

PRESIDENT

BILL FCC

SERVICE MANUAL

SPECIFICATIONS

General		
Frequency coverage		26.965 ~ 27.405MHz
Operating mode		A3E (AM)
Number of channels		40
Antenna Impedance		50 Ω
Working temperature		-10°C~+55°C
Frequency Tolerance		Better than 0.002%
Input Voltage		13.2V DC
Grounding Method		Negative ground
Current Drain	Transmitter	13.2V : 2.0A Max.
	Receiver	About 300mA(max.) 0.8A (VOL Max.)
Dimensions (W x H x D) With projections		Microphone: 60 x 41.5 x 82 mm Body: 104.2 x 122.2 x 27 mm
Weight		Approx.315g
RECEIVER		
Receiving System		Dual conversion superheterodyne
IF Frequencies		Double Conversion 1st 10.695MHz/ 2nd 455KHz
Selectivity	1.0 μ V for 10dB(S+N)/N in AM Mode	
	1.0 μ V 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		Less than 1.0 μ V
TRANSMITTER		
Output Power		AM: 4.0 W
Modulated signal distortion		Inferior to 5%
Frequency Response		300Hz to 3000Hz
Output Impedance		50ohms, Unbalanced
Harmonic Suppression		More than -36dBm

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.

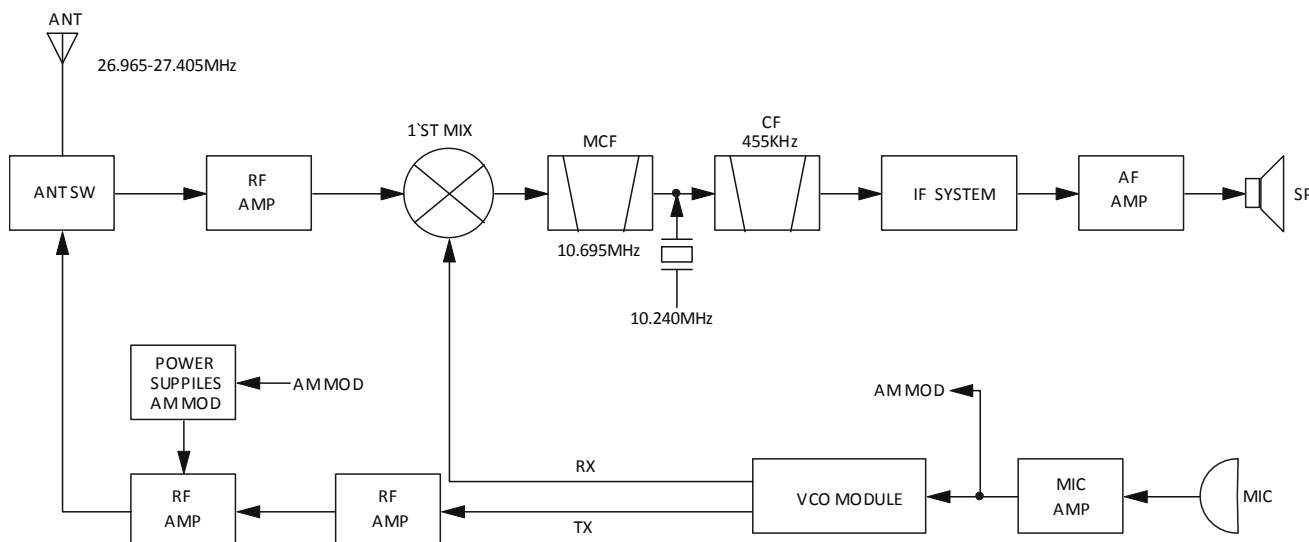


Fig. 1 Frequency configuration

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 (Q3) after passing through a transmit/receive switch circuit (D1, and D2 are off). After the signal is filtered through a band pass filter (L4, L5 and L6) 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 (Q5) to create a 10.695MHz first intermediate frequency (1st IF) signal. The first IF signal is filtered through a band pass filter (L8, L9 and L10) and then fed through the monolithic crystal filter (MCFs : CB1) to further remove spurious signals.

■ IF amplifier

The first IF signal goes into second mixer Q26, second mixer mixes first IF and 10.24MHz second IF output Y2. The signal is heterodyned again with a second local oscillator signal. The second IF signal is then fed through a 455kHz ceramic filter (CF1) to further eliminate unwanted signals. The signal is amplified by Q17 and Q7, and then the second IF signal enters D13 diode DC and receive audio signal output.

CIRCUIT DESCRIPTION

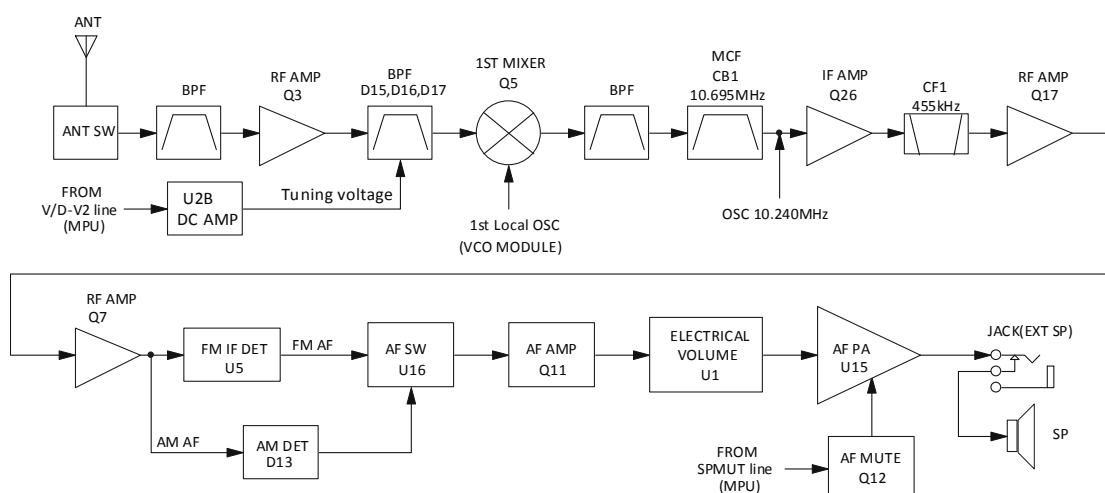


Fig. 2 Receiver section configuration

■ AF amplifier

The AM AF through the D13 and AF amplifier (Q11), and, and Electrical Control Volume IC(U1). After goes to AF power amplifier IC (U15). Is routed to an audio power amplifier (U15) where it is amplified and output to the speaker. To output sounds from the speaker, U8 sends a high signal to the SPMUT line the turns Q12.

■ 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 through the MIC amplifier (U4), and resulting signal 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 Q36, Q37 and Q38.

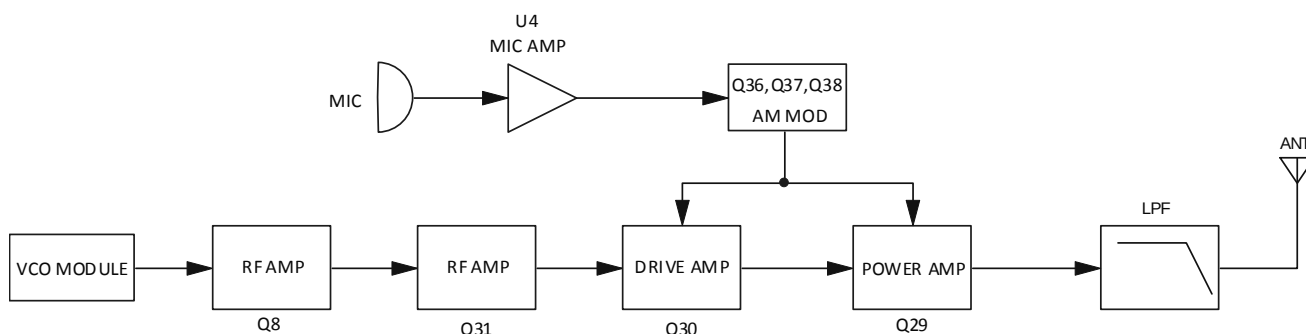


Fig. 5 Transmit circuit

CIRCUIT DESCRIPTION

■ Power Amplifier Circuit

The transmit output signal from the VCO module passes through the buffer amplified (Q8) and amplified by Q31 and Q30. The amplified signal goes to the final amplifier (Q29) through a low-pass filter. The lowpass filter removes unwanted high-frequency harmonic components, and the resulting signal is transmitted through the antenna terminal.

WX Receiver

■ WX Frequency configuration

The frequency configuration of the receiver is shown in Fig. 6.

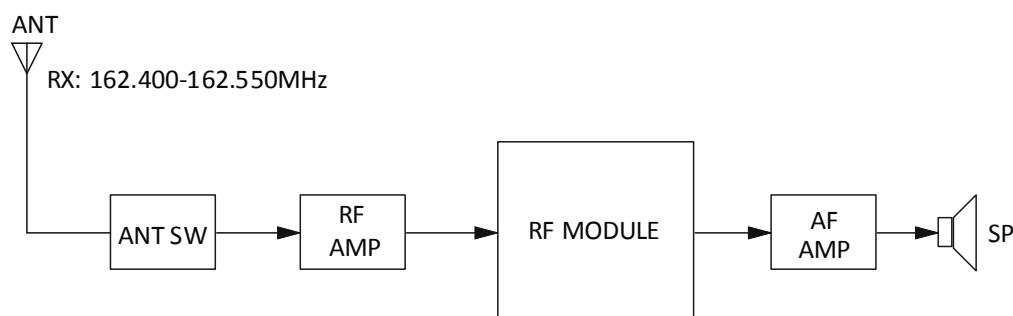


Fig. 6 WX Frequency configuration

■ WX Receiver Circuit

The received signal through a transmission/reception switching circuit (antenna switch) and RF amplified (Q501) and is demodulated by the RF module U500. The demodulated signal is routed to the audio circuit.

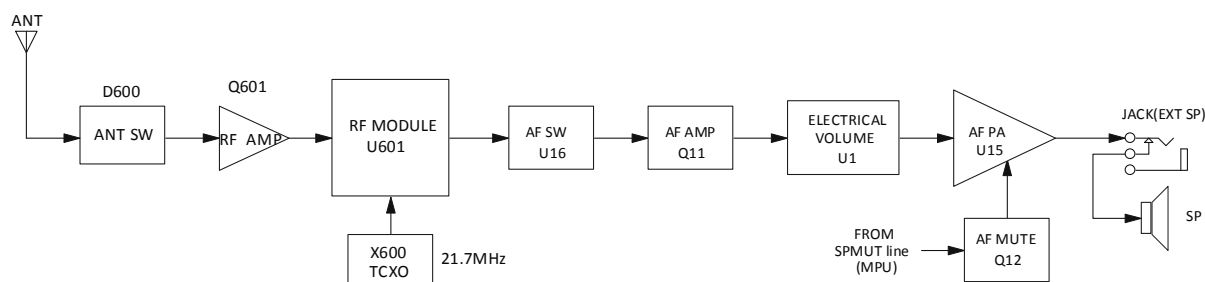


Fig. 7 WX Receiver section configuration

Power Supply

The power supply voltage is maintained to 8.0V, 5.0V and 3.3V by the series regulator (U10, U11 and U7). 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 (U8) operates at a clock of 12MHz.

The control circuit consists of a microprocessor (U8) and its peripheral circuits. It controls the TX-RX unit. U8 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 (U8) controls the display LCD and LEDs. The LCD driver (U900) and MPU (U8) communicate through the DATA, CLK, LE lines.

LCD UNIT		
Designators	Comment	Footprint
C900	103P	S0402N
C901	103P	S0402N
C902	225P/6.3V	S0402N
C903	225P/6.3V	S0402N
D900	R6GHBHC	R6GHBHC
D901	R6GHBHC	R6GHBHC
DS900	FS62405ATT-P	FS62405ATT-P(BILL)
J900	0.5S-1X-10PWB	SSOI10
Q900	RT1N141U	EMT3
Q901	RT1N141U	EMT3
Q902	RT1N141U	EMT3
R900	470R	S0402N
R901	470R	S0402N
R902	330R	S0402N
R903	270R	S0402N
R904	330R	S0402N
R905	270R	S0402N
R906	1K	S0402N
R907	1K	S0402N
R908	1K	S0402N
R909	1K	S0402N
R910	100R	S0402N
U900	TM1622	LQFP64-7*7
CONT UNIT		
Designators	Comment	Footprint
C800	103P	S0402N
C802	103P	S0402N
C803	103P	S0402N
C804	103P	S0402N
J800	CB-HKCZ-0012	QFM16-6F2
J801	5V 2.1A	SIP2T2
J802	CGJ-JCJ-0467	CGJ-JCJ-USB180
J803	0.5S-1X-10PWB	SSOI10
J804	0.5S-1-20PB	SIPM20
R800	100K	S0402N
R801	100K	S0402N
R802	100K	S0402N
R803	100K	S0402N
R804	100K	S0402N
R805	100K	S0402N
R806	100K	S0402N
R807	100K	S0402N
R808	2K2	S0402N
R809	2K2	S0402N
R810	2K2	S0402N
R811	2K2	S0402N
R812	2K2	S0402N
R813	2K2	S0402N
R814	51K	S0402N
R815	51K	S0402N
R816	51K	S0402N
R817	51K	S0402N
R818	75K/F	S0603N
R819	49.9K/F	S0603N
R820	43.2K/F	S0603N
R821	49.9K/F	S0603N
S800	UP	SKW(6*3.5*5)
S801	F	CGJ-QCKG-3*3*1.5H

Designators	Comment	Footprint
S802	ANL/NB	CGJ-QCKG-3*3*1.5H
S803	DN	SKW(6*3.5*5)
S804	EMG	CGJ-QCKG-3*3*1.5H
S805	AM/FM	CGJ-QCKG-3*3*1.5H
VOL UNIT		
Designators	Comment	Footprint
W900	B502a/B502a,FFC20C8.5	R09448GS
J900	VOL-PCB	SIP1.5T6
MAIN UNIT		
Designators	Comment	Footprint
C1	104P	S0402N
C2	103P	S0402N
C3	103P	S0402N
C4	103P	S0402N
C5	103P	S0402N
C6	103P	S0402N
C7	103P	S0402N
C8	103P	S0402N
C9	103P	S0402N
C10	103P	S0402N
C11	103P	S0402N
C12	NC	S0402N
C13	103P	S0402N
C14	NC	S0402N
C15	NC	S0402N
C16	103P	S0402N
C17	103P	S0402N
C18	475P/16V	S0603N
C19	102P	S0402N
C20	102P/J	S0402N
C21	102P	S0402N
C22	NC	S0402N
C23	NC	S0402N
C24	NC	S0402N
C25	33P/J	S0603N
C26	39P/J	S0402N
C27	151P/J	S0402N
C28	475P/16V	S0805N
C29	821P/J	S0402N
C30	221P/J	S0402N
C31	221P/J	S0402N
C32	221P/J	S0402N
C33	221P/J	S0402N
C34	33P/J	S0402N
C35	33P/J	S0402N
C36	33P/J	S0402N
C37	12P/J	S0402N
C38	12P/J	S0402N
C39	12P/J	S0402N
C40	13P/J	S0402N
C41	475P/16V	S0603N
C42	103P	S0402N
C43	104P	S0402N
C44	104P	S0402N
C45	82P/J	S0402N
C46	82P/J	S0402N
C47	82P/J	S0402N
C48	6P/B	S0402N
C49	6P/B	S0402N

Designators	Comment	Footprint
C50	6P/B	S0402N
C51	7P/B	S0402N
C52	7P/B	S0402N
C53	223P	S0402N
C54	101P/J	S0402N
C55	101P/J	S0402N
C56	101P/J	S0402N
C57	101P/J	S0402N
C58	101P/J	S0402N
C59	101P/J	S0402N
C60	101P/J	S0402N
C61	101P/J	S0402N
C62	105P/16V	S0402N
C63	103P	S0402N
C64	5P/B	S0402N
C65	20P/J	S0402N
C66	20P/J	S0402N
C67	22P/J	S0402N
C68	103P	S0402N
C69	104P	S0402N
C70	102P	S0603N
C71	103P	S0402N
C72	103P	S0402N
C73	103P	S0402N
C74	475P/16V	S0603N
C75	103P	S0402N
C76	475P/16V	S0603N
C77	226P/25V	1206
C78	103P	S0603N
C79	103P	S0402N
C80	103P	S0402N
C81	104P	S0603N
C82	181P/J	S0402N
C83	221P/J	S0402N
C84	224P	S0402N
C85	224P	S0402N
C86	225P/10V	S0402N
C87	226P/10V	S0805N
C88	101P/J	S0402N
C89	101P/J	S0402N
C90	47P/J	S0402N
C91	104P	S0402N
C92	103P	S0402N
C93	104P	S0402N
C94	NC	S0402N
C95	104P	S0402N
C96	104P	S0402N
C97	104P	S0402N
C98	104P	S0402N
C99	105P/25V	S0603N
C100	392P/J	S0402N
C101	391P/J	S0402N
C102	102P/J	S0402N
C103	102P/J	S0402N
C104	102P/J	S0402N
C105	225P/10V	S0402N
C106	225P/10V	S0402N
C107	272P	S0402N
C108	472P	S0402N
C109	332P	S0402N

Designators	Comment	Footprint
C110	333P	S0402N
C111	82P/J	S0603N
C112	NC	S0603N
C113	NC	S0603N
C114	181P/J	S0603N
C115	24P/J	S0603N
C116	15P/J	S0603N
C117	121P/J	S0603N
C118	121P/J	S0603N
C119	39P/J	S0603N
C120	121P/J	S0603N
C121	103P	S0402N
C122	103P	S0603N
C123	103P	S0603N
C124	103P	S0603N
C125	103P	S0402N
C126	103P	S0402N
C127	225P/10V	S0402N
C128	103P	S0402N
C129	103P	S0402N
C130	103P	S0402N
C131	103P	S0402N
C132	103P	S0402N
C133	103P	S0402N
C134	103P	S0402N
C135	103P	S0402N
C136	103P	S0402N
C137	103P	S0603N
C138	103P	S0402N
C141	225P/10V	S0402N
C142	225P/6.3V	S0402N
C143	225P/6.3V	S0402N
C144	225P/6.3V	S0402N
C145	103P	S0402N
C146	103P	S0402N
C147	105P/25V	S0603N
C148	103P	S0402N
C149	103P	S0402N
C150	103P	S0603N
C151	5P/B	S0603N
C152	181P/HJ	S0805N
C153	105P/16V	S0402N
C154	105P/16V	S0402N
C155	561P/HJ	S0805N
C156	271P/HJ	S0805N
C157	1P/B	S0603N
C158	102P	S0402N
C159	NC	S0603N
C160	NC	S0402N
C161	331P/J	S0603N
C162	271P/J	S0603N
C163	331P/J	S0402N
C164	471P/J	S0402N
C165	101P/J	S0402N
C166	475P/16V	S0603N
C167	271P/J	S0402N
C168	223P	S0402N
C169	104P	S0402N
C170	NC	S0402N
C171	104P	S0402N

Designators	Comment	Footprint
C172	225P/16V	S0603N
C173	225P/16V	S0603N
C174	225P/16V	S0603N
C175	103P	S0402N
C176	103P	S0402N
C177	104P	S0402N
C178	NC	S0402N
C179	104P	S0402N
C180	104P	S0603N
C181	104P	S0402N
C182	NC	S0402N
C183	104P	S0402N
C184	104P	S0402N
C185	102P	S0603N
C186	475P/25V	S0805N
C187	103P	S0402N
C188	103P	S0603N
C189	103P	S0603N
C190	104P	S0603N
C191	103P	S0402N
C192	105P/25V	S0603N
C193	475P/16V	S0603N
C194	471P/J	S0402N
C195	472P	S0402N
C196	102P	S0603N
C197	102P	S0603N
C198	103P	S0402N
C199	105P/16V	S0402N
C200	121P/J	S0402N
C201	121P/J	S0402N
C202	224P	S0402N
C203	NC	S0402N
C204	103P	S0402N
C205	221P/J	S0402N
C206	NC	S0402N
C207	102P	S0402N
C208	102P/J	S0402N
C209	225P/10V	S0402N
C210	225P/6.3V	S0402N
C211	12P/J	S0805N
C212	104P	S0402N
C213	8P/B	S0402N
C214	8P/B	S0402N
C215	472P	S0402N
C216	333P	S0603N
C217	103P	S0402N
C218	103P	S0402N
C219	104P	S0402N
C220	104P	S0402N
C221	104P	S0402N
C222	104P	S0402N
C223	104P	S0402N
C224	103P	S0402N
C225	475P/16V	S0603N
C226	105P/16V	S0402N
C227	331P/J	S0402N
C228	68P/J	S0402N
C229	183P	S0402N
C230	103P	S0402N
C231	473P/25V	S0603N

Designators	Comment	Footprint
C232	473P	S0603N
C233	103P	S0402N
C234	103P	S0402N
C235	104P	S0603N
C236	103P	S0402N
C237	103P	S0402N
C238	104P	S0402N
C239	102P	S0603N
C240	103P	S0402N
C241	106P/16V	S0805N
C242	103P	S0402N
C243	10P/J	S0402N
C244	103P	S0402N
C245	103P	S0402N
C246	225P/10V	S0402N
C247	103P	S0402N
C248	105P/16V	S0402N
C249	103P	S0402N
C250	103P	S0402N
C251	151P/J	S0402N
C252	151P/J	S0402N
C253	18P/J	S0402N
C254	225P/10V	S0402N
C256	103P	S0402N
C257	102P	S0402N
C500	11P/J	S0402N
C501	11P/J	S0402N
C504	104P	S0402N
C506	101P/J	S0402N
C509	104P	S0402N
C510	104P	S0402N
C513	NC	S0402N
C514	225P/6.3V	S0402N
C516	225P/6.3V	S0402N
C523	225P/6.3V	S0402N
C600	104P	S0402N
C601	103P	S0402N
C602	103P	S0402N
C603	103P	S0402N
C604	103P	S0402N
C605	24P/J	S0402N
C606	24P/J	S0402N
C607	225P/6.3V	S0402N
C608	225P/10V	S0402N
C609	104P	S0402N
C610	104P	S0402N
C611	104P	S0402N
C612	104P	S0402N
C613	104P	S0402N
C614	104P	S0402N
C615	225P/6.3V	S0402N
C616	103P	S0402N
C617	102P	S0402N
C618	104P	S0402N
C619	102P	S0402N
C620	8P/B	S0603N
C621	3P/B	S0402N
C622	102P/J	S0603N
C623	33P/J	S0603N
C624	39P/J	S0402N

Designators	Comment	Footprint
C625	471P/J	S0402N
C626	12P/J	S0402N
C627	NC	S0402N
C628	104P	S0402N
C629	22P/J	S0402N
C630	24P/J	S0402N
C631	27P/J	S0402N
C632	18P/J	S0402N
C633	18P/J	S0402N
C634	103P	S0402N
C635	101P/J	S0402N
C636	225P/6.3V	S0402N
C637	225P/6.3V	S0402N
C638	105P/16V	S0402N
C639	225P/6.3V	S0402N
C640	103P	S0402N
C641	103P	S0402N
C642	103P	S0402N
C643	103P	S0402N
C644	472P	S0402N
C645	472P	S0402N
C646	102P	S0402N
C647	225P/6.3V	S0402N
C648	471P/J	S0402N
CB1	10.695MHZ	M10.7
CF1	LT455HT	K455E5
D1	1SS356	SOD323
D2	1SS356	SOD323
D3	1SS400	SOD523
D4	ESDBL3V3F1	DFN1006
D5	1SS400	SOD523
D6	3V3	SOD523
D7	1SS400	SOD523
D8	1SS400	SOD523
D9	1SS400	SOD523
D10	ESDBL3V3F1	DFN1006
D11	SM540BF	SMB-FL
D12	BAR43S	SOT23-123(1)
D13	BAR43S	SOT23-123(1)
D14	BAR43S	SOT23-123(1)
D15	NC	SOD523
D16	NC	SOD523
D17	NC	SOD523
D18	BA892	SOD523
D19	BA892	SOD523
D20	1SS400	SOD523
D21	1SS400	SOD523
D22	1SS400	SOD523
D23	12V	SOD523
D24	1SS355	SOD323
D25	1SS400	SOD523
D26	1SS400	SOD523
D27	SBR1045L	TO-277A
D28	1SS400	SOD523
D29	3V3	SOD523
D30	5V6	SOD323
D31	DTESDBLC5V0LED02	DFN1006
D32	DTESDBLC5V0LED02	DFN1006
D33	ESDBL3V3F1	DFN1006
D34	ESDBL3V3F1	DFN1006

Designators	Comment	Footprint
D35	ESDBL3V3F1	DFN1006
D36	ESDBL3V3F1	DFN1006
D600	BA892	SOD523
E1	CGJ-JCJ-0199	ANT
E2	220uF/16V	RBM6.3X5.5
E3	220uF/16V	RBM6.3X5.5
E4	220uF/10V	SRB0.10(5MM)
E5	470uF/25V	SRBH0.125(6.3*8)
E6	220uF/10V	SRB0.10(5MM)
E7	100uF/25V	RBM6.3X5.5
E8	470uF/25V	SRB0.160(8MM)
E12	100uF/25V	RBM6.3X5.5
J1	VOL-PCB	SIP1.5T6
J2	SP	SIP1.5T2
J3	0.5S-1-20PB	SIPM20
J4	CON3	CON2.0-3
J5	DC-1	DC-1.0/2.5MM-V1.0
J6	5V 2.1A	SIP2T2
JK1	EX SP	PJ-328A
L1	FHW0805UC1R0JGT	S0805N
L2	470nH	S0603N
L3	8.2uH	S0603N
L4	FHW0805UCR33GGT	S0805N
L5	FHW0805UCR33GGT	S0805N
L6	FHW0805UCR33GGT	S0805N
L7	FHW1008UCR33JGT	2520-18
L8	NLV25T-1R0J	LWS-2520
L9	NLV25T-1R0J	LWS-2520
L10	NLV25T-1R0J	LWS-2520
L11	22uH	S0603N
L12	6.8uH	S0603N
L13	NLV32T-101J	S3225N
L14	10.5TR	
L15	10.5TR	
L16	10.5TR	
L17	10.5TR	
L18	220nH	S0603N
L19	6.5TL	
L20	9.5TR	
L21	FHW1008UC056JGT	2520-18
L22	6.8uH	S0603N
L23	CBM100505U301T	S0402N
L24	330nH	S0603N
L25	10uH	S0603N
L26	LWS33-0009	L7*13
L27	HA53-4R7MT	LWS-5952
L28	CBM100505U301T	S0402N
L29	CBM160808U601T	S0603N
L30	CBM160808U601T	S0603N
L31	6.5TR	
L32	NLV32T-471J	S3225N
L33	CB-LJX-0097	JMP
L34	HA53-4R7MT	LWS-5952
L35	CBM201209U300T	S0805N
L36	CBM201209U300T	S0805N
L500	CBM100505U221T	S0402N
L600	68nH-XL	S0603N
L601	220nH	S0603N
L602	120nH	S0603N
L603	27nH-XL	S0603N

Designators	Comment	Footprint
L604	27nH-XL	S0603N
L605	102T	S0402N
L606	102T	S0402N
L607	0R	S0402N
Q1	MMBTSC2714Y	SOT23
Q2	MMBTSC2714Y	SOT23
Q3	MMBTSC2714Y	SOT23
Q4	MMBTSC2714Y	SOT23
Q5	MMBTSC2714Y	SOT23
Q6	MMBTSC2714Y	SOT23
Q7	MMBTSC2714Y	SOT23
Q8	MMBTSC2714Y	SOT23
Q9	KTC3875S(GR)	SOT23
Q10	KTC3875S(GR)	SOT23
Q11	KTC3875S(GR)	SOT23
Q12	RT1N141U	EMT3
Q13	KTC3875S(GR)	SOT23
Q14	LMBT3906LT1G	SOT23
Q15	LMBT3906LT1G	SOT23
Q16	LMBT3906LT1G	SOT23
Q17	2SC2714(QY)	SOT23
Q18	UMC5N	SOT353
Q19	UMC5N	SOT353
Q20	RT1N141U	EMT3
Q21	UMC5N	SOT353
Q22	RT1N141U	EMT3
Q23	RT1N141U	EMT3
Q24	NC	EMT3
Q25	NC	SOT23
Q26	2SC2714(QY)	SOT23
Q27	RT1N141U	EMT3
Q28	RT1N141U	EMT3
Q29	FQP13N10	TO-220AB(H1)
Q30	2SC2314(F)	TO-126(H1)
Q31	2SC3356	SOT23
Q32	2SC4082	SC70
Q33	RT1N141U	EMT3
Q34	RT1N141U	EMT3
Q35	L2SD1781KRLT1G	SOT23
Q36	2SC2712(GR)	SOT23
Q37	MJE2955T	TO-220AB(H1)
Q38	2SB1132	SOT89
Q39	RT1N141U	EMT3
Q40	RT1N141U	EMT3
Q41	RT1N141U	EMT3
Q600	KTC3875S(GR)	SOT23
Q601	2SC4226	SC70
Q602	NC	SOT353
R1	2K2	S0402N
R2	2K2	S0402N
R3	2K2	S0402N
R4	2K2	S0402N
R5	330R	S0603N
R6	10K	S0402N
R7	3K3	S0402N
R8	3K3	S0402N
R9	3K3	S0402N
R10	3K3	S0402N
R11	3K3	S0603N
R12	33K	S0402N

Designators	Comment	Footprint
R13	10K	S0402N
R14	10K	S0402N
R15	10K	S0402N
R16	10K	S0402N
R17	10K	S0402N
R18	NC	S0402N
R19	10K	S0402N
R20	10K	S0402N
R21	10K	S0402N
R22	10K	S0402N
R23	10K	S0402N
R24	10K	S0402N
R25	2K4	S0402N
R26	2K	S0402N
R27	220R	S0402N
R28	220R	S0402N
R29	220R	S0402N
R30	330R	S0402N
R31	1K	S0402N
R32	1K	S0402N
R33	39K	S0402N
R34	47K	S0402N
R35	5K1	S0402N
R36	4K7	S0402N
R37	4K7	S0402N
R38	1K8	S0402N
R39	470R	S0402N
R40	470R	S0402N
R41	470R	S0402N
R42	470R	S0402N
R43	470R	S0402N
R44	220R	S0402N
R45	470R	S0402N
R46	10K	S0402N
R47	1K	S0402N
R48	1K	S0402N
R49	47K	S0402N
R50	1K2	S0402N
R51	NC	S0402N
R52	1K	S0603N
R53	NC	S0402N
R54	1K	S0402N
R55	1K	S0402N
R56	1K	S0402N
R57	4K7	S0402N
R58	47K	S0402N
R59	47K	S0402N
R60	47K	S0402N
R61	47K	S0402N
R62	47K	S0402N
R63	27K	S0402N
R64	NC	S0402N
R65	NC	S0402N
R66	NC	S0402N
R67	100K	S0402N
R68	100K	S0402N
R69	100K	S0402N
R70	100K	S0402N
R71	100K	S0402N
R72	330K	S0402N

Designators	Comment	Footprint
R73	330K	S0402N
R74	330K	S0402N
R75	10R	S0402N
R76	1K	S0402N
R77	1K	S0402N
R78	NC	S0402N
R79	0R	S0402N
R80	47K	S0402N
R81	0R	S0402N
R82	0R	S0402N
R83	330R	S0402N
R84	330R	S0402N
R85	82R	S0402N
R86	3K3	S0402N
R87	120K	S0402N
R88	22K	S0402N
R89	470R	S0603N
R90	100R	S0402N
R91	22K	S0402N
R92	47R	S0402N
R93	510R	S0402N
R94	68K	S0402N
R95	68K	S0402N
R96	56K	S0402N
R97	680R	S0402N
R98	680R	S0402N
R99	82K	S0402N
R100	150K	S0402N
R101	4K7	S0402N
R102	470R	S0402N
R103	10K	1206
R104	10K	S0402N
R105	10K	S0603N
R106	1K	S0402N
R107	1M	S0402N
R108	1K5	S0402N
R109	220R	S0402N
R110	820R	S0402N
R111	47K	S0402N
R112	2K2	S0603N
R113	1K	S0402N
R114	8K2	S0603N
R115	470K	S0402N
R116	2K7	S0402N
R117	33K	S0402N
R118	33R	S0603N
R119	0R	S0603N
R120	56R	S0402N
R121	56R	S0402N
R122	2K2	S0402N
R123	2K2	S0402N
R124	8K2	S0402N
R125	270R	S0402N
R126	56R	S0402N
R127	680K	S0402N
R128	330R	S0402N
R129	10K	S0402N
R130	4K7	S0402N
R131	4K7	S0402N
R132	1K	S0402N

Designators	Comment	Footprint
R133	1K	S0402N
R134	10K	S0402N
R135	10K	S0402N
R136	0.091R/F	1206
R137	3K3	S0402N
R138	680R	S0402N
R139	5K6	S0402N
R140	220K	S0402N
R141	10K	S0402N
R142	10K	S0402N
R143	22K	S0402N
R144	10K	S0402N
R145	10K	S0402N
R146	10K	S0402N
R147	10K	S0402N
R148	10K	S0603N
R149	1K	S0402N
R150	220R	S0402N
R151	2K2	S0402N
R152	2K2	S0402N
R153	4K7	S0402N
R154	NC	S0402N
R155	2K7	S0402N
R156	4K7	S0402N
R157	100K	S0402N
R158	100K	S0402N
R159	100K	S0402N
R160	1K	S0402N
R161	100K	S0402N
R162	100K	S0402N
R163	100K	S0402N
R164	10K	S0402N
R165	220K	S0402N
R166	220K	S0402N
R167	220K	S0402N
R168	NC	S0402N
R169	5K6	S0402N
R170	15R	S0402N
R171	150K	S0402N
R172	47K	S0402N
R173	100K	S0402N
R174	470R	S0402N
R175	22K	S0402N
R176	0.091R/F	1206
R177	3.3K/F	S0603N
R178	27R	S0402N
R179	22K	S0402N
R180	NC	S0402N
R181	22K	S0402N
R182	22K	S0402N
R183	8K2	S0402N
R184	8K2	S0402N
R185	1K	S0402N
R186	1K	S0402N
R187	1K	S0402N
R188	10.5K/F	S0603N
R189	68K	S0402N
R190	NC	RES0.4(1/4W)
R191	NC	S0402N
R192	0R	S0402N

Designators	Comment	Footprint
R193	1K	S0402N
R194	1K	S0402N
R195	220R	S0402N
R196	220R	S0402N
R197	1M	S0402N
R198	1M	S0402N
R199	470R	S0603N
R200	2K	S0402N
R201	NC	S0402N
R202	820K	S0402N
R203	330R	S0603N
R204	33K	S0402N
R205	33K	S0402N
R206	5K6	S0402N
R207	5K6	S0402N
R208	5K6	S0402N
R209	560R	S0805N
R210	15R	S0805N
R211	NC	S0402N
R212	3R3(3/4W)	2010
R213	3R3(3/4W)	2010
R214	15K	S0402N
R215	10K	S0402N
R219	680R	S0402N
R600	10K	S0402N
R601	10K	S0402N
R602	47K	S0402N
R603	2K2	S0402N
R604	1K	S0402N
R605	100K	S0402N
R606	100R	S0402N
R610	10K	S0402N
R611	47K	S0402N
R612	1K	S0603N
R613	1K	S0402N
R614	1K	S0402N
R615	1K	S0402N
R616	1K	S0402N
R617	3K9	S0402N
R618	22K	S0402N
R619	220R	S0402N
R620	47R	S0402N
R621	22R	S0402N
R622	4K7	S0402N
U1	M62429	SOP8
U2	BA2904SFV	ICS-SSOP-B8
U3	XL4201	SOP8-E
U4	BA2904SFV	ICS-SSOP-B8
U5	AA32416	SSOP16
U6	TA75S01F	SOT25
U7	ME6206-33M	SOT23-123
U8	GD32F330CBT6	LQFP7X7-48
U10	MC7808CDTT5	DPAK-3
U11	KIA78L05	SOT89N(123)
U12	ME6206-33M	SOT23-123
U15	HM8872	SOP8-E
U16	SGM4157YC	SOT363
U500	SWD6801	ICS-ESOP16
U600	ME6206-33M	SOT23-123
U601	QA8556	QFN4X4-32PIN

Designators	Comment	Footprint
X1	12MHZ	XTAL3.2*2.5
X500	26MHZ	XTAL3.2*2.5
X600	21.7MHZ	XTAL3.2*2.5
Y1	JTBM455CX24	JTBM455CX24
Y2	10.24MHZ	XTAL_SMD5032

Testing mode

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Note : Testing voltage 13.2V/Equipment HP8921A

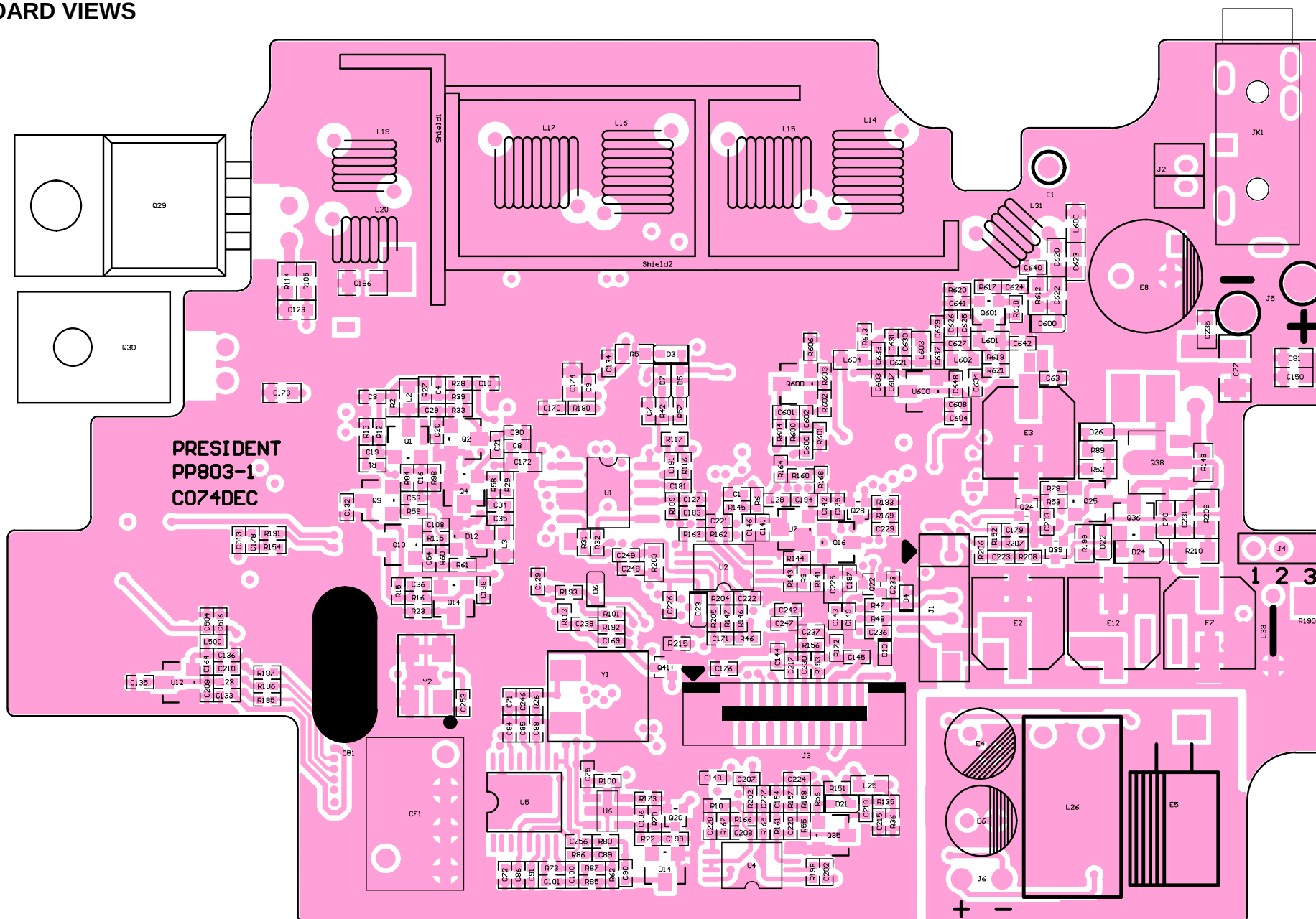
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Test mode: When radio is off, press and hold PTT + CB/WX + EMG and turn on radio ,then enter into testing mode. Press microphone [UP] or [DN] to choose the adjusting menu, press Button UP or Button Downm for parameter adjustment.

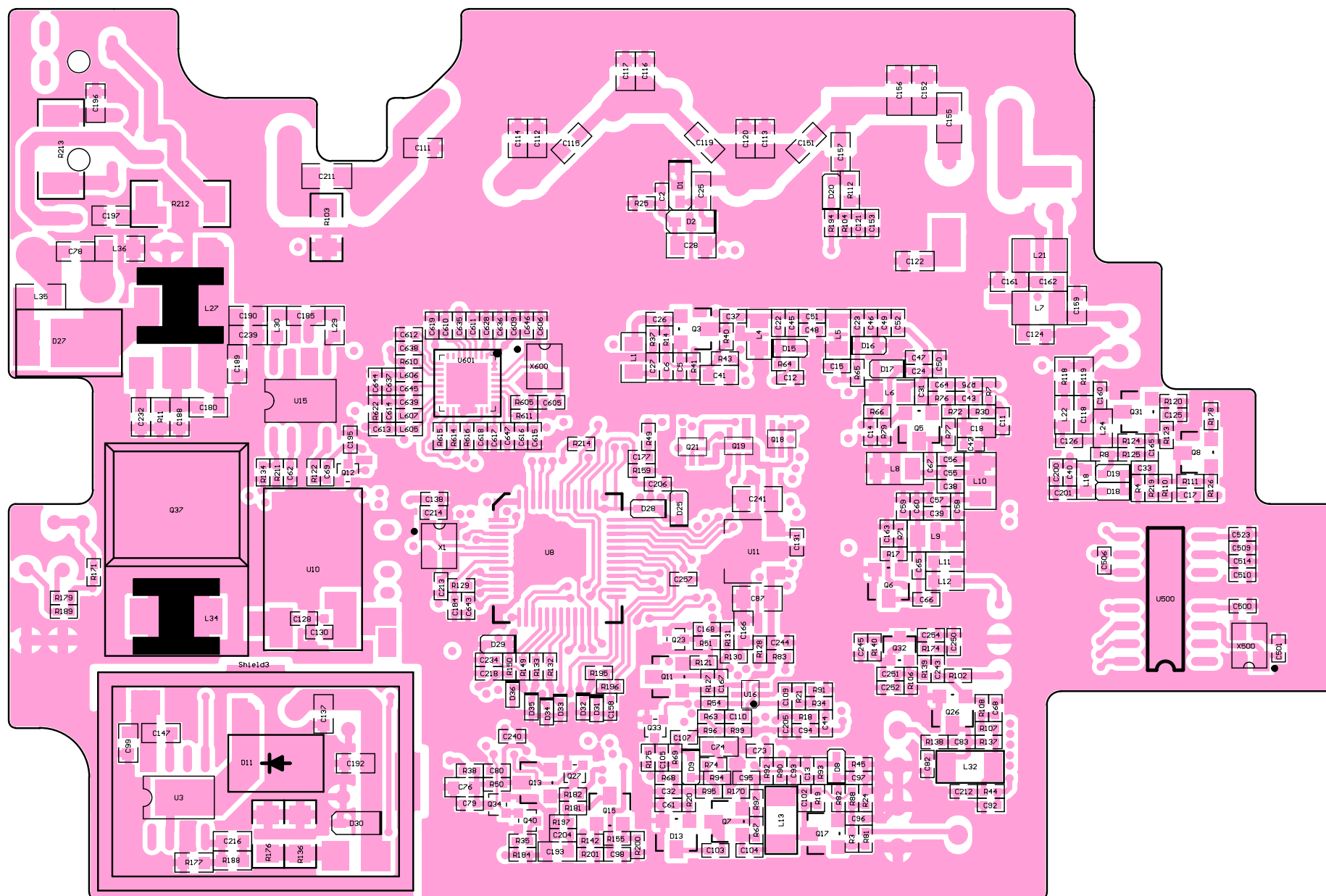
Low-power adjustment: In testing mode,select PL channel , turn off the signal of modulation, Under the launching state Button UP or Button DOWN key adjust the power to 3.8W

AM Low-power amplitude adjustment: In testing mode, select AL channel ,1.25K 30mV, Under the launching state Button UP or Button DOWN key adjust the amplitude to 87%

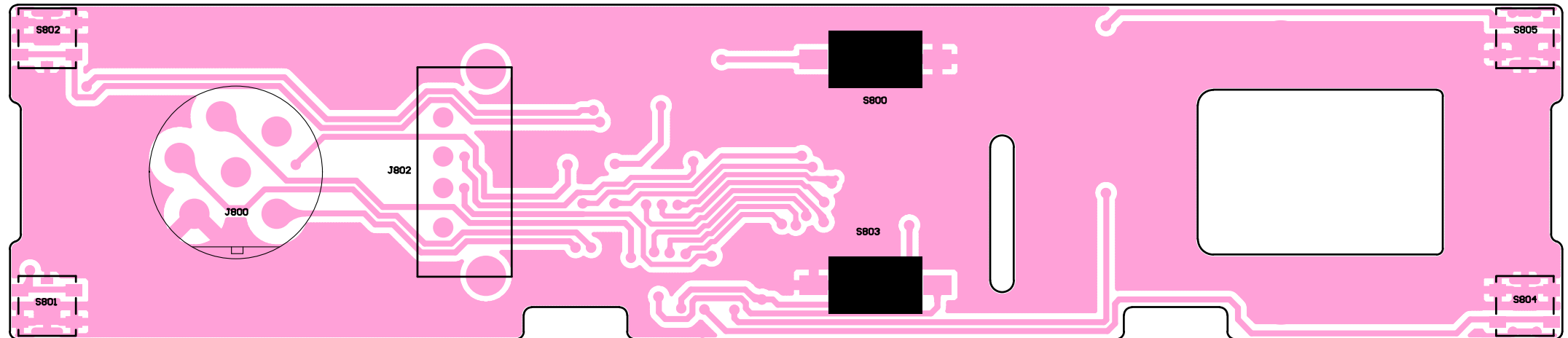
PC BOARD VIEWS



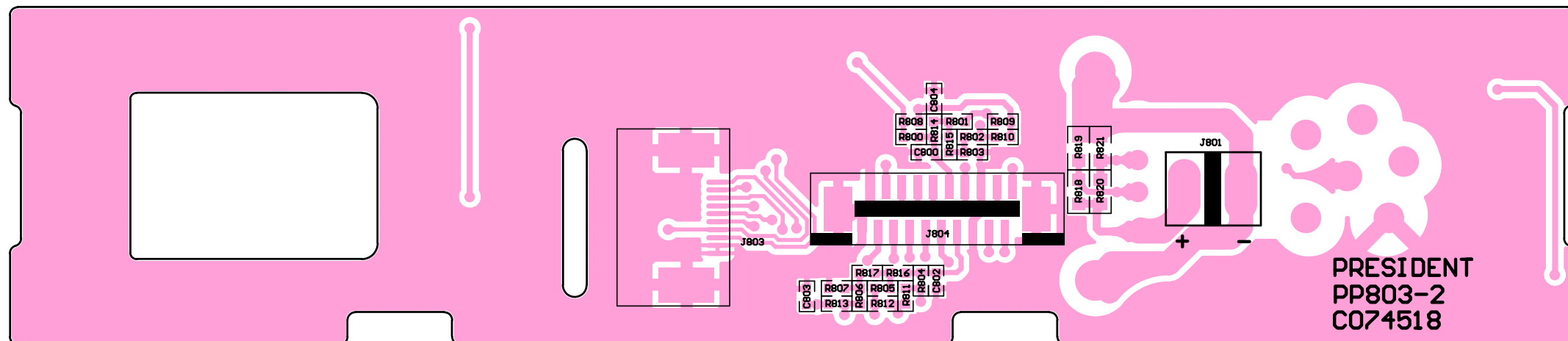
PC BOARD VIEWS



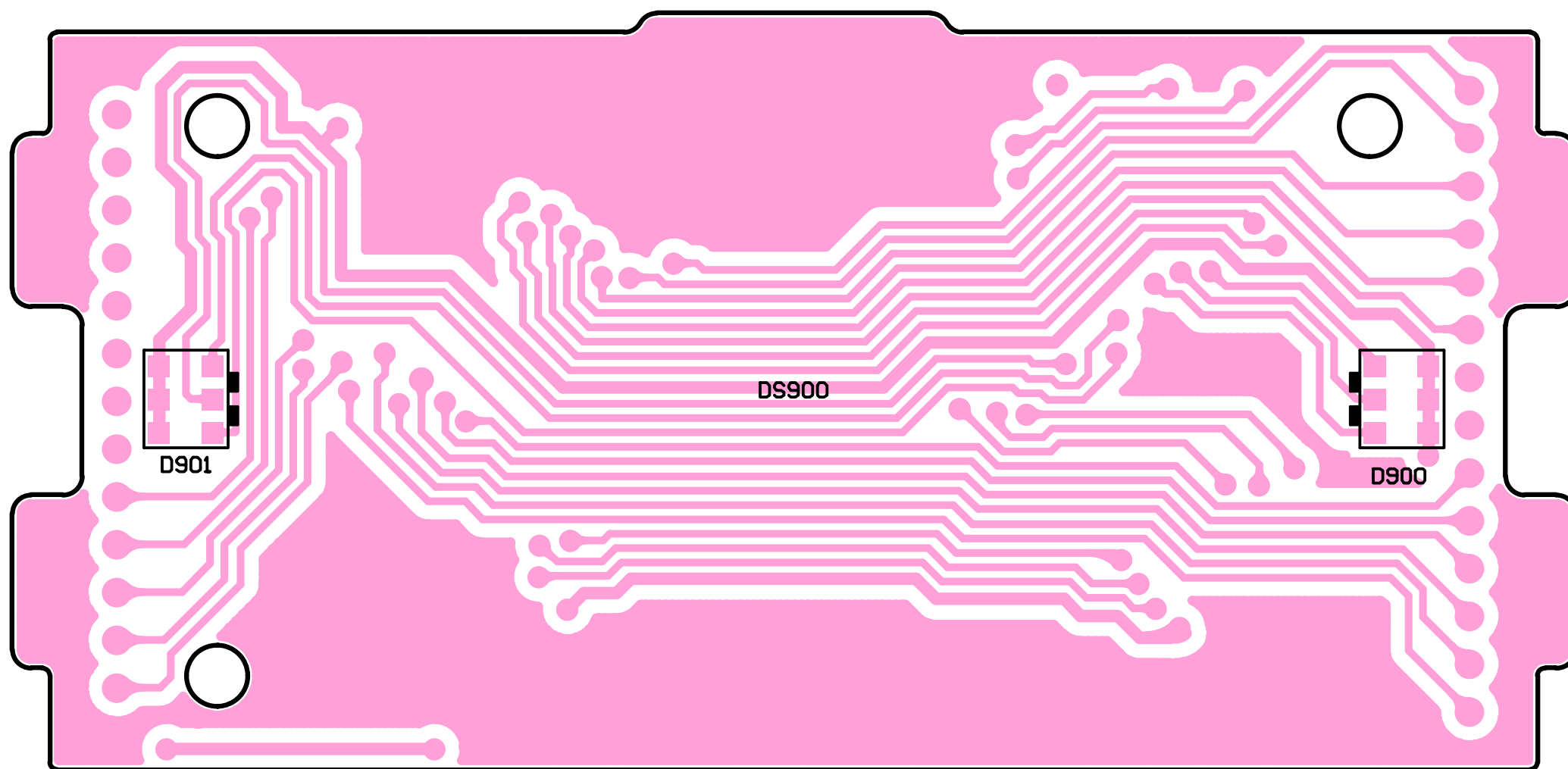
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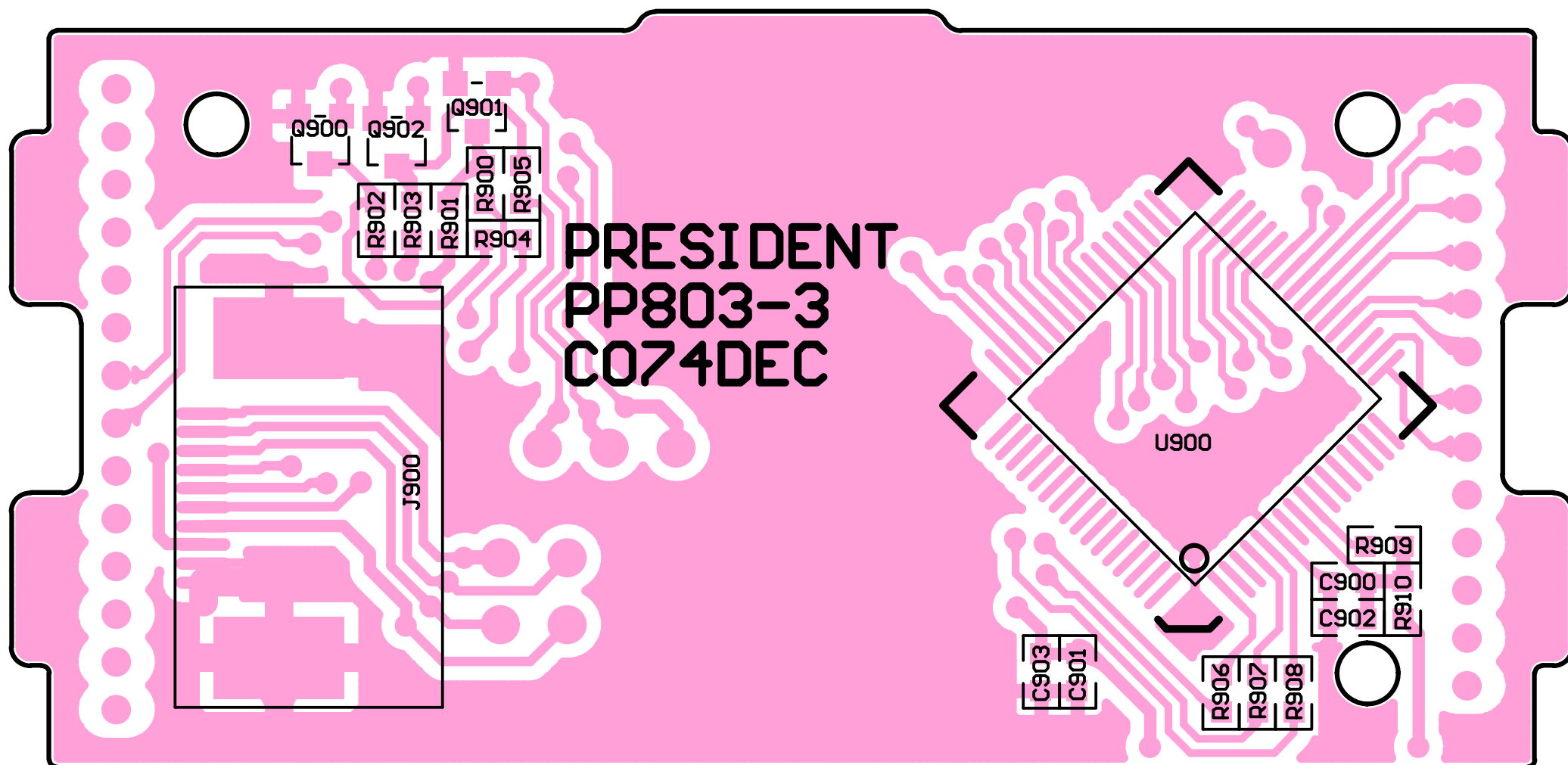
PC BOARD VIEWS



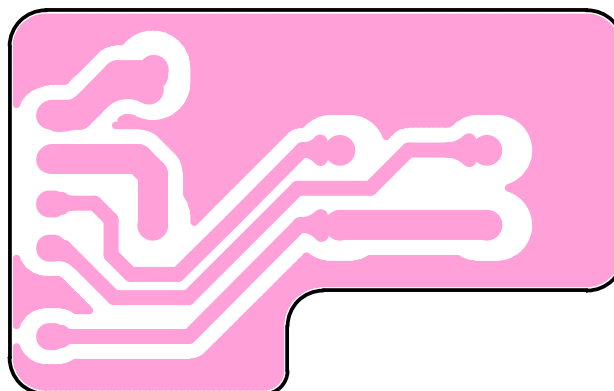
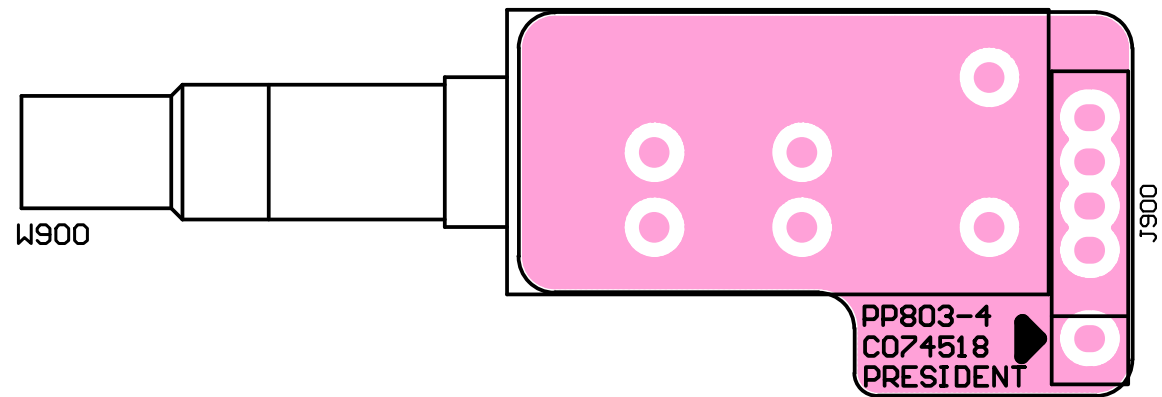
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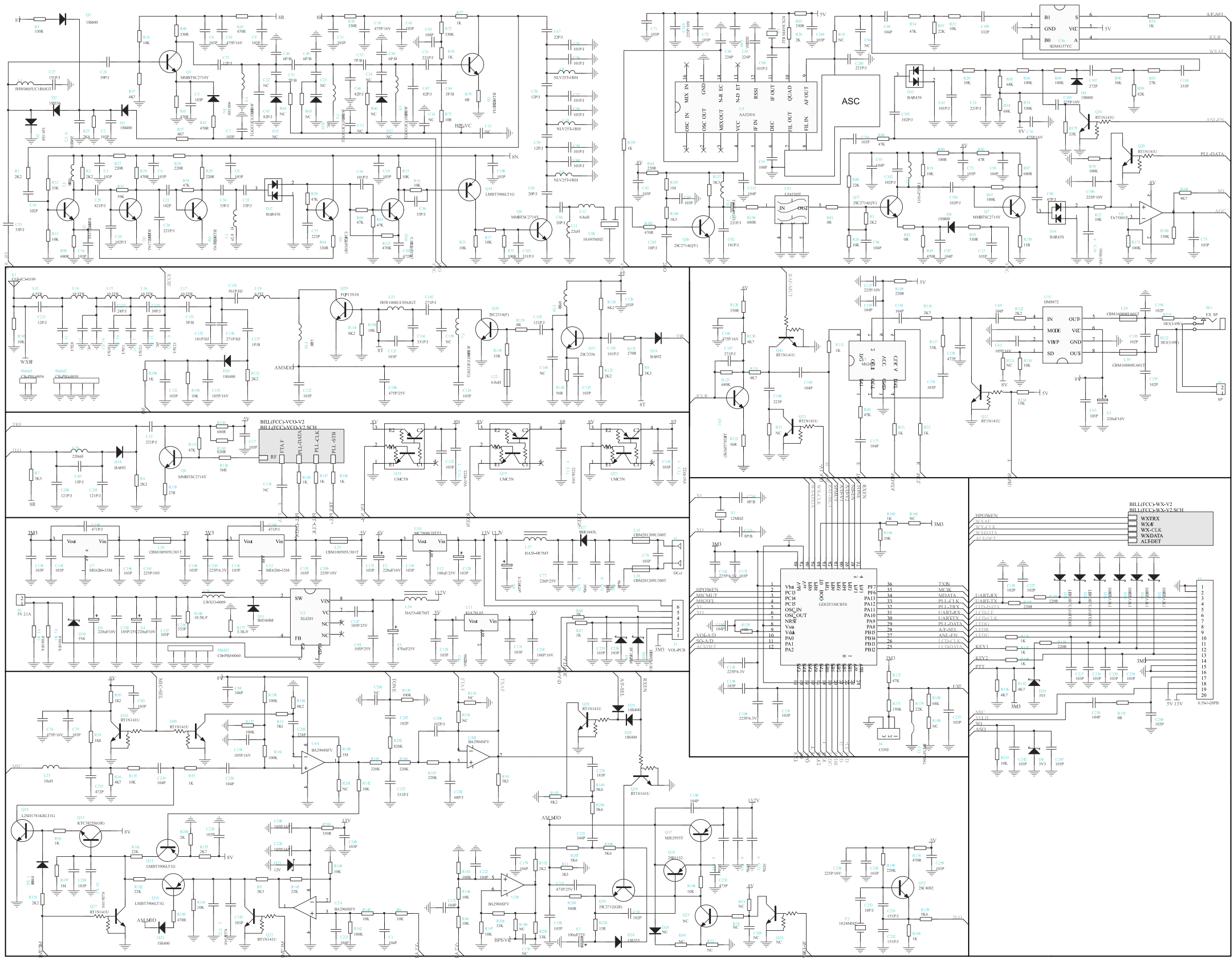
PC BOARD VIEWS



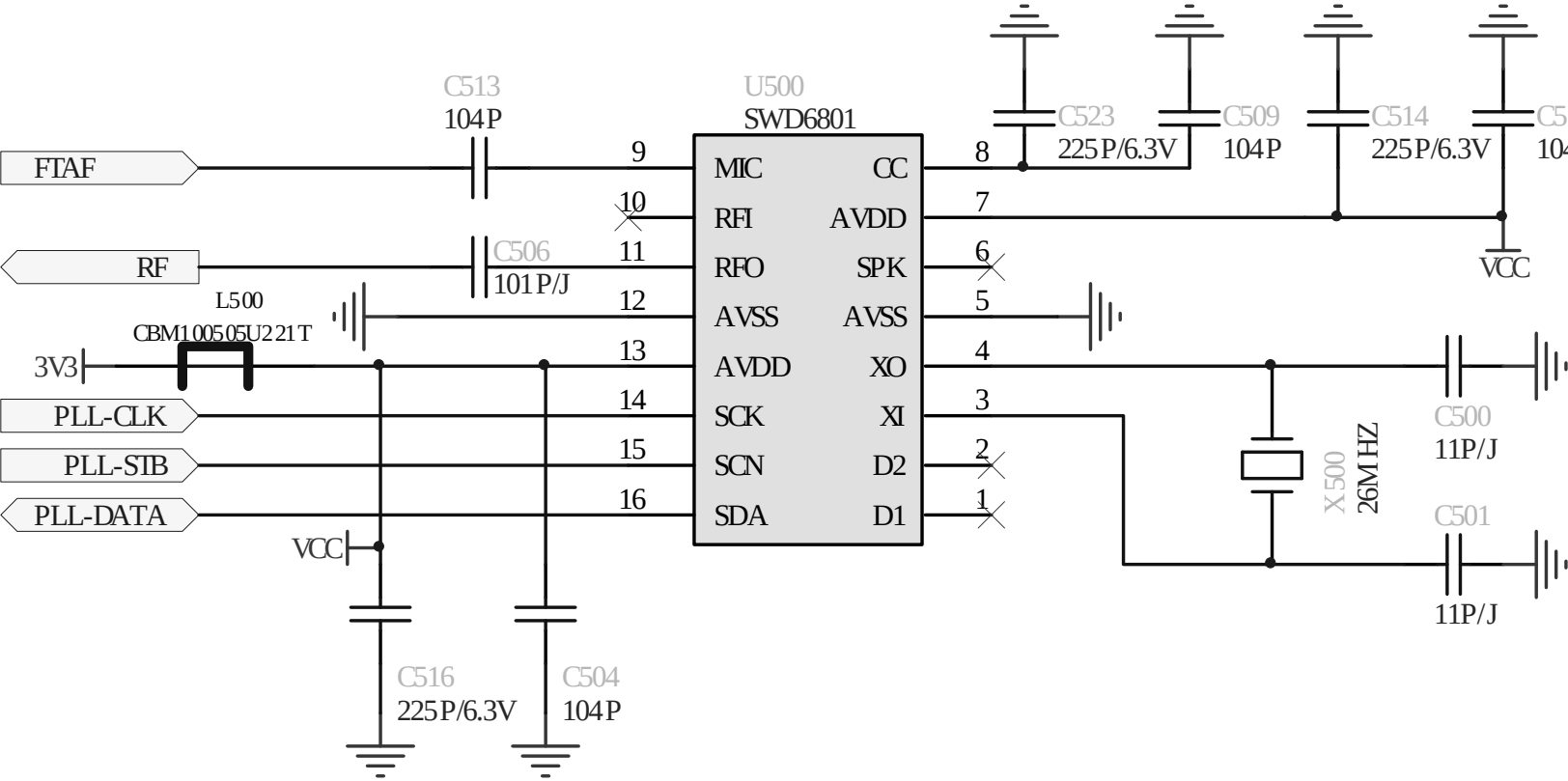
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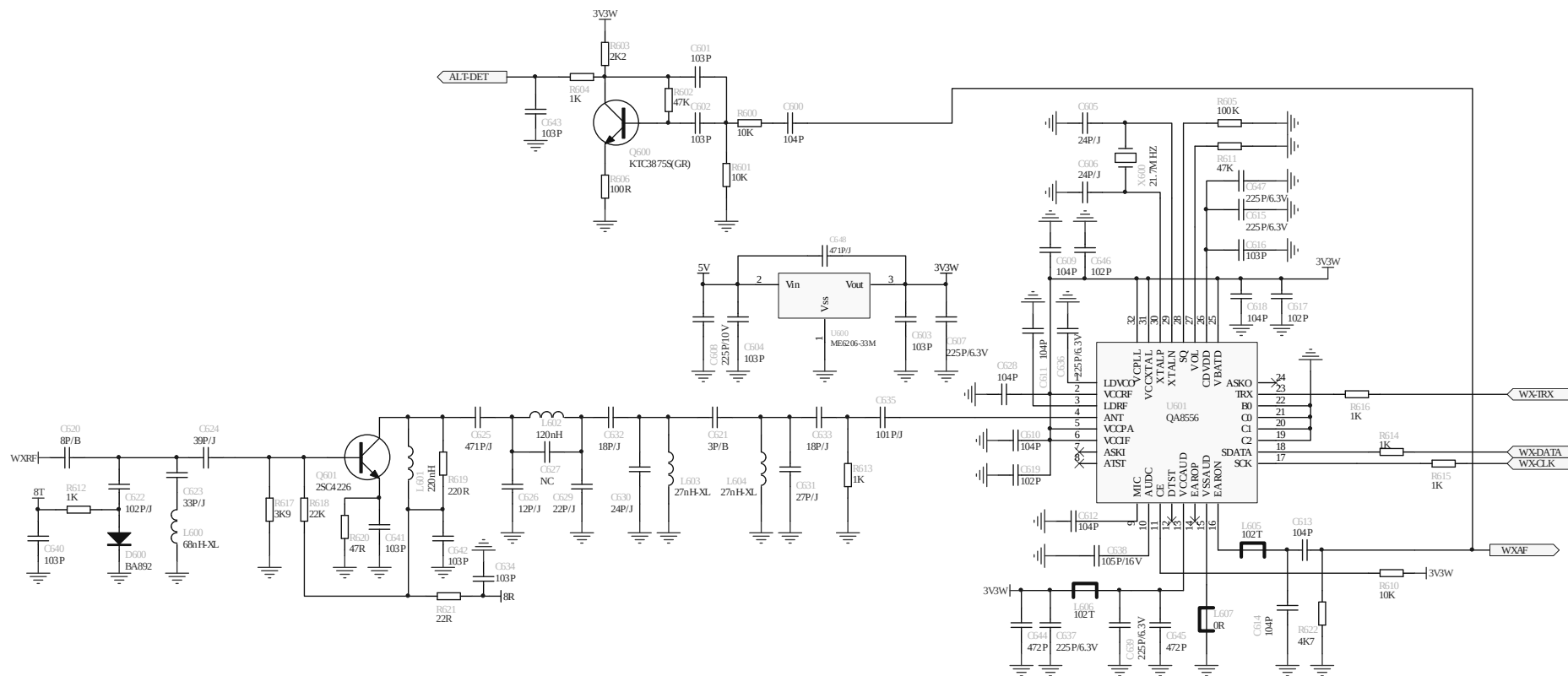


SCHEMATIC DIAGRAM

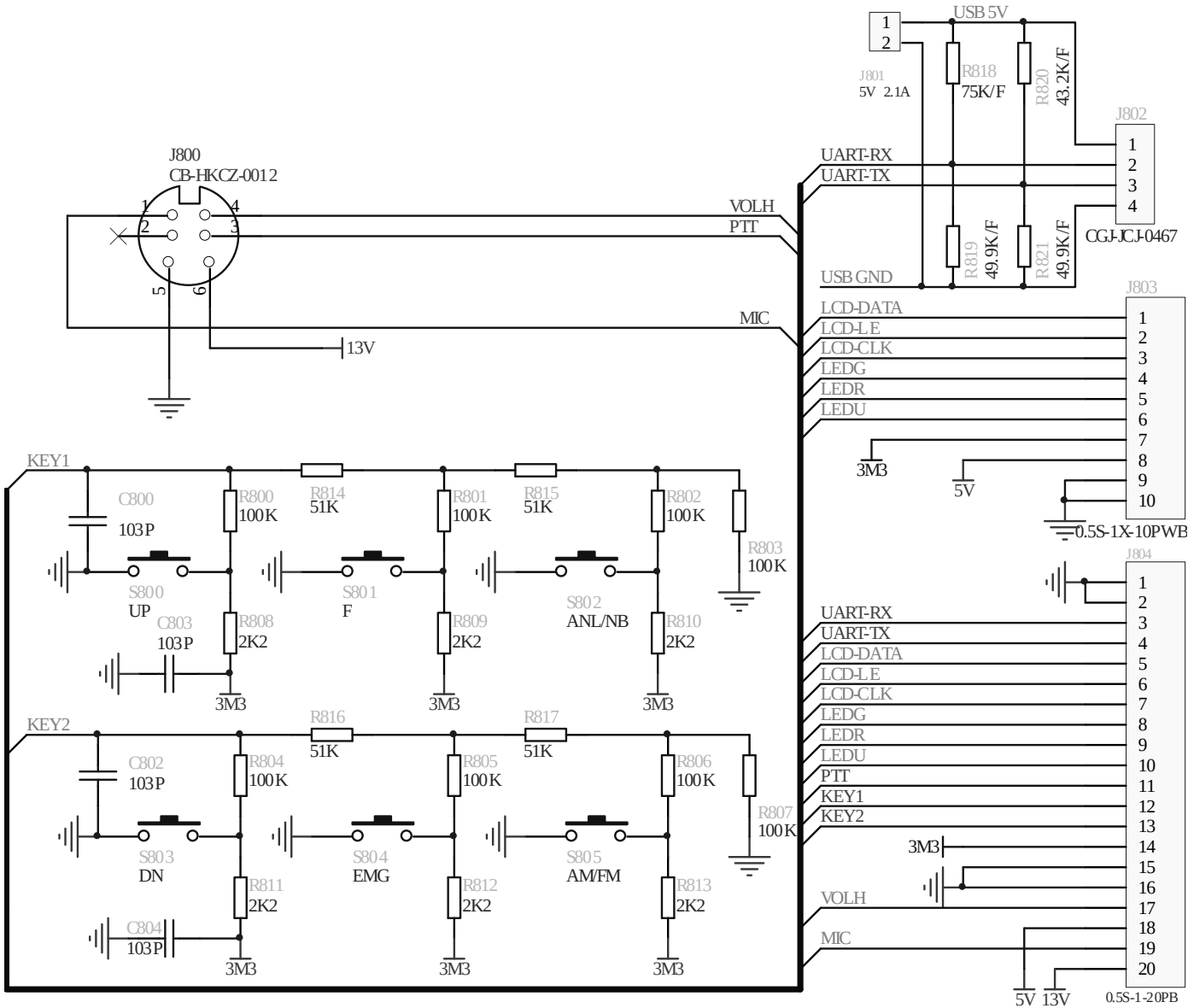


SCHEMATIC DIAGRAM

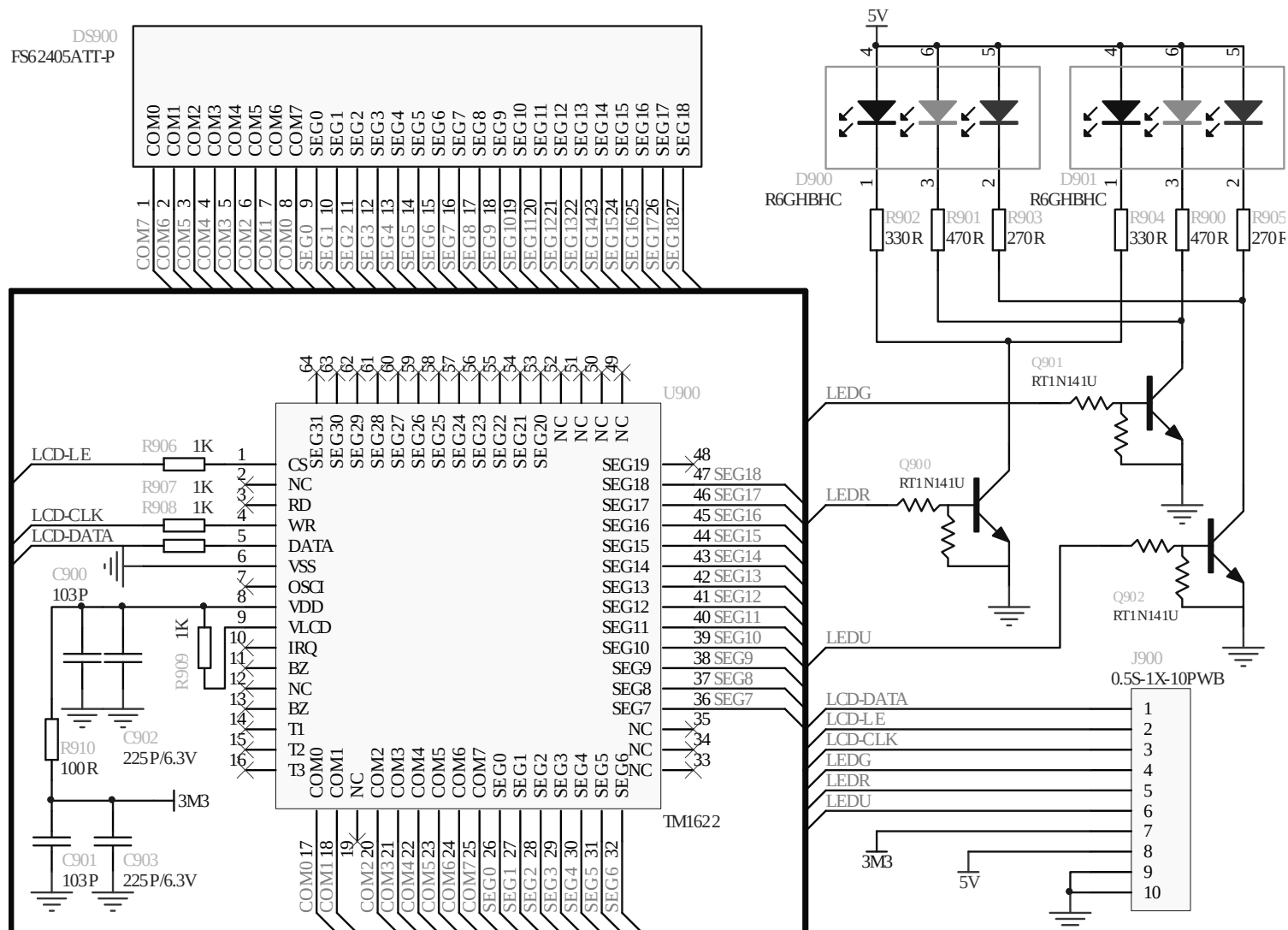




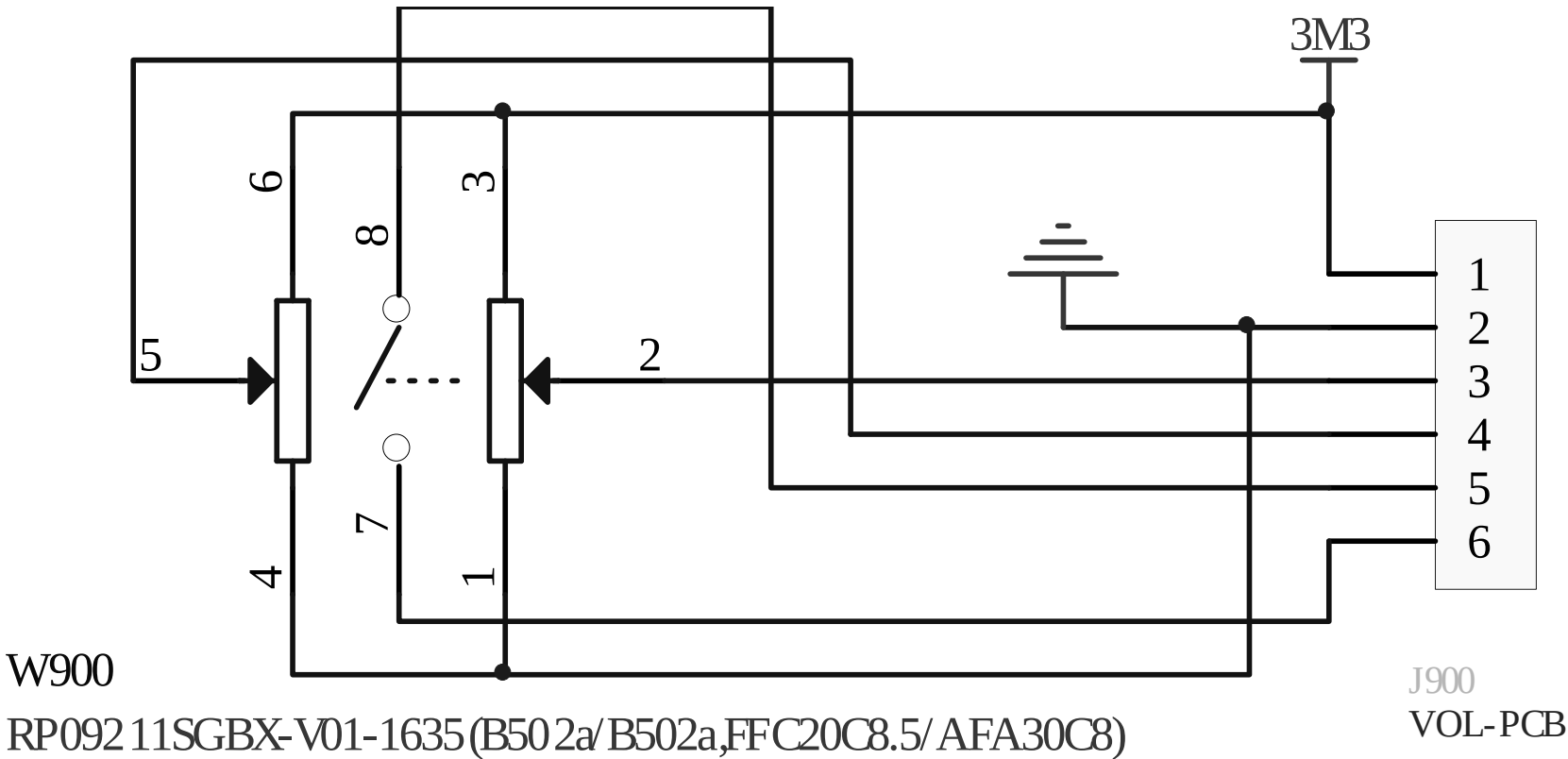
SCHEMATIC DIAGRAM



SCHEMATIC DIAGRAM



SCHEMATIC DIAGRAM



BLOCK DIAGRAM

