

# Service Document **Exchange Set**

## **YACHT BOY 50 WR5405**

<b>Service Manual</b>
<b>Sicherheit Safety</b>
Materialnr./Part No. 720108000001



Es gelten die Vorschriften und Sicherheitshinweise gemäß dem Service Manual "Sicherheit", Materialnummer 720108000001, sowie zusätzlich die eventuell abweichenden, landesspezifischen Vorschriften!



The regulations and safety instructions shall be valid as provided by the "Safety" Service Manual, part number 720108000001, as well as the respective national deviations.

# ALIGNMENT INSTRUCTIONS

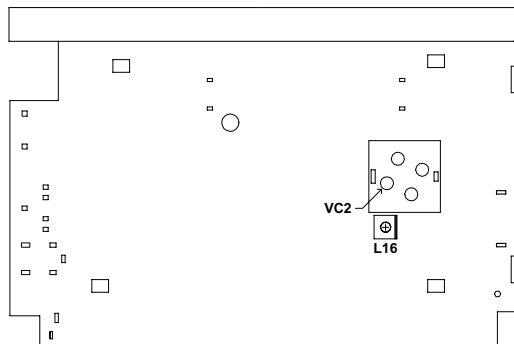
## (1) ALIGNMENT FOR FM FREQUENCY RANGE

a. Required Instruments  
 FM RF signal generator  
 SSVM

b. Alignment Procedure

Mode	Adjustment	Procedure
FM	L16 VC2	(1) Set the power switch to the ON position. (2) Connect a SSVM to the TP2 and TP3. (3) Connect the FM signal generator to the input terminal of the rod antenna (TP1, TP4) (4) Set the signal of the signal generator to the standard FM band, with frequency deviation to 22.5 kHz modulation. (5) With the tuning gang fully closed, set the signal generator to 87.35 MHz $\pm 0.15$ MHz and adjust L16 (stretch or squeeze) for a maximum reading on the SSVM. (6) With the tuning gang fully open, set the signal generator to 108.25 MHz $\pm 0.25$ MHz and adjust VC2E for a maximum reading on the SSVM. (7) Repeat Steps 5 and 6 until the best sensitivity is obtained at both frequencies.

c. Instrument Connection



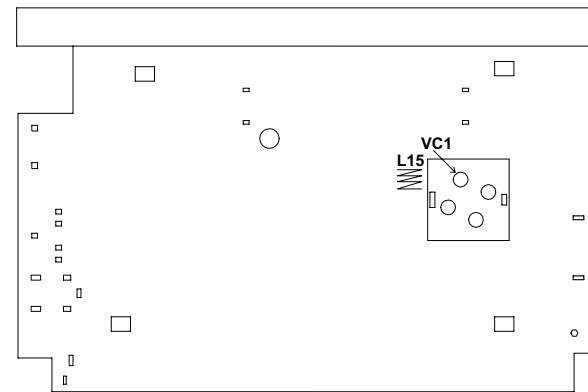
## (2) ALIGNMENT FOR FM SENSITIVITY

a. Required Instruments  
 FM/AM RF Signal Generator  
 SSVM

b. Alignment Procedure

Mode	Adjustment	Procedure
FM	L15 VC1	(1) Set the power switch to the ON position. (2) Connect a SSVM to the speaker. (TP2, TP3) (3) Connect the FM signal generator to the input terminal of the rod antenna (TP1, TP4) (4) Set the signal of the signal generator to the standard FM band, with frequency deviation to 22.5kHz modulation. (5) With the tuning gang fully closed, set the signal generator to 90 MHz and adjust L15 (stretch or squeeze) for a maximum reading on the SSVM. (6) With the tuning gang fully open, set the signal generator to 106 MHz and adjust VC1 for a maximum reading on the SSVM. (7) Repeat steps 5 and 6 until the best sensitivity is obtained at both frequencies.

c. Instrument Connection



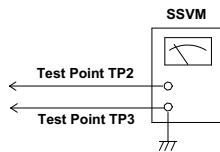
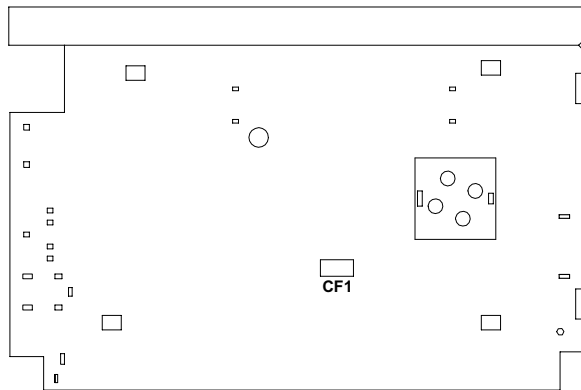
**(3) ALIGNMENT FOR AM IF**

- a. Required Instruments  
 AM RF Signal Generator  
 SSVM

b. Alignment Procedure

Mode	Adjustment	Procedure
AM	CF 1	(1) Set the power switch to the ON position. (2) Connect a SSVM to the TP2, TP3. (3) Connect the AM signal generator to the loop antenna. (4) Set the signal generator to 460 kHz, with 30% modulation. Set the tuning gang fully closed, and adjust CF1 for a maximum reading on the SSVM.

c. Instrument Connection



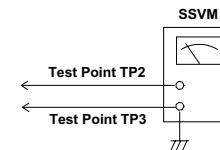
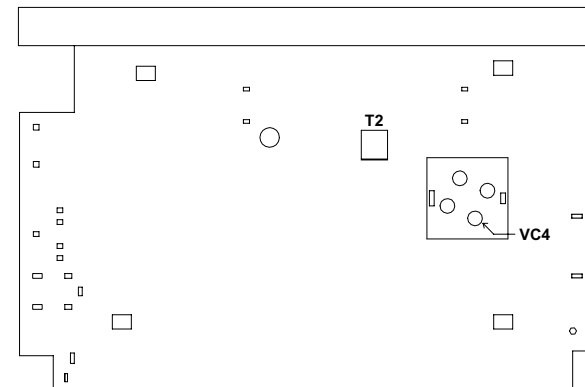
**(4) ALIGNMENT FOR AM FREQUENCY RANGE**

- a. Required Instruments  
 AM RF Signal Generator  
 SSVM

b. Alignment Procedure

Mode	Adjustment	Procedure
MW	T2 VC4	(1) Set the power switch to the ON position. (2) Connect a SSVM to the TP2, TP3. (3) Connect a AM RF signal generator to the loop antenna. (4) Set the signal generator to 516.5 kHz with 30% modulation. Set the tuning gang fully closed, and adjust T2 for maximum reading on the SSVM. (5) Set the signal generator to 1630 kHz. Set the tuning gang fully open and adjust VC4 for a maximum reading on the SSVM. (6) Repeat Steps 4 and 5 until the best sensitivity is obtained at both frequencies.

c. Instrument Connection



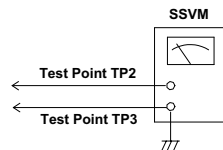
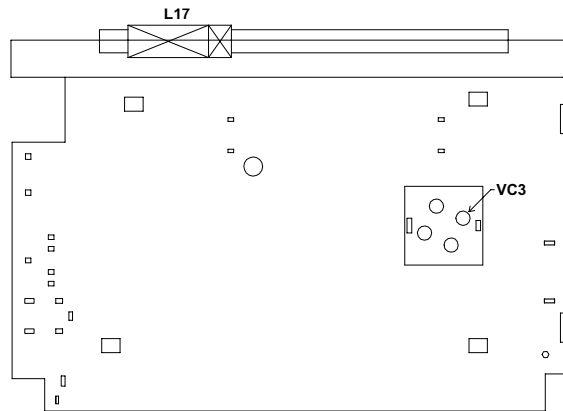
### (5) ALIGNMENT FOR AM SENSITIVITY

- a. Required Instruments  
 AM RF Signal Generator  
 SSVM

b. Alignment Procedure

Mode	Adjustment	Procedure
MW	L17 VC3	(1) Set the power switch to ON position. (2) Connect a SSVM to the TP2, TP3. (3) Connect the AM RF signal generator to the loop antenna. (4) Set the signal generator to 558 kHz, with 30% modulation. Set the tuning gang fully closed and adjust L17 for a maximum reading on the SSVM. (5) Set the signal generator to 1440 kHz. Set the tuning gang fully open and adjust VC3 for a maximum reading on the SSVM. (6) Repeat steps 4 and 5 until the best sensitivity is obtained at both frequencies.

c. Instrument Connection



### (6) OSCILLATOR ALIGNMENT FOR REMAINDER OF SW BANDS

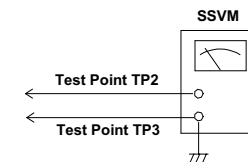
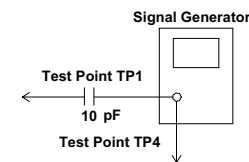
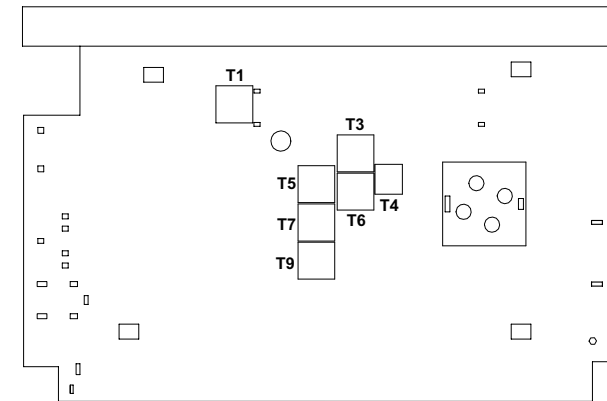
- a. Required Instruments  
 AM RF Signal Generator  
 SSVM

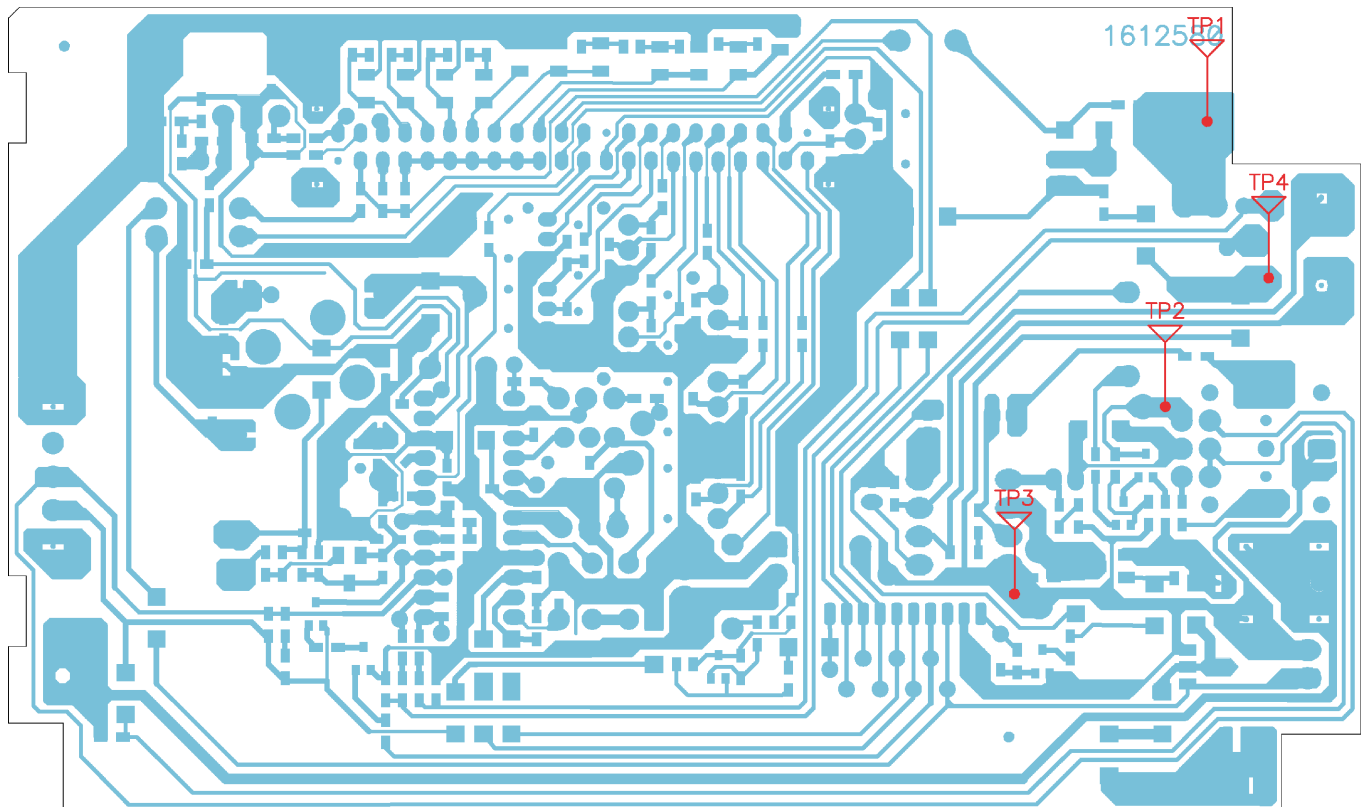
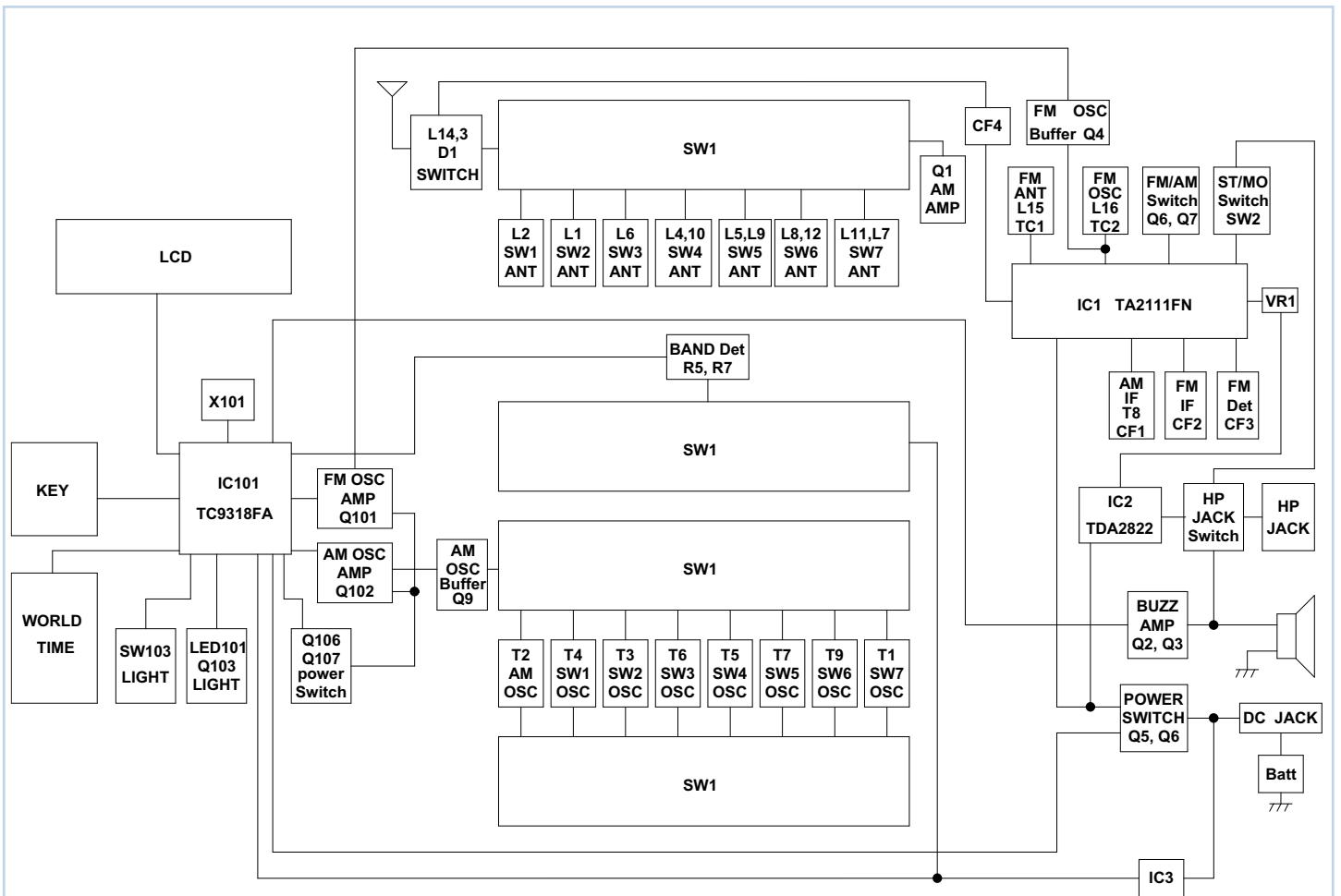
b. Alignment Procedure

Mode	Pr	cedure
49m ↓ 16m	(1) Set the power switch to ON position. (2) Connect a SSVM to the TP2, TP3. (3) Connect a signal generator with a 10pF dummy antenna. (TP1, TP4) (4) Set the signal generator's frequency as noted below (use 1kHz, 30% modulation). (5) With the tuning gang fully closed, adjust the appropriate coils noted below for maximum reading on the SSVM.	

Mode	Generator Frequency	Adjustment
49m	5.8 MHz	T4
41m	7.0 MHz	T3
31m	9.3 MHz	T6
25m	11.43 MHz	T5
21m	13.43 MHz	T7
19m	15 MHz	T9
16m	17.32 MHz	T1

c. Instrument Connection



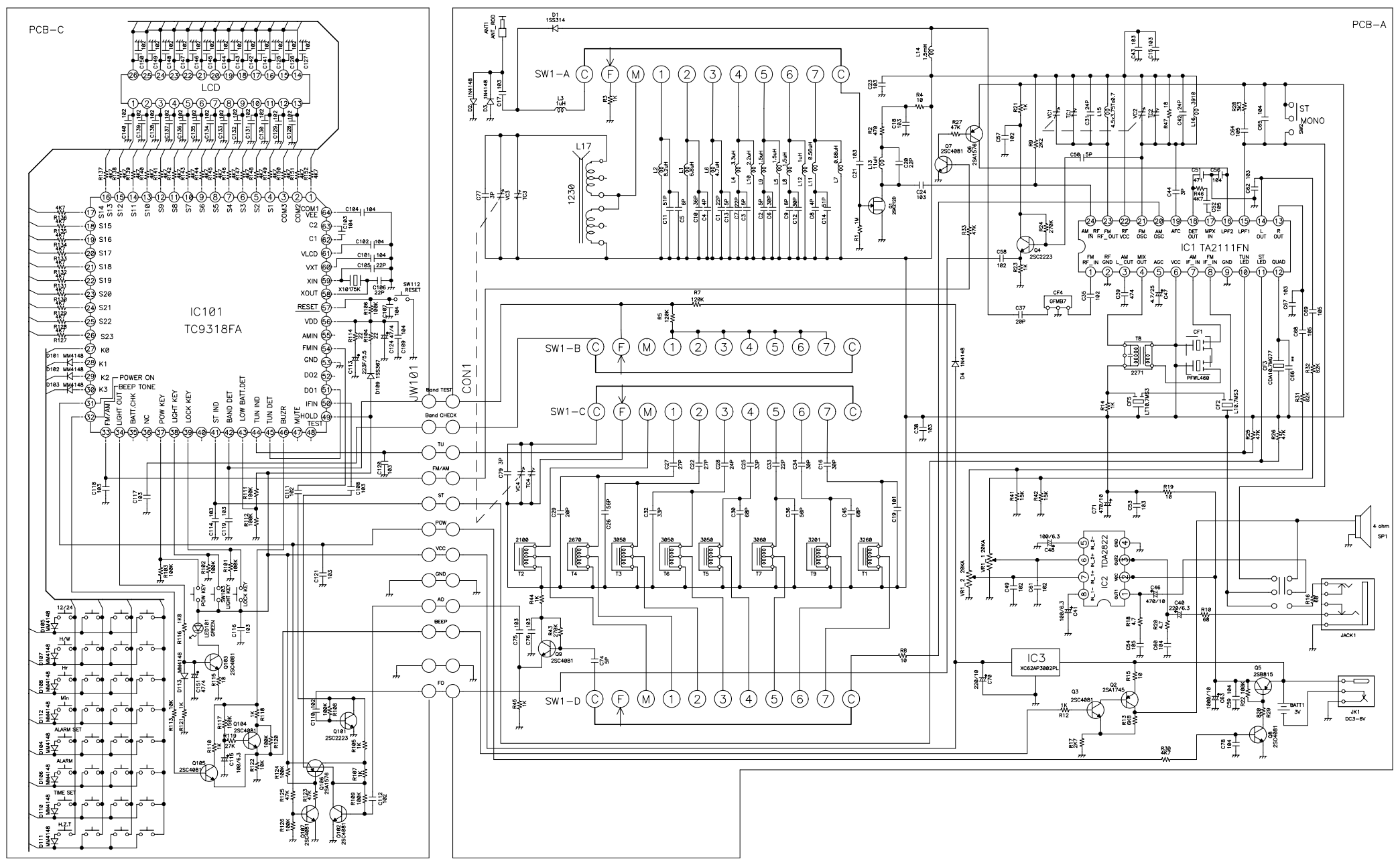






PCB-C

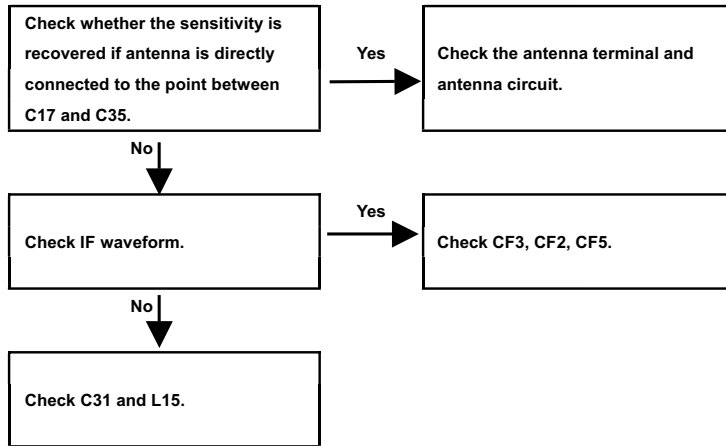
PCB-A



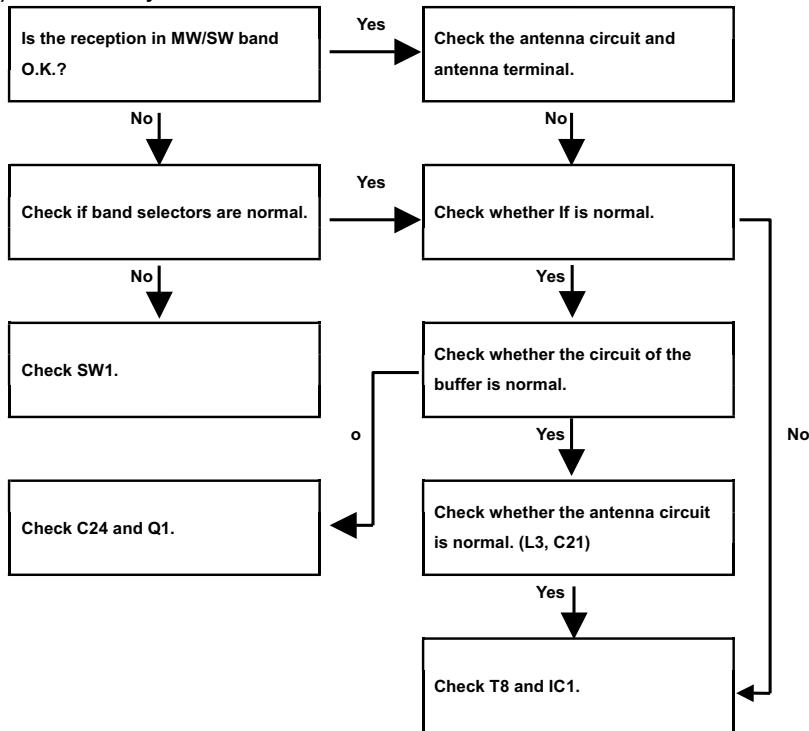


# TROUBLESHOOTING FLOW CHART

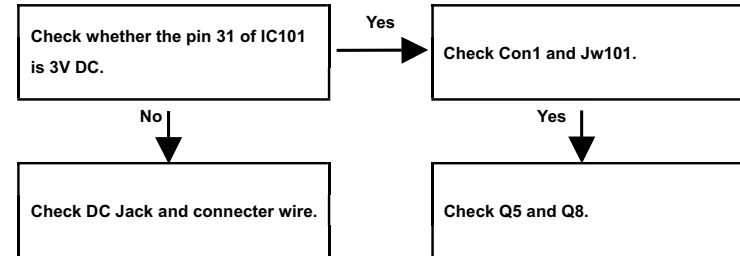
## ( 1 ) Weak sensitivity on FM mode



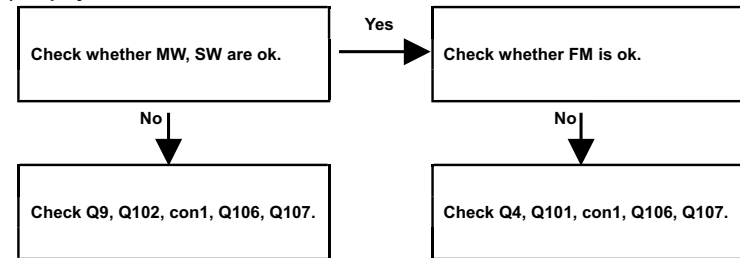
## ( 2 ) Weak sensitivity in AM band



## ( 3 ) Power can not be turned on

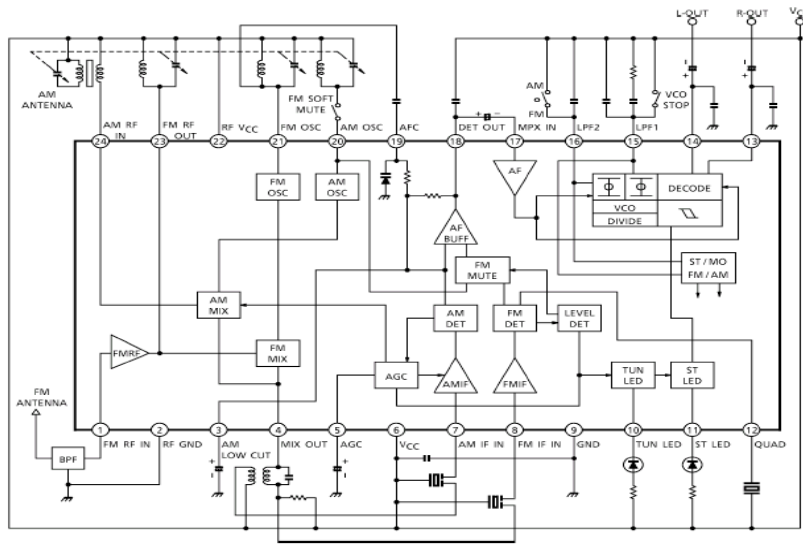


## ( 4 ) Display can not be Normal

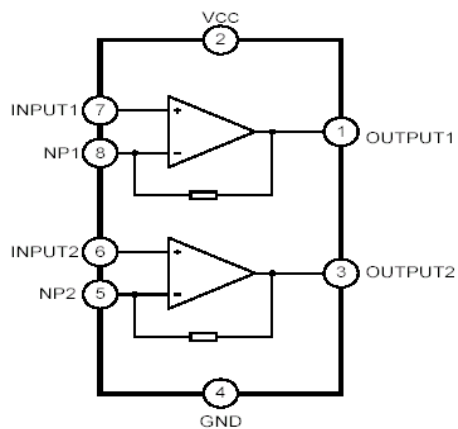


# IC CIRCUIT BLOCK DIAGRAM

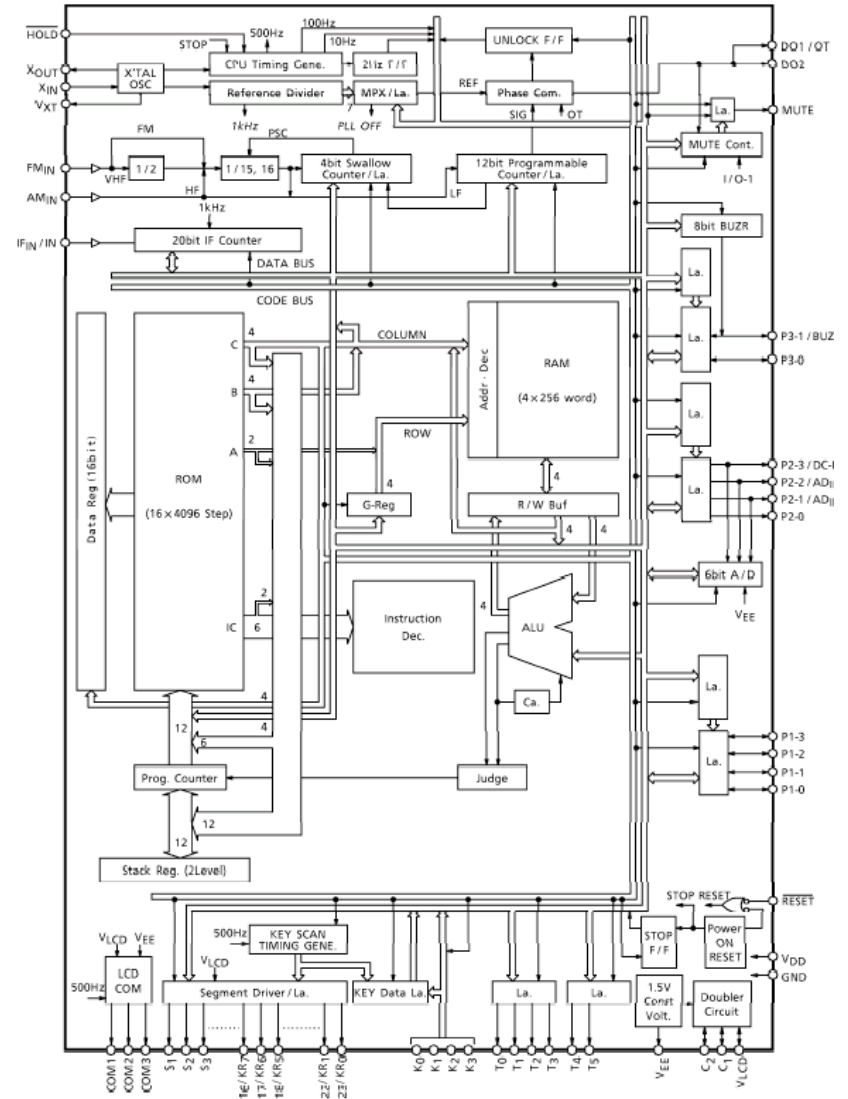
1. IC1-TA2111N



2. IC2-TDA2822



3. IC101-TC9318FA



# IC AND TRANSISTOR VOLTAGE CHART

IC1-TA2111N

PIN	FM	AM
1	0.8	0
2	0	0
3	0.4	1
4	2.4	2.8
5	0	0
6	2.9	2.9
7	2.3	2.3
8	2.9	2.9
9	0	0
10	2.7	2.7
11	2.7	2.7
12	2.0	2.3
13	1.2	1.2
14	1.2	1.2
15	2.9	2.9
16	1.8	2.9
17	0.7	0.7
18	1.0	1.0
19	0.4	0.9
20	2.9	2.9
21	2.9	2.9
22	2.9	2.9
23	2.9	2.9
24	2.9	2.9

IC2- TDA2822

PIN	FM	AM
1	1.25	1.25
2	3	3
3	1.25	1.25
4	0	0
5	0.55	0.55
6	0	0
7	0	0
8	0.55	0.55

IC1-TC9318FA

PIN	FM	MW
1	1.5	1.5
2	1.5	1.5
3	1.5	1.5
4	1.5	1.5
5	1.5	1.5
6	1.5	1.5
7	1.5	1.5
8	1.5	1.5
9	1.5	1.5
10	1.5	1.5
11	1.5	1.5
12	1.5	1.5
13	1.5	1.5
14	1.5	1.5
15	1.5	1.5
16	1.5	1.5
17	1.5	1.5
18	1.5	1.5
19	1.54	1.54
20	1.54	1.54
21	1.54	1.54
22	1.54	1.54
23	1.54	1.54
24	1.54	1.54
25	1.54	1.54

PIN	FM	MW
26	1.54	1.54
27	1.07	1.24
28	1.30	1.24
29	1.25	1.25
30	1.25	1.17
31	0	0
32	0	2.92
33	0	0
34	0	0
35	2.47	2.92
36	0	0
37	0	0
38	2.82	2.96
39	2.96	3.39
40	2.96	3.39
41	0.39	0
42	1.48	0.02
43	1.45	1.45
44	0.62	0.60
45	2.82	2.96
46	0	0
47	0	0
48	0	0
49	2.82	2.96
50	1.33	1.49

PIN	FM	MW
51	1.17	1.33
52	1.09	1.09
53	0	0
54	1.31	0
55	0	1.21
56	2.48	2.94
57	2.48	0.22
58	0.22	0.23
59	0.50	0.40
60	1.42	1.42
61	3	3
62	0	0
63	2.24	2.26
64	1.5	1.5

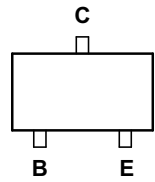
Transistor

		FM	AM
Q1	G	0	0
	D	1.6	1.6
	S	0	0
Q2	C	0	0
	B	2.4	2.4
	E	3	3
Q3	C	2.4	2.4
	B	0	0
	E	0	0
Q4	C	2.4	2.4
	B	1	1
	E	0.3	0.3
Q5	C	3	3
	B	2.3	2.3
	E	3	3
Q6	C	1.8	2.9
	B	2.3	2.3
	E	2.8	2.9
Q7	C	2.2	0
	B	0	0.6
	E	0	0
Q8	C	0	0
	B	0.6	0.6
	E	0	0
Q9	C	2.2	2.2
	B	1.2	1.2
	E	0.6	0.6

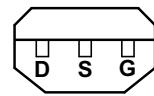
		FM	AM
Q101	C	1.9	1.9
	B	0.7	0.7
	E	0	0
Q102	C	1.3	1.3
	B	0.6	0.6
	E	0	0
Q103	C	1.5	1.5
	B	0	0
	E	0	0
Q104	C	0	0
	B	0	0
	E	0	0
Q105	C	0	0
	B	0	0
	E	0	0
Q106	C	2.9	2.9
	B	2.3	2.3
	E	3.0	3.0
Q107	C	0	0
	B	0.6	0.6
	E	0	0

# SEMICONDUCTOR LEAD IDENTIFICATIONS

## Transistors



- 2SB815
- 2SC2223
- 2SA1745
- 2SA1576
- 2SC4081



2SK212D

(E:Emitter C:Collector B:Base S:Source G:Gate D:Dra

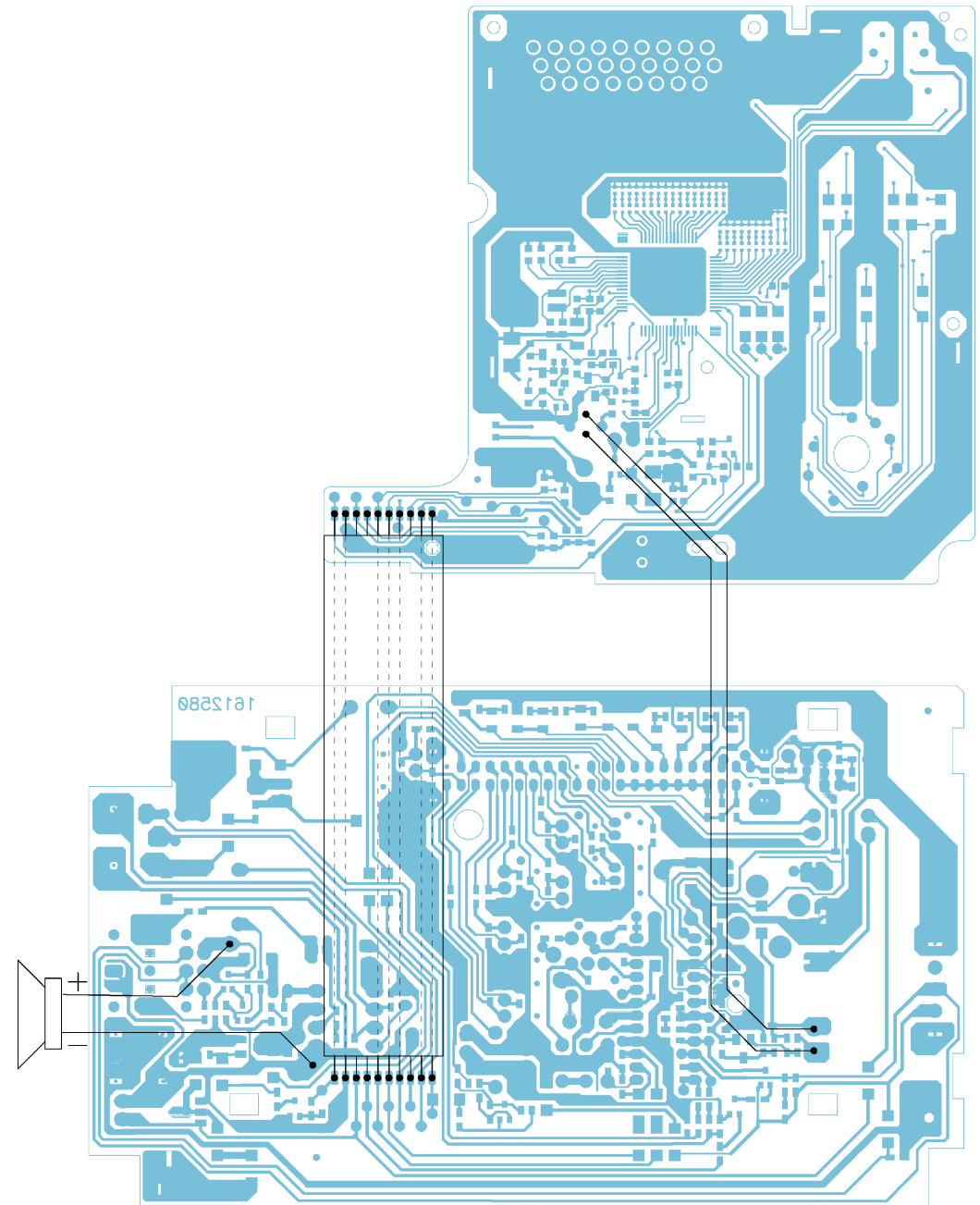
## Diodes

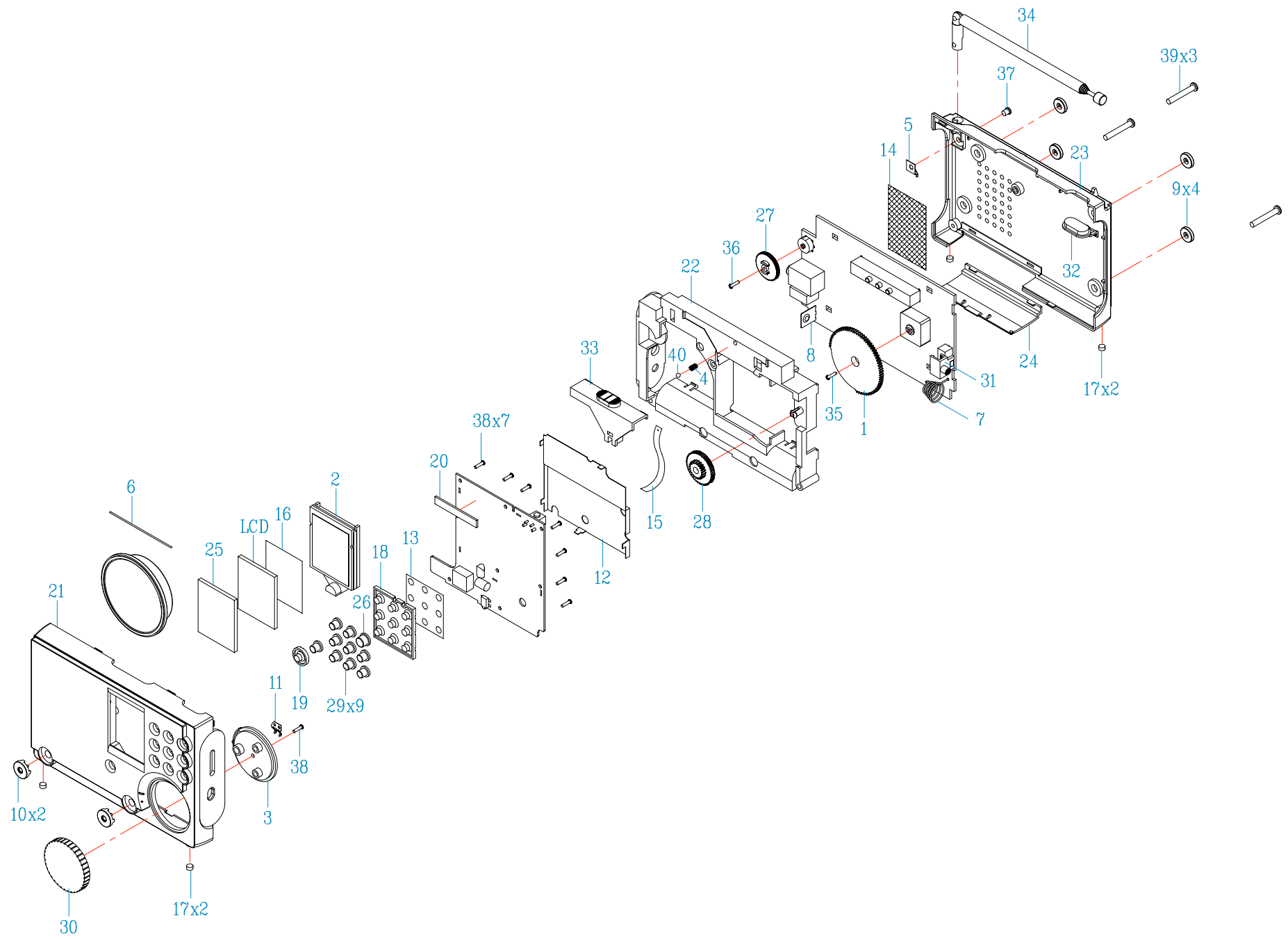


- 1N4148
- MM4148



- 1SS314
- 1SS367





# GRUNDIG

Ersatzteilliste  
Spare Parts List

## AUDIO/HIFI

11 / 2003

### YACHT BOY 50 WR5405

MATERIAL-NR. / PART NO.: 759816000700  
BESTELL-NR. / ORDER NO.: GRO0350 CHROM/CHROME

POS. NR. POS. NO.	ABB. FIG.	MATERIAL-NR. PART NUMBER	ANZ. QTY.	BEZEICHNUNG Ⓚ	DESCRIPTION Ⓜ
		759816000700		YACHT BOY 50 / WR 5405 CHROM TAUSCHGERAET	YACHT BOY 50 / WR 5405 CHROME EXCHANGE SET
		759545015200		DECKEL BATTERIE	BATTERY COVER
		720114035500		BEDIENUNGSANLEITUNG D/GB/F/I/P/E/NL/PL/DK/S/FIN	INSTRUCTION MANUAL D/GB/F/I/P/E/NL/PL/DK/S/FIN

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ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION