012-3808-08	Variable resistor (33kΩ STOP)	1
VR <sup>102,103</sup>	012-3808-11	Variable resistor (220kΩ)	2
CCT <sup>501</sup>	050-0077-00	Component circuit (47kΩx4)	1
CCT <sup>901</sup>	050-0078-03	Component circuit (10kΩx5)	1
CCT <sup>902</sup>	050-0088-03	Component circuit (10kΩx7)	1
CCT <sup>102</sup>	050-0099-00	Component circuit (DN1360E)	1
IC <sup>802</sup>	051-0172-00	IC (TC4011BP)	1
IC <sup>506</sup>	051-0281-01	IC (μPB553AC)	1
IC <sup>502</sup>	051-0306-00	IC (TD62105P)	1
IC <sup>505,901</sup>	051-0329-00	IC (TD62506P)	2
IC <sup>701</sup>	051-0352-00	IC (TA78L005P)	1
IC <sup>101</sup>	051-0363-00	IC (LA1140)	1
IC <sup>104</sup>	051-0407-00	IC (LA2110)	1
IC <sup>507</sup>	051-0478-00	IC (NJD6506S)	1
IC <sup>504</sup>	051-0504-00	IC (BA3802)	1
IC <sup>503</sup>	051-0509-01	IC (μPD1710G013-03)	1
IC <sup>302</sup>	051-0561-01	IC (AN6263N)	1
IC <sup>501</sup>	051-0565-00	IC (M54562P)	1
IC <sup>105</sup>	051-0733-00	IC (LA3430)	1
IC <sup>902</sup>	051-0734-00	IC (μPD7507G(M)805)	1
CF <sup>101</sup>	060-0115-01	Ceramic resonator	1
X <sup>501</sup>	061-1053-61	Crystal (AT41)	1
X <sup>901</sup>	061-1056-00	Crystal (MX38T)	1
Q <sup>501,803,903,910</sup>	100-1048-00	Transistor (2SA104B)	4
Q <sup>702,703</sup>	102-2458-28	Transistor (2SC2458GR)	2
Q <sup>101,102,103,104,105,106,107,108,701,801,802,805,902,904,911,912</sup>	102-2458-50	Transistor (2SC2458YGRBL)	16

## ⓄSDK P.W.B

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
VR <sup>1</sup>	012-3707-05	Variable resistor (10kΩ)	1
CCT <sup>101</sup>	050-0103-00	Component circuit	1
IC <sup>103</sup>	051-0501-00	IC (LA3365)	1
IC <sup>102</sup>	051-0739-00	IC (LA2220)	1
CF <sup>1</sup>	060-0115-01	Ceramic resonator (CSB456F11)	1

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
Q <sup>502,503</sup>	102-2655-25	Transistor (2SC2655Y)	2
Q <sup>705</sup>	102-3267-00	Transistor (2SC3267)	1
Q <sup>804</sup>	102-3400-00	Transistor (2SC3400)	1
Q <sup>109,110</sup>	103-1504-00	Transistor (2SD1504)	2
Q <sup>405,901,905,906,907,908</sup>	125-2003-02	Transistor (RN1202)	6
R <sup>113</sup>	032-0059-05	Film resistor (22kΩ)	1
R <sup>112</sup>	032-0059-08	Film resistor (100kΩ)	1
R <sup>111</sup>	032-0059-49	Film resistor (5.6kΩ)	1
C <sup>116,506</sup>	160-1022-05	Ceramic capacitor (1000pF B) HD	2
C <sup>118</sup>	160-1512-05	Ceramic capacitor (150pF B) HD	1
C <sup>127</sup>	160-5612-05	Ceramic capacitor (560pF B) HD	1
C <sup>122</sup>	160-6812-05	Ceramic capacitor (680pF B) HD	1
C <sup>104,105,114,121,125,132,504,706</sup>	171-1033-06	Ceramic capacitor (0.01μF) SC	8
C <sup>126</sup>	171-2223-06	Ceramic capacitor (0.0022μF) SC	1
C <sup>101,102,106,108,109,118,119,204,510,514,515</sup>	171-2233-06	Ceramic capacitor (0.022μF) SC	11
C <sup>124</sup>	171-3333-06	Ceramic capacitor (0.033μF) SC	1
C <sup>130,139,140</sup>	171-4723-06	Ceramic capacitor (0.0047μF) SC	3
C <sup>107,110,141</sup>	171-4733-06	Ceramic capacitor (0.047μF) SC	3
C <sup>501,502,901,902</sup>	174-2200-13	Ceramic capacitor (22pF CH) TC	4
C <sup>903</sup>	174-3300-13	Ceramic capacitor (33pF CH) TC	1
C <sup>103</sup>	174-4700-13	Ceramic capacitor (47pF CH) TC	1
C <sup>702,806</sup>	172-1042-20	Polyester capacitor (63V0.1μF) SS	2
C <sup>310</sup>	172-4732-20	Polyester capacitor (63V0.047μF) SS	1
C <sup>906</sup>	173-1032-10	Polyester capacitor (50V0.01μF) S	1
C <sup>801</sup>	179-2273-33	Electrolytic capacitor (16V220μF) S	1
C <sup>513</sup>	179-3373-33	Electrolytic capacitor (16V330μF) S	1
C <sup>503</sup>	179-4773-23	Electrolytic capacitor (10V470μF) S	1
C <sup>904</sup>	179-4773-33	Electrolytic capacitor (16V470μF) S	1
C <sup>115,117,120,128,131,135,142,201</sup>	183-1053-62	Electrolytic capacitor (50V1μF) USS	8
C <sup>119,145,905,907,908,917,703,802,907,908</sup>	183-1063-32	Electrolytic capacitor (16V10μF) USS	10
C <sup>134</sup>	183-2243-62	Electrolytic capacitor (50V0.22μF) USS	1
C <sup>111,705,804</sup>	183-2253-62	Electrolytic capacitor (50V2.2μF) USS	3
C <sup>123</sup>	183-2263-32	Electrolytic capacitor (16V22μF) USS	1
C <sup>704</sup>	183-3343-62	Electrolytic capacitor (50V0.33μF) USS	1
C <sup>707</sup>	183-3353-62	Electrolytic capacitor (50V3.3μF) USS	1
C <sup>113</sup>	183-4743-62	Electrolytic capacitor (50V0.47μF) USS	1
C <sup>136,138,508,518,803,805</sup>	183-4753-52	Electrolytic capacitor (35V4.7μF) USS	6
C <sup>511,516,701,709,710,714</sup>	183-4763-32	Electrolytic capacitor (16V47μF) USS	6

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
C <sup>2</sup>	171-4773-06	Ceramic capacitor (0.047μF) SC	1
C <sup>15</sup>	173-6831-10	Polyester capacitor (0.068μF) S	1
C <sup>5,8</sup>	042-0249-00	Tantalum capacitor (16V0.22μF)	2
C <sup>14</sup>	182-1053-62	Electrolytic capacitor (50V1μF) SS	1
C <sup>3,11,16</sup>	182-1063-32	Electrolytic capacitor (16V10μF) SS	3

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
C <sup>9</sup>	182-1073-12	Electrolytic capacitor (6.3V100μF) SS	1
C <sup>1</sup>	182-1073-22	Electrolytic capacitor (10V100μF) SS	1
C <sup>7</sup>	182-2263-22	Electrolytic capacitor (10V22μF) SS	1
C <sup>6</sup>	182-3343-62	Electrolytic capacitor (50V0.33μF) SS	1

## ⓄAUDIO P.W.B

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
D <sup>302,401-404,702-705</sup>	001-0330-00	Diode (1SS119)	9
D <sup>303</sup>	001-0333-31	Diode (MA2082)	1
D <sup>304,306</sup>	001-0360-00	Diode (S5566B)	2
D <sup>301</sup>	001-0421-24	Diode (MTZ9.1J)	1
L <sup>301</sup>	009-0603-00	Choke	1
VR <sup>310</sup>	012-3808-05	Variable resistor (4.7kΩ DK)	1
VR <sup>801</sup>	012-3808-07	Variable resistor (22kΩ W-IND)	1
VR <sup>301,302</sup>	012-3808-09	Variable resistor (47kΩ DOLBY)	2
IC <sup>303</sup>	051-0267-00	IC (TC4066BP)	1
IC <sup>702</sup>	051-0296-01	IC (TA78L006AP)	1
IC <sup>801</sup>	051-0422-53	IC (NJM2904D)	1
IC <sup>304</sup>	051-0523-00	IC (NR9200)	1
IC <sup>301</sup>	051-0539-00	IC (TA7405P)	1
IC <sup>306</sup>	051-0552-00	IC (H8D1525B)	1
IC <sup>305</sup>	051-0606-00	IC (BT3S501)	1
Q <sup>704</sup>	101-0911-00	Transistor (2SB911)	1
Q <sup>303,304,306,307,308,309,401,402,403,404,406</sup>	102-2458-25	Transistor (2SC2458Y)	11
Q <sup>301,302,305</sup>	103-1504-00	Transistor (2SD1504)	3
R <sup>918</sup>	032-0082-02	Cement resistor (5W22Ω)	1

## ⓄMECHANISM P.W.B

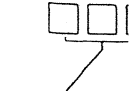
REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
D <sup>601-604</sup>	001-0330-00	Diode (1SS119)	4
Q <sup>605</sup>	100-1048-00	Transistor (2SA104B)	1
Q <sup>601,602</sup>	100-1297-00	Transistor (2SA1297)	2

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
C <sup>4</sup>	182-4743-62	Electrolytic capacitor (50V0.47μF) SS	1
C <sup>13</sup>	182-4753-52	Electrolytic capacitor (35V4.7μF) SS	1
C <sup>12</sup>	182-4763-02	Electrolytic capacitor (4V47μF) SS	1
C <sup>10</sup>	182-4763-22	Electrolytic capacitor (10V47μF) SS	1

REF.NO.	PART NO. (ORDER NO.)	DESCRIPTION	Q'TY
R <sup>334</sup>	111-1011-81	Film resistor (½W100Ω)	1
C <sup>301,302,305,306</sup>	160-1022-05	Ceramic capacitor (1000pF B) HD	4
C <sup>308,309</sup>	171-1033-06	Ceramic capacitor (0.01μF) SC	2
C <sup>344,711,712,713</sup>	172-1042-20	Polyester capacitor (63V0.1μF) SS	4
C <sup>343</sup>	179-1083-33	Electrolytic capacitor (16V1000μF) S	1
C <sup>317</sup>	179-2273-21	Electrolytic capacitor (10V220μF) S	1
C <sup>340,401</sup>	179-4773-23	Electrolytic capacitor (10V470μF) S	2
C <sup>315,334,335</sup>	182-1053-62	Electrolytic capacitor (50V1μF) SS	3
C <sup>303,321,322,338,339,341,342,386,387,404</sup>	182-1063-32	Electrolytic capacitor (16V10μF) SS	10
C <sup>318,327</sup>	182-1073-22	Electrolytic capacitor (10V100μF) SS	2
C <sup>312,320</sup>	182-1073-32	Electrolytic capacitor (16V100μF) SS	2
C <sup>330,331</sup>	182-2243-62	Electrolytic capacitor (50V0.22μF) SS	2
C <sup>311,314,319,336</sup>	182-2253-62	Electrolytic capacitor (50V2.2μF) SS	4
C <sup>307,333</sup>	182-2263-22	Electrolytic capacitor (10V22μF) SS	2
C <sup>403</sup>	182-3363-22	Electrolytic capacitor (10V33μF) SS	1
C <sup>313,323,324,325,332,402</sup>	182-4753-52	Electrolytic capacitor (35V4.7μF) SS	6
C <sup>326,329</sup>	182-4763-22	Electrolytic capacitor (10V47μF) SS	2
C <sup>336,337</sup>	183-1053-62	Electrolytic capacitor (50V1μF) USS	2
C <sup>380</sup>	183-2263-32	Electrolytic capacitor (16V22μF) USS	1

Note: OM (Oxidized Metal) SS (Super Small)  
S (Small) TC (Temperature-Compensating)  
HD (Higher Dielectric) LL (Low Leak)  
SC (Semi-Conductor) USS (Ultra Super Small)

● How to  
Resistors &  
special res  
Film resist



Classification	Res
1 1 1	33

Example of color

R	T	R
0 1	108	1 0
0 15	158	1 5

Color

1st color band	2nd color band	3rd color band	4th color band
----------------	----------------	----------------	----------------

