



RadioShack®

ServiceManual

21-1576

**TRC-447
40-CHANNEL MOBILE CB
WITH WX ALERT**

Catalog Number: 21-1576

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SPECIFICATIONS

GENERAL

Channels:	40 (CB Transceiver) 7 (Digital Weather Alert Radio)
Frequency range:	26.965 MHz to 27.405 MHz (CB) 162.400 MHz to 162.550 MHz (WX)
Frequency control:	PLL controlled synthesizer
Microphone:	Electret condenser type microphone with channel up/down switch
Antenna impedance:	50-ohm
Controls:	Volume control with Power on/off Switch Squelch control for CB SWR Cal Control for CB RF gain control for CB Mic Gain Control for CB and PA
Switches:	CH9-NOR-CH19 Lever Switch for CB S/RF-SWR-CAL Lever Switch for CB CB-WX-PA Lever Switch NB-OFF-MON Lever Switch DUAL-OFF Lever Switch for CB Channel Rotary Switch for CB and WX
Indicators:	Channel number (LED: Green color) TX/RX (LED:TX-Red/RX-Green Color) WX/ALERT (LED:Red Color)
Antenna connector:	M Type (SO 239)
Jacks:	Mic 6 pin Screw Type EXT. SP 3.5 dia. PA. SP 3.5 dia.
Dimensions (HWD):	55mm × 185 mm × 225 mm
Weight:	1.4 kg
Power supply:	12 V DC rated (13.8 V DC)
Operating temperature range:	-30 °C to +50 °C (FCC Stability)
Storage temperature range:	-30 °C to +60 °C (Without damage)
Accessories:	Microphone Microphone hanger with screws Mounting bracket with screws DC Power Cord with Fuse Owner's manual

Measuring Conditions

Power supply voltage:	13.8 V DC
Temperature and humidity:	25 ±5 °C, 50 to 70%
Output load for transmitter:	50 ohm Resistive
Input signal source:	50 ohm SSG
Test input signal:	1 kHz, 30% Modulation (CB) 1 kHz, ±3 kHz Deviation (WX) FSK, ±4.5 kHz Deviation (Digital WX Alert)
Output Load for Receiver:	8 ohm Resistive
Reference Audio Output Power:	0.5 W
Measuring Channel:	CH 20 (CB) CH 5 (WX)
Each Function Knob Condition.	
Volume:	Fully clockwise (FCW)
Squelch:	Unsquelled
RF gain:	Fully clockwise (FCW)
Mic Gain:	Fully clockwise (FCW)
CH9-NOR-CH19:	NOR
NB-OFF-MON:	OFF
DUAL-OFF:	OFF

* FCC type acceptance specification for PART 15 and 95.

* Frequency tolerance and specification: ±0.005% from -30 °C to +50 °C

CB TRANSMITTER PORTION

Item		Unit	Nominal	Limit
Frequency tolerance	25 °C 13.8 V	Hz	±200	±1300
RF Power output		W	–	4
AMC range	50% to 100% modulation	dB	45	35
Modulation frequency response	Lower frequency 450 Hz	dB	–3	–10
	Upper frequency 2500 Hz	dB	–3	–10
Microphone sensitivity	1 kHz, 50% Mod.	mV	4	10
Modulation distortion	1 kHz, 80% Mod.	%	3	8
Battery drain	at No modulation	mA	900	1300
	at 80% modulation	mA	1300	1900
RF Power output at 12 V		W	2.7	2.2
Modulation attack time		mSec	100	300
Modulation release time		mSec	800	500

CB RECEIVER PORTION

Maximum sensitivity		μV	0.5	1
Sensitivity for 10 dB S/N		μV	0.5	1
AGC Figure of merit	50 mV for 10 dB change in audio output	dB	90	75
Threshold squelch sensitivity		μV	0.5	1
Tight squelch sensitivity		μV	1000	250 ~ 4000
Adjacent channel selectivity at ±10 kHz		dB	50	40
Spurious rejection ratio		dB	45	30
Image rejection ratio (–910 kHz)		dB	65	55
IF rejection ratio	10.695 MHz	dB	60	50
	455 kHz	dB	90	60
Audio output power	Maximum 8-ohm	W	5.5	4.0
	10% Distortion 8-ohm	W	4.0	3.5
Audio frequency response	Lower frequency 450 Hz	dB	–3	–10
	Upper frequency 2500 Hz	dB	–3	–10
THD at 500 mW audio output	1 mV 30% input	%	3	5
Signal to noise ratio at 1mV		dB	40	35
Oscillator on voltage		V	5	11
Battery drain	at No signal	mA	300	350
	at Maximum AF output	mA	1000	1500
RF gain control range at 1 μV reference		dB	30	20
S-meter sensitivity at S-9		μV	100	50 ~ 200

WEATHER RADIO SECTION

Sensitivity at 2.0 μV Input		dB SINAD	27	15
THD at 500 mW audio output				
Input 1 mV ±3 kHz deviation		%	3	7
Signal to noise ratio at 1 mV		dB	45	35
Audio output power	Maximum 8-ohm	W	5.5	4
	10% Distortion 8-ohm	W	4	3.5
Digital weather alert sensitivity				
Input SAME data (FSK) ±4.5 kHz dev.		μV	0.5	1.0

CHANNEL FREQUENCY OF PLL SYNTHESIZER

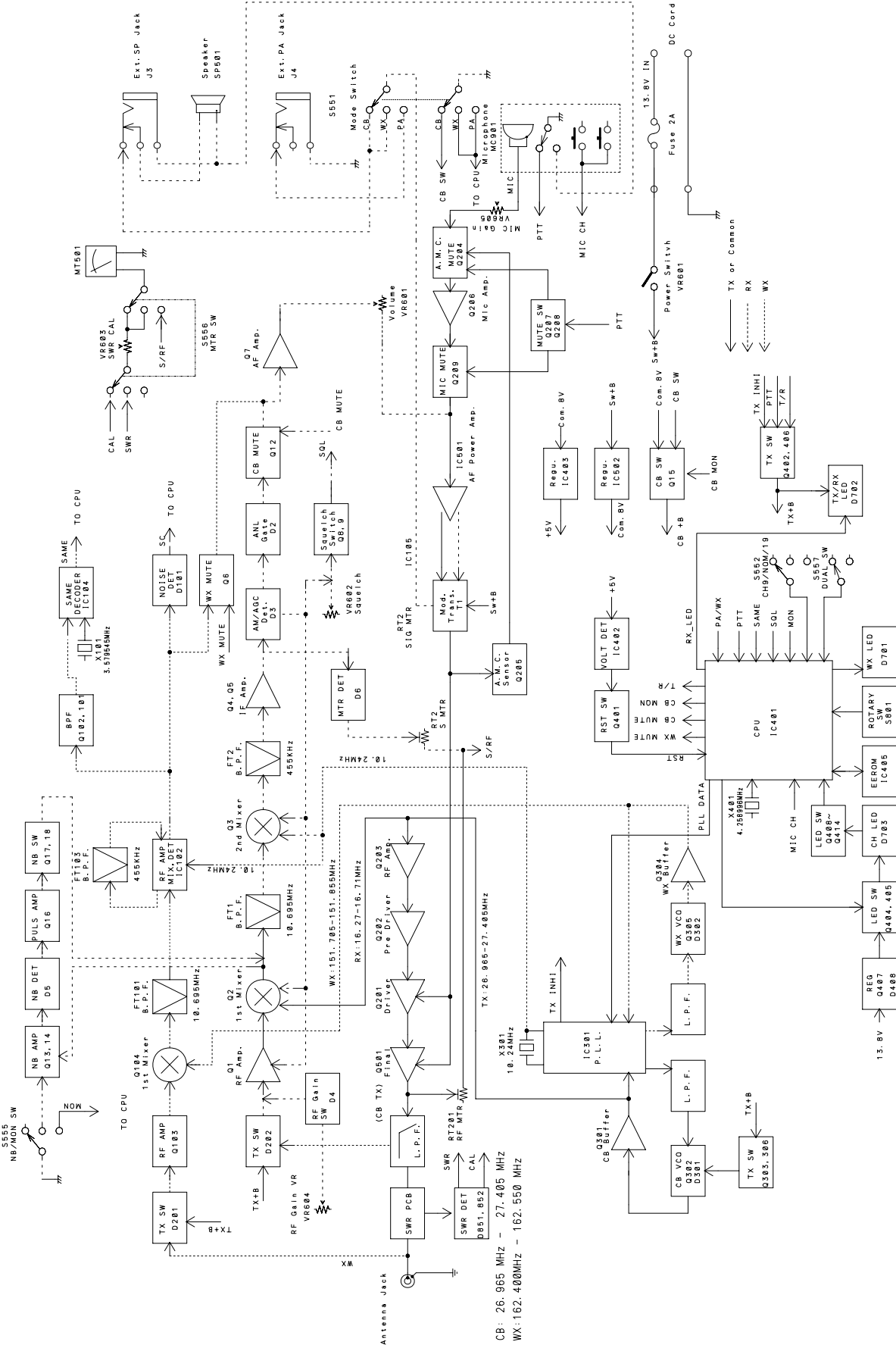
CB BAND

CH	Antenna Frequency (MHz)	TX VCO Frequency (MHz)	RX VCO Frequency (MHz)
1	26.965	26.965	16.270
2	26.975	26.975	16.280
3	26.985	26.985	16.290
4	27.005	27.005	16.310
5	27.015	27.015	16.320
6	27.025	27.025	16.330
7	27.035	27.035	16.340
8	27.055	27.055	16.360
9	27.065	27.065	16.370
10	27.075	27.075	16.380
11	27.085	27.085	16.390
12	27.105	27.105	16.410
13	27.115	27.115	16.420
14	27.125	27.125	16.430
15	27.135	27.135	16.440
16	27.155	27.155	16.460
17	27.165	27.165	16.470
18	27.175	27.175	16.480
19	27.185	27.185	16.490
20	27.205	27.205	16.510
21	27.215	27.215	16.520
22	27.225	27.225	16.530
23	27.255	27.255	16.560
24	27.235	27.235	16.540
25	27.245	27.245	16.550
26	27.265	27.265	16.570
27	27.275	27.275	16.580
28	27.285	27.285	16.590
29	27.295	27.295	16.600
30	27.305	27.305	16.610
31	27.315	27.315	16.620
32	27.325	27.325	16.630
33	27.335	27.335	16.640
34	27.345	27.345	16.650
35	27.355	27.355	16.660
36	27.365	27.365	16.670
37	27.375	27.375	16.680
38	27.385	27.385	16.690
39	27.395	27.395	16.700
40	27.405	27.405	16.710

WX/ALERT BAND

CH	Antenna Frequency (MHz)	VCO Frequency (MHz)
1	162.400	151.705
2	162.425	151.730
3	162.450	151.755
4	162.475	151.780
5	162.500	151.805
6	162.525	151.830
7	162.550	151.855

BLOCK DIAGRAM

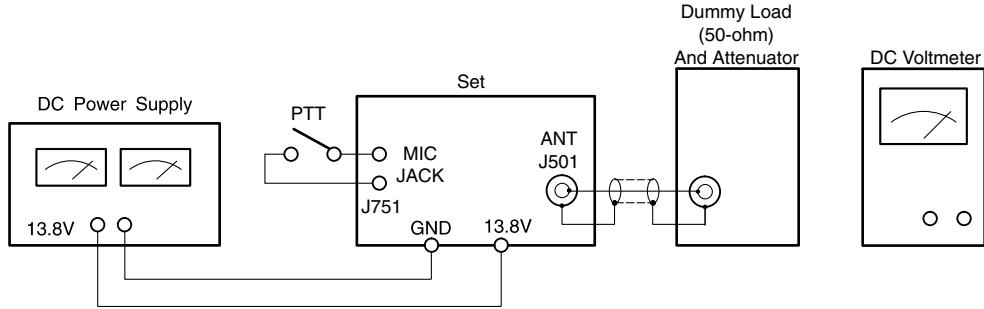


ALIGNMENT AND ADJUSTMENT

ALIGNMENT OF PLL

Test Equipment Required and Connections

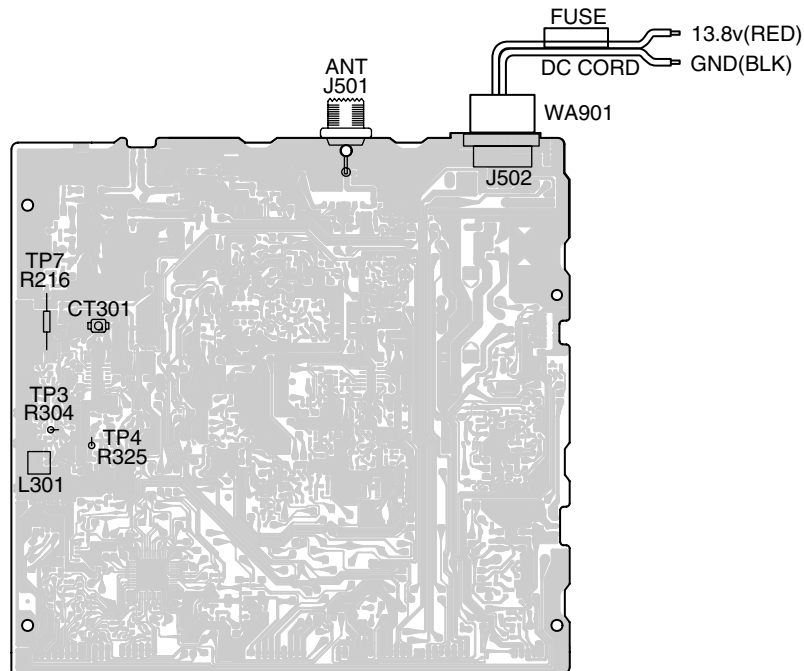
- DC power supply: 13.8 V
- DC voltmeter
- Dummy load (50-ohm)



Alignment Procedure

Step	Preset to	Adjustment	Remarks
1	TX 40 CH	L301	Adjust L301 to obtain 3.8 ± 0.1 V (DC) at TP3 (R304).
2	TX/RX 1 ~ 40 CH	—	Check if the DC Voltage on all channels is kept within 1.5 V to 3.9 V at TP3.
3	RX 40 CH	CT301	Adjust CT 301 to obtain $16.71 \text{ MHz} \pm 50 \text{ Hz}$ at TP7 (R216).
4	WX 1 ~ 7 CH	—	Check if the DC Voltage on all channels is kept within 1.0 V to 4.0 V at TP4.

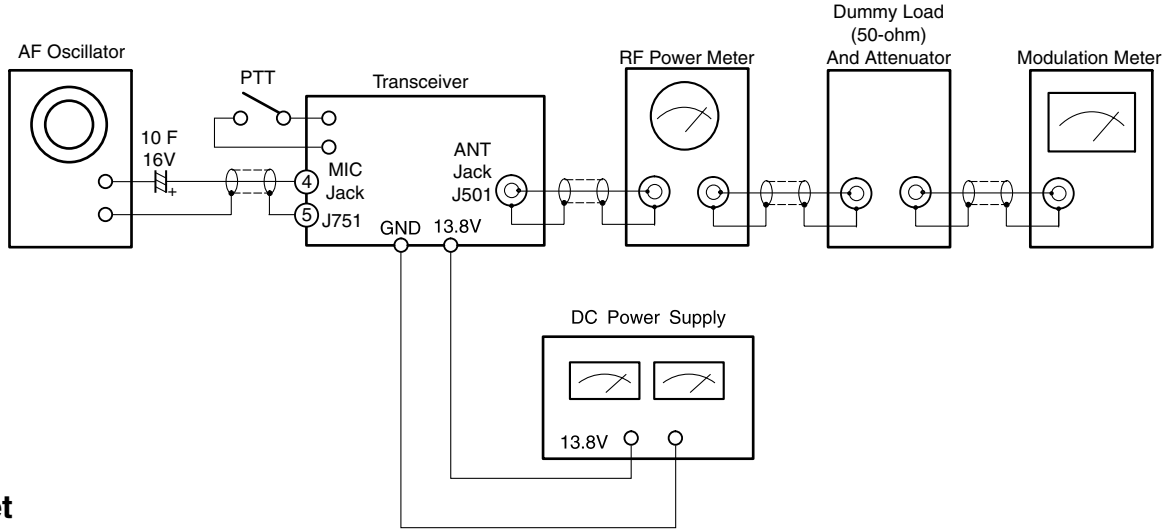
Alignment Point Locations (Main PCB)



ALIGNMENT OF TRANSMITTER SECTION

Test Equipment Required and Connections

- DC power supply: 13.8 V
- Modulation meter
- AF oscillator
- RF power meter
- Dummy load (50-ohm) & attenuator



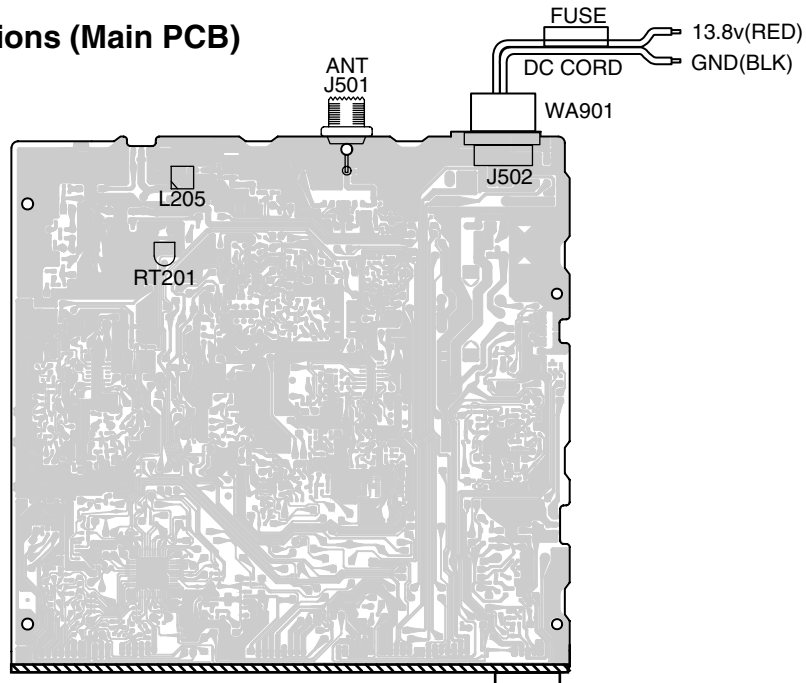
Preset

- ALERT/WX/CB position: CB

Alignment Procedure

Step	Preset to	Adjustment	Remarks
1	No modulation 19 CH	L205	Adjust L205 by turning the core clockwise to obtain 3.8 W reading on the RF power meter.
2	No modulation	—	Confirm frequencies of all channels are within specification.
3	No modulation	RT201	Adjust RT201 to position the indicator in the meter MT501 just on "SIG9".

Alignment Point Locations (Main PCB)

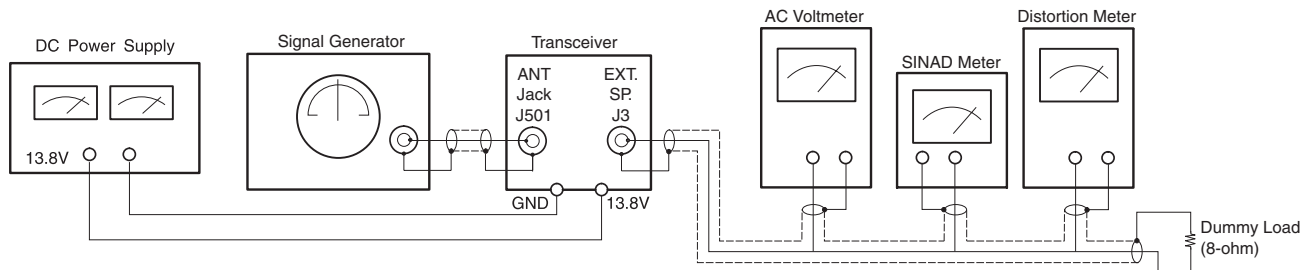


Microphone jack J751

ALIGNMENT OF RECEIVER SECTION

Test Equipment Required and Connections

- DC power supply: 13.8 V
- AC voltmeter
- Dummy load (8-ohm, 5 W resistive)
- Signal generator (SG) (27.205 MHz, 1 kHz, 30% AM modulation, output impedance 50-ohm): CB
(162.45 MHz, 1 kHz, ± 3 kHz Dev. FM modulation, output impedance 50-ohm): WX
- SINAD Meter
- Distortion meter



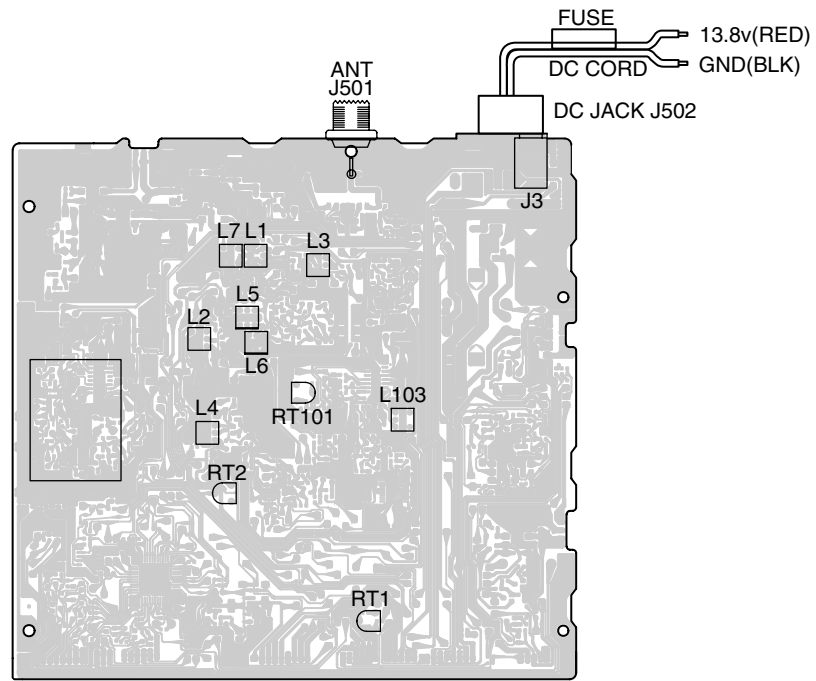
Preset

- ALERT/WX/CB: CB

Alignment Procedure

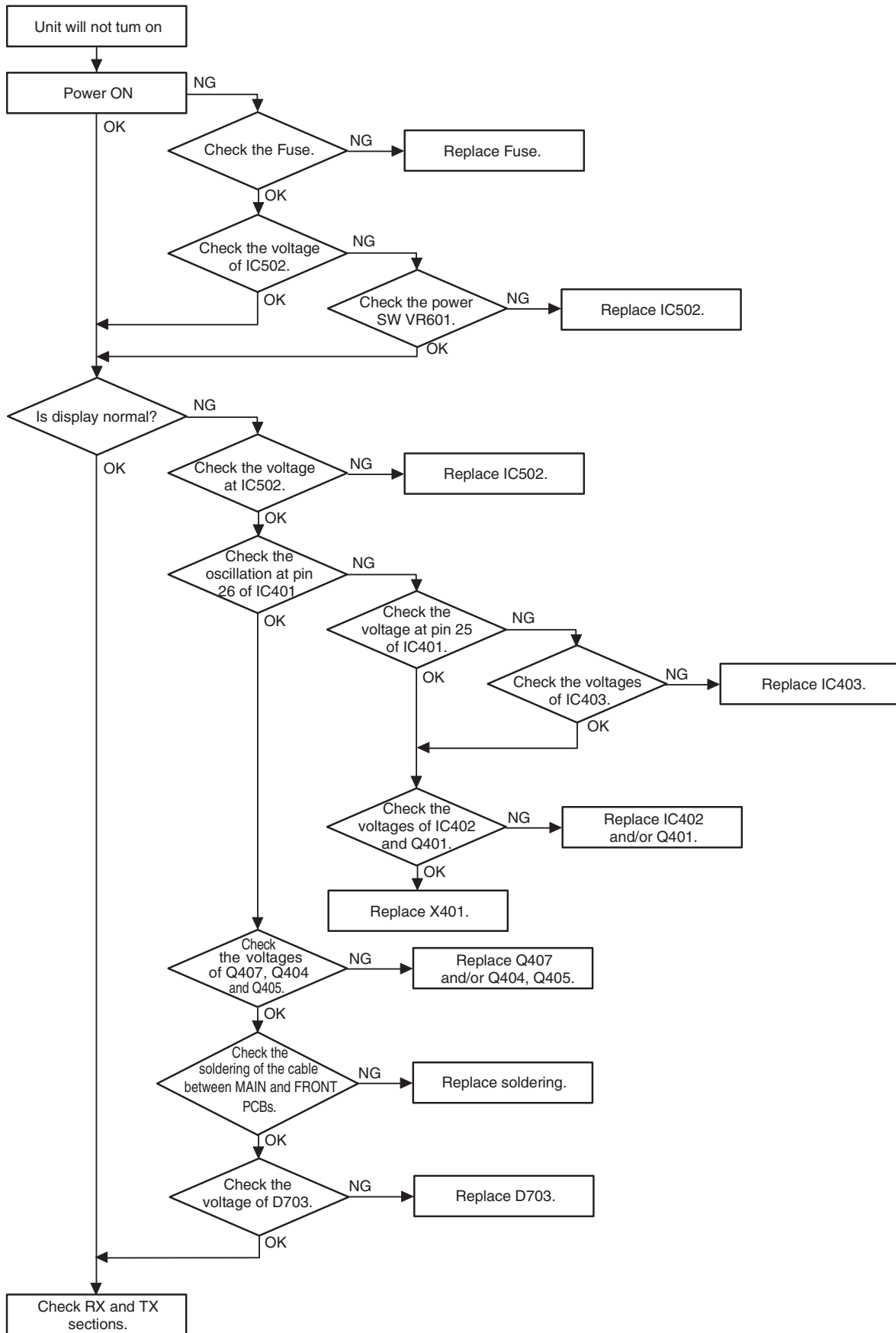
Step	Preset to	Adjustment	Remarks
1	Vol.: Max. SQ.: Min. RX: 20 CH	L3, L1, L7, L5 L6, L2	Connect the SG to the antenna jack (J501) and the AC voltmeter across the dummy load (8-ohm) to the external speaker jack (J3). Adjust coil (L1 ~ L7) to obtain the maximum reading on the AC voltmeter with keeping the level of the SG.
2	Vol.: Standard SQ.: Min. RX: 20 CH	L4	Set the output level of SG to 1 mV (-47 dBm). Adjust coil L4 to obtain minimum Reading on the Distortion Meter.
3	Vol.: Standard 20 CH SQ.: Max.	RT1	Set the output level of SG to 1 mV (-47 dBm). Adjust RT1 so SQ just opens.
4	Vol.: Standard SQ.: Min. RX: 20 CH	RT2	Set the output level of SG to 100 μ V (-67 dBm). Adjust RT2 to position the indicator in the meter MT501 just on "SIG9".
5	WX: 3 CH	L103	Set the output level of SG to 100 μ V (-67 dBm) No modulation. Adjust coil to obtain the maximum reading on the AC voltmeter.
6	WX: 3 CH	RT101	Set the output level of SG to SINAD 15 dB. Adjust RT101 so SQ just opens.

Alignment Point Locations (Main PCB)

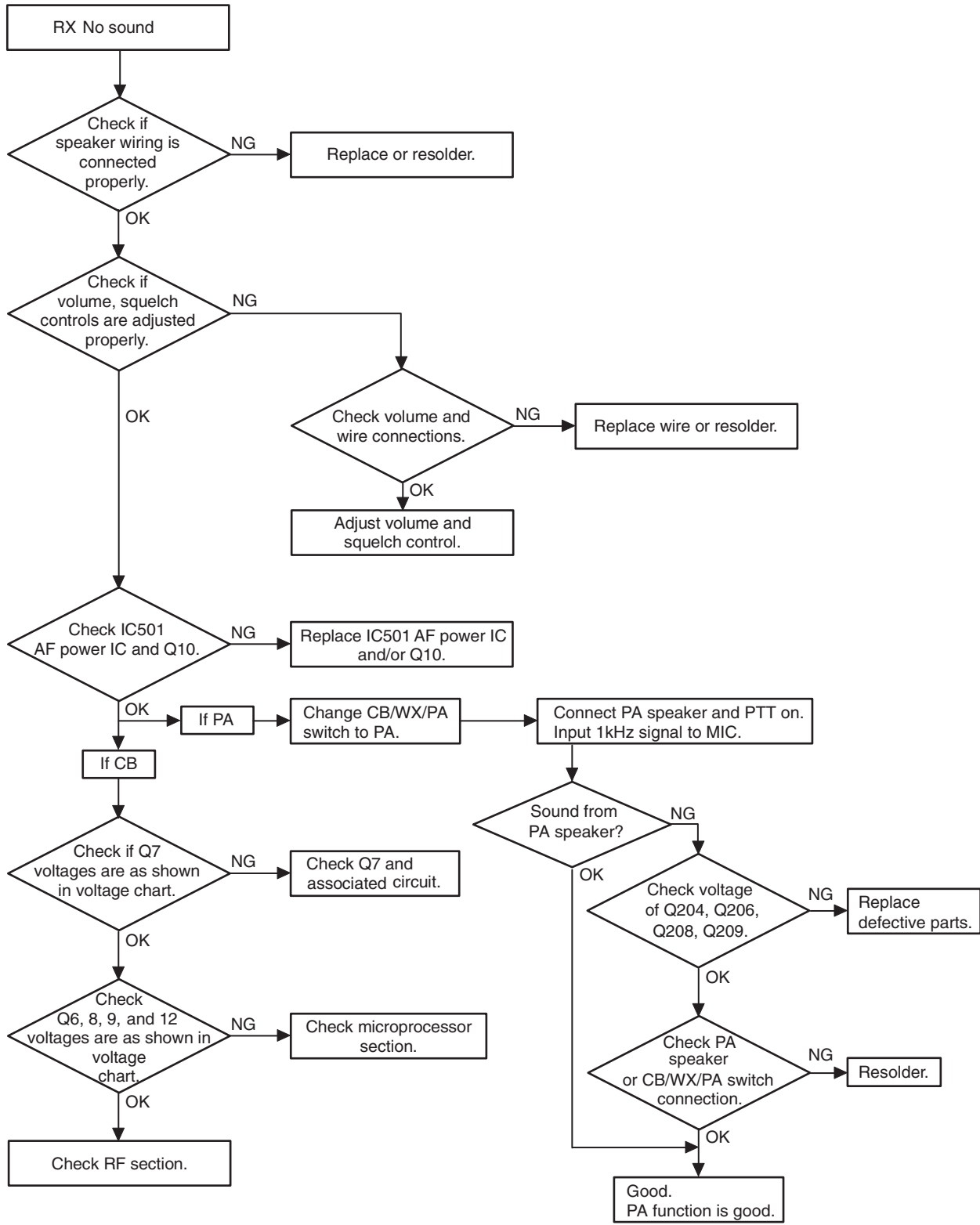


TROUBLESHOOTING

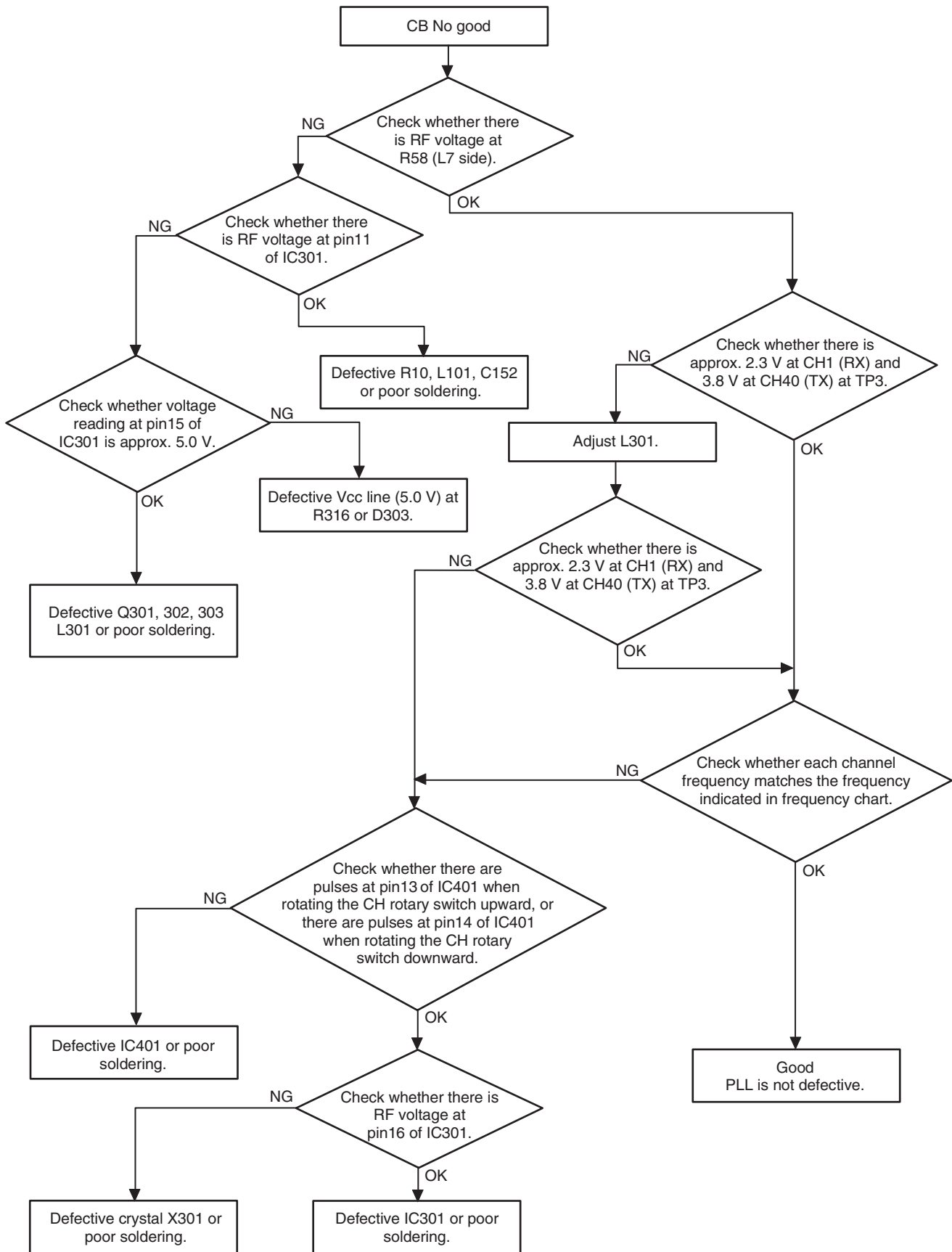
SYSTEM CONTROL SECTION CLOCK



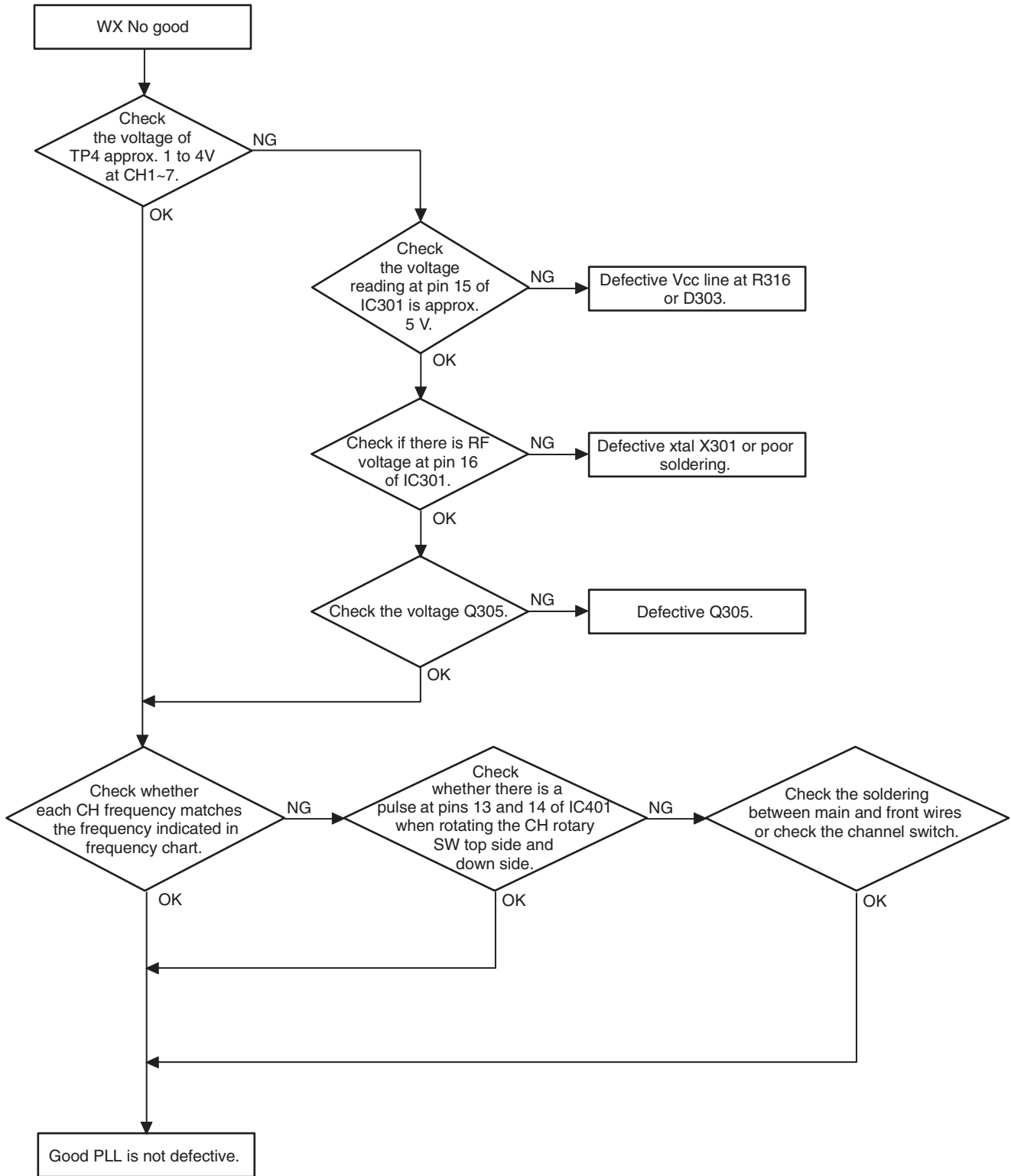
AUDIO SECTION



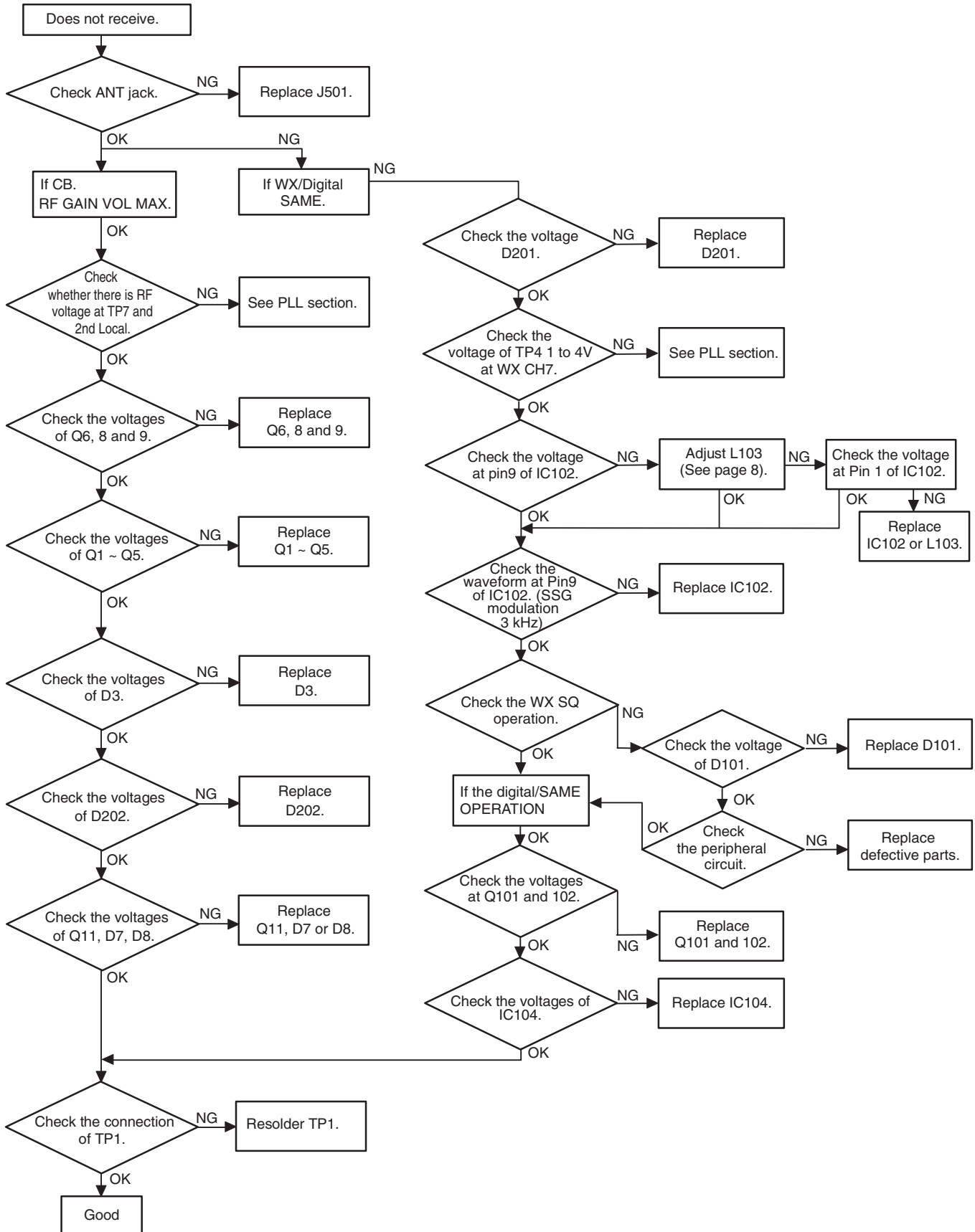
PLL CIRCUIT



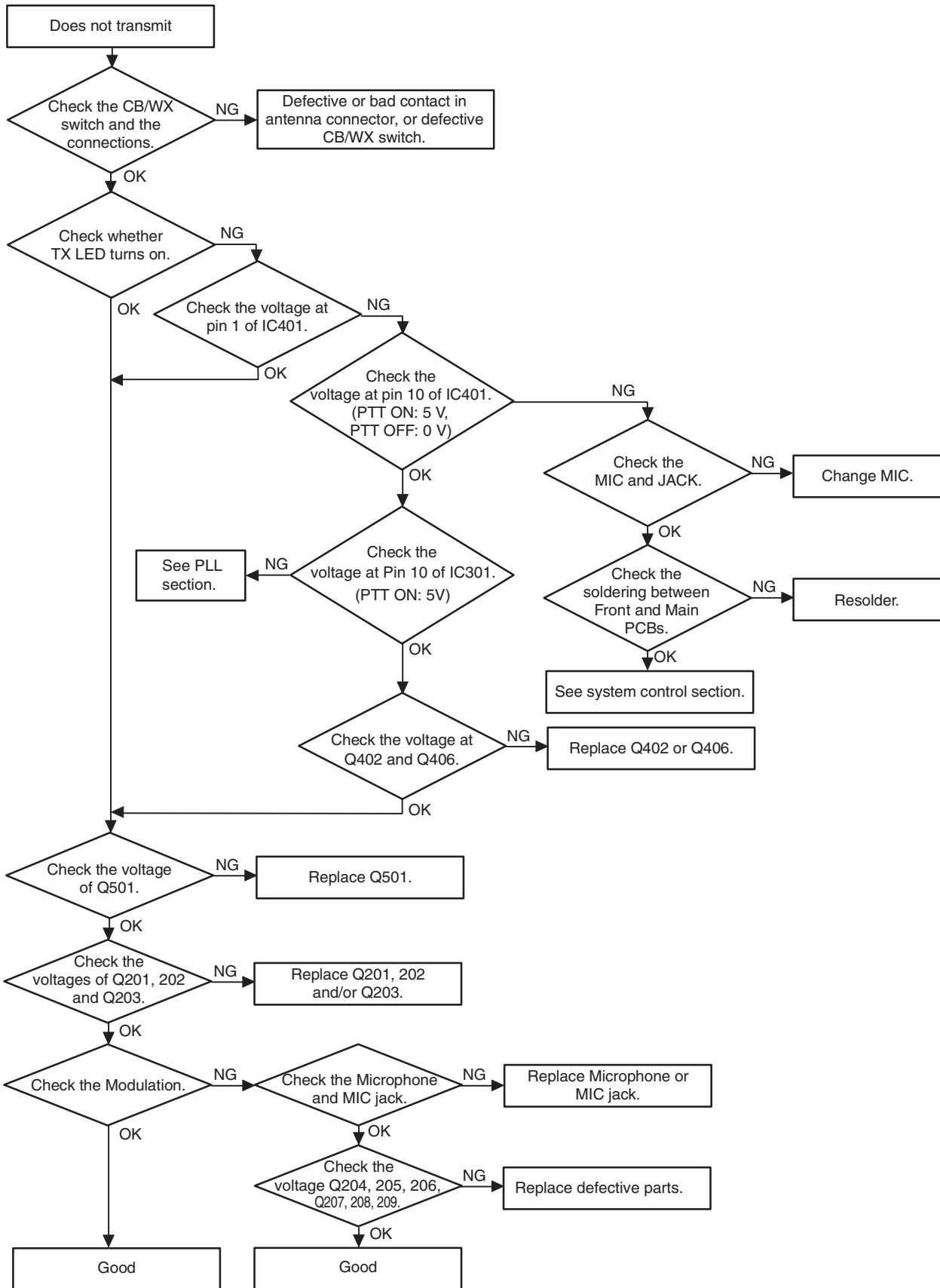
PLL CIRCUIT



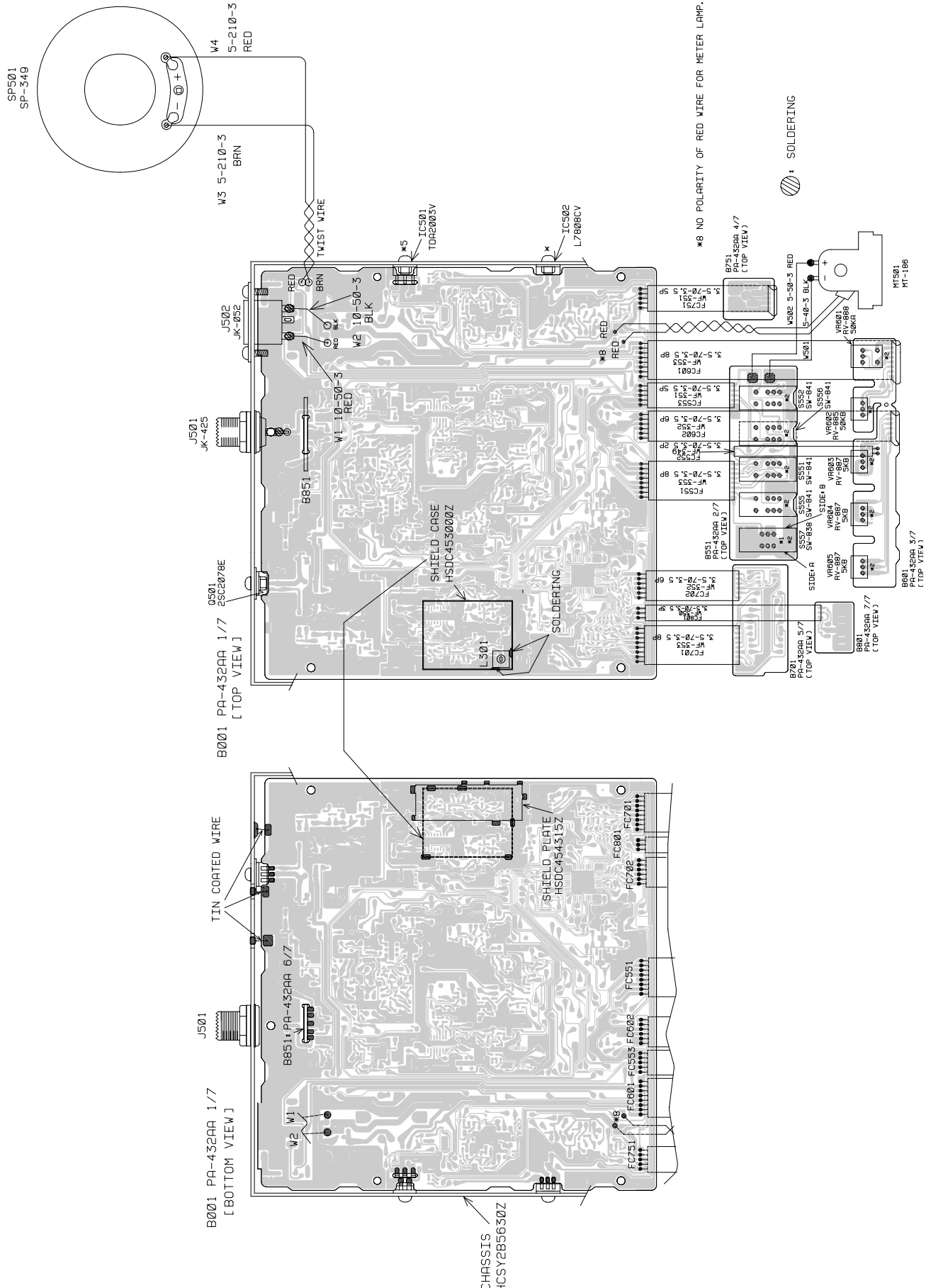
RX SECTION CHECK



TX SECTION CHECK



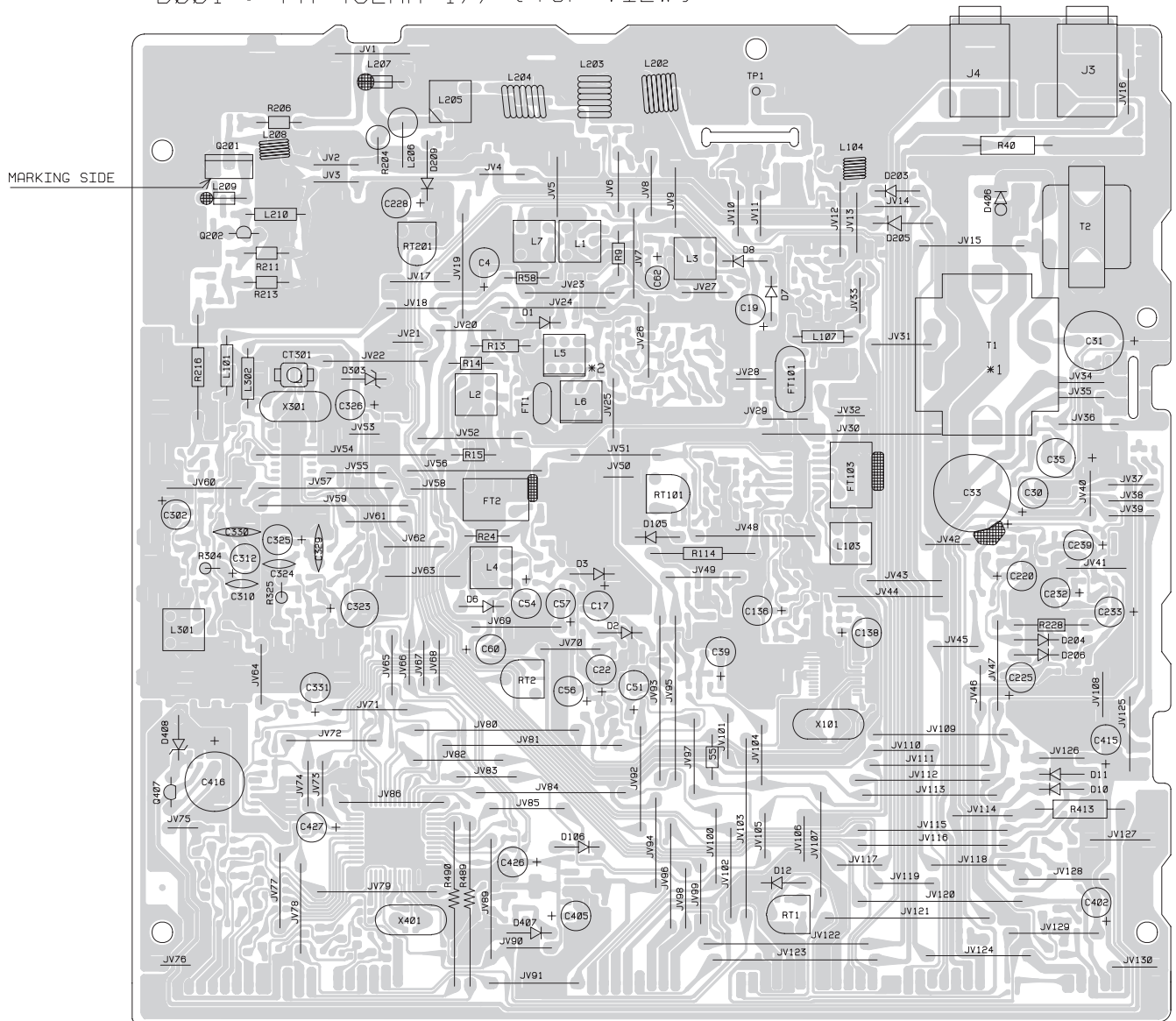
WIRING DIAGRAM



PRINTED CIRCUIT BOARDS

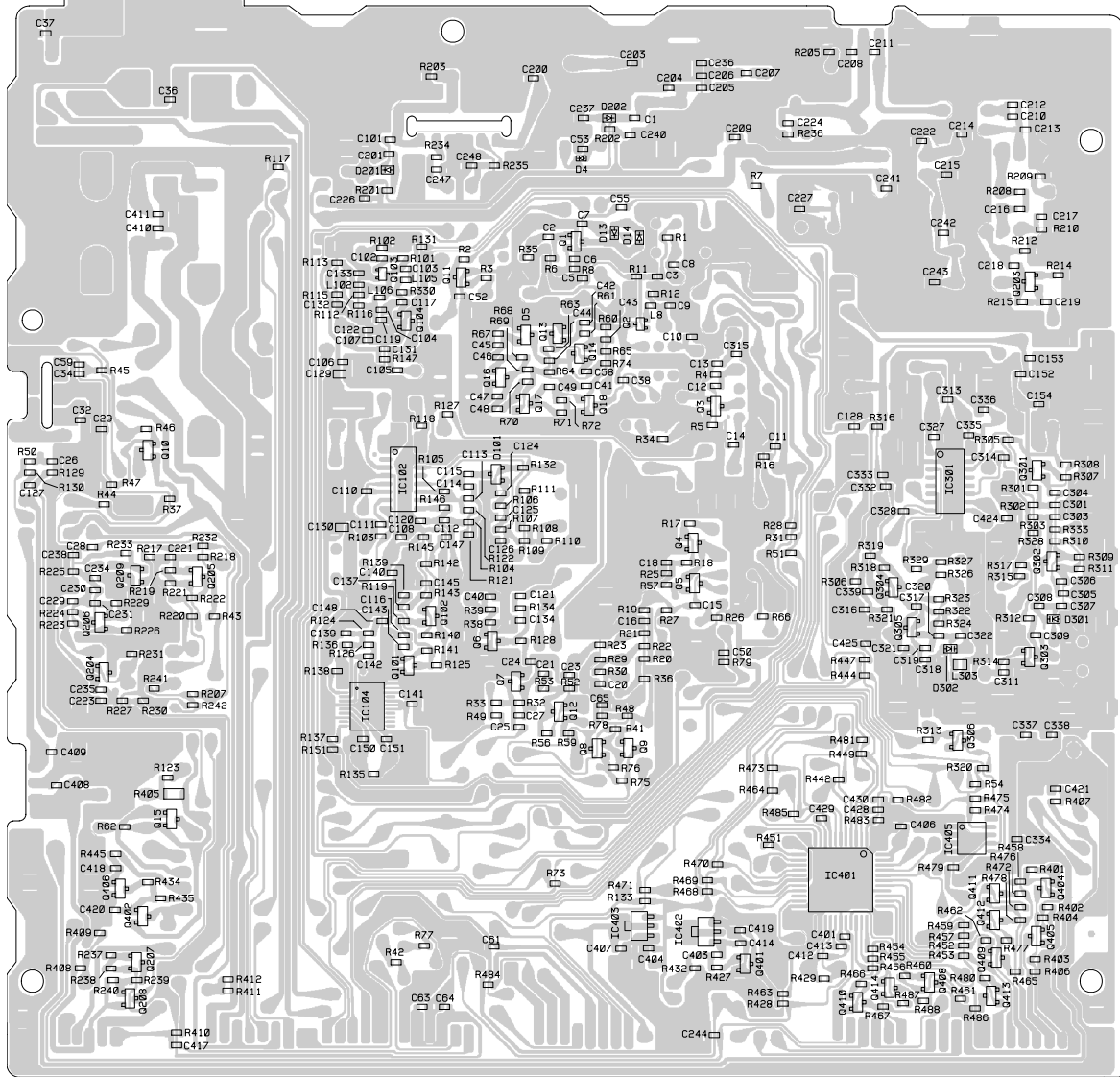
Main

B001 : PA-432AA 1/7 (TOP VIEW)



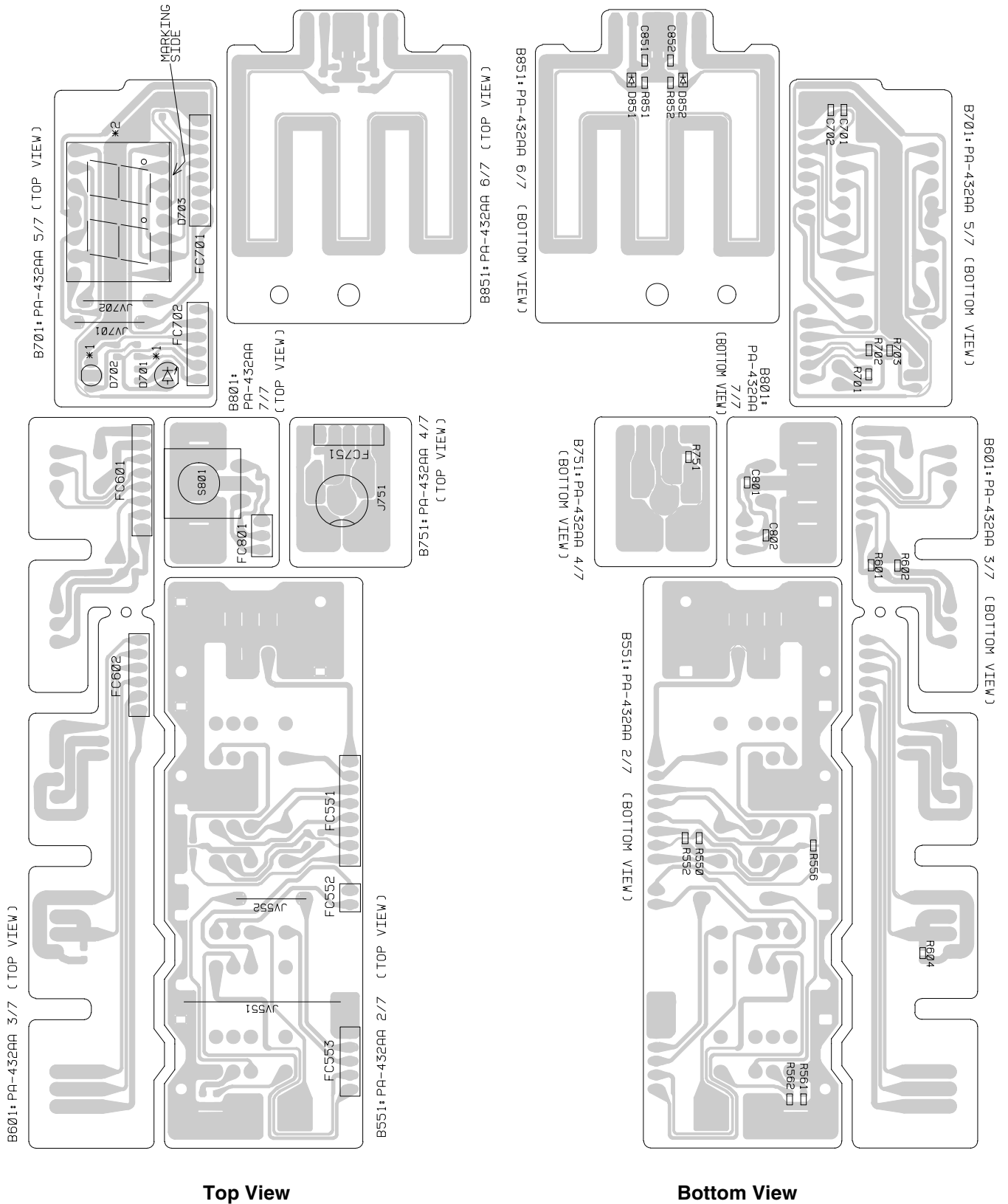
Top View

B001 : PA-432AA 1/7 (BOTTOM VIEW)



Bottom View

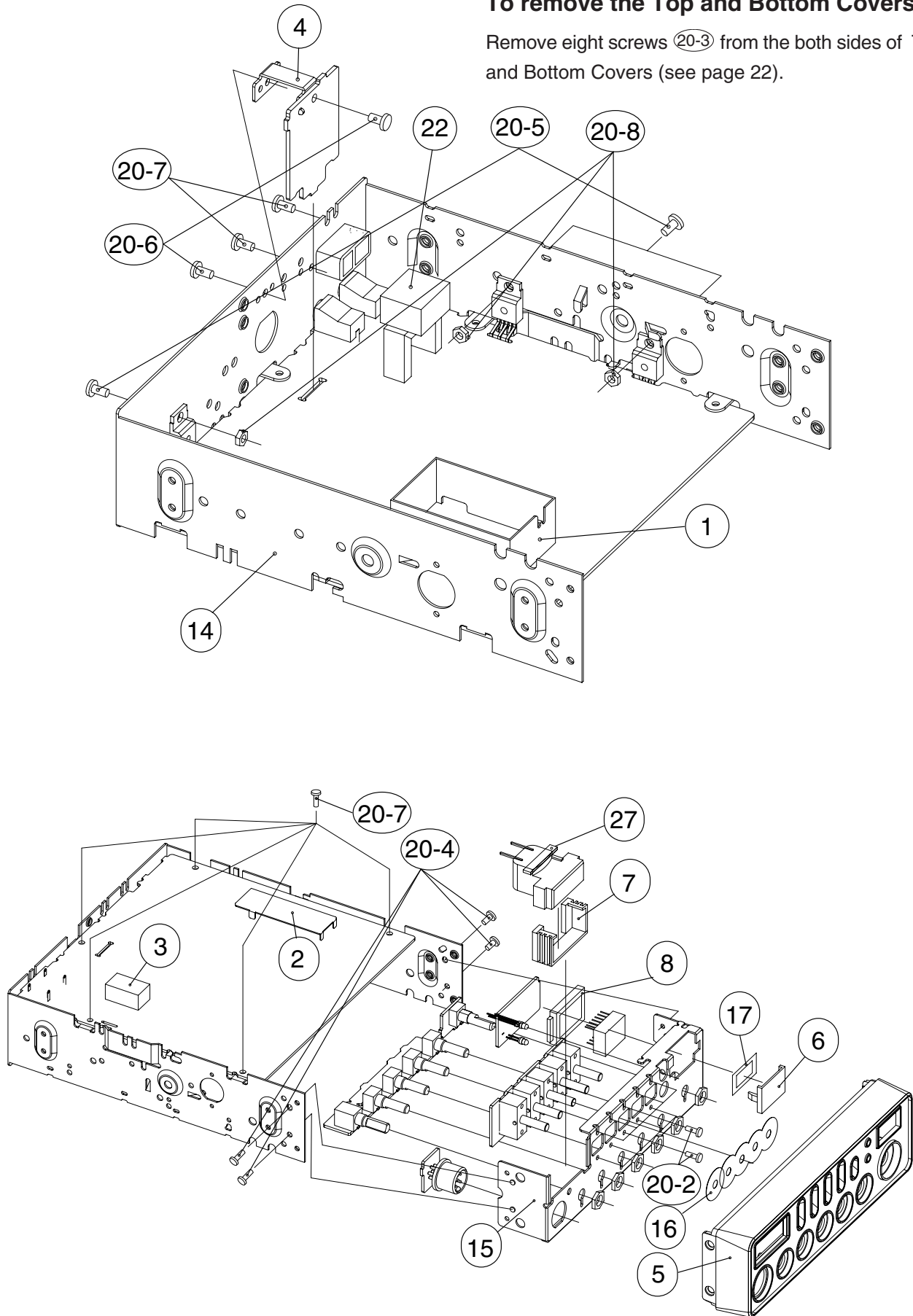
SWITCH/VOLUME/LED/MIC/CH SW/SWR PCBs

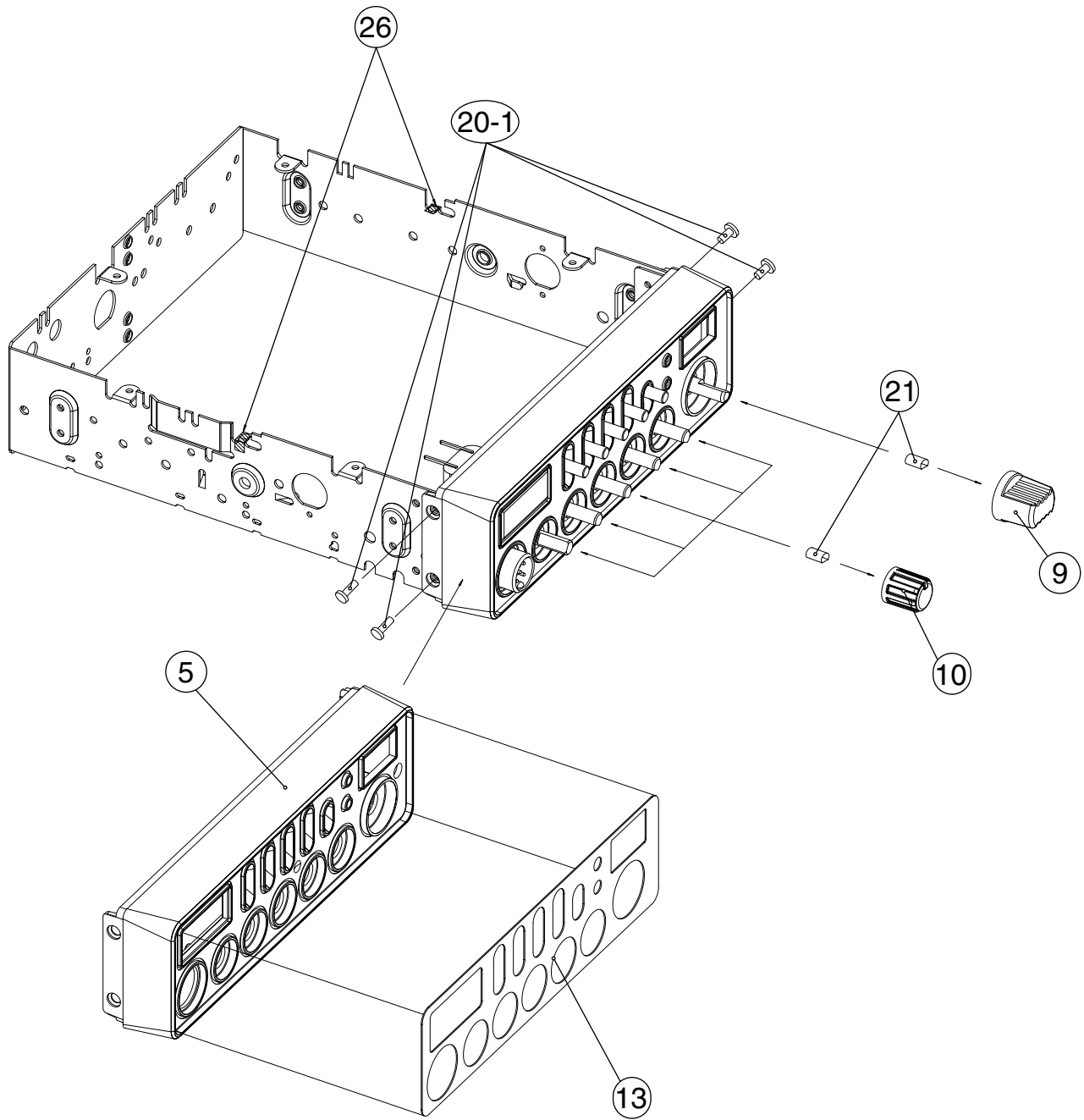


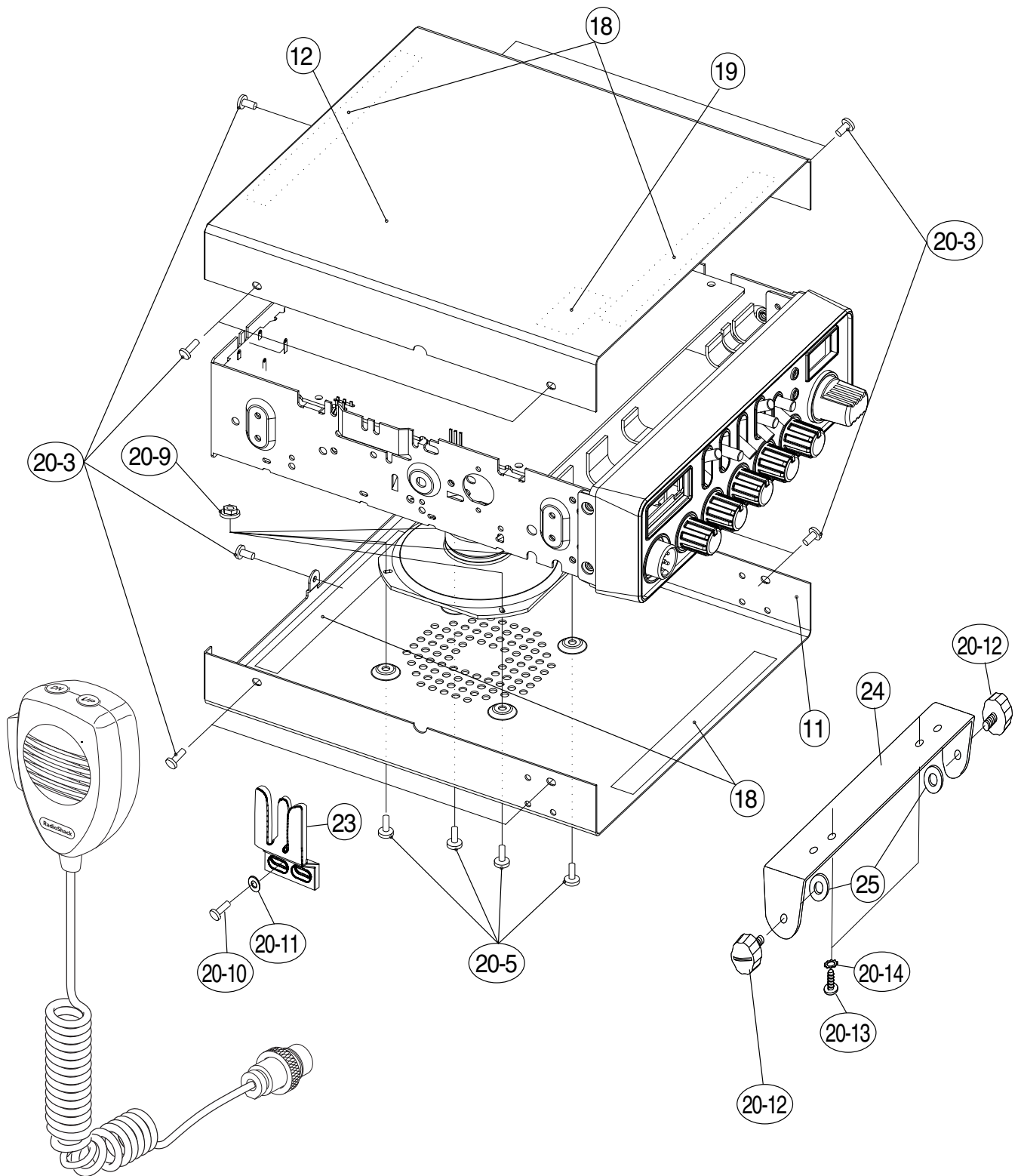
EXPLODED VIEW AND DISASSEMBLY INSTRUCTIONS

To remove the Top and Bottom Covers:

Remove eight screws (20-3) from the both sides of Top and Bottom Covers (see page 22).







MECHANICAL PARTS LIST

Ref. No.	Description	RS Part No.	Mfr' s Part No.
1	Shield Case	SPTE,T=0.3	HSDC453000Z
2	Shield Plate	SPTE	HSDC454315Z
3	Cushion	NEOPRENE SP 25*15*15T	RCUN435264Z
4	Holder: PCB	SECC	HHZ4B5754Z
5	Panel, Front	ABS	GCAS2B5626Z
6	Display Window	PC	GCAS442091Z
7	Holder, Meter	POLYETHY,MILK WHITE	GHD404812Z
8	Holder, LED	ABS	GHDZ442085Z
9	Knob	ABS(PLATING),CR PLATING	GNBZ442014Z
10	Knob	ABS(PLATING),CR PLATING	GNBZ442015Z
11	Cover, Bottom	VINY TOP	HCAS2B5627Z
12	Cover, Top	VINY TOP	HCAS2B5628Z
13	Front Piece		HCAS3B5629Z
14	Chassis	SPCC	HCSY2B5630Z
15	Chassis	SECC	HCSY3B5631Z
16	Himelon		RBLD4B6084Z
17	Blind Plate	PVC 0.4T BLACK	RETC412489Z
18	Wool-Coated Paper, Wool Tack	WOOL PAPER,10*150*0.3T	RUTC403865Z
19	Insulation Plate	PVC,30*20*0.5T	RZEB407154Z
20	Hardware Kit, Base		HDWKT367ZHB
20-1	Screw, Flat HD +	M3×4 NI	SSCW133004N
20-2	Screw, Bind HD +	M2.6×4 NI	SSCW192604N
20-3	Screw, Bind HD +	M3×5 NI	SSCW193005N
20-4	Screw, Bind HD +	M3×6 NI	SSCW193006N
20-5	Screw, Bind HD +	M3×8 NI	SSCW193008N
20-6	Screw, Taptight Bind HD +	M3×5 NI	SSCW343005N
20-7	Screw, Taptight Bind HD +	M3×6 NI	SSCW343006N
20-8	Hex Nut	M3.0 NI	SSCW430030N
20-9	Nut, Flange	M3 ZMC	SSCW480030Z
20-10	Screw, Taptight Round HD +	D3.5×8 NI	SSCW293508N
20-11	Washer, Lock	D3.5 NI	SSCW530035N
20-12	Screw, Mounting	ABS INST CLR BLACK	GMSC405736A
20-13	Screw, Taptight Round HD +	D5×10 NI	SSCW295010N
20-14	Washer, Star	D5 NI	SSCW540050N
21	Spring Plate, Knob	D6.02×L9.53	TSTD0200003
22	Cushion	NEOPRENE	RCUN4B6610Z
23	Hanger, Microphone	SPCC,1.0T,NI	HMHG402919Z
24	Mounting Bracket	SPCC,1.6T,ZMC	HBCT406058Z
25	Washer, Rubber	EPT, BLACK 7×15×2.0T	LWSR493891Z
26	Himelon		RBLD451795Z
27	Cushion	NEOPRENE	RCUN451801Z

ELECTRICAL PARTS LIST

MAIN PCB ASSEMBLY

Ref. No.	Description	RS Part No.	Mfr's Part No.
B1	Assembly, MAIN PCB Consists of the following:		AT367ZHBA
Capacitors			
Notes: All ceramic capacitors are Multilayer (1608) Tape type, unless otherwise specified. The following codes indicate variations of capacitors against temperature: B=±10%, CH=0±60 ppm/°C, UJ=-750 ppm/°C±120 ppm/°C, CK=0 ±250 ppm/°C, F=+30 -80 %,			
C1	Ceramic	15 pF 50 V ±5 % CH	BCMM811504Z
C2	Ceramic	220 pF 50 V ±5 % CH	BCMM812214Z
C3	Ceramic	470 pF 50 V ±5 % CH	BCMM814714Z
C4	Electrolytic	4.7 µF 50 V ±20 % C-156	BCAZ814796Z
C5	Ceramic	0.001 µF 50 V ±10 % B	BCML811025Z
C6	Ceramic	0.01 µF 50 V ±10 % B	BCML811035Z
C7	Ceramic	0.01 µF 50 V ±10 % B	BCML811035Z
C8	Ceramic	220 pF 50 V ±5 % CH	BCMM812214Z
C9	Ceramic	0.0022 µF 50 V ±10 % B	BCML812225Z
C10	Ceramic	0.01 µF 50 V ±10 % B	BCML811035Z
C11	Ceramic	0.001 µF 50 V ±10 % B	BCML811025Z
C12	Ceramic	0.022 µF 25 V ±10 % B	BCML512235Z
C13	Ceramic	33 pF 50 V ±5 % CH	BCMM813304Z
C14	Ceramic	0.047 µF 50 V ±10 % B	BCML814735Z
C15	Ceramic	0.001 µF 50 V ±10 % B	BCML811025Z
C16	Ceramic	0.0047 µF 50 V ±10 % B	BCML814725Z
C17	Electrolytic	0.47 µF 50 V ±20 % C-156	BCAZ814786Z
C18	Ceramic	0.47 µF 10 V ±10 % B	BCML114745Z
C19	Electrolytic	4.7 µF 50 V ±20 % C-156	BCAZ814796Z
C20	Ceramic	0.01 µF 50 V ±10 % B	BCML811035Z
C21	Ceramic	0.0047 µF 50 V ±10 % B	BCML814725Z
C22	Electrolytic	4.7 µF 50 V ±20 % C-156	BCAZ814796Z
C23	Ceramic	0.022 µF 25 V ±10 % B	BCML512235Z
C24	Ceramic	0.01 µF 50 V ±10 % B	BCML811035Z
C25	Ceramic	0.01 µF 50 V ±10 % B	BCML811035Z
C26	Ceramic	1 µF 6.3 V ±10 % B	BCML901055Z
C27	Ceramic	220 pF 50 V ±5 % CH	BCMM812214Z
C28	Ceramic	0.001 µF 50 V ±10 % B	BCML811025Z
C29	Ceramic	0.0047 µF 50 V ±10 % B	BCML814725Z
C30	Electrolytic	100 µF 10 V ±20 % C-156	BCAZ111016Z
C31	Electrolytic	470 µF 16 V ±20 % C-156	BCAZ314716Z
C32	Ceramic	0.01 µF 50 V ±10 % B	BCML811035Z
C33	Electrolytic	1000 µF 25 V ±20 % C-156	BCAZ511026Z
C34	Ceramic	0.1 µF 16 V ±10 % B	BCML311045Z
C35	Electrolytic	47 µF 25 V ±20 % C-155	BCAK514706Z
C36	Ceramic	0.001 µF 50 V ±10 % B	BCML811025Z
C37	Ceramic	0.001 µF 50 V ±10 % B	BCML811025Z
C38	Ceramic	5 pF 50 V ±0.25 pF CH	BCMM815091Z
C39	Electrolytic	100 µF 10 V ±20 % C-156	BCAZ111016Z
C40	Ceramic	0.01 µF 50 V ±10 % B	BCML811035Z
C41	Ceramic	0.01 µF 50 V ±10 % B	BCML811035Z
C42	Ceramic	3 pF 50 V ±0.1 pF CH	BCMM813098Z
C43	Ceramic	0.01 µF 50 V ±10 % B	BCML811035Z
C44	Ceramic	0.001 µF 50 V ±10 % B	BCML811025Z

Ref. No.	Description						RS Part No.	Mfr's Part No.
C45	Ceramic	100 pF	50 V	±5 %	CH		BCMM811014Z	
C46	Ceramic	0.001 μF	50 V	±10 %	B		BCML811025Z	
C47	Ceramic	150 pF	50 V	±5 %	CH		BCMM811514Z	
C48	Ceramic	0.001 μF	50 V	±10 %	B		BCML811025Z	
C49	Ceramic	0.022 μF	25 V	±10 %	B		BCML512235Z	
C50	Ceramic	0.01 μF	50 V	±10 %	B		BCML811035Z	
C51	Electrolytic	1 μF	50 V	±20 %	C-156		BCAZ811096Z	
C52	Ceramic	0.01 μF	50 V	±10 %	B		BCML811035Z	
C53	Ceramic	0.01 μF	50 V	±10 %	B		BCML811035Z	
C54	Electrolytic	22 μF	50 V	±20 %	C-156		BCAZ812206Z	
C55	Ceramic	1.5 pF	50 V	±0.25 pF	CK		BCMS811591Z	
C56	Electrolytic	1 μF	50 V	±20 %	C-156		BCAZ811096Z	
C57	Electrolytic	10 μF	50 V	±20 %	C-156		BCAZ811006Z	
C58	Ceramic	100 pF	50 V	±5 %	CH		BCMM811014Z	
C59	Ceramic	0.1 μF	16 V	±10 %	B		BCML311045Z	
C60	Electrolytic	22 μF	50 V	±20 %	C-156		BCAZ812206Z	
C61	Ceramic	0.01 μF	50 V	±10 %	B		BCML811035Z	
C62	Not Used							
C63	Ceramic	1 μF	6.3 V	±10 %	B		BCML901055Z	
C64	Ceramic	1 μF	6.3 V	±10 %	B		BCML901055Z	
C65	Ceramic	0.047 μF	50 V	±10 %	B		BCML814735Z	
C66~100	Not Used							
C101	Ceramic	4 pF	50 V	±0.25 pF	CH		BCMM814091Z	
C102	Ceramic	4 pF	50 V	±0.25 pF	CH		BCMM814091Z	
C103	Ceramic	2 pF	50 V	±0.25 pF	CH		BCMV812098Z	
C104	Ceramic	0.01 μF	50 V	±10 %	B		BCML811035Z	
C105	Ceramic	22 pF	50 V	±5 %	CH		BCMM812204Z	
C106	Ceramic	0.001 μF	50 V	±10 %	B		BCML811025Z	
C107	Ceramic	0.01 μF	50 V	±10 %	B		BCML811035Z	
C108	Ceramic	0.1 μF	16 V	±10 %	B		BCML311045Z	
C109	Not Used							
C110	Ceramic	0.047 μF	50 V	±10 %	B		BCML814735Z	
C111	Ceramic	0.047 μF	50 V	±10 %	B		BCML814735Z	
C112	Ceramic	0.01 μF	50 V	±10 %	B		BCML811035Z	
C113	Ceramic	470 pF	50 V	±5 %	CH		BCMM814714Z	
C114	Ceramic	470 pF	50 V	±5 %	CH		BCMM814714Z	
C115	Ceramic	0.01 μF	50 V	±10 %	B		BCML811035Z	
C116	Ceramic	0.0082 μF	50 V	±10 %	B		BCML818225Z	
C117	Ceramic	7 pF	50 V	±0.5 pF	CH		BCMM817092Z	
C118	Not Used							
C119	Ceramic	330 pF	50 V	±5 %	CH		BCMM813314Z	
C120	Ceramic	0.01 μF	50 V	±10 %	B		BCML811035Z	
C121	Ceramic	0.01 μF	50 V	±10 %	B		BCML811035Z	
C122	Ceramic	150 pF	50 V	±5 %	CH		BCMM811514Z	
C123	Not Used							
C124	Ceramic	0.0047 μF	50 V	±10 %	B		BCML814725Z	
C125	Ceramic	1 μF	6.3 V	±10 %	B		BCML901055Z	
C126	Ceramic	0.01 μF	50 V	±10 %	B		BCML811035Z	
C127	Ceramic	47 pF	50 V	±5 %	CH		BCMM814704Z	
C128	Ceramic	3 pF	50 V	±0.1 pF	CH		BCMM813098Z	
C129	Ceramic (2125)	1 μF	10 V	±10 %	B		BCXT111055Z	
C130	Ceramic (2125)	1 μF	10 V	±10 %	B		BCXT111055Z	
C131	Ceramic	120 pF	50 V	±5 %	CH		BCMM811214Z	

Ref. No.	Description					RS Part No.	Mfr's Part No.
C132	Ceramic	0.047 μ F	50 V	± 10 %	B		BCML814735Z
C133	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C134	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C135	Not Used						
C136	Electrolytic	2.2 μ F	50 V	± 20 %	C-156		BCAZ812296Z
C137	Ceramic	0.0047 μ F	50 V	± 10 %	B		BCML814725Z
C138	Electrolytic	1 μ F	50 V	± 20 %	C-156		BCAZ811096Z
C139	Ceramic	330 pF	50 V	± 5 %	CH		BCMM813314Z
C140	Ceramic	0.0018 μ F	50 V	± 10 %	B		BCML811825Z
C141	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z
C142	Ceramic	100 pF	50 V	± 5 %	CH		BCMM811014Z
C143	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C144	Not Used						
C145	Ceramic	0.0012 μ F	50 V	± 10 %	B		BCML811225Z
C146	Not Used						
C147	Ceramic	0.0056 μ F	50 V	± 10 %	B		BCML815625Z
C148	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z
C149	Not Used						
C150	Ceramic	22 pF	50 V	± 5 %	CH		BCMM812204Z
C151	Ceramic	22 pF	50 V	± 5 %	CH		BCMM812204Z
C152	Ceramic	22 pF	50 V	± 5 %	CH		BCMM812204Z
C153	Ceramic	100 pF	50 V	± 5 %	CH		BCMM811014Z
C154	Ceramic	100 pF	50 V	± 5 %	CH		BCMM811014Z
C155~199	Not Used						
C200	Ceramic	9 pF	50 V	± 0.5 pF	CH		BCMM819092Z
C201	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C202	Not Used						
C203	Ceramic	180 pF	50 V	± 5 %	CH		BCMM811814Z
C204	Ceramic	270 pF	50 V	± 5 %	CH		BCMM812714Z
C205	Ceramic	27 pF	50 V	± 5 %	CH		BCMM812704Z
C206	Ceramic	180 pF	50 V	± 5 %	CH		BCMM811814Z
C207	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C208	Ceramic	27 pF	50 V	± 5 %	CH		BCMM812704Z
C209	Ceramic	0.047 μ F	50 V	± 10 %	B		BCML814735Z
C210	Ceramic	15 pF	50 V	± 5 %	CH		BCMM811504Z
C211	Ceramic	10 pF	50 V	± 0.5 pF	CH		BCMM811002Z
C212	Ceramic	220 pF	50 V	± 5 %	CH		BCMM812214Z
C213	Ceramic	27 pF	50 V	± 5 %	CH		BCMM812704Z
C214	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C215	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C216	Ceramic	470 pF	50 V	± 5 %	CH		BCMM814714Z
C217	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C218	Ceramic	100 pF	50 V	± 5 %	CH		BCMM811014Z
C219	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C220	Electrolytic	100 μ F	10 V	± 20 %	C-156		BCAZ111016Z
C221	Ceramic	0.047 μ F	50 V	± 10 %	B		BCML814735Z
C222	Ceramic	0.047 μ F	50 V	± 10 %	B		BCML814735Z
C223	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C224	Ceramic	2 pF	50 V	± 0.1 pF	CH		BCMM812098Z
C225	Electrolytic	47 μ F	25 V	± 20 %	C-156		BCAZ514706Z
C226	Ceramic	0.047 μ F	50 V	± 10 %	B		BCML814735Z
C227	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C228	Electrolytic	1 μ F	50 V	± 20 %	C-156		BCAZ811096Z

Ref. No.	Description					RS Part No.	Mfr's Part No.
C229	Ceramic	0.022 μ F	25 V	± 10 %	B		BCML512235Z
C230	Ceramic	150 pF	50 V	± 5 %	CH		BCMM811514Z
C231	Ceramic	0.0047 μ F	50 V	± 10 %	B		BCML814725Z
C232	Electrolytic	22 μ F	50 V	± 20 %	C-156		BCAZ812206Z
C233	Electrolytic	22 μ F	50 V	± 20 %	C-156		BCAZ812206Z
C234	Ceramic	0.047 μ F	16 V	± 10 %	B		BCML314735Z
C235	Ceramic	0.022 μ F	25 V	± 10 %	B		BCML512235Z
C236	Ceramic	47 pF	50 V	± 5 %	CH		BCMM814704Z
C237	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C238	Ceramic	0.0047 μ F	50 V	± 10 %	B		BCML814725Z
C239	Electrolytic	47 μ F	25 V	± 20 %	C-156		BCAZ514706Z
C240	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C241	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C242	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C243	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C244	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C245, 246	Not Used						
C247	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C248	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C249~300	Not Used						
C301	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C302	Electrolytic	47 μ F	25 V	± 20 %	C-156		BCAZ514706Z
C303	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C304	Ceramic	15 pF	50 V	± 5 %	CH		BCMM811504Z
C305	Ceramic	150 pF	50 V	± 5 %	CH		BCMM811514Z
C306	Ceramic	330 pF	50 V	± 5 %	CH		BCMM813314Z
C307	Ceramic	22 pF	50 V	± 5 %	CH		BCMM812204Z
C308	Ceramic	56 pF	50 V	± 5 %	UJ		BCMP815604Z
C309	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C310	Semi Conductor (YR) TS 2.5 S	0.022 μ F	25 V	± 10 %	TAPING		BCGL512235Z
C311	Ceramic	1 μ F	6.3 V	± 10 %	B		BCML901055Z
C312	Electrolytic	0.47 μ F	50 V	± 20 %	C-094		BCEU814786Z
C313	Ceramic	68 pF	50 V	± 5 %	CH		BCMM816804Z
C314	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C315	Ceramic	390 pF	50 V	± 5 %	CH		BCMM813914Z
C316	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z
C317	Ceramic	7 pF	50 V	± 0.5 pF	CH		BCMM817092Z
C318	Ceramic	22 pF	50 V	± 5 %	CH		BCMM812204Z
C319	Ceramic	27 pF	50 V	± 5 %	CH		BCMM812704Z
C320	Ceramic	8 pF	50 V	± 0.5 pF	CH		BCMM818092Z
C321	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C322	Ceramic	27 pF	50 V	± 5 %	CH		BCMM812704Z
C323	Electrolytic	220 μ F	10 V	± 20 %	C-156		BCAZ112216Z
C324	Semi Conductor (YR) TS 2.5 S	0.01 μ F	25 V	± 10 %	TAPING		BCGL511035Z
C325	Electrolytic	0.47 μ F	50 V	± 20 %	C-094		BCEU814786Z
C326	Electrolytic	100 μ F	10 V	± 20 %	C-156		BCAZ111016Z
C327	Ceramic	33 pF	50 V	± 5 %	CH		BCMM813304Z
C328	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C329	Semi Conductor (YR) TS 5.0 S	0.047 μ F	25 V	± 10 %	TAPING		BCGL514735Z
C330	Semi Conductor (YR) TS 5.0 S	0.047 μ F	25 V	± 10 %	TAPING		BCGL514735Z
C331	Electrolytic	4.7 μ F	50 V	± 20 %	C-156		BCAZ814796Z
C332	Ceramic	56 pF	50 V	± 5 %	CH		BCMM815604Z
C333	Ceramic	47 pF	50 V	± 5 %	CH		BCMM814704Z

Ref. No.	Description					RS Part No.	Mfr's Part No.
C334	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z
C335	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C336	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z
C337	Ceramic	0.1 μ F	25 V	-20+80 %	F		BCMF511040Z
C338	Ceramic	1 μ F	10 V	-20+80 %	F		BCMF111050Z
C339	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C340~400	Not Used						
C401	Ceramic	0.047 μ F	50 V	± 10 %	B		BCML814735Z
C402	Electrolytic	47 μ F	25 V	± 20 %	C-156		BCAZ514706Z
C403	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z
C404	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z
C405	Electrolytic	22 μ F	50 V	± 20 %	C-156		BCAZ812206Z
C406	Ceramic	0.22 μ F	10 V	± 10 %	B		BCML112245Z
C407	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z
C408	Ceramic	0.047 μ F	50 V	± 10 %	B		BCML814735Z
C409	Ceramic	0.047 μ F	50 V	± 10 %	B		BCML814735Z
C410	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C411	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C412	Ceramic	22 pF	50 V	± 5 %	CH		BCMM812204Z
C413	Ceramic	22 pF	50 V	± 5 %	CH		BCMM812204Z
C414	Ceramic	0.022 μ F	25 V	± 10 %	B		BCML512235Z
C415	Electrolytic	100 μ F	10 V	± 20 %	C-156		BCAZ111016Z
C416	Electrolytic	1000 μ F	16 V	± 20 %	C-156		BCAZ311026Z
C417	Ceramic	0.47 μ F	10 V	± 10 %	B		BCML114745Z
C418	Ceramic	1 μ F	6.3 V	± 10 %	B		BCML901055Z
C419	Ceramic	0.022 μ F	25 V	± 10 %	B		BCML512235Z
C420	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C421	Ceramic	0.1 μ F	16 V	± 10 %	B		BCML311045Z
C422, 423	Not Used						
C424	Ceramic	0.047 μ F	50 V	± 10 %	B		BCML814735Z
C425	Ceramic	0.01 μ F	50 V	± 10 %	B		BCML811035Z
C426	Electrolytic	10 μ F	50 V	± 20 %	C-156		BCAZ811006Z
C427	Electrolytic	100 μ F	10 V	± 20 %	C-156		BCAZ111016Z
C428	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C429	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
C430	Ceramic	0.001 μ F	50 V	± 10 %	B		BCML811025Z
CT301	Trimmer	CT-090	ECR-LA050M52 50 pF				BCTY0090500
Diodes							
D1		1N4148	T-77	AX TS 26+			BDAY0246003
D2		1N4148	T-77	AX TS 26+			BDAY0246003
D3		1N4148	T-77	AX TS 26+			BDAY0246003
D4		1SS390	TE61				BDAY1041001
D5		HSM88AS	TL				BDAY0346001
D6		1SS108	TD	AX TS 26+			BDAY0798001
D7		1N4148	T-77	AX TS 26+			BDAY0246003
D8		1N4148	T-77	AX TS 26+			BDAY0246003
D9		1N4148	T-77	AX TS 26+			BDAY0246003
D10		1N4148	T-77	AX TS 26+			BDAY0246003
D11		1N4148	T-77	AX TS 26+			BDAY0246003
D12		1N4148	T-77	AX TS 26+			BDAY0246003
D13~100	Not Used						

Ref. No.	Description				RS Part No.	Mfr's Part No.
D101		HSM88AS	TL			BDAY0346001
D102~104	Not Used					
D105		1N4148	T-77	AX TS 26+		BDAY0246003
D106		1N4148	T-77	AX TS 26+		BDAY0246003
D107~200	Not Used					
D201	Switching	1SS356	TW11			BDAY0808001
D202	Switching	1SS356	TW11			BDAY0808001
D203		1N4148	T-77	AX TS 26+		BDAY0246003
D204		1N4148	T-77	AX TS 26+		BDAY0246003
D205		1N4003				BDAY0133001
D206		1N4148	T-77	AX TS 26+		BDAY0246003
D207, 208	Not Used					
D209		1N4148	T-77	AX TS 26+		BDAY0246003
D210~300	Not Used					
D301	Varicap	HVU307	TRU			BDAY0940001
D302	Varicap	HVU307	TRU			BDAY0940001
D303	Zener	HZ5B1	TD	AX TS 26+		BDAY0492040
D304~405	Not Used					
D406		1N4003				BDAY0133001
D407		1N4148	T-77	AX TS 26+		BDAY0246003
D408	Zener	HZ5C1	TD	AX TS 26+		BDAY0492002
Filter						
FT1	Ceramic	FL-048	SFELA10M7GM00-B0			BFLY0048001
FT2	Ceramic	FL-852	LTS455HTW			BFLY0852001
FT3~100	Not Used					
FT101	Ceramic	FL-048	SFELA10M7GM00-B0			BFLY0048001
FT102	Ceramic	FL-743	LTW33-455D			BFLY0743001
FT103	Ceramic	FL-743	LTW33-455D			BFLY0743001
ICs						
IC101	Not Used					
IC102		S1T3361D01-S0T0				BDEY3282003
IC103	Not Used					
IC104		SM8224CM-E2				BDEY3021003
IC301		BU2630F-E2				BDEY2769003
IC401	UC2891	UPD789166GB-685-8ES				BDDY1435001
IC402		XC61CC4302PR/XC61AC4302PR				BDEY4017003
IC403		RH5RL50AA-T1				BDEY2935003
IC404	Not Used					
IC405		AT24CO2N-10SI-1.8				BDEY3517003
Jack						
J1, 2	Not Used					
J3	Earphone	JK-899	JH3501-020D			BJKY0899001
J4	Earphone	JK-899	JH3501-020D			BJKY0899001

Ref. No.	Description			RS Part No.	Mfr's Part No.
Coil					
L1		LB-1030	K7T1/33333		BLBY1030001
L2		LB-1029	K7-H5/33333		BLBY1029001
L3		LB-1103	M7-M/33303		BLBY1103001
L4		LB-1028	K7-H5/33333		BLBY1028001
L5		LB-652	M7-M/33334		BLBY0652001
L6		LB-652	M7-M/33334		BLBY0652001
L7		LB-1030	K7T1/33333		BLBY1030001
L101	Inductor Molded	LZ-041		1 μ H K	BLZY0041109
L102	Inductor Molded Chip Tape	LZ-183	HK1608R10J-T	100NH	BLZY0183108
L103		LB-1175	7002BE-A0026HM		BLBY1175001
L104		LE-278	7T 0.5UEW		BLEY0278001
L105	Not Used				
L106	Inductor Molded Chip Tape	LZ-183	HK1608R10J-T	100NH	BLZY0183108
L107	Inductor Molded	LZ-041		1.8 μ H K	BLZY0041189
L201	Not Used				
L202		LE-417	L-2E4-S(R22-E712X)		BLEY0417001
L203		LE-419	L-1E4-S(R22-E813)		BLEY0419001
L204		LE-435	L-1E4-S(R22-E858)		BLEY0435001
L205		LC-228	L-1S7-T(R12-J840X)		BLCY0228001
L206		LD-237	L-2R4W(R22-E563)		BLDY0237001
L207		LD-087	BF04-3*5*1		BLDY0087001
L208		LE-535			BLEY0535001
L209		LD-087	BF04-3*5*1		BLDY0087001
L210	Inductor Molded	LZ-041		0.47 μ H K	BLZY0041478
L301		LB-1112	M7-D3/31332		BLBY1112001
L302	Inductor Molded	LZ-041		1 μ H K	BLZY0041109
L303	Inductor Molded Chip	LZ-219	LLQ2012-E47NJ	47N	BLZY0219477
Transistor					
Q1		DB-718	2SC2714-Y	TE85L	BDBC2714124
Q2		DB-718	2SC2714-Y	TE85L	BDBC2714124
Q3		DB-718	2SC2714-Y	TE85L	BDBC2714124
Q4		DB-718	2SC2714-Y	TE85L	BDBC2714124
Q5		DB-862	2SC3052-T12-1F		BDBC3052106
Q6		DB-862	2SC3052-T12-1F		BDBC3052106
Q7		DB-862	2SC3052-T12-1F		BDBC3052106
Q8		DB-862	2SC3052-T12-1F		BDBC3052106
Q9		DB-862	2SC3052-T12-1F		BDBC3052106
Q10		DB-862	2SC3052-T12-1F		BDBC3052106
Q11		DB-862	2SC3052-T12-1F		BDBC3052106
Q12		DB-862	2SC3052-T12-1F		BDBC3052106
Q13		DB-718	2SC2714-Y	TE85L	BDBC2714124
Q14		DB-718	2SC2714-Y	TE85L	BDBC2714124
Q15		DB-035	2SA812(M)-M6A	T1B	BDBA0812695
Q16		DB-862	2SC3052-T12-1F		BDBC3052106
Q17		DB-092	2SA1235A-T12-1F		BDBA1235106
Q18		DB-862	2SC3052-T12-1F		BDBC3052106
Q101		DB-862	2SC3052-T12-1F		BDBC3052106
Q102		DB-862	2SC3052-T12-1F		BDBC3052106
Q103		DB-848	2SC5065-Y(TE85R)		BDBC5065124

Ref. No.	Description	RS Part No.	Mfr's Part No.
Q104	DB-848 2SC5065-Y(TE85R)		BDBC5065124
Q201	DB-792 2SC2314F		BDBC2314106
Q202	DB-301 2SC941TM-O TAPING RH TS+		BDBX0941523
Q203	DB-718 2SC2714-Y TE85L		BDBC2714124
Q204	DB-862 2SC3052-T12-1F		BDBC3052106
Q205	DB-092 2SA1235A-T12-1F		BDBA1235106
Q206	DB-862 2SC3052-T12-1F		BDBC3052106
Q207	DB-862 2SC3052-T12-1F		BDBC3052106
Q208	DB-092 2SA1235A-T12-1F		BDBA1235106
Q209	DB-862 2SC3052-T12-1F		BDBC3052106
Q301	DB-718 2SC2714-Y TE85L		BDBC2714124
Q302	DB-718 2SC2714-Y TE85L		BDBC2714124
Q303	DB-862 2SC3052-T12-1F		BDBC3052106
Q304	DB-718 2SC2714-Y TE85L		BDBC2714124
Q305	DB-718 2SC2714-Y TE85L		BDBC2714124
Q306	DB-862 2SC3052-T12-1F		BDBC3052106
Q401	DB-862 2SC3052-T12-1F		BDBC3052106
Q402	DB-035 2SA812(M)-M6A T1B		BDBA0812695
Q403	Not Used		
Q404	DB-035 2SA812(M)-M6A T1B		BDBA0812695
Q405	DB-035 2SA812(M)-M6A T1B		BDBA0812695
Q406	DB-862 2SC3052-T12-1F		BDBC3052106
Q407	DB-309 2SC2001-L		BDBC2001111
Q408	DB-092 2SA1235A-T12-1F		BDBA1235106
Q409	DB-092 2SA1235A-T12-1F		BDBA1235106
Q410	DB-092 2SA1235A-T12-1F		BDBA1235106
Q411	DB-092 2SA1235A-T12-1F		BDBA1235106
Q412	DB-092 2SA1235A-T12-1F		BDBA1235106
Q413	DB-092 2SA1235A-T12-1F		BDBA1235106
Q414	DB-092 2SA1235A-T12-1F		BDBA1235106

Resistors

R1	Carbon Fixed Chip 1.5 kohm 1/16 W ±5 %		BRFC161524Z
R2	Carbon Fixed Chip 4.7 kohm 1/16 W ±5 %		BRFC164724Z
R3	Carbon Fixed Chip 5.6 kohm 1/16 W ±5 %		BRFC165624Z
R4	Carbon Fixed Chip 330 ohm 1/16 W ±5 %		BRFC163314Z
R5	Carbon Fixed Chip 56 ohm 1/16 W ±5 %		BRFC165604Z
R6	Carbon Fixed Chip 3.3 kohm 1/16 W ±5 %		BRFC163324Z
R7	Carbon Fixed Chip 560 ohm 1/16 W ±5 %		BRFC165614Z
R8	Carbon Fixed Chip 820 ohm 1/16 W ±5 %		BRFC168214Z
R9	Carbon Axial Lead (26) 100 ohm 1/6 W ±5 %		BRPA611014Z
R10	Not Used		
R11	Carbon Fixed Chip 8.2 kohm 1/16 W ±5 %		BRFC168224Z
R12	Carbon Fixed Chip 180 ohm 1/16 W ±5 %		BRFC161814Z
R13	Carbon Axial Lead (26) 100 ohm 1/6 W ±5 %		BRPA611014Z
R14	Carbon Axial Lead (26) 270 kohm 1/6 W ±5 %		BRPA612744Z
R15	Carbon Axial Lead (26) 220 ohm 1/6 W ±5 %		BRPA612214Z
R16	Carbon Fixed Chip 560 ohm 1/16 W ±5 %		BRFC165614Z
R17	Carbon Fixed Chip 1.5 kohm 1/16 W ±5 %		BRFC161524Z
R18	Carbon Fixed Chip 47 kohm 1/16 W ±5 %		BRFC164734Z
R19	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R20	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z

Ref. No.	Description	RS Part No.	Mfr's Part No.
R21	Carbon Fixed Chip 150 kohm 1/16 W ±5 %		BRFC161544Z
R22	Carbon Fixed Chip 68 kohm 1/16 W ±5 %		BRFC166834Z
R23	Carbon Fixed Chip 150 kohm 1/16 W ±5 %		BRFC161544Z
R24	Carbon Axial Lead (26) 2.2 kohm 1/6 W ±5 %		BRPA612224Z
R25	Carbon Fixed Chip 330 ohm 1/16 W ±5 %		BRFC163314Z
R26	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z
R27	Carbon Fixed Chip 15 kohm 1/16 W ±5 %		BRFC161534Z
R28	Carbon Fixed Chip 22 kohm 1/16 W ±5 %		BRFC162234Z
R29	Carbon Fixed Chip 47 kohm 1/16 W ±5 %		BRFC164734Z
R30	Carbon Fixed Chip 270 kohm 1/16 W ±5 %		BRFC162744Z
R31	Carbon Fixed Chip 56 kohm 1/16 W ±5 %		BRFC165634Z
R32	Carbon Fixed Chip 1 Mohm 1/16 W ±5 %		BRFC161054Z
R33	Carbon Fixed Chip 2.7 kohm 1/16 W ±5 %		BRFC162724Z
R34	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z
R35	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R36	Carbon Fixed Chip 39 kohm 1/16 W ±5 %		BRFC163934Z
R37	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R38	Carbon Fixed Chip 33 kohm 1/16 W ±5 %		BRFC163334Z
R39	Carbon Fixed Chip 2.2 kohm 1/16 W ±5 %		BRFC162224Z
R40	Metal Oxide 4.7 ohm 3 WS ±5 %		BRSJ034794Z
R41	Carbon Fixed Chip 33 kohm 1/16 W ±5 %		BRFC163334Z
R42	Carbon Fixed Chip 3.9 kohm 1/16 W ±5 %		BRFC163924Z
R43	Carbon Fixed Chip 120 kohm 1/16 W ±5 %		BRFC161244Z
R44	Carbon Fixed Chip 6.8 kohm 1/16 W ±5 %		BRFC166824Z
R45	Carbon Fixed Chip 2.2 ohm 1/16 W ±5 %		BRFC162294Z
R46	Carbon Fixed Chip 33 kohm 1/16 W ±5 %		BRFC163334Z
R47	Carbon Fixed Chip 47 ohm 1/16 W ±5 %		BRFC164704Z
R48	Carbon Fixed Chip 2.2 Mohm 1/16 W ±5 %		BRFC162254Z
R49	Carbon Fixed Chip 220 ohm 1/16 W ±5 %		BRFC162214Z
R50	Carbon Fixed Chip 150 kohm 1/16 W ±5 %		BRFC161544Z
R51	Carbon Fixed Chip 2.7 kohm 1/16 W ±5 %		BRFC162724Z
R52	Carbon Fixed Chip 15 kohm 1/16 W ±5 %		BRFC161534Z
R53	Carbon Fixed Chip 15 kohm 1/16 W ±5 %		BRFC161534Z
R54	Carbon Fixed Chip 4.7 kohm 1/16 W ±5 %		BRFC164724Z
R55	Carbon Axial Lead (26) 12 kohm 1/6 W ±5 %		BRPA611234Z
R56	Carbon Fixed Chip 220 kohm 1/16 W ±5 %		BRFC162244Z
R57	Carbon Fixed Chip 15 ohm 1/16 W ±5 %		BRFC161504Z
R58	Carbon Axial Lead (26) 100 ohm 1/6 W ±5 %		BRPA611014Z
R59	Carbon Fixed Chip 4.7 kohm 1/16 W ±5 %		BRFC164724Z
R60	Carbon Fixed Chip 4.7 kohm 1/16 W ±5 %		BRFC164724Z
R61	Carbon Fixed Chip 47 kohm 1/16 W ±5 %		BRFC164734Z
R62	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R63	Carbon Fixed Chip 3.3 kohm 1/16 W ±5 %		BRFC163324Z
R64	Carbon Fixed Chip 180 ohm 1/16 W ±5 %		BRFC161814Z
R65	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R66	Carbon Fixed Chip 820 ohm 1/16 W ±5 %		BRFC168214Z
R67	Carbon Fixed Chip 1 Mohm 1/16 W ±5 %		BRFC161054Z
R68	Carbon Fixed Chip 150 kohm 1/16 W ±5 %		BRFC161544Z
R69	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R70	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R71	Carbon Fixed Chip 47 kohm 1/16 W ±5 %		BRFC164734Z
R72	Carbon Fixed Chip 100 kohm 1/16 W ±5 %		BRFC161044Z
R73	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z

Ref. No.	Description	RS Part No.	Mfr's Part No.
R74	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R75	Carbon Fixed Chip 47 kohm 1/16 W ±5 %		BRFC164734Z
R76	Carbon Fixed Chip 47 kohm 1/16 W ±5 %		BRFC164734Z
R77	Carbon Fixed Chip 2.2 kohm 1/16 W ±5 %		BRFC162224Z
R78	Carbon Fixed Chip 2.2 Mohm 1/16 W ±5 %		BRFC162254Z
R79	Carbon Fixed Chip 2.2 kohm 1/16 W ±5 %		BRFC162224Z
R101	Carbon Fixed Chip 56 kohm 1/16 W ±5 %		BRFC165634Z
R102	Carbon Fixed Chip 3.3 kohm 1/16 W ±5 %		BRFC163324Z
R103	Carbon Fixed Chip 27 kohm 1/16 W ±5 %		BRFC162734Z
R104	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R105	Carbon Fixed Chip 560 kohm 1/16 W ±5 %		BRFC165644Z
R106	Carbon Fixed Chip 33 kohm 1/16 W ±5 %		BRFC163334Z
R107	Carbon Fixed Chip 33 kohm 1/16 W ±5 %		BRFC163334Z
R108	Carbon Fixed Chip 560 kohm 1/16 W ±5 %		BRFC165644Z
R109	Carbon Fixed Chip 27 kohm 1/16 W ±5 %		BRFC162734Z
R110	Carbon Fixed Chip 27 kohm 1/16 W ±5 %		BRFC162734Z
R111	Carbon Fixed Chip 56 kohm 1/16 W ±5 %		BRFC165634Z
R112	Carbon Fixed Chip 560 ohm 1/16 W ±5 %		BRFC165614Z
R113	Carbon Fixed Chip 330 ohm 1/16 W ±5 %		BRFC163314Z
R114	Carbon Axial Lead (52) 8.2 kohm 1/4 W ±5 %		BRFT148224Z
R115	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R116	Carbon Fixed Chip 150 kohm 1/16 W ±5 %		BRFC161544Z
R117	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R118	Carbon Fixed Chip 0 ohm 1/16 W ±5 %		BRFC160004Z
R119	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R120	Not Used		
R121	Carbon Fixed Chip 1.5 kohm 1/16 W ±5 %		BRFC161524Z
R122	Carbon Fixed Chip 470 kohm 1/16 W ±5 %		BRFC164744Z
R123	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z
R124	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R125	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R126	Carbon Fixed Chip 470 kohm 1/16 W ±5 %		BRFC164744Z
R127	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R128	Carbon Fixed Chip 22 kohm 1/16 W ±5 %		BRFC162234Z
R129	Carbon Fixed Chip 1 Mohm 1/16 W ±5 %		BRFC161054Z
R130	Carbon Fixed Chip 270 kohm 1/16 W ±5 %		BRFC162744Z
R131	Carbon Fixed Chip 0 ohm 1/16 W ±5 %		BRFC160004Z
R132	Carbon Fixed Chip 470 kohm 1/16 W ±5 %		BRFC164744Z
R133	Carbon Fixed Chip 2.2 Mohm 1/16 W ±5 %		BRFC162254Z
R134	Carbon Fixed Chip 33 kohm 1/16 W ±5 %		BRFC163334Z
R135	Carbon Fixed Chip 1 Mohm 1/16 W ±5 %		BRFC161054Z
R136	Carbon Fixed Chip 56 kohm 1/16 W ±5 %		BRFC165634Z
R137	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R138	Carbon Fixed Chip 56 kohm 1/16 W ±5 %		BRFC165634Z
R139	Carbon Fixed Chip 3.3 kohm 1/16 W ±5 %		BRFC163324Z
R140	Carbon Fixed Chip 330 kohm 1/16 W ±5 %		BRFC163344Z
R141	Carbon Fixed Chip 470 kohm 1/16 W ±5 %		BRFC164744Z
R142	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R143	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R145	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R146	Carbon Fixed Chip 0 ohm 1/16 W ±5 %		BRFC160004Z
R147	Carbon Fixed Chip 6.8 kohm 1/16 W ±5 %		BRFC166824Z
R148~150	Not Used		

Ref. No.	Description	RS Part No.	Mfr's Part No.
R151	Carbon Fixed Chip 1.8 kohm 1/16 W ±5 %		BRFC161824Z
R201	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R202	Carbon Fixed Chip 680 ohm 1/16 W ±5 %		BRFC166814Z
R203	Carbon Fixed Chip 2.2 kohm 1/16 W ±5 %		BRFC162224Z
R204	Metal Oxide 220 ohm 1 WS ±5 %		BRSJ002214Z
R205	Carbon Fixed Chip 22 ohm 1/16 W ±5 %		BRFC162204Z
R206	Carbon Axial Lead (26) 2.2 ohm 1/6 W ±5 %		BRPA612294Z
R207	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R208	Carbon Fixed Chip 22 ohm 1/16 W ±5 %		BRFC162204Z
R209	Carbon Fixed Chip 33 ohm 1/16 W ±5 %		BRFC163304Z
R210	Carbon Fixed Chip 56 ohm 1/16 W ±5 %		BRFC165604Z
R211	Carbon Axial Lead (26) 3.3 kohm 1/6 W ±5 %		BRPA613324Z
R212	Carbon Fixed Chip 1.8 kohm 1/16 W ±5 %		BRFC161824Z
R213	Carbon Axial Lead (26) 100 ohm 1/6 W ±5 %		BRPA611014Z
R214	Carbon Fixed Chip 10 ohm 1/16 W ±5 %		BRFC161004Z
R215	Carbon Fixed Chip 47 kohm 1/16 W ±5 %		BRFC164734Z
R216	Carbon Axial Lead (52) 220 ohm 1/4 W ±5 %		BRFT142214Z
R217	Carbon Fixed Chip 3.9 kohm 1/16 W ±5 %		BRFC163924Z
R218	Carbon Fixed Chip 1.2 kohm 1/16 W ±5 %		BRFC161224Z
R219	Carbon Fixed Chip 39 kohm 1/16 W ±5 %		BRFC163934Z
R220	Carbon Fixed Chip 1.5 kohm 1/16 W ±5 %		BRFC161524Z
R221	Carbon Fixed Chip 1.2 kohm 1/16 W ±5 %		BRFC161224Z
R222	Carbon Fixed Chip 3.3 kohm 1/16 W ±5 %		BRFC163324Z
R223	Carbon Fixed Chip 180 kohm 1/16 W ±5 %		BRFC161844Z
R224	Carbon Fixed Chip 1.5 kohm 1/16 W ±5 %		BRFC161524Z
R225	Carbon Fixed Chip 22 kohm 1/16 W ±5 %		BRFC162234Z
R226	Carbon Fixed Chip 47 kohm 1/16 W ±5 %		BRFC164734Z
R227	Carbon Fixed Chip 3.3 kohm 1/16 W ±5 %		BRFC163324Z
R228	Carbon Axial Lead (26) 2.7 kohm 1/6 W ±5 %		BRPA612724Z
R229	Carbon Fixed Chip 1.5 kohm 1/16 W ±5 %		BRFC161524Z
R230	Carbon Fixed Chip 4.7 kohm 1/16 W ±5 %		BRFC164724Z
R231	Carbon Fixed Chip 27 kohm 1/16 W ±5 %		BRFC162734Z
R232	Carbon Fixed Chip 3.9 kohm 1/16 W ±5 %		BRFC163924Z
R233	Carbon Fixed Chip 15 kohm 1/16 W ±5 %		BRFC161534Z
R234	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R235	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R236	Carbon Fixed Chip 560 ohm 1/16 W ±5 %		BRFC165614Z
R237	Carbon Fixed Chip 47 kohm 1/16 W ±5 %		BRFC164734Z
R238	Carbon Fixed Chip 100 kohm 1/16 W ±5 %		BRFC161044Z
R239	Carbon Fixed Chip 3.9 kohm 1/16 W ±5 %		BRFC163924Z
R240	Carbon Fixed Chip 47 kohm 1/16 W ±5 %		BRFC164734Z
R241	Carbon Fixed Chip 1.5 kohm 1/16 W ±5 %		BRFC161524Z
R242	Carbon Fixed Chip 4.7 kohm 1/16 W ±5 %		BRFC164724Z
R301	Carbon Fixed Chip 180 ohm 1/16 W ±5 %		BRFC161814Z
R302	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z
R303	Carbon Fixed Chip 220 ohm 1/16 W ±5 %		BRFC162214Z
R304	Carbon Axial Lead (52) 10 kohm 1/4 W ±5 %		BRFT141034Z
R305	Carbon Fixed Chip 560 ohm 1/16 W ±5 %		BRFC165614Z
R306	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z
R307	Carbon Fixed Chip 2.2 ohm 1/16 W ±5 %		BRFC162294Z
R308	Carbon Fixed Chip 33 kohm 1/16 W ±5 %		BRFC163334Z
R309	Carbon Fixed Chip 330 ohm 1/16 W ±5 %		BRFC163314Z
R310	Carbon Fixed Chip 15 kohm 1/16 W ±5 %		BRFC161534Z

Ref. No.	Description	RS Part No.	Mfr's Part No.
R311	Carbon Fixed Chip 22 kohm 1/16 W $\pm 5\%$		BRFC162234Z
R312	Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$		BRFC161034Z
R313	Carbon Fixed Chip 47 kohm 1/16 W $\pm 5\%$		BRFC164734Z
R314	Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$		BRFC161034Z
R315	Carbon Fixed Chip 4.7 kohm 1/16 W $\pm 5\%$		BRFC164724Z
R316	Carbon Fixed Chip 150 ohm 1/16 W $\pm 5\%$		BRFC161514Z
R317	Carbon Fixed Chip 6.8 kohm 1/16 W $\pm 5\%$		BRFC166824Z
R318	Carbon Fixed Chip 18 kohm 1/16 W $\pm 5\%$		BRFC161834Z
R319	Carbon Fixed Chip 390 ohm 1/16 W $\pm 5\%$		BRFC163914Z
R320	Carbon Fixed Chip 1.2 kohm 1/16 W $\pm 5\%$		BRFC161224Z
R321	Carbon Fixed Chip 100 ohm 1/16 W $\pm 5\%$		BRFC161014Z
R322	Carbon Fixed Chip 120 ohm 1/16 W $\pm 5\%$		BRFC161214Z
R323	Carbon Fixed Chip 8.2 kohm 1/16 W $\pm 5\%$		BRFC168224Z
R324	Carbon Fixed Chip 3.3 kohm 1/16 W $\pm 5\%$		BRFC163324Z
R325	Carbon Axial Lead (52) 10 kohm 1/4 W $\pm 5\%$		BRFT141034Z
R326	Carbon Fixed Chip 5.6 kohm 1/16 W $\pm 5\%$		BRFC165624Z
R327	Carbon Fixed Chip 12 kohm 1/16 W $\pm 5\%$		BRFC161234Z
R328	Carbon Fixed Chip 560 ohm 1/16 W $\pm 5\%$		BRFC165614Z
R329	Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$		BRFC161034Z
R330~332	Not Used		
R333	Carbon Fixed Chip 0 ohm 1/16 W $\pm 5\%$		BRFC160004Z
R401	Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$		BRFC161034Z
R402	Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$		BRFC161034Z
R403	Carbon Fixed Chip 1 kohm 1/16 W $\pm 5\%$		BRFC161024Z
R404	Carbon Fixed Chip 270 ohm 1/16 W $\pm 5\%$		BRFC162714Z
R405	Carbon Fixed Chip 0 ohm 1/8 W $\pm 5\%$		BRFC180004Z
R406	Carbon Fixed Chip 1 kohm 1/16 W $\pm 5\%$		BRFC161024Z
R407	Carbon Fixed Chip 470 ohm 1/16 W $\pm 5\%$		BRFC164714Z
R408	Carbon Fixed Chip 1.5 kohm 1/16 W $\pm 5\%$		BRFC161524Z
R409	Carbon Fixed Chip 1.5 kohm 1/16 W $\pm 5\%$		BRFC161524Z
R410	Carbon Fixed Chip 5.6 kohm 1/16 W $\pm 5\%$		BRFC165624Z
R411	Carbon Fixed Chip 100 ohm 1/16 W $\pm 5\%$		BRFC161014Z
R412	Carbon Fixed Chip 100 ohm 1/16 W $\pm 5\%$		BRFC161014Z
R413	Metal Oxide Bulk 82 ohm 2 W $\pm 5\%$		BRSJ208204Z
R414~426	Not Used		
R427	Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$		BRFC161034Z
R428	Carbon Fixed Chip 22 kohm 1/16 W $\pm 5\%$		BRFC162234Z
R429	Carbon Fixed Chip 1 Mohm 1/16 W $\pm 5\%$		BRFC161054Z
R430, 431	Not Used		
R432	Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$		BRFC161034Z
R433	Not Used		
R434	Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$		BRFC162224Z
R435	Carbon Fixed Chip 100 kohm 1/16 W $\pm 5\%$		BRFC161044Z
R436~441	Not Used		
R442	Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$		BRFC161034Z
R443	Not Used		
R444	Carbon Fixed Chip 56 kohm 1/16 W $\pm 5\%$		BRFC165634Z
R445	Carbon Fixed Chip 56 kohm 1/16 W $\pm 5\%$		BRFC165634Z
R446	Not Used		
R447	Carbon Fixed Chip 3.3 kohm 1/16 W $\pm 5\%$		BRFC163324Z
R448	Not Used		
R449	Carbon Fixed Chip 1 kohm 1/16 W $\pm 5\%$		BRFC161024Z
R450	Not Used		

Ref. No.	Description	RS Part No.	Mfr's Part No.
R451	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R452	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R453	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R454	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R455	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R456	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R457	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R458	Carbon Fixed Chip 560 ohm 1/16 W ±5 %		BRFC165614Z
R459	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R460	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R461	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z
R462	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R463	Carbon Fixed Chip 0 ohm 1/16 W ±5 %		BRFC160004Z
R464	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R465	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z
R466	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R467	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z
R468	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R469	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R470	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R471	Carbon Fixed Chip 1 Mohm 1/16 W ±5 %		BRFC161054Z
R472	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R473	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R474	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R475	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R476	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z
R477	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R478	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z
R479	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R480	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R481	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R482	Carbon Fixed Chip 8.2 kohm 1/16 W ±5 %		BRFC168224Z
R483	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R484	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R485	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R486	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z
R487	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R488	Carbon Fixed Chip 100 ohm 1/16 W ±5 %		BRFC161014Z
R489	Carbon Axial Lead (52) 1 kohm 1/4 W ±5 %		BRFT141024Z
R490	Carbon Axial Lead (52) 1 kohm 1/4 W ±5 %		BRFT141024Z
RT1	Semi-Fixed RT-552 1KB		BRTY0552102
RT2	Semi-Fixed RT-552 3KB		BRTY0552302
RT101	Semi-Fixed RT-552 300KB		BRTY0552304
RT201	Semi-Fixed RT-552 50KB		BRTY0552503
Transfomer			
T1		TF-215	BTFY0215001
T2	AF Choke	TF-083	BTFY0083001
X101	Crystal QX-492	3.579545MHZ	BQXY0492001
X301	Crystal QX-074	10.240MHZ	BQXY0074001
X401	Crystal QX-796	4.258996MHZ	BQXY0796001
W1	Wire UL 1430	#24 10- 50- 3 RED	CUFB005041Z

Ref. No.	Description	RS Part No.	Mfr's Part No.
W2	Wire UL 1430 #24 10- 50- 3 BLK		CUFK005041Z
W3	Wire UL 1430 #24 5-210- 3 BRN		CUFA021021Z
W4	Wire UL 1430 #24 5-210- 3 RED		CUFB021021Z
Miscellaneous			
B1	PCB:Main (Not repairable) PA-432AA		BPAY0432AA1
TP1	Test Pin TP-122 1820-01-PP1		BTPY0122001
	Shield Case SPTE,T=0.3		HSDC453000Z
	Shield Plate SPTE		HSDC454315Z
	Cushion NEOPRENE SP 25*15*15T		RCUN435264Z
	Cushion NEOPRENE		RCUN4B6610Z

Switch PCB ASSEMBLY

Ref. No.	Description	RS Part No.	Mfr's Part No.
B551	Assembly, Switch PCB Consists of the following:		AT367ZHBB
Capacitors			
Notes: All ceramic capacitors are Multilayer (1608) Tape type, unless otherwise specified. The following codes indicate variations of capacitors against temperature: B=±10%			
Flat Cable			
FC551	WF-353 3.5-70-3.5 8P		BWfy3530700
FC552	WF-349 3.5-70-3.5 2P		BWfy3490700
FC553	WF-351 3.5-70-3.5 5P		BWfy3510700
Resistors			
R550	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R552	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
R556	Carbon Fixed Chip 0 ohm 1/16 W ±5 %		BRFC160004Z
R561	Carbon Fixed Chip 1 kohm 1/16 W ±5 %		BRFC161024Z
R562	Carbon Fixed Chip 10 kohm 1/16 W ±5 %		BRFC161034Z
Switch			
S551	Lever SW-841		BSWY0841001
S552	Lever SW-841		BSWY0841001
S555	Lever SW-841		BSWY0841001
S556	Lever SW-841		BSWY0841001
S557	Lever SW-838		BSWY0838001

Volume PCB ASSEMBLY

Ref. No.	Description	RS Part No.	Mfr's Part No.
B601	Assembly, Volume PCB Consists of the following:		AT367ZHBC
Capacitors			
Notes: All ceramic capacitors are Multilayer (1608) Tape type, unless otherwise specified. The following codes indicate variations of capacitors against temperature: B=±10%			
Flat Cable			
FC601	WF-353 3.5-70-3.5 8P		BWfy3530700
FC602	WF-352 3.5-70-3.5 6P		BWfy3520700
Resistors			
R601	Carbon Fixed Chip 22 kohm 1/16 W ±5 %		BRFC162234Z
R602	Carbon Fixed Chip 0 ohm 1/16 W ±5 %		BRFC160004Z
R604	Carbon Fixed Chip 47 kohm 1/16 W ±5 %		BRFC164734Z
Variable			
VR601	(TP96N00N) RV-888 RY-6313 50KA		BRVY0888001
VR602	(TP96N0020F) RV-885 RY-6310 B50K		BRVY0885001
VR603	(TP96N00) RV-887 RY-6311 B5K		BRVY0887001
VR604	(TP96N00) RV-887 RY-6311 B5K		BRVY0887001
VR605	(TP96N00) RV-887 RY-6311 B5K		BRVY0887001

LED PCB ASSEMBLY

Ref. No.	Description	RS Part No.	Mfr's Part No.
B701	Assembly, LED PCB Consists of the following:		AT367ZHBD
Capacitors			
Notes: All ceramic capacitors are Multilayer (1608) Tape type, unless otherwise specified. The following codes indicate variations of capacitors against temperature: B=±10%			
C701	Ceramic	0.01 μF 50 V ±10 % B	BCML811035Z
C702	Ceramic	0.01 μF 50 V ±10 % B	BCML811035Z
Diodes			
D701	LED	TLR-124	BDAY0100001
D702	LED	TLSG-126	BDAY0756001
D703	LED	LTD-482GC-08J	BDAY1081001
Flat Cable			
FC701		WF-353 3.5-70-3.5 8P	BW FY3530700
FC702		WF-352 3.5-70-3.5 6P	BW FY3520700
Resistors			
R701	Carbon Fixed Chip	1.2 kohm 1/16 W ±5 %	BRFC161224Z
R702	Carbon Fixed Chip	820 ohm 1/16 W ±5 %	BRFC168214Z
R703	Carbon Fixed Chip	680 ohm 1/16 W ±5 %	BRFC166814Z

MIC PCB ASSEMBLY

Ref. No.	Description	RS Part No.	Mfr's Part No.
B751	Assembly, MIC PCB Consists of the following:		AT367ZHBE
Capacitors			
Notes: All ceramic capacitors are Multilayer (1608) Tape type, unless otherwise specified. The following codes indicate variations of capacitors against temperature: B=±10%			
Flat Cable			
FC751	WF-351 3.5-70-3.5 5P		BWfy3510700
Jacks			
J751	MIC 3JK-1139		BJKY1139001
Resistors			
R751	Carbon Fixed Chip 4.7 kohm 1/16 W ±5 %		BRFC164724Z
Capacitor			
C801	Ceramic 0.0056 µF 50 V ±10 % B		BCML815625Z
C802	Ceramic 0.0056 µF 50 V ±10 % B		BCML815625Z
Flat Cable			
FC801	WF-350 3.5-70-3.5 3P		BWfy3500700
Switch			
S801	Rotary SR-456 EC09P20-303A0		BSRY0456001

SWR PCB ASSEMBLY

Ref. No.	Description	RS Part No.	Mfr's Part No.
B851	Assembly, SWR PCB Consists of the following:		AT367ZHBG
Capacitors			
Notes: All ceramic capacitors are Multilayer (1608) Tape type, unless otherwise specified. The following codes indicate variations of capacitors against temperature: B=±10%			
C851	Ceramic	0.01 μF 50 V ±10 % B	BCML811035Z
C852	Ceramic	0.01 μF 50 V ±10 % B	BCML811035Z
Diodes			
D851		MA728-TX	BDAY0769001
D852		MA728-TX	BDAY0769001
Resistors			
R851	Carbon Fixed Chip	150 ohm 1/16 W ±5 %	BRFC161514Z
R852	Carbon Fixed Chip	150 ohm 1/16 W ±5 %	BRFC161514Z
Miscellaneous			
	PCB	SECC	HHDZ4B5754Z

OTHER ELECTRICAL PARTS

Ref. No.	Description	RS Part No.	Mfr's Part No.
IC501		TDA2003V	BDEY0919001
IC502		L7808CV	BDEY0924001
J501	W/O LUG	JK-425 M-RM-L 102	BJKY0425002
J502		JK-052 BLACK 12T-5C018-S	BJKY0052002
MC901	MICROPHONE	MK-563 EMC-503-005	BMKY0563001
MT501	Meter	MT-186 250	BMTY0186001
Q501		DB-791 2SC2078E	BDBC2078105
SP501	Speaker	SP-349 C77S21-3	BSPY0349001
YI501	Bushing	YD-019 B312D-11-A	BYDY0019003
YI502	Insulation Sheet	YD-041 AC223	BYDY0041001
W501	W-004	UL 1571 #26 5- 40- 3 BLK	CUPK004021Z
W502	W-004	UL 1571 #26 5- 50- 3 RED	CUPB005021Z
WA901	DC Cord	WZ-517 1515 W/P	BWZY0517001

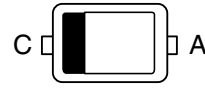
SEMICONDUCTOR LEAD IDENTIFICATION

DIODES

1N4003
1N4148
1SS108
HZ5B1
HZ5C1

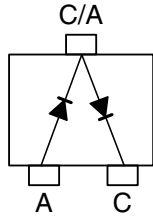


1SS356
1SS390
HVU307
MA728

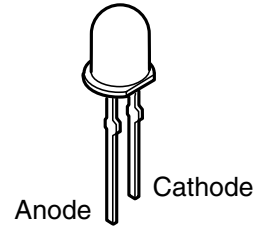


A: Anode
C: Cathode

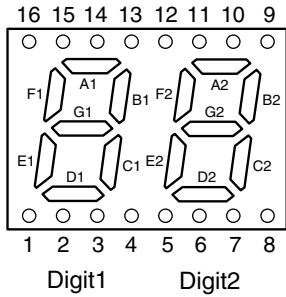
HSM88AS



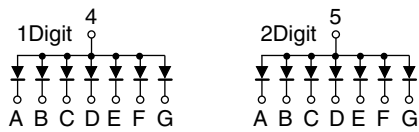
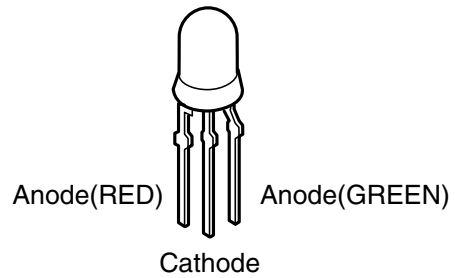
TLR-124



LTD-482GC

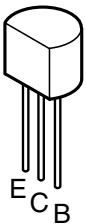


TLSG-126

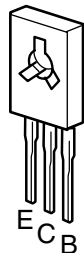


TRANSISTORS

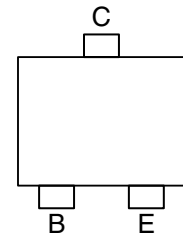
2SC2001
2SC941TM-O



2SC2078E
2SC2314F



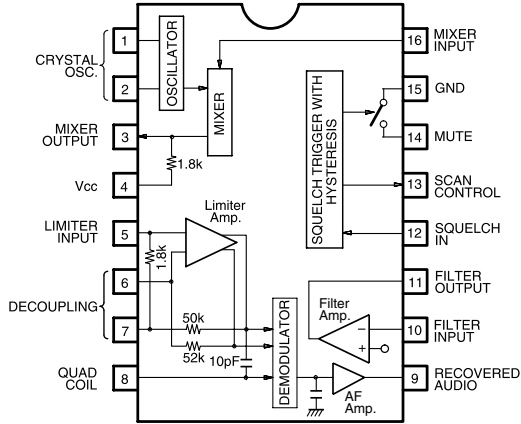
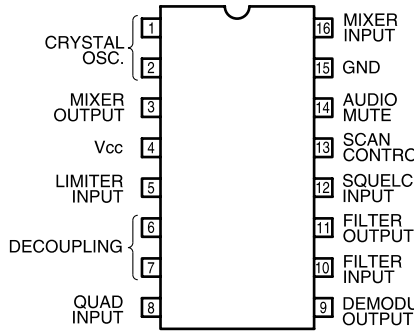
2SA812
2SA1235
2SC2714
2SC5065



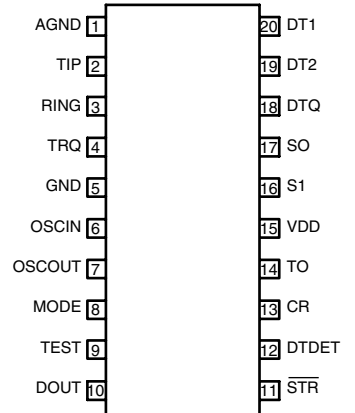
B: Base
C: Collector
E: Emitter

IC INTERNAL DIAGRAMS

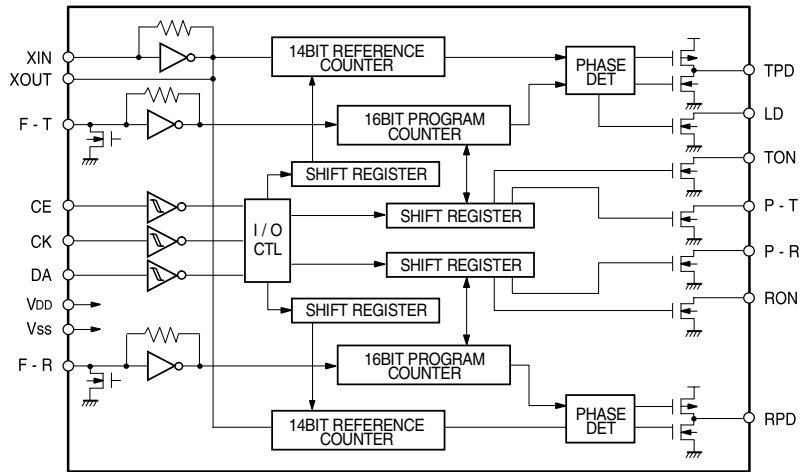
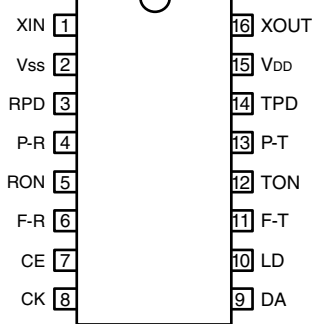
IC102
S1T3361D01



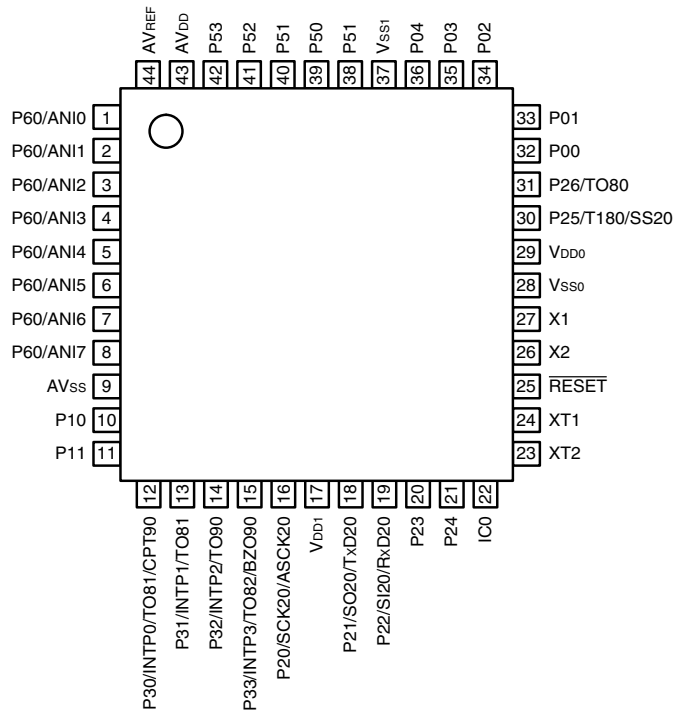
IC104
SM8224CM



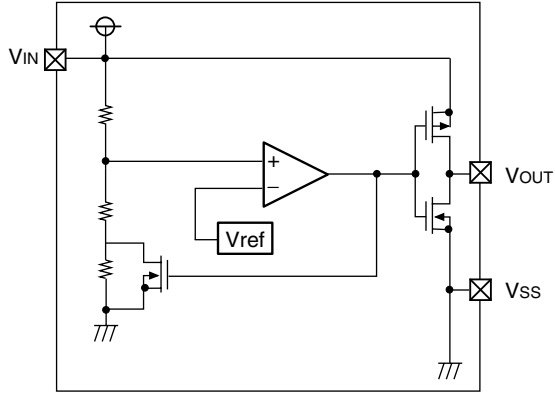
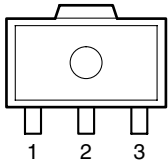
IC301
BU2630F



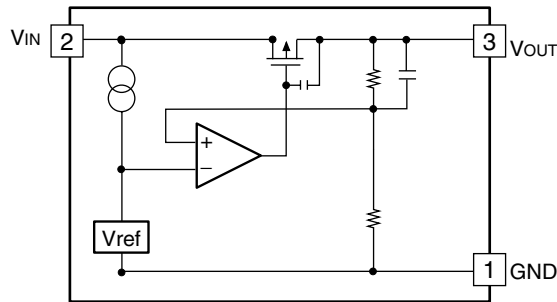
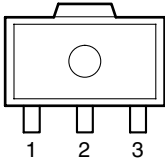
IC401
μPD789166



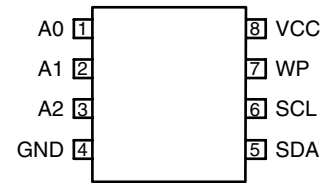
IC402
XC61CC4302PR/XC61AC4302PR



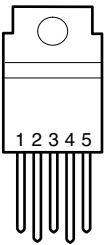
IC403
RH5RL50AA



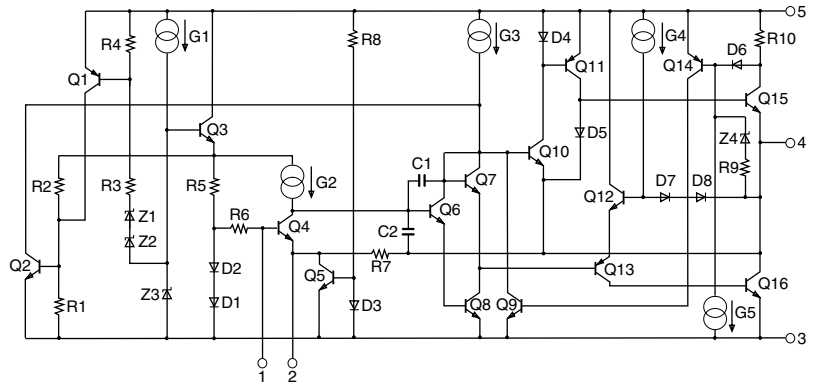
IC405
AT24CO2N



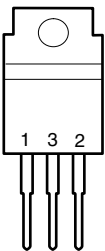
IC501
TDA2003V



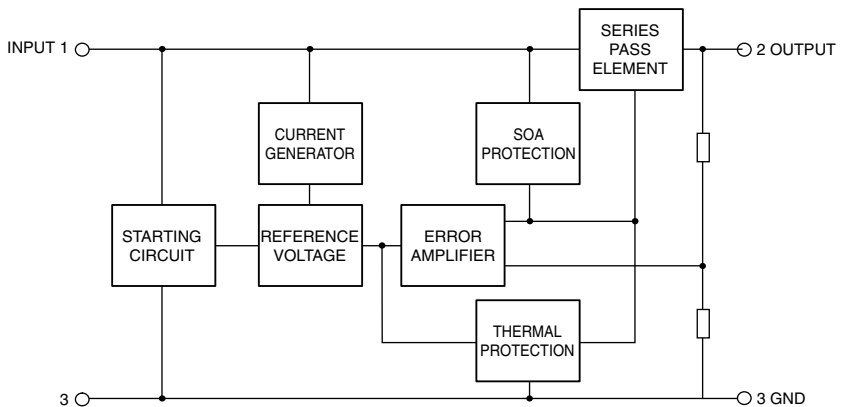
- 1: Non inverting input
- 2: Inverting input
- 3: Ground
- 4: Output
- 5: Supply voltage



IC502
L7808CV



- 1: Input
- 2: Ground
- 3: Output



IC AND TRANSISTOR VOLTAGE CHART

IC's

Unit [V]

Unit [V]

Symbol No.	Pin	Mode				Comment
		TX	RX	WX	PA	
IC102	1	5.9	5.9	5.9	5.9	OSC
	2					NC
	3	5.4	5.4	5.4	5.4	MIXER OUTPUT
	4	6.0	6.0	6.0	6.0	VCC
	5	4.9	4.9	4.9	4.9	LIMITER INPUT
	6	4.9	4.9	4.9	4.9	DECOUPLING
	7	4.9	4.9	4.9	4.9	DECOUPLING
	8	6.0	6.0	6.0	6.0	QUADRATURE IN
	9	2.6	2.6	2.6	2.6	AUDIO OUT
	10	0.9	0.9	0.9	0.9	FILTER INPUT
	11	2.7	2.7	2.7	2.7	FILTER OUTPUT
	12	-0.2	-0.2	-0.2	-0.2	SQUELCH INPUT
	13					NC
	14	0.0	0.0	0/4.9	0.0	WX OFF/1mV
	15	0.0	0.0	0.0	0.0	GND
	16	1.9	1.9	1.9	1.9	RF INPUT
IC301	1	2.1	2.1	2.1	2.1	XIN
	2	0.0	0.0	0.0	0.0	VSS
	3	2.4	2.4	2.4	2.4	RPD
	4					NC
	5					NC
	6	2.2	2.2	2.2	2.2	F-R
	7	0.0	0.0	0.0	0.0	LE
	8	134kHz Clock Pulse				CLK
	9	0-5V Data Pulse				DATA
	10	2.8	0.0	0.0	0.0	LD
	11	2.2	2.2	2.2	2.2	F-T
	12					NC
	13					NC
	14	3.7	2.5	4.9	4.9	TPD
	15	5.0	5.0	5.0	5.0	VDD
	16	2.1	2.1	2.1	2.1	XOUT
IC402	1	5.0	5.0	5.0	5.0	VOUT
	2	5.0	5.0	5.0	5.0	VIN
	3	0.0	0.0	0.0	0.0	VSS
IC403	1	0.0	0.0	0.0	0.0	GND
	2	8.0	8.0	8.0	8.0	IN
	3	5.0	5.0	5.0	5.0	OUT
IC405	1	0.0	0.0	0.0	0.0	A0
	2	0.0	0.0	0.0	0.0	A1
	3	0.0	0.0	0.0	0.0	A2
	4	0.0	0.0	0.0	0.0	GND
	5	0.5	0.5	0.5	0.5	SDA
	6	0.5	0.5	0.5	0.5	SCL
	7	0.0	0.0	0.0	0.0	WP
	8	5.0	5.0	5.0	5.0	VCC

Symbol No.	Pin	Mode					Comment
		TX	RX	WX	PA	ALERT	
IC401	1	3.5V@UP/2.5V@NOM/1.3V@DOWN					PTT_CH
	2	4.5V@CH9/2.5V@NOR/0V@CH19					CH_MODE
	3	5V@MON ON / 0V@MON OFF					MON
	4	0-3V Alert Pulse @ Alert					SAME
	5	2.5	2.5	0.0	1.7	0.0	PA_WX
	6	0.0	0.0	0.0	-	4.9	SC
	7	5V@DUAL ON / 0V@DUAL OFF					DUAL
	8	5.0	0.0	5.0	5.0	5.0	SQL
	9	0.0	0.0	0.0	0.0	0.0	AVss
	10	5.0	0.0	-	-	-	TX/RX
	11	4.9	4.9	4.9/0	4.9	0.0	WXMUTE
	12	0.0	0.0	0.0	0.0	0.0	NOT USE
	13	Edge @ Rotary SW Change					CHDN
	14	Edge @ Rotary SW Change					CHUP
	15	WX ALERT PULSE @ ALERT					ALOUT
	16	PLL Clock Output					CLK
	17	5.0	5.0	5.0	5.0	5.0	Vdd1
	18	PLL/EEPROM Data Output					DATA
	19	PLL LE Output					LE
	20						NC
	21	0-4V Switching Pulse					LED-COM
	22	0.0	0.0	0.0	0.0	0.0	Vpp
	23						NC
	24	0.0	0.0	0.0	0.0	0.0	GND
	25	5.0	5.0	5.0	5.0	5.0	/RESET
	26	5.0	5.0	5.0	5.0	5.0	X2
	27	0.0	0.0	0.0	0.0	0.0	X1
	28	0.0	0.0	0.0	0.0	0.0	Vss0
	29	5.0	5.0	5.0	5.0	5.0	Vdd0
	30	EEPROM Clock Output					E_CLK
	31	0-5V LED Switching Pulse					LED-C
	32	0-5V LED Switching Pulse					LED-G
	33	0-5V LED Switching Pulse					LED-A
	34	0-5V LED Switching Pulse					LED-F
	35	0-5V LED Switching Pulse					LED-B
	36	0-5V LED Switching Pulse					LED-E
	37	0.0	0.0	0.0	0.0	0.0	Vss1
	38	0-5V LED Switching Pulse					LED_D
	39	6.3V@WX LED ON/0V@OFF					WXLED
	40	0.0	2.0	2.0	0.0	0.0	RX_LED
	41	2.8	0.0	2.8	2.8	-	CBMUTE
	42	0.0	0.0	8.0	8.0	-	CB_MON
	43	5.0	5.0	5.0	5.0	5.0	AVdd
	44	5.0	5.0	5.0	5.0	5.0	AVref
IC104	1	2.5	2.5	2.5	2.5	-	AGND
	2	2.5	2.5	2.5	2.5	-	TIP
	3	2.1	2.1	2.1	2.1	-	RING
	4	2.1	2.1	2.1	2.1	-	TRQ
	5	0.0	0.0	0.0	0.0	-	GND
	6	2.2	2.2	2.2	2.2	-	OSC IN
	7	2.2	2.2	2.2	2.2	-	OSC OUT

Unit [V]

Symbol No.	Pin	Mode					Comment
		TX	RX	WX	PA	ALERT	
IC401	8	0.0	0.0	0.0	0.0	-	MODE
	9						NC
	10	0-5V Alert Pulse @ Alert					DOUT
	11						NC
	12						NC
	13						NC
	14						NC
	15	5.0	5.0	5.0	5.0	-	VDD
	16	5.0	5.0	5.0	5.0	-	S1
	17	5.0	5.0	5.0	5.0	-	S0
	18						NC
	19	0.0	0.0	0.0	0.0	-	DT2
	20	0.0	0.0	0.0	0.0	-	DT1

Unit [V]

Symbol No.	Pin	Mode				Comment
		TX	RX	WX	PA	
IC501	1	1.4	1.4	1.4	1.4	+IN
	2	0.8	0.8	0.8	0.8	-IN
	3	0.0	0.0	0.0	0.0	GND
	4	6.2	6.3	6.3	6.3	OUT
	5	13.4	13.7	13.7	13.7	Vc
IC502	1	13.4	13.7	13.7	13.7	IN
	2	0.0	0.0	0.0	0.0	GND
	3	8.0	8.0	8.0	8.0	OUT

TRANSISTORS

Unit [V]

Unit [V]

Symbol No.	Pin	Mode				Comment
		TX	RX	WX	PA	
Q1	E	0.9	0.8	-	-	
	C	7.5	7.5	-	-	
	B	1.6	1.2	-	-	
Q2	E	1.7	0.8	-	-	
	C	7.7	7.2	-	-	
	B	1.6	1.3	-	-	
Q3	E	0.0	0.0	-	-	
	C	7.6	7.6	-	-	
	B	0.7	0.7	-	-	
Q4	E	0.0	0.0	-	-	
	C	2.3	2.3	-	-	
	B	0.7	0.7	-	-	
Q5	E	1.7	1.7	-	-	
	C	7.1	7.1	-	-	
	B	2.3	2.3	-	-	
Q6	E	0.0	0.0	0.0	0.0	
	C	0.0	0.0	0.0	0.0	
	B	0.7	0.7	0.7/0	0.7	WX OFF/1mV
Q7	E	0.0	0.0	0.0	0.0	
	C	4.2	4.2	4.2	4.2	
	B	0.7	0.7	0.7	0.7	
Q8	E	0.0	0.0	0.0	0.0	SQ OPEN/CLOSE
	C	0.0	0/5.0	0.0	0.0	↓
	B	0.7	0.7/0	0.7	0.7	
Q9	E	0.0	0.0	0.0	0.0	
	C	6.3	6.3/0	6.3	6.3	↓
	B	0.2	0.2/0.7	0.0	0.0	
Q10	E	0.0	0.0	0.0	0.0	
	C	0.0	0.0	0.0	0.0	
	B	0.7	0.7	0.7	0.7	
Q11	E	0.0	0.0	-	-	
	C	0.0	0/0.9	-	-	RX OFF/1mV
	B	0.7	0.7	-	-	
Q12	E	0.0	0.0	0.0	0.0	
	C	0.0	0.0	0.0	0.0	
	B	0.7	0.0	0.7	0.7	
Q13	E	0.0	0.0	-	-	NB OFF/ON
	C	0.1/1.9	0.1/1.7	-	-	↓
	B	0.7/0.6	0.7/0.7	-	-	
Q14	E	6.3/1.2	6.3/1.2	-	-	
	C	7.6/7.3	7.6/7.3	-	-	↓
	B	0.1/2.0	0.1/1.7	-	-	
Q15	E	8.0	8.0	8.0	8.0	
	C	7.7	7.7	0.0	0.0	
	B	7.2	7.2	8.0	8.0	
Q16	E	0.0	0.0	-	-	
	C	0.9	0.9	-	-	
	B	0.6	0.6	-	-	
Q17	E	7.6	7.6	-	-	
	C	0.0	0.0	-	-	
	B	7.6	7.6	-	-	

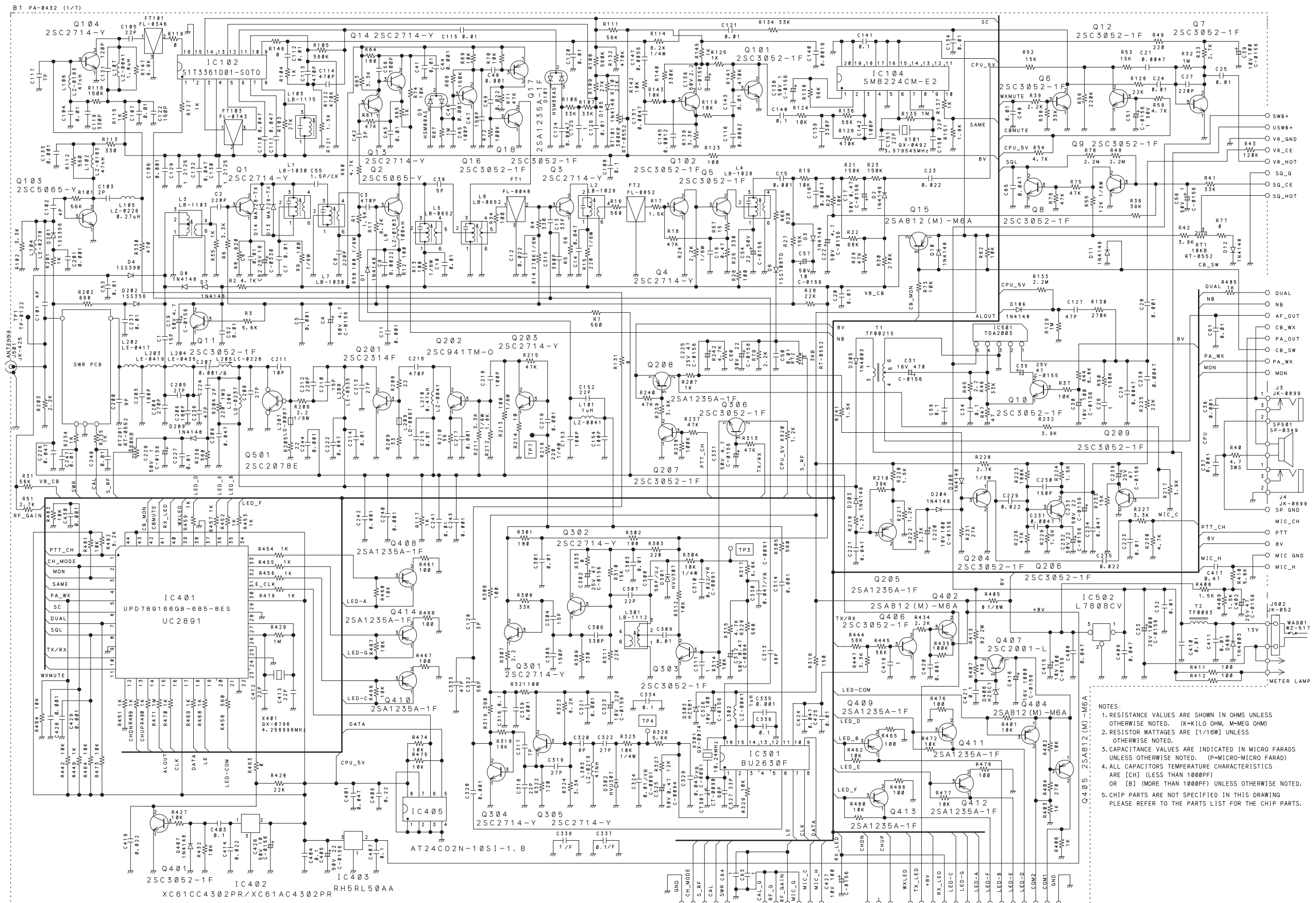
Symbol No.	Pin	Mode				Comment
		TX	RX	WX	PA	
Q18	E	0.0	0.0	-	-	
	C	0.0	0.0	-	-	
	B	0.0	0.0	-	-	
Q101	E	0.0	0.0	0.0	0.0	
	C	2.7	2.7	2.7	2.7	
	B	0.6	0.6	0.6	0.6	
Q102	E	2.6	2.6	2.6	2.6	
	C	3.9	3.9	3.9	3.9	
	B	3.2	3.2	3.2	3.2	
Q103	E	0.0	0.0	0.0	0.0	
	C	3.5	3.5	3.5	3.5	
	B	0.6	0.8	0.8	0.8	
Q104	E	0.0	0.0	0.0	0.0	
	C	3.3	3.3	3.3	3.3	
	B	0.7	0.7	0.7	0.7	
Q201	E	0.0	0.0	-	-	
	C	12.0	13.6	-	-	
	B	0.0	0.0	-	-	
Q202	E	1.8	0.0	-	-	
	C	7.5	0.0	-	-	
	B	2.3	0.0	-	-	
Q203	E	0.1	0.0	-	-	
	C	6.4	0.0	-	-	
	B	0.9	0.0	-	-	
Q204	E	0.0	0.0	0.0	0.0	
	C	0.0	0.0	0.0	0.0	
	B	0.0	0.7	0.7	0.0	
Q205	E	3.5	3.5	3.5	3.5	
	C	0.2	0.2	0.2	0.2	
	B	3.4	3.4	3.4	3.4	
Q206	E	0.7	0.7	0.7	0.7	
	C	5.8	5.8	5.8	5.8	
	B	1.3	1.3	1.3	1.3	
Q207	E	0.0	0.0	0.0	0.0	
	C	7.9	0.1	0.1	7.9	
	B	0.0	0.7	0.7	0.0	
Q208	E	8.0	8.0	8.0	8.0	
	C	0.0	7.9	7.9	0.0	
	B	7.9	7.2	7.2	7.9	
Q209	E	0.0	0.0	0.0	0.0	
	C	0.0	0.0	0.0	0.0	
	B	0.0	0.7	0.7	0.0	
Q301	E	0.1	0.1	-	-	
	C	4.4	4.6	-	-	
	B	0.8	0.8	-	-	
Q302	E	2.3	2.3	-	-	
	C	6.1	6.1	-	-	
	B	3.1	3.1	-	-	
Q303	E	0.0	0.0	-	-	
	C	0.0	7.6	-	-	
	B	0.7	0.0	-	-	

Unit [V]

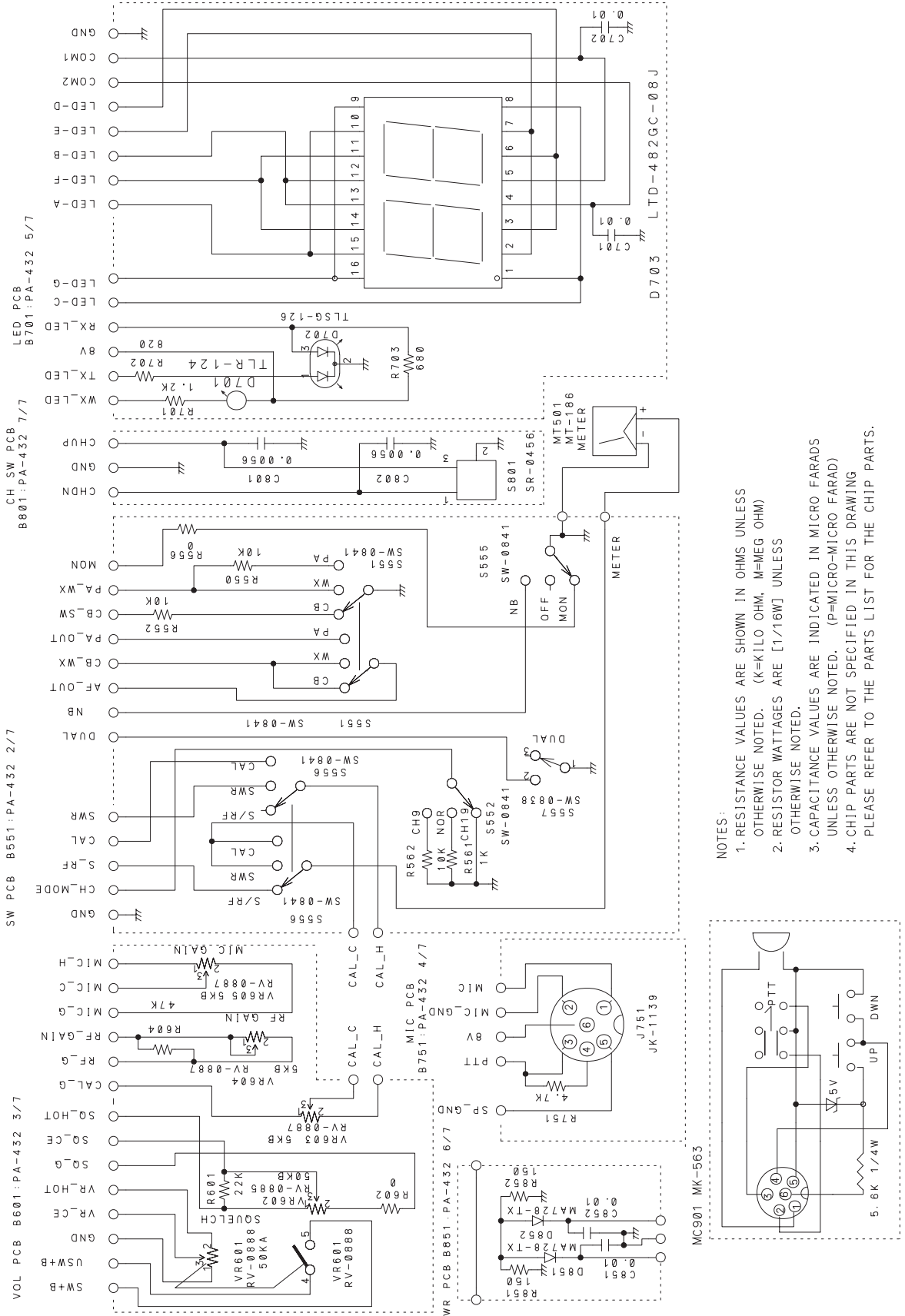
Symbol No.	Pin	Mode				Comment
		TX	RX	WX	PA	
Q304	E	0.0	0.0	0.0	0.0	
	C	2.5	2.5	2.5	2.5	
	B	0.7	0.7	0.7	0.7	
Q305	E	0.8	0.8	0.8	0.8	
	C	5.5	5.5	5.5	5.5	
	B	1.4	1.4	1.4	1.4	
Q306	E	0.7	0.0	0.0	0.0	
	C	0.8	5.0	5.0	5.0	
	B	1.4	0.0	0.0	0.0	
Q401	E	0.0	0.0	0.0	0.0	
	C	5.0	5.0	5.0	5.0	
	B	0.0	0.0	0.0	0.0	
Q402	E	8.0	8.0	8.0	8.0	
	C	7.8	0.0	0.0	0.0	
	B	7.0	7.9	7.9	7.9	
Q404	E	4.0	4.0	4.2	4.0	CB:20CH,WX:4CH
	C	2.5-4V Switching Pulse				
	B	3-4V Switching Pulse				
Q405	E	4.0	4.0	4.2	4.0	CB:20CH,WX:4CH
	C	0-4V Switching Pulse				
	B	3-4V Switching Pulse				
Q406	E	0.0	0.0	0.0	0.0	
	C	0.1	7.9	7.9	7.9	
	B	0.7	0.0	0.0	0.0	
Q407	E	4.1	4.1	4.2	4.1	CB:20CH,WX:4CH
	C	5.7	5.7	6.2	5.7	↓
	B	4.8	4.8	4.8	4.8	↓
Q408	E	2-5V Switching Pulse				
	C	0-2V Switching Pulse				
	B	1-5V Switching Pulse				
Q409	E	2-5V Switching Pulse				
	C	0-2V Switching Pulse				
	B	1-5V Switching Pulse				
Q410	E	2-5V Switching Pulse				
	C	0-2V Switching Pulse				
	B	1-5V Switching Pulse				
Q411	E	2-5V Switching Pulse				
	C	0-2V Switching Pulse				
	B	1-5V Switching Pulse				
Q412	E	2-5V Switching Pulse				
	C	0-2V Switching Pulse				
	B	1-5V Switching Pulse				
Q413	E	2-5V Switching Pulse				
	C	0-2V Switching Pulse				
	B	1-5V Switching Pulse				
Q414	E	2-5V Switching Pulse				
	C	0-2V Switching Pulse				
	B	1-5V Switching Pulse				
Q501	E	0.0	0.0	0.0	0.0	
	C	9.6	13.5	13.5	13.5	
	B	-0.3	0.0	0.0	0.0	

SCHEMATIC DIAGRAMS (21-1576)

Main PCB



SWITCH/VOLUME/LED/MIC/CH SW/SWR PCBs (21-1576)



- NOTES:
1. RESISTANCE VALUES ARE SHOWN IN OHMS UNLESS OTHERWISE NOTED. (K=KILO OHM, M=MEG OHM)
 2. RESISTOR WATTAGES ARE [1/16W] UNLESS OTHERWISE NOTED.
 3. CAPACITANCE VALUES ARE INDICATED IN MICRO FARADS UNLESS OTHERWISE NOTED. (P=MICRO-MICRO FARAD)
 4. CHIP PARTS ARE NOT SPECIFIED IN THIS DRAWING PLEASE REFER TO THE PARTS LIST FOR THE CHIP PARTS.

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