

PRESIDENT

MARTIN

SERVICE MANUAL

SPECIFICATIONS

General		
Frequency coverage		26.965 ~ 27.405MHz
Operating mode		F3E (FM), A3E (AM)
Configuration		40 EU / 40 PL / 80 d / 40 EC / 40 UK+40 CEPT / 27 In
Antenna Impedance		50 Ω
Working temperature		-10°C~+55°C
Frequency Tolerance		Better than 0.002%
Input Voltage		13.2V & 26.4V DC
Grounding Method		Negative ground
Current Drain	Transmitter	13.2V : 2.0A Max.
		26.4V : 1.5A Max.
	Receiver	From 150mA to 500mA 13,2V / From 100mA to 300mA 26,4V
Dimensions (W x H x D)		Microphone: 60 x 41 x 82 mm
With projections		Body: 115 x 180 x 35 mm
Weight		Approx.600g
RECEIVER		
Receiving System		Dual conversion superheterodyne
IF Frequencies		Double Conversion 1st 10.695MHz/ 2nd 455KHz
Sensitivity	-112dBm for 20dB SINAD in AM Mode	
	-117dBm for 20dB SINAD in FM Mode	
Audio Output Power		3 watts max @8 Ω
Audio Distortion		Less than 5% @ 1KHz
Image Rejection		70dB
Adjacent Channel Rejection		60dB
Frequency Response		300Hz to 3000Hz
Squelch sensitivity		Threshold 0,2 μ V(-120dBm)/Tight 1mV(-47dBm)
TRANSMITTER		
Output Power		FM/AM: 4.0 W
Modulated signal distortion		Inferior to 5%
Frequency Response		300Hz to 3000Hz
Output Impedance		50ohms, Unbalanced
Harmonic Suppression		More than -56dBm

CIRCUIT DESCRIPTION

Frequency configuration

The receiver utilizes double conversion. The first IF is 10.695MHz and the second IF is 455kHz. The first local oscillator signal is supplied from the VCO module.

The VCO module in the transmitter generates the necessary frequencies. Fig. 1 shows the frequencies.

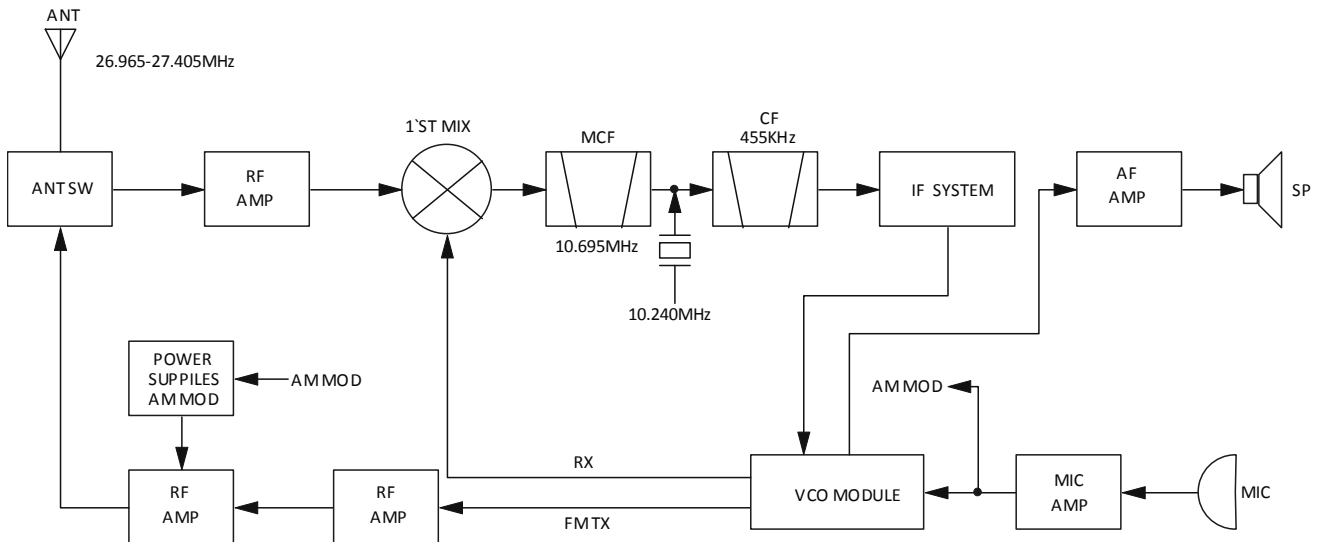


Fig. 1 Frequency configuration

Receiver

The frequency configuration of the receiver is shown in Fig. 2.

■ Front - end RF amplifier

An incoming signal from the antenna is applied to an RF amplifier (Q103) after passing through a transmit/receive switch circuit (D100, D110 and D108 are off). After the signal is filtered through a band pass filter to eliminate unwanted signals before it is passed to the first mixer.

■ First Mixer

The signal from the RF amplifier is heterodyned with the first local oscillator signal from the VCO module at the first mixer (Q104) to create a 10.695MHz first intermediate frequency (1st IF) signal. The first IF signal is filtered through a band pass filter (L106, L107 and L108) and then fed through the monolithic crystal filter (MCFs : CB100) to further remove spurious signals.

■ IF amplifier

The first IF signal goes into second mixer Q113, second mixer mix first IF and 10.24MHz second IF output Y100. The signal is heterodyned again with a second local oscillator signal. The second IF signal is then fed through a 455kHz ceramic filter (CF100) to further eliminate unwanted signals. The signal is amplified by Q114 and Q105, and then the second IF signal enters U101 (FM processing IC) in FM mode or changed according to D117 diode DC and receive audio signal output.

CIRCUIT DESCRIPTION

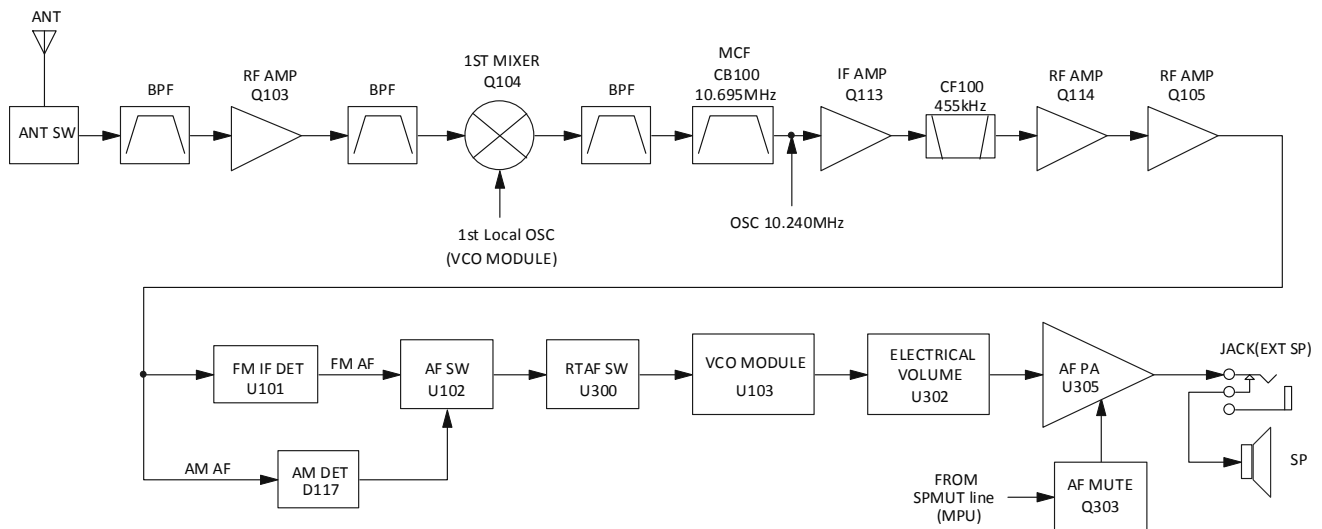


Fig. 2 Receiver section configuration

■ AF amplifier

The FM IC output the FM AF passes through the AF electrical switch(U102) or The AM demodulated signal from Q105 goes to AF electrical switch (U102) through D117, electrical switch (U300),VCO module, and Electrical Control Volume IC(U302). After goes to AF power amplifier IC (U305). Is routed to an audio power amplifier (U305) where it is amplified and output to the speaker. To output sounds from the speaker, U701 sends a high signal to the SPMUT line the turns Q303.

■ Squelch

A squelch circuit is provided to prevent no-signal noise or weak signals from outputting to a speaker during transmission.

Transmitter

■ Transmit audio

The audio signal from the microphone goes to the VCO module through the VCO modulation terminal for direct FM modulation. The AM modulation signal enter into RF amplifier after passing through power supplies Q306, Q307 and Q311.

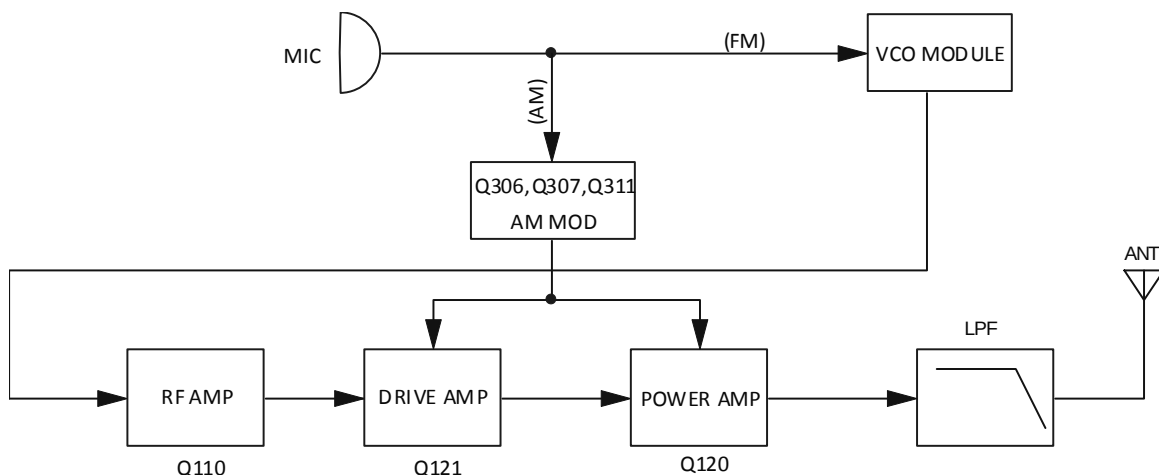


Fig. 5 Transmit circuit

CIRCUIT DESCRIPTION

■ Power Amplifier Circuit

The transmit output signal from the VCO module passes through the amplified (Q110) and amplified by Q121. The amplified signal goes to the final amplifier (Q120) through a low-pass filter. The lowpass filter removes unwanted high-frequency harmonic components, and the resulting signal is transmitted through the antenna terminal.

Power Supply

The power supply voltage is maintained to 8.0V, 5.0V and 3.3V by the series regulator (U501, U500 and U503). It is used as MCU power 3M3, 8N, 8T and 8R.

8V is a common 8V.

8R is 8V for reception and output during reception.

8T is 8V for transmission and output during transmission.

5V is a common 5V.

Control Circuit

■ MPU

The microprocessor (U701) operates with an internal clock of 4MHz.

The control circuit consists of a microprocessor (U701) and its peripheral circuits. It controls the TX-RX unit. U701 mainly performs the following:

- 1) Switching between transmission and reception by the PTT signal input.
- 2) Sending frequency program data to the PLL.
- 3) Controlling squelch on/off by the DC voltage from the squelch circuit.
- 4) Controls the second MPU.
- 5) Controls the compander unit.
- 6) Controls the power supply unit.

Display Circuit

The MPU (U701) controls the display LCD and LEDs. The LCD driver (U800) and MPU (U701) communicate through the DAT, CLK, CS lines.

CONT UNIT		
Designators	Comment	Footprint
C800	103PC	S0402
C801	103PC	S0402
C802	103PC	S0402
C803	475PC	S0603
C805	225PJ	S0402
C806	225PJ	S0402
C807	103PC	S0402
C810	103PC	S0402
D800	CESDBLC5V0D5	SOD523
D801	BLU	SD0603(LED)
D802	BLU	SD0603(LED)
D803	BLU	SD0603(LED)
D804	BLU	SD0603(LED)
D805	BLU	SD0603(LED)
D806	BLU	SD0603(LED)
D807	GRE	SD0603(LED)
D808	GRE	SD0603(LED)
D809	GRE	SD0603(LED)
D810	GRE	SD0603(LED)
D811	GRE	SD0603(LED)
D812	GRE	SD0603(LED)
D813	ORG	SD0603(LED)
D814	ORG	SD0603(LED)
D815	ORG	SD0603(LED)
D816	ORG	SD0603(LED)
D817	ORG	SD0603(LED)
D818	ORG	SD0603(LED)
DS800	HSA28722-UPTSZ-01	HSA28722-UPTSZ-01
J800	CB-HKCZ-0012	QFM16-6F2
J801	5V 2.1A	SIP2T2
J802	CGJ-JCJ-0467	CGJ-JCJ-USB180
J803	0.5S-1-20PB	SIPM20
Q800	KTC3875S(GR)	SOT23
Q801	KTC3875S(GR)	SOT23
Q802	KTC3875S(GR)	SOT23
R800	75K/F	S0603
R801	43.2K/F	S0603
R802	100R	S0402
R803	100R	S0402
R804	100R	S0402
R805	100R	S0402
R806	10K	S0402
R807	49.9K/F	S0603
R808	49.9K/F	S0603
R809	100K	S0402
R810	100K	S0402
R811	100K	S0402
R812	100K	S0402
R813	10K	S0402
R814	10K	S0402
R815	4K7	S0402
R816	4K7	S0402
R817	4K7	S0402
R818	1K8	S0402
R819	1K8	S0402
R820	1K8	S0402
R821	2K2	S0402
R822	2K2	S0402

Designators	Comment	Footprint
R823	2K2	S0402
R824	1K8	S0402
R825	1K8	S0402
R826	1K8	S0402
R827	47R	S0402
R828	47R	S0402
R829	47R	S0402
R830	51K	S0402
R831	51K	S0402
S800	CGJ-QCKG-0032	SKW(6*3.5*5)
S801	CGJ-QCKG-0032	SKW(6*3.5*5)
S802	CGJ-QCKG-0032	SKW(6*3.5*5)
S804	CGJ-BMKG-0029	SW-R11N
U800	TM1722	SOL-24
W800	CGJ-JZKG-0006	R095X2NO(1)
W801	CGJ-JZKG-0006	R095X2NO(1)
VOL UNIT		
Designators	Comment	Footprint
J900	CON4	SIP2T4
W900	CGJ-YLKG-0068	VRHK
MAIN UNIT		
Designators	Comment	Footprint
C100	33PHJ	S0603
C101	151PHJ	S0402
C102	103PC	S0402
C103	103PC	S0402
C104	103PC	S0402
C105	103PC	S0402
C106	103PC	S0402
C107	103PC	S0402
C108	102PHJ	S0402
C109	225PA	S0402
C110	103PC	S0402
C111	103PC	S0402
C112	103PC	S0402
C113	225PA	S0402
C114	225PA	S0402
C115	103PC	S0402
C116	103PC	S0402
C117	103PC	S0402
C118	221PHJ	S0402
C119	471PH	S0402
C120	103PC	S0402
C121	475PA	S0603
C122	475PE	S0805
C123	221PHJ	S0402
C124	221PHJ	S0402
C125	121PHJ	S0402
C126	121PHJ	S0402
C127	NC	S0402
C128	27PHJ	S0402
C129	39PHJ	S0402
C130	12PHJ	S0402
C131	12PHJ	S0402
C132	12PHJ	S0402
C133	82PHJ	S0402
C134	82PHJ	S0402
C135	82PHJ	S0402
C136	475PC	S0603

Designators	Comment	Footprint
C137	475PC	S0603
C138	105PC	S0402
C139	3PHB	S0402
C140	5PHB	S0402
C141	3PHB	S0402
C142	NC	S0402
C143	475PC	S0603
C146	7PHB	S0402
C147	7PHB	S0402
C148	221PHJ	S0402
C149	221PHJ	S0402
C150	221PHJ	S0402
C153	104PC	S0402
C154	0R	S0603
C155	5PHB	S0402
C156	22PHJ	S0402
C157	101PHJ	S0402
C158	101PHJ	S0402
C159	101PHJ	S0402
C160	101PHJ	S0402
C161	101PHJ	S0402
C162	101PHJ	S0402
C164	101PHJ	S0402
C165	10PHJ	S0402
C167	13PHJ	S0402
C168	18PHJ	S0402
C171	103PC	S0402
C172	103PH	S0603
C173	103PH	S0603
C179	151PHJ	S0402
C180	151PHJ	S0402
C181	103PC	S0402
C182	225PA	S0402
C183	181PHJ	S0402
C184	104PC	S0402
C185	104PC	S0402
C186	104PC	S0402
C187	104PC	S0402
C188	104PC	S0402
C189	104PC	S0402
C190	103PC	S0402
C191	103PC	S0402
C192	103PC	S0402
C193	103PC	S0402
C194	103PC	S0402
C195	103PC	S0402
C196	103PC	S0402
C197	103PC	S0402
C198	103PC	S0402
C199	103PC	S0402
C200	102PHJ	S0402
C201	102PHJ	S0402
C202	102PHJ	S0402
C210	47PHJ	S0402
C211	101PHJ	S0402
C212	101PHJ	S0402
C213	225PA	S0402
C214	225PA	S0402
C215	221PHJ	S0402
C219	225PA	S0402

Designators	Comment	Footprint
C220	225PA	S0402
C221	332PH	S0402
C222	103PC	S0402
C224	475PE	S0805
C225	103PC	S0402
C226	56PHJ	S0603
C227	24PHJ	S0603
C228	39PHJ	S0603
C229	5PHB	S0603
C233	561P2DJ	S0805
C236	103PH	S0603
C241	221PHJ	S0603
C242	221PHJ	S0603
C243	NC	S0603
C244	224PC	S0402
C245	224PC	S0402
C247	121PHJ	S0603
C249	103PC	S0402
C250	103PC	S0402
C252	392PHJ	S0402
C253	391PHJ	S0402
C254	102PHJ	S0402
C255	10PHJ	S0603
C256	151PHJ	S0603
C257	15PHJ	S0603
C258	121PHJ	S0603
C259	NC	S0603
C260	121PHJ	S0603
C261	181P2DJ	S0805
C262	271P2DJ	S0805
C268	NC	S0603
C269	472PH	S0402
C270	103PC	S0402
C271	1PHB	S0603
C275	105PC	S0402
C300	103PC	S0402
C301	103PC	S0402
C302	103PC	S0402
C303	103PC	S0402
C304	104PC	S0402
C305	104PC	S0402
C306	104PC	S0402
C307	104PC	S0402
C308	NC	S0402
C309	472PH	S0402
C310	472PH	S0402
C311	475PA	S0603
C312	475PA	S0603
C313	104PC	S0402
C314	104PC	S0402
C315	104PC	S0402
C316	104PC	S0402
C317	104PC	S0402
C318	104PC	S0402
C319	104PC	S0402
C320	103PC	S0402
C321	104PC	S0402
C322	104PC	S0402
C323	104PC	S0402
C324	475PC	S0603

Designators	Comment	Footprint
C325	103PC	S0402
C326	225PA	S0402
C327	103PC	S0402
C328	102PH	S0603
C329	NC	S0603
C330	222PH	S0402
C331	NC	S0603
C332	103PH	S0603
C333	102PH	S0603
C334	103PH	S0603
C335	NC	S0402
C336	221PHJ	S0402
C337	103PHJ	S0402
C338	103PHJ	S0402
C339	103PC	S0402
C340	681PHJ	S0402
C341	475PC	S0603
C342	475PC	S0603
C345	104PC	S0402
C347	475PC	S0603
C351	103PH	S0603
C354	475PC	S0603
C355	475PC	S0603
C362	NC	S0603
C363	102PH	S0603
C367	103PC	S0402
C371	104PC	S0402
C372	104PC	S0402
C374	102PH	S0402
C375	103PH	S0603
C376	332PH	S0402
C377	224PE	S0603
C378	103PH	S0603
C381	103PH	S0603
C500	103PH	S0603
C501	103PH	S0603
C502	104PH	S0603
C503	103PH	S0603
C504	103PH	S0603
C505	103PC	S0402
C506	102PH	S0402
C507	103PC	S0402
C508	103PC	S0402
C509	103PC	S0402
C510	103PC	S0402
C511	103PC	S0402
C513	103PC	S0402
C514	103PC	S0402
C515	103PC	S0402
C516	103PC	S0402
C517	471PH	S0402
C518	471PH	S0402
C519	225PA	S0402
C520	225PA	S0402
C521	225PA	S0402
C522	225PA	S0402
C523	475PC	S0603
C525	105PC	S0402
C526	105PC	S0402
C527	333PE	S0402

Designators	Comment	Footprint
C528	105PH	S0805
C529	105PH	S0805
C530	103PC	S0402
C531	NC	S0402
C532	104PH	S0603
C533	104PH	S0603
C534	103PC	S0402
C535	104PH	S0603
C536	103PH	S0402
C537	103PH	S0402
C538	104PH	S0603
C539	105PH	S0805
C540	105PH	S0805
C541	333PE	S0402
C542	105PH	S0805
C543	NC	S0402
C700	103PC	S0402
C701	103PC	S0402
C702	103PC	S0402
C703	475PJ	S0603
C705	103PC	S0402
C706	102PH	S0402
C707	103PC	S0402
C708	102PH	S0402
C709	103PC	S0402
C711	103PC	S0402
C713	103PC	S0402
C715	103PC	S0402
C716	475PJ	S0603
C717	103PC	S0402
C724	103PC	S0402
C725	103PC	S0402
C728	103PC	S0402
C730	104PC	S0402
C731	103PC	S0402
C732	475PJ	S0603
CB100	QI-0014	M10.7
CF100	FCI-0006	K455E5
D100	1SS400	SOD523
D101	1SS400	SOD523
D102	1SS400	SOD523
D103	1SS400	SOD523
D104	1SS400	SOD523
D105	1SS400	SOD523
D106	1SS400	SOD523
D107	1SS400	SOD523
D108	1SS356	SOD323
D110	1SS356	SOD323
D116	DS-0251	SOT323A
D117	DS-0251	SOT323A
D119	1SS400	SOD523
D122	BA892	SOD523
D123	BA892	SOD523
D300	1SS400	SOD523
D301	1SS400	SOD523
D302	12V	SOD523
D303	5V1	SOD523
D304	1SS400	SOD523
D305	1SS355	SOD323
D306	DS-0251	SOT323A

Designators	Comment	Footprint
D307	1SS400	SOD523
D308	3V3	SOD523
D309	5V1	SOD523
D500	B340A	SOD-106
D501	B340A	SOD-106
D502	SM540BF	SMB-FL
D503	5V6	SOD323
D504	DS-0256	SOD523
D505	SK510C	DO-214AB
D703	DS-0224	DFN1006
D704	DS-0223	DFN1006
D705	DS-0223	DFN1006
D706	DS-0224	DFN1006
D711	DS-0224	DFN1006
D712	DS-0224	DFN1006
D713	DS-0224	DFN1006
D714	DS-0224	DFN1006
D715	DS-0224	DFN1006
E100	CGJ-JCJ-0166	ANT
E300	22uF/25V	SRB0.10(5MM)
E301	100uF/25V	SRB0.125(6MM)
E303	470uF/25V	SRB0.160(8MM)
E500	220uF/35V	SRB0.160(8MM)
E501	220uF/35V	SRB0.160(8MM)
E502	100uF/25V	SRB0.125(6MM)
E503	220uF/16V	SRB0.125(6MM)
E505	220uF/16V	SRB0.125(6MM)
E506	330uF/35V	SRB0.200(10MM)
E507	220uF/35V	SRB0.160(8MM)
E508	470uF/10V	SRB0.125(6MM)
E509	330uF/35V	SRB0.200(10MM)
E510	470uF/25V	SRB0.160(8MM)
J300	CGJ-JCJ-0035	SIP2T2
J500	DC-1	DC-1.0/2.5MM-V1.0
J502	5V 2.1A	SIP2T2
J700	CGJ-JCJ-0041	SIP2T4
J701	CGJ-JCJ-0040	CON2.0-3
J704	CGJ-JCJ-0120	SIPM20
JK300	CGJ-JCJ-0118	PJ-302
JK302	CGJ-JCJ-0411	EJ-2503-35-GP
L1	LWS1008-0030	S2520
L100	LWS0805-0056	S0805
L101	220nH	S0402
L102	CBM100505U301T	S0402
L103	LWS0805-0059	S0805
L104	LWS0805-0059	S0805
L105	LWS0805-0059	S0805
L106	LWS2520-0011	S2520
L107	LWS2520-0011	S2520
L108	LWS2520-0011	S2520
L109	22uH	S0603
L110	6.8uH	S0603
L111	LWS3225-0003	S3225
L112	LWS3225-0006	S3225
L113	CBM100505U301T	S0402
L119	LAI-0076	
L120	LAI-0076	
L121	LAI-0076	
L122	LAI-0076	
L123	LAI-0236	

Designators	Comment	Footprint
L127	LAI-0239	
L128	LWS1008-0031	S2520
L129	6.8uH	S0603
L130	LWS0805-0059	S0805
L131	220nH	S0402
L300	6.8uH	S0603
L301	6.8uH	S0603
L500	LWS0630-0001	INDUCTORS-7.8*7.0MM
L501	CBM100505U301T	S0402
L502	CBM100505U301T	S0402
L503	LWS33-0009	L7*13
L504	LWS0530-0001	LWS-5952
L505	LWS0630-0001	INDUCTORS-7.8*7.0MM
L506	LWS127125-0001	L7*13
L507	CBM100505U301T	S0402
L700	CB-LJX-0097	JMP
M100	T,0,0	MASK
M101	T,94,0	MASK
M102	T,-3,105	MASK
M103	T,97,105	MASK
Q101	RT1N141U	EMT3
Q102	RT1N141U	EMT3
Q103	MMBTSC2714Y	SOT23
Q104	MMBTSC2714Y	SOT23
Q105	MMBTSC2714Y	SOT23
Q110	ST2SC3202Y	TO92-ECB
Q112	2SC4082	SC70
Q113	2SC2714(QY)	SOT23
Q114	2SC2714(QY)	SOT23
Q120	FQP13N10	TO-220-V-123-A
Q121	2SC2314(F)	TO126-V-ECB-V2.0
Q300	RT1N141U	EMT3
Q301	NC	EMT3
Q302	KTC3875S(GR)	SOT23
Q303	RT1N141U	EMT3
Q304	RT1N141U	EMT3
Q306	2SA2022	TO220F-V-BCE-V2.0
Q307	2SB1132	SOT89
Q308	KTC3875S(GR)	SOT23
Q310	LMBT3906LT1G	SOT23
Q311	2SC2712(GR)	SOT23
Q312	RT1N141U	EMT3
Q313	L2SD1781KRLT1G	SOT23
Q317	UMC5N	SOT353
Q500	UMC5N	SOT353
Q502	UMC5N	SOT353
R100	220R	S0805
R101	3K3	S0402
R102	3K3	S0402
R103	3K3	S0402
R104	2K4	S0402
R105	4K7	S0402
R106	1K	S0402
R107	1K	S0402
R108	1K	S0402
R109	470R	S0402
R110	470R	S0402
R111	470R	S0402
R112	470R	S0402
R113	470R	S0402

Designators	Comment	Footprint
R114	470R	S0402
R115	1K	S0402
R116	4K7	S0402
R117	10K	S0402
R118	10K	S0402
R119	10K	S0402
R120	1K	S0402
R121	1K	S0402
R122	RTS-0023	S0402
R123	1K	S0603
R124	10K	S0402
R125	1K	S0402
R126	10K	S0402
R127	1K	S0603
R128	0R	S0603
R130	0R	S0402
R132	100K	S0402
R133	100K	S0402
R134	100K	S0402
R135	100K	S0402
R137	330R	S0402
R138	220R	S0402
R142	330K	S0402
R143	330K	S0402
R144	240K	S0402
R145	10R	S0402
R146	1K	S0402
R147	1K	S0402
R148	1K	S0402
R150	0R	S0402
R151	220R	S0402
R152	0R	S0402
R153	470R	S0402
R154	220K	S0402
R155	3K9	S0402
R156	1K5	S0402
R157	1M	S0402
R159	3K3	S0402
R160	3K3	S0402
R161	220R	S0402
R162	680R	S0402
R164	100R	S0402
R165	22K	S0402
R166	22K	S0402
R167	2K2	S0402
R170	2K2	S0402
R171	510R	S0402
R173	1K8	S0402
R175	47R	S0402
R176	15R	S0402
R182	47K	S0402
R183	47K	S0402
R187	330R	S0402
R189	4K7	S0402
R191	150K	S0402
R192	2K4	S0402
R193	100K	S0402
R195	68K	S0402
R196	68K	S0402
R197	68K	S0402

Designators	Comment	Footprint
R199	10K	S1206
R203	33R	S0603
R206	10K	S0603
R208	8K2	S0603
R209	100K	S0402
R211	0R	S0603
R213	82R	S0402
R214	3K3	S0402
R218	56R	S0402
R222	10K	S0402
R232	0R	S0402
R233	10K	S0402
R234	1K	S0402
R235	2K2	S0603
R300	680R	S0402
R301	10K	S0402
R302	10K	S0402
R303	22K	S0402
R304	1K8	S0402
R305	10K	S0402
R306	10K	S0603
R307	1K	S0402
R308	1K	S0402
R309	1K	S0402
R310	1K	S0402
R311	1K	S0402
R312	1K	S0402
R313	15K	S0402
R314	1M	S0402
R315	1M	S0402
R316	47K	S0402
R317	10K	S0402
R318	10K	S0603
R319	NC	S0402
R320	1K	S0402
R321	22K	S0402
R322	10K	S0402
R323	10K	S0402
R324	10K	S0402
R325	10K	S0402
R326	6K8	S0603
R327	680R	S0402
R328	10K	S0402
R329	4K7	S0402
R330	1K8	S0402
R331	4K7	S0402
R332	22K	S0402
R333	3K3	S0402
R334	30K	S0402
R335	100K	S0402
R336	68K	S0402
R337	100K	S0402
R338	39K	S0402
R339	1M	S0402
R340	1K	S0402
R341	120K	S0402
R342	180K	S0402
R343	100K	S0402
R344	4K7	S0402
R345	4K7	S0402

Designators	Comment	Footprint
R346	4K7	S0402
R347	22R	S0402
R348	4K7	S0402
R349	3K9	S0402
R350	NC	S0402
R351	10K	S0402
R352	470K	S0402
R353	3K9	S0402
R354	1K	S0402
R355	22K	S0402
R356	2K2	S0402
R361	2K2	S0402
R362	3K3	S0603
R363	3K3	S0402
R365	5K6	S0402
R366	2K2	S0402
R367	5K6	S0402
R369	4K7	S0402
R372	220R	S0603
R374	1K	S0402
R375	33K	S0402
R379	47K	S0402
R380	33K	S0402
R381	2K2	S0603
R382	100R	S0805
R383	220R	S0402
R387	4R7	S0805
R393	150K	S0402
R394	330K	S0402
R400	5k6	S0603
R401	100K	S0603
R404	470R	S0603
R405	1K	S0402
R500	10K	S0402
R501	7K5	S0402
R502	12K.1(1%)	S0402
R503	0.091R/F	S1206
R504	0.091R/F	S1206
R505	10.5K/F	S0402
R506	3.3K/F	S0402
R507	1K2(1%)	S0402
R508	7K5	S0402
R700	4K7	S0402
R701	4K7	S0402
R702	10K	S0402
R703	10K	S0402
R706	100R	S0402
R707	100R	S0402
R708	100R	S0402
R709	10R	S0402
R712	10K	S0402
R715	100R	S0402
R716	100R	S0402
R717	100R	S0402
R718	100R	S0402
R719	NC	S0402
R724	100R	S0402
R726	10K	S0402
R727	NC	RES0.4(1/4W)
R728	22K	S0402

Designators	Comment	Footprint
R731	150K	S0402
R732	47K	S0402
R733	68K	S0402
R734	NC	S0402
R735	NC	S0402
Shield100	NC	ANDY-S1-V1.0
Shield101	CB-PBJ-0050	ANDY-S2-V1.0
Shield102	CB-PBJ-0058	CB-PBJ-0058
Shield103	NC	CB-PBJ-0070
Shield104	CB-PBJ-0076	CB-PBJ-0076
Shield500	CB-PBJ-0053	CB-PBJ-0053
Shield501	CB-PBJ-0067	CB-PBJ-0067
U100	TA75S01F	SOT25
U101	AA32416	SSOP16
U102	SGM4157YC	SOT363
U103	QA8558	QFN4X4-20A
U300	SGM4157YC	SOT363
U301	SGM4157YC	SOT363
U302	M62429	SOP8
U303	BA2904SFV	ICS-SSOP-B8
U304	BA2904SFV	ICS-SSOP-B8
U305	YD1517P	SDIP18
U500	ME6118A50B3G	SOT223-123
U501	L78M08CDT	TO-252(DPAK)
U502	ME6206-33M	SOT23-123
U503	ME6206-33M	SOT23-123
U504	XL4201	SOP8-E
U505	XL4015	TO-263
U701	ICS-0639	LQFP7X7-48
X100	QSSMD-0064	TCXO-2520
Y100	QSSMD-0059	XTAL_SMD5032
Y101	FDI-0001	K450V2

Testing mode

Note : Testing voltage 13.2V/TX 27,205Mhz/RX 27,255Mhz

Test mode: When radio is off , press and hold the PTT+ MODE + F key and turn on radio, LCD shows “tS” in 5s, Press **F → MODE then full display**, enter into the testing mode.

Press microphone [UP] or [DN] or turn channel knob to choose the adjusting menu, turn channel knob for parameter adjustment.

AM/FM LP adjustment: In testing mode, select [PL] channel, turn off the signal of modulation, Under the launching state Rotary channel switch adjust the power to 4.0W

FM deviation testing mode: In testing mode, select [F2] channel , 1.25k 30mV, Under the launching state Rotary channel switch adjust the deviation to 2.0KHz

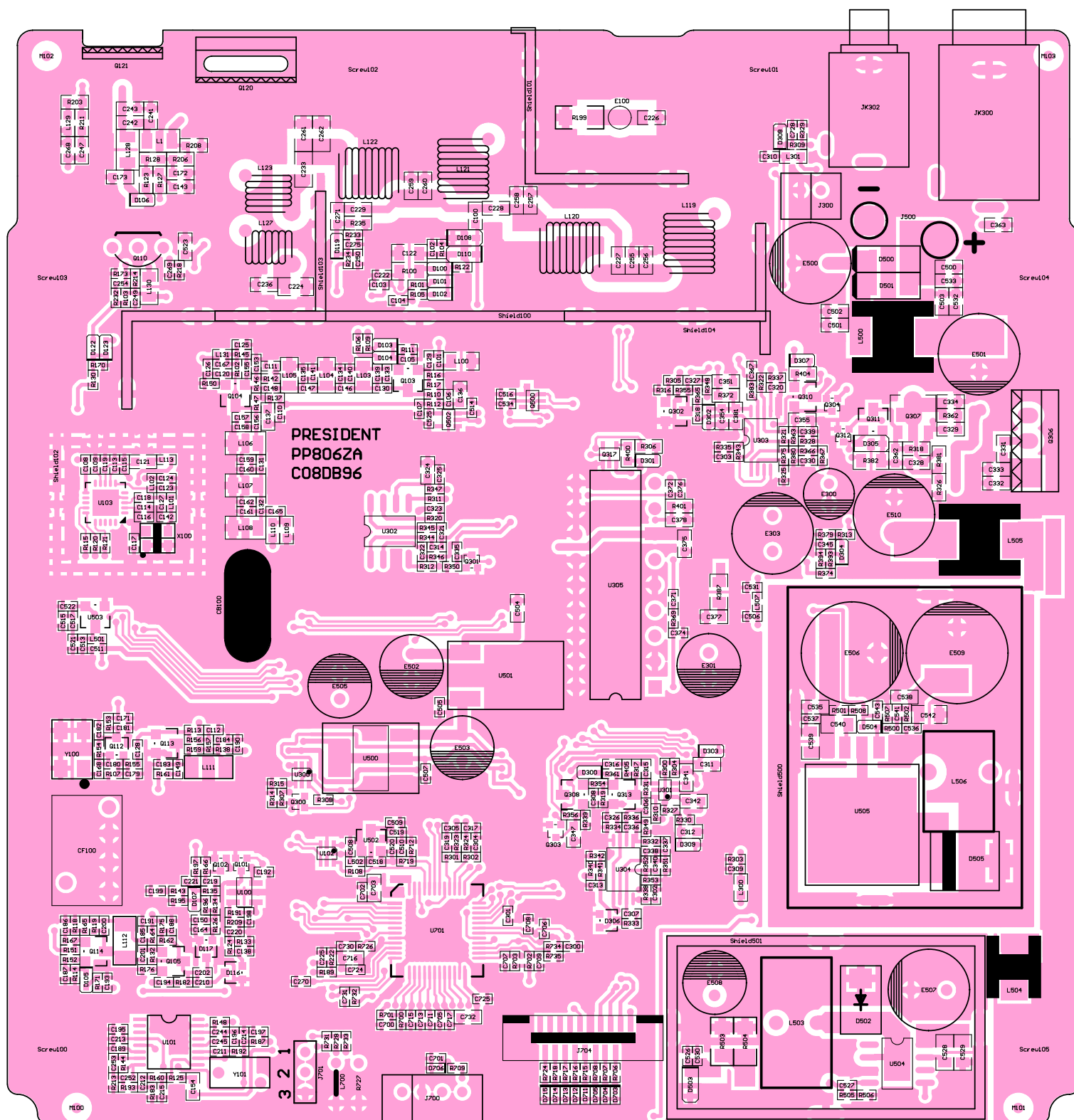
AM HP amplitude adjustment: In testing mode, select [A2] channel, 1.25K 30mV, Under the launching state Rotary channel switch adjust the amplitude to 85%

AM LP amplitude adjustment: In testing mode, select [AL] channel, 1.25K 30mV, Under the launching state Rotary channel switch adjust the amplitude to 90%

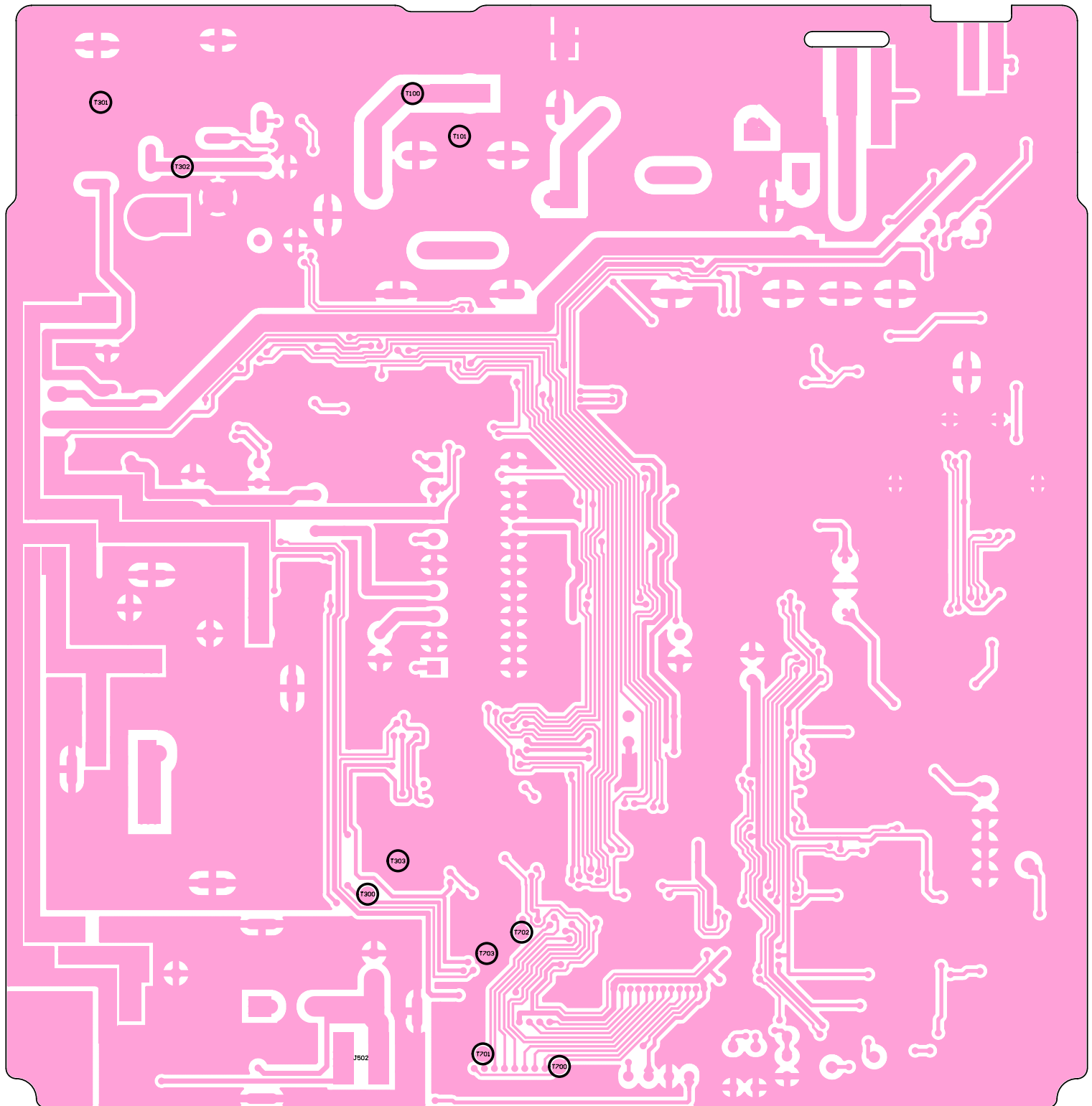
S-meter adjustment: In testing mode, select [rl] channel, 1K 1.2KHz, Under the launching state Rotary channel switch adjust the S-meter pointer at “3. bar” positions.

Default : 34 (-67dBm)

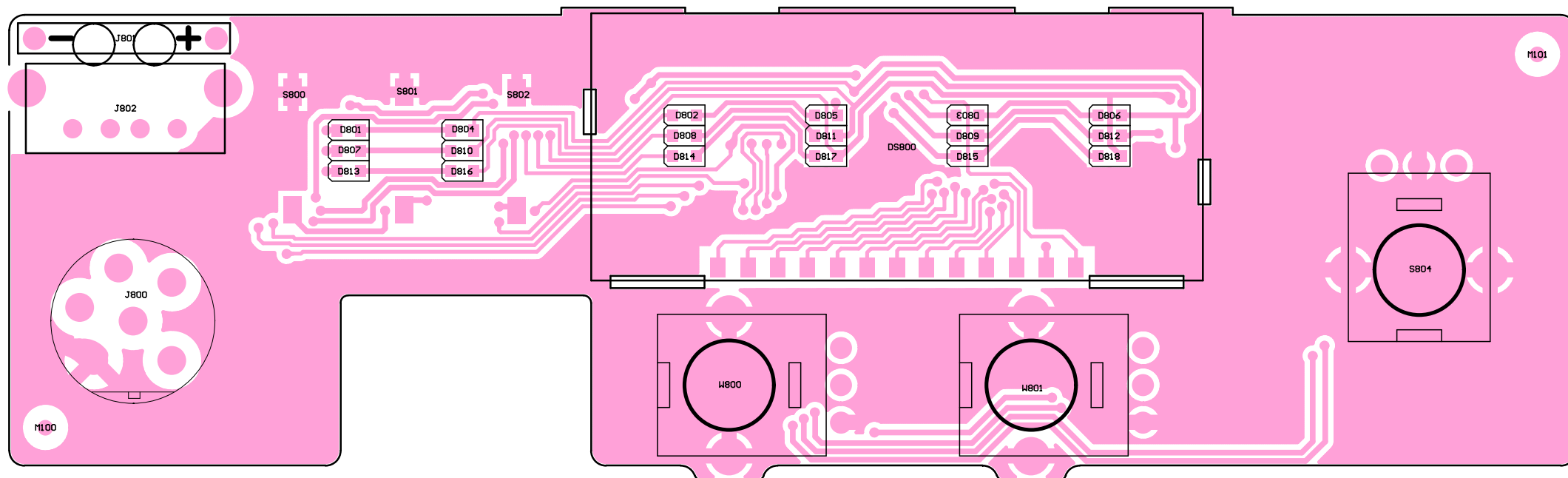
Equipment setting: In Rx status, RF Gen Freq : 27.255MHz , Amplitude : set value, AF Gne1 Freq : 1KHz, AF Gne1 To : 1.2KHz, AF Gne2 Freq : 1KHz, AF Gne2 To : OFF



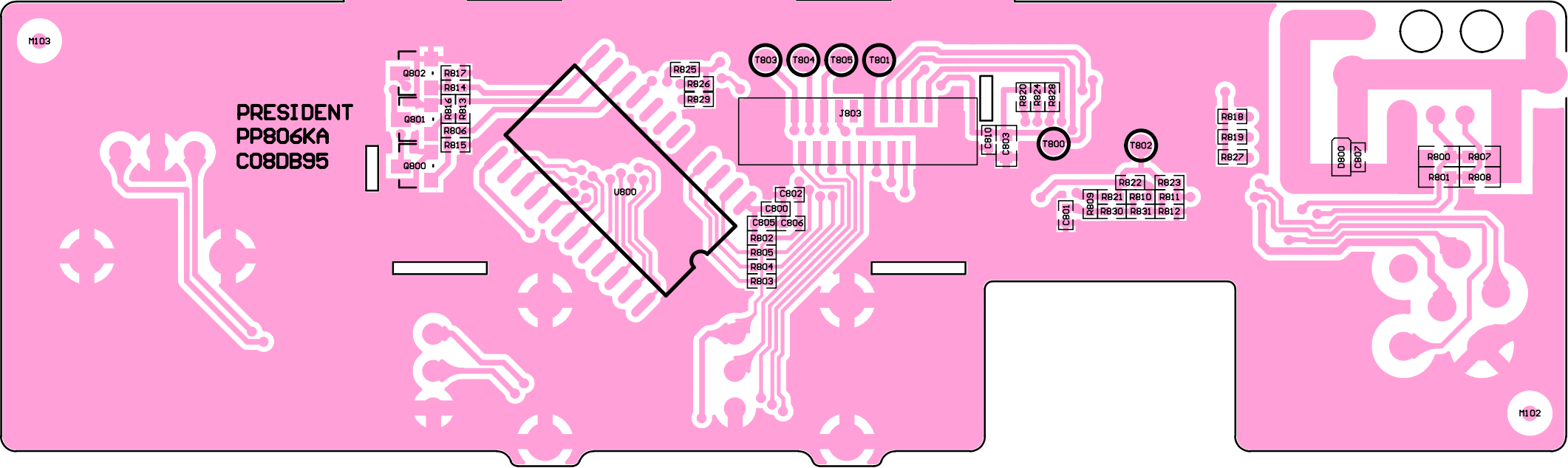
PC BOARD VIEWS



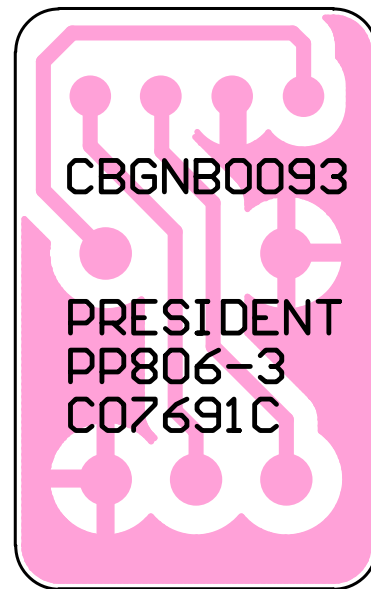
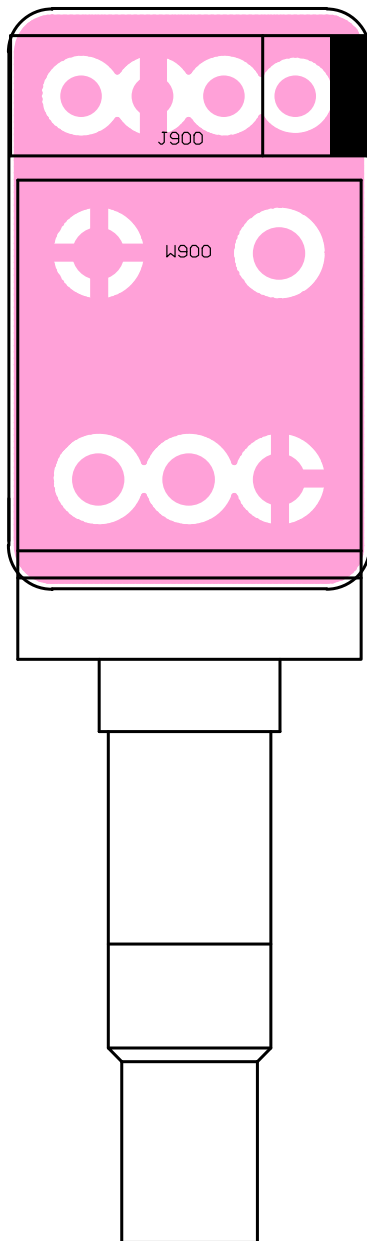
PC BOARD VIEWS



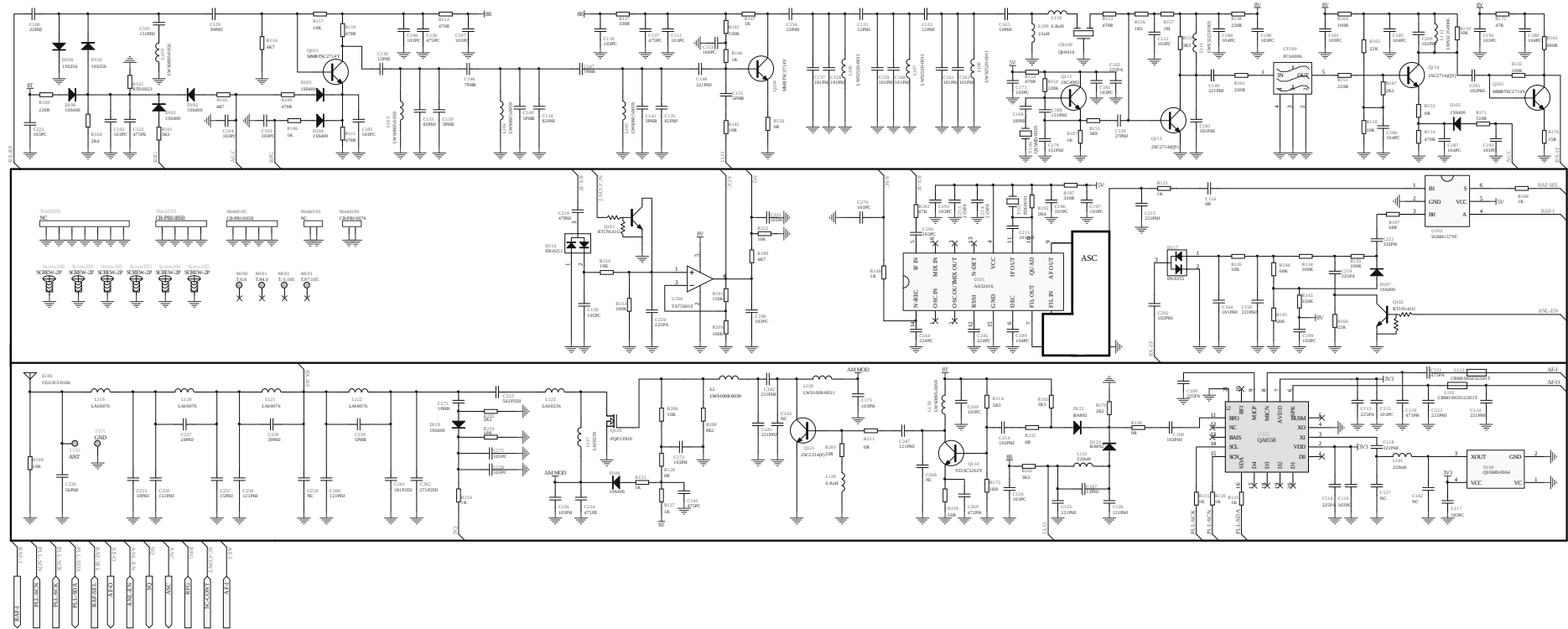
PC BOARD VIEWS



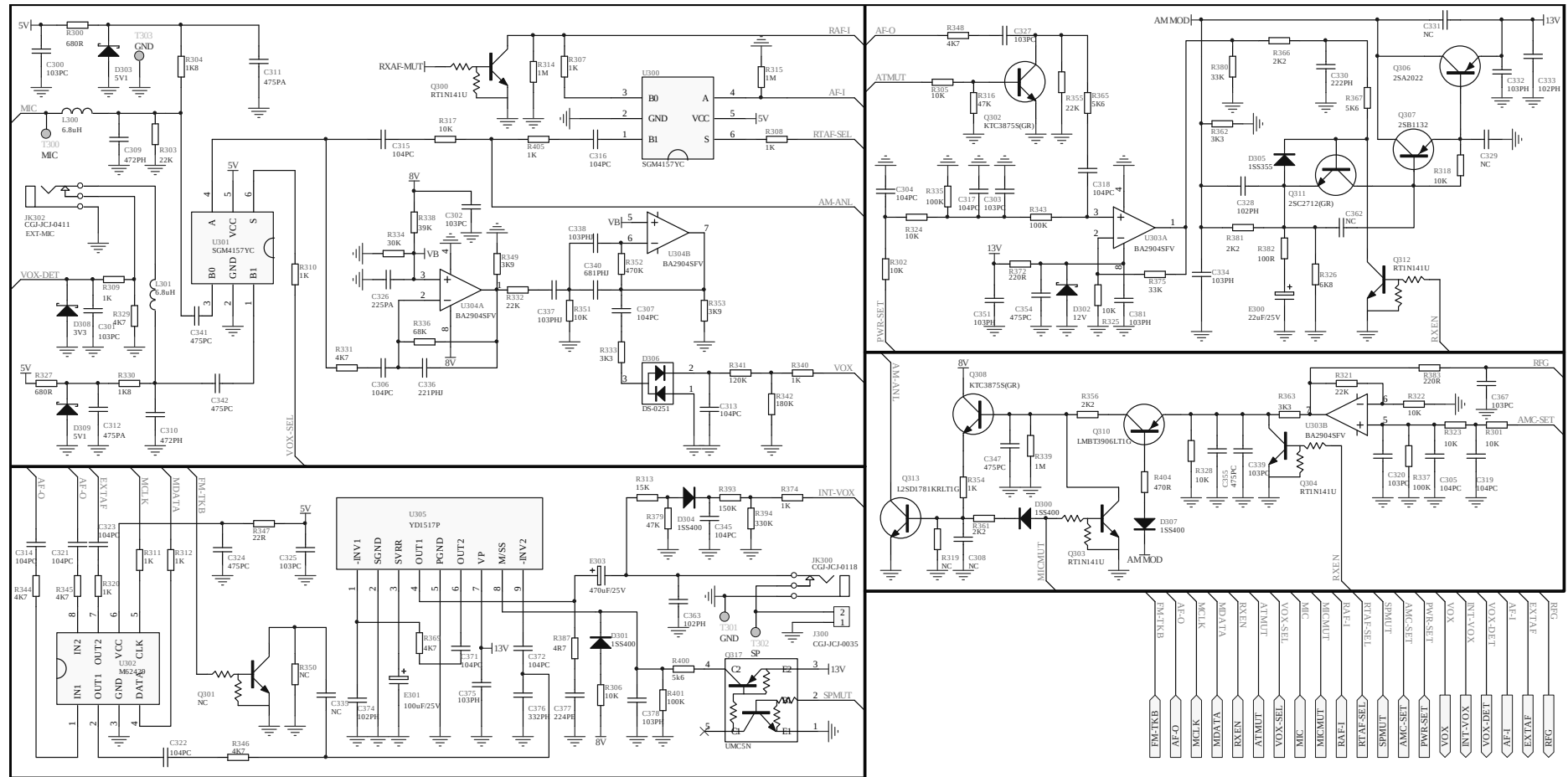
PC BOARD VIEWS



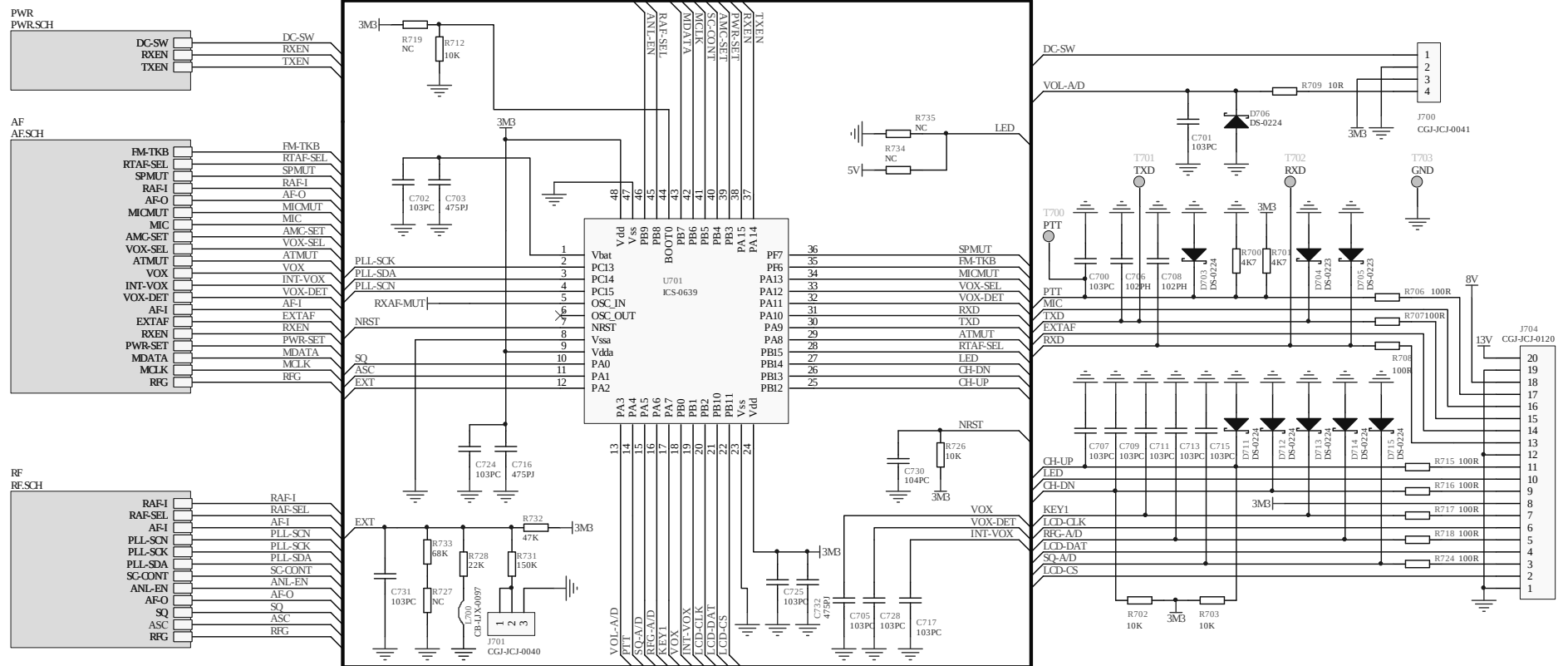
SCHEMATIC DIAGRAM



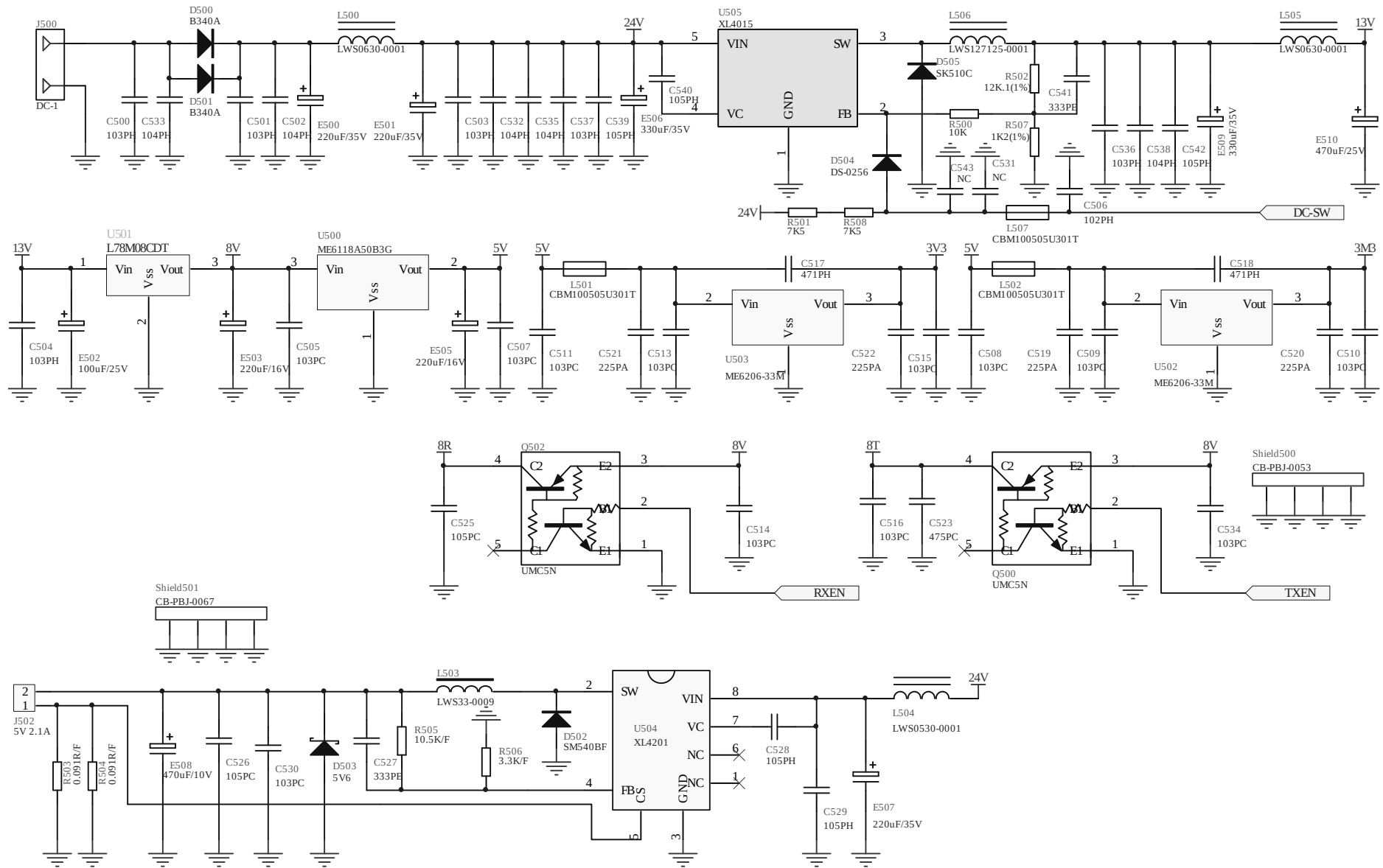
SCHEMATIC DIAGRAM



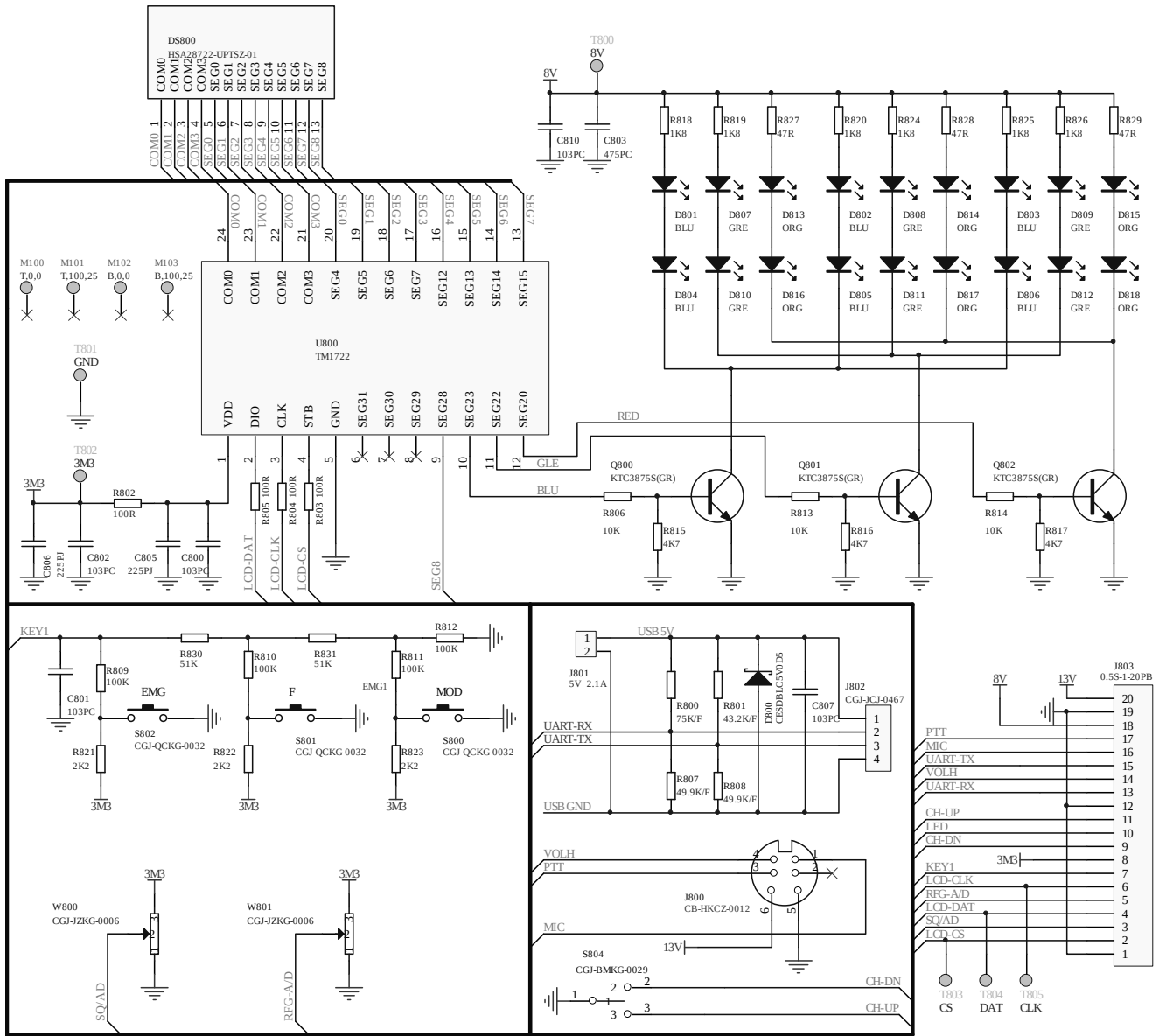
SCHEMATIC DIAGRAM



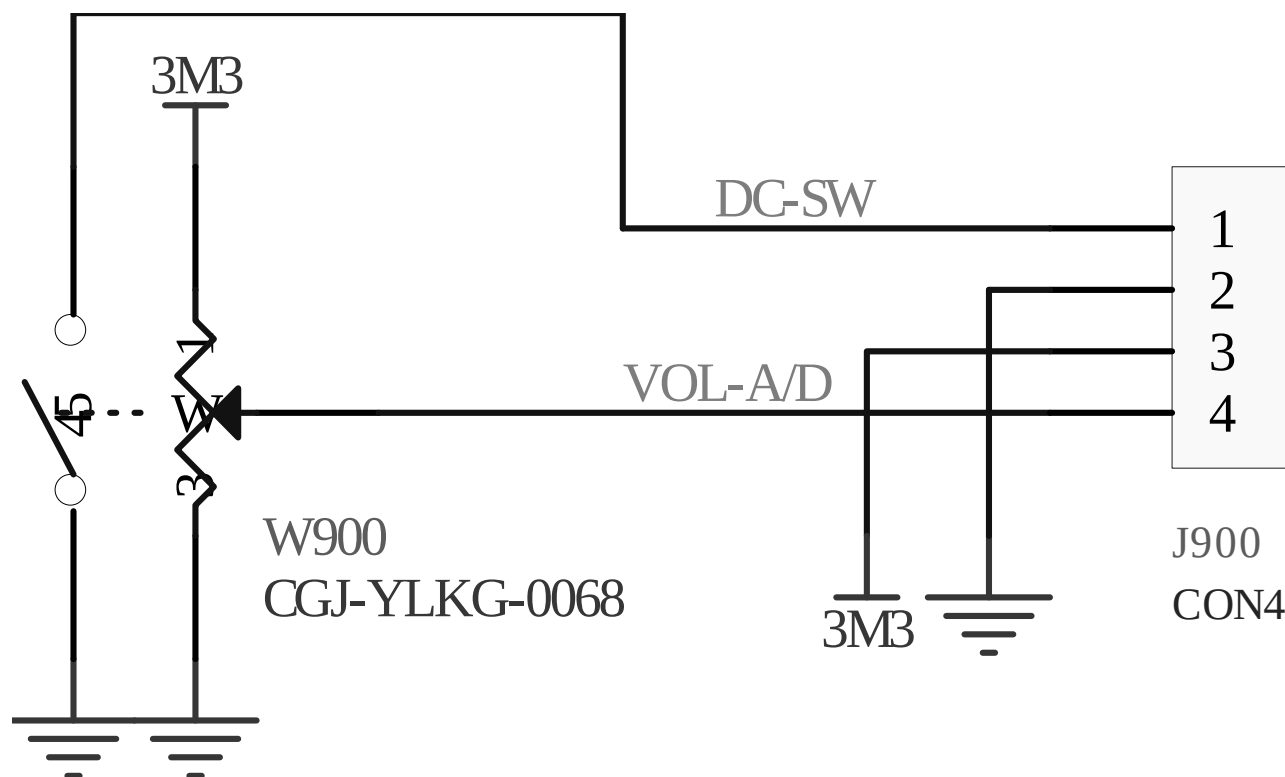
SCHEMATIC DIAGRAM



SCHEMATIC DIAGRAM



SCHEMATIC DIAGRAM



BLOCK DIAGRAM

