

Service Manual

National
RADIO
Panasonic



FM-MW-SW 3-BAND PORTABLE RADIO

MODEL RF-888JB

■ SPECIFICATIONS

Frequency Range:	FM 87.5~108 MHz	Power Consumption:	5W (AC Only)
	MW 520~1610 kHz (577~186m)	Speaker:	16 cm(6½") PM Dynamic Speaker
	SW 5.9~18 MHz (50.8~16.7m)	Dimensions:	228(Wide) × 192(High) × 73(Deep) mm (8¾" × 7⅞" × 2⅞")
Intermediate Frequency:	FM 10.7 MHz	Weight:	2 kg. (4 lb. 6.5 oz.) without bat- teries
	AM (MW & SW) 455 kHz	Impedance:	Speaker8Ω
Sensitivity:	FM 2μV for 50 mW Output		Earphone Jack8Ω
	MW 20μV/m for 50 mW Output		DIN Jack80kΩ
	SW 3μV for 50 mW Output		Mix Recording Out Jack6kΩ
Power Output:	3.3W Maximum		Microphone Jack1kΩ
Power Source:	AC 110~125V/220~240V 50-60 Hz or 6V (Four "D" Size Flashlight Batteries) (National UM-1 or equivalent)		

MATSUSHITA ELECTRIC
MATSUSHITA ELECTRIC TRADING CO., LTD.
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■ TO REMOVE CABINET COVER

1. Remove the MIC mixing knob from cabinet.
(Attach cord to the knob and pull it out forward as illustrated in fig. 1)
2. Remove four (4) cover screw, nos. 1~4, as illustrated in fig. 2.
3. Remove cabinet back cover.
4. Remove cabinet front cover in the direction of arrow ② by pushing the cabinet in the direction of arrow ①, as illustrated in fig. 3.
5. Unsolder lead wires to speaker terminal.
6. To reassemble, reverse the above procedure.

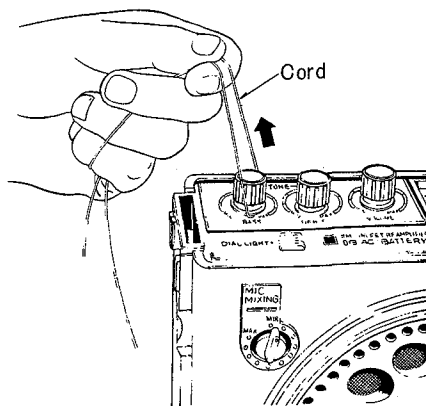


Fig. 1

■ TO REMOVE CORE ANTENNA

1. Remove the cabinet cover. (Refer to cabinet cover removal instruction.)
2. Unsolder lead wires to chassis, nos. 1~4, as illustrated in fig. 7.
3. Remove the core antenna in the direction of arrow as illustrated in fig. 7.
4. To reassemble, reverse the above procedure.

■ TO REMOVE DIAL DRIVE ASSEMBLY

1. Remove Mic mixing and tuning knobs.
2. Remove cabinet front cover. (Refer to cabinet cover removal instruction.)
3. Remove three (3) red screws, nos. 1~3, as illustrated in fig. 4.
4. To reassemble, reverse the above procedure and read the following note.

Note

Turn dial drum and tuning shaft to fully counter-clockwise.

■ DIAL CORD INSTALLATION GUIDE

1. Remove dial drive assembly from cabinet.
(Refer to dial drive assembly removal instruction.)
2. Dial cord length is 100 cm (39 $\frac{3}{8}$ "').
3. Loosen roller No. 2 installation screw which is illustrated in fig. 5.
4. Turn dial drum fully counter-clockwise and then lock dial drum by awl, illustrated in fig. 5.
5. Arrows (1~15) indicate correct order and direction of dial cord installation, as illustrated in fig. 6.
6. Cement dial cord ends.
7. Pull out, in the direction of the arrow, the end of the spring, which is in roller No. 1 and is illustrated in fig. 5, to remove the spring end from the catch on the end of the roller.
8. Insert a screwdriver into roller No. 1, illustrated in fig. 5, wind the dial scale film on roller No. 1, and attach the end of dial scale film to the boss in roller No. 2.
9. Push in the spring, illustrated in fig. 5, attaching it to the catch on the end of the roller (after winding the dial scale film until it stops, the spring end should be pushed in and hooked on the nearest catch).
10. Wind the dial scale film onto roller No. 2, illustrated in fig. 5, and set it at the start point, as illustrated in fig. 8.
11. Secure roller No. 2, and tighten roller No. 2 installation screw, illustrated in fig. 5.
12. Attach the dial drive portion to the cabinet (Refer to the dial drive removal instructions.)
13. Positively restrain roller No. 2, illustrated in fig. 5, using a screwdriver, and loosen roller No. 2 installation screw. Adjust roller No. 2 and set the dial scale film to the location illustrated in fig. 9.

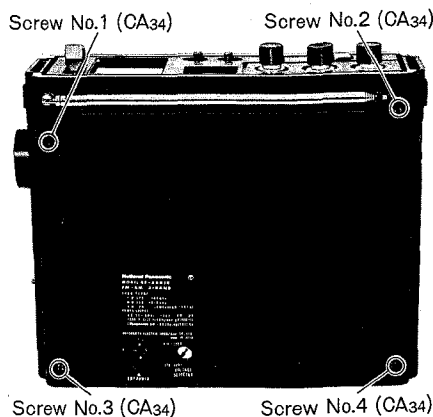


Fig. 2



Fig. 3

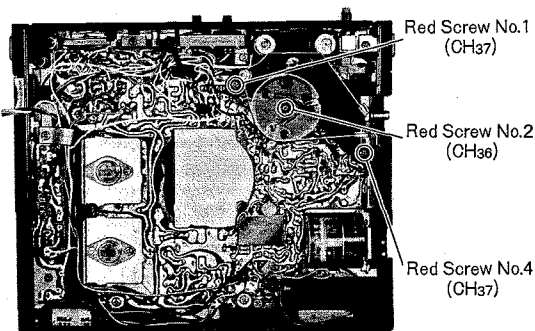


Fig. 4

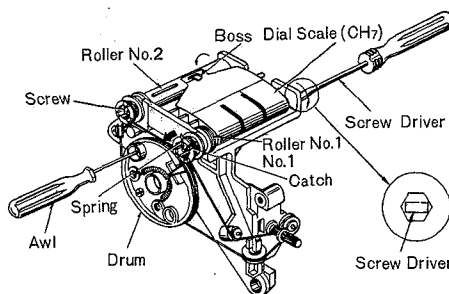


Fig. 5

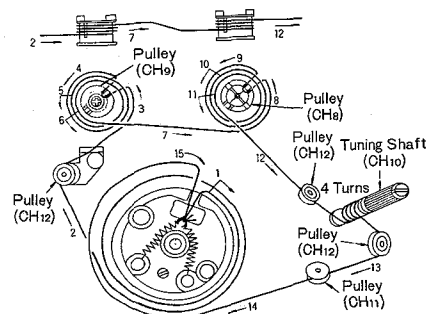


Fig. 6

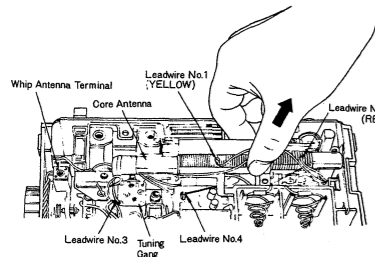


Fig. 7

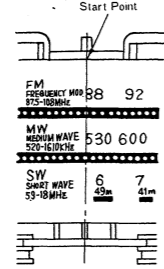


Fig. 8

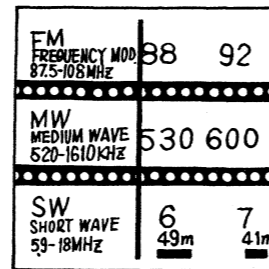
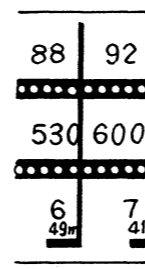
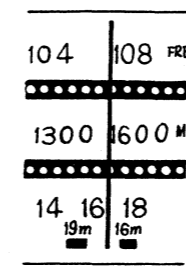


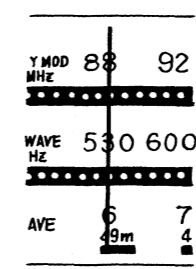
Fig. 9



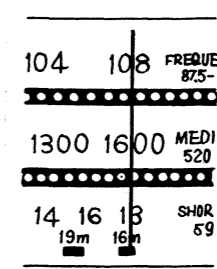
550 kHz
Fig. 10



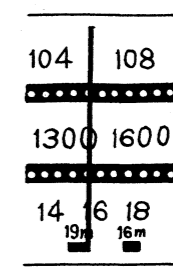
1500 kHz
Fig. 11



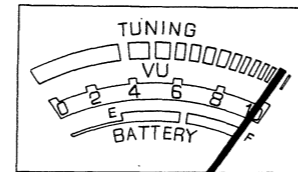
6 MHz
Fig. 12



18 MHz
Fig. 13



106 MHz
Fig. 14



TUNING/BATTERY/REC LEVEL METER ADJUSTMENT

- RADIO RECEIVER SETTING
 - Set PHONO-RADIO selector switch to RADIO.
 - Set band selector switch to MW.
 - Set volume control to minimum.
- REMARKS
 - Set indicator switch to TUNE.
 - Adjust R54 so that the pointer of level meter stays as shown in figure right.

ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

- Notes:**
- Set volume control to MAX.
 - Set bass and treble control to MAX.
 - Set band selector switch to MW, SW or FM.
 - Set MIC mixing volume control to MIN.
 - Set loudness switch to OFF.
 - Set power switch to ON.
 - Set power source voltage to 6 volts DC.
 - Set PHONO-RADIO selector switch to RADIO.
 - Set AFC/DX-LOCAL switch to ON/DX.

SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING (DISTANCE)	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
CONNECTIONS	FREQUENCY				
MW ALIGNMENT					
(1)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. with 400 kHz.	Point of non-interference. (on/about 600 kHz)	T ₂ (1st IFT) T ₄ (2nd IFT)	Adjust for maximum output.
(2)	"	550 kHz	550 kHz [Fig. 10]	L ₇ (OSC Coil) (* 1) L ₄ (ANT Coil)	Adjust for maximum output. Adjust L ₄ by moving coil bobbin along ferrite core.
(3)	"	1500 kHz	1500 kHz [Fig. 11]	C ₄₃ (OSC Trimmer) C ₁ (ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
SW ALIGNMENT					
(4)	Connect to whip antenna terminal through 10PF capacitor. Common to chassis.	6 MHz	6 MHz [Fig. 12]	L ₈ (OSC Coil) L ₅ (ANT Coil)	Adjust for maximum output.
(5)	"	18 MHz	18 MHz [Fig. 13]	C ₄₇ (OSC Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).
(* 1) Cement antenna bobbin with wax after completing alignment.					
FM-IF ALIGNMENT					
(6)	High side thru. 0.001 mfd to point TP ₂ . Common to chassis.	10.7 MHz (400 kHz SWP.)	Point of non-interference. (on/about 90 MHz).	T ₁ (FM 1st IFT) T ₃ (FM 2nd IFT) T ₅ (FM 3rd IFT) T ₆ (FM 4th IFT) (Primary)	Adjust for maximum amplitude and proper linearity between ± 100 kHz markers. (Refer to fig. 16.)
(7)	"	"	"	T ₇ (FM 4th IFT) (Secondary)	Adjust T ₇ so that 10.7 MHz marker appears at the center. (Refer to fig. 17.)
FM-RF ALIGNMENT					
(8)	Connect to whip antenna terminal through FM Dummy antenna. (Refer to Fig. 18.)	87.2 MHz	Minimum Frequency.	L ₆ (FM OSC Coil)	(* 2) Adjust for maximum output.
(9)	"	90 MHz	Tune to signal	L ₂ (FM DET Coil)	(* 2) Adjust for maximum output.
(10)	"	106 MHz	106 MHz [Fig. 14]	C ₄₀ (FM OSC Trimmer) C ₈ (FM DET Trimmer)	(* 2) Adjust for maximum output. Repeat steps (8) ~ (10).

(* 2) Three output responses will be present; proper tuning is the center frequency.

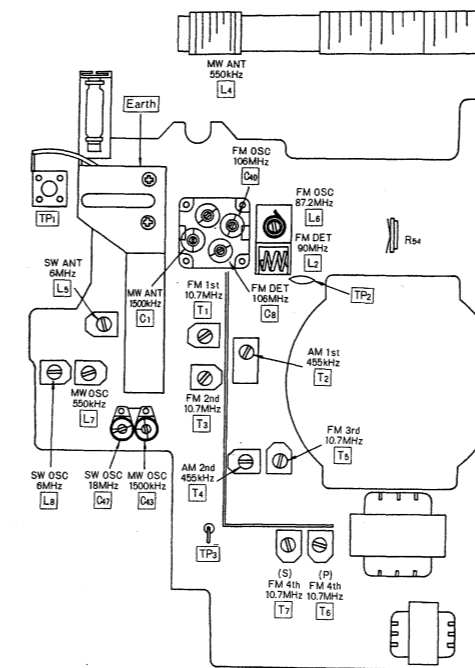


Fig. 15

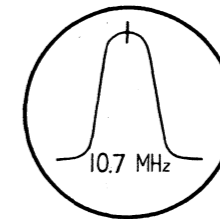


Fig. 16

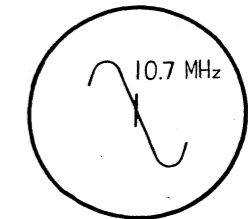


Fig. 17

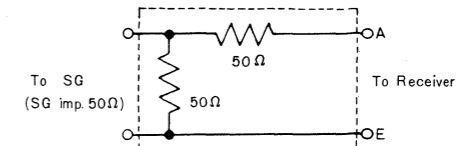
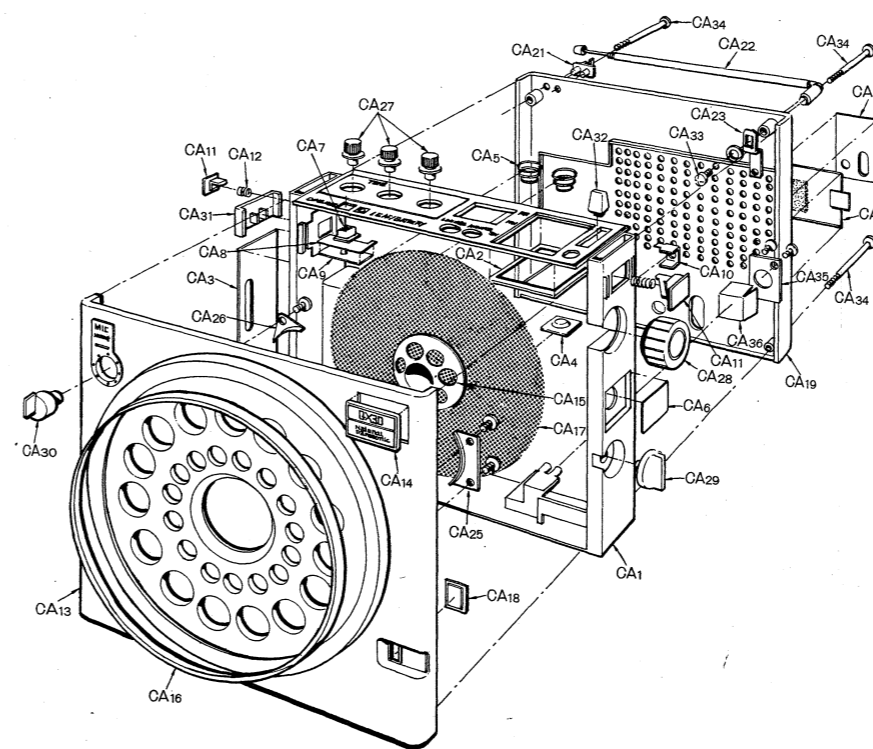
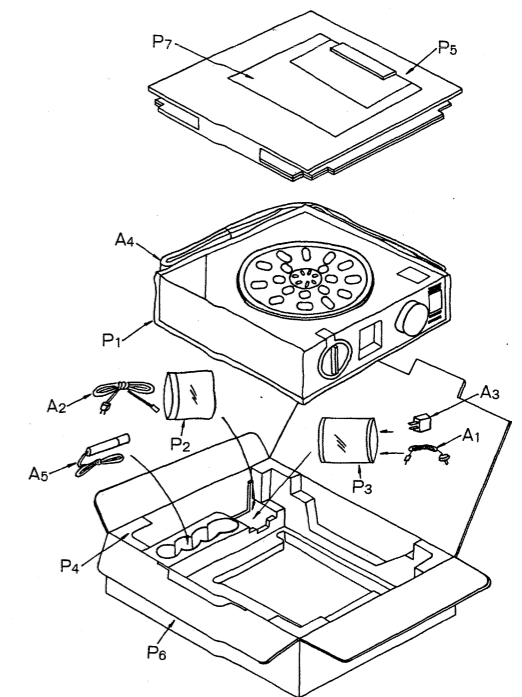


Fig. 18 FM Dummy Antenna

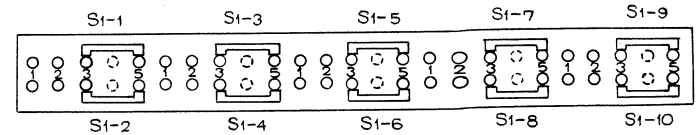
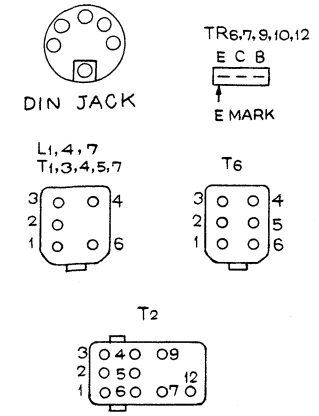
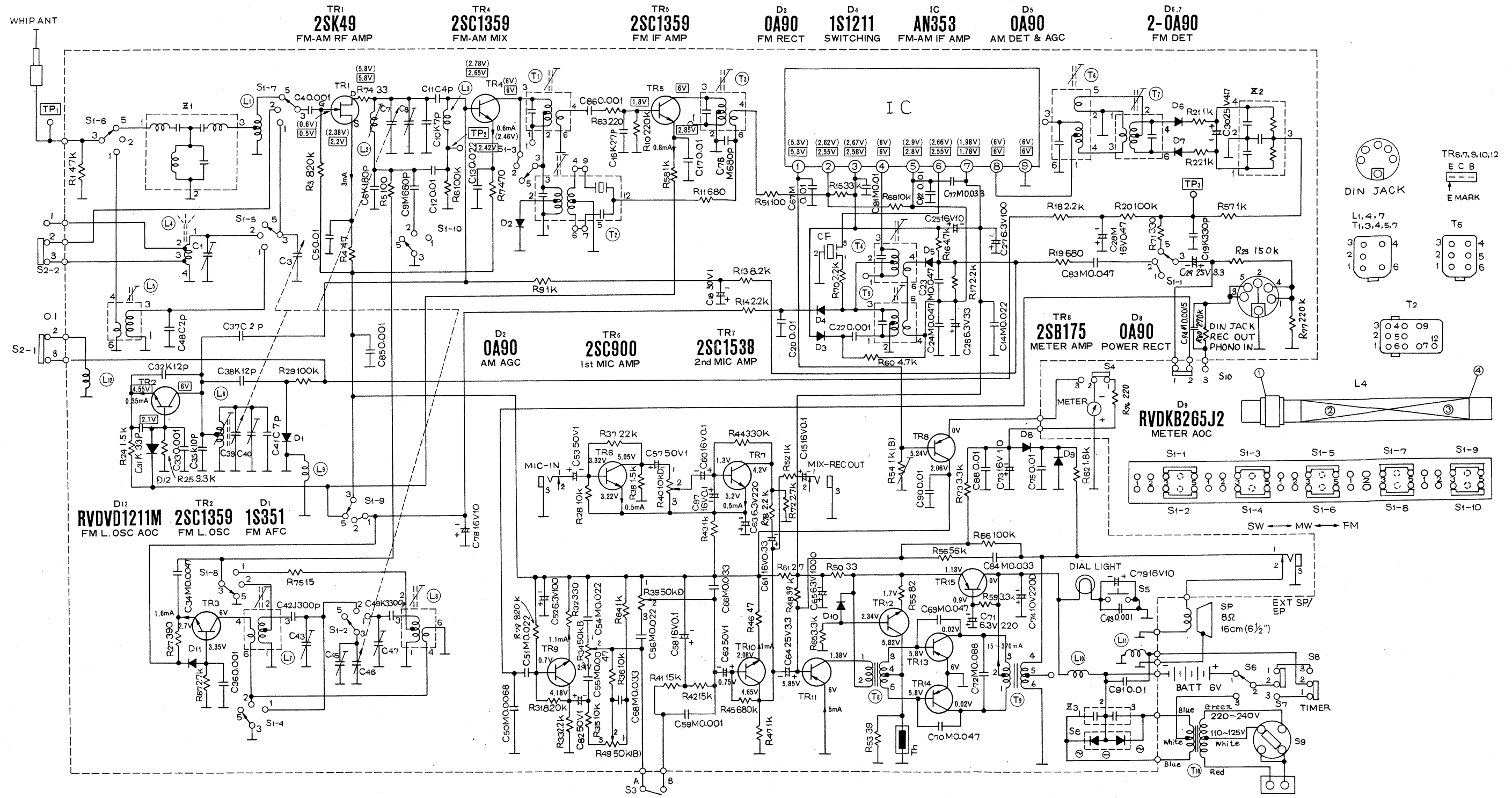
CABINET PARTS LOCATIONS



ACCESSORIES & PACKING PARTS LOCATIONS



Schematic Diagram—Model RF-888JB

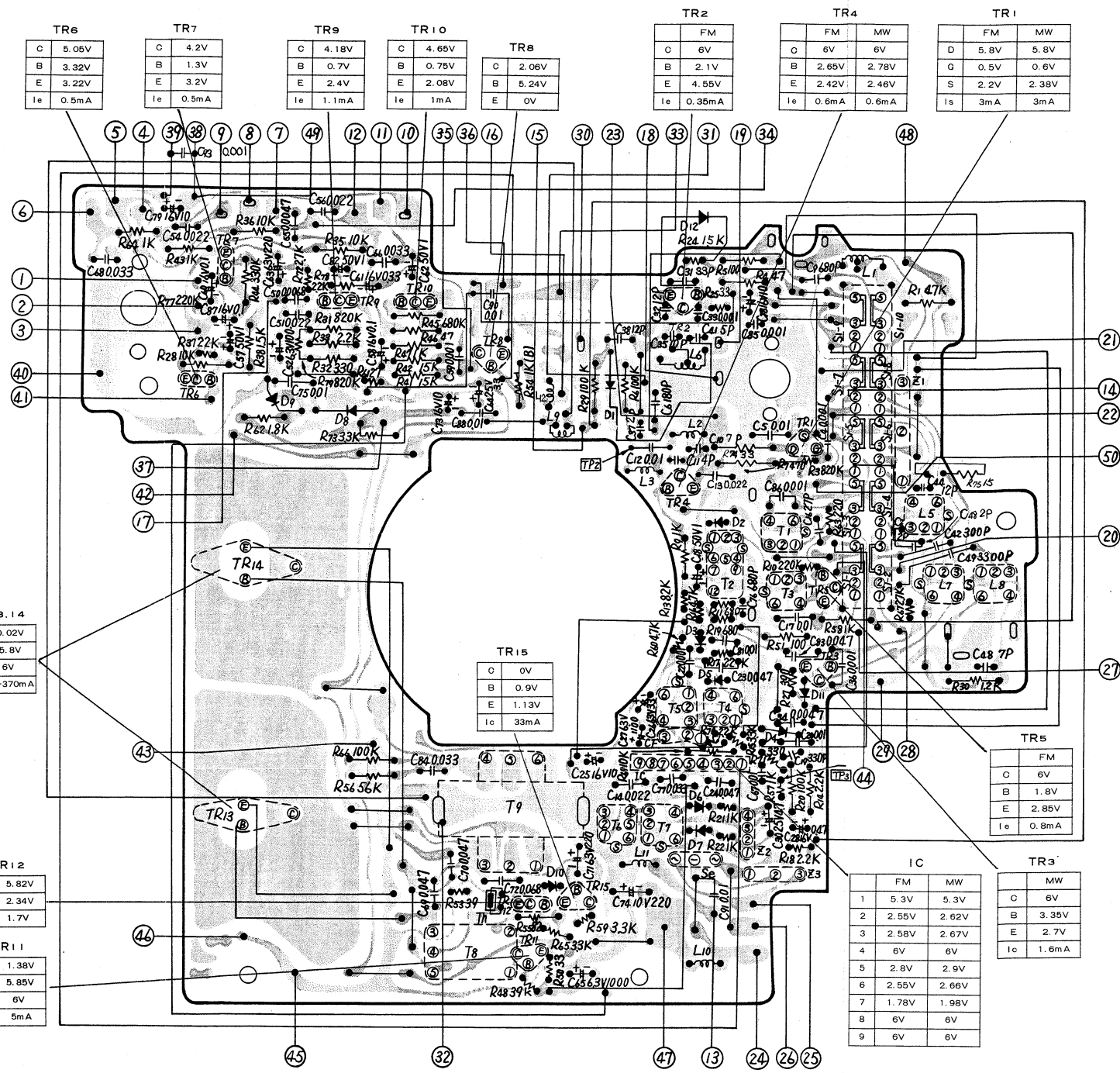
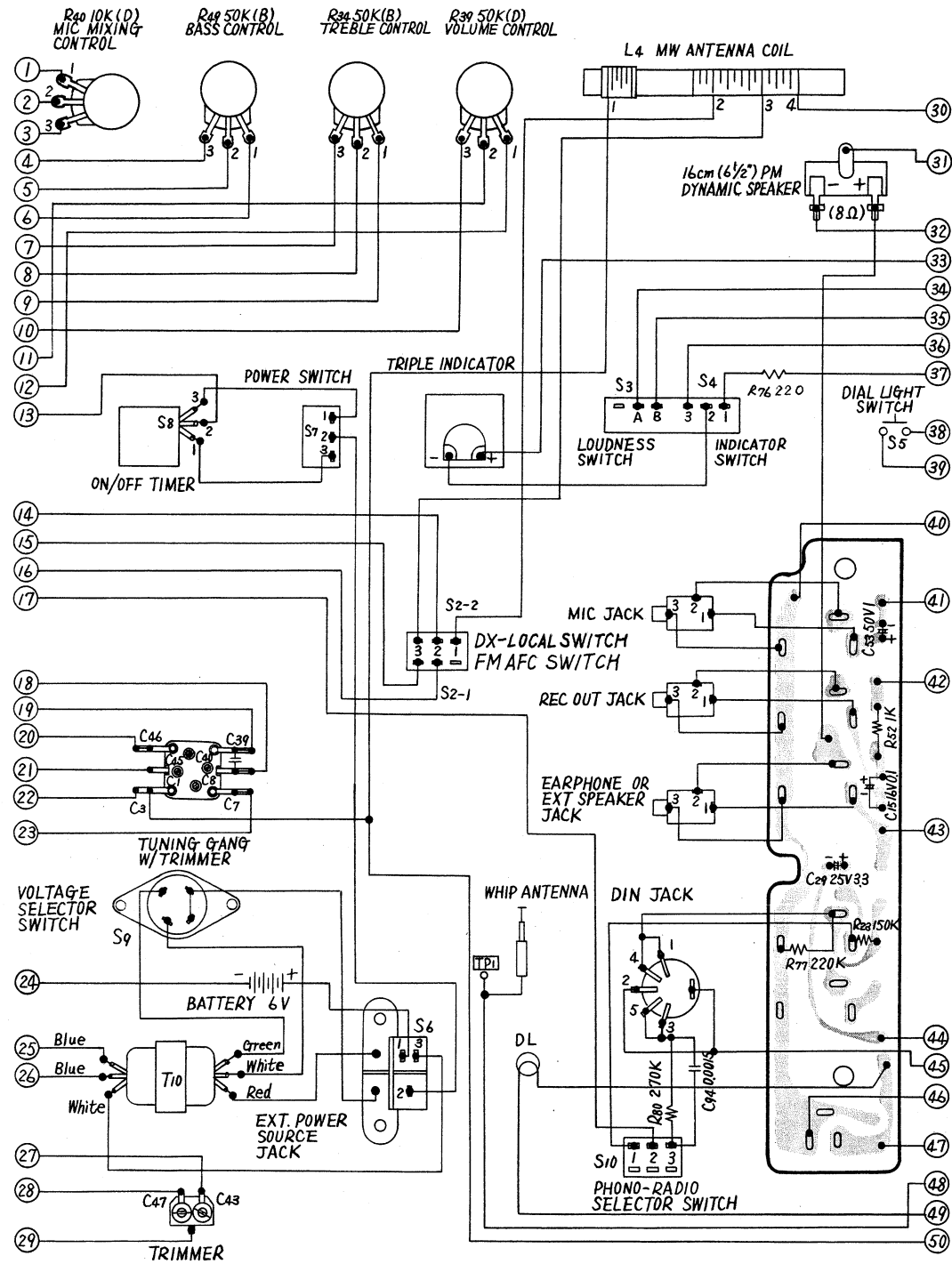


- | | | | |
|---|-------------------------------------|---------------------------------------|--|
| D11
RVDKB265J2
AM L. OSC AOC | TR3
2SC1359
AM L. OSC | TR9
2SC1538
PRE AMP | TR10
2SC1538
1st AF AMP |
| D10
RVDVD1211M
POWER AOC | TR12
2SC1537
POWER AOC | TR13,14
2SB473
POWER AMP | TR15
2SB176
RIPPLE FILTER |
| Se
RVDC08P1R
RECT | AC
110-125/220~240V
50-60Hz | | |

C	48	1	3	4	5	85	6	7	8	9	10	11	12	13	86	16	17	18	76	20	67	22	81	92	77	23	24	25	26	27	14	83	28	94	19	29	30									
R	1	31	32	33	34	36	37	38	39	40	41	42	43	45	46	47	49	78	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	90	69	70	71	72	73	74	75	84	93	79	91
	24	25	27	67	75	29	79	31	32	28	33	64	34	35	36	37	49	38	39	40	41	42	43	44	45	46	47	61	72	48	52	50	65	53	54	55	56	66	59	73	62	76				

- Notes:**
1. S1-1~S1-10: Band selector switch in "FM" position.
 2. S2-1~S2-2: FM AFC/MW DX-LOCAL switch in AFC "OFF" position.
 3. S3: Loudness switch in "OFF" position.
 4. S4: Indicator switch in "VU" position.
 5. S5: Dial light switch in "OFF" position.
 6. S6: AC-Battery selector switch in "Battery" position.
 7. S7: Power switch in "OFF" position.
 8. S8: Timer switch in "OFF" position.
 9. S9: Voltage selector switch in "110~125V" position.
 10. S10: Phono-Radio selector switch in "RADIO" position.
 11. DC voltage measurements are taken with circuit tester 10KΩ/V from negative terminal of battery.
□.....FM position ().....MW position
 12. Battery current: No signal.....75 mA
Maximum output850 mA

Circuit Board Wiring View-Model RF-888JB



TR6	
C	5.05V
B	3.32V
E	3.22V
Ie	0.5mA

TR7	
C	4.2V
B	1.3V
E	3.2V
Ie	0.5mA

TR9	
C	4.18V
B	0.7V
E	2.4V
Ie	1.1mA

TR10	
C	4.65V
B	0.75V
E	2.08V
Ie	1mA

TR8	
C	2.06V
B	5.24V
E	0V

TR2	
C	6V
B	2.1V
E	4.55V
Ie	0.35mA

TR4	
C	6V
B	2.65V
E	2.42V
Ie	0.6mA

TR1	
D	5.8V
G	0.5V
S	2.2V
Ie	3mA

TR13,14	
C	0.02V
B	5.8V
E	6V
Ie	15-37mA

TR15	
C	0V
B	0.9V
E	1.13V
Ic	33mA

TR12	
C	5.82V
B	2.34V
E	1.7V

TR11	
C	1.38V
B	5.85V
E	6V
Ie	5mA

TR5	
C	6V
B	1.8V
E	2.85V
Ie	0.8mA

IC	
1	5.3V
2	2.55V
3	2.58V
4	6V
5	2.8V
6	2.55V
7	1.78V
8	6V
9	6V

TR3	
C	6V
B	3.35V
E	2.7V
Ic	1.6mA

TR, D & IC	T10	L4	TR6	TR7	TR13	TR14	D9	TR9	D8	TR10	TR8	TR12	TR11	D10	TR15	D1	D12	IC	TR2	TR4	D4	D7	D2	D5	D4	TR1	D11	TR3	TR5
T & L	T10	L4																											

Earth Line

