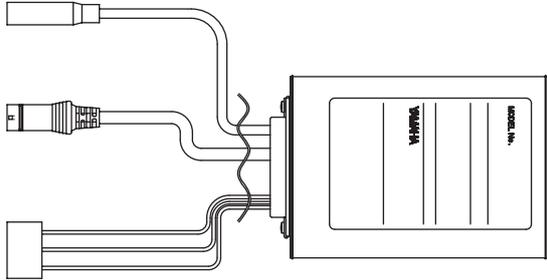


# Service Manual



## YAMAHA Motorcycle Genuine CB Radio

Model **JC-216R-51**

(Genuine No.4XY-88182-10-00-80)

### SPECIFICATIONS

#### Transmitter section

Power output: 4.0W  
 Unbalanced output: 50 ohm  
 S/N: More than 40dB  
 Modulation sensitivity: 10% to 20%  
 (at -20dBV input)

#### Receiver section

Practical sensitivity: Less than 6dBuVemf  
 (S/N 10dB)  
 S/N: More than 35dB  
 Distortion: Less than 8%  
 Squelch sensitivity: Threshold; Less than 8dBuVemf  
 SQ10; 25+10/-5 dBuVemf  
 Tight; More than 50dBuVemf

#### General

Power voltage: 13.2V DC  
 Ground: Negative  
 Current consumption: Less than 2.0A  
 (at 4W transmission)  
 Backup consumption: Less than 1.0mA  
 Frequency range: 26.965MHz to 27.405MHz(40ch)  
 Frequency tolerance: Less than 50ppm  
 Radio wave type: A3E(amplitude modulation)  
 Dimensions(mm): 105(W)x35(H)x150(D)  
 Weight: 750g

### Channel indication number

ch	MHz	ch	MHz
1	26.965	21	27.215
2	26.975	22	27.225
3	26.985	23	27.255
4	27.005	24	27.235
5	27.015	25	27.245
6	27.025	26	27.265
7	27.035	27	27.275
8	27.055	28	27.285
9	27.065	29	27.295
10	27.075	30	27.305
11	27.085	31	27.315
12	27.105	32	27.325
13	27.115	33	27.335
14	27.125	34	27.345
15	27.135	35	27.355
16	27.155	36	27.365
17	27.165	37	27.375
18	27.175	38	27.385
19	27.185	39	27.395
20	27.205	40	27.405

### NOTES

- \* We cannot supply PWB with component parts in principle. When a circuit on PWB has failure, please repair it by component parts base. Parts which are not mentioned in service manual are not supplied.
- \* Specifications and design are subject to change without notice for further improvement.

### COMPONENT

JC-216R-51

1. Main unit

----- 1

## To engineers in charge of repair or inspection of our products.

Before repair or inspection, make sure to follow the instructions so that customers and Engineers in charge of repair or inspection can avoid suffering any risk or injury.

1. Use specified parts.

The system uses parts with special safety features against fire and voltage. Use only parts with equivalent characteristics when replacing them.

The use of unspecified parts shall be regarded as remodeling for which we shall not be liable. The onus of product liability (PL) shall not be our responsibility in cases where an accident or failure is as a result of unspecified parts being used.

2. Place the parts and wiring back in their original positions after replacement or re-wiring.

For proper circuit construction, use of insulation tubes, bonding, gaps to PWB, etc, is involved. The wiring connection and routing to the PWB are specially planned using clamps to keep away from heated and high voltage parts. Ensure that they are placed back in their original positions after repair or inspection.

If extended damage is caused due to negligence during repair, the legal responsibility shall be with the repairing company.

3. Check for safety after repair.

Check that the screws, parts and wires are put back securely in their original position after repair. Ensure for safety reasons there is no possibility of secondary problems around the repaired spots.

If extended damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.

4. Caution in removal and making wiring connection to the parts for the automobile.

Disconnect the battery terminal after turning the ignition key off. If wrong wiring connections are made with the battery connected, a short circuit and/or fire may occur. If extensive damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.

5. Cautions in soldering

Please do not spread liquid flux in soldering.

Please do not wash the soldering point after soldering.

6. Cautions in soldering for chip capacitors

Please solder the chip capacitors after pre-heating for replacement because they are very weak to heat.

Please do not heat the chip capacitors with a soldering iron directly.

7. Cautions in handling for chip parts.

Do not reuse removed chips even when no abnormality is observed in their appearance. Always replace them with new ones. (The chip parts include resistors, capacitors, diodes, transistors, etc).

Please make an operation test after replacement.

8. Cautions in handling flexible PWB

Before working with a soldering iron, make sure that the iron tip temperature is around 270°C. Take care not to apply the iron tip repeatedly (more than three times) to the same patterns. Also take care not to apply the tip with force.

9. Turn the unit OFF during disassembly and parts replacement.

Recheck all work before you apply power to the unit.

# ADJUSTMENTS

## Adjusting VCO

1. Set CB channel to CH22(27.225MHz).
2. Connect a DC voltmeter to TP16(V.CONT).
3. Adjust L502 so that the voltmeter reading becomes 2.0V+/-0.05V while transmitting(TX), and adjust L503 so that the voltmeter reading becomes 2.0V+/-0.05V while receiving a signal(RX).

## Adjusting TX power

1. Set CB channel to CH19(27.185MHz), and connect a power meter to ANT.
2. Adjust L106, IFT100 in this order so that the power becomes maximum at TP17.
3. Adjust L103 so that the power becomes maximum.
4. Adjust VR200 so that the powermeter reading becomes 3.75W+/-0.05W.
5. Make sure that the power is 3.4W to 4.0W when CB channel is set CH1 and CH40.

## Adjusting modulation

1. Set CB channel to CH19(27.185MHz).
2. Connect low frequency oscillator to the MIC-IN terminal of the connector, and set the oscillator's output to 1kHz, 1V.
3. Adjust VR201 so that the depth of modulation at this time becomes 68% to 71%.
4. Set the microphone input to 1kHz, 100mV.
5. Adjust VR202 so that the depth of modulation at this time becomes 50+1/-1%.

## Adjusting receive sensitivity

1. Set CB channel to 18CH(27.175MH), set SQ level to 1, and set VOL level to 20.
2. Adjust VR301 to obtain 1.3V+/-0.01V at TP18.
3. Connect SSG to ANT(set SSG output to 0dBuVemf), and connect an AC voltmeter(synchroscope) to the audio output. Adjust IFT306, IFT304, IFT301, IFT300 and L300 in this order so that the audio output becomes maximum.
4. Make sure that S/N is more than 10dB when CB channel is set CH20 and SSG output is set 5dBuVemf.

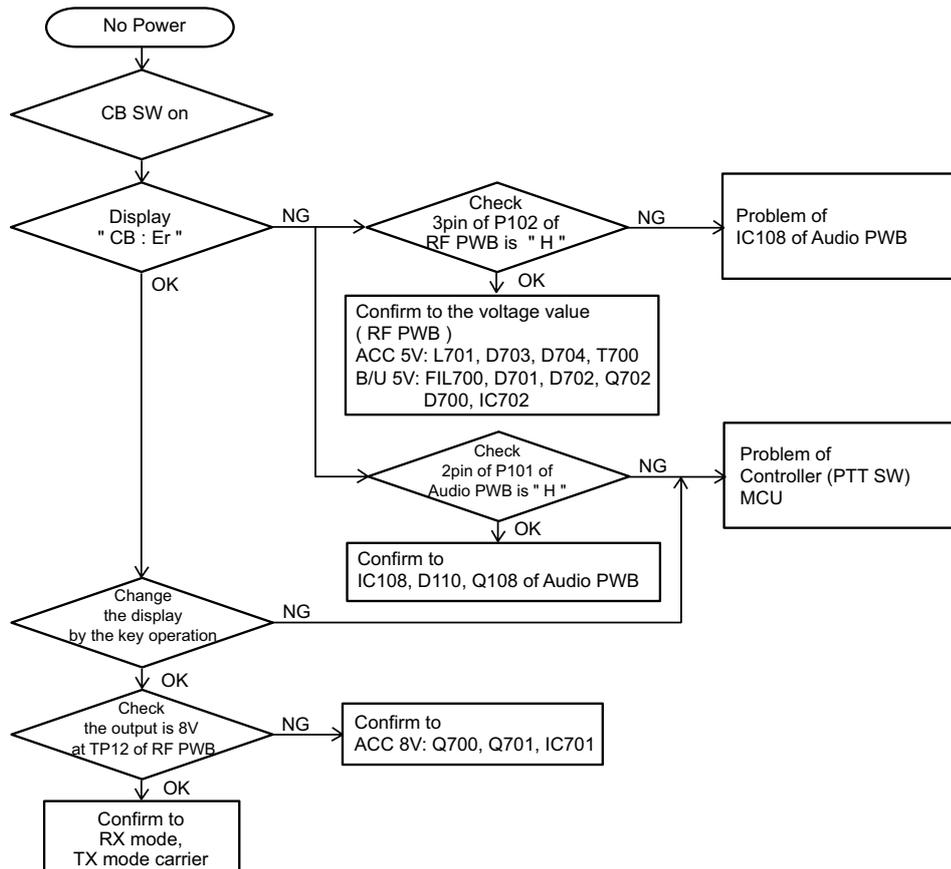
## Adjusting squelch

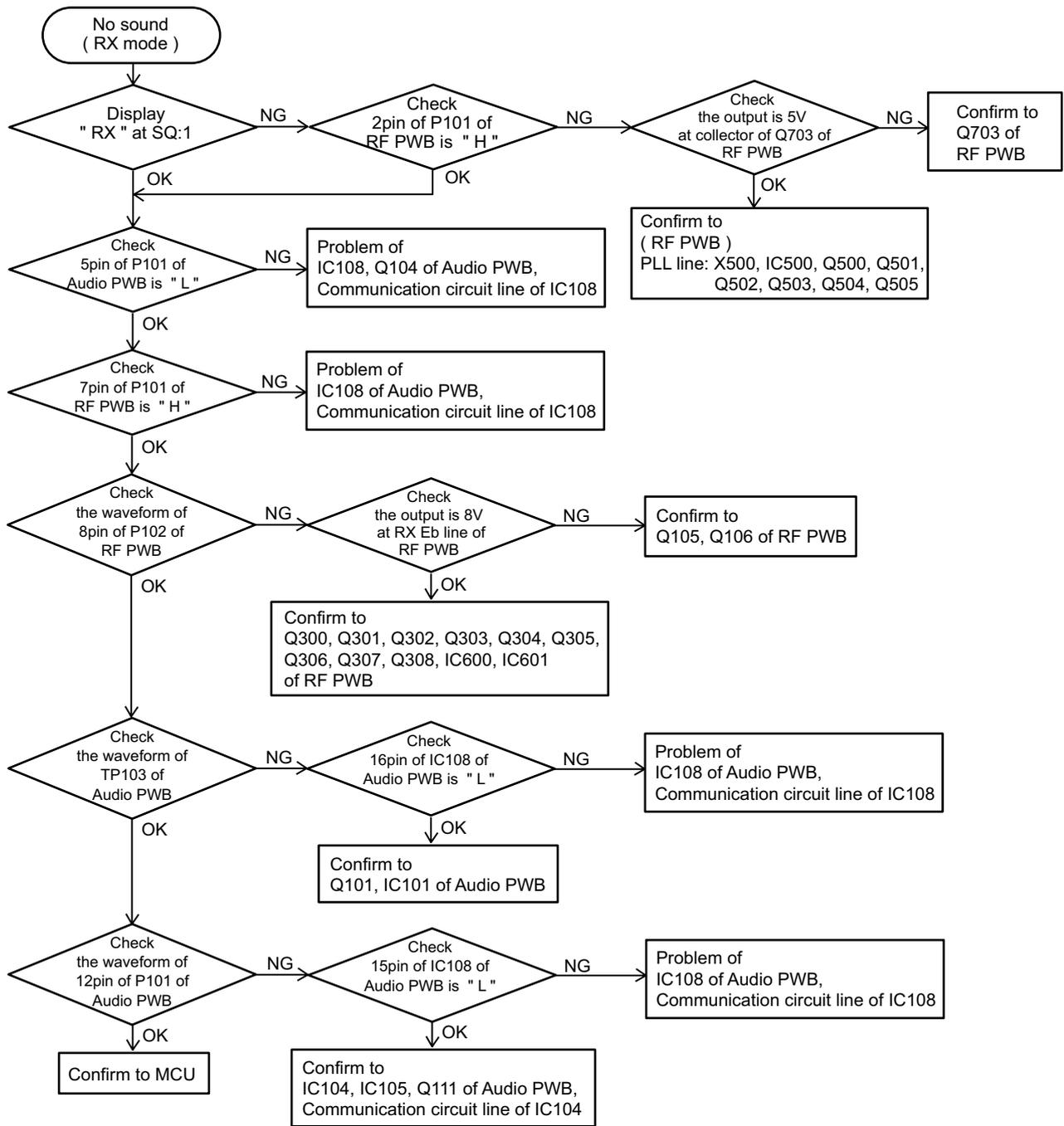
Confirm VR302 is at the center before this adjustment, and adjust as follows.

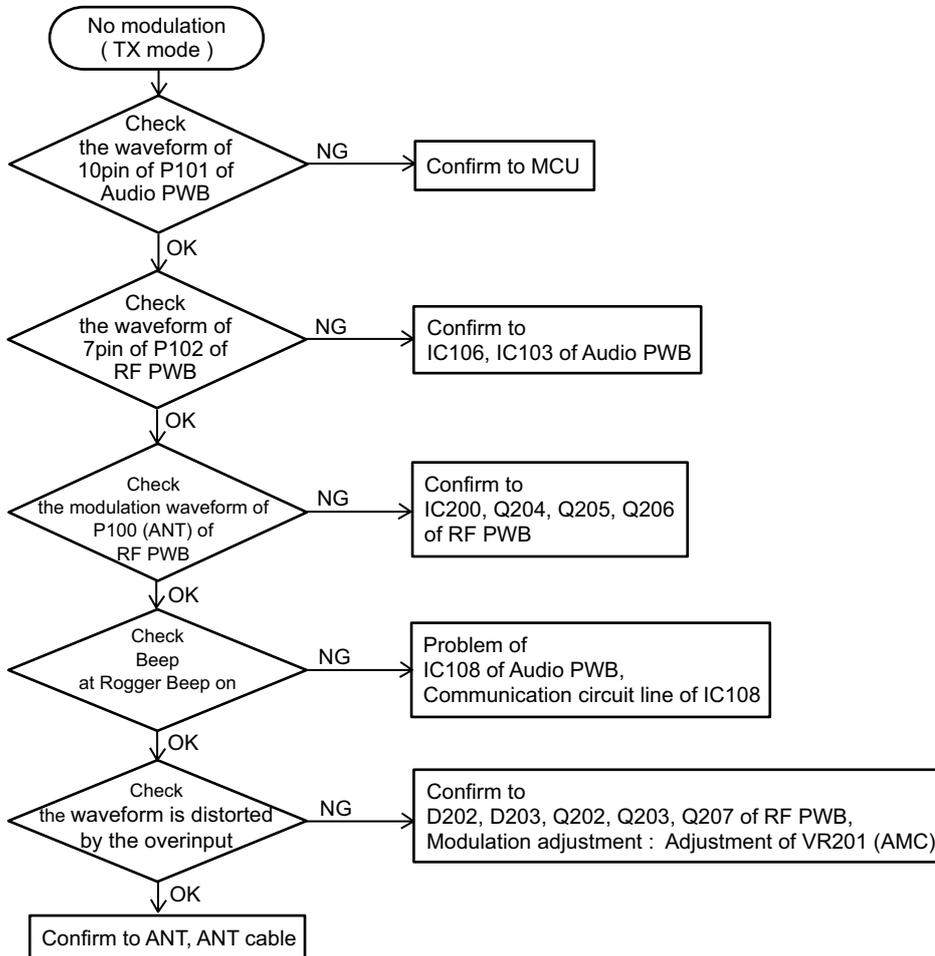
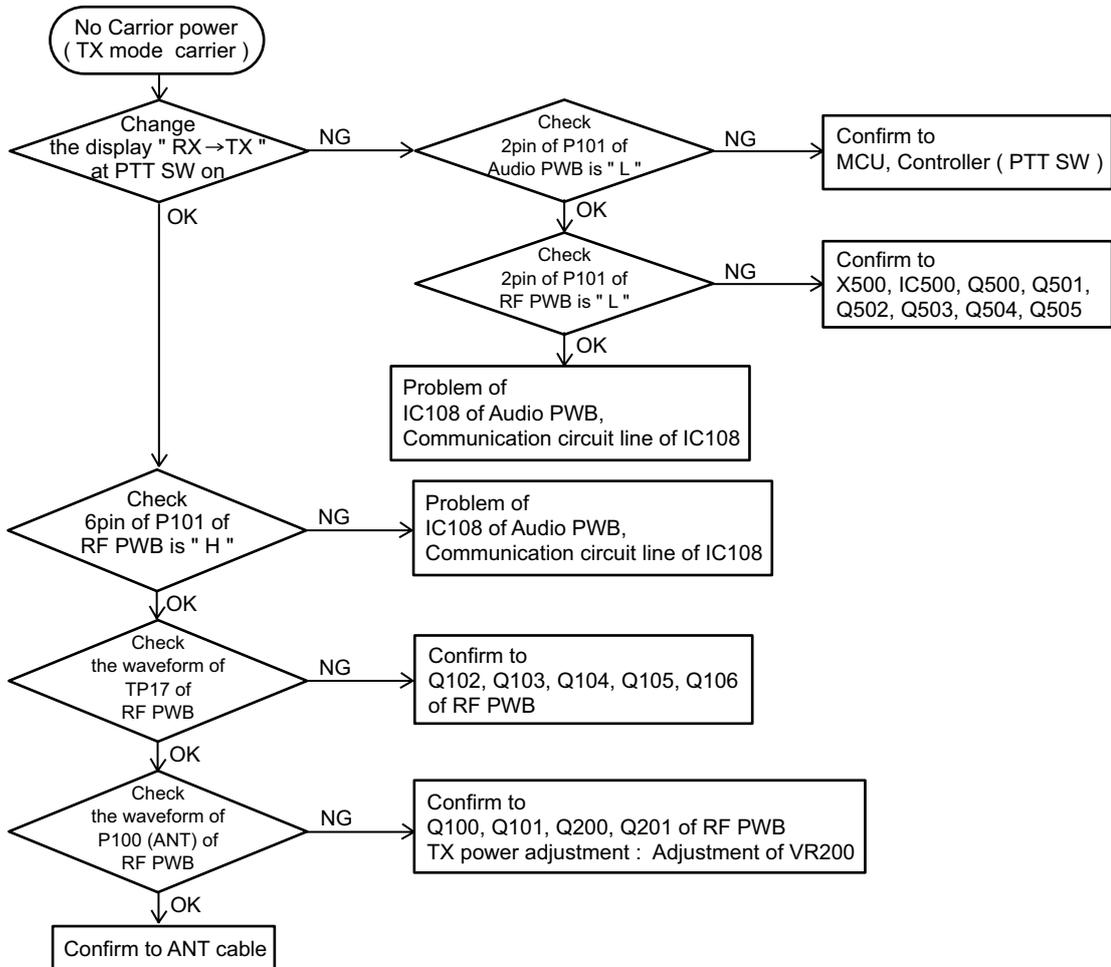
Adjust the tracking in the order of SQ2, SQ20, SQ2, and SQ20.

1. Set CB channel to CH18(27.175MHz), and set VOL level to 10.
2. Set SSG output to 2dBuVemf, turn VR303 so that the waveform appear.
3. Set SSG output to 60dBuVemf, turn VR302 so that the waveform appear.
4. Threshold sensitivity  
Set CB channel to CH18(27.175MHz), set VOL level to 10, and SSG output is -10dBuVemf. Make sure that the waveform disappears when SQ level is set 1 to 2. Now set RF output to 8dBuVemf. Confirm that audio waveform appears.
5. Tight sensitivity  
Set CB channel to CH18(27.175MHz), set SQ level to 20, set VOL level to 10, and set SSG output to 50dBuVemf. Increase SSG output, and make sure that the waveform appears when SSG output is at 54dBuVemf.

# TROUBLESHOOTING





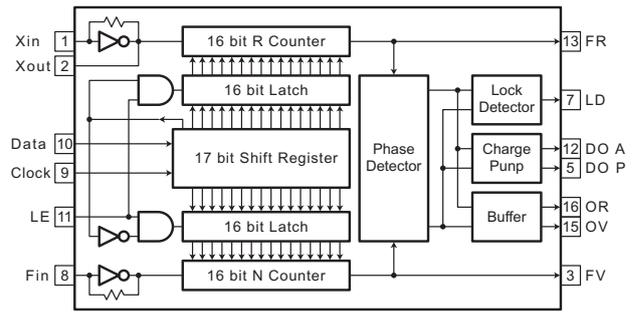
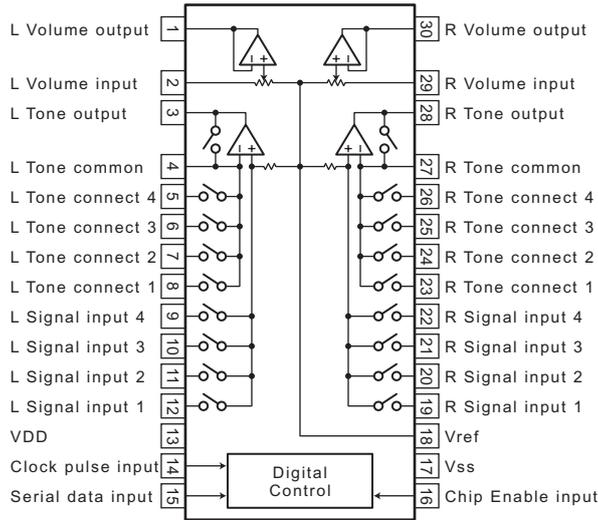


# EXPLANATION OF IC

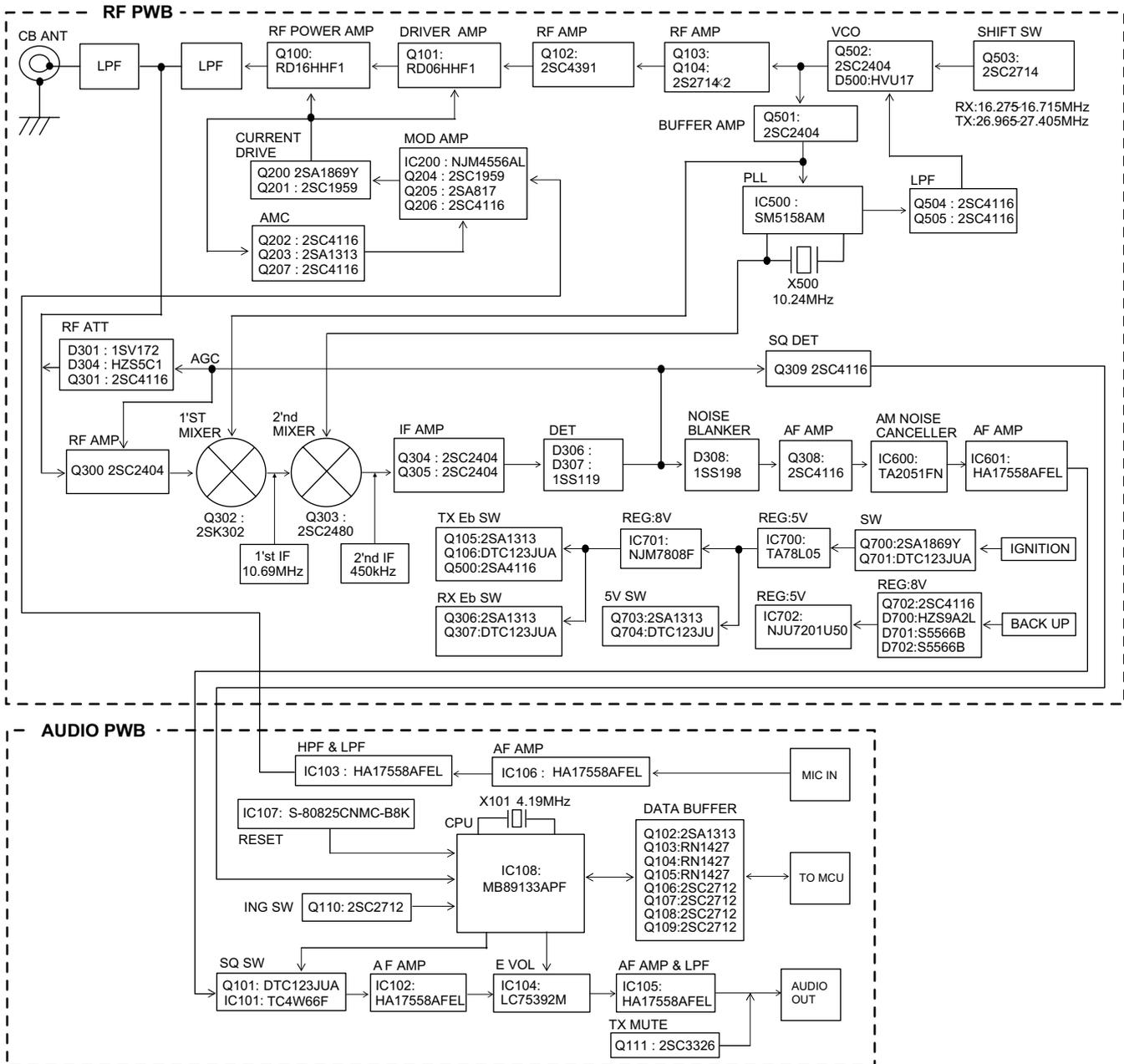
051-5044-90 LC75392M-TLM-E Electric Volume Control

051-6207-18 SM5158AM-G-ET

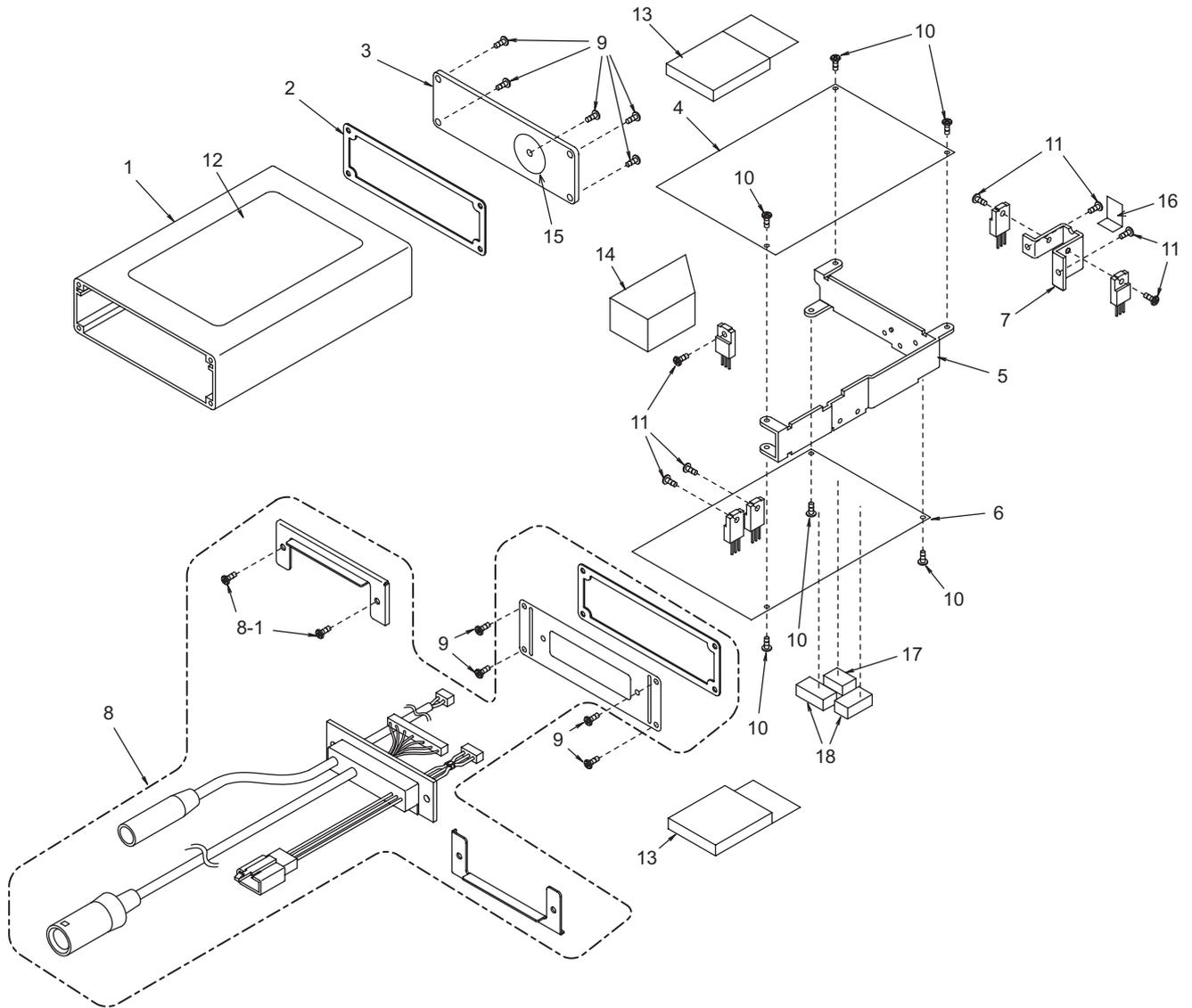
PLL Synthesizer



## BLOCK DIAGRAM



# EXPLODED VIEW/PARTS LIST



NO.	PART NO.	DESCRIPTION	Q'TY
1	313-1671-02	CASE	1
2	347-5347-00	GASKET	1
3	331-1965-00	BOTTOM PLATE	1
4	-----	AUDIO PWB	1
5	313-1672-00	HEATSINK A	1
6	-----	RF PWB	1
7	313-1673-01	HEATSINK B	1
8	855-3434-02	EXTENSION LEAD ASSY	1
8-1	714-3010-8H	MACHINE SCREW(M3 x 10)	2
9	716-1779-50	MACHINE SCREW(M3 x 8)	9

NO.	PART NO.	DESCRIPTION	Q'TY
10	732-3006-1B	SEMS SCREW(M3 x 6)	6
11	714-3006-1B	MACHINE SCREW(M3 x 6)	7
12	286-9160-02	SETPLATE	1
13	345-8295-00	RUBBER PARTS	2
14	345-8296-00	RUBBER PARTS	1
15	345-6059-00	SPACER	1
16	345-8201-00	SURGE PROTECT	1
17	345-6039-00	GASKET	1
18	345-7297-00	RUBBER PARTS	2

# ELECTRICAL PARTS LIST

## RF PWB(B1) section

REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION
C100	043-0298-50	120pF	C328	168-1022-55	1000pF K	C700	168-1032-55	0.01uF K
C101	166-1811-50	180pF CH	C329	168-3322-55	3300pF K	C701	163-4763-35	16V 47uF
C102	166-3301-50	33pF CH	C330	178-1052-78	1uF	C702	168-1032-55	0.01uF K
C103	043-0298-52	270pF	C331	168-4732-78	0.047uF K	C703	189-1073-41	25V 100uF
C104	043-0299-51	470pF	C332	163-1063-35	16V 10uF	C704	168-1032-55	0.01uF K
C105	043-0298-52	270pF	C333	168-1042-78	16V 0.1uF	C705	189-1073-41	25V 100uF
C106	168-1045-56	0.1uF Z	C334	168-4722-55	4700pF K	C706	168-1022-55	1000pF K
C107	166-1511-50	150pF CH	C335	178-1052-78	1uF	C707	163-4763-35	16V 47uF
C108	168-4732-78	0.047uF K	C336	189-2263-68	50V 22uF	C708	163-4763-35	16V 47uF
C109	043-0298-52	270pF	C337	168-1032-55	0.01uF K	C709	168-1032-55	0.01uF K
C110	166-2211-50	220pF CH	C338	178-1052-78	1uF	C710	168-1032-55	0.01uF K
C111	168-4732-78	0.047uF K	C339	168-4722-55	4700pF K	C711	163-4753-55	35V 4.7uF
C112	043-0298-52	270pF	C340	168-1022-55	1000pF K	C712	189-1083-41	25V 1000uF
C113	168-4732-78	0.047uF K	C341	168-1022-55	1000pF K	C713	168-2232-55	0.022uF K
C114	166-3311-50	330pF CH	C342	168-1032-55	0.01uF K	C714	168-3332-78	0.033uF K
C115	166-6801-50	68pF CH	C343	168-1042-78	16V 0.1uF	C715	168-6822-55	6800pF K
C116	168-4732-78	0.047uF K	C344	166-1501-50	15pF CH	C716	189-1073-41	25V 100uF
C117	168-4732-78	0.047uF K	C500	168-4732-78	0.047uF K	C717	168-1022-55	1000pF K
C118	166-5601-50	56pF CH	C501	163-1063-35	16V 10uF	C718	168-1032-55	0.01uF K
C119	168-4732-78	0.047uF K	C502	168-4732-78	0.047uF K	C719	168-1032-55	0.01uF K
C120	168-4732-78	0.047uF K	C503	168-4732-78	0.047uF K	C720	168-1032-55	0.01uF K
C121	168-4732-78	0.047uF K	C504	166-3301-50	33pF CH	C721	168-1032-55	0.01uF K
C122	166-1511-50	150pF CH	C505	166-3301-50	33pF CH	D201	001-0516-90	MA111
C123	168-4732-78	0.047uF K	C506	168-4732-78	0.047uF K	D202	001-0516-90	MA111
C124	166-1511-50	150pF CH	C507	168-4732-78	0.047uF K	D203	001-0516-90	MA111
C125	166-3901-50	39pF CH	C508	166-1811-50	180pF CH	D204	001-0516-90	MA111
C127	042-0423-22	16V 4.7uF	C509	166-2211-50	220pF CH	D205	001-0516-90	MA111
C128	166-3901-50	39pF CH	C510	166-2701-50	27pF CH	D206	001-0516-90	MA111
C129	168-4732-78	0.047uF K	C511	166-3301-50	33pF CH	D207	001-0516-90	MA111
C200	168-1042-78	16V 0.1uF	C512	168-3332-78	0.033uF K	D208	001-0516-90	MA111
C201	189-4773-42	25V 470uF	C513	168-1042-78	16V 0.1uF	D209	001-0516-90	MA111
C202	168-1022-55	1000pF K	C514	168-1042-78	16V 0.1uF	D300	001-0516-90	MA111
C203	187-4753-67	50V 4.7uF	C515	168-1032-55	0.01uF K	D301	001-0512-90	1SV172
C204	168-1032-55	0.01uF K	C516	168-1022-55	1000pF K	D302	001-0330-90	1SS119
C205	189-2263-68	50V 22uF	C517	168-4732-78	0.047uF K	D303	001-0330-90	1SS119
C206	189-2263-68	50V 22uF	C518	163-4763-35	16V 47uF	D304	001-0401-30	HZS5 C1,C2
C207	189-2273-28	10V 220uF	C519	177-2252-78	16V 2.2uF	D305	001-0330-90	1SS119
C208	168-1032-55	0.01uF K	C520	178-3342-78	0.33uF	D306	001-0330-90	1SS119
C209	168-1022-55	1000pF K	C521	166-3301-50	33pF CH	D307	001-0330-90	1SS119
C210	163-1063-35	16V 10uF	C522	166-2701-50	27pF CH	D308	001-0361-90	1SS198
C211	168-1042-78	16V 0.1uF	C523	168-1032-55	0.01uF K	D500	001-3204-90	HVU17-TR
C212	168-1022-55	1000pF K	C524	166-6801-50	68pF CH	D700	001-0504-44	HZS9 A2L
C213	168-1042-78	16V 0.1uF	C525	168-1032-55	0.01uF K	D701	001-0360-00	S5566B
C214	163-1063-35	16V 10uF	C600	168-1022-55	1000pF K	D702	001-0360-00	S5566B
C215	168-4732-78	0.047uF K	C601	168-1042-78	16V 0.1uF	D703	001-0601-90	DE3L2OU
C216	189-2273-28	10V 220uF	C602	168-2232-55	0.022uF K	D704	001-0601-90	DE3L2OU
C217	168-1042-78	16V 0.1uF	C603	168-3332-78	0.033uF K	FIL700	060-3000-60	0.01uF EMI
C218	168-1032-55	0.01uF K	C604	168-2232-55	0.022uF K	IC200	051-1407-00	NJM4556AL
C219	178-1052-78	1uF	C605	168-4732-78	0.047uF K	IC500	051-6207-18	SM5158AM-G-ET
C300	166-4701-50	47pF CH	C606	168-4732-78	0.047uF K	IC600	051-4200-90	TA2051FN
C301	168-1022-55	1000pF K	C607	166-4711-50	470pF CH	IC601	051-3049-90	HA17558AFEL
C302	166-2701-50	27pF CH	C608	166-4711-50	470pF CH	IC700	051-0352-91	TA78L05F
C303	168-1022-55	1000pF K	C609	168-1032-55	0.01uF K	IC701	051-0718-10	NJM7808FA
C304	163-1063-35	16V 10uF	C610	042-0423-22	16V 4.7uF	IC702	051-1461-90	NJU7201U50
C305	168-4732-78	0.047uF K	C611	168-2232-55	0.022uF K	IFT100	005-5030-00	600BCS-10809
C306	168-4732-78	0.047uF K	C612	166-5601-50	56pF CH	IFT300	005-5030-00	600BCS-10809
C307	168-1032-55	0.01uF K	C613	163-1063-35	16V 10uF	IFT301	005-5031-00	600BCS-10876N
C308	163-1063-35	16V 10uF	C614	042-0398-53	16V 3.3uF TAN	IFT302	005-2037-00	SFELF10M7HKAO-BO
C309	168-1032-55	0.01uF K	C615	168-4722-55	4700pF K	IFT304	005-0750-00	IFT
C310	163-1063-35	16V 10uF	C616	168-2232-55	0.022uF K	IFT305	005-2504-01	CFWS450HT11
C311	168-1022-55	1000pF K	C617	166-5601-50	56pF CH	IFT306	005-0753-00	IFT
C312	168-4732-78	0.047uF K	C618	166-4701-50	47pF CH	L100	010-2159-00	RF COIL
C313	166-3301-50	33pF CH	C619	168-1032-55	0.01uF K	L101	010-2159-00	RF COIL
C314	166-2201-50	22pF CH	C620	168-4732-78	0.047uF K	L102	010-2159-00	RF COIL
C315	166-9097-50	9pF CH	C621	168-1032-55	0.01uF K	L103	010-6024-00	0.25uH
C316	166-6801-50	68pF CH	C622	168-2232-55	0.022uF K	L104	010-7021-00	0.16uH/25MHz
C318	166-1511-50	150pF CH	C623	042-0423-22	16V 4.7uF	L105	010-7020-00	0.06uH/25MHz
C319	168-4732-78	0.047uF K	C624	168-2232-55	0.022uF K	L106	010-4209-00	0.32uH
C320	166-1007-50	10pF CH	C625	168-2232-55	0.022uF K	L200	010-3105-62	1k ohm/100MHz
C321	168-4732-78	0.047uF K	C626	168-3332-78	0.033uF K	L201	010-3105-62	1k ohm/100MHz
C322	168-4732-78	0.047uF K	C627	168-1022-55	1000pF K	L202	010-2198-58	2.7uH
C323	168-4732-78	0.047uF K	C628	178-1052-78	1uF	L300	010-4218-00	27.7pF/27MHz
C324	168-1032-55	0.01uF K	C629	163-1063-35	16V 10uF	L301	010-2198-58	2.7uH
C325	168-1042-78	16V 0.1uF	C630	168-1032-55	0.01uF K	L500	010-3105-62	1k ohm/100MHz
C326	168-4732-78	0.047uF K	C631	042-0423-22	16V 4.7uF	L501	010-2198-52	3.3uH
C327	168-4732-78	0.047uF K	C632	168-1032-55	0.01uF K			

REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION
L502	010-4207-00	1uH	R203	119-3331-15	1/10W 33k ohm	R341	119-1841-15	1/10W 180k ohm
L503	010-4208-00	1.2uH	R204	119-1021-15	1/10W 1k ohm	R342	119-3931-15	1/10W 39k ohm
L504	010-3407-62	10uH J	R205	119-2221-15	1/10W 2.2k ohm	R343	119-1841-15	1/10W 180k ohm
L600	010-2052-00	2.2mH	R206	119-1051-15	1/10W 1M ohm	R344	119-2731-15	1/10W 27k ohm
L701	060-0198-00	NOISE FILTER	R207	119-6821-15	1/10W 6.8k ohm	R345	119-3331-15	1/10W 33k ohm
P100	076-0232-02	2P	R208	119-3331-15	1/10W 33k ohm	R346	119-2731-15	1/10W 27k ohm
P101	076-2012-08	8P	R209	119-4701-15	1/10W 47 ohm	R347	119-1531-15	1/10W 15k ohm
P102	076-2012-08	8P	R210	119-4701-15	1/10W 47 ohm	R348	119-2221-15	1/10W 2.2k ohm
P103	076-0232-03	3P	R211	119-1031-15	1/10W 10k ohm	R349	119-3331-15	1/10W 33k ohm
Q100	125-8020-00	RD16HHF1	R212	119-1031-15	1/10W 10k ohm	R350	119-5631-15	1/10W 56k ohm
Q101	125-8019-00	RD06HHF1	R213	119-3331-15	1/10W 33k ohm	R500	119-4721-15	1/10W 4.7k ohm
Q102	192-4391-00	2SC4391	R214	119-1021-15	1/10W 1k ohm	R501	119-1241-15	1/10W 120k ohm
Q103	192-2714-25	2SC2714 Y	R215	119-6821-15	1/10W 6.8k ohm	R502	119-3311-15	1/10W 330 ohm
Q104	192-2714-25	2SC2714 Y	R216	119-2231-15	1/10W 22k ohm	R503	119-1011-15	1/10W 100 ohm
Q105	190-1313-00	2SA1313 O,Y	R217	119-3321-15	1/10W 3.3k ohm	R504	119-3311-15	1/10W 330 ohm
Q106	125-2027-94	DTC123JUA	R218	119-2721-15	1/10W 2.7k ohm	R505	119-5631-15	1/10W 56k ohm
Q200	100-1869-25	2SA1869Y	R219	119-1021-15	1/10W 1k ohm	R506	119-2211-15	1/10W 220 ohm
Q201	192-1959-00	2SC1959	R220	119-1521-15	1/10W 1.5k ohm	R507	119-8221-15	1/10W 8.2k ohm
Q202	192-4116-00	2SC4116	R221	119-3931-15	1/10W 39k ohm	R508	119-5621-15	1/10W 5.6k ohm
Q203	190-1313-00	2SA1313 O,Y	R222	119-1231-15	1/10W 12k ohm	R509	119-2221-15	1/10W 2.2k ohm
Q204	192-1959-00	2SC1959	R223	119-1021-15	1/10W 1k ohm	R510	119-2231-15	1/10W 22k ohm
Q205	190-0817-00	2SA817	R224	119-1011-15	1/10W 100 ohm	R511	119-5621-15	1/10W 5.6k ohm
Q206	192-4116-00	2SC4116	R225	119-1021-15	1/10W 1k ohm	R512	119-1021-15	1/10W 1k ohm
Q207	192-4116-00	2SC4116	R226	119-1031-15	1/10W 10k ohm	R513	119-5631-15	1/10W 56k ohm
Q300	192-2404-50	2SC2404 C,D	R227	119-1531-15	1/10W 15k ohm	R514	119-1011-15	1/10W 100 ohm
Q301	192-4116-00	2SC4116	R228	119-1021-15	1/10W 1k ohm	R515	119-2721-15	1/10W 2.7k ohm
Q302	198-0302-50	2SK302 Y,GR	R229	119-2221-15	1/10W 2.2k ohm	R516	119-5621-15	1/10W 5.6k ohm
Q303	192-2480-00	2SC2480 T,S-TX	R230	119-3921-15	1/10W 3.9k ohm	R517	119-1021-15	1/10W 1k ohm
Q304	192-2404-50	2SC2404 C,D	R232	119-4711-15	1/10W 470 ohm	R518	119-1021-15	1/10W 1k ohm
Q305	192-2404-50	2SC2404 C,D	R300	119-3921-15	1/10W 3.9k ohm	R519	119-1021-15	1/10W 1k ohm
Q306	190-1313-00	2SA1313 O,Y	R301	119-1221-15	1/10W 1.2k ohm	R520	119-2211-15	1/10W 220 ohm
Q307	125-2027-94	DTC123JUA	R302	119-1221-15	1/10W 1.2k ohm	R521	119-1021-15	1/10W 1k ohm
Q308	192-4116-00	2SC4116	R303	119-2221-15	1/10W 2.2k ohm	R522	119-4721-15	1/10W 4.7k ohm
Q309	192-4116-50	2SC4116 Y,G	R304	119-2211-15	1/10W 220 ohm	R600	119-1031-15	1/10W 10k ohm
Q500	192-4116-00	2SC4116	R305	119-1011-15	1/10W 100 ohm	R601	119-1211-15	1/10W 120 ohm
Q501	192-2404-50	2SC2404 C,D	R306	119-2211-15	1/10W 220 ohm	R602	119-1231-15	1/10W 12k ohm
Q502	192-2404-50	2SC2404 C,D	R307	119-1221-15	1/10W 1.2k ohm	R603	119-6821-15	1/10W 6.8k ohm
Q503	192-2714-25	2SC2714 Y	R308	119-5621-15	1/10W 5.6k ohm	R604	119-6831-15	1/10W 68k ohm
Q504	192-4116-00	2SC4116	R309	119-5621-15	1/10W 5.6k ohm	R605	119-3301-15	1/10W 33 ohm
Q505	192-4116-00	2SC4116	R310	119-3321-15	1/10W 3.3k ohm	R606	119-1031-15	1/10W 10k ohm
Q700	100-1869-25	2SA1869Y	R311	119-1011-15	1/10W 100 ohm	R607	119-1031-15	1/10W 10k ohm
Q701	125-2027-94	DTC123JUA	R312	119-1021-15	1/10W 1k ohm	R608	119-3331-15	1/10W 33k ohm
Q702	192-4116-00	2SC4116	R313	119-1011-15	1/10W 100 ohm	R609	119-2221-15	1/10W 2.2k ohm
Q703	190-1313-00	2SA1313 O,Y	R314	119-3311-15	1/10W 330 ohm	R610	119-1841-15	1/10W 180k ohm
Q704	125-2027-94	DTC123JUA	R315	119-4721-15	1/10W 4.7k ohm	R611	119-3331-15	1/10W 33k ohm
R101	119-1041-15	1/10W 100k ohm	R316	119-2711-15	1/10W 270 ohm	R612	119-1041-15	1/10W 100k ohm
R102	119-4721-15	1/10W 4.7k ohm	R317	119-6831-15	1/10W 68k ohm	R613	119-1041-15	1/10W 100k ohm
R103	119-5621-15	1/10W 5.6k ohm	R318	119-1011-15	1/10W 100 ohm	R614	119-4731-15	1/10W 47k ohm
R104	119-1021-15	1/10W 1k ohm	R319	119-4721-15	1/10W 4.7k ohm	R700	119-1031-15	1/10W 10k ohm
R105	119-1821-15	1/10W 1.8k ohm	R320	119-2221-15	1/10W 2.2k ohm	R701	119-2221-15	1/10W 2.2k ohm
R106	119-3301-15	1/10W 33 ohm	R321	119-1031-15	1/10W 10k ohm	R702	119-2221-15	1/10W 2.2k ohm
R107	119-1501-15	1/10W 15 ohm	R322	119-2221-15	1/10W 2.2k ohm	R703	119-8221-15	1/10W 8.2k ohm
R108	119-3311-15	1/10W 330 ohm	R323	119-1011-15	1/10W 100 ohm	R704	119-1211-15	1/10W 120 ohm
R109	119-2221-15	1/10W 2.2k ohm	R324	119-1511-15	1/10W 150 ohm	R705	119-1831-15	1/10W 18k ohm
R110	119-1041-15	1/10W 100k ohm	R325	119-3301-15	1/10W 33 ohm	R706	119-4721-15	1/10W 4.7k ohm
R111	119-3341-15	1/10W 330k ohm	R326	119-1831-15	1/10W 18k ohm	T700	009-0621-06	CHOKE 1.4mH
R112	119-1831-15	1/10W 18k ohm	R327	119-4721-15	1/10W 4.7k ohm	TH300	002-0315-02	THERMISTOR
R113	119-4721-15	1/10W 4.7k ohm	R328	119-1021-15	1/10W 1k ohm	TM1	073-0731-01	TERMINAL
R114	119-3301-15	1/10W 33 ohm	R329	119-6821-15	1/10W 6.8k ohm	TM2	073-0731-01	TERMINAL
R115	119-2721-15	1/10W 2.7k ohm	R330	119-5631-15	1/10W 56k ohm	VR200	012-6009-52	1k ohm B VR
R116	119-1021-15	1/10W 1k ohm	R331	119-5631-15	1/10W 56k ohm	VR201	012-6004-55	4.7k ohm B VR
R117	119-3311-15	1/10W 330 ohm	R332	119-5631-15	1/10W 56k ohm	VR202	012-6004-55	4.7k ohm B VR
R118	119-3311-15	1/10W 330 ohm	R333	119-5631-15	1/10W 56k ohm	VR301	012-6009-59	47k ohm B VR
R119	119-6811-15	1/10W 680 ohm	R334	119-2241-15	1/10W 220k ohm	VR302	012-6009-59	47k ohm B VR
R120	119-1231-15	1/10W 12k ohm	R335	119-1241-15	1/10W 120k ohm	VR303	012-6009-58	33k ohm B VR
R121	119-1021-15	1/10W 1k ohm	R336	119-2231-15	1/10W 22k ohm	X500	061-1070-00	10.24MHz
R122	119-2211-15	1/10W 220 ohm	R337	119-2231-15	1/10W 22k ohm	PWB	039-1345-03	PWB(WITHOUT COMPONENTS)
R200	119-1521-15	1/10W 1.5k ohm	R338	119-3301-15	1/10W 33 ohm			
R201	119-3321-15	1/10W 3.3k ohm	R339	119-2721-15	1/10W 2.7k ohm			
R202	119-1031-15	1/10W 10k ohm	R340	119-3921-15	1/10W 3.9k ohm			

### Audio PWB(B2) section

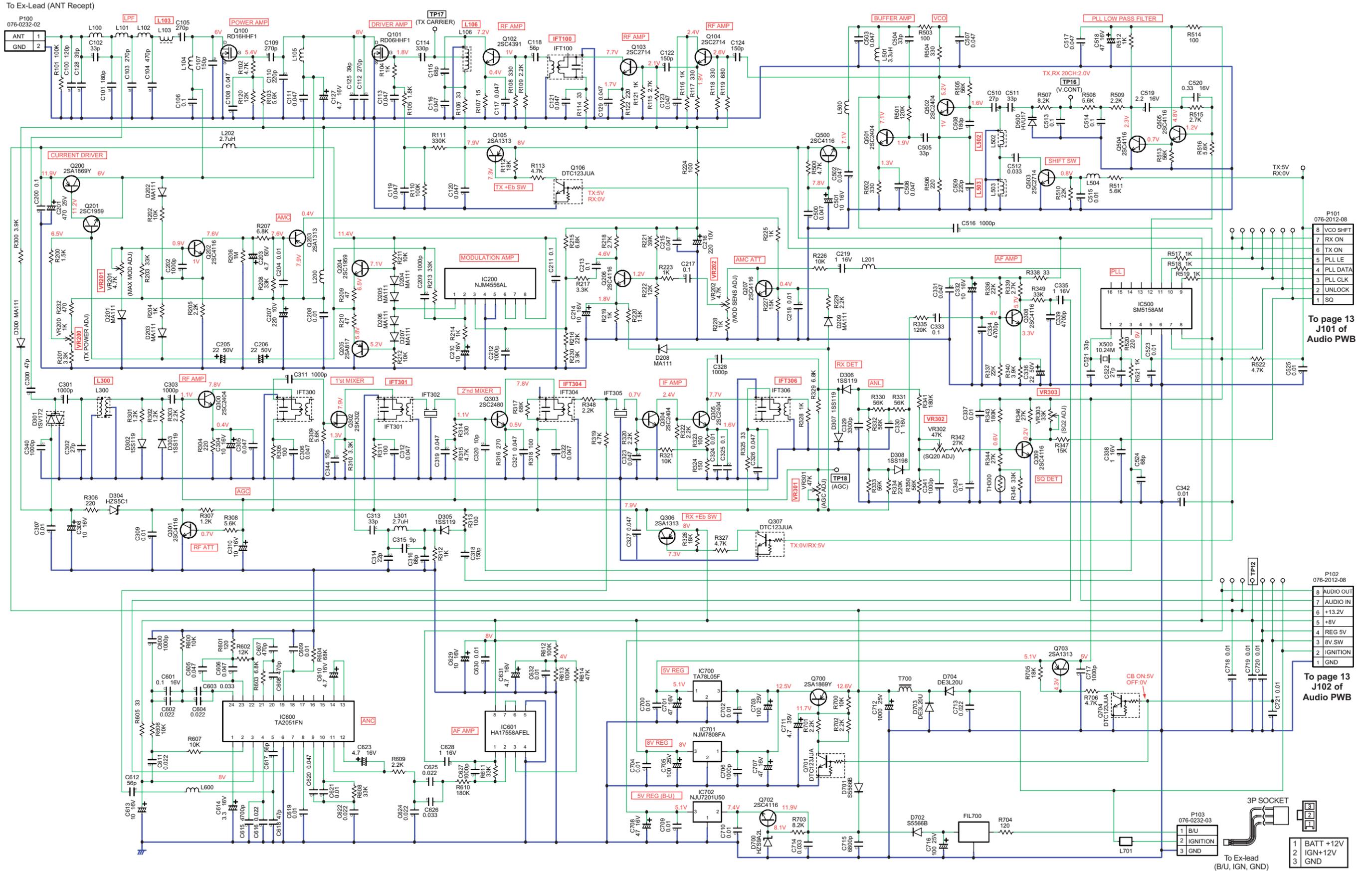
REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION
C100	042-0423-97	16V 10uF	C106	168-1032-55	0.01uF K	C112	168-3322-55	3300pF K
C101	178-1052-78	1uF	C107	168-1032-55	0.01uF K	C113	178-1052-78	1uF
C102	178-1052-78	1uF	C108	042-0423-97	16V 10uF	C114	042-0423-97	16V 10uF
C103	168-1032-55	0.01uF K	C109	168-1022-55	1000pF K	C115	168-1032-55	0.01uF K
C104	042-0423-97	16V 10uF	C110	042-0423-20	10V 10uF	C116	163-4763-35	16V 47uF
C105	042-0423-20	10V 10uF	C111	168-1032-55	0.01uF K	C117	168-1032-55	0.01uF K

REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION	REF No.	PART No.	DESCRIPTION
C118	168-3322-55	3300pF K	D108	001-0516-90	MA111	R137	119-4731-15	1/10W 47k ohm
C119	168-1032-55	0.01uF K	D109	001-0516-90	MA111	R138	119-1031-15	1/10W 10k ohm
C120	042-0423-97	16V 10uF	D110	001-0529-23	MA8043-M	R139	119-1231-15	1/10W 12k ohm
C121	178-1052-78	1uF	D111	001-0584-25	MA8091	R140	119-2221-15	1/10W 2.2k ohm
C122	168-2232-55	0.022uF K	D112	001-0584-25	MA8091	R141	119-1021-15	1/10W 1k ohm
C123	168-2222-55	2200pF K	D113	001-0584-25	MA8091	R142	119-2221-15	1/10W 2.2k ohm
C124	178-1052-78	1uF	IC101	051-7100-08	TC4W66F-TE12L	R143	119-1021-15	1/10W 1k ohm
C125	166-3911-50	390pF CH	IC102	051-3049-90	HA17558AFEL	R144	119-4731-15	1/10W 47k ohm
C126	042-0423-20	10V 10uF	IC103	051-3049-90	HA17558AFEL	R145	119-1031-15	1/10W 10k ohm
C127	168-1032-55	0.01uF K	IC104	051-5044-90	LC75392M-TLM-E	R146	114-2711-21	2W 270 ohm
C128	178-1052-78	1uF	IC105	051-3049-90	HA17558AFEL	R147	119-4721-15	1/10W 4.7k ohm
C129	178-1052-78	1uF	IC106	051-3049-90	HA17558AFEL	R148	119-4721-15	1/10W 4.7k ohm
C130	042-0423-97	16V 10uF	IC107	051-5403-09	S-80825CNMC-B8K	R149	119-1031-15	1/10W 10k ohm
C131	168-1032-55	0.01uF K	IC108	052-9203-01	MB89133APFM-G499	R150	119-1031-15	1/10W 10k ohm
C132	178-1052-78	1uF	J101	074-0880-08	8P OUTLET SOCKET	R151	119-4731-15	1/10W 47k ohm
C133	168-1032-55	0.01uF K	J102	074-0880-08	8P OUTLET SOCKET	R152	119-4731-15	1/10W 47k ohm
C134	168-1032-55	0.01uF K	L101	010-3105-62	1k ohm/100MHZ	R153	119-4721-15	1/10W 4.7k ohm
C135	168-1032-55	0.01uF K	L102	010-3105-62	1k ohm/100MHZ	R154	119-4721-15	1/10W 4.7k ohm
C136	168-1032-55	0.01uF K	L103	010-3105-62	1k ohm/100MHZ	R155	119-1031-15	1/10W 10k ohm
C137	168-1032-55	0.01uF K	L104	010-3105-62	1k ohm/100MHZ	R156	119-1031-15	1/10W 10k ohm
C138	168-1032-55	0.01uF K	L105	010-3105-62	1k ohm/100MHZ	R157	119-1831-15	1/10W 18k ohm
C139	168-1032-55	0.01uF K	L106	010-3105-62	1k ohm/100MHZ	R158	119-3321-15	1/10W 3.3k ohm
C140	168-1032-55	0.01uF K	L107	010-3105-62	1k ohm/100MHZ	R159	119-1031-15	1/10W 10k ohm
C141	168-1022-55	1000pF K	L108	010-3105-62	1k ohm/100MHZ	R160	119-1031-15	1/10W 10k ohm
C142	168-1032-55	0.01uF K	L109	010-3105-62	1k ohm/100MHZ	R161	119-1031-15	1/10W 10k ohm
C143	168-1022-55	1000pF K	L110	010-3105-62	1k ohm/100MHZ	R162	119-1031-15	1/10W 10k ohm
C144	168-1032-55	0.01uF K	P101	076-0232-14	14P	R163	119-1031-15	1/10W 10k ohm
C145	042-0423-20	10V 10uF	Q101	125-2027-94	DTC123JUA	R164	119-1031-15	1/10W 10k ohm
C146	168-1032-55	0.01uF K	Q102	190-1313-00	2SA1313 O,Y	R165	119-1031-15	1/10W 10k ohm
C147	168-1042-78	16V 0.1uF	Q103	125-2017-97	RN1427	R166	119-4721-15	1/10W 4.7k ohm
C148	168-1042-78	16V 0.1uF	Q104	125-2017-97	RN1427	R167	119-4721-15	1/10W 4.7k ohm
C149	168-1522-55	1500pF K	Q105	125-2017-97	RN1427	R168	119-1041-15	1/10W 100k ohm
C150	168-4732-78	0.047uF K	Q106	192-2712-00	2SC2712	R169	119-1031-15	1/10W 10k ohm
C151	042-0423-97	16V 10uF	Q107	192-2712-00	2SC2712	R170	119-3331-15	1/10W 33k ohm
C152	168-1032-55	0.01uF K	Q108	192-2712-00	2SC2712	R171	119-4721-15	1/10W 4.7k ohm
C153	166-6801-50	68pF CH	Q109	192-2712-00	2SC2712	R172	119-4721-15	1/10W 4.7k ohm
C154	166-6801-50	68pF CH	Q110	192-2712-00	2SC2712	R173	119-8231-15	1/10W 82k ohm
C155	168-1042-78	16V 0.1uF	Q111	192-3326-00	2SC3326	R174	119-1041-15	1/10W 100k ohm
C156	166-2211-50	220pF CH	R101	119-4731-15	1/10W 47k ohm	R175	119-1041-15	1/10W 100k ohm
C157	166-2211-50	220pF CH	R102	119-4731-15	1/10W 47k ohm	R176	119-5631-15	1/10W 56k ohm
C158	166-2211-50	220pF CH	R103	119-4731-15	1/10W 47k ohm	R177	119-1011-15	1/10W 100 ohm
C159	166-2211-50	220pF CH	R104	119-1031-15	1/10W 10k ohm	R178	119-5621-15	1/10W 5.6k ohm
C160	166-2211-50	220pF CH	R105	119-1031-15	1/10W 10k ohm	R179	119-2231-15	1/10W 22k ohm
C161	166-2211-50	220pF CH	R106	119-2231-15	1/10W 22k ohm	R180	119-1021-15	1/10W 1k ohm
C162	166-2211-50	220pF CH	R107	119-2231-15	1/10W 22k ohm	R181	119-1031-15	1/10W 10k ohm
C163	166-2211-50	220pF CH	R108	119-4731-15	1/10W 47k ohm	R182	119-1841-15	1/10W 180k ohm
C164	166-2211-50	220pF CH	R109	119-1031-15	1/10W 10k ohm	R183	119-1031-15	1/10W 10k ohm
C165	166-2211-50	220pF CH	R110	119-1031-15	1/10W 10k ohm	R184	119-1031-15	1/10W 10k ohm
C166	168-2222-55	2200pF K	R111	119-1031-15	1/10W 10k ohm	R185	119-4731-15	1/10W 47k ohm
C167	168-2222-55	2200pF K	R112	119-8231-15	1/10W 82k ohm	R186	119-4731-15	1/10W 47k ohm
C168	178-1052-78	1uF	R113	119-8231-15	1/10W 82k ohm	R187	119-1021-15	1/10W 1k ohm
C169	168-1022-55	1000pF K	R114	119-8231-15	1/10W 82k ohm	R188	119-1021-15	1/10W 1k ohm
C170	168-1532-55	0.015uF K	R115	119-8231-15	1/10W 82k ohm	R189	119-1031-15	1/10W 10k ohm
C171	168-1032-55	0.01uF K	R116	119-8231-15	1/10W 82k ohm	R190	119-1031-15	1/10W 10k ohm
C172	168-1032-55	0.01uF K	R117	119-8231-15	1/10W 82k ohm	R191	119-2221-15	1/10W 2.2k ohm
C173	168-1032-55	0.01uF K	R118	119-8231-15	1/10W 82k ohm	R192	119-4721-15	1/10W 4.7k ohm
C174	042-0423-20	10V 10uF	R119	119-8231-15	1/10W 82k ohm	R194	119-2231-15	1/10W 22k ohm
C175	168-1032-55	0.01uF K	R120	119-1031-15	1/10W 10k ohm	R195	119-2231-15	1/10W 22k ohm
C176	042-0423-97	16V 10uF	R121	119-1031-15	1/10W 10k ohm	R196	119-1021-15	1/10W 1k ohm
C177	168-1032-55	0.01uF K	R122	119-1031-15	1/10W 10k ohm	R197	119-4701-15	1/10W 47 ohm
C179	178-1052-78	1uF	R123	119-8231-15	1/10W 82k ohm	R198	119-4701-15	1/10W 47 ohm
C180	168-1032-55	0.01uF K	R124	119-8231-15	1/10W 82k ohm	R199	119-4711-15	1/10W 470 ohm
C181	168-1032-55	0.01uF K	R125	119-8231-15	1/10W 82k ohm	R200	119-4701-15	1/10W 47 ohm
C182	168-1522-55	1500pF K	R126	119-8231-15	1/10W 82k ohm	R201	119-4701-15	1/10W 47 ohm
C183	168-1032-55	0.01uF K	R127	119-8231-15	1/10W 82k ohm	R202	119-4701-15	1/10W 47 ohm
C184	042-0423-20	10V 10uF	R128	119-8231-15	1/10W 82k ohm	R203	119-4721-15	1/10W 4.7k ohm
C185	178-1052-78	1uF	R129	119-8231-15	1/10W 82k ohm	R204	119-1011-15	1/10W 100 ohm
C187	042-0423-20	10V 10uF	R130	119-8231-15	1/10W 82k ohm	R205	119-1011-15	1/10W 100 ohm
C188	166-3311-50	330pF CH	R131	119-2221-15	1/10W 2.2k ohm	R206	119-1011-15	1/10W 100 ohm
C190	178-1052-78	1uF	R132	119-1031-15	1/10W 10k ohm	R207	119-4721-15	1/10W 4.7k ohm
D101	001-0516-90	MA111	R133	119-1031-15	1/10W 10k ohm	R210	119-4731-15	1/10W 47k ohm
D102	001-0529-30	MA8051-H	R134	119-6821-15	1/10W 6.8k ohm	R211	114-2711-21	2W 270 ohm
D103	001-0516-90	MA111	R135	119-6831-15	1/10W 68k ohm	TM1	073-0731-01	TERMNAL
D104	001-0529-30	MA8051-H	R136	119-4731-15	1/10W 47k ohm	TM2	073-0731-01	TERMNAL
D105	001-0516-90	MA111				X101	060-1041-00	4.194MHz
D106	001-0367-91	1SS226				PWB	039-1344-01	PWB(WITHOUT
D107	001-0516-90	MA111						

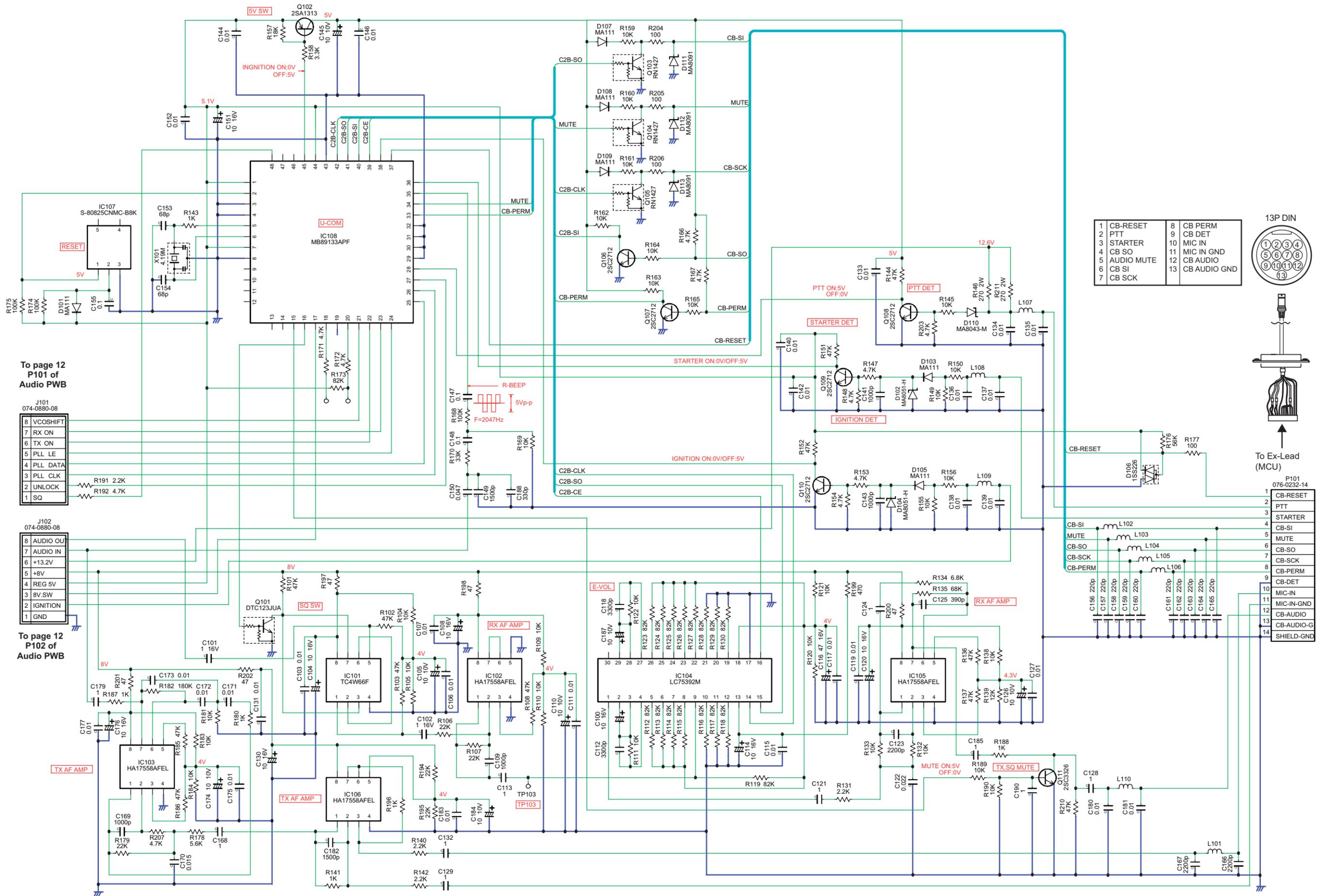


# CIRCUIT DIAGRAM

## RF PWB(B1) section



Audio PWB(B2) section



To page 12  
P101 of  
Audio PWB

8	VCOSHIFT
7	RX ON
6	TX ON
5	PLL LE
4	PLL DATA
3	PLL CLK
2	UNLOCK
1	SQ

8	AUDIO OU
7	AUDIO IN
6	+13.2V
5	+8V
4	REG 5V
3	8V.SW
2	IGNITION
1	GND

To page 12  
P102 of  
Audio PWB

1	CB-RESET	8	CB PERM
2	PTT	9	CB DET
3	STARTER	10	MIC IN
4	CB SO	11	MIC IN GND
5	AUDIO MUTE	12	CB AUDIO
6	CB SI	13	CB AUDIO GND
7	CB SCK		

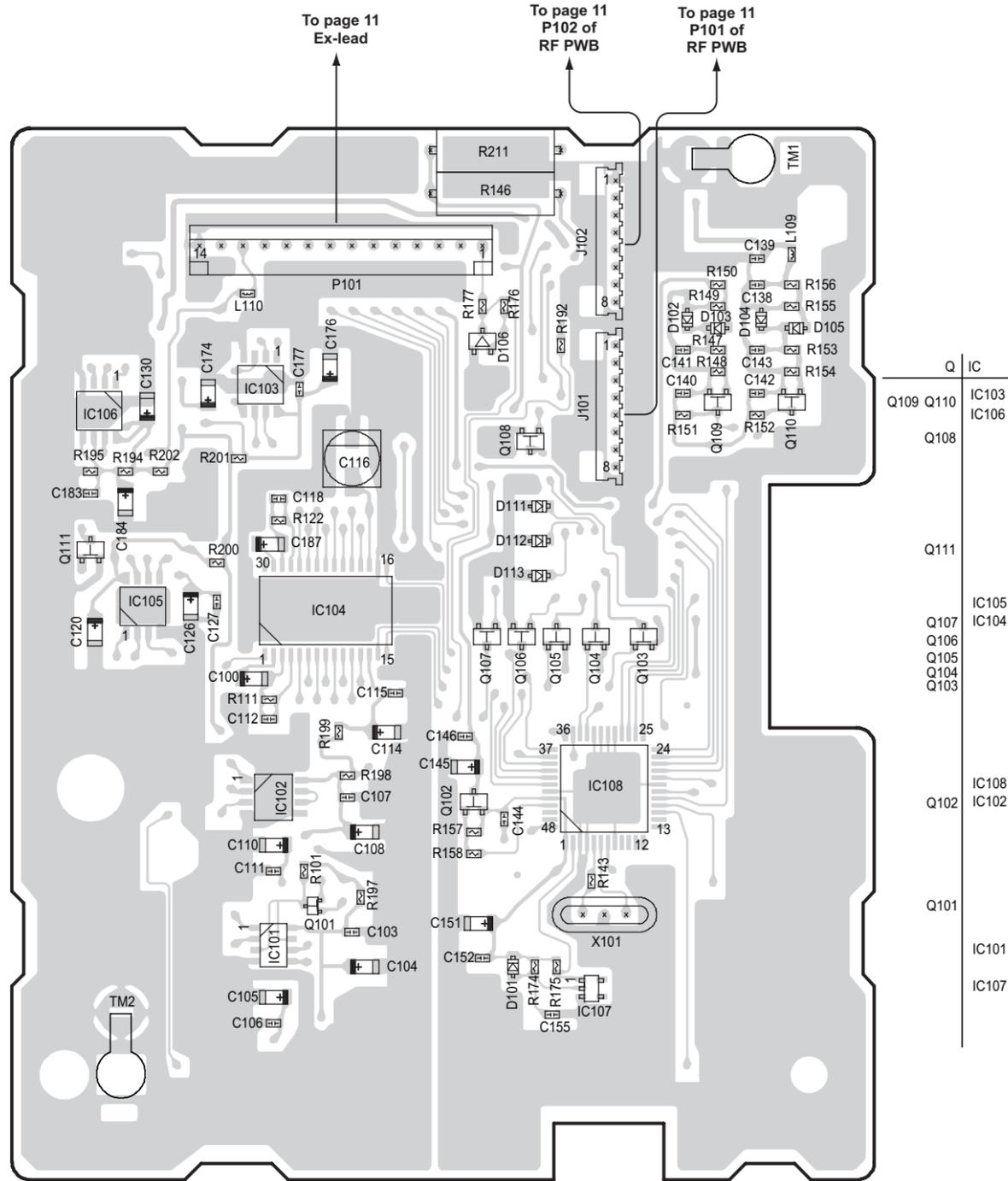


To Ex-Lead  
(MCU)

1	CB-RESET
2	PTT
3	STARTER
4	CB-SI
5	MUTE
6	CB-SO
7	CB-SCK
8	CB-PERM
9	CB-DET
10	MIC-IN
11	MIC-IN-GND
12	CB-AUDIO
13	CB-AUDIO-G
14	SHIELD-GND

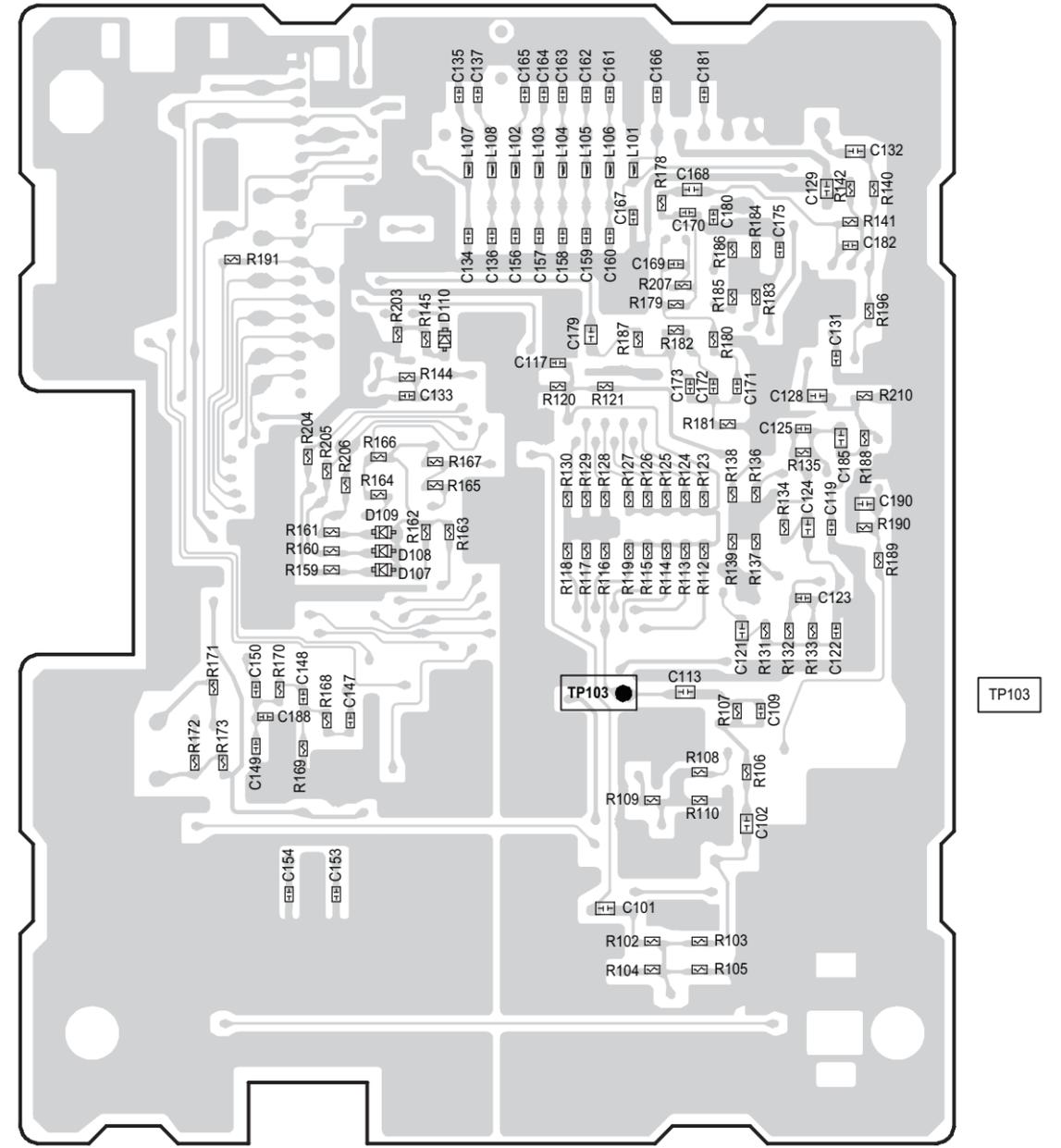
# PRINTED WIRING BOARD

Audio PWB(B2) section



COMPONENT SIDE

Caution:  
COMPONENT SIDE: Parts on the component side seen from the component side are indicated.



SOLDER SIDE

Caution:  
SOLDER SIDE: Parts on the solder side seen from the solder side are indicated.