

HITACHI

SERVICE MANUAL

TY

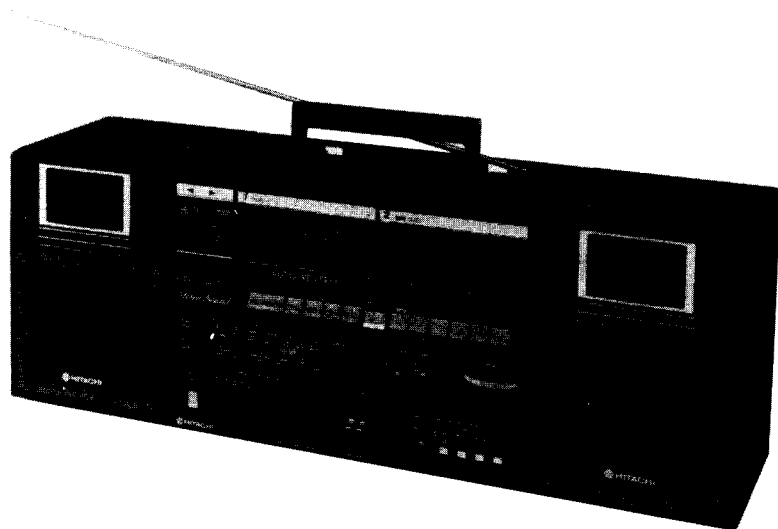
No. 484E

TRK-W550

(H,HC,E,E(BS),W,AU)

TAPE 1 TN-222F-116 chassis

TAPE 2 TN-29F-135 chassis



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SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers. Critical parts are marked with Δ in the circuit diagram and printed wiring board.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

SPECIFICATIONS

RADIO SECTION

Circuit System:	FM/AM 2-band Superheterodyne [For H,HC] FM/SW/MW/LW 4-band Superheterodyne [For E, E(BS)] FM/SW2/SW1/MW 4-band Superheterodyne [For W, AU]
Tuning Range:	FM: 88 to 108 MHz [For H, HC, W, AU] FM: 87.5 to 108 MHz [For E, E(BS)] SW: 6 to 18 MHz [For E, E(BS)] SW2: 7 to 22 MHz [For W, AU] SW1: 2.3 to 7 MHz [For W, AU] MW (AM): 530 to 1,605 kHz LW: 150 to 285 kHz [For E, E(BS)] FM: 10.7 MHz
Intermediate Frequency:	MW (AM): 465 kHz [For E, E(BS)] MW (AM): 455 kHz [For H, HC, W, AU]

Sensitivity:	FM: 10 dB (pra.) 2 dB (max.)
	SW: 30 dB (pra.) 25 dB (max.)
	SW2: 30 dB (pra.) 20 dB (max.)
	SW1: 50 dB (pra.) 35 dB (max.)
	MW (AM): 50 dB (pra.) 35 dB (max.)
	LW: 57 dB (pra.) 45 dB (max.)

Antennas (Aerials):	FM/SW (SW2): Telescopic antenna
	SW1/MW (AM)/LW: Built in ferrite-core antenna

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

PORTABLE COMPONENT SYSTEM

February 1986

TOYOKAWA WORKS

• TAPE RECORDER SECTION

Tape:	Cassette tape
Track System:	4 track 2 channel stereo
Tape Speed:	4.75 cm/sec.
Recording System:	AC bias (TAPE 2)
Erasing System:	AC erase (TAPE 2)
Frequency Response:	Normal: 30 to 13,000 Hz METAL: 30 to 14,000 Hz
Signal to Noise Ratio:	50 dB
Wow and Flutter:	0.08% (W-RMS)
Cross Talk:	Between tracks: 65 dB Between channels: 40 dB
Output Load Impedance:	Mixing mic: 1.6 mV, 4 k Ω Line-in: 600 mV, 47k Ω [For H, HC, W, AU] CD-in: 650 mV, 47k Ω [For H, HC, W, AU] Phono-In: 6 mV, 47 k Ω [For E, E(BS)] CD/Line-in: 650mV, 47k Ω [For E, E(BS)]
Output Level and Load Impedance:	Headphones 8 to 100 Ω Speakers 2.8 to 8 Ω
Distortion:	2%
Erasing Ratio:	65dB
Fast Forwarding or Rewinding time:	TAPE 1: 120 sec TAPE 2: 150 sec
Motor:	DC motor

DISASSEMBLY

1. How to remove the speaker box (Fig. 1)

Release one clip to the arrow direction and remove the speaker box by pulling upward. (both side)

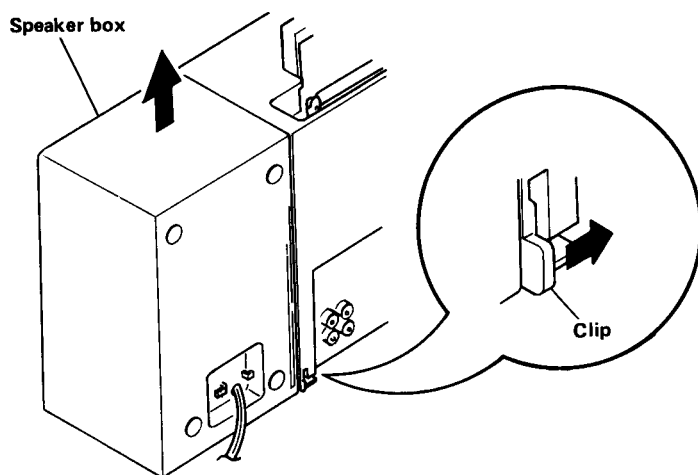


Fig.1

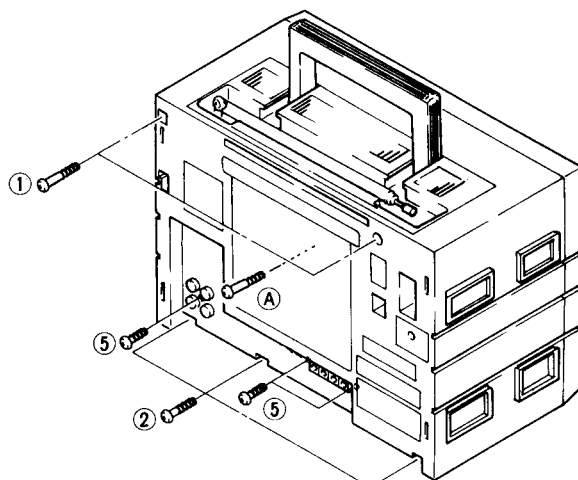
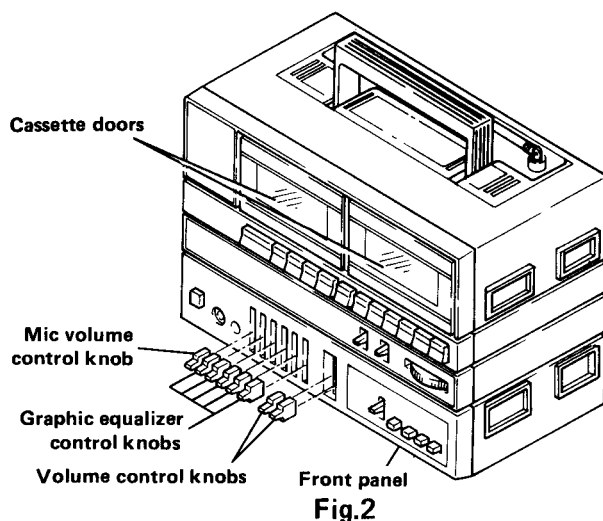
2. How to remove the Front panel (Fig. 2, 3)

Remove two screws ①, three screws ② and one screw (A) which is in the battery case. Then open the cassette doors and pull the front panel. (Screw (A) is except W, AU)

Note. Eight knobs come off together when pull the front panel.

• GENERAL SECTION

Semiconductors:	ICs: 10 [For H, HC, W, AU] 11 [For E, E(BS)] Transistors: 23 [For H, HC, W, AU] 24 [For E, E(BS)] Diodes: 25 [For W, AU] 24 [Except W, AU] LEDs: 3
Power Supply:	AC: 120 V, 60 Hz [For H, HC] AC: 220 V, 50 Hz [For E] AC: 240 V, 50 Hz [For E (BS), AU] AC: 110 - 127V/200 - 220V/230 - 250V, 50/60Hz [For W] DC: 15 V ("D" CELL (IEC R20)x 10 or equivalent)
Power Consumption:	30 W [For W] 35 W [For H, HC] 45 W [For E, E(BS), AU] 60 W P.M.P. (AC operation)
Power Output:	[Except H, HC] 7.5 W/CH (10% T.H.D. DC operation)
Speakers:	Woofer: 12 cm, 2.8 Ω (X2) Tweeter: 2 cm, 500 Ω (X4)
Dimensions:	642 (W) x 230 (H) x 188 (D) mm
Weight:	8.0 kg (with batteries)

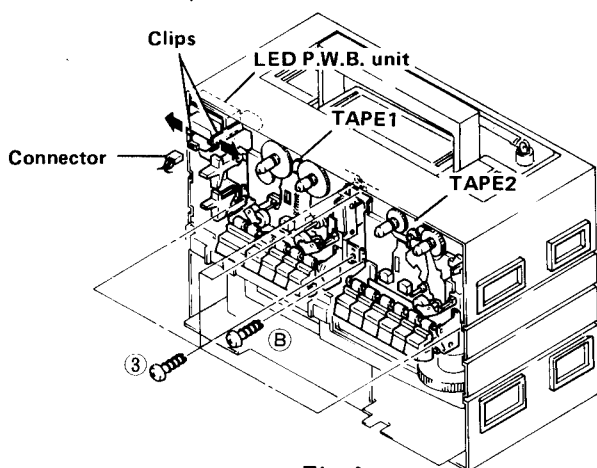


3. How to remove the Cassette Chassis (Fig. 4)

Remove five screws (3) and one screw (B).
(Screw (B) is for W, AU only)

4. How to remove the LED P.W.B. (Fig.4)

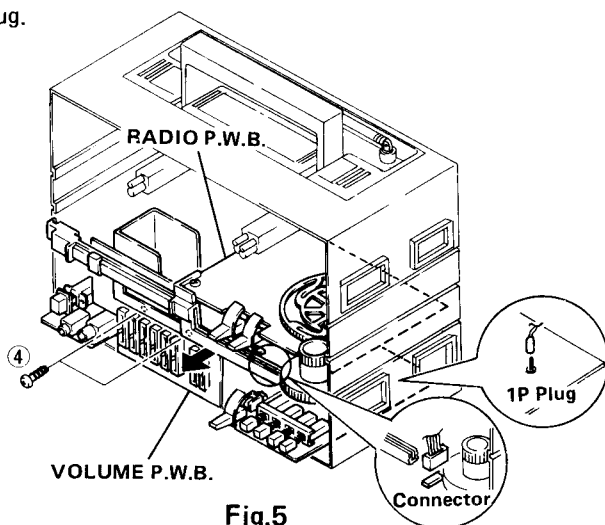
Pull the LED P.W.B. unit, then remove one connector.
Release two clips to the arrow direction.

**Fig.4****5. How to remove the VOLUME P.W.B. (Fig. 5)**

Remove two screws (4).

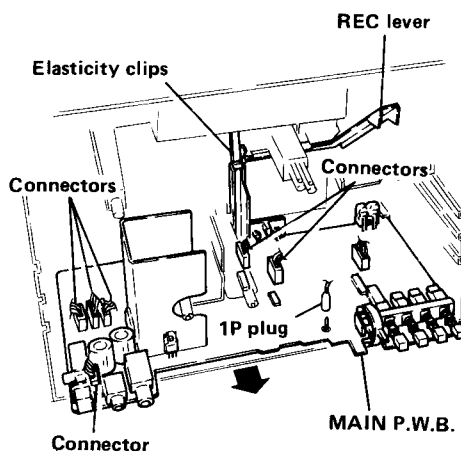
6. How to remove the RADIO P.W.B. (Fig. 5)

Pull to the arrow direction, remove one connector and 1P plug.

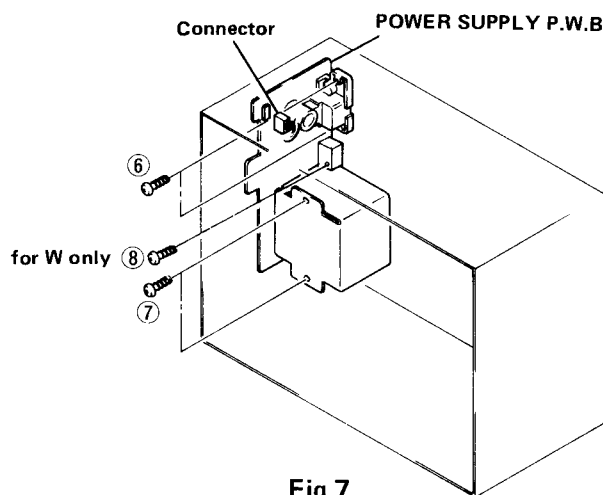
**Fig.5****7. How to remove the MAIN P.W.B. (Fig. 3,6)**

Remove three screws (5), push the elasticity clips, then move the REC lever to the top.

Pull the arrow direction, remove six connectors and 1P plug.

**Fig.6****8. How to remove the POWER SUPPLY P.W.B. (Fig. 7)**

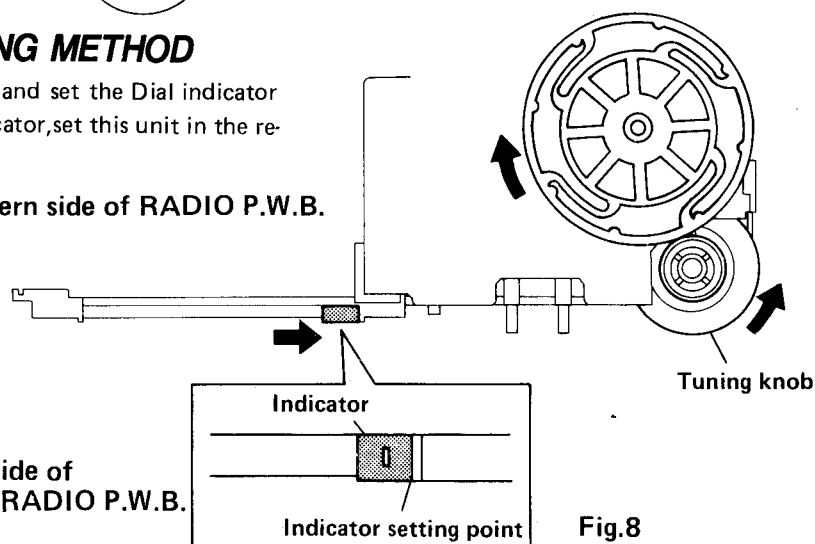
Remove two screws (6), two screws (7), one screw (8) and one connector.

**Fig.7****DIAL INDICATOR SETTING METHOD**

Turn the Tuning knob clockwise and set the Dial indicator to setting point. Setting dial indicator, set this unit in the rear case.

Pattern side of RADIO P.W.B.

Front side of
RADIO P.W.B.

**Fig.8**

ADJUSTMENT

RADIO SECTION

RADIO P.W.B.

● Adjustment point

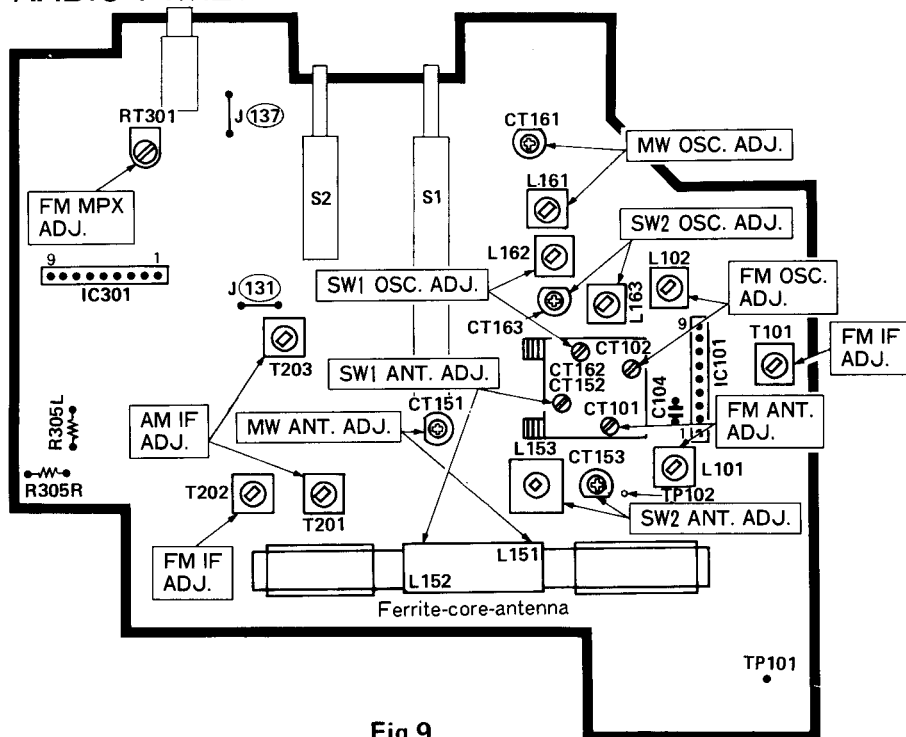


Fig.9

AM section for W, AU (FM/SW2/SW1/MW 4-band)

Step		Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
			Measuring Instrument	Input Terminal	Output Terminal				
1	(1)	AM IF	●Genescope (455 kHz)	L 151 (MW position)	Jumper (131) (through the 100kΩ resistor and the 0.1 μF capacitor)	455 kHz	Highest	T201 T203	(Note 1)
	(2)					Repeat steps (1)			
2	(1)	SW2 OSC. (Covering)	● AM signal generator (400 Hz, 30% mod.)	TP101 (+) TP102 (–) (through SW dummy antenna) (Note 2)	R305R (or R305L)	6.7 MHz	Lowest	L163	Max.
	(2)					23 MHz	Highest	CT163	
	(3)					Repeat steps (1) and (2)			
3	(1)	SW2 ANT. (Tracking)	● VTVM ●Oscilloscope			8 MHz	8 MHz	L153	Max.
	(2)					20 MHz	20 MHz	CT153	
	(3)					Repeat steps (1) and (2)			
4	(1)	SW1 OSC. (Covering)	● AM signal generator (400 Hz, 30% mod.)	Ferrite-core antenna (Note 3)	R305R (or R305L)	2.2 MHz	Lowest	L162	Max.
	(2)					7.3 MHz	Highest	CT162	
	(3)					Repeat steps (1) and (2)			
5	(1)	SW1 ANT. (Tracking)	● VTVM ●Oscilloscope			2.7 MHz	2.7 MHz	L152	Max.
	(2)					6.3 MHz	6.3 MHz	CT152	
	(3)					Repeat steps (1) and (2)			
6	(1)	MW OSC. (Covering)	● AM signal generator (400 Hz, 30% mod.)	Ferrite-core antenna (Note 3)	R305R (or R305L)	515 kHz	Lowest	L161	Max.
	(2)					1,650 kHz	Highest	CT161	
	(3)					Repeat steps (1) and (2)			
7	(1)	MW ANT. (Tracking)	● VTVM ●Oscilloscope			600 kHz	600 kHz	L151	Max.
	(2)					1,400 kHz	1,400kHz	CT151	
	(3)					Repeat steps (1) and (2)			

RADIO P.W.B.

● Adjustment point

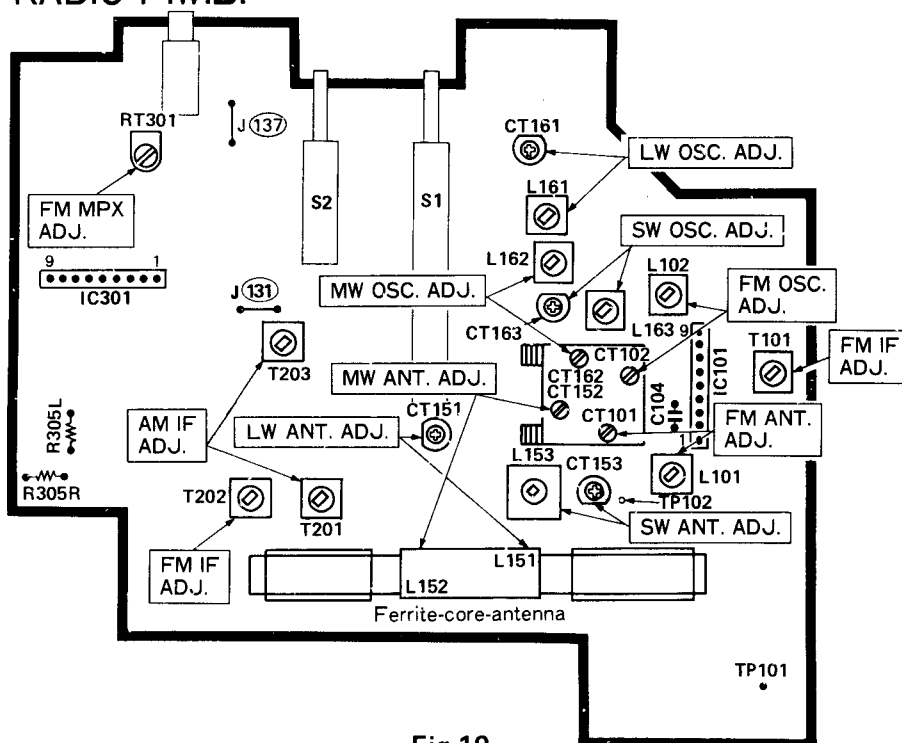


Fig.10

AM section for E, E(BS) (FM/SW/MW/LW 4-band)

Step		Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
			Measuring Instrument	Input Terminal	Output Terminal				
1	(1)	AM IF	● Genescope (465 kHz)	L152 (MW position)	Jumper (131) (through the 100kΩ resistor and the 0.1 μF capacitor)	465 kHz	Highest	T201 T203	(Note 1)
	(2)					Repeat steps (1)			
2	(1)	SW OSC. (Covering)	● AM signal generator (400 Hz, 30% mod.)	TP101 (+) TP102 (—) (through SW dummy antenna) (Note 2)	R305R (or R305L)	5.8 MHz	Lowest	L163	Max.
	(2)					18.5 MHz	Highest	CT163	
	(3)					Repeat steps (1) and (2)			
3	(1)	SW ANT. (Tracking)	● VTVM ● Oscilloscope			6.5 MHz	6.5 MHz	L153	Max.
	(2)					16 MHz	16 MHz	CT153	
	(3)					Repeat steps (1) and (2)			
4	(1)	MW OSC. (Covering)	● AM signal generator (400 Hz, 30% mod.)	Ferrite-core antenna (Note 3)	R305R (or R305L)	515 kHz	Lowest	L162	Max.
	(2)					1,650 kHz	Highest	CT162	
	(3)					Repeat steps (1) and (2)			
5	(1)	MW ANT (Tracking)	● VTVM ● Oscilloscope			600 kHz	600 kHz	L152	Max.
	(2)					1,400 kHz	1,400 kHz	CT152	
	(3)					Repeat steps (1) and (2)			
6	(1)	LW OSC. (Covering)	● AM signal generator (400 Hz, 30% mod.)	Ferrite-core antenna (Note 3)	R305R (or R305L)	145 kHz	Lowest	L161	Max.
	(2)					290 kHz	Highest	CT161	
	(3)					Repeat steps (1) and (2)			
7	(1)	LW ANT. (Tracking)	● VTVM (RIF switch:B) ● Oscilloscope			160 kHz	160 kHz	L151	Max.
	(2)					270 kHz	270 kHz	CT151	
	(3)					Repeat steps (1) and (2)			

RADIO P.W.B.

● Adjustment point

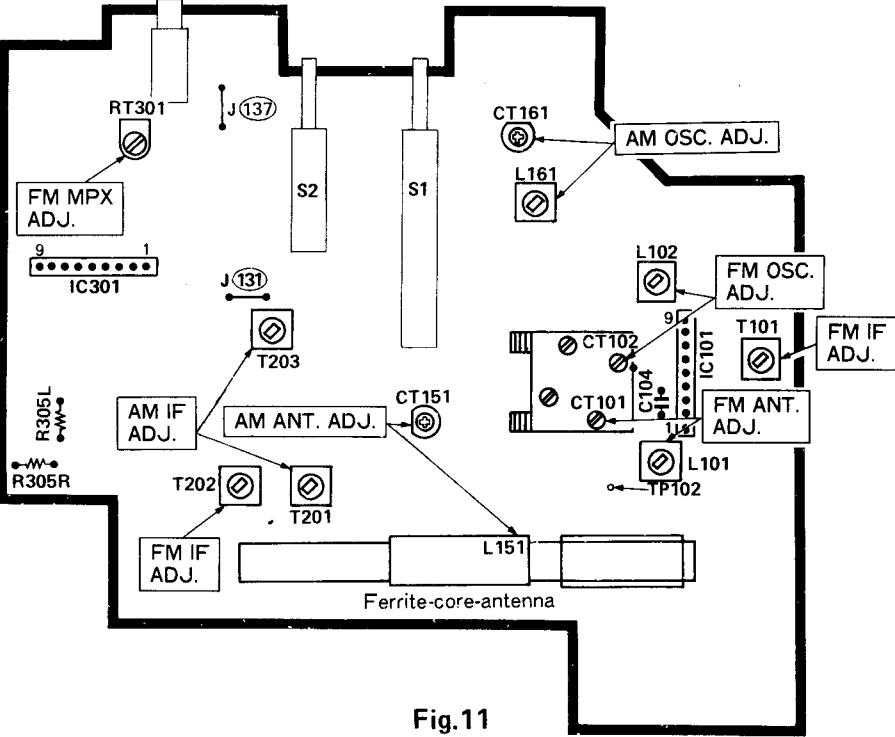


Fig.11

AM section for H, HC (FM/AM 2-band)

Step		Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
			Measuring Instrument	Input Terminal	Output Terminal				
1	(1)	AM IF	● Genescope (455 kHz)	L151 (AM position)	Jumper (131) (through the 100kΩ resistor and the 0.1 μF capacitor)	455 kHz	Highest	T201 T203	(Note 1)
	(2)				Repeat steps (1)				
2	(1)	AM OSC. (Covering)	● AM signal generator (400 Hz, 30 % mod.) ● VTVM ● Oscilloscope	Ferrite-core antenna (Note 3)	R305R (or R305L)	515 kHz	Lowest	L161	Max.
	(2)					1, 650 kHz	Highest	CT161	
	(3)					Repeat steps (1) and (2)			
3	(1)	AM ANT. (Tracking)	● VTVM ● Oscilloscope	Ferrite-core antenna (Note 3)	R305R (or R305L)	600 kHz	600 kHz	L151	Max.
	(2)					1, 400 kHz	1,400 kHz	CT151	
	(3)					Repeat steps (1) and (2)			

FM section

*() For W. Germany

Step	Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
		Measuring Instrument	Input Terminal	Output Terminal				
1	(1) FM IF	Turn T202 fully counterclockwise			10.7 MHz	Highest	T101	(Note 4)
	(2) S-Curve	● Genescope (10.7 MHz) (MODE select switch: MONO)	C104 body (+) TP102 (-)	Jumper (137) (through the 100k Ω resistor and the 0.1 μ F capacitor)			T202	(Note 5)
2	(1) FM OSC (Covering)	● FM signal generator (400 Hz, 30% dev.) ● Oscilloscope ● VTVM (MODE select switch: MONO)	TP101 (+) TP102 (-) (through FM dummy antenna) (Note 6)	R305R (or R305L)	87 MHz *(87.5 MHz)	Lowest	L102	Max.
	(2)				109 MHz *(108 MHz)	Highest	CT102	
	(3)				Repeat steps (1) and (2)			
3	(1) FM ANT (Tracking)				90 MHz	90 MHz	L101	Max.
	(2)				106 MHz	106 MHz	CT101	
	(3)				Repeat steps (1) and (2)			
4	(1) FM MPX (Multiplex)	● Frequency counter (MODE select switch: STEREO)	Connect a 10 μ F/25V electrolytic capacitor between the NO. 1 pin of IC301 and GND	Jumper (137)	—	—	RT301	38 kHz $\pm$ 50 Hz (Note 7)

Note:

1. Feed in a weak signal from the genescope. Adjust T201, T203 for maximum gain and the waveform of Fig. 12.

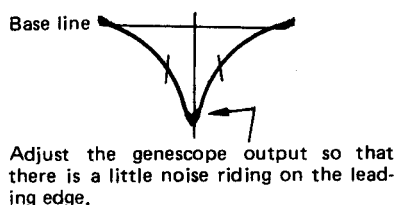


Fig.12

2. SW dummy antenna shows Fig. 13.

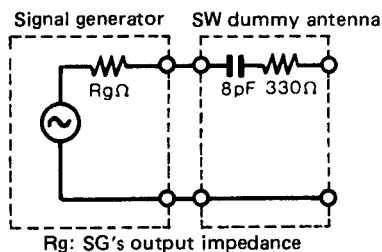
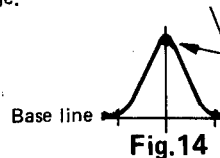


Fig.13

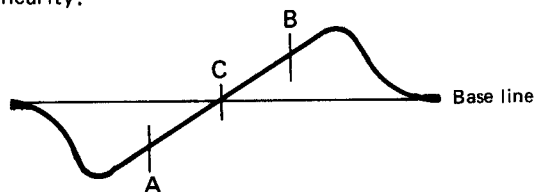
3. Connect AM signal generator to loop antenna, bring near to ferrite antenna.

4. Feed in a weak signal to C104 (body) from the genescope. Adjust T101 for maximum gain and the waveform indicated in Fig.14. If the center of the waveform cannot be lined up on the marker, adjust the right / left balance.

Adjust the genescope output so that there is a little noise riding on the leading edge.



5. Use the T202 core to from the S-curve shown in Fig. 15. Adjust the symmetry of A and B about point C for linearity.



6. FM dummy antenna shows Fig. 16.

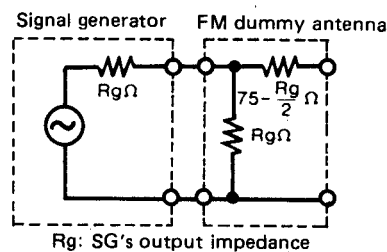
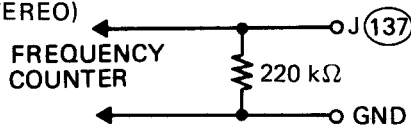


Fig.16

7. Connect the frequency counter to jumper (137) and connect a 220 Ω resistor parallel with the frequency counter. (MODE select switch: STEREO)



2. TAPE RECORDER SECTION

● Adjustment point

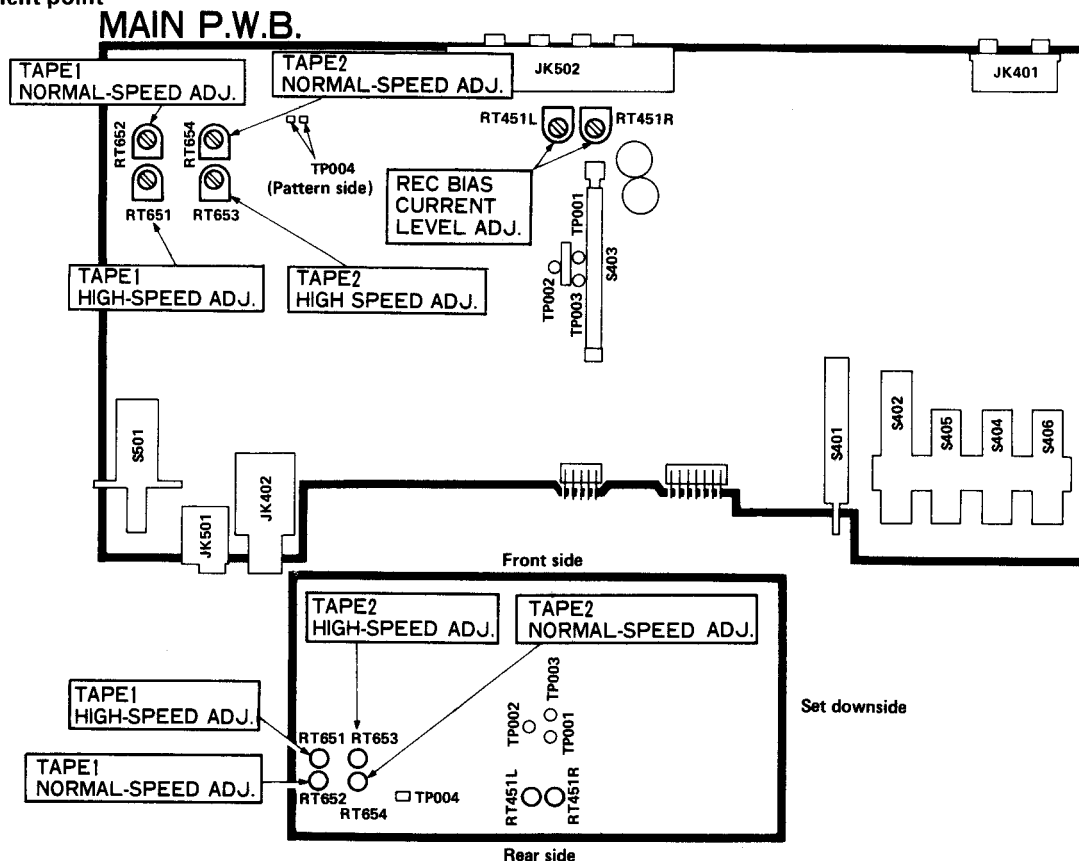


Fig.18

Make the following adjustments after opening the cassette door and cleaning the head, pressure rollers, and capstans with a head cleaning stick moistened in alcohol.

Note: Upright the unit and make adjustment from the bottom surface.

1. TAPE 2 Section (Record/playback)

(1) Adjustment of tape speed

Adjustment tape	Adjustment value	Adjustment point
Tape speed adjustment tape	6,000 Hz ± 20 Hz	RT653 (High speed mode)
	3,000 Hz ± 10 Hz	RT654 (Normal speed mode)

Adjustment Procedure

Connect the frequency counter to the SP OUT terminals and short TP004 to set to the High speed mode. Playback the adjustment tape and adjust RT653 so that the reading of frequency counter would be 6,000 Hz ± 20 Hz. Then, open TP004 to set to the Normal speed mode. Playback the adjustment tape and adjust RT654 so that the reading of frequency counter would be 3,000 Hz ± 10 Hz. Make adjustment at the middle of tape after applying heat-run for 20 minutes or more.

Note: Be sure to make adjustment in order of High speed and Normal speed modes.

(2) Azimuth Adjustment of Recording/Playback Head

Adjustment tape	Adjustment Value	Adjustment point
Azimuth alignment tape (10 kHz or more)	Maximum output	Azimuth adjustment screw

Adjustment Procedure

Connect the electronic voltmeter to the SP OUT terminals, playback the alignment tape, and make adjustment. If the maximum values of both channels differ, set to the maximum value of L channel and check that the difference between the maximum values of both channels is within 2 dB. If the difference is larger, make readjustment. After the adjustment, fix the screw with Screw Lock.

(3) REC Bias Current Level Adjustment

Input	Adjustment value	Adjustment point
—	29 V ± 0.5 V	RT451LR

Adjustment Procedure

Set the RIF switch (S2) to the A position and the tape select switch (S404) of TAPE 2 to the METAL position. Connect the "+" terminal of electronic voltmeter to TP001 (Lch) or TP003 (Rch) and the "-" terminal to TP002, and adjust RT451LR so that the reading of voltmeter would be $29\text{ V} \pm 0.5\text{V}$.

Note: The cables should be run parallel to each other. Do not use cables which are longer than required.

2. TAPE 1 Section (Playback)

(1) Adjustment of tape speed

Adjustment tape	Adjustment value	Adjustment point
Tape speed adjustment tape	$6,020\text{ Hz} \pm 20\text{ Hz}$	RT651 (High speed mode)
	$3,010\text{ Hz} \pm 10\text{ Hz}$	RT652 (Normal speed mode)

Adjustment Procedure

Connect the frequency counter to the SP OUT terminals and short TP004 to set to the High speed mode. Playback the adjustment tape in the forward direction and adjust RT651 so that the reading of frequency counter would be $6,020\text{ Hz} \pm 20\text{ Hz}$. Then, playback the tape in the reverse direction and check if the reading is $6,000\text{ Hz} \pm 40\text{ Hz}$. If the reading is outside the range of adjustment value, make readjustment so that the reading would be $5,960\text{ Hz}$ to $6,050\text{ Hz}$ both in the forward and reverse directions.

Open TP004 to set to the Normal speed mode. As in the case of High speed mode, playback the adjustment tape in the forward direction and adjust RT652 so that the reading would be $3,010\text{ Hz} \pm 10\text{ Hz}$. Playback the tape in the reverse direction and check if the reading is $3,000\text{ Hz} \pm 20\text{ Hz}$. If the reading is outside the range of adjustment value, make readjustment so that the reading would be $2,980\text{ Hz}$ to $3,025\text{ Hz}$ both in the forward and reverse directions.

Note: Set TAPE 1 and TAPE 2 to the same speed as much as possible.

(2) Azimuth Adjustment of Playback Head

Adjustment tape	Adjustment value	Adjustment point
Azimuth alignment tape (10 kHz or more)	Maximum output	Azimuth adjustment screw

Adjustment Procedure

Like the TAPE 2 section, make adjustment so that the difference between the maximum values of both channels would be within 2 dB. Check that the adjustment value is also satisfied in the reverse direction.

3. Cassette Chassis Checking and Adjustment

No.	Inspection Item	Reference Value	Remarks
1.	Pressure roller compression strength	TAPE 1 270 – 420 g TAPE 2 300 – 500 g	(Note 1) Tension gage
2.	Playback torque	TAPE 1 35 – 70 g TAPE 2 30 – 60 g	Cassettepack system Torque meter
3.	FF/REW torque	80 g	Cassettepack system Torque meter
4.	Take up back-tension	TAPE 1 1.5 – 6.0 g·cm TAPE 2 2.0 – 6.0 g·cm	Cassettepack system Torque meter
5.	Tape drive force	TAPE 1 100 g·min TAPE 2 120 g·min	
6.	Axial play of flywheel	0.05 – 0.5 mm	

Note 1 Pressure roller compression strength

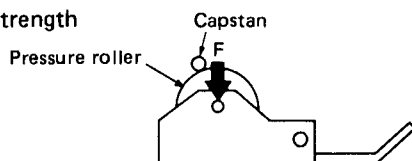


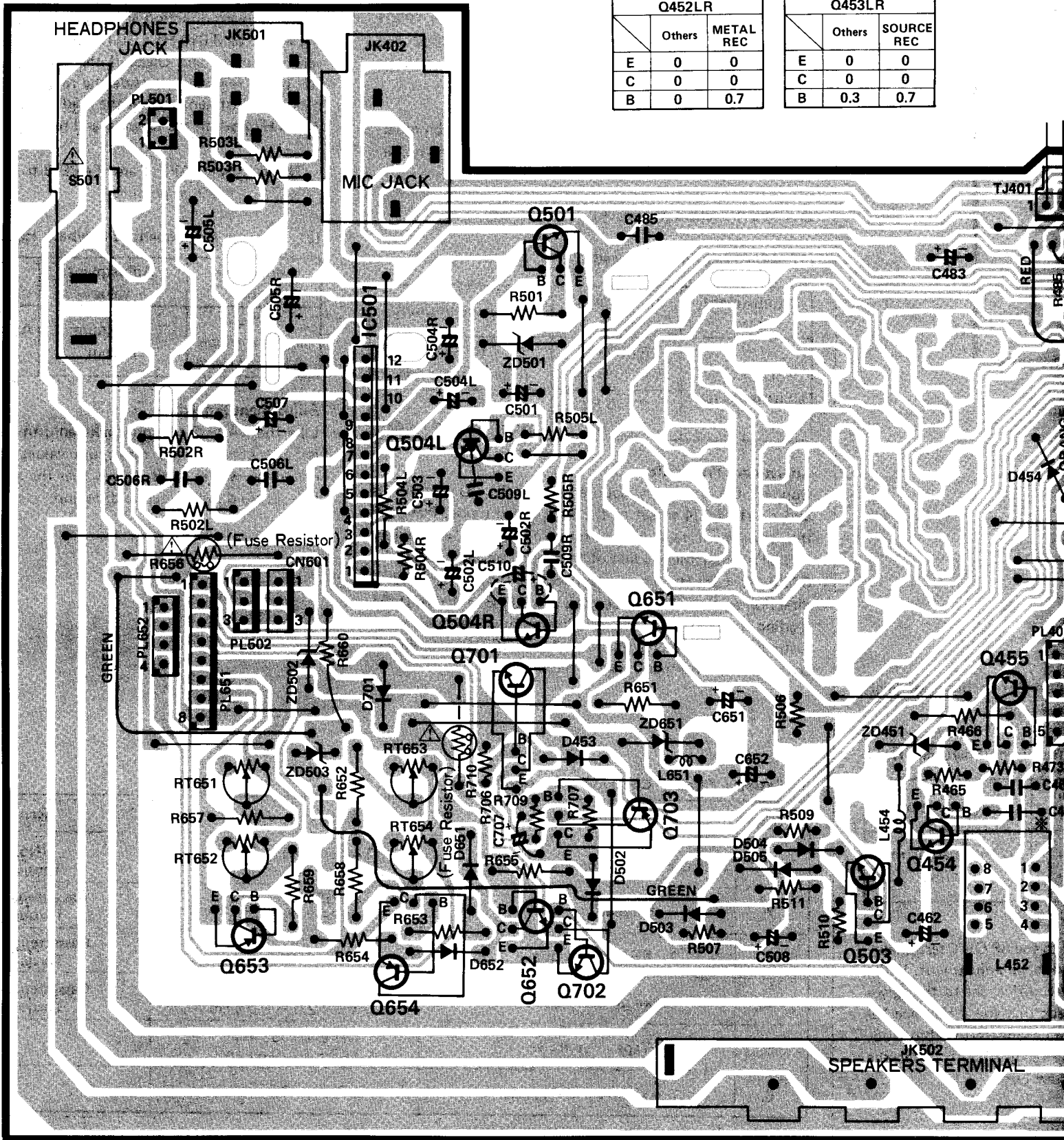
Fig. 19

MAIN P.W.B.

S501 OPERATE SWITCH

Q452LR		
	Others	METAL REC
E	0	0
C	0	0
B	0	0.7

Q453LR		
	Others	SOURCE REC
E	0	0
C	0	0
B	0.3	0.7



SPEAKERS TERMINAL

ceramic capacitor.

METAL REC
0
0
0.7

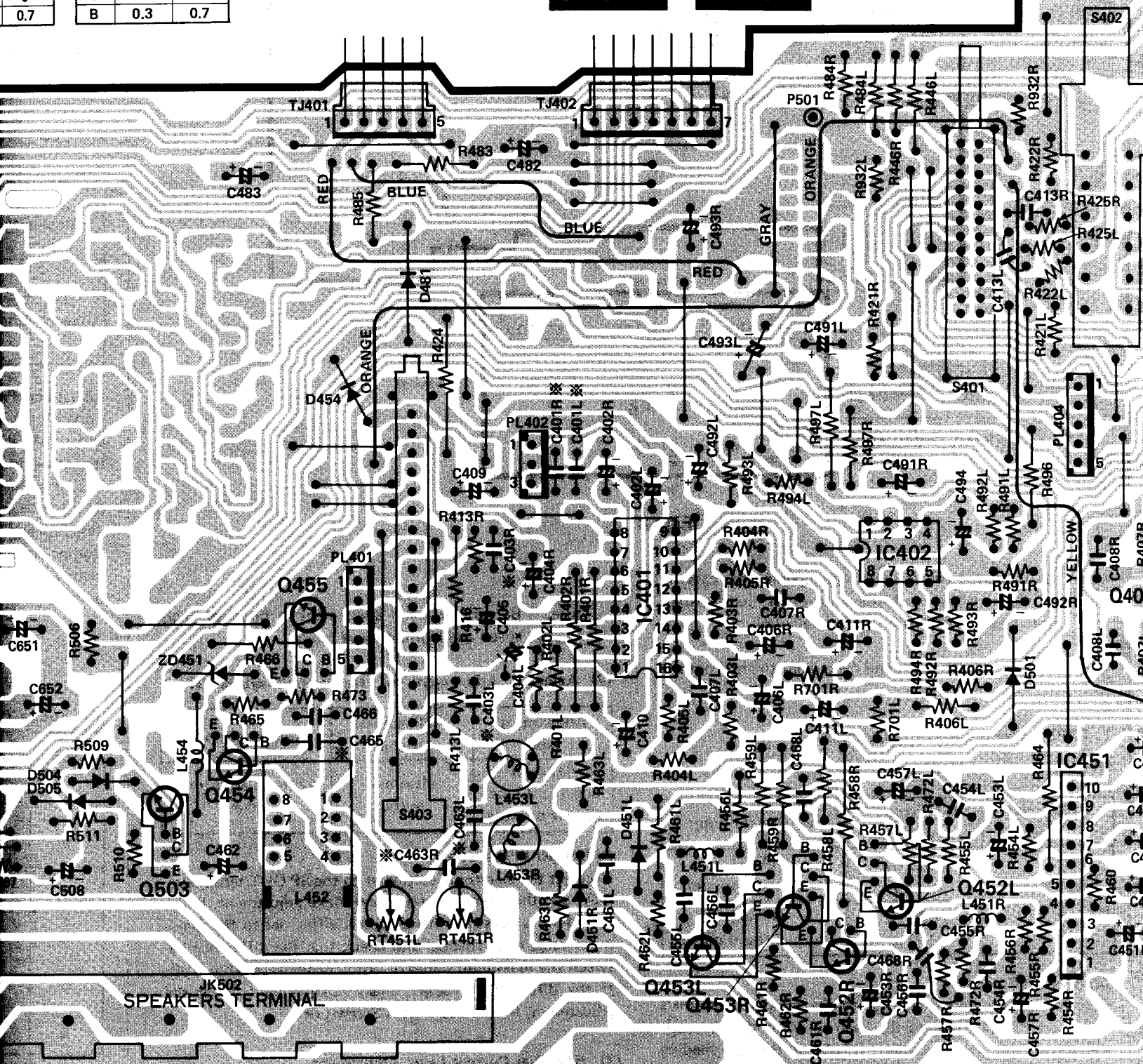
Q453LR		
Others	SOURCE REC	
E	0	0
C	0	0
B	0.3	0.7

S403

REC/PLAY
SELECT
SWITCH

S401

FUNCTION
SELECT
SWITCH



	E	C	B
Q501	8.7	16.0	9.4
Q503	0	0	0.6
Q504	0	0	0

Q401LR		
Others	METAL	
E	0	0
C	0	0
B	0	0.6

Q403LR		
Others	SPSS	
E	0	0
C	0	0
B	0	0.7

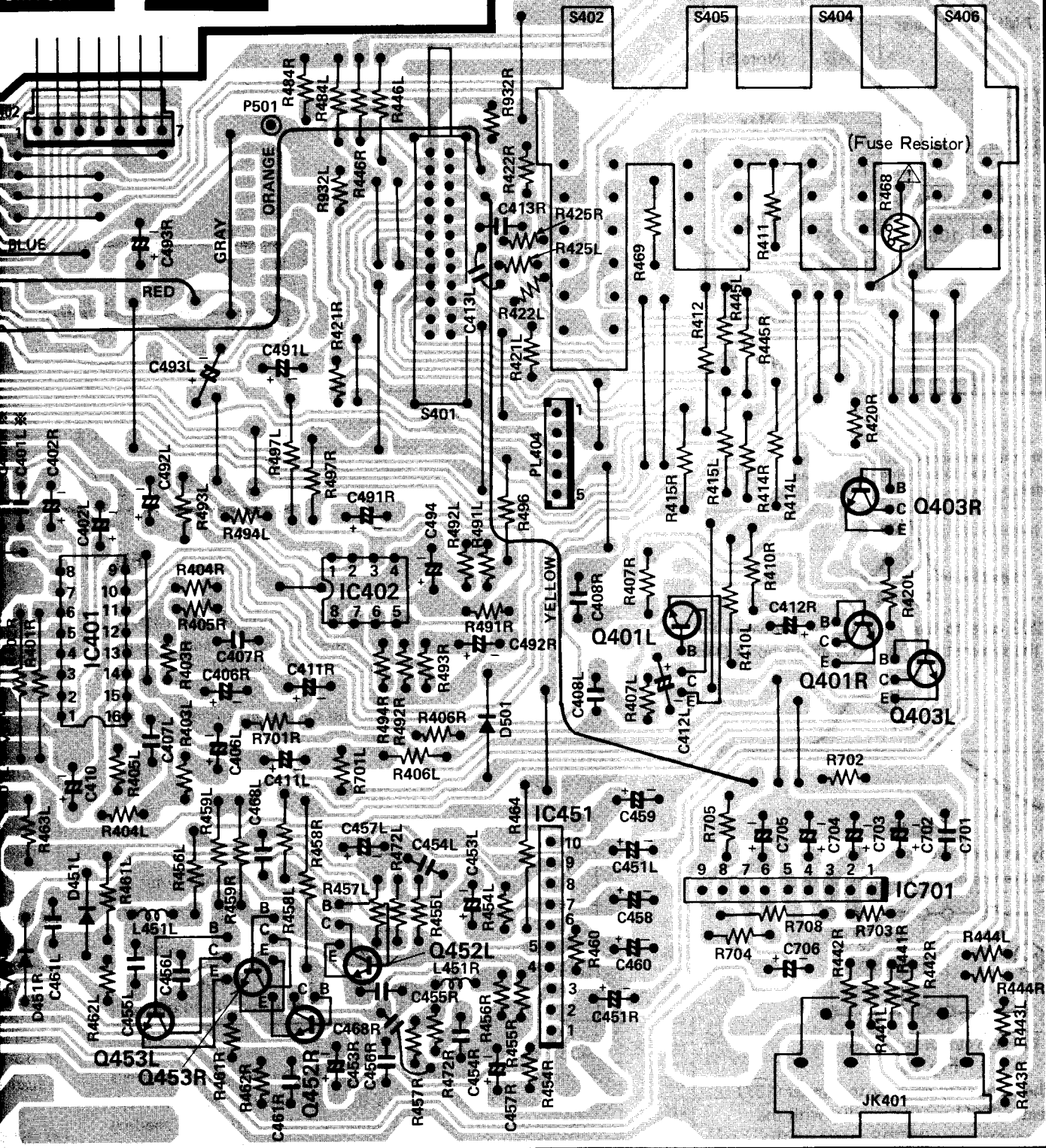
Q701		
Others	T1 PLAY	
E	0	0
C	0	0
B	0.3	0.7

Others	T1 PLAY
E	0
C	0
B	0.7

S403

REC/PLAY
SELECT
SWITCH

S401

FUNCTION
SELECT
SWITCHCD PHONO/LINE
INPUT

B
9.4
0.6
0

Q401LR		
Others	METAL	
E	0	0
C	0	0
B	0	0.6

Q403LR		
Others	SPSS	
E	0	0
C	0	0
B	0	0.7

Q701		
Others	T1 PLAY	
E	0	0
C	0	0
B	0.3	0.7

Q702		
Others	SPSS	
E	0	0
C	12.2	0.5
B	0.2	0.8

S402

REC MODE
SELECT
SWITCH

S405

TAPE1
TAPE SELE
SWITCH

S404

TAPE2
TAPE SELE
SWITCH

S406

REC MUTE
SWITCH

RT451LR

REC BIAS
CURRENT
LEVEL ADJ

RT651

TAPE1
HIGH-SPEED
ADJ.

RT652

TAPE1
NORMAL-SP
ADJ.

RT653

TAPE2
HIGH-SPEED
ADJ.

RT654

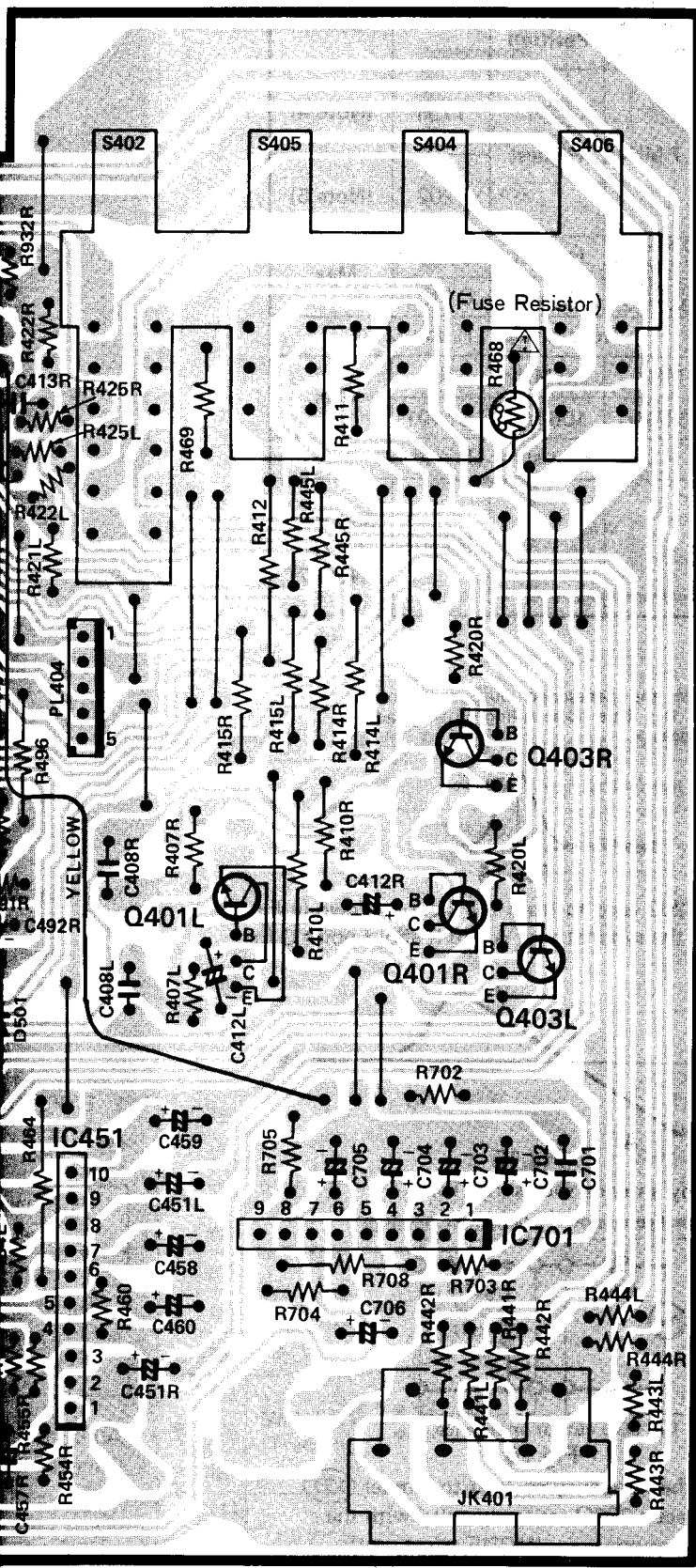
TAPE2
NORMAL-SP
ADJ.

RIF SWITCH (AM MODE)		A
Q454	E	0
	C	0
	B	0
Q455	E	0
	C	0
	B	0

	E
Q651	12.2
Q652	0 (0)
Q653	8.2 (4.9)
Q654	8.4 (5.2)

(): HIGH SPEED

Voltage is measur



Others	T1 PLAY
0	0
0	0
0.3	0.7

Q702	
Others	SPSS
E	0
C	12.2
B	0.2

CD PHONO/LINE
INPUT

S402

REC MODE
SELECT
SWITCH

S405

TAPE1
TAPE SELECT
SWITCH

S404

TAPE2
TAPE SELECT
SWITCH

S406

REC MUTE
SWITCH

RT451LR

REC BIAS
CURRENT
LEVEL ADJ.

RT651

TAPE1
HIGH-SPEED
ADJ.

RT652

TAPE1
NORMAL-SPEED
ADJ.

RT653

TAPE2
HIGH-SPEED
ADJ.

RT654

TAPE2
NORMAL-SPEED
ADJ.

RIF SWITCH (AM MODE)	A/C	B	D
Q454	E 0	0	0
	C 0	0	0
	B 0.7	0	0.2
Q455	E 0	0	0
	C 0	0	0
	B 0.8	0	0.7

	E	C	B
Q651	12.2	16.0	12.8
Q652	0 (0)	0 (9.0)	0.7 (0.2)
Q653	8.2 (4.9)	8.2 (10.1)	7.5 (9.5)
Q654	8.4 (5.2)	8.4 (10.2)	7.7 (9.7)

(): HIGH SPEED DUBBING MODE

Voltage is measured at no signal

Pin No.	IC401
1	3.2
2	3.2
3	7.8
4	0
5	3.2
6	3.2
7	0
8	1.3 (2.7)
9	0
10	0
11	0
12	3.2
13	3.2
14	3.2
15	3.2
16	3.2

(): T1 PLAY
T2 REC

Q703		
Others	SPSS	T1 FF/ REW
0	8.7	8.7
0	8.7	0
0	8.0	8.7

Pin No.	IC501
1	1.2
2	0
3	20
4	0
5	0
6	1.2
7	10.4
8	18.9
9	0
10	20.2
11	18.2
12	10.4

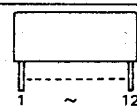
Pin No.	IC402
1	4.5
2	4.5
3	4.5
4	0
5	4.5
6	4.5
7	4.5
8	8.2

Pin No.	IC451
1	1.2
2	0
3	4.1
4	0
5	0
6	8.0
7	4.1
8	0
9	1.2
10	7.0

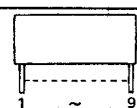
Pin No.	IC701
1	0(2.0)
2	0(0)
3	0(2.0)
4	0(0)
5	0(0)
6	0(1.5)
7	0(0.7)
8	0(0.1)
9	0(7.5)

(): SPSS

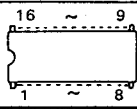
AN7147



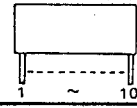
BA3408
M5226P
TA7640AP



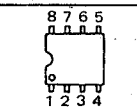
AN7310
AN7420
LA2010
TA7358P



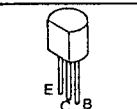
M51544AL



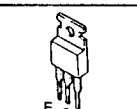
M5218P
μPC4558C



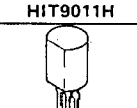
2SA933(R)
2SC460C
2SC1740L(N/S)
2SC1741QR
2SC1845EF



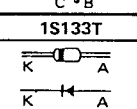
2SD1266(P)



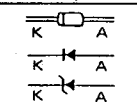
HIT9011H



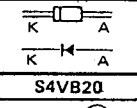
1S133T



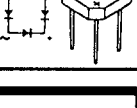
1S2473VE
1S2790
HZ-3B-2
HZ-9A3
HZ9B1
HZ9C1
HZ12-B1



ERB12-01



S4VB20

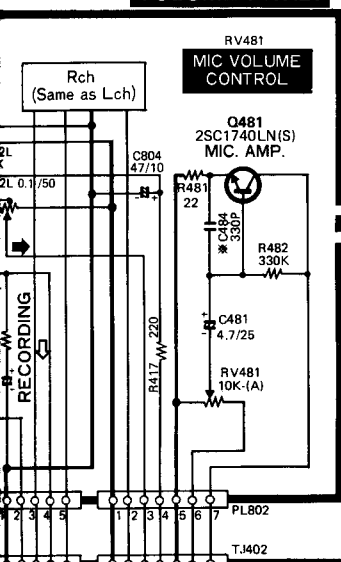


✱ indicates axial lead cylindrical ceramic capacitor.
 ☆ indicates those parts that are specified to be used differently for models and destinations.
 ● for W, AU: Mylar Film capacitor except W, AU: Ceramic Disc capacitor



except W,AU: Ceramic Discal capacitor

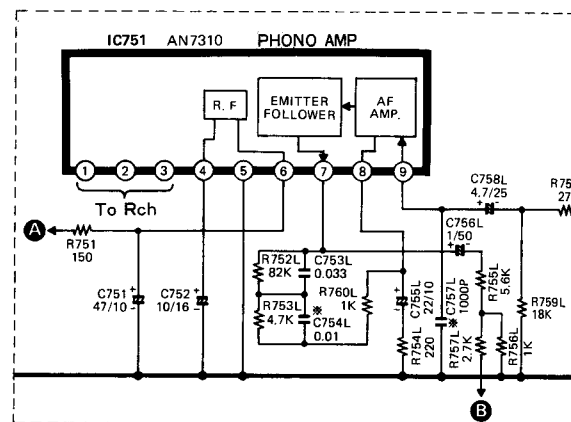
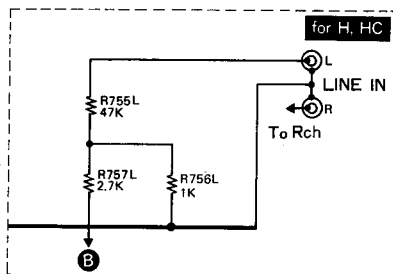
VOLUME P.W.B.



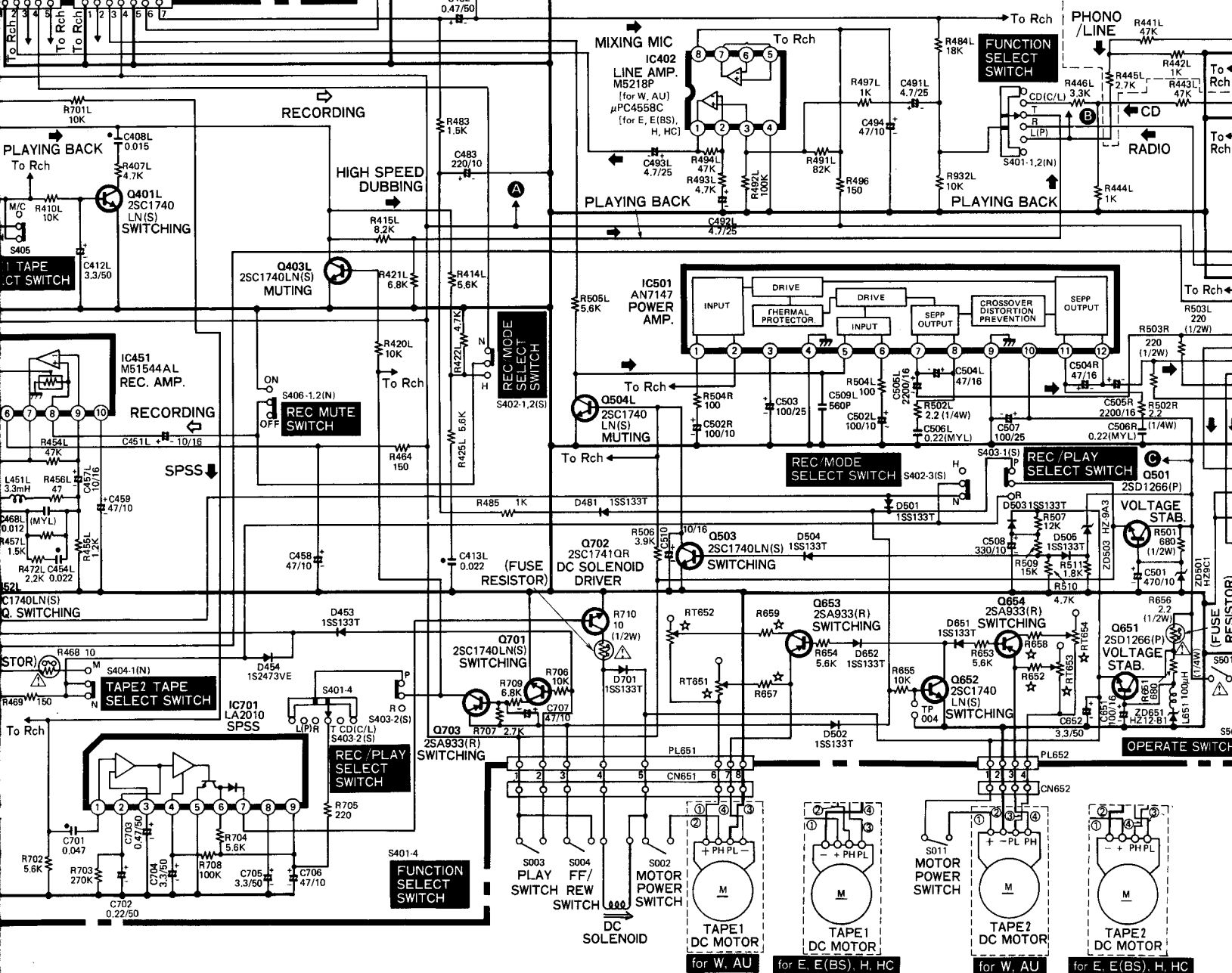
Q401LR		
Others	METAL	
E	0	0
C	0	0
B	0	0.6

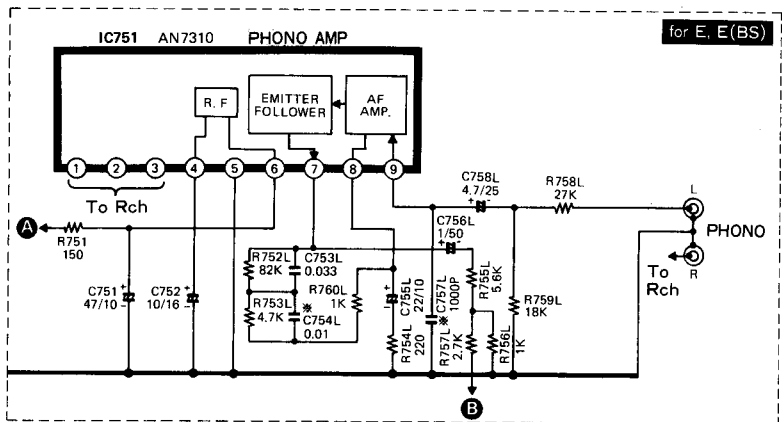
Q403LR		
Others	SPSS	
E	0	0
C	0	0
B	0	0.7

Q452LR		
Others	METAL REC	
E	0	0
C	0	0
B	0	0.7



★No.	for W,AU	except W,AU
R652	15K	10K
R657	15K	10K
R658	6.8K	5.6K
R659	6.8K	5.6K
RT651	10K-(B)	5K-(B)
RT652	10K-(B)	5K-(B)
RT653	10K-(B)	5K-(B)
RT654	10K-(B)	5K-(B)





Voltage is measured at no signal

Q453LR		
	Others	SOURCE REC
E	0	0
C	0	0
B	0.3	0.7

Q481		
	Others	HIGH SPEED DUBBING
E	0	0
C	2.5	0
B	0.7	0

IC801		
Pin No.	L	R
1	3.7	3.7
2	3.0	3.0
3	3.7	3.7
4	3.0	3.0
5	3.7	3.7
6	3.0	3.0
7	3.7	3.7
8	3.0	3.0
9	3.7	3.7
10	3.0	3.0
11	3.7	3.7
12	3.7	3.7
13	3.7	3.7
14	6.9	6.9
15	3.7	3.7
16	0	0

IC401		
Pin No.	Others	T1 PLAY T2 REC
1	3.2	3.2
2	3.2	3.2
3	7.8	7.8
4	0	0
5	3.2	3.2
6	3.2	3.2
7	0	0
8	1.3	2.7
9	0	0
10	0	0
11	0	0
12	3.2	3.2
13	3.2	3.2
14	3.2	3.2
15	3.2	3.2
16	3.2	3.2

Pin No.	IC402	IC451	IC501
1	4.5	1.2	1.2
2	4.5	0	0
3	4.5	4.1	20.0
4	0	0	0
5	4.5	0	0
6	4.5	8.0	1.2
7	4.5	4.1	10.4
8	8.2	0	18.9
9		1.2	0
10		7.0	20.2
11			18.2
12			10.4

Pin No.	IC701	Others	SPSS
1	0	2.0	
2	0	0	
3	0	2.0	
4	0	0	
5	0	0	
6	0	1.5	
7	0	0.7	
8	0	0.1	
9	0	7.5	

RIF SWITCH (AM MODE)	A/C	B	D
Q454	E	0	0
	C	0	0
	B	0.7	0.2
Q455	E	0	0
	C	0	0
	B	0.8	0.7

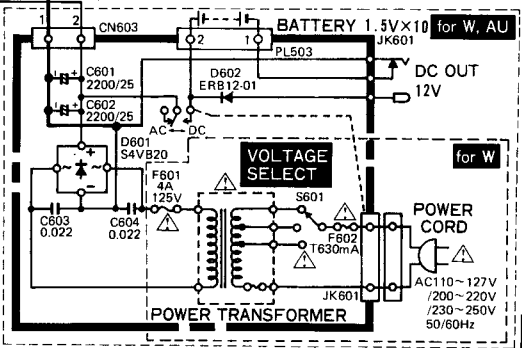
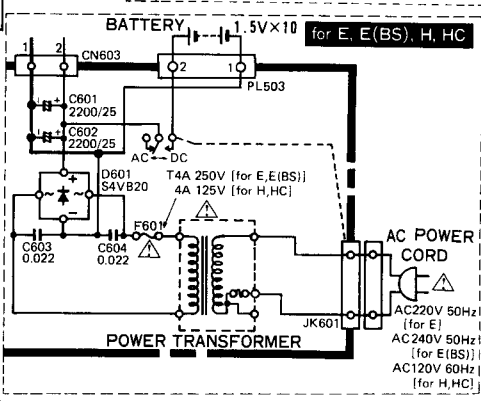
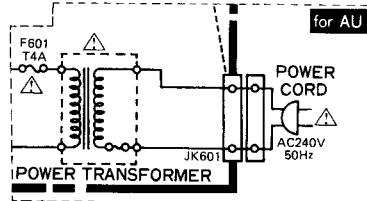
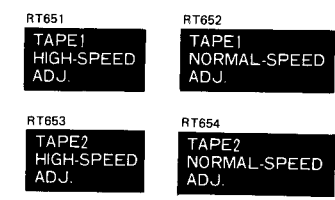
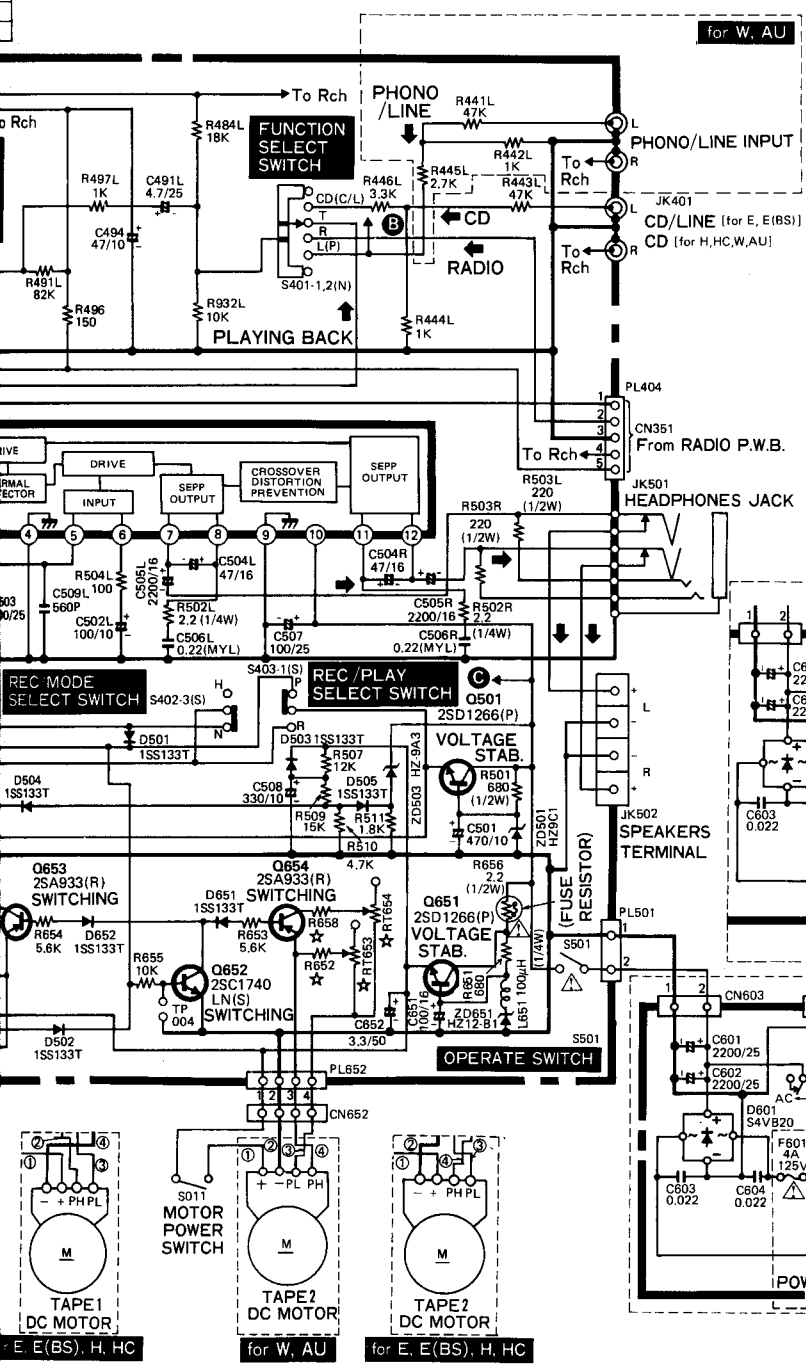
	E	C	B
Q501	8.7	16.0	9.4
Q503	0	0	0.6
Q504LR	0	0	0

	E	C	B
Q651	12.2	16.0	12.8
Q652	0	0	0.7
	(0)	(9.0)	(0.2)
Q653	8.2	8.2	7.5
	(4.9)	(10.1)	(9.5)
Q654	8.4	8.4	7.7
	(5.2)	(10.2)	(9.7)

Q703		
Others	T1 SPSS	T1 FF REW
E	0	8.7
C	0	8.7
B	0	8.0

Q702		
Others	SPSS	
E	0	0
C	12.2	0.5
B	0.2	0.8

Q701		
Others	T1 PLAY	
E	0	0
C	0	0
B	0.3	0.7



POWER SUPPLY P.W.B.

PRINTED WIRING BOARD [H,HC,E,E(BS)]

※ indicates axial lead cylindrical ceramic capacitor.

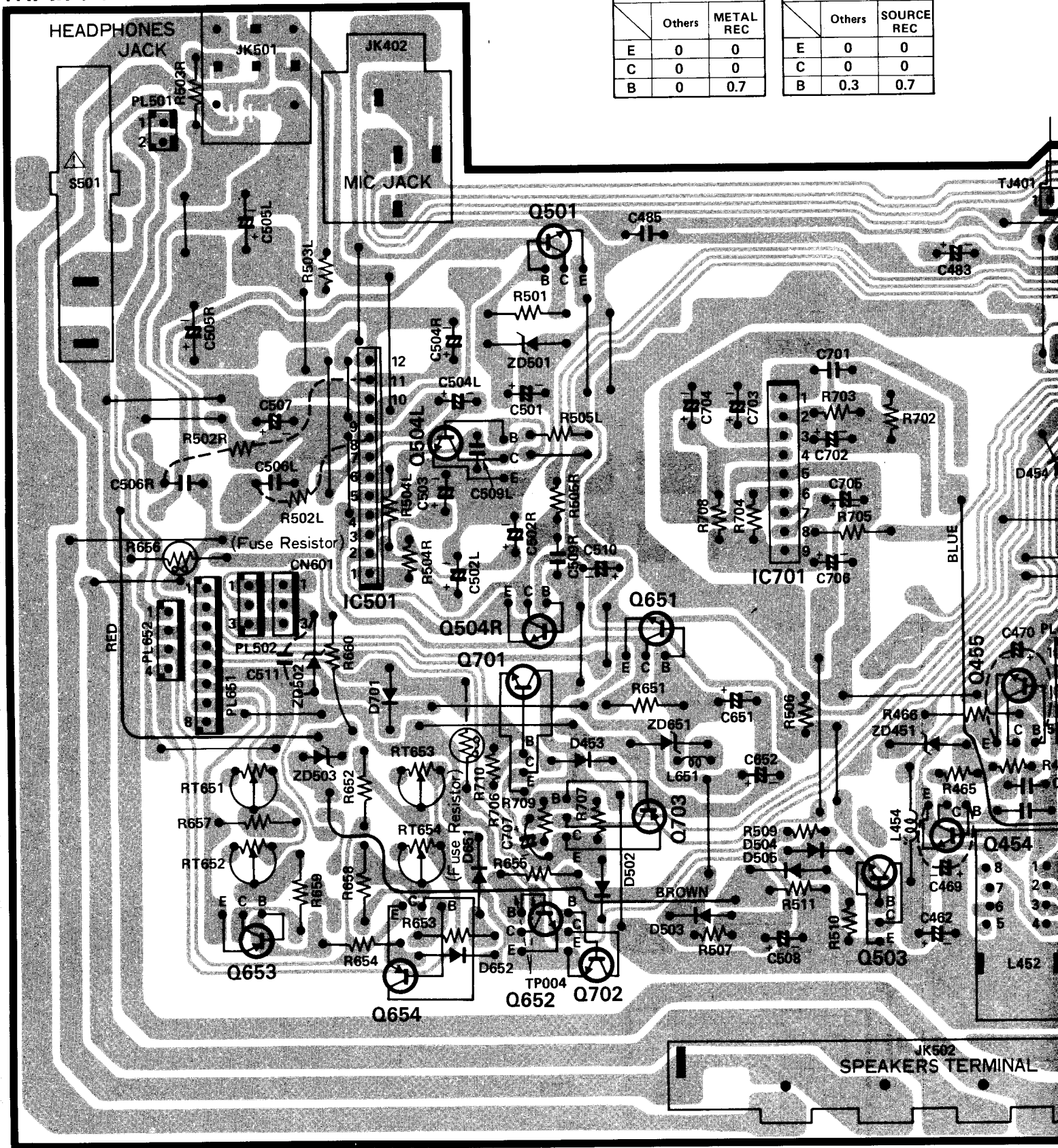
MAIN P.W.B.

S501

OPERATE SWITCH

Q452LR		
	Others	METAL REC
E	0	0
C	0	0
B	0	0.7

Q453LR		
	Others	SOURCE REC
E	0	0
C	0	0
B	0.3	0.7

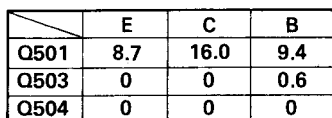


	E	C
Q501	8.7	16.
Q503	0	0
Q504	0	0

	Q453LR		
METAL REC		Others	SOURCE REC
0	E	0	0
0	C	0	0
0.7	B	0.3	0.7

REC/PLAY
SELECT
SWITCH

FUNCTION
SELECT
SWITCH



Q401LR		
	Others	METAL
E	0	0
C	0	0
B	0	0.6

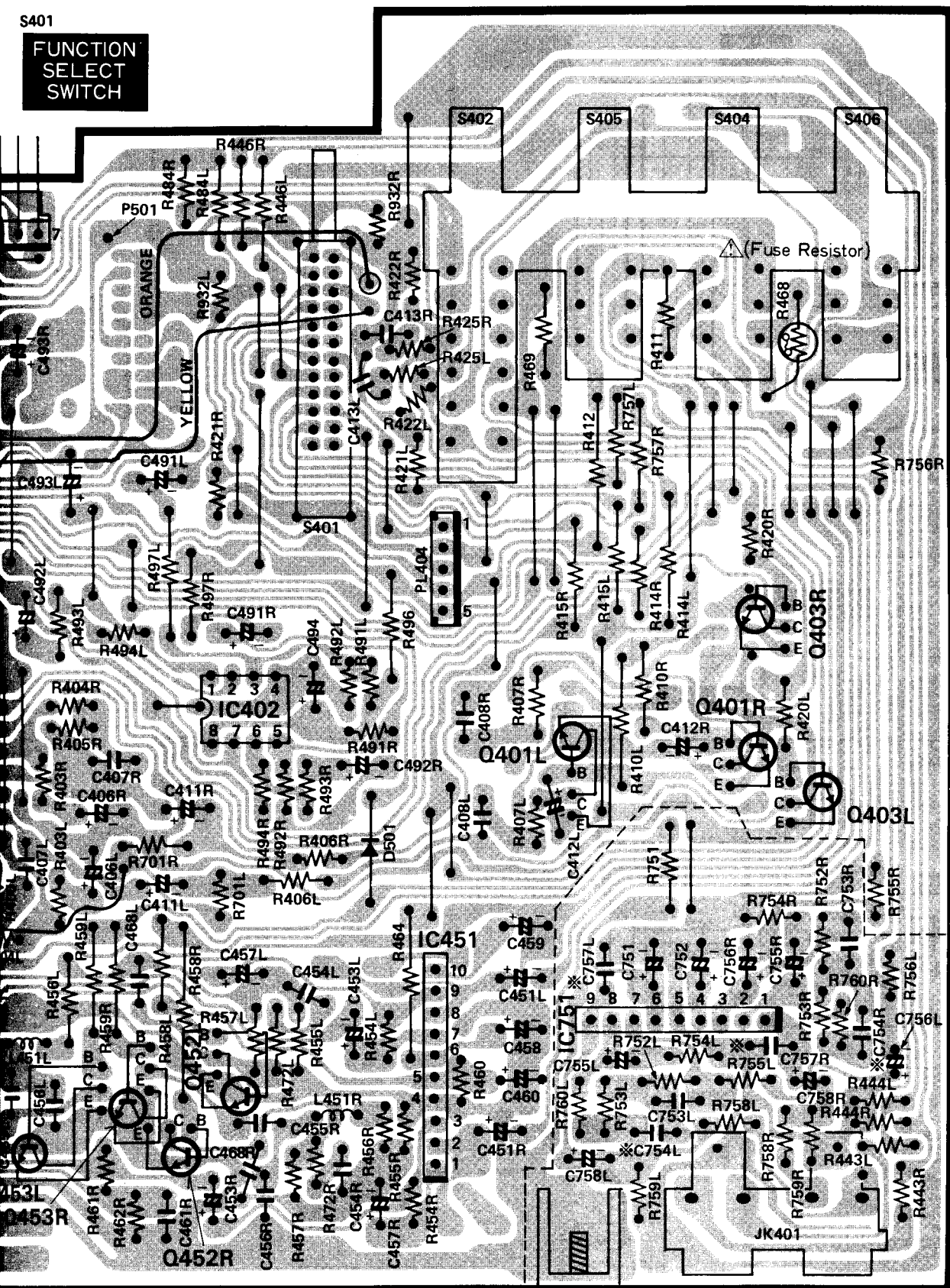
Q403LR		
	Others	SPSS
E	0	0
C	0	0
B	0	0.7

Q701		
	Others	T1 PLAY
E	0	0
C	0	0
B	0.3	0.7

Q702		
	Others	SPSS
E	0	0
C	12.2	0.5
B	0.2	0.8

S401

FUNCTION
SELECT
SWITCH



S402

REC MODE
SELECT
SWITCH

S405

TAPE1
TAPE SELECT
SWITCH

S404

TAPE2
TAPE SELECT
SWITCH

S406

REC MUTE
SWITCH

RT451LR

REC BIAS
CURRENT
LEVEL ADJ.

RT651

TAPE1
HIGH-SPEED
ADJ.

RT652

TAPE1
NORMAL-SPEED
ADJ.

RIF SW

(AM M)

Q454

Q455

Q651

Q652

Q653

Q654

(): HIGH

Voltage

Q403LR

Others

SPSS

0

0

0

0

0

0.7

Q701

Others

T1 PLAY

E

0

C

0

B

0.3

0

0

Q702

Others

SPSS

E

0

C

12.2

B

0.2

0

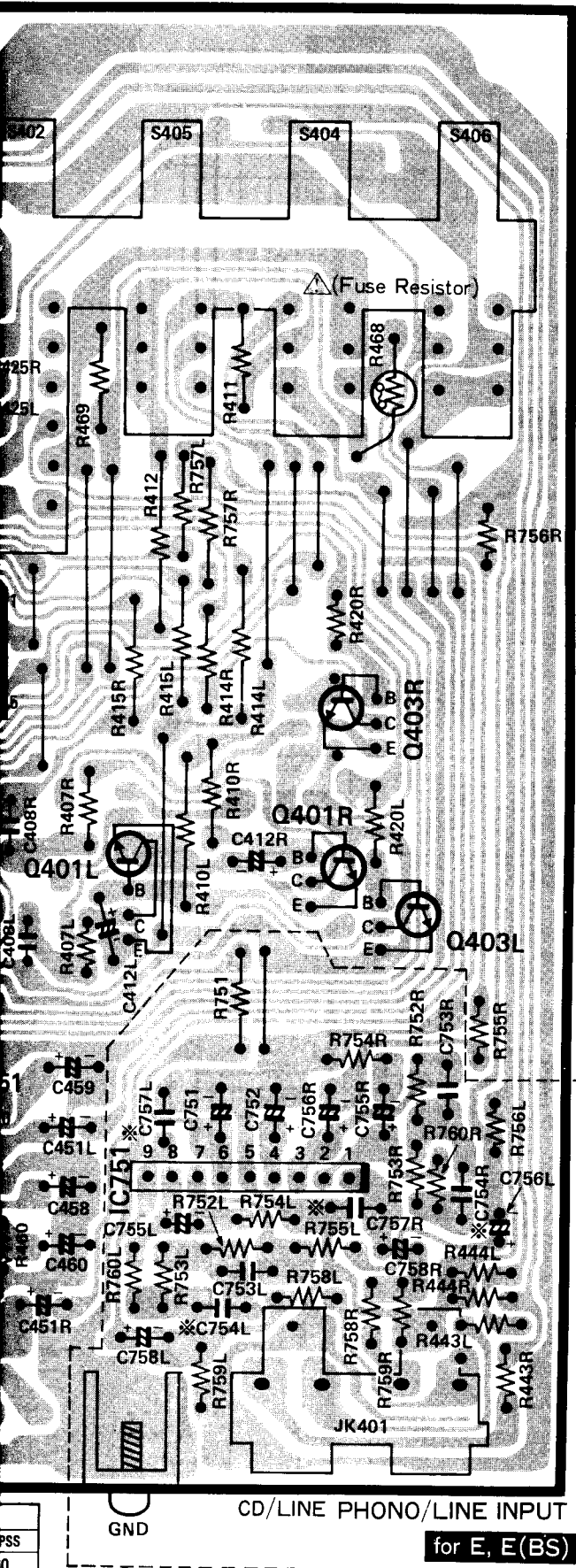
0.5

0.8

CD/LINE PHONO/LINE INPUT

for E, E(BS)

CD



S402

REC MODE
SELECT
SWITCH

S405

TAPE1
TAPE SELECT
SWITCH

S404

TAPE2
TAPE SELECT
SWITCH

S406

REC MUTE
SWITCH

RT451LR

REC BIAS
CURRENT
LEVEL ADJ.

RT651

TAPE1
HIGH-SPEED
ADJ.

RT652

TAPE1
NORMAL-SPEED
ADJ.

RT653

TAPE2
HIGH-SPEED
ADJ.

RT654

TAPE2
NORMAL-SPEED
ADJ.

RIF SWITCH (AM MODE)		A/C	B	D
Q454	E	0	0	0
	C	0	0	0
	B	0.7	0	0.2
Q455	E	0	0	0
	C	0	0	0
	B	0.8	0	0.7

	E	C	B
Q651	12.2	16.0	12.8
Q652	0 (0)	0 (9.0)	0.7 (0.2)
Q653	8.2 (4.9)	8.2 (10.1)	7.5 (9.5)
Q654	8.4 (5.2)	8.4 (10.2)	7.7 (9.7)

(): HIGH SPEED DUBBING MODE

Voltage is measured at no signal

Pin No.	IC401
1	3.2
2	3.2
3	7.8
4	0
5	3.2
6	3.2
7	0
8	1.3 (2.7)
9	0
10	0
11	0
12	3.2
13	3.2
14	3.2
15	3.2
16	3.2

(): T1 PLAY
T2 REC

Q703			
Others	SPSS	T1 FF/ REW	
0	8.7	8.7	
0	8.7	0	
0	8.0	8.7	

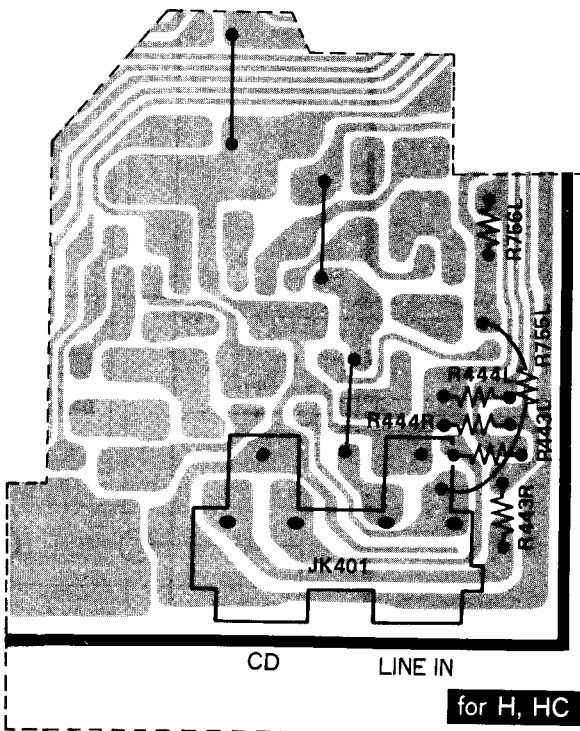
Pin No.	IC402
1	4.5
2	4.5
3	4.5
4	0
5	4.5
6	4.5
7	4.5
8	8.2

Pin No.	IC451
1	1.2
2	0
3	4.1
4	0
5	0
6	8.0
7	4.1
8	0
9	1.2
10	7.0

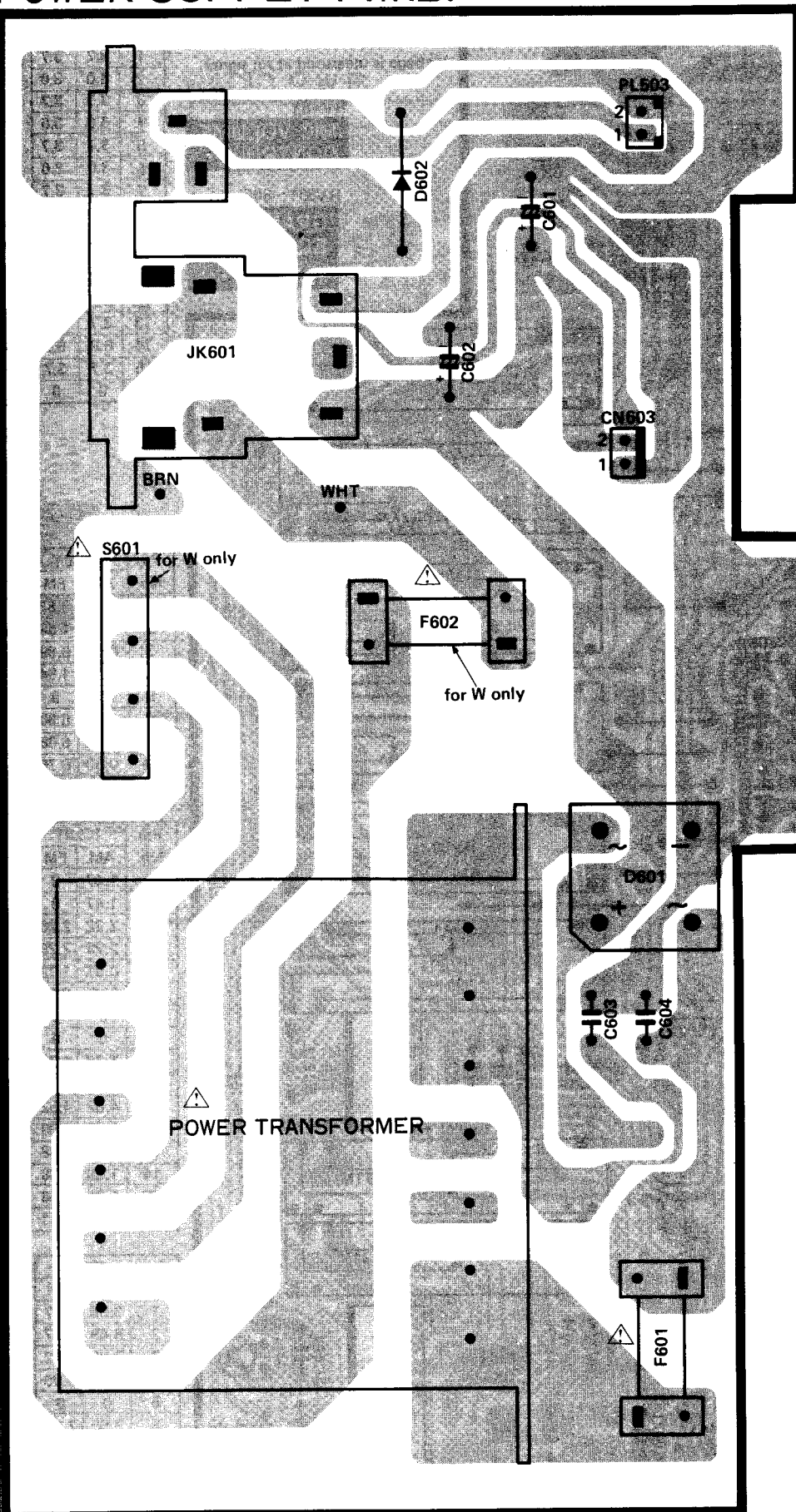
Pin No.	IC701
1	0(2.0)
2	0(0)
3	0(2.0)
4	0(0)
5	0(0)
6	0(1.5)
7	0(0.7)
8	0(0.1)
9	0(7.5)

(): SPSS

Pin No.	IC501
1	1.2
2	0
3	20
4	0
5	0
6	1.2
7	10.4
8	18.9
9	0
10	20.2
11	18.2
12	10.4



POWER SUPPLY P.W.B.



RT301
FM MPX. ADJ.

S601
VOLTAGE
SELECTOR

S2
MODE
SELECT/
RIF/AFC
SWITCH

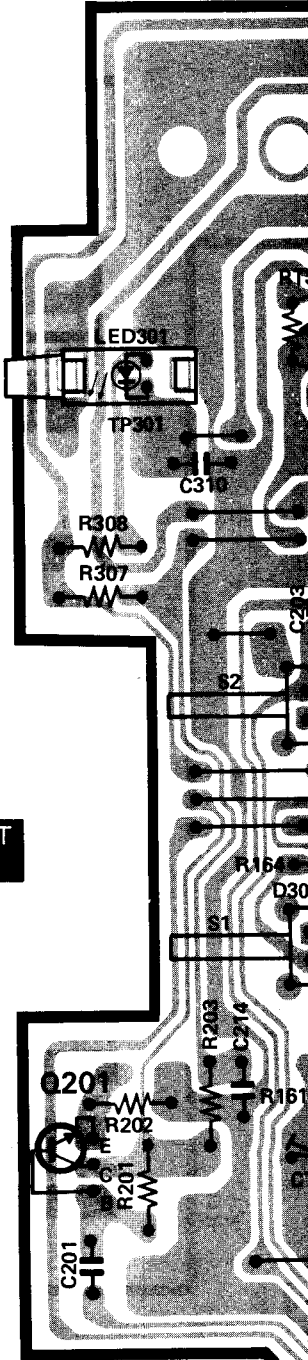
S1
BAND SELECT
SWITCH

	Q201		
	E	C	B
AM	0.11	6.20	0.81
FM	0	5.96	0.80

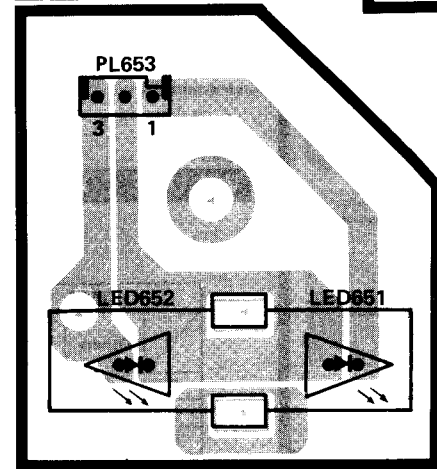
CT101, L101
FM ANT. ADJ.

CT102, L102
FM OSC. ADJ.

RADIO P.W.B.



LED P.W.B.



T101
FM IF A

amic capacitor.

RADIO P.W.B.

SW

RT301
FM MPX. ADJ.

VOLTAGE
SELECTOR

S2
MODE
SELECT/
R/F/AFC
SWITCH

S1
BAND SELECT
SWITCH

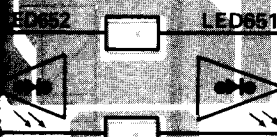
	Q201		
	E	C	B
AM	0.11	6.20	0.81
FM	0	5.96	0.80

CT101, L101
FM ANT. ADJ.

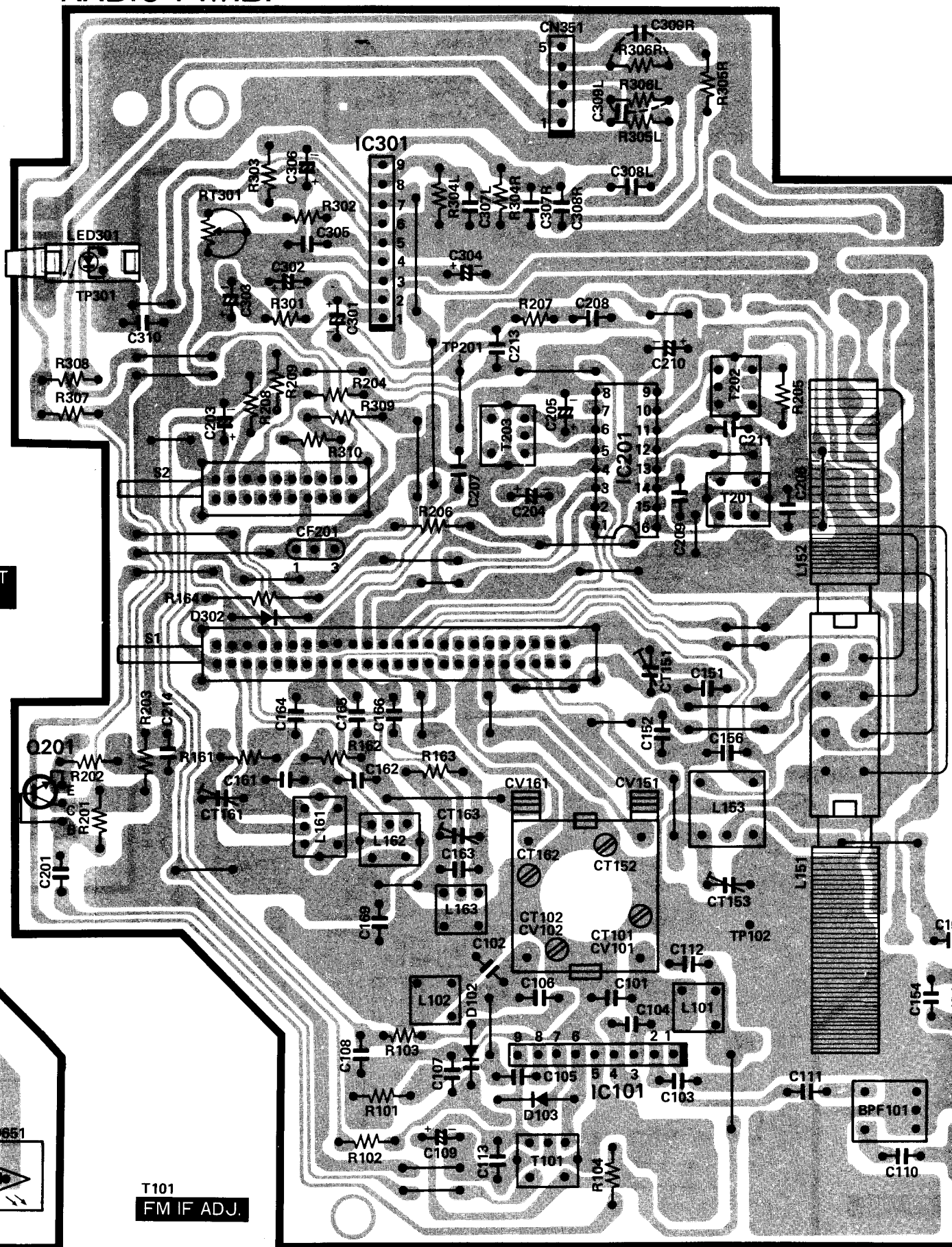
CT102, L102
FM OSC. ADJ.

D P.W.B.

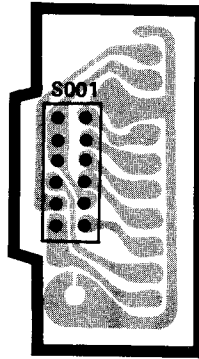
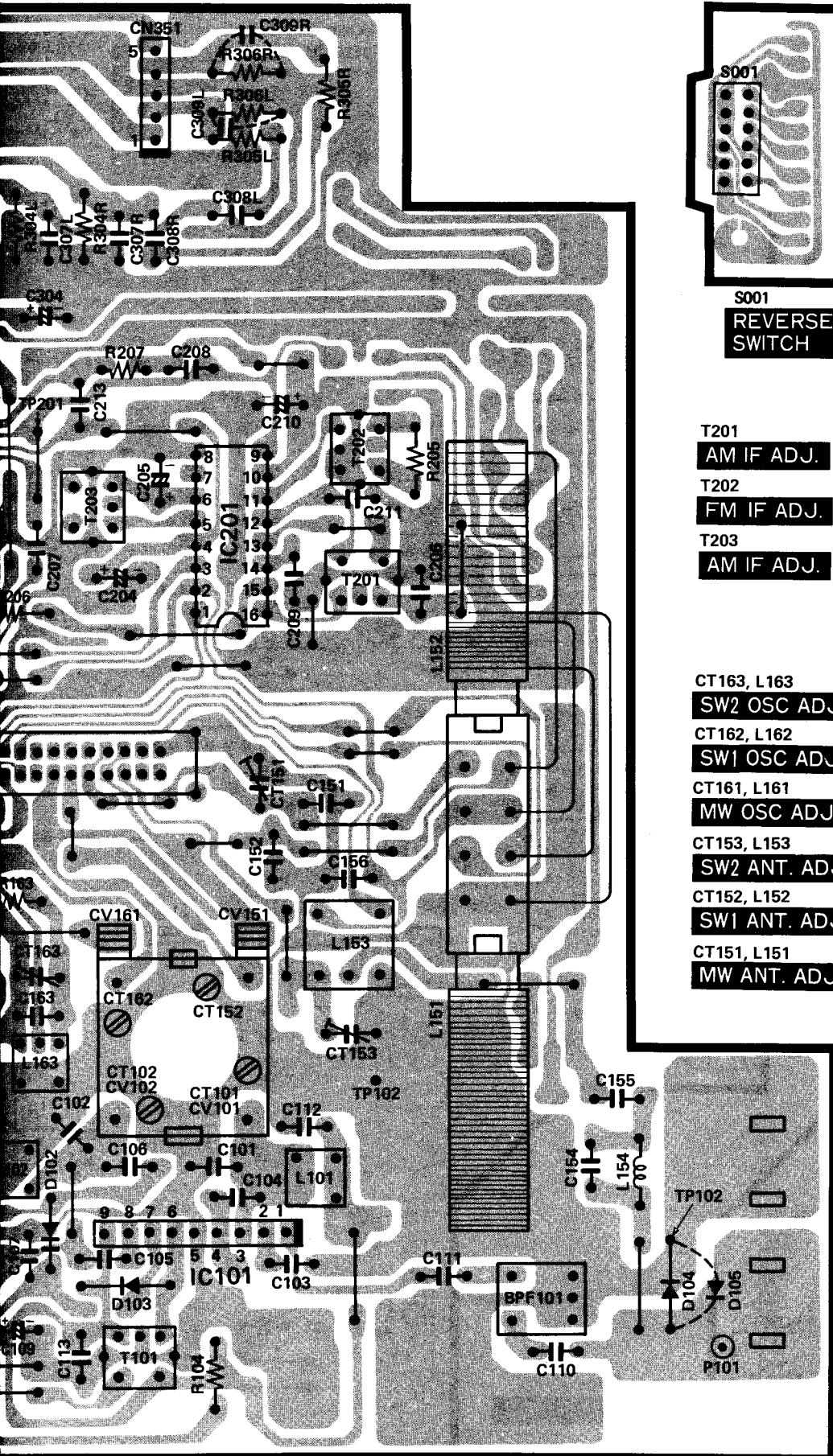
PL653



T101
FM IF. ADJ.



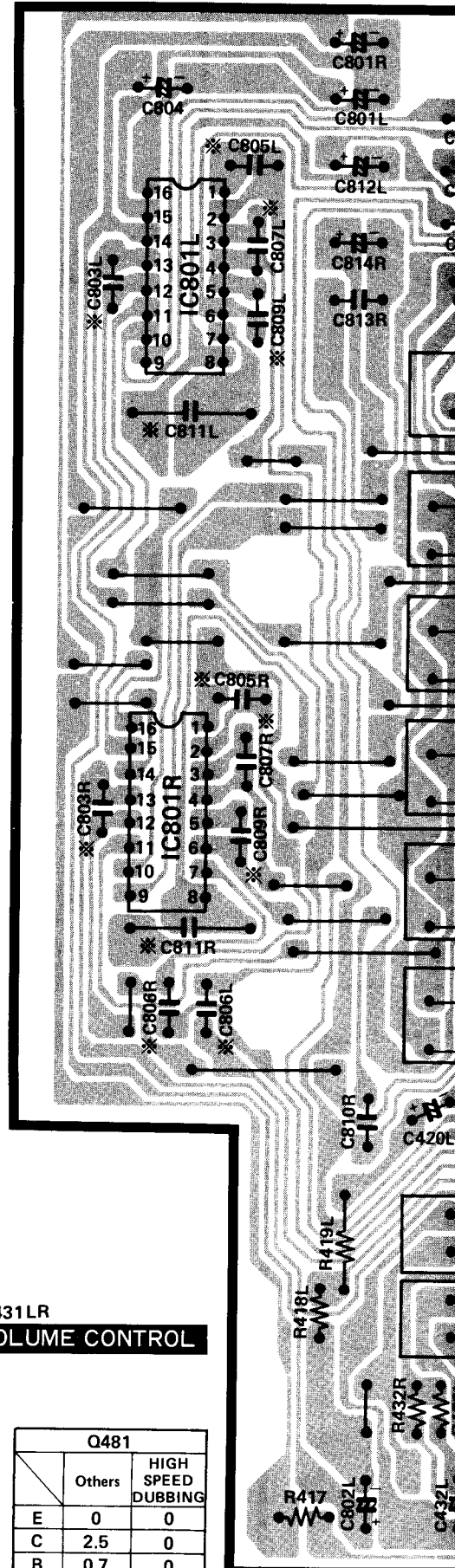
VOLUME P.W.B.



S001
REVERSE
SWITCH

T201
AM IF ADJ.
T202
FM IF ADJ.
T203
AM IF ADJ.

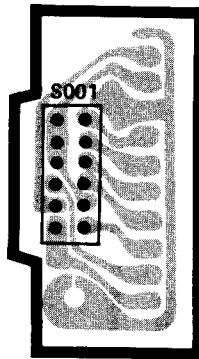
CT163, L163
SW2 OSC. ADJ.
CT162, L162
SW1 OSC. ADJ.
CT161, L161
MW OSC. ADJ.
CT153, L153
SW2 ANT. ADJ.
CT152, L152
SW1 ANT. ADJ.
CT151, L151
MW ANT. ADJ.

RV431LR
VOLUME CONTROL

Q481		
	Others	HIGH SPEED DUBBING
E	0	0
C	2.5	0
B	0.7	0

SWITCH P.W.B. VOLUME P.W.B.

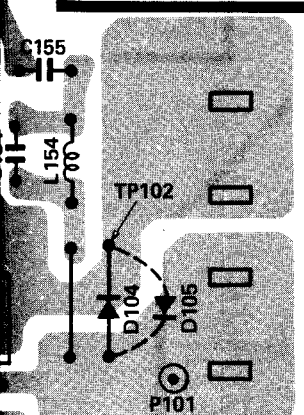
Voltage is measured at no signal



S001
REVERSE
SWITCH

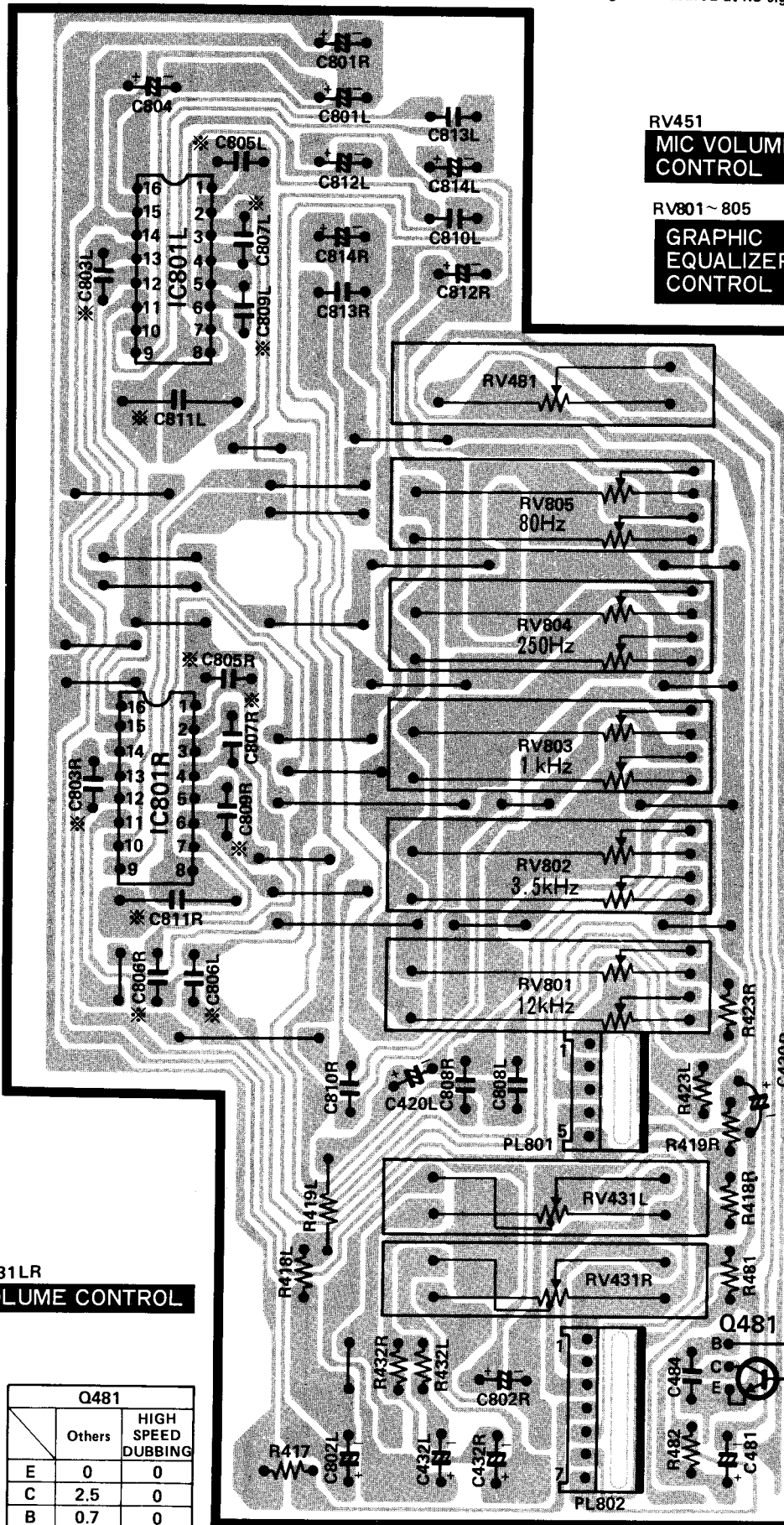
T201
AM IF ADJ.
T202
FM IF ADJ.
T203
AM IF ADJ.

CT163, L163
SW2 OSC ADJ.
CT162, L162
SW1 OSC ADJ.
CT161, L161
MW OSC ADJ.
CT153, L153
SW2 ANT. ADJ.
CT152, L152
SW1 ANT. ADJ.
CT151, L151
MW ANT. ADJ.



RV431LR
VOLUME CONTROL

Q481		
	Others	HIGH SPEED DUBBING
E	0	0
C	2.5	0
B	0.7	0



RV451
MIC VOLUME
CONTROL

RV801~805
GRAPHIC
EQUALIZER
CONTROL

Pin No.	IC801	
	L	R
1	3.7	3.7
2	3.0	3.0
3	3.7	3.7
4	3.0	3.0
5	3.7	3.7
6	3.0	3.0
7	3.7	3.7
8	3.0	3.0
9	3.7	3.7
10	3.0	3.0
11	3.7	3.7
12	3.7	3.7
13	3.7	3.7
14	6.9	6.9
15	3.7	3.7
16	0	0

Pin No.	IC101	
	AM	FM
1	0	0.82
2	0.10	1.58
3	0.50	6.89
4	0.10	1.54
5	0	0
6	0.50	6.88
7	0.10	6.08
8	0.50	6.78
9	0.50	6.88

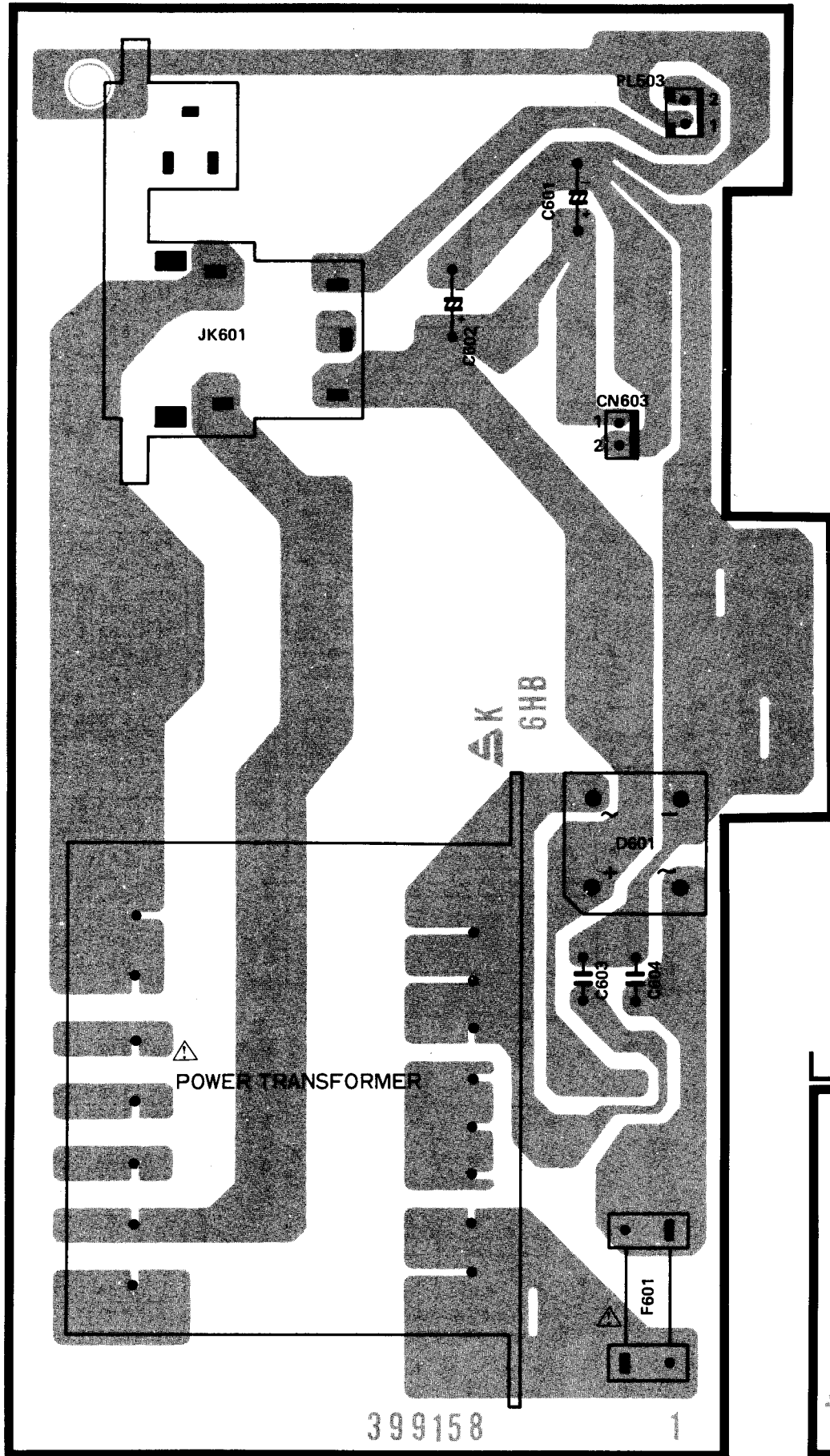
Pin No.	IC201	
	AM	FM
1	1.47	0
2	1.47	0
3	2.22	2.28
4	2.23	2.28
5	0.87	1.12
6	0.87	0.89
7	0	0
8	0	0
9	1.26	1.36
10	4.62	4.51
11	4.62	4.52
12	1.38	1.39
13	1.38	1.38
14	1.38	1.38
15	1.38	1.38
16	4.61	4.51

Pin No.	IC301	
	AM	FM
1	3.50	3.47
2	6.49	6.17
3	7.90	7.52
4	6.29	5.90
5	0	0
6	7.05	7.05
7	7.91	7.52
8	3.75	3.68
9	3.73	3.64

PRINTED WIRING BOARD [H,HC,E,E(BS)] **POWER SUPPLY P.W.B.**

※ indicates axial lead cylindrical ceramic capacitor.

[H, HC E, E(BS)]



RT301
FM MPX. ADJ.

S2
MODE
SELECT/
RIF/AFC
SWITCH

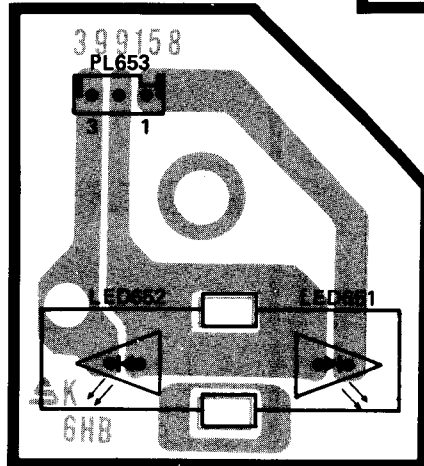
S1
BAND SELECT
SWITCH

	Q201		
	E	C	B
AM	0.11	6.20	0.81
FM	0	5.96	0.80

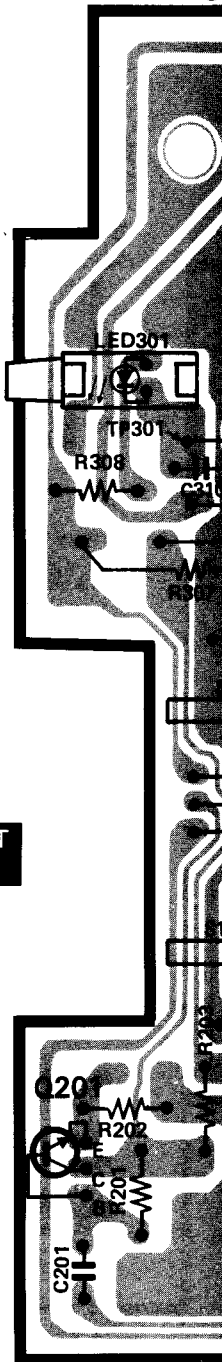
CT101, L101
FM ANT ADJ.

CT102, L102
FM OSC ADJ.

LED P.W.B.



RADIO



T1
F

axial lead cylindrical ceramic capacitor.

RADIO P.W.B.

[E, E(BS)]

RT301
FM MPX. ADJ.

S2
MODE
SELECT/
RIF/AFC
SWITCH

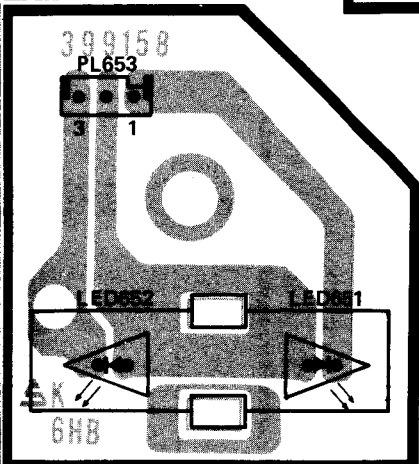
S1
BAND SELECT
SWITCH

	Q201		
	E	C	B
AM	0.11	6.20	0.81
FM	0	5.96	0.80

CT101, L101
FM ANT ADJ.

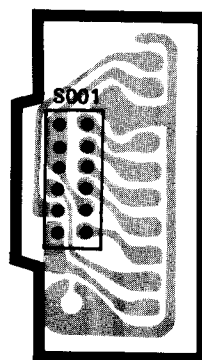
CT102, L102
FM OSC ADJ.

LED P.W.B.



T101
FM IF ADJ.

K 6HB



CT163, L163
SW OSC ADJ.

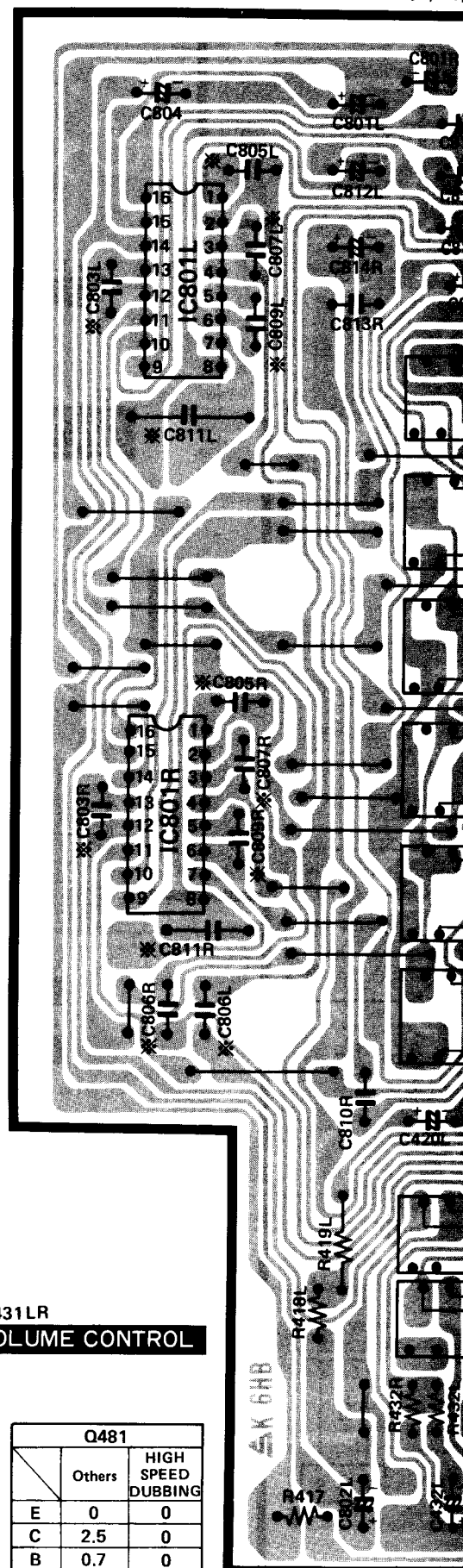
CT162, L162
MW OSC ADJ.

CT161, L161
LW OSC ADJ.

CT153, L153
SW ANT. ADJ.

CT152, L152
MW ANT. ADJ.

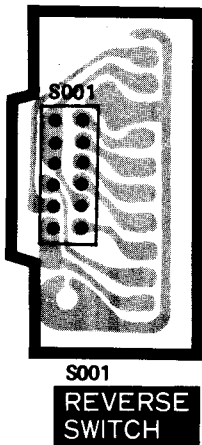
CT151, L151
LW ANT. ADJ.



Q481		
	Others	HIGH SPEED DUBBING
E	0	0
C	2.5	0
B	0.7	0

VOLUME P.W.B.

[H, HC, E, E(BS)]



T201
AM IF ADJ.

T202
FM IF ADJ.

T203
AM IF ADJ.

CT163, L163
SW OSC ADJ.

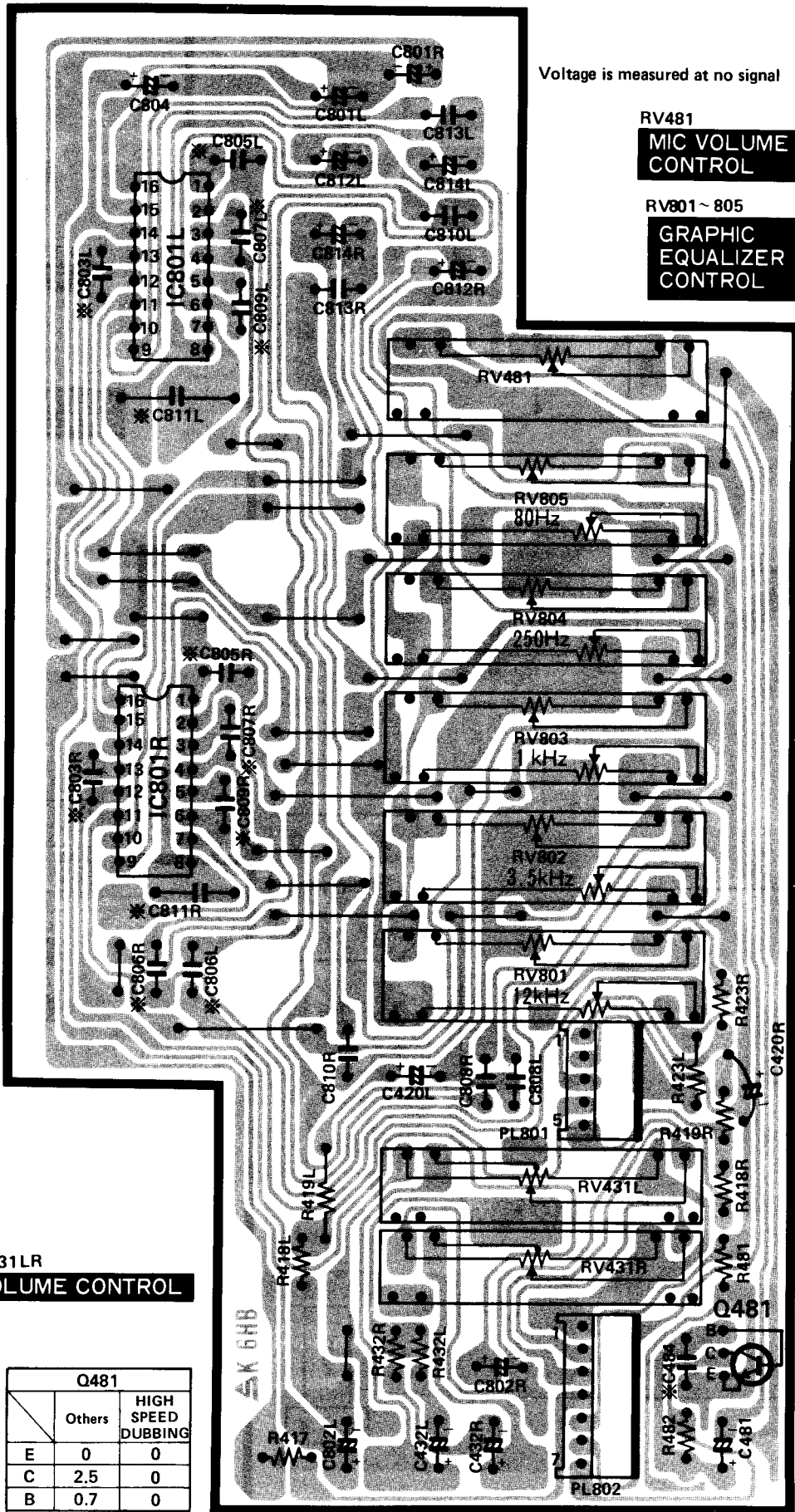
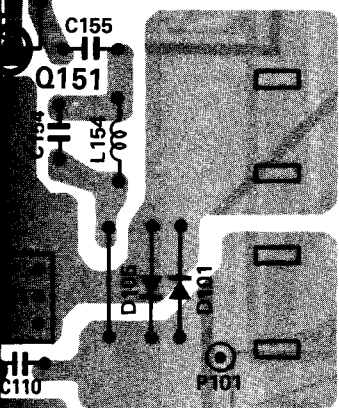
CT162, L162
MW OSC ADJ.

CT161, L161
LW OSC ADJ.

CT153, L153
SW ANT. ADJ.

CT152, L152
MW ANT. ADJ.

CT151, L151
LW ANT. ADJ.



Pin No.	IC801	
	L	R
1	3.7	3.7
2	3.0	3.0
3	3.7	3.7
4	3.0	3.0
5	3.7	3.7
6	3.0	3.0
7	3.7	3.7
8	3.0	3.0
9	3.7	3.7
10	3.0	3.0
11	3.7	3.7
12	3.7	3.7
13	3.7	3.7
14	6.9	6.9
15	3.7	3.7
16	0	0

Pin No.	IC101	
	AM	FM
1	0	0.82
2	0.10	1.58
3	0.50	6.89
4	0.10	1.54
5	0	0
6	0.50	6.88
7	0.10	6.08
8	0.50	6.78
9	0.50	6.88

Pin No.	IC201	
	AM	FM
1	1.47	0
2	1.47	0
3	2.22	2.28
4	2.23	2.28
5	0.87	1.12
6	0.87	0.89
7	0	0
8	0	0
9	1.26	1.36
10	4.62	4.51
11	4.62	4.52
12	1.38	1.39
13	1.38	1.38
14	1.38	1.38
15	1.38	1.38
16	4.61	4.51

Pin No.	IC301	
	AM	FM
1	3.50	3.47
2	6.49	6.17
3	7.90	7.52
4	6.29	5.90
5	0	0
6	7.05	7.05
7	7.91	7.52
8	3.75	3.68
9	3.73	3.64

Q481		
	Others	HIGH SPEED DUBBING
E	0	0
C	2.5	0
B	0.7	0

RADIO P.W.B.

RT301
FM MPX. ADJ.

S2
MODE
SELECT/
RIF/AFC
SWITCH

S1
BAND SELECT
SWITCH

CT101, L101
FM ANT. ADJ.

CT102, L102
FM OSC. ADJ.

T101
FM IF ADJ.

T201
AM IF ADJ.
T202
FM IF ADJ.
T203
AM IF ADJ.

CT161, L161
AM OSC. ADJ.

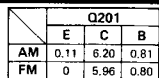
CT151, L151
AM ANT. ADJ.

Voltage is measured at no signal

	Q201		
	E	C	B
AM	0.11	6.20	0.81
FM	0	5.96	0.80

Pin No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC101	AM	0	0.10	0.50	0.10	0	0.50	0.10	0.50	0.50							
	FM	0.82	1.58	6.89	1.54	0	6.88	6.08	6.78	6.88							
IC201	AM	1.47	1.47	2.22	2.23	0.87	0.87	0	0	1.26	4.62	4.62	1.38	1.38	1.38	1.38	4.61
	FM	0	0	2.28	2.28	1.12	0.89	0	0	1.36	4.51	4.52	1.39	1.38	1.38	1.38	4.51
IC301	AM	3.50	6.49	7.90	6.29	0	7.05	7.91	3.75	3.73							
	FM	3.47	6.17	7.52	5.90	0	7.05	7.52	3.68	3.64							

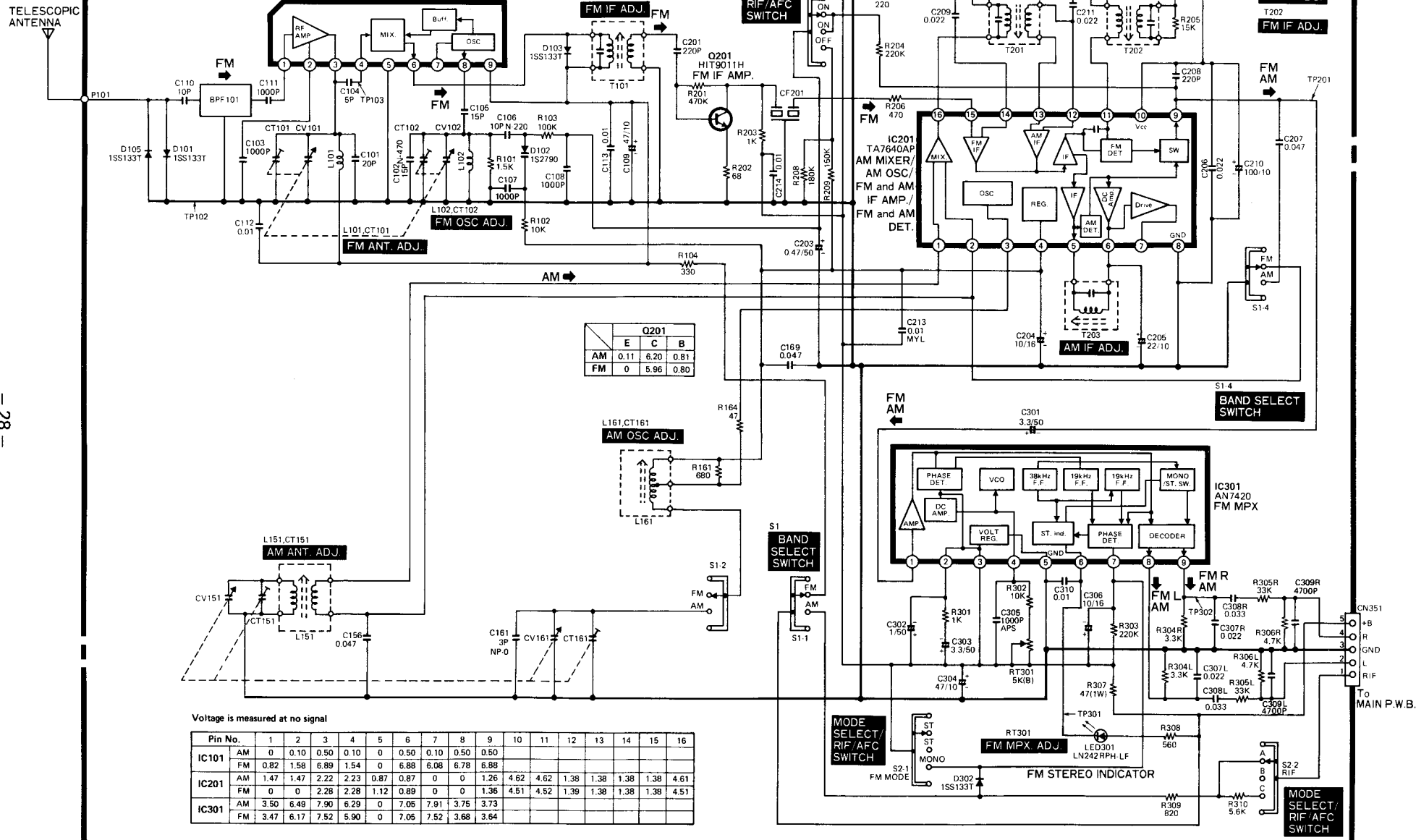
G



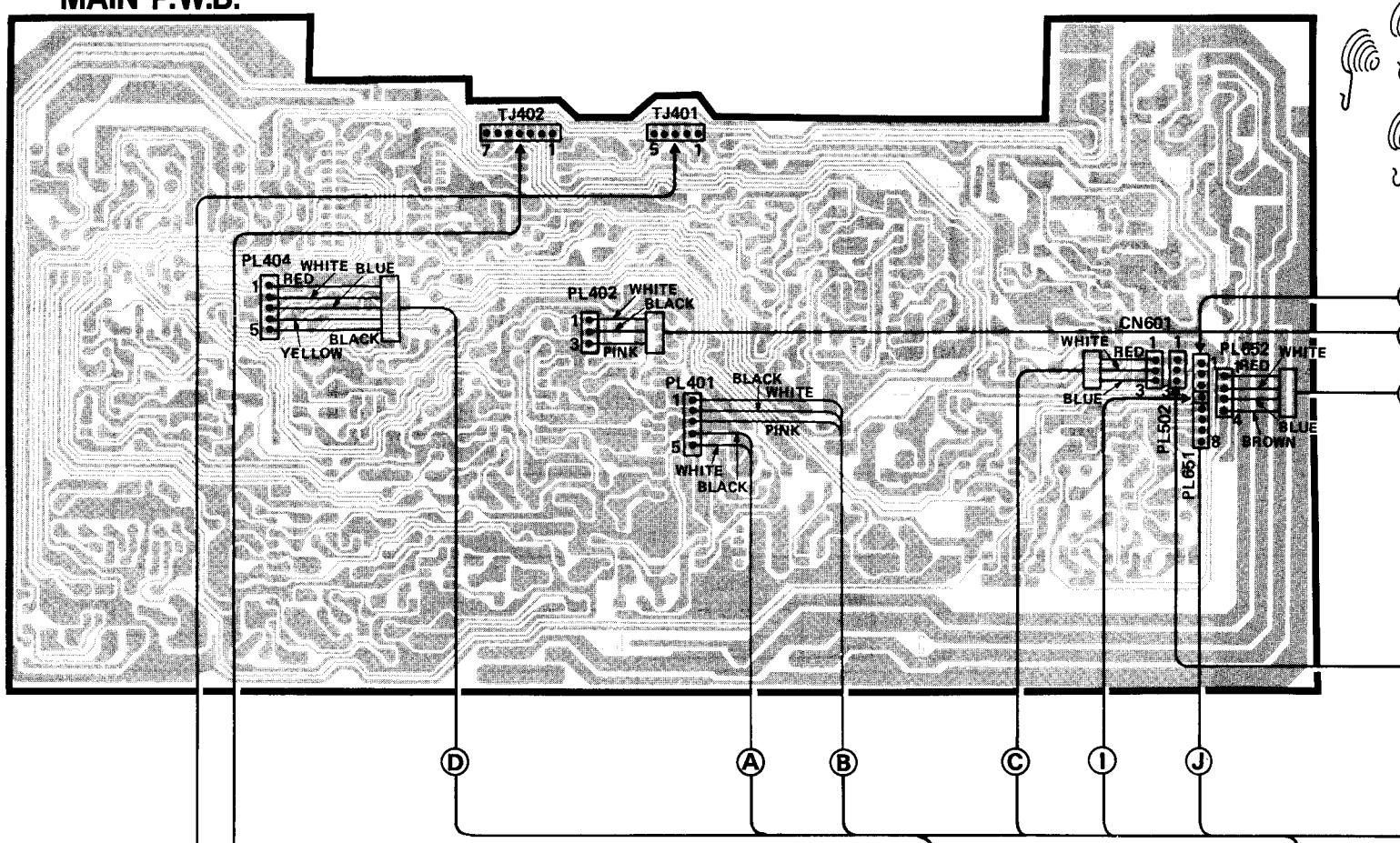
Voltage is measured at no signal

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC101	AM	0	0.10	0.50	0	0	0.50	0.10	0.50	0.50						
	FM	0.82	1.58	6.89	1.54	0	6.88	6.06	6.78	6.88						
IC201	AM	1.47	1.47	2.22	2.23	0.87	0.87	0	0	1.26	4.62	4.62	1.38	1.38	1.38	4.61
	FM	0	0	2.28	2.28	1.12	0.89	0	0	1.36	4.51	4.52	1.39	1.38	1.38	4.51
IC301	AM	3.50	6.49	7.90	6.29	0	7.05	7.91	3.75	3.73						
	FM	3.47	6.17	7.52	5.90	0	7.05	7.52	3.68	3.64						

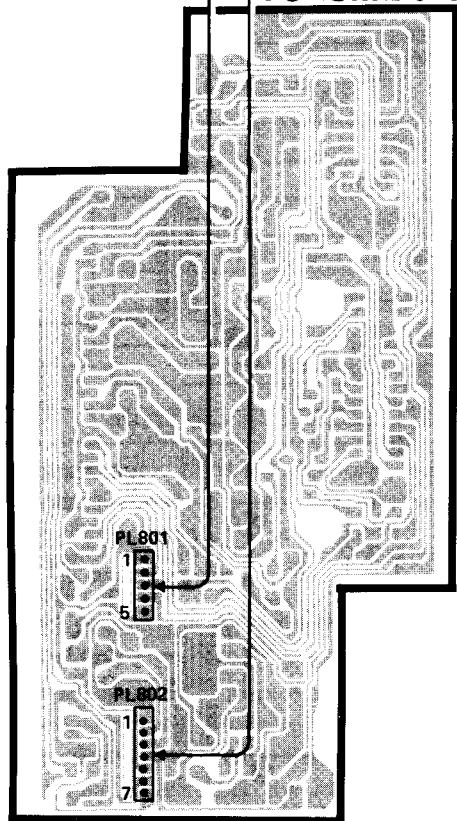
RADIO P.W.B.



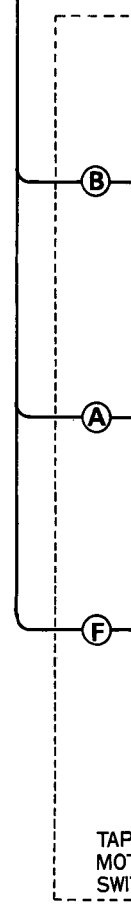
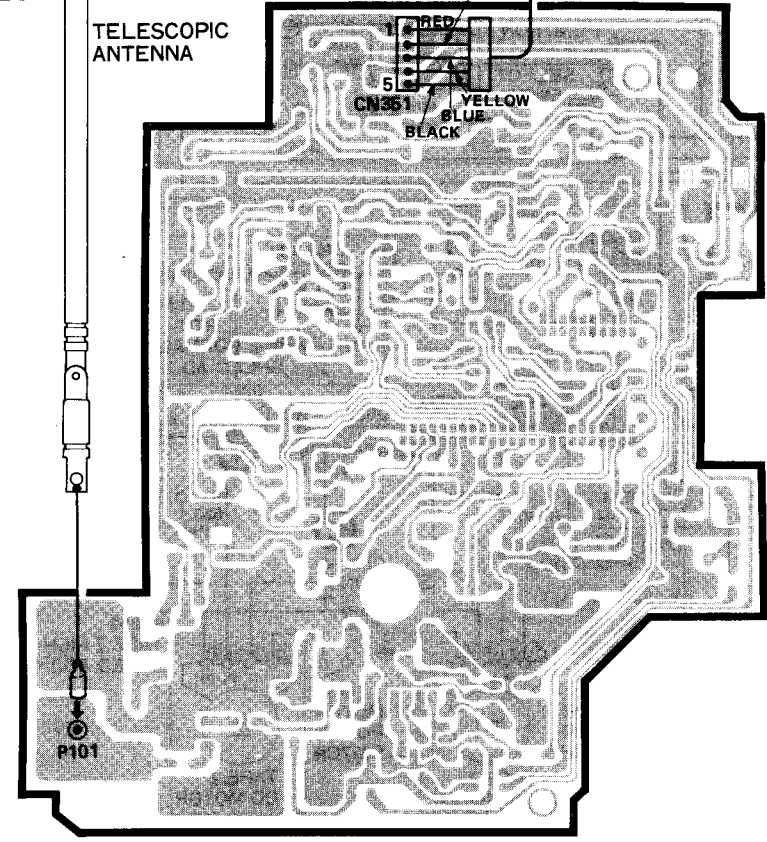
WIRING DIAGRAM MAIN P.W.B.



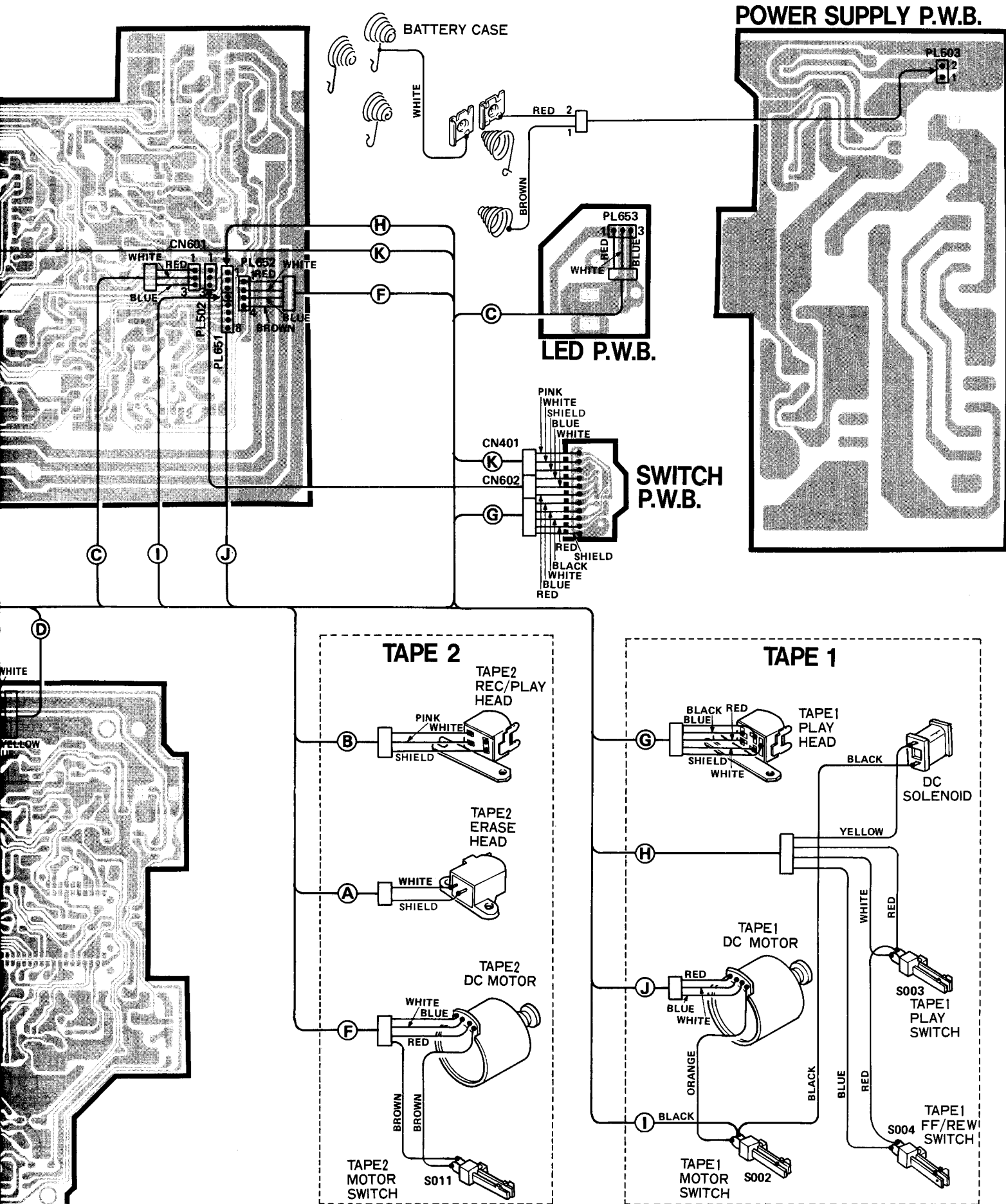
VOLUME P.W.B.



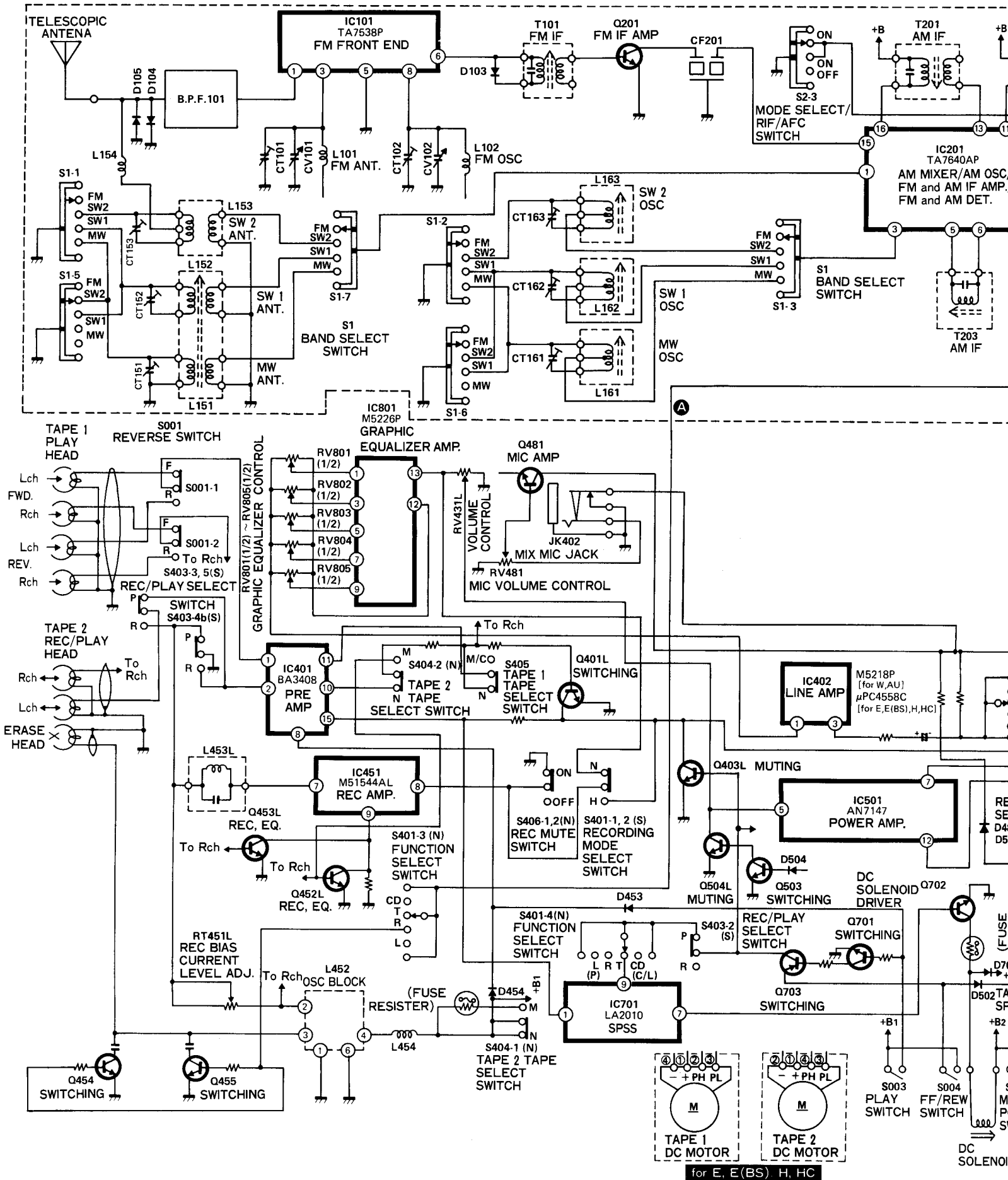
RADIO P.W.B. WHITE

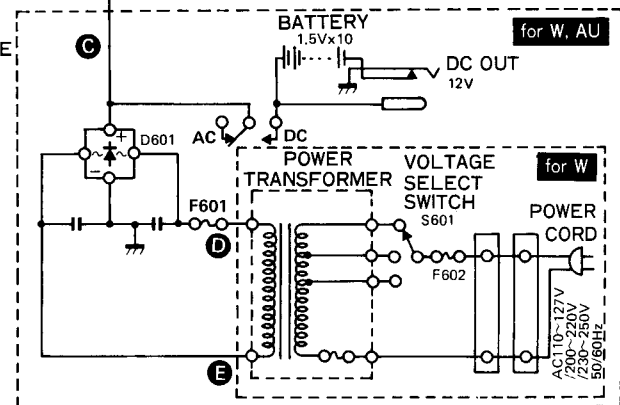
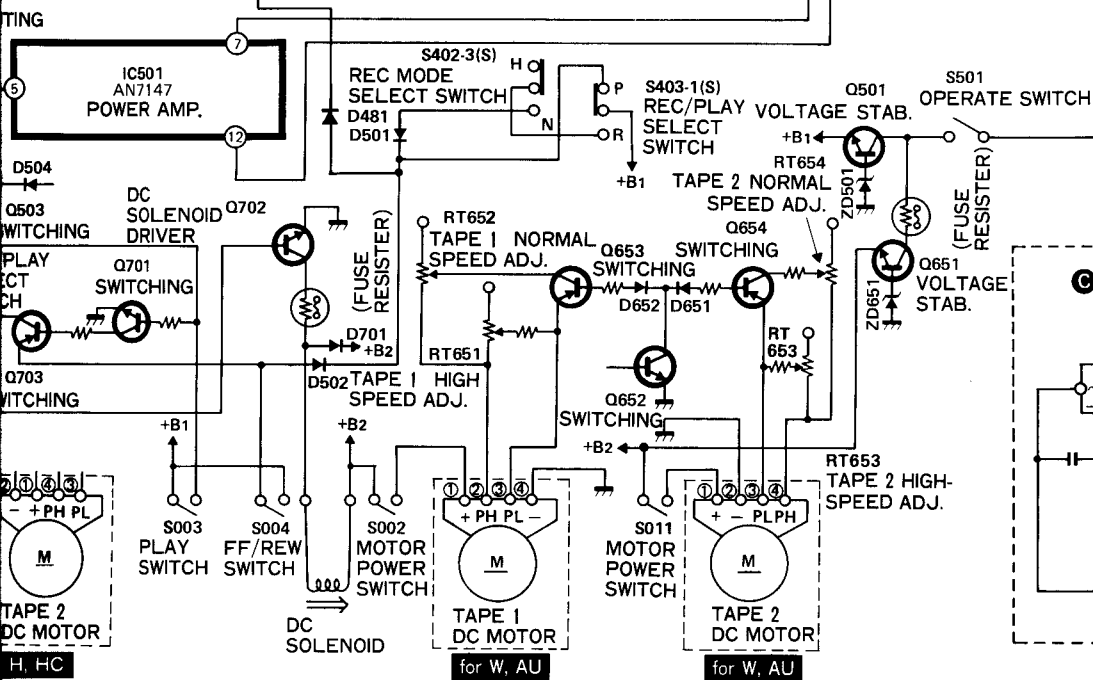
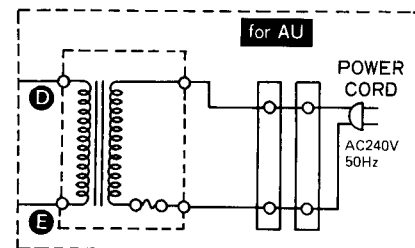
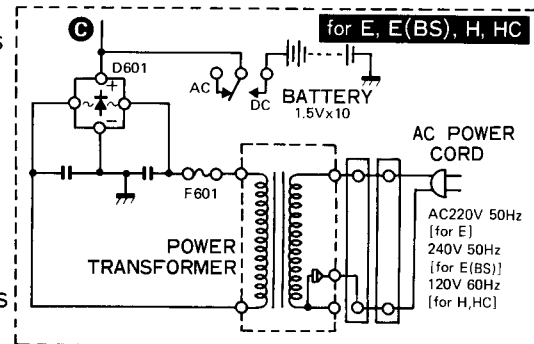
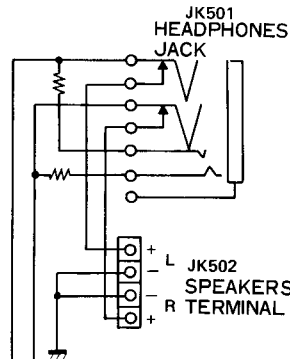
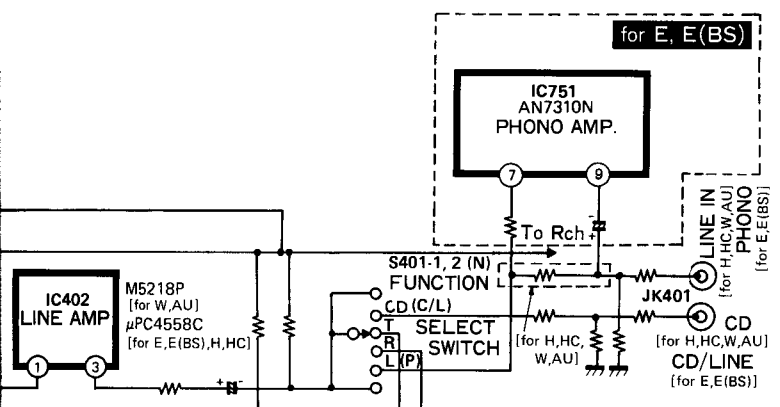
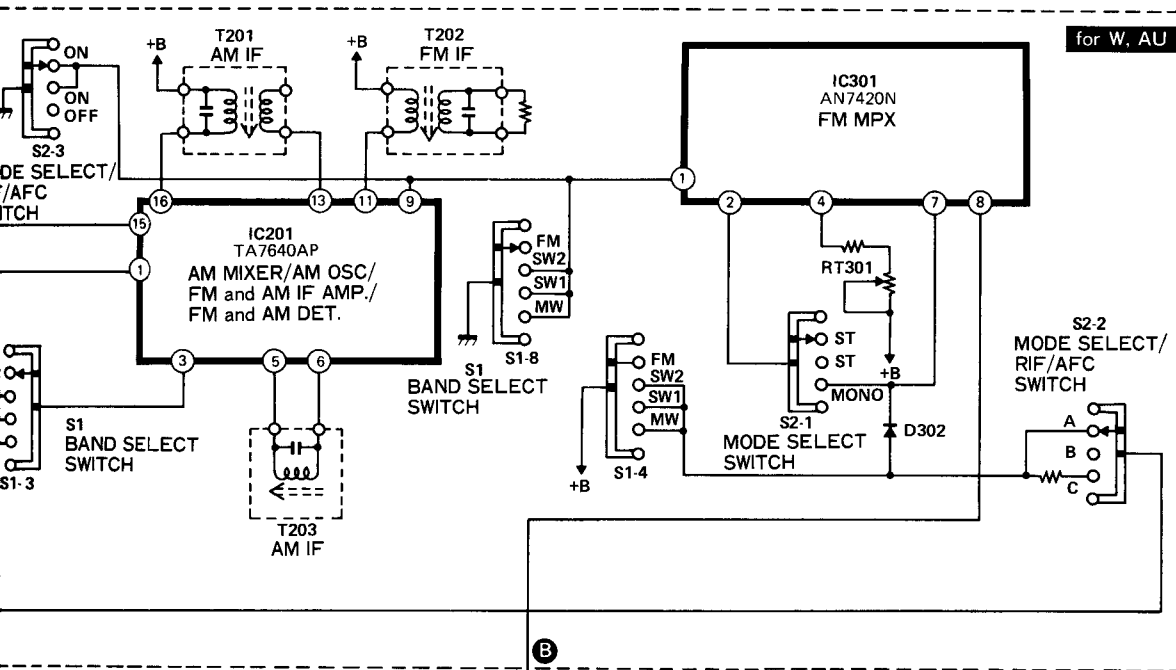


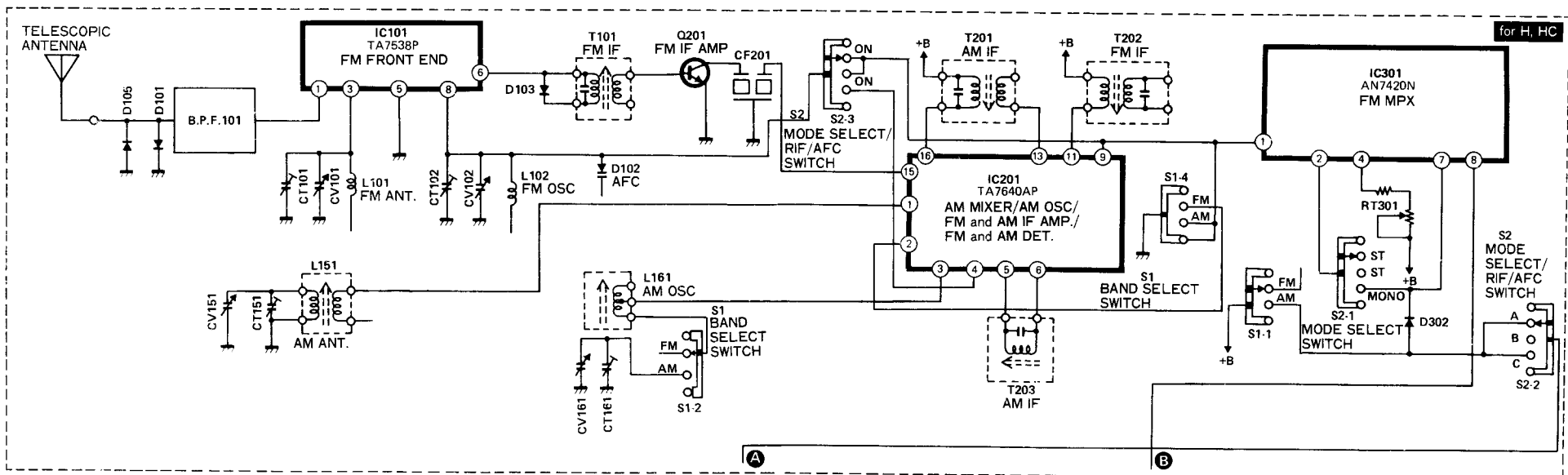
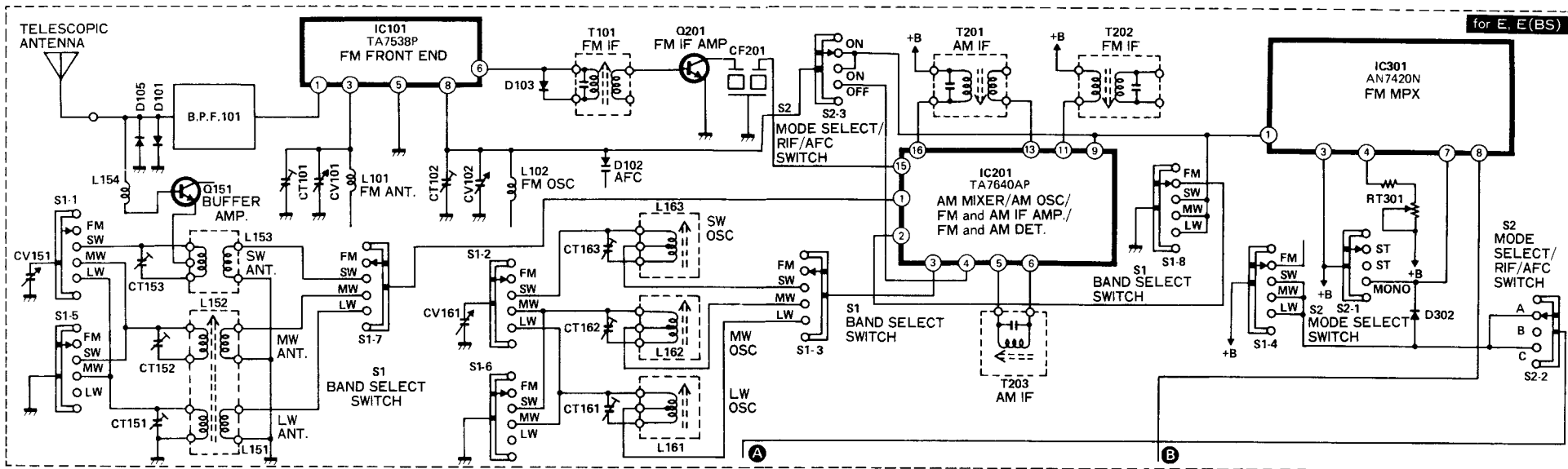
TAPE
MOTOR
SWITCH



BLOCK DIAGRAM





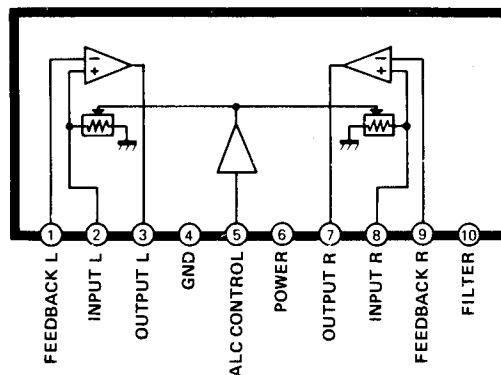
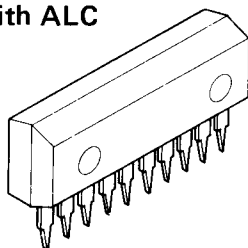


DISCRIPTION OF NEW PARTS

M51544AL (IC451)

Dual front amplifier with ALC

- External form



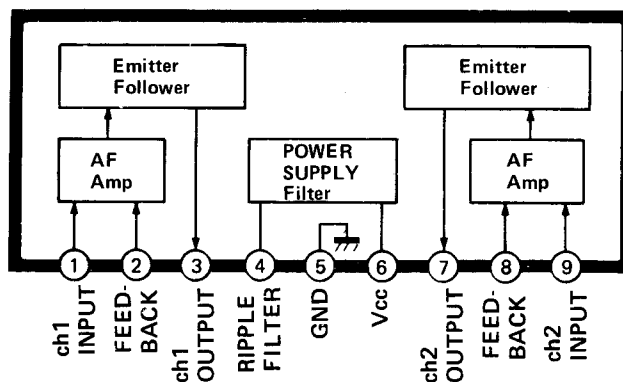
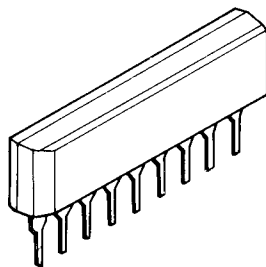
- Maximum rating ($T_a=25^\circ\text{C}$)

Item	Symbol	Rating
Supply voltage	VCC	16V
Current of power source	ICC	27mA
Allowable loss	PD	650mW
Thermal reduction ratio	Ko	6.5mW/ $^\circ\text{C}$
Temperature of operational circuit	Topr	-20 to +75 $^\circ\text{C}$
Storage temperature	Tstg	-40 to +125 $^\circ\text{C}$

AN7310N (IC751) (for E,E(BS),E(Z))

Dual pre-amplifier

- External form



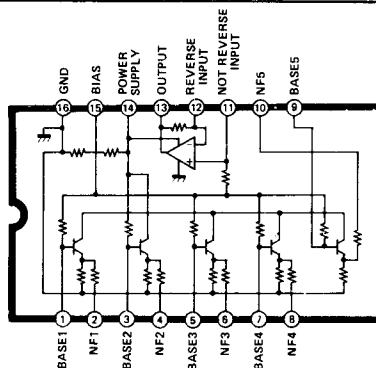
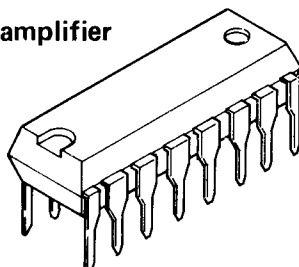
- Maximum rating ($T_a=25^\circ\text{C}$)

Item	Symbol	Rating
Supply voltage	VCC	16V
Current of power source	ICC	15mA
Allowable loss	PD	240mW
Temperature of operational circuit	Topr	-30 to +75 $^\circ\text{C}$
Storage temperature	Tstg	-55 to +150 $^\circ\text{C}$

M5226P (IC801L/R)

Graphic equalizer amplifier

- External form



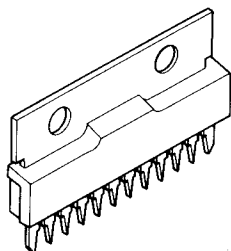
- Maximum rating ($T_a=25^\circ\text{C}$)

Item	Symbol	Rating
Supply voltage	VCC	20V
Current of power source	ICC	50mA
Allowable loss	PD	700mW
Temperature of operational circuit	Topr	-20 to +75 $^\circ\text{C}$
Storage temperature	Tstg	-55 to +125 $^\circ\text{C}$

AN7147 (IC501)

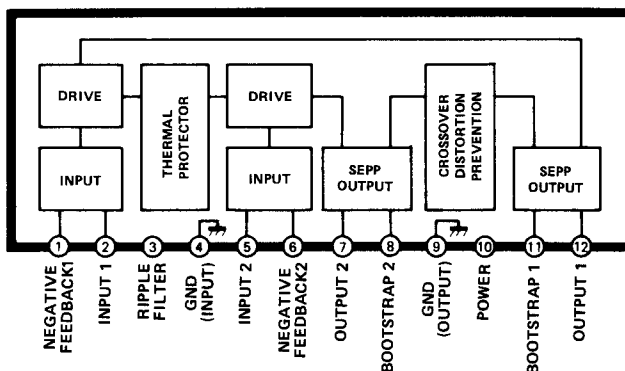
Silicon monolithic bipolar IC low-frequency power amplifier

● External form



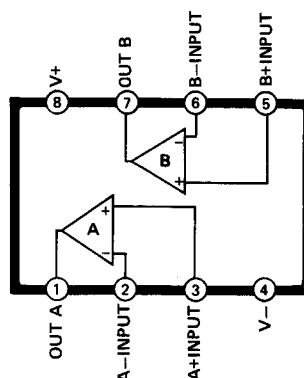
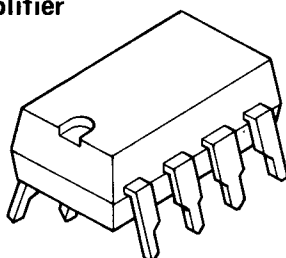
● Maximum rating (Ta=25°C)

Item	Symbol	Rating
Supply voltage	VCC	at rest 24V
		at operation 18V
Current of power source	ICC	4.0A
Allowable loss	PD	62.5W
Operating ambient atmospheric pressure	Popr	1.0 ± 0.6kg/cm ²
Operating constant acceleration	Gopr	1,000G
Operating impact resistance	Sopr	500G
Temperature of operational circuit	Topr	-30 to +75°C
Storage temperature	Tstg	-55 to +150°C

**μPC4558C (IC402) (for E,E(BS),H,HC)**

Dual operational amplifier

● External form



● Maximum rating (Ta=25°C)

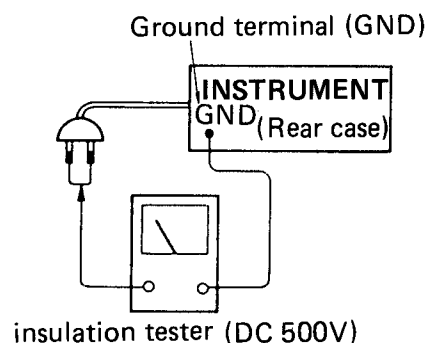
Item	Symbol	Rating
Supply voltage	VCC	36V
Full-capacitor loss	P _τ	350mW
Difference movement input voltage	V _{ID}	±30V
In-phase input voltage	V _{ICM}	±15V
Output short circuit time	t _s	∞
Temperature of operational circuit	T _{opt}	0 to +70°C
Storage temperature	T _{stg}	-55 to +125°C

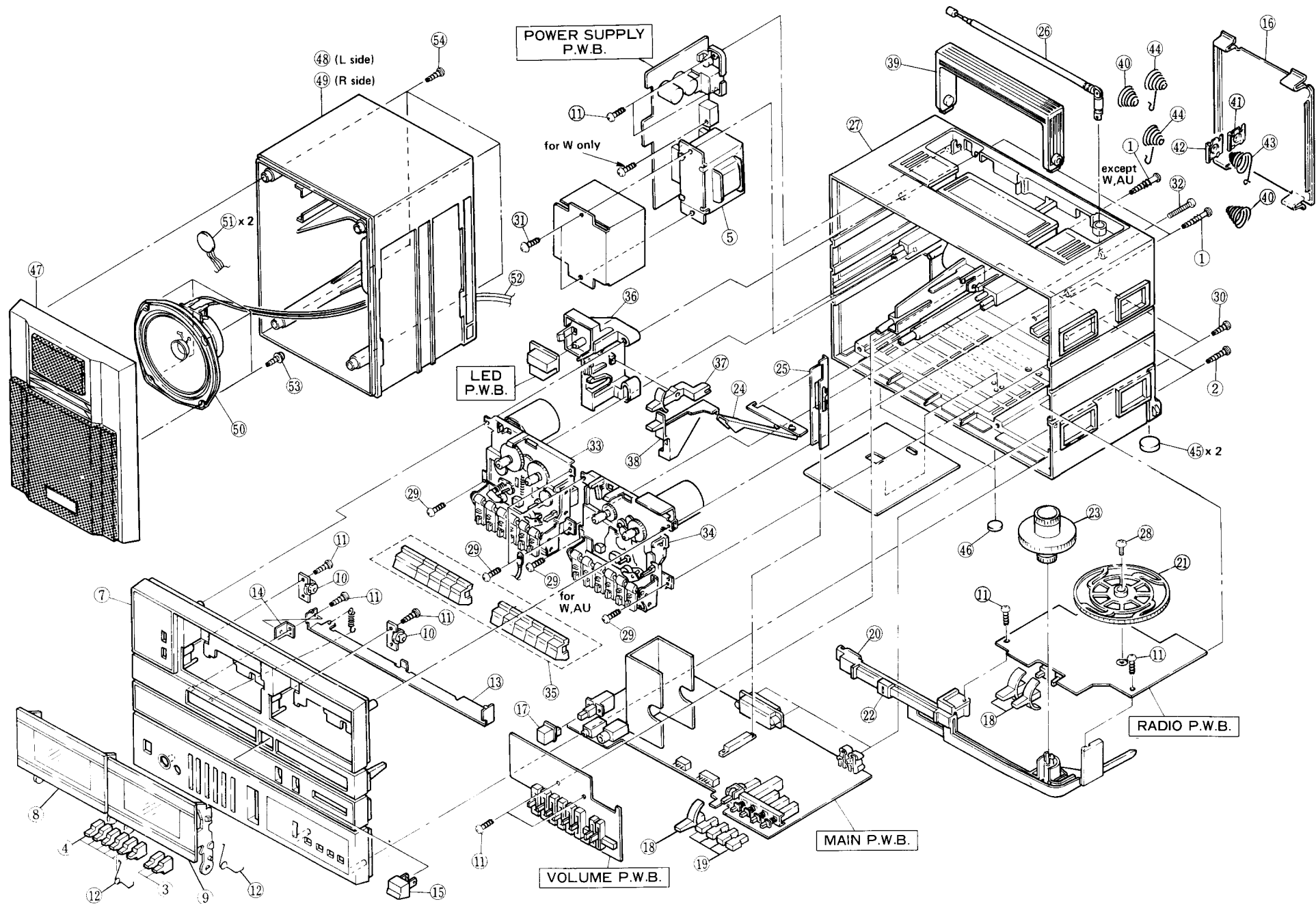
Check that exposed parts are acceptably insulated from the supply circuit before returning the instrument repaired to the customer.

● Checking method

OPERATE switch is set to ON

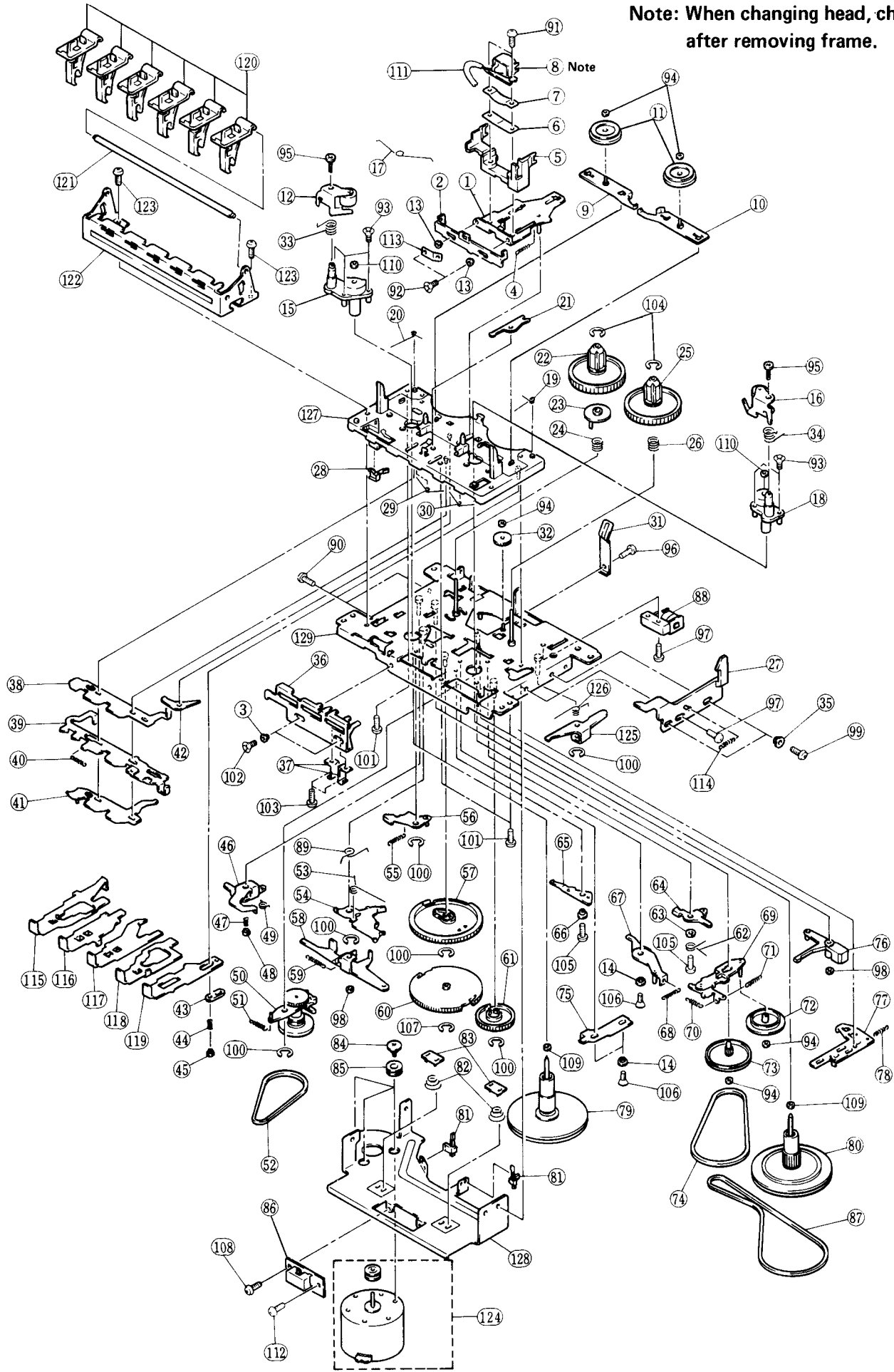
Next, measure the resistance value between the both poles of attachment cup (Power supply plug) and the exposed parts (Parts such as Ground terminal, Knob, Cover, etc where the customer is easy to touch.) and check that the resistance value is 500 kohms or more.





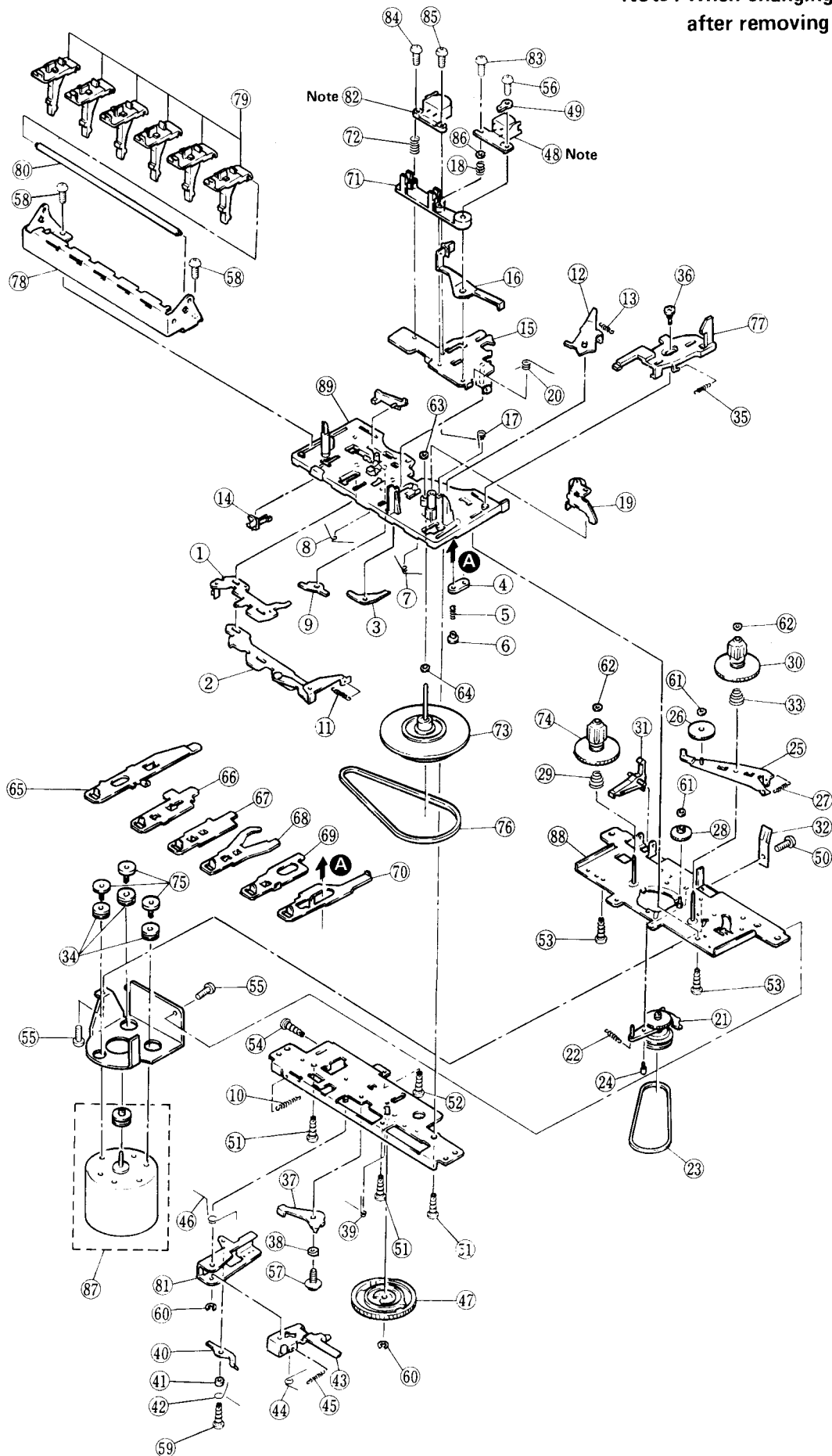
EXPLODED VIEW (Cassette Chassis Assembly) TAPE 1

Note: When changing head, change after removing frame.



EXPLODED VIEW (Cassette Chassis Assembly) TAPE 2

Note : When changing head, change
after removing frame.



CC: Cylindrical ceramic MO: Metal oxide PP: Polypropylene
 CF: Carbon film ST: Styrol MF: Mylar film
 FR: Fuse resistor CD: Ceramic discal ME: Metal
 EL: Electrolytic CO: Composition TA: Tantalum

REPLACEMENT PARTS LIST

SYMBOL NO.		PART NO.		DESCRIPTION				SYMBOL NO.		PART NO.		DESCRIPTION				SYMBOL NO.		PART NO.		DESCRIPTION																			
CAPACITORS																																							
C101	1248669	CD	24PF	±5%	50V				C164	0279327	MF	360PF	±5%	100V			C404LR	0252521	EL	10μF	±20%	16V																	
			[for W, AU]								[for W, AU]								[except W, AU]																				
	0248667	CD	20PF	±5%	50V				1221392	ST	220PF	±5%	50V				C405	0252325	EL	47μF	±20%	10V																	
			[except W, AU]								[for E, E(BS)]						C406LR	0252325	EL	47μF	±20%	10V																	
C102	0248034	CD	15PF	±5%	50V				C165	0268442	PP	1500PF	±5%	100V			C407LR	0275013	MF	0.022μF	±10%	50V																	
			[for W, AU]								[for W, AU]								[for W, AU]																				
	0248334	CD	15PF	±5%	50V				0268321	MF	360PF	±5%	100V					0249763	CD	0.022μF	±20%	25V																	
			[except W, AU]								[for E, E(BS)]								[except W, AU]																				
C103	0209731	CD	1000PF	±10%	50V				C166	0268443	PP	3900PF	±5%	100V			C408LR	0275012	MF	0.015μF	±10%	50V																	
C104	0208635	CD	5PF	±0.25PF	50V						[for W, AU]								[for W, AU]																				
C105	1248664	CD	15PF	±5%	50V				C166	0276011	MF	0.1μF	±10%	50V			C408LR	0249762	CD	0.015μF	±20%	25V																	
			[for W, AU]								[for E, E(BS)]								[except W, AU]																				
	0208664	CD	15PF	±5%	50V				C167	0208648	CD	8PF	±0.5PF	50V			C409	0252521	EL	10μF	±20%	16V																	
			[except W, AU]								[for E, E(BS)]						C410	0252325	EL	47μF	±20%	10V																	
C105	0208664	CD	15PF	±5%	50V				C168	0208684	CD	100PF	±5%	50V			C411LR	0252521	EL	10μF	±20%	16V																	
			[except W, AU]								[for E, E(BS)]						C412LR	1252813	EL	3.3μF	±20%	50V																	
C106	1248020	CD	10PF	±0.5PF	50V														[for W, AU]																				
			[for W, AU]						C169	0249765	CD	0.047μF	±20%	50V				0252813	EL	3.3μF	±20%	50V																	
	0248020	CD	10PF	±0.5PF	50V				C201	0208692	CD	220PF	±5%	50V					[except W, AU]																				
			[except W, AU]																																				
C107	0249731	CD	1000PF	±10%	50V												C413LR	0275013	MF	0.022μF	±10%	50V																	
			[for W, AU]																[for W, AU]																				
	0209731	CD	1000PF	±10%	50V				C203	0252805	EL	0.47μF	±20%	50V				0249763	CD	0.022μF	±20%	25V																	
			[except W, AU]																[except W, AU]																				
C108	0209731	CD	1000PF	±10%	50V				C204	0252521	EL	10μF	±20%	16V			C414	0244141	CD	0.01μF	±10%	50V																	
C109	0252325	EL	47μF	±20%	10V				C205	0252322	EL	22μF	±20%	10V					[except W, AU]																				
C110	1248650	CD	10PF	±0.5PF	50V				C206	0209173	CD	0.022μF	±80% -20%	50V			C420LR	1252811	EL	1μF	±20%	50V																	
			[for W, AU]						C207	0275015	MF	0.047μF	±10%	50V					[for W, AU]																				
	0208650	CD	10PF	±0.5PF	50V						[for W, AU]							0252811	EL	1μF	±20%	50V																	
			[except W, AU]								[except W, AU]							[except W, AU]																					
C111	0209731	CD	1000PF	±10%	50V				C208	0208692	CD	220PF	±5%	50V			C432LR	0252801	EL	0.1μF	±20%	50V																	
C112	0209737	CD	0.01μF	±10%	50V				C209	0209173	CD	0.022μF	±80% -20%	50V			C451LR	0252521	EL	10μF	±20%	16V																	
C113	0209737	CD	0.01μF	±10%	50V											C453LR	0252521	EL	10μF	±20%	16V																		
C151	1248650	CD	10PF	±0.5PF	50V				C210	0252331	EL	100μF	±20%	10V			C454LR	1275013	MF	0.022μF	±10%	50V																	
			[for W, AU]						C211	0209173	CD	0.022μF	±80% -20%	50V					[for W, AU]																				
	0208678	CD	56PF	±5%	50V				C213	0275011	MF	0.01μF	±10%	50V				0249763	CD	0.022μF	±20%	25V																	
			[for E, E(BS)]															[except W, AU]																					
C152	1248647	CD	7PF	±0.5PF	50V				C214	0209737	CD	0.01μF	±10%	50V			C455LR	0275013	MF	0.022μF	±10%	50V																	
			[for W, AU]						C301	0252813	EL	3.3μF	±20%	50V					[for W, AU]																				
	0208650	CD	10PF	±0.5PF	50V				C302	0252811	EL	1μF	±20%	50V				0249763	CD	0.022μF	±20%	25V																	
			[for E, E(BS)]						C303	0252813	EL	3.3μF	±20%	50V					[except W, AU]																				
C153	0208664	CD	15PF	±5%	50V				C304	0252325	EL	47μF	±20%	10V			C456LR	0275012	MF	0.015μF	±10%	50V																	
			[for E, E(BS)]						C305	0268446	PP	1000PF	±5%	100V					[for W, AU]																				
									C306	0252521	EL	10μF	±20%	16V				0249762	CD	0.015μF	±20%	25V																	
C154	0208635	CD	5PF	±0.25PF	50V													[except W, AU]																					
			[except H, HC]						C307LR	0249763	CD	0.022μF	±20%	25V			C457LR	0252521	EL	10μF	±20%	16V																	
C155	0209737	CD	0.01μF	±10%	50V												C458	0252325	EL	47μF	±20%	10V																	
			[except H, HC]														C459	0252325	EL	47μF	±20%	10V																	
C156	0209175	CD	0.047μF	±80% -20%	50V				0275013	MF	0.022μF	±10%	50V				C460	0252325	EL	47μF	±20%	10V																	
C157	0209737	CD	0.01μF	±10%	50V						[for W, AU]						C461LR	0275033	MF	0.027μF	±10%	50V																	
			[for E, E(BS)]						C308LR	0275014	MF	0.033μF	±10%	50V			C462	0252325	EL	47μF	±20%	10V																	
C158	0208647	CD	7PF	±0.5PF	50V						[for W, AU]						C463LR	0240037	CC	220PF	±10%	50V																	
			[for E, E(BS)]								[except W, AU]						C465	0240045	CC	1000PF	±10%	50V																	
C161	0246413	CD	3PF	±0.25PF	50V												C466	0209732	CD	1500PF	±10%	50V																	
			[for H, HC]														C468LR	0275031	MF	0.012μF	±10%	50V																	
	1248666	CD	18PF	±5%	50V				C309LR	1239425	CD	4700PF	±10%	50V			C469	0252805	EL	0.47μF	±20%	50V																	
			[for W, AU]								[for W, AU]							[except W, AU]																					
	0208674	CD	39PF	±5%	50V						CD	4700PF	±10%	50V			C470	0252805	EL	0.47μF	±20%	50V																	
			[for E, E(BS)]								[except W, AU]							[except W, AU]																					
C162	0208662	CD	12PF	±5%	50V				C310	0209737	CD	0.01μF	±10%	50V			C481	0252615	EL	4.7μF	±20%	25V																	
			[for W, AU]						C401LR	0240044	CC	820PF	±10%	50V			C482	0252805	EL	0.47μF	±20%	50V																	
	0208666	CD	18PF	±5%	50V				C402LR	0252521	EL	10μF	±20%	16V			C483	0252332	EL	220μF	±20%	10V																	
			[for E, E(BS)]						C403LR	0240045	CC	1000PF	±10%	50V			C484	0240039	CC	330PF	±10%	50V																	
C163	1248661	CD	11PF	±5%	50V				C404L	1252521	EL	10μF	±20%	16V			C485	0275014	MF	0.033μF	±10%	50V																	
			[for W, AU]								[for W, AU]							[for W, AU]																					
C163	0208666	CD	18PF	±5%	50V													0249764	CD	0.033μF	±20%	25V																	
			[for E, E(BS)]						C404R	0252521	EL	10μF	±20%	16V				[except W, AU]																					
																	C491LR	0252615	EL	4.7μF	±20%	25V																	
																	C492LR	0252615	EL	4.7μF	±20%	25V																	

SYMBOL NO.	PART NO.	DESCRIPTION			
C493L	1252615	EL	4.7μF	±20%	25V
		[for W, AU]			
C493R	0252615	EL	4.7μF	±20%	25V
		[for W, AU]			
C493LR	0252615	EL	4.7μF	±20%	25V
		[except W, AU]			
C494	0252325	EL	47μF	±20%	10V
C501	1252335	EL	470μF	±20%	10V
		[for W, AU]			
C501	0252335	EL	470μF	±20%	10V
		[except W, AU]			
C502LR	0252331	EL	100μF	±20%	10V
C503	1252813	EL	100μF	±20%	25V
		[for W, AU]			
	0252631	EL	100μF	±20%	25V
		[except W, AU]			
C504LR	0252525	EL	47μF	±20%	16V
C505LR	1252542	EL	2200μF	±20%	16V
		[for W, AU]			
C505LR	0252542	EL	2200μF	±20%	16V
		[except W, AU]			
C506LR	0276013	MF	0.22μF	±10%	50V
C507	1252813	EL	100μF	±20%	25V
		[for W, AU]			
	0252631	EL	100μF	±20%	25V
		[except W, AU]			
C508	1252333	EL	330μF	±20%	10V
		[for W, AU]			
C508	0252333	EL	330μF	±20%	10V
		[except W, AU]			
C509LR	1239411	CD	560PF	±10%	50V
		[for W, AU]			
	0249724	CD	560PF	±10%	25V
		[except W, AU]			
C510	1252521	EL	10μF	±20%	16V
		[for W, AU]			
	0252521	EL	10μF	±20%	16V
		[except W, AU]			
C511	0244141	CD	0.01μF	±10%	50V
		[except W, AU]			
C601	1259840	EL	2200μF	±20%	25V
		[for W, AU]			
	0256648	EL	2200μF	±20%	25V
		[except W, AU]			
C602	1259840	EL	2200μF	±20%	25V
		[for W, AU]			
	0256648	EL	2200μF	±20%	25V
		[except W, AU]			
C603	0209173	CD	0.022μF	+80% -20%	50V
C604	0209173	CD	0.022μF	+80% -20%	50V
C651	0252531	EL	100μF	±20%	16V
C652	0252813	EL	3.3μF	±20%	50V
C701	0275015	MF	0.047μF	±10%	50V
		[for W, AU]			
	0249765	CD	0.047μF	±20%	25V
		[except W, AU]			
C702	1252873	EL	0.22μF	±20%	50V
		[for W, AU]			
	0252802	EL	0.22μF	±10%	50V
		[except W, AU]			
C703	0252805	EL	0.47μF	±20%	50V
C704	1252813	EL	3.3μF	±20%	50V
		[for W, AU]			

SYMBOL NO.	PART NO.	DESCRIPTION			
C704	0252813	EL	3.3μF	±20%	50V
		[except W, AU]			
C705	0252813	EL	3.3μF	±20%	50V
C706	0252325	EL	47μF	±20%	10V
C707	0252325	EL	47μF	±20%	10V
C751	0252325	EL	47μF	±20%	10V
		[for E, E(BS)]			
C752	0252521	EL	10μF	±20%	16V
		[for E, E(BS)]			
C753LR	0249764	CD	0.033μF	±20%	25V
		[for E, E(BS)]			
C754LR	0244171	CC	0.01μF	±10%	50V
		[for E, E(BS)]			
C755LR	0252322	EL	22μF	±20%	10V
		[for E, E(BS)]			
C756LR	0252811	EL	1μF	±20%	50V
		[for E, E(BS)]			
C757LR	0209161	CC	1000PF	±10%	50V
		[for E, E(BS)]			
C758LR	0252615	EL	4.7μF	±20%	25V
		[for E, E(BS)]			
C801LR	0252322	EL	22μF	±20%	10V
C802LR	0252521	EL	10μF	±20%	16V
C803LR	0240045	CC	1000PF	±10%	50V
C804	0252325	EL	47μF	±20%	10V
C805LR	0240039	CC	330PF	±10%	50V
C806LR	0240059	CC	6800PF	±30%	16V
C807LR	0240045	CC	1000PF	±10%	50V
C808LR	0275013	MF	0.022μF	±10%	50V
		[for W, AU]			
	0249763	CD	0.022μF	±20%	25V
		[except W, AU]			
C809LR	0240056	CC	3900PF	±30%	16V
C810LR	0275016	MF	0.068μF	±10%	50V
C811LR	0209027	CC	0.015μF	±30%	25V
C812LR	0252803	EL	0.33μF	±20%	50V
C813LR	0275015	MF	0.047μF	±10%	50V
		[for W, AU]			
C813LR	0249765	CD	0.047μF	±20%	25V
		[except W, AU]			
C814LR	0252811	EL	1μF	±20%	50V
RESISTORS					
R101	0113623	CF	2.2kΩ	±5%	SRD1/6P
		[for W, AU]			
	0113619	CF	1.5kΩ	±5%	SRD1/6P
		[except W, AU]			
R102	0113639	CF	10kΩ	±5%	SRD1/6P
R103	0113663	CF	100kΩ	±5%	SRD1/6P
R104	0113603	CF	330Ω	±5%	SRD1/6P
R151	0113679	CF	470kΩ	±5%	SRD1/6P
		[for E, E(BS)]			
R152	0113591	CF	100Ω	±5%	SRD1/6P
		[for E, E(BS)]			
R161	0113611	CF	680Ω	±5%	SRD1/6P
		[for H, HC]			
	0113649	CF	27kΩ	b5%	SRD1/6P
		[for E, E(BS)]			
	0113631	CF	4.7kΩ	±5%	SRD1/6P
		[for W, AU]			
R162	0113631	CF	4.7kΩ	±5%	SRD1/6P
		[for E, E(BS)]			
	0113639	CF	10kΩ	±5%	SRD1/6P
		[for W, AU]			

SYMBOL NO.	PART NO.	DESCRIPTION			
R163	0113645	CF	18kΩ	±5%	SRD1/6P
		[for E, E(BS)]			
	0113647	CF	22kΩ	±5%	SRD1/6P
		[for W, AU]			
R164	0113583	CF	47Ω	±5%	SRD1/6P
R201	0113679	CF	470kΩ	±5%	SRD1/6P
R202	0113587	CF	68Ω	±5%	SRD1/6P
R203	0113615	CF	1kΩ	±5%	SRD1/6P
R204	0113671	CF	220kΩ	±5%	SRD1/6P
R205	0113643	CF	15kΩ	±5%	SRD1/6P
R206	0113607	CF	470Ω	±5%	SRD1/6P
R207	0113599	CF	220Ω	±5%	SRD1/6P
R208	0113669	CF	180kΩ	±5%	SRD1/6P
R209	0113667	CF	150kΩ	±5%	SRD1/6P
R301	0113615	CF	1kΩ	±5%	SRD1/6P
R302	0113639	CF	10kΩ	±5%	SRD1/6P
R303	0113671	CF	220kΩ	±5%	SRD1/6P
R304LR	0113627	CF	3.3kΩ	±5%	SRD1/6P
R305LR	0113651	CF	33kΩ	±5%	SRD1/6P
R306LR	0113631	CF	4.7kΩ	±5%	SRD1/6P
R307	0119049	ME	47Ω	±10%	RN1B
		[for W, AU]			
	1119409	ME	47Ω	±5%	RN1B
		[except W, AU]			
R308	0113609	CF	560Ω	±5%	SRD1/6P
R309	0113613	CF	820Ω	±5%	SRD1/6P
R310	0113633	CF	5.6kΩ	±5%	SRD1/6P
R401LR	0113651	CF	33kΩ	±5%	SRD1/6P
R402LR	0113651	CF	33kΩ	±5%	SRD1/6P
R403LR	0113591	CF	100Ω	±5%	SRD1/6P
R404LR	0113633	CF	5.6kΩ	±5%	SRD1/6P
R405LR	0113667	CF	150kΩ	±5%	SRD1/6P
R406LR	0113631	CF	4.7kΩ	±5%	SRD1/6P
R407LR	0113631	CF	4.7kΩ	±5%	SRD1/6P
R410LR	0113639	CF	10kΩ	±5%	SRD1/6P
R411	0113639	CF	10kΩ	±5%	SRD1/6P
R412	0113633	CF	5.6kΩ	±5%	SRD1/6P
R413LR	0113663	CF	100kΩ	±5%	SRD1/6P
R414LR	0113633	CF	5.6kΩ	±5%	SRD1/6P
R415LR	0113637	CF	8.2kΩ	±5%	SRD1/6P
R416	0113599	CF	220Ω	±5%	SRD1/6P
R417	0113599	CF	220Ω	±5%	SRD1/6P
R418LR	0113641	CF	12kΩ	±5%	SRD1/6P
R419LR	0113623	CF	2.2kΩ	±5%	SRD1/6P
R420LR	0113639	CF	10kΩ	±5%	SRD1/6P
R421LR	0113635	CF	6.8kΩ	±5%	SRD1/6P
R422L	0129886	CF	4.7kΩ	±5%	SRD1/4P
		[for W, AU]			
R422R	0113631	CF	4.7kΩ	±5%	SRD1/6P
		[for W, AU]			
R422LR	0113631	CF	4.7kΩ	±5%	SRD1/6P
		[except W, AU]			
R423LR	0113631	CF	4.7kΩ	±5%	SRD1/6P
R424	0113651	CF	33kΩ	±5%	SRD1/6P
R425LR	0113633	CF	5.6kΩ	±5%	SRD1/6P
R432LR	0113625	CF	2.7kΩ	±5%	SRD1/6P
R441LR	0113655	CF	47kΩ	±5%	SRD1/6P
		[for W, AU]			

SYMBOL NO.	PART NO.	DESCRIPTION			
R442LR	0113615	CF 1kΩ	±5%	SRD1/6P	
		[for W, AU]			
R443LR	0113655	CF 47kΩ	±5%	SRD1/6P	
R444LR	0113615	CF 1kΩ	±5%	SRD1/6P	
R445LR	0113625	CF 2.7kΩ	±5%	SRD1/6P	
		[for W, AU]			
R446LR	0113627	CF 3.3kΩ	±5%	SRD1/6P	
R454LR	0113655	CF 47kΩ	±5%	SRD1/6P	
R455LR	0113617	CF 1.2kΩ	±5%	SRD1/6P	
R456LR	0113583	CF 47Ω	±5%	SRD1/6P	
R457LR	0113619	CF 1.5kΩ	±5%	SRD1/6P	
R458LR	0113639	CF 10kΩ	±5%	SRD1/6P	
R459LR	0113639	CF 10kΩ	±5%	SRD1/6P	
R460	0113687	CF 1MΩ	±5%	SRD1/6P	
R461LR	0113627	CF 3.3kΩ	±5%	SRD1/6P	
R462LR	0113633	CF 5.6kΩ	±5%	SRD1/6P	
R463LR	0113637	CF 8.2kΩ	±5%	SRD1/6P	
R464	0113595	CF 150Ω	±5%	SRD1/6P	
R465	0113615	CF 1kΩ	±5%	SRD1/6P	
R466	0113615	CF 1kΩ	±5%	SRD1/6P	
△R468	1110601	FR 10Ω	±5%	RN1/4B	
R469	0113595	CF 150Ω	±5%	SRD1/6P	
R472LR	0113623	CF 2.2kΩ	±5%	SRD1/6P	
R473	0129884	CF 3.9kΩ	±5%	SRD1/4P	
R481	0113575	CF 22Ω	±5%	SRD1/6P	
R482	0113675	CF 330kΩ	±5%	SRD1/6P	
R483	0113619	CF 1.5kΩ	±5%	SRD1/6P	
R484LR	0113645	CF 18kΩ	±5%	SRD1/6P	
R485	0113615	CF 1kΩ	±5%	SRD1/6P	
R491LR	0113661	CF 82kΩ	±5%	SRD1/6P	
R492LR	0113663	CF 100kΩ	±5%	SRD1/6P	
R493LR	0113631	CF 4.7kΩ	±5%	SRD1/6P	
R494LR	0113655	CF 47kΩ	±5%	SRD1/6P	
R496	0113595	CF 150Ω	±5%	SRD1/6P	
R497LR	0113615	CF 1kΩ	±5%	SRD1/6P	
R501	0113297	CF 680Ω	±5%	SRD1/2P	
R502LR	0129509	CF 2.2Ω	±5%	SRD1/4P	
R503LR	0113291	CF 220kΩ	±5%	SRD1/2P	
R504LR	0113591	CF 100Ω	±5%	SRD1/6P	
R505LR	0113633	CF 5.6kΩ	±5%	SRD1/6P	
R506	0113629	CF 3.9kΩ	±5%	SRD1/6P	
R507	0113641	CF 12kΩ	±5%	SRD1/6P	
R509	0113643	CF 15kΩ	±5%	SRD1/6P	
R510	0113631	CF 4.7kΩ	±5%	SRD1/6P	
R511	0113621	CF 1.8kΩ	±5%	SRD1/6P	
R651	0129581	CF 680Ω	±5%	SRD1/4P	
R652	0113643	CF 15kΩ	±5%	SRD1/6P	
		[for W, AU]			
	0113639	CF 10kΩ	±5%	SRD1/6P	
		[except W, AU]			
R653	0113633	CF 5.6kΩ	±5%	SRD1/6P	
R654	0113633	CF 5.6kΩ	±5%	SRD1/6P	
R655	0113639	CF 10kΩ	±5%	SRD1/6P	
△R656	1113821	FR 2.2Ω	±5%	RN1/2B	
R657	0113643	CF 15kΩ	±5%	SRD1/6P	
		[for W, AU]			
	0113639	CF 10kΩ	±5%	SRD1/6P	
		[except W, AU]			
R658	0113635	CF 6.8kΩ	±5%	SRD1/6P	
		[for W, AU]			
R658	0113633	CF 5.6kΩ	±5%	SRD1/6P	
		[except W, AU]			

SYMBOL NO.	PART NO.	DESCRIPTION			
R659	0113635	CF	6.8kΩ	±5%	SRD1/6P
	0113633	[for W, AU]			
		CF	5.6kΩ	±5%	SRD1/6P
		[except W, AU]			
R660	0129583	CF	820Ω	±5%	SRD1/4P
R701LR	0113639	CF	10kΩ	±5%	SRD1/6P
R702	0113633	CF	5.6kΩ	±5%	SRD1/6P
R703	0113673	CF	270kΩ	±5%	SRD1/6P
R704	0113633	CF	5.6kΩ	±5%	SRD1/6P
R705	0113599	CF	220Ω	±5%	SRD1/6P
R706	0113639	CF	10kΩ	±5%	SRD1/6P
R707	0113625	CF	2.7kΩ	±5%	SRD1/6P
R708	0113663	CF	100kΩ	±5%	SRD1/6P
R709	0113635	CF	6.8kΩ	±5%	SRD1/6P
△R710	1113830	FR	10Ω	±5%	RN1/2B
R751	0113595	CF	150Ω	±5%	SRD1/6P
		[for E, E(BS)]			
R752LR	0113661	CF	82kΩ	±5%	SRD1/6P
		[for E, E(BS)]			
R753LR	0113631	CF	4.7kΩ	±5%	SRD1/6P
		[for E, E(BS)]			
R754LR	0113599	CF	220Ω	±5%	SRD1/6P
		[for E, E(BS)]			
R755LR	0113655	CF	47kΩ	±5%	SRD1/6P
	0113633	CF	5.6kΩ	±5%	SRD1/6P
		[for H, HC]			
R756LR	0113615	CF	1kΩ	±5%	SRD1/6P
		[except W, AU]			
R757LR	0113625	CF	2.7kΩ	±5%	SRD1/6P
		[except W, AU]			
R758LR	0113649	CF	27kΩ	±5%	SRD1/6P
		[for E, E(BS)]			
R759LR	0113645	CF	18kΩ	±5%	SRD1/6P
		[for E, E(BS)]			
R760LR	0113615	CF	1kΩ	±5%	SRD1/6P
		[for E, E(BS)]			
R932LR	0113639	CF	10kΩ	±5%	SRD1/6P
ICs & TRANSISTORS					
IC101	2398201	TA7358P			
IC201	2389511	TA7640AP			
IC301	2397521	AN7420			
IC401	2388891	BA3408			
IC402	2387301	M5218P [for W, AU]			
	2300831	μPC4558C [except W, AU]			
IC451	2300671	M51544AL			
IC501	2300641	AN7147			
IC701	2397561	LA2010			
IC751	2300821	AN7310 [for E, E(BS)]			
IC801LR	2389451	M5226P			
Q151	2319081	HIT9011H [for E, E(BS)]			
Q201	2329323	2SC460C [for W, AU]			
	2319081	HIT9011H [except W, AU]			
Q401LR	2328652	2SC1740LN(S)			
Q403LR	2328652	2SC1740LN(S)			
Q452LR	2328652	2SC1740LN(S)			
Q453LR	2328652	2SC1740LN(S)			
Q454	2328652	2SC1740LN(S) [for W,AU]			
	2329561	2SC1845EF [except W, AU]			
Q455	2328652	2SC1740LN(S) [for W, AU]			
	2329561	2SC1845EF [except W, AU]			
Q481	2328652	2SC1740LN(S)			
Q501	2317803	2SD1266(P)			
Q503	2328652	2SC1740LN(S)			

SYMBOL NO.	PART NO.	DESCRIPTION
Q504LR	2328652	2SC1740LN(S)
Q651	2317803	2SD1266(P)
Q652	2328652	2SC1740LN(S)
Q653	2329582	2SA933(R)
Q654	2329582	2SA933(R)
Q701	2328652	2SC1740LN(S)
Q702	2329316	2SC1741QR
Q703	2329582	2SA933(R)
DIODES		
D101	2397421	1SS133T [except W, AU]
D102	2338031	1S2790
D103	2397421	1SS133T
D104	2397421	1SS133T [for W, AU]
D105	2338011	1S2473VE [for W, AU]
	2397421	1SS133T [except W, AU]
D302	2397421	1SS133T
D451LR	2397421	1SS133T
D453	2397421	1SS133T
D454	2338011	1S2473VE
D481	2397421	1SS133T
D501	2397421	1SS133T
D502	2397421	1SS133T
D503	2397421	1SS133T
D504	2397421	1SS133T
D505	2397421	1SS133T
D601	2337461	S4VB20
D602	2337762	ERB12-01 [for W, AU]
D651	2397421	1SS133T
D652	2397421	1SS133T
D701	2397421	1SS133T
ZD451	2337615	HZ-3B-2
ZD501	2337527	HZ9C1
ZD502	2337524	HZ9B1
ZD503	2337523	HZ-9A3
ZD651	2337564	HZ12-B1
LED301	2397611	LN242RPH-LF
LED651	2398362	SLP139B
LED652	2398362	SLP139B
VARIABLE RESISTORS		
RT301	0158977	4.7kΩ-(B) [for W, AU]
	0189331	5kΩ-(B) [except W, AU]
		(38kHz FREE RUN ADJ.)
RT451LR	0158973	100kΩ-(B) [for W, AU]
	0189333	100kΩ-(B) [except W, AU]
		(REC. BIAS CURRENT LEVEL ADJ.)
RT651	0158971	10kΩ-(B) [for W, AU]
	0189331	5kΩ-(B) [except W, AU]
		(TAPE 1, HIGH SPEED ADJ.)
RT652	0158971	10kΩ-(B) [for W, AU]
	0189331	5kΩ-(B) [except W, AU]
		(TAPE 1, NORMAL SPEED ADJ.)
RT653	0158971	10kΩ-(B) [for W, AU]
	0189331	5kΩ-(B) [except W, AU]
		(TAPE 2, HIGH SPEED ADJ.)
RT654	0158971	10kΩ-(B) [for W, AU]
	0189331	5kΩ-(B) [except W, AU]
		(TAPE 2, NORMAL SPEED ADJ.)
RV431LR	0189262	10kΩ-(3B) [for W, AU]
		(REC LEVEL CONTROL)

SYMBOL NO.	PART NO.	DESCRIPTION
RV431LR	0189286	10k Ω -(3B) [except W, AU] (REC LEVEL CONTROL)
RV481	0189261	10k Ω -(A) [for W, AU]
	0189285	10k Ω -(A) [except W, AU] (MIC. VOLUME CONTROL)
RV801	0189271	100k Ω -(B) [for W, AU]
	0189287	100k Ω -(B) [except W, AU] (G/E CONTROL)
RV802	0189271	100k Ω -(B) [for W, AU]
	0189287	100k Ω -(B) [except W, AU] (G/E CONTROL)
RV803	0189271	100k Ω -(B) [for W, AU]
	0189287	100k Ω -(B) [except W, AU] (G/E CONTROL)
RV804	0189271	100k Ω -(B) [for W, AU]
	0189287	100k Ω -(B) [except W, AU] (G/E CONTROL)
RV805	0189271	100k Ω -(B) [for W, AU]
	0189287	100k Ω -(B) [except W, AU] (G/E CONTROL)

COILS & TRANSFORMERS

L101	2135262	FM RF coil
L102	2135253	FM OSC. coil [for W, AU]
	2135248	FM OSC. coil [except W, AU]
	2758321	Ferrite antenna (L151) [for H, HC]
	2758261	Ferrite antenna (L151, 152) [for E, E(BS)]
	2758251	Ferrite antenna (L151, 152) [for W, AU]
L153	2137662	SW ANT. coil [for E, E(BS)]
	2137663	SW ANT. coil [for W, AU]
L154	2137684	Choke coil [for E, E(BS)]
	2135641	Coil [for W, AU]
L161	2137634	MW OSC. coil [for H, HC]
	2137712	LW OSC. coil [for E, E(BS)]
	2137711	MW OSC. coil [for W, AU]
L162	2137711	MW OSC. coil [for E, E(BS)]
	2137713	SW OSC. coil [for W, AU]
L163	2137671	SW OSC. coil [for E, E(BS)]
	2137672	SW OSC. coil [for W, AU]
L451LR	2227991	Choke coil 3.3mH
L452	2137071	Coil [for W, AU]
	2136922	OSC block [except W, AU]
L453LR	2135626	Trap coil
L454	2227353	Choke coil 100 μ F
L651	2227877	Choke coil
T101	2135651	FM IF trans.
T201	2154952	AM IF trans.
T202	2154964	FM IF trans.
T203	2154951	AM IF trans.

MISCELLANEOUS

CT151	0283125	Trimmer capacitor [except H, HC]
CT153	0283125	Trimmer capacitor [except H, HC]
CT161	0283125	Trimmer capacitor [for W, AU]
	0282148	Trimmer capacitor [for E, E(BS)]
CT163	0283125	Trimmer capacitor [except H, HC]
CV101	0282282	Variable capacitor [for H, HC]
	0282351	Variable capacitor [for E, E(BS)]
	0282116	Variable capacitor [for W, AU]
BPF101	2136871	FM filter
CF201	2135321	Ceramic filter

SYMBOL NO.	PART NO.	DESCRIPTION
JK401	2678344	4P US pin jack
JK402	2678416	MIC. jack
JK501	2678221	Jack (3.5 ϕ) [for W, AU]
	2678761	Jack (3.5 ϕ) [except W, AU]
JK502	2688282	4P push terminal [for W, AU]
	2689331	4P push terminal [except W, AU]
$\triangle$ JK601	2658452	Power socket [for H, HC]
$\triangle$	2658462	Power socket [for E, E(BS)]
$\triangle$	2658451	Power socket [for W, AU]
S1	2628007	Lever switch (BAND SELECT) [for H, HC]
	2628004	Lever switch (BAND SELECT) [except H, HC]
S2	2628003	Lever switch (MODE SELECT/RIF/AFC)
S401	2628009	Lever switch (FUNCTION SELECT)
	2600401	4 key push switch (REC MODE, TAPE SELECT, REC MUTE) (S402, 404, 405, 406)
S403	2628322	Slide switch (REC/PLAY SELECT) [for W, AU]
	2628521	Slide switch (REC/PLAY SELECT) [except W, AU]
$\triangle$ S501	2639869	Push switch (OPERATE)
$\triangle$ S601	2618401	Rotary switch (VOLTAGE SELECT) [for W]
$\triangle$ F601	2727894	Fuse 4A 125V [for H, HC, W]
$\triangle$	2727582	Fuse T4A [for AU]
$\triangle$	2727725	Fuse T4A 250V [for E, E(BS)]
$\triangle$ F602	2727195	Fuse 630mA [for W]
	2727974	Fuse holder
	2727832	Fuse holder
	3978481	LED holder
	3950521	LED holder
	8691406	3 ϕ x 6 BT bind head screw (IC501, lug terminal)
	8691408	3 ϕ x 8 BT bind head screw (Q501, Q651)

for ACCESSORIES

$\triangle$	2706591	AC power cord [for H]
$\triangle$	2711251	AC power cord [for HC]
$\triangle$	2705942	AC power cord [for E]
$\triangle$	2717901	AC power cord [for E(BS)]
$\triangle$	2798522	Power cord [for W]
$\triangle$	2704542	Power cord [for AU]
$\triangle$	2667922	Siemens plug [for H]
$\triangle$	2668091	Siemens plug [for W]

CABINET CHASSIS

SYMBOL NO.	PART NO.	DESCRIPTION
1	4577817	3φ x 30 screw (rear case)
2	4577816	3φ x 20 BT screw (rear case)
3	3306472	Slide knob [for W, AU]
	3306474	Slide knob [except W, AU] (VOLUME CONTROL)
4	3306471	Slide knob [for W, AU]
	3306473	Slide knob [except W, AU] (MIC. VOLUME CONTROL, G/E CONTROL)
△ 5	2249323	Power transformer [for H, HC]
△	2249322	Power transformer [for E]
△	2249321	Power transformer [for E(BS)]
△	2249281	Power transformer [for W]
△	2249291	Power transformer [for AU]
7	3203361	Front panel ass'y [for H, HC]
	3203362	Front panel ass'y [for E, E(BS)]
	4029201	Front panel ass'y [for W]
	4029202	Front panel ass'y [for AU]
8	3978109	Cassette door (TAPE 1) [except W, AU]
	4823151	Cassette door (TAPE 1) [for W, AU]
9	3978100	Cassette door (TAPE 2) [except W, AU]
	4823152	Cassette door (TAPE 2) [for W, AU]
10	3950381	Damper ass'y
11	8691410	3φ x 10 BT bind head screw (damper, dubbing lever holder, others)
12	3368563	Eject spring
13	4466461	Dubbing lever
14	4466491	Dubbing lever holder
15	3306481	Button (dubbing) [for W, AU]
	3306482	Button (dubbing) [except W, AU]
16	3950091	Battery cover [for W, AU]
	3950093	Battery cover [except W, AU]
17	3295102	Push button (operate) [for W, AU]
	3295103	Push button (operate) [except W, AU]
18	3295081	Lever knob [For W, AU]
	3295082	Lever knob [except W, AU] (function select, band select, FM mode/RIF/AFC)
19	3295193	Button [for W, AU]
	3295194	Button [except W, AU] (REC mute, tape select, REC mode)
20	3978441	Pointer holder [for W, AU]
	3978442	Pointer holder [except W, AU]
21	3978461	Variable capacitor gear [for W, AU]
	3978462	Variable capacitor gear [except W, AU]
22	3978453	Pointer [for W, AU]
	3978454	Pointer [except W, AU]
23	3306491	Tuning knob [for W, AU]
	3306492	Tuning knob [except W, AU]
24	4466451	REC lever (A)
25	4466431	REC lever (B)
26	2757901	ROD antenna

CASSETTE CHASSIS TAPE I

SYMBOL NO.	PART NO.	DESCRIPTION
27	4831891	Rear case ass'y [for H]
	4831892	Rear case ass'y [for HC]
	4831893	Rear case ass'y [for E]
	4831894	Rear case ass'y [for E(BS)]
	4825821	Rear case ass'y [for W]
	4825822	Rear case ass'y [for AU]
28	0741306	2.6φ x 6 bind screw (variable capacitor gear)
29	8699414	3φ x 14 BT bind head screw (cassette chassis)
30	8699410	3φ x 10 BT bind head screw (SP terminal, US pin)
31	4578976	3φ x 20 BT bind head screw (power trans.)
32	8744425	3φ x 25 bind screw (ROD antenna)
33	2588731	TN-222F-116 mecha ass'y (TAPE 1) [for W, AU]
	2588732	TN-222F-116 mecha ass'y (TAPE 1) [except W, AU]
34	2588741	TN-29F-135 mecha ass'y (TAPE 2) [for W, AU]
	2588742	TN-29F-135 mecha ass'y (TAPE 2) [except W, AU]
35	3306451	Button (operate) [for W, AU]
	3306452	Button (operate) [except W, AU]
36	3978472	Lever holder [for W, AU]
	3978473	Lever holder [except W, AU]
37	3306502	MODE lever A [for W, AU]
	3306503	MODE lever A [except W, AU]
38	3306511	MODE lever B [for W, AU]
	3306512	MODE lever B [except W, AU]
39	3800403	Handle [for W, AU]
	3800402	Handle [except W, AU]
40	3362601	Spring A [for W, AU]
	3367142	Spring A [except W, AU]
41	4436664	Terminal
42	4436663	Terminal
43	3367063	Spring
44	3367062	Spring
45	4996212	Foot
46	4996213	Foot
SPEAKER BOX		
47	3800721	Front grille ass'y [for W, AU]
	3800722	Front grille ass'y [except W, AU]
48	3800731	Rear case L [for W, AU]
	3800733	Rear case L [except W, AU]
49	3800732	Rear case R [for W, AU]
	3800734	Rear case R [except W, AU]
50	2403761	12cm speaker [for W, AU]
		12cm Speaker [except W, AU]
51	4930881	Ceramic tweeter [for W, AU]
	2403353	Piezo tweeter speaker [except W, AU]
52	4930891	Speaker cord [for W, AU]
	2748646	Speaker cord [except W, AU]
53	8691410	3φ x 10 BT bind head screw (12cm speaker)
54	4577816	3φ x 20 BT screw (front grille)

SYMBOL NO.	PART NO.	DESCRIPTION
1	4819081	Head panel
2	4819082	CHP lever
3	4819083	CH slide lever collar
4	4819084	Head panel spring
5	4819085	Head base
6	4819086	Head plate
7	4819087	Head SP plate
8	4819088	Head
9	4819089	Take-up roller plate (R) ass'y
10	4819080	Take-up roller plate (F) ass'y
11	4819091	Take-up roller ass'y
12	4819092	Pinch roller arm (R) ass'y
13	4819093	C.H.P. lever collar A
14	4819094	Collar
15	4819095	FL metal (R)
16	4819096	Pinch roller arm (F) ass'y
17	4819097	Pinch roller spring
18	4819098	FL metal (F)
19	4819099	Take-up roller (F) spring
20	4819090	Take-up roller (R) spring
21	4819101	Control lever
22	4819102	Reel (R) ass'y
23	4819103	Sensor
24	4819104	Sensor spring
25	4819105	Reel (F) ass'y
26	4819106	Spring
27	4819221	Eject slide lever
28	4819108	Leaf switch (MOTOR SWITCH)
29	4819109	Button lever spring
30	4819100	Button lever spring
31	4819111	Pack SP plate
32	4819112	FF gear
33	4819113	Pinch roller arm (R) spring
34	4819114	Pinch roller arm (F) spring
35	4819116	Collar
36	4819119	CH slide lever
37	4819110	Switch SP plate
38	4819121	T.P.S. function lever
39	4819122	Push button actuator ass'y
40	4819123	Push button actuator spring
41	4819124	Switch actuator
42	4819125	RWD lever
43	4819131	PAUSE lever
44	4819132	PAUSE lever spring
45	4819133	PAUSE stopper
46	4819134	M function lever
47	4819135	Function lever spring
48	4819136	Bush
49	4819137	M function lever (B) spring
50	4819138	RF clutch ass'y
51	4819139	RF clutch arm spring
52	4819130	RF belt
53	4819141	Lift spring
54	4819142	Lift arm ass'y
55	4819143	M trigger arm spring
56	4819144	M trigger arm ass'y
57	4819145	M gear
58	4819146	CH lever ass'y
59	4819147	CH lever spring
60	4819148	CH gear ass'y
61	4819149	P gear
62	4819140	P trigger arm spring

CASSETTE CHASSIS TAPE2

SYMBOL NO.	PART NO.	DESCRIPTION	STMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
63	4819151	P trigger collar	108	4819204	2φ x 3 pan head screw (switch base)	1	4818992	Switch plate
64	4819152	P trigger arm				2	4818993	Push button actuator ass'y
65	4819153	RF trigger arm	109	4819205	Polyslider washer (2.2φ x 3.8 x 0.5)	3	4818990	RWD lever
66	4819154	RF collar				4	4819131	PAUSE lever
67	4819155	P actuator arm ass'y	110	4819206	Nylon washer (2.1φ x 3.5 x 0.5)	5	4819132	PAUSE lever spring
68	4819156	P actuator arm spring				6	4819133	PAUSE stopper
69	4819157	Cam gear plate ass'y	111	4819207	Wire line	7	4819100	Button lever spring
70	4819158	Sensor plate spring	112	4819208	2φ x 3 screw (switch base)	8	4819005	Button lever spring
71	4819159	Cam gear plate spring	113	4718209	Damper spring	9	4819006	PR stopper
72	4819150	Cam gear	114	4819222	Eject slide lever spring	10	4819007	Button lever spring
73	4819161	Pulley	115	4819223	PLAY button lever	11	4819008	Actuator spring
74	4819162	Full auto belt	116	4819224	REWIND button lever	12	4819009	Auto lever
75	4819163	RF lever	117	4819225	FF button lever	13	4819000	Auto lever spring
76	4819164	Sensing plate	118	4819226	STOP button lever	14	4819011	Leaf switch (MOTOR SWITCH)
77	4819165	Control lever	119	4819227	PAUSE button lever ass'y	15	4819013	Head panel ass'y
78	4819166	Control lever spring	120	3800421	Operation lever	16	4819015	Sensing plate ass'y
79	4819167	FL pulley capstan ass'y	121	4819232	Button lever shaft	17	4819016	Head panel spring
80	4819168	FL gear capstan ass'y	122	4819233	Button frame	18	4819017	Spring
81	4819160	Leaf switch (PLAY SWITCH, FF/REWSWITCH)	123	4819234	2φ x 8 camera screw (button frame)	19	4819010	Pressure roller ass'y
						20	4819021	Pressure roller spring
82	4819171	Damper spring	124	4819235	Motor ass'y [for W, AU]	21	4819022	RF pulley arm ass'y
83	4819172	FL patch plate		4819237	Motor ass'y [except W, AU]	22	4819023	RF pulley arm spring
84	4819173	M collar screw (motor)	125	4819182	T.P.S. lever	23	4819024	RF belt
85	4819174	Motor rubber	126	4819183	T.P.S. lever spring	24	4819025	RF arm collar screw
86	4819176	Switch base ass'y	127	4819107	Main base ass'y	25	4819028	Take-up gear plate ass'y
87	4819228	Main belt	128	4819229	FL hold plate	26	4819029	Take-up roller gear
88	4819181	Coil ass'y	129	4819118	Chassis ass'y	27	4819020	TG plate spring
89	4819185	Spring				28	4819112	FF gear
90	4819186	2φ x 3 screw with washer (chassis)				29	4819032	Spring
						30	4819034	Take-up reel ass'y
91	4819187	2φ x 10 fine screw (head)				31	4819035	Record safety lever
92	4819188	2φ x 2.5 camera screw (CHP lever)				32	4819036	Pack spring
93	4819189	2φ x 8.5 camera screw (FL metal)				33	4819037	Spring
94	4819180	Polyslider washer cut (1.2φ x 3 x 0.25)				34	4819039	Motor rubber
95	4819191	2φ x 6 tapping screw (pinch roller arm)				35	4819044	Eject slide lever spring
						36	4819045	Screw (eject slide lever)
96	4819192	2φ x 3 C tapping screw (pack SP plate)				37	4819047	M. trigger arm ass'y
97	4819193	2φ x 8 screw with washer (E slide lever, coil ass'y)				38	4819048	M.T.A. collar
98	4819194	Polyslider washer (2.1φ x 5 x 0.4)				39	4819049	Main gear spring
99	4819195	2φ x 5 C tapping screw (E slide lever)				40	4819051	REC sensor
100	4819196	E ring (2φ)						
						41	4819052	REC sensor collar
101	4819197	2φ x 6 P tapping screw (chassis)				42	4819053	REC sensor spring
102	4819198	2φ x 3 camera screw (CH slide lever)				43	4819054	REC function arm B
103	4819199	2φ x 1.5 camera screw (switch SP plate)				44	4819055	REC spring
104	4819190	E ring (1.5φ)				45	4819056	REC arm (B) spring
105	4819201	2φ x 3.5 camera screw (P trigger arm, RF trigger arm)				46	4819057	REC arm (A) spring
						47	4819058	Main gear
106	4819202	2φ x 2.5 camera screw (RF lever, P actuator ass'y)				48	4819050	R/P head [for W, AU]
107	4819203	E ring (1.5φ special)					2555671	R/P head [except W, AU]
						49	4819062	Lug
						50	4819063	2φ x 3 tapping screw (pack spring)
						51	4819064	2φ x 4 C tapping bind screw (sub chassis)
						52	4819195	2φ x 5 C tapping screw (sub chassis)
						53	4819066	2φ x 3.5 P tapping screw (reel base)
						54	4819204	2φ x 3 pan head screw (sub chassis)
						55	4819068	2φ x 4 tapping screw (motor bracket)

SYMBOL NO.	PART NO.	DESCRIPTION
56	4819060	2 ϕ x 7 screw (R/P head)
57	4819202	2 ϕ x 2.5 camera screw (M. trigger arm)
58	4819072	2 ϕ x 7 screw (frame)
59	4819073	2 ϕ x 5 screw (REC sensor)
60	4819196	E ring (2 ϕ)
61	4819180	Polyslider washer cut (1.2 ϕ x 3 x 0.25)
62	4819077	Washer (1.2 ϕ x 3 x 0.4)
63	4819078	Washer (1.55 ϕ x 3.8 x 0.5)
64	4819079	P washer cut (2.2 ϕ x 3.8 x 0.4)
65	4819522	REC button lever
66	4819523	PLAY button lever
67	4819524	RWD button lever
68	4819525	FF button lever
69	4819526	STOP button lever
70	4819527	PAUSE button lever ass'y
71	4819528	Head base
72	4819529	E.H. spring
73	4819520	Flywheel ass'y
74	4819531	Supply reel ass'y
75	4819533	Motor collar screw (motor)
76	4819534	Main belt
77	4819535	Eject slide lever
78	4819536	Frame
79	4819537	Operation lever
80	4819538	Button lever shaft
81	4819539	REC function arm (A)
82	4819541	Erase head [for W, AU]
	2555331	Erase head [except W, AU]
83	4819542	2 ϕ x 7 pan head screw (R/P head)
84	4819543	2 ϕ x 8 pan head screw (erase head)
85	4819544	2 ϕ x 8 cap screw (erase head)
86	4819545	Washer (2.1 ϕ x 5 x 0.4)
87	4819546	Motor ass'y [for W, AU]
	4819547	Motor ass'y [except W, AU]
88	4819027	Reel base ass'y
89	4819521	Main base ass'y

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