



Service Manual

DIGITAL PORTABLE RADIO



Preface

This manual describes the information related to the product repair. It is intended for use by qualified technicians only. To repair the product properly, please read this manual carefully before repairing.

This manual is applicable to the following product:

BD50X Digital Portable Radio (X may represent 2, 5, 6, or 8)

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Documentation Information

Conventions

Icon Conventions

Icon	Description
 NOTE	Indicates references that can further describe the related topics.
 CAUTION	Indicates situations that could cause data loss or equipment damage.

Notation Conventions

Notation	Description	Example
Boldface	Denotes menus, tabs, parameter names, window names, dialogue names, and hardware buttons.	To save the configuration, click Apply .
		The Log Level Settings dialogue appears.
		Press the PTT key.
" "	Denotes messages, directories, file names, folder names, and parameter values.	The screen displays "Invalid Battery!"
		Open "PDT_PSS.exe".
		Go to "D:/opt/local".
		In the Port text box, enter "22".
>	Directs you to access a multi-level menu.	Go to File > New .
<i>Italic</i>	Denotes document titles.	For details about using the DWS, refer to <i>Dispatch Workstation User Guide</i> .
Courier New	Denotes commands and their execution results.	To set the IP address, run the following command: vos-cmd - m name IP

Revision History

Version	Release Date	Description
V03	October 2021	Upgraded the main board and materials in the frequency

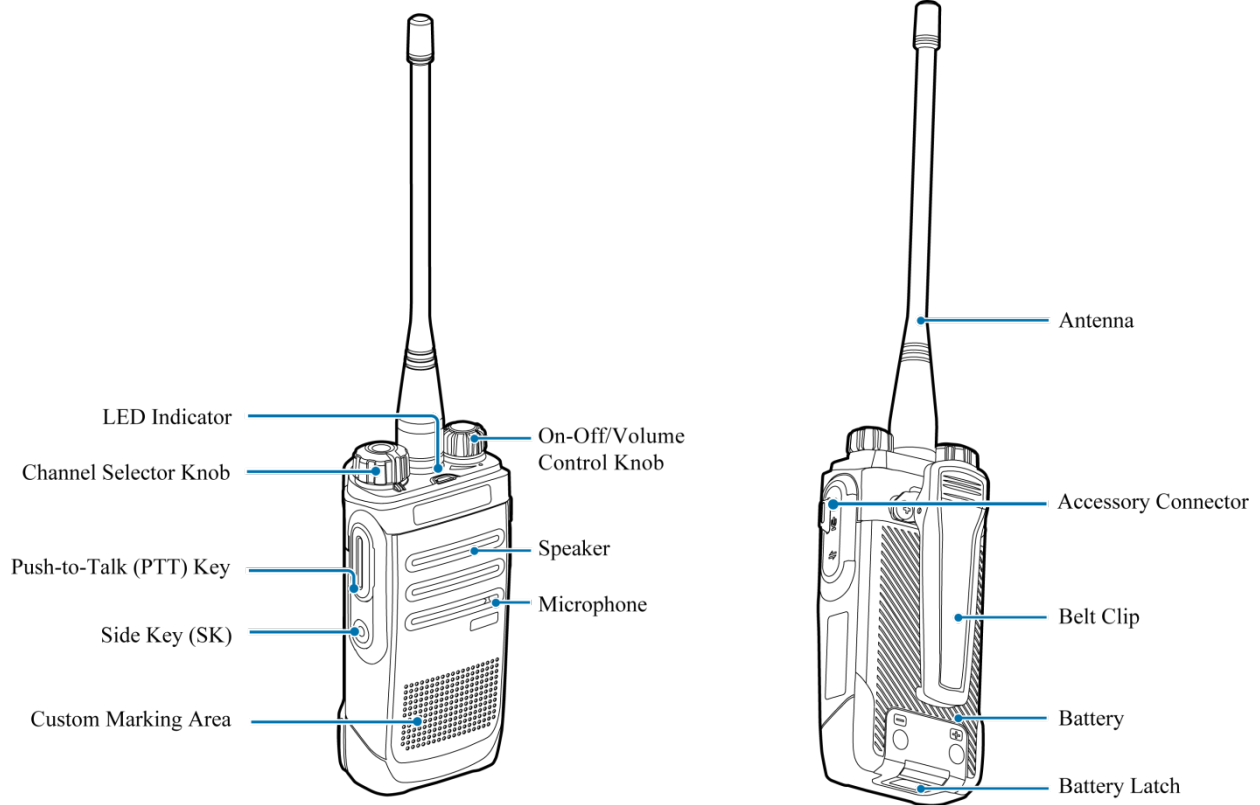
Version	Release Date	Description
		band of UHF (400–470 MHz) and VHF (136–174 MHz).
V02	September 2020	● Upgraded the main board to version H in the frequency band of UHF (400–470 MHz) ● Added abbreviations.
V01	February 2018	● Added VHF (136–174 MHz) ● Added UHF (350–400 MHz) ● Upgraded main board and materials; updated UHF (400–470 MHz)
V00	February 2017	Initial release.

UHF (400–470 MHz)

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1. Product Layout



2. Disassembly and Reassembly

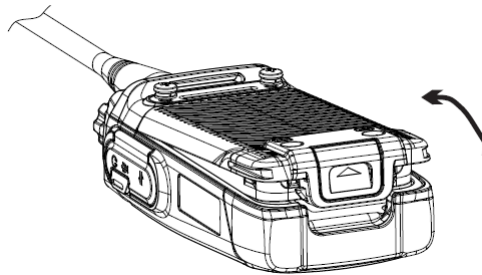
This chapter describes how to disassemble and reassemble the radio.

2.1 Tools

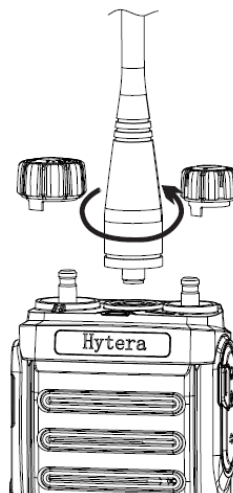
- T9 Screwdriver
- Socket wrench
- Philips screw
- Tweezers
- Soldering iron
- Antistatic device

2.2 Disassembly Procedure

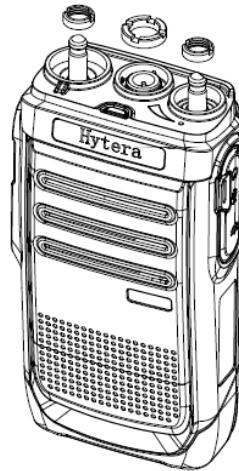
1. Turn off the radio.
2. Move the battery latch upwards to release it, and then remove the battery from the radio.



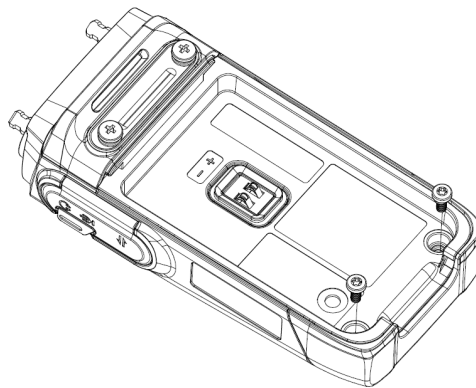
3. Rotate the antenna anticlockwise to remove it, and then pull out the **Channel Selector** knob and **On-Off/Volume Control** knob.



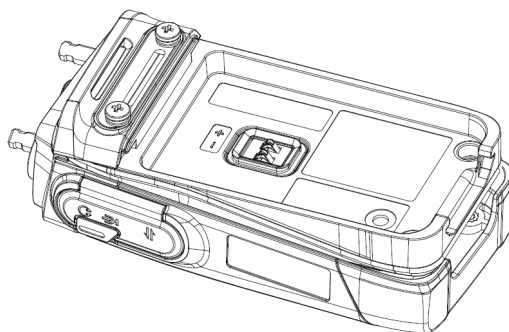
4. Use a socket wrench to remove the nuts from the antenna connector, **Channel Selector** knob, and **On-Off/Volume Control** knob.



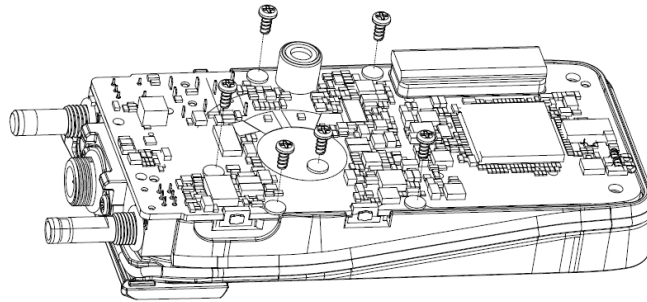
5. Use a T9 screwdriver to remove the two screws in the battery slot.



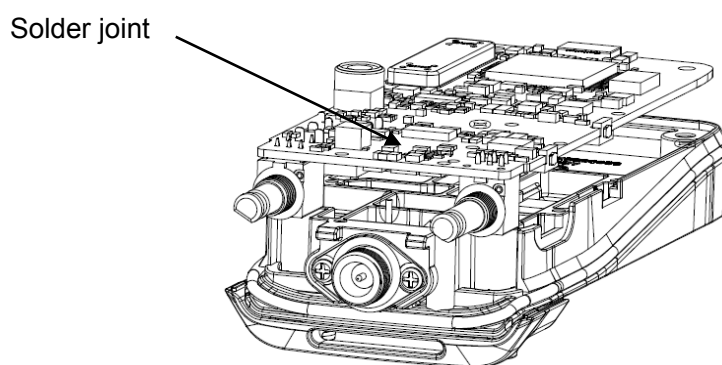
6. Use tweezers to remove the aluminum chassis.



7. Use a Phillips screwdriver to remove the six screws on the main board.



8. Use a soldering iron to unsolder the solder joint of the antenna connector, and then separate the main board from the aluminum chassis.



2.3 Reassembly Procedure



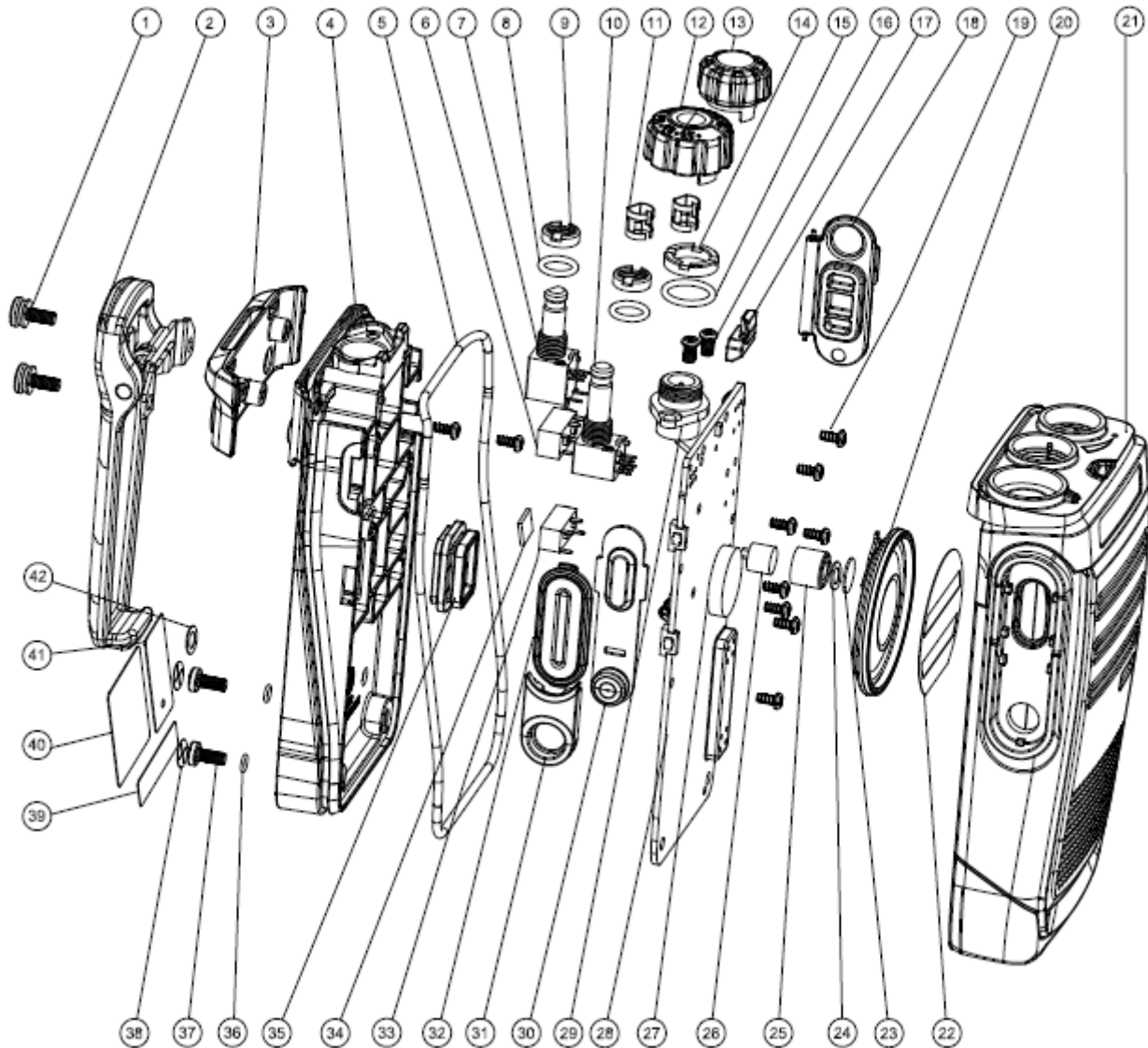
CAUTION

Make sure the waterproof ring is attached in place.

1. Place the main board back to the aluminum chassis, and then use a soldering iron to solder the solder joint of the antenna connector.
2. Put the six screws back on the main board, and use a Phillips screwdriver to tighten them.
3. Use tweezers to put the aluminum chassis back in place.
4. Put the two screws back in the battery slot, and use a T9 screwdriver to tighten them.
5. Put the nuts back in place for the antenna connector, **Channel Selector** knob, and **On-Off/Volume Control** knob, and use a socket wrench to tighten them.
6. Put the **Channel Selector** knob and **On-Off/Volume Control** knob back in place.
7. Place the antenna in its receptacle, and then rotate it clockwise until hand tight.
8. Align the battery contacts with the contacts in the battery compartment, and then gently press the battery latch downwards to lock it.

3. Exploded View and Packing Guide

3.1 Exploded View



The table below lists the parts.

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	5107000000375A	Machine screw	2	22	5113040060802A	Speaker felt	1
2	31040000000005	Belt clip	1	23	5113030000026A	Waterproof MIC mesh	1
3	51160000000654B	Rear cover	1	24	5113010000110A	MIC pad	1
4	5117000060961C	Aluminum chassis	1	25	5110000000591B	MIC cover	1
5	5110000000693A	Main waterproof ring	1	26	51020200000041	Microphone	1
6	51040600000221	Earpiece connector	1	27	5113050000240A	Speaker foam	1
7	51010300000037	Rotary switch	1	28	5001010002126L	Main PCB	1
8	5110000000841A	O-RING for rotary switch	2	29	51030600000014	SMA RF connector	1

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
9	5108000000070A	Nut for volume switch	2	30	5110000000405A	PTT key	1
10	51010200060041	Volume switch	1	31	5116000000459B	Bracket for PTT key cover	1
11	5111000000193A	Inner lining for knob	2	32	5116000000742A	PTT key cover	1
12	5116000001993F	Channel selector knob	1	33	51040600000050	Earpiece connector	1
13	5116000000518F	Volume control knob	1	34	5119020000001A	Heat sink pad	1
14	5108000000029A	Nut for antenna	1	35	5110000000364A	Waterproof ring for battery connector	1
15	5110000000909A	O_RING for antenna	1	36	5110000000402A	Waterproof ring for M2 screw	2
16	5107000000184A	Machine screw	2	37	5107000000199A	Machine screw	2
17	5116000001533B	Light guide	1	38	5207000000978A	Anti-dismantling label	2
18	5116000001665C	Accessory connector cover	1	39	5207000000719A	Transmission instruction label	1
19	5107000000300A	Self-tapping screw	10	40	5207000001707A	Aluminum chassis label	1
20	51020600000072	Speaker	1	41	5207000000849B	Caution label	1
21	5116000001932A	Front housing	1	42	5113040000021A	Breathable film for battery	2

**NOTE**

The part number is subject to change without notice due to product upgrade.

3.2 Packing Guide



4. Specifications

General		
Frequency Range	400–470 MHz	
Dimensions (H x W x D) (with battery and without antenna)	108 mm x 54.5 mm x 28 mm	
Weight (with battery and antenna)	240 g	
Zone Capacity	3	
Channel Capacity	48	
Channel Spacing	25 kHz/12.5 kHz	
Operating Voltage	Rated voltage: 7.2 V	
	Extreme Voltage: 6.2–8.4 V	
Battery	1500 mAh Li-ion battery	
Battery Life (5/5/90 duty cycle)	Analog: 12 hours	
	Digital: 16 hours	
Antenna Impedance	50 Ω	
RX		
Sensitivity	Analog	0.22 μV (12 dB SINAD)
		0.22 μV (typical) (12 dB SINAD)
		0.4 μV (20 dB SINAD)
	Digital	0.22 μV/BER5%
Adjacent Channel Selectivity	12.5 kHz/TIA-603	> 60 dB
	25 kHz/TIA-603	> 70 dB
Spurious Response Rejection	TIA-603	> 70 dB
Intermodulation	TIA-603	> 65 dB
Conducted Emission	< 1 GHz	< –57 dBm
	> 1 GHz	< –47 dBm

Blocking	> 84 dB	
RX Audio S/N	Analog: > 45 dB/40 dB	
	Digital: > 40 dB	
Rated Audio Distortion	5%	
Rated Audio Output Power	0.5 W	
RX Audio Response	+1 dB to –3 dB	
TX		
Frequency Stability	0.5 ppm	
Output Power	Low power	1.2 W
	High power	4.2 W
FM Modulation	11K0F3E@12.5 kHz	
	16K0F3E@25 kHz	
4FSK Digital Modulation	12.5 kHz (data only): 7K60FXD	
	12.5 kHz (data and voice): 7K60FXW	
Spurious Emission	< 1 GHz	< –36 dBm
	> 1 GHz	< –30 dBm
Modulation Limiting	2.5 kHz@12.5 kHz	
	5.0 kHz@25 kHz	
TX Audio S/N	Analog: > 45 dB/40 dB	
	Digital: > 40 dB	
Adjacent Channel Power	12.5 kHz	> 60 dB
	25 kHz	> 70 dB
TX Audio Response	+1 dB to –3 dB	
TX Audio Distortion	3%	
Vocoder	SELP1.7/AMBE+2™	
Environment		

Operating Temperature	–30°C to +60°C	
Storage Temperature	–40°C to +85°C	
Electrostatic Discharge	IEC 61000-4-2 (level 4)	±15 kV (air)
		±8 kV (contact)
United States Military Standard	MIL-STD-810 C/D/E/F/G	
Water & Dust Protection	IP54	
Humidity	MIL-STD-810 C/D/E/F/G	
Drop, Shock & Vibration	MIL-STD-810 C/D/E/F/G	

**NOTE**

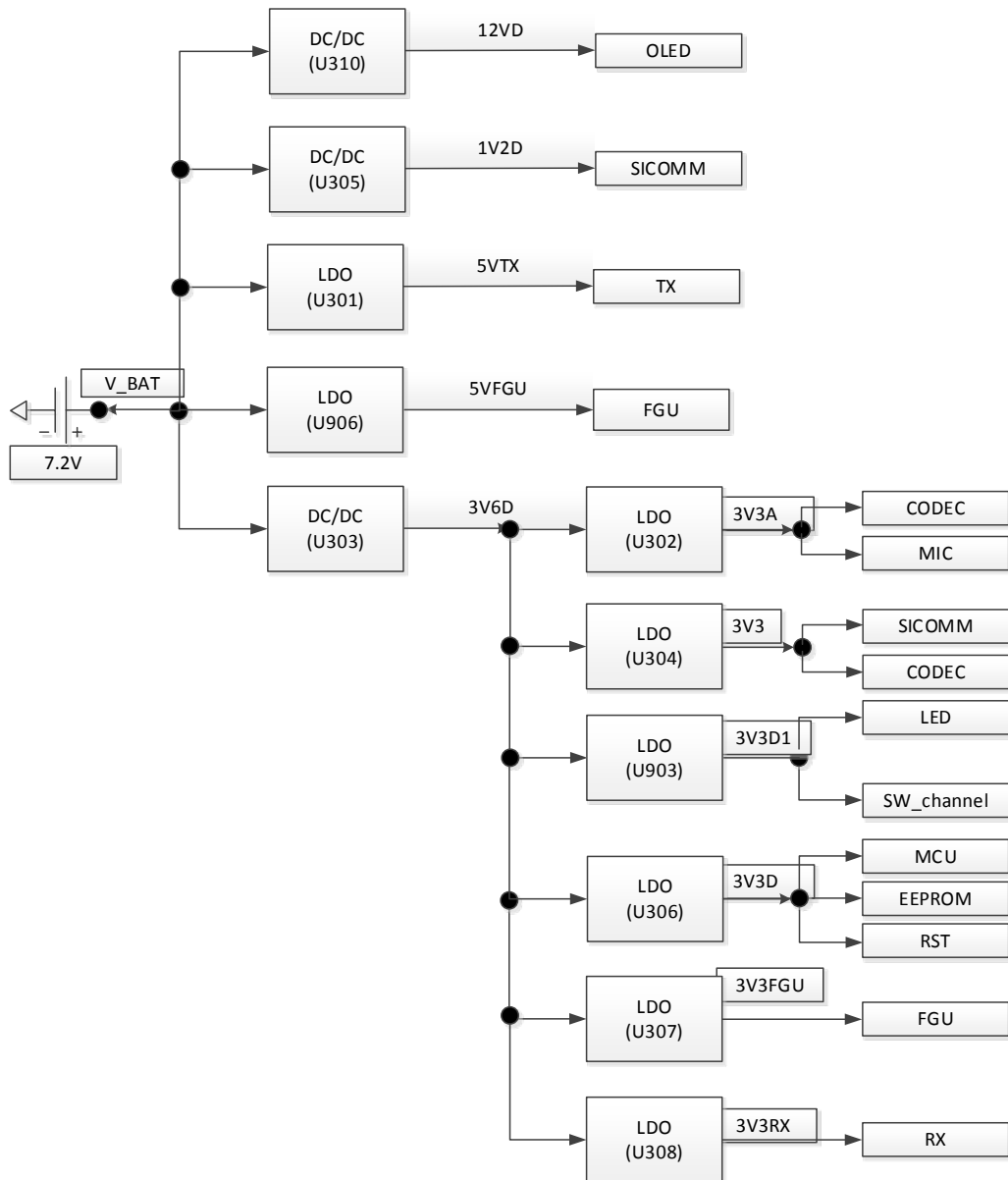
All specifications are tested according to applicable standards, and subject to change without notice due to continuous technological development.

5. Circuit Description

5.1 Baseband Section

5.1.1 Power Supply Module

The power supply employs a 7.2 V dual-cell Li-ion battery.



The 7.2 V voltage powers the RF board and baseband board in the following ways:

RF Board

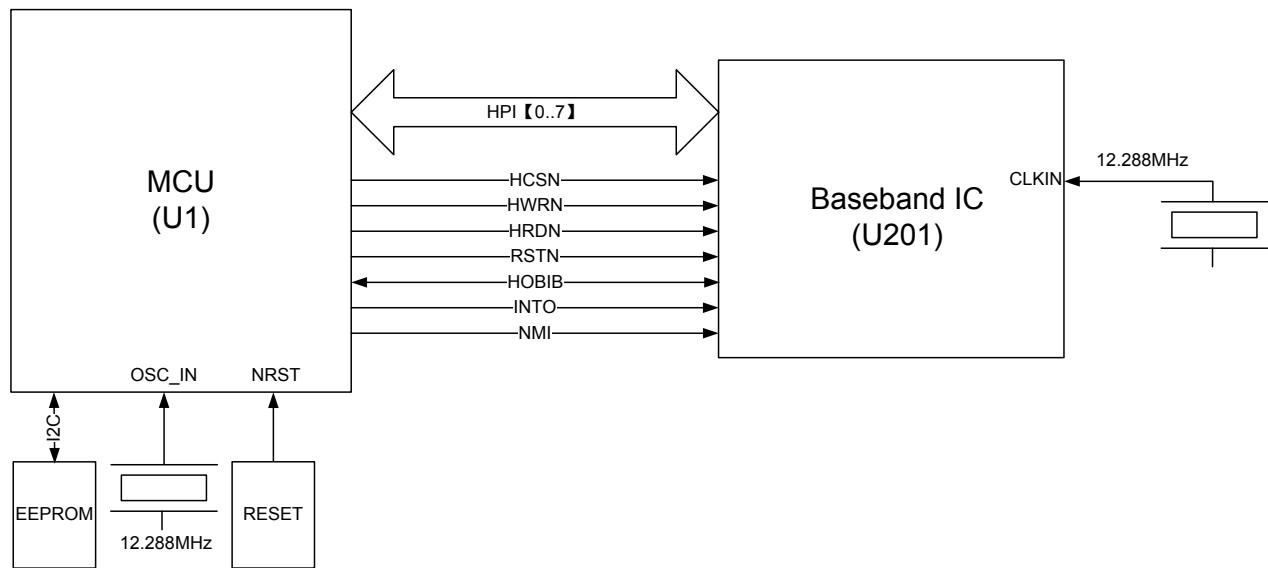
- The LDO (U301) converts the 7.2 V voltage into a 5.0 V voltage, which powers the TX circuit.
- The DC/DC (U303) converts the 7.2 V voltage into a 3.6 V voltage. Then the LDOs (U307 and U308) convert the 3.6 V voltage into 3.3 V voltage, which powers the FGU circuit and RX circuit.

Baseband Board

The DC/DC (U303) converts the 7.4 V voltage into a 3.6 V voltage. The 3.6 V voltage is further processed as follows:

- The LDOs (U302, U304, U903, and U306) convert the 3.6 V voltage into 3.3 V voltages, which power the CODEC, MIC, MCU, EEPROM, and so on.
- The DC/DC (U305) converts the 3.6 V voltage into a 1.2 V voltage, which powers the baseband processor chip SICOMM.

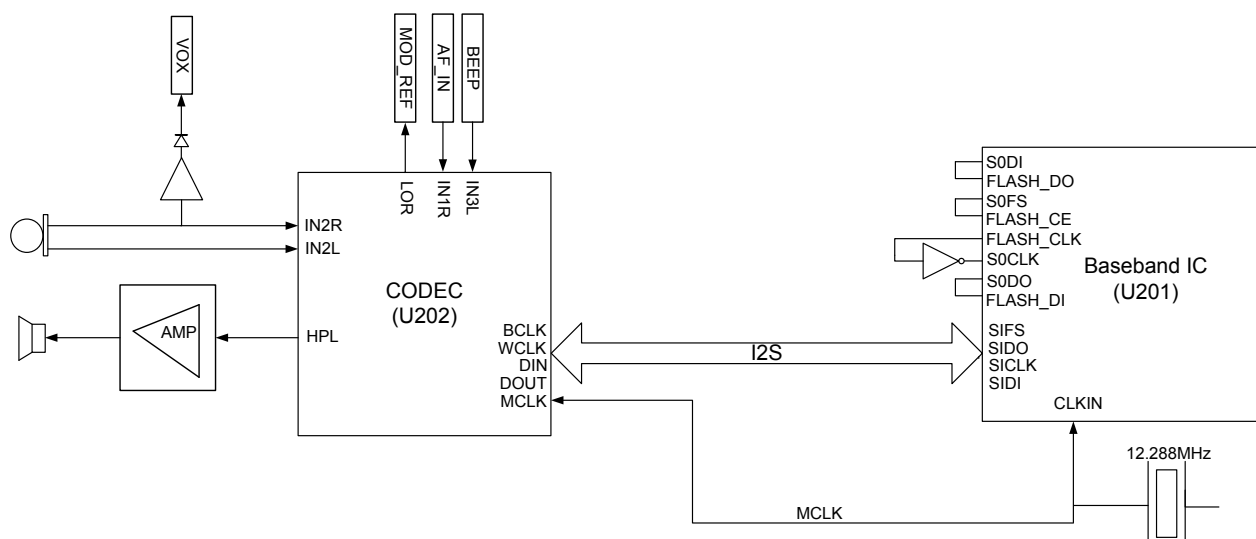
5.1.2 Control Module



The control module consists of the MCU (U1) serving as the main controller and baseband IC (U201) serving as the baseband processor. Both the MCU and baseband IC use the frequency generated by the 12.288 MHz crystal oscillator as the clock signal.

The MCU communicates with the baseband IC through the HPI bus, and connects to the 512 KB EEPROM through the I2C bus for storing programming and debugging data.

5.1.3 Audio Module



The audio module consists of the CODEC (U202), baseband IC (U201), audio power amplifier (AMP), and so on. Both the CODEC and baseband IC use the frequency generated by the 12.288 MHz crystal oscillator as the clock signal.

Audio Path

- RX Path

The audio signal received from the RF section goes to the CODEC through the IN1R interface for amplification and A-D conversion. Afterwards, it goes to the baseband IC through the I2S bus for processing, and then goes back to the CODEC for D-A conversion and amplification. Finally, it goes to the AMP through the HPL interface for amplification, and gets output through the speaker.

- TX Path

The audio signal from the microphone goes to the operational amplifier and is divided into two differential signals. The two signals go to the CODEC through the IN2R and IN2L interfaces for amplification and A-D conversion. Afterwards, the processed signal goes to the baseband IC through the I2S bus for processing, and then goes back to the CODEC for D-A conversion and amplification. Finally, it goes to the FGU circuit through the LOR interface for modulation.



NOTE

With the VOX feature enabled, the audio signal from the microphone is transmitted to the MCU for VOX sampling and detection before being processed.

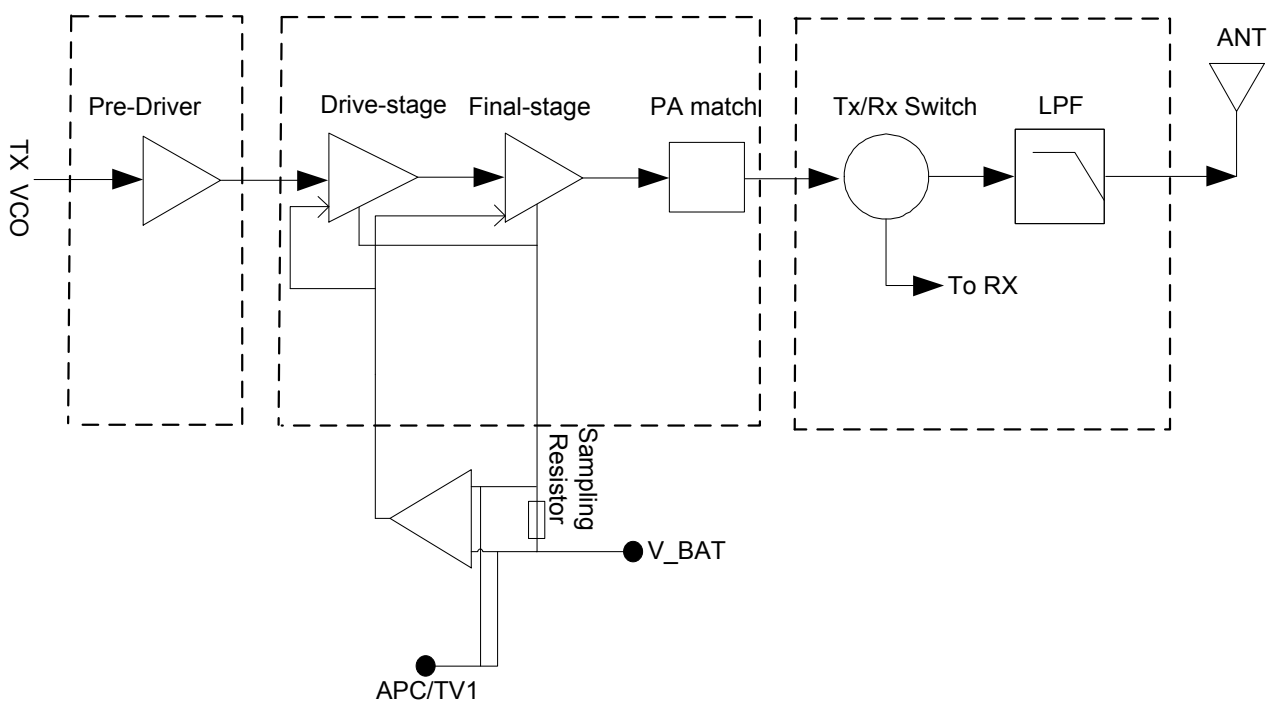
Audio Power Amplifier

The table below lists the main parameters of the audio amplifier.

Parameter	Value
Rated Power (P_o)	0.5 W
Maximum Power (P_{max})	1.6 W
Speaker Impedance (R_L)	16 Ω

5.2 RF Section

5.2.1 TX Circuit



The TX circuit consists of RF PA circuit, low-pass filter (LPF) circuit, and automatic power control (APC) circuit.

RF PA Circuit

The carrier signal generated by the TX VCO goes to the pre-driver PA for initial amplification, the drive-stage PA for further amplification, and then final-stage PA for final amplification. The amplified carrier signal then passes through the microstrip matcher for output impedance matching, so as to reduce output power loss due to impedance mismatch.

LPF Circuit

After the output impedance matching, the signal goes to the TX/RX switch and then to the LPF for suppressing harmonics and spurious signals. Finally, it goes to the antenna for transmission.

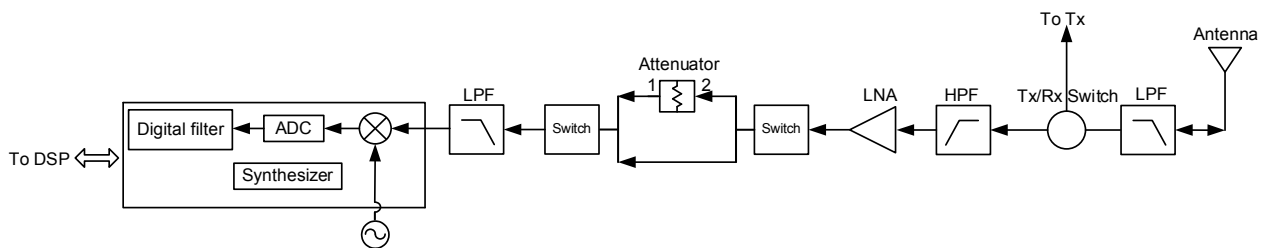
APC Circuit

The APC circuit converts the drain current from the driver-stage PA and final-stage PA into a voltage, and then compares the voltage with the APC control voltage output by the MCU. The error voltage generated from the comparison adjusts the TX power by controlling the gate bias voltage of the driver-stage PA and final-stage PA.

5.2.2 RX Circuit

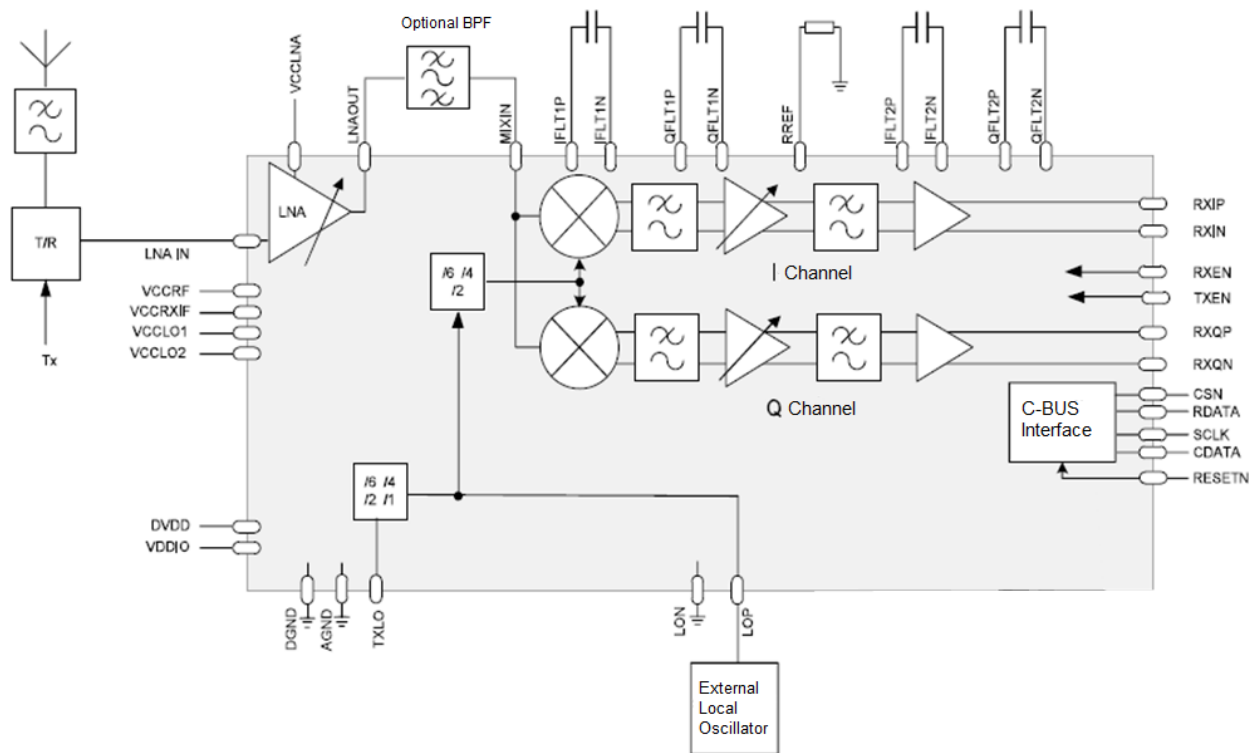
The RX circuit adopts a zero-IF scheme, which consists of the RX front-end and RX back-end. The RX front-end includes high-pass filter (HPF), low-noise amplifier (LNA), two RF switches, and LPF. The RX back-end adopts a zero-IF chip for conversion and demodulation..

RX Front-End



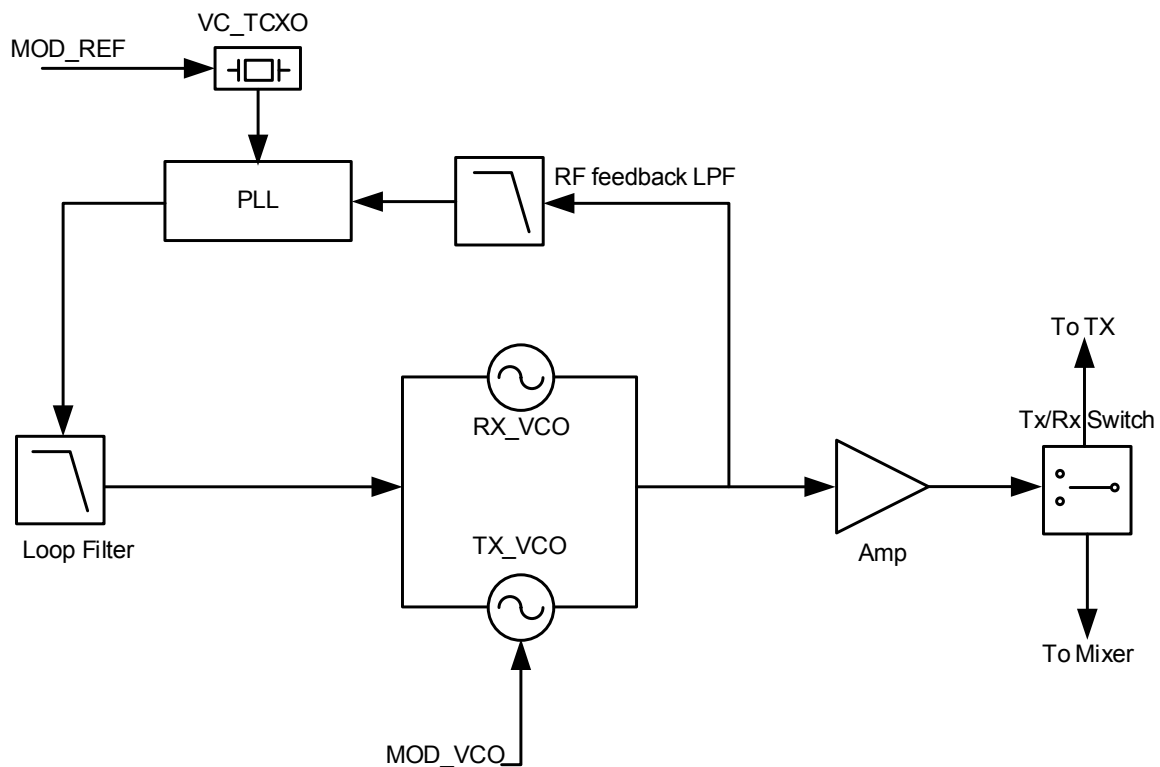
The signal received from the antenna goes to the LPF shared with the TX circuit for filtering high-frequency signals, to the first-stage RF HPF through the TX/RX switch for preliminarily filtering 1/2 RF frequency and other spurious signals, and then to the internal or external LNA for amplification. The amplified signal goes to the LPF and RF switches to further filter and limit the signal entering the frequency mixer.

RX Back-End



The filtered and amplified signal goes to the zero-IF chip, where the signal mixes with the RX LO signal generated by the VCO and directly changes to zero frequency. After ADC sampling and decimation filtering, the I/Q digital signal is sent to the DSP for FM/4FSK demodulation. Then the voice data is decompressed, sent to the voice codec chip for D/A conversion, and finally output to the speaker through the audio power amplifier.

5.2.3 FGU Circuit



The FGU circuit consists of VCO and PLL, which can track the frequency and switch the channel under the control of MCU signals. It is the core module of the TX-RX system.

PLL

The 19.2 MHz frequency generated by the reference crystal oscillator and VCO signal go to PLL for frequency division. If the signals have different frequencies or phases, the PLL will output a signal corresponding to the phase difference. The pulse current goes to the loop filter for RC integration, and is then converted into CV voltage. Then the CV voltage is sent to the varactor of VCO to adjust the output frequency of VCO directly until the CV voltage becomes constant. Then the PLL is locked, and the stable frequency output by VCO goes to the TX-RX channel through two buffer amplifiers.

VCO

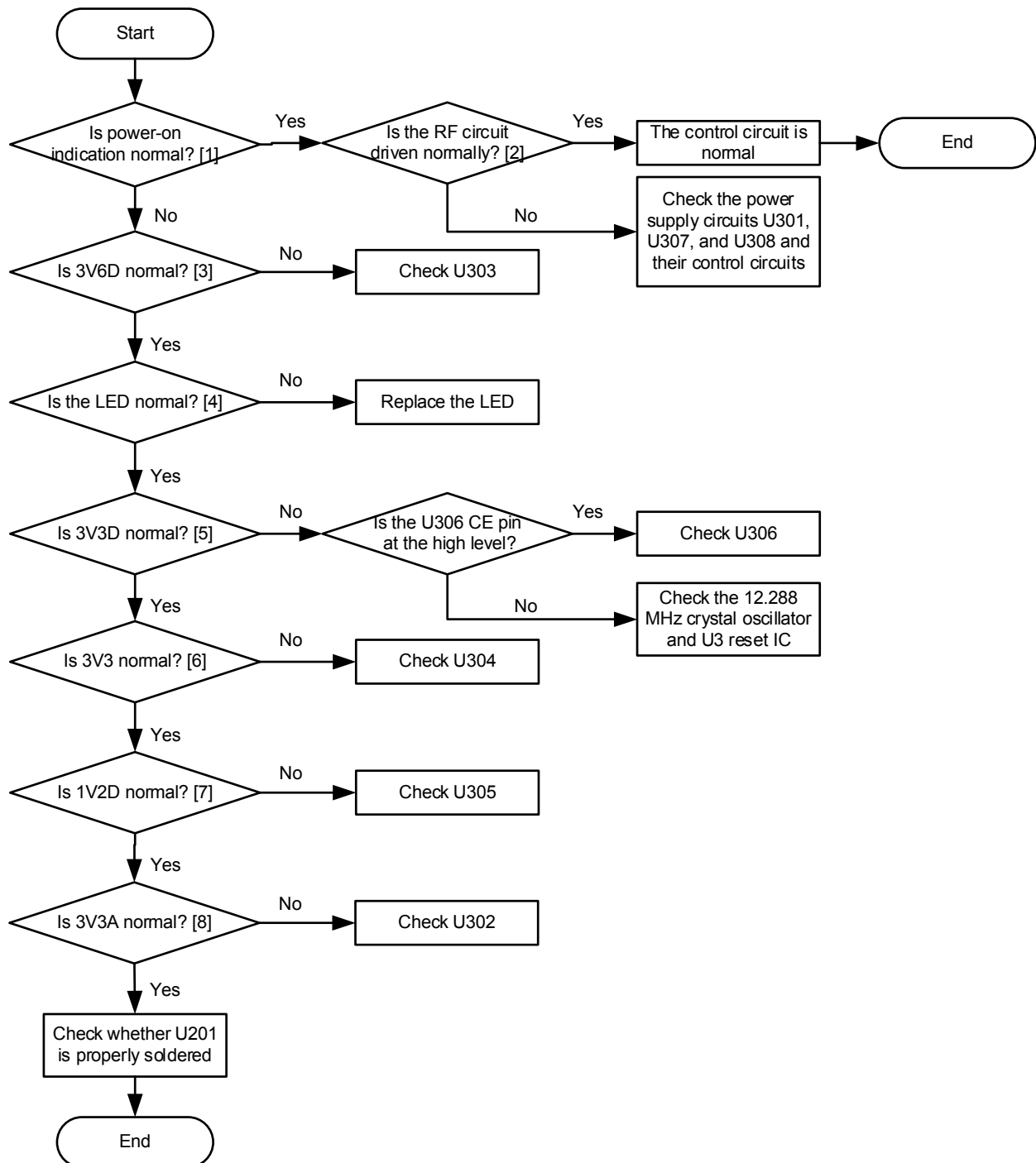
The VCO adopts Colpitts oscillator circuit, and includes RX_VCO and TX_VCO. RX_VCO provides the LO signal, and TX_VCO provides carrier for transmitting signals. When the oscillator is operating, it obtains different output frequencies by changing the varactor's control voltage (namely, CV voltage), and then switches the operating status by controlling the compound transistor.

Two-point Modulation

In TX mode, the two-point modulation technology of VCO and reference oscillator is adopted to obtain higher modulation accuracy and lower 4FSK bit error rate. MOD_VCO and MOD_REF respectively transmit the modulating signals to TX_VCO and VC_TCXO for modulation.

6. Troubleshooting Flow Chart

6.1 Control Circuit



Description of normal situation:

- [1] The radio announces the channel number after being turned on.
- [2] The RF power supply outputs normally, and the power supply for the RX path is switched on.
- [3] The voltage at TP303 is $3.6 \pm 10\%$ V.

[4] After the radio is turned on, the LED indicator flashes green for three times.

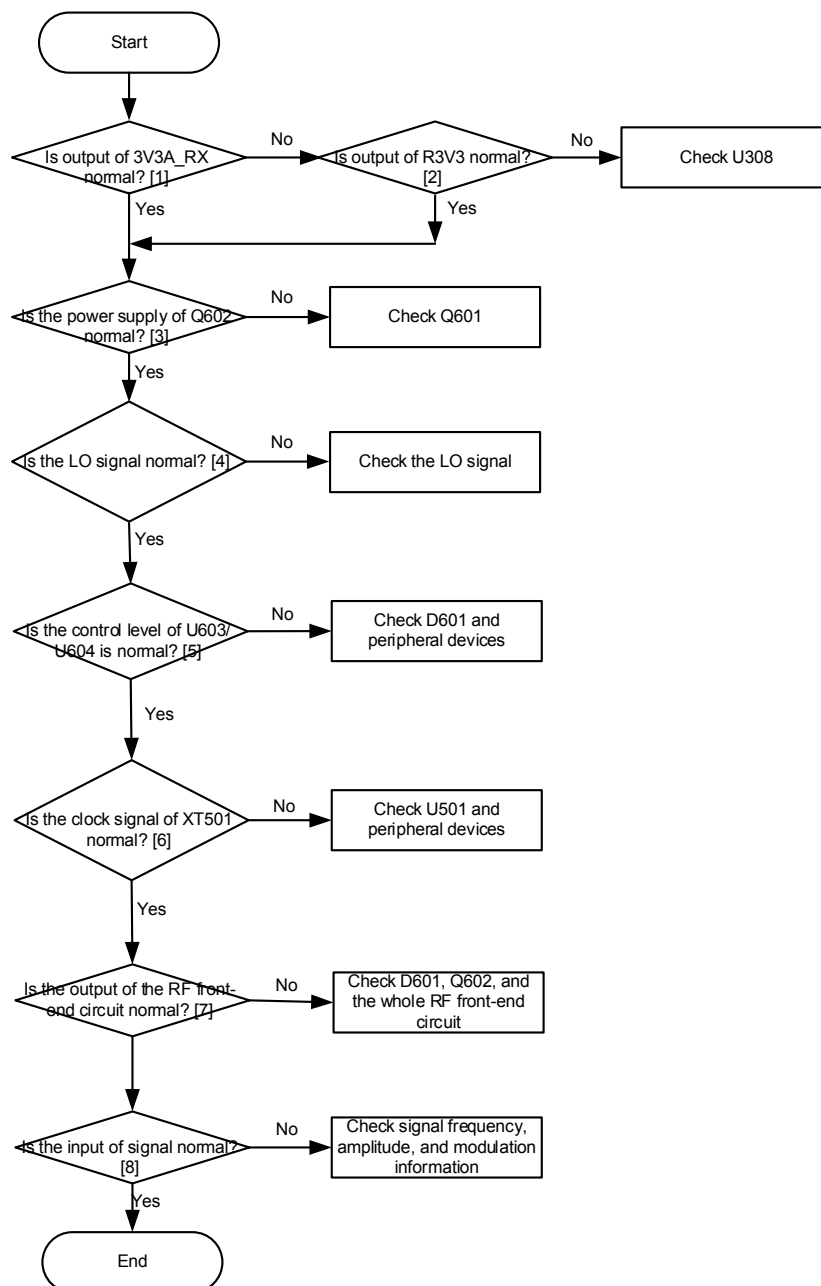
[5] The output voltage at Pin 5 of U306 is $3.3 \pm 10\%$ V.

[6] The output voltage at Pin 5 of U304 is $3.3 \pm 10\%$ V.

[7] The voltage at TP305 is $1.2 \pm 10\%$ V.

[8] The output voltage at Pin 5 of U302 is $3.3 \pm 10\%$ V.

6.2 RX Circuit



Description of normal situation:

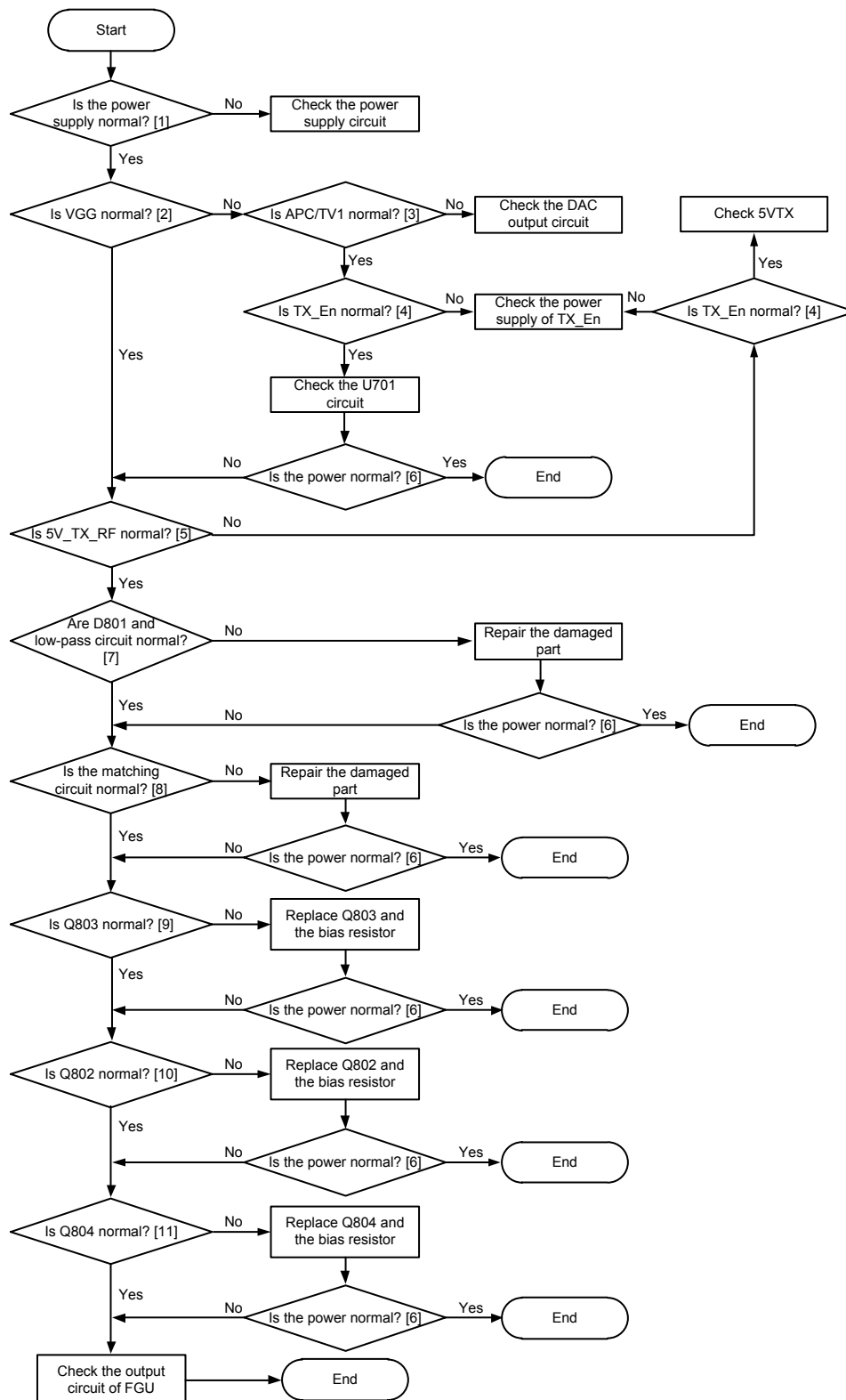
- [1] & [2]: The input voltage at Pin 1 and output voltage at Pin 5 of U308 is respectively about 3.6 V and 3.3 V.
- [3] When the radio receives a signal having an amplitude of less than –35 dBm, the voltage at Pin 4 of Q602 is about 3.3 V.
- [4] When the radio is receiving signals, the frequency of LO signal C642 is about twice the RX frequency, and the amplitude is about –3 dBm.
- [5] When the radio receives a signal having an amplitude of less than –105 dBm, the voltage at L622 is about 3.3 V, and the voltage at L623 is 0 V. When the radio receives a signal having an amplitude of greater than –95 dBm, the voltage at L622 is about 0 V, and the voltage at L623 is 3.3 V.
- [6] The frequency of the oscillator circuit composed of XT501 and other devices is 19.2 MHz.
- [7] Input a –110 dBm signal at the antenna port, the gain of the RX circuit is greater than 10 dB, and the amplitude at C657 and C663 is greater than –100 dBm. Input a –90 dBm signal at the antenna port, the RX circuit will attenuate the signal, the amplitude at C657 is greater than –80 dBm, and the amplitude at C663 is about –90 dBm.
- [8] At the antenna port, input a –47 dBm signal with standard debugging information (AF=1 kHz, FM=3 kHz).

6.3 TX Circuit



CAUTION

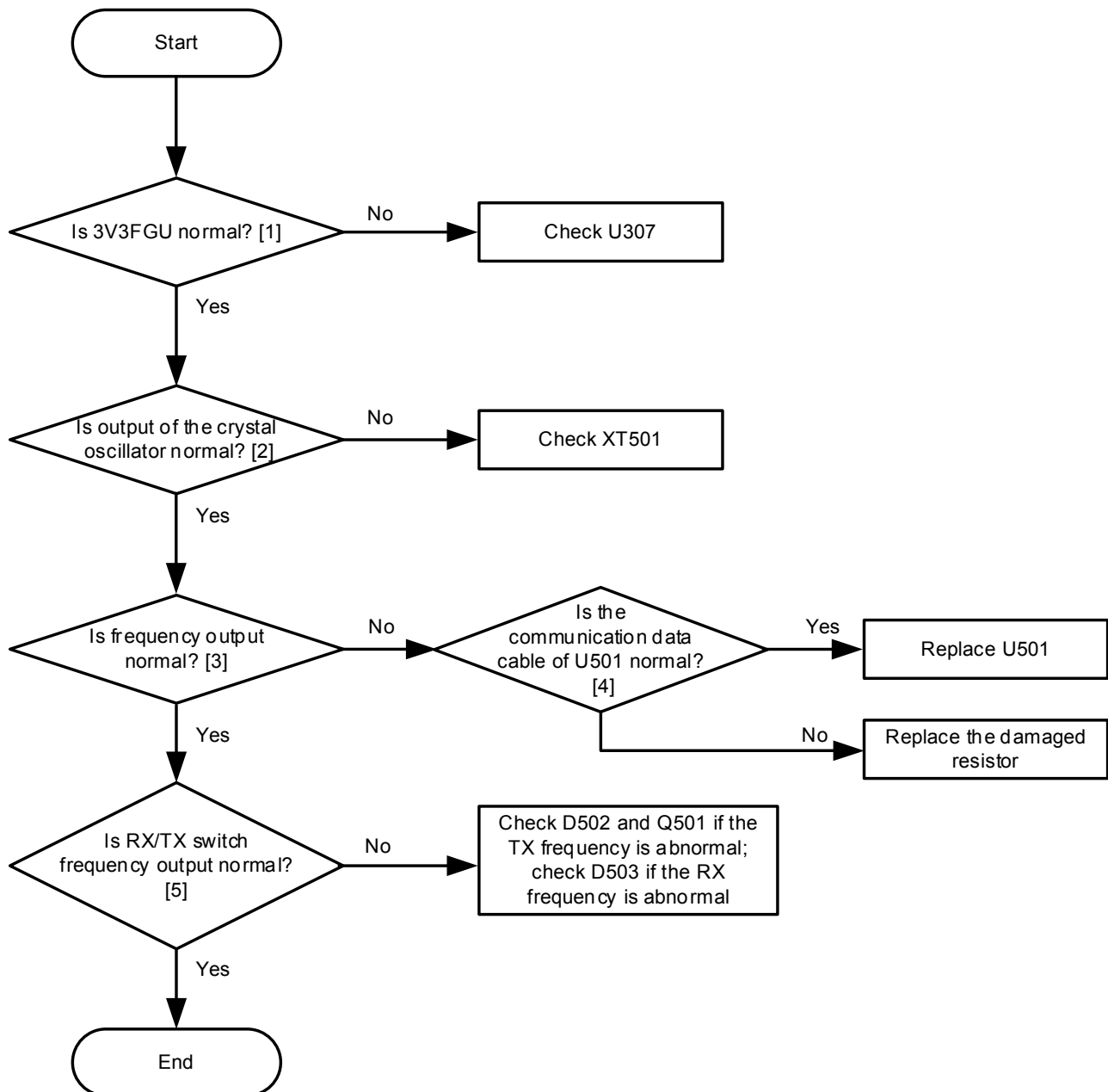
To avoid the impact on TX power, do the following tests under the 7.2 V power supply.



Description of normal situation:

- [1] The voltage of the power supply is $7.2 \pm 10\%$ V.
- [2] VGG ranges from 1.8 V to 2.1 V for low power and 2.4 V to 2.8 V for high power.
- [3] APC/TV1 ranges from 1 V to 1.3 V for low power and 1.8 V to 2.1 V for high power.
- [4] TX_En is $3.3 \pm 10\%$ V.
- [5] 5V_TX_RF is $5 \pm 10\%$ V.
- [6] The high power is $4.2 \pm 10\%$ W, and the low power is $1.2 \pm 10\%$ W.
- [7] The start-up voltage of D801 is $0.7 \pm 10\%$ V. The low-pass circuit coil is soldered properly. The antenna connector is properly soldered to the main board.
- [8] The matching parts are soldered properly.
- [9] VDD is $7.2 \pm 10\%$ V. VGG of Q803 ranges from 1.0 V to 1.2 V for low power and 1.35 V to 1.55 V for high power.
- [10] VDD is $7.2 \pm 10\%$ V. VGG of Q802 ranges from 1.8 V to 2.1 V for low power and 2.4 V to 2.8 V for high power.
- [11] The voltages at the two ends of R811 are $5.0 \pm 10\%$ V and $3.3 \pm 10\%$ V.

6.4 FGU Circuit

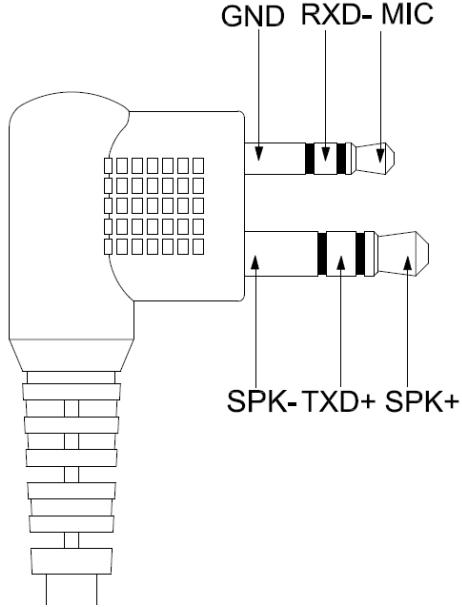


Description of normal situation:

- [1] The output voltage at Pin 5 of U307 is $3.3 \pm 10\%$ V.
- [2] Test C534. In normal case, the output frequency is 38.4 MHz, and the AC level is greater than 1.1 V.
- [3] The RX LO frequency is the sum of the RX frequency and IF. The TX frequency equals the frequency at which the radio is transmitting.
- [4] The cable is properly connected to the MCU and protected from open circuit.
- [5] The amplitude of carrier signals at the RX switch and TX switch is greater than 0 dBm.

7. Interface Definition

The table below lists information about the double-pin (J402 and J403) plug for earpiece and programming cable.

Interface	Pin No.	Signal	Illustration
J402	1	SPK-	
	2	TXD+	
	3	SPK+	
	4	SPK+	
	5	SPK-	
J403	1	GND	
	2	MIC	
	3	RXD-	
	4	OPTTEL1	

8. Tuning Description

8.1 Tools

- Radio communication test set: Aeroflex 3920 and HP8921
- Power supply: 3 A/10 V
- Multimeter
- Tuner software

8.2 Tuning Procedure

8.2.1 Tuning the Radio

After reassembling the radio, tune it using the Tuner software.

The table below describes the items to be tuned and the corresponding tuning methods. After tuning an item, click **Save** to save the tuned value.

Item	Method
TX Section	
Reference Oscillator Warp	1. Connect the antenna connector of the radio to the RF port of HP8921, and set HP8921 to TX test mode. 2. Open the Tuner software, and go to TUNE_DATA > TX > Reference Oscillator Warp in the left navigation tree. 3. Adjust the vernier on the Tuner, until the frequency deviation between the frequency displayed on HP8921 and that displayed on the Tuner is less than or equal to 40 Hz. 4. Click Transmit On.
Transmit Power Calibration	1. Connect the antenna connector of the radio to the RF port of HP8921, and set HP8921 to TX test mode. 2. Open the Tuner software, and go to TUNE_DATA > TX > Transmit Power Calibration in the left navigation tree. 3. Select the required channel, and then click the spin box under Low or High. 4. Click Transmit On. 5. Adjust the value in the spin box under Low or High to 1.2 ± 0.1 W or 4.2 ± 0.1 W

Item	Method
	respectively.
Modulation Balance	1. Connect the antenna connector of the radio to the RF port of HP8921, and set HP8921 to TX test mode. 2. Set HP8921 as follows: ● IF Filter: 230 kHz ● Filter1: < 20 Hz HPF ● Filter2: < 15 kHz LPF ● De-Emphasis: OFF 3. Open the Tuner software, and go to TUNE_DATA > TX > Modulation Balance in the left navigation tree. 4. Select the required channel, and then click the spin box under LOW_PORT. 5. Click Transmit On. 6. Adjust the value in the spin box until the frequency deviation displayed on HP8921 is 5 kHz $\pm$ 50 Hz. 7. Press the Enter key on the keyboard to confirm the setting.
RX Section	
Front-end Filter	1. Connect the antenna connector of the radio to the RF port of HP8921. 2. Connect audio accessory connector of the radio to the audio input port of HP8921, and set HP8921 to RX test mode. 3. Set HP8921 as follows: ● Output RF signal: –118 dBm/Frequency (current channel frequency) ● Modulation frequency: 1 kHz ● Modulation deviation: 3 kHz ● De-Emphasis: 750 μs 4. Open the Tuner software, and go to TUNE_DATA > RX > Front-end filter in the left navigation tree. 5. Adjust the vernier on the Tuner until the value of SIN_AD displayed on HP8921 is greater than 14 dB. 6. Set HP8921 to output a 37 dBm RF signal whose frequency is the sum of the current channel frequency and –29.025 MHz.

Item	Method
	7. Adjust the vernier on the Tuner until the value of SIN_AD displayed on HP8921 is less than 14 dB. 8. Press the Enter key on the keyboard to confirm the setting.

8.2.2 Testing the Radio

After tuning the radio, test the TX and RX performance of the radio as follows:

TX Performance

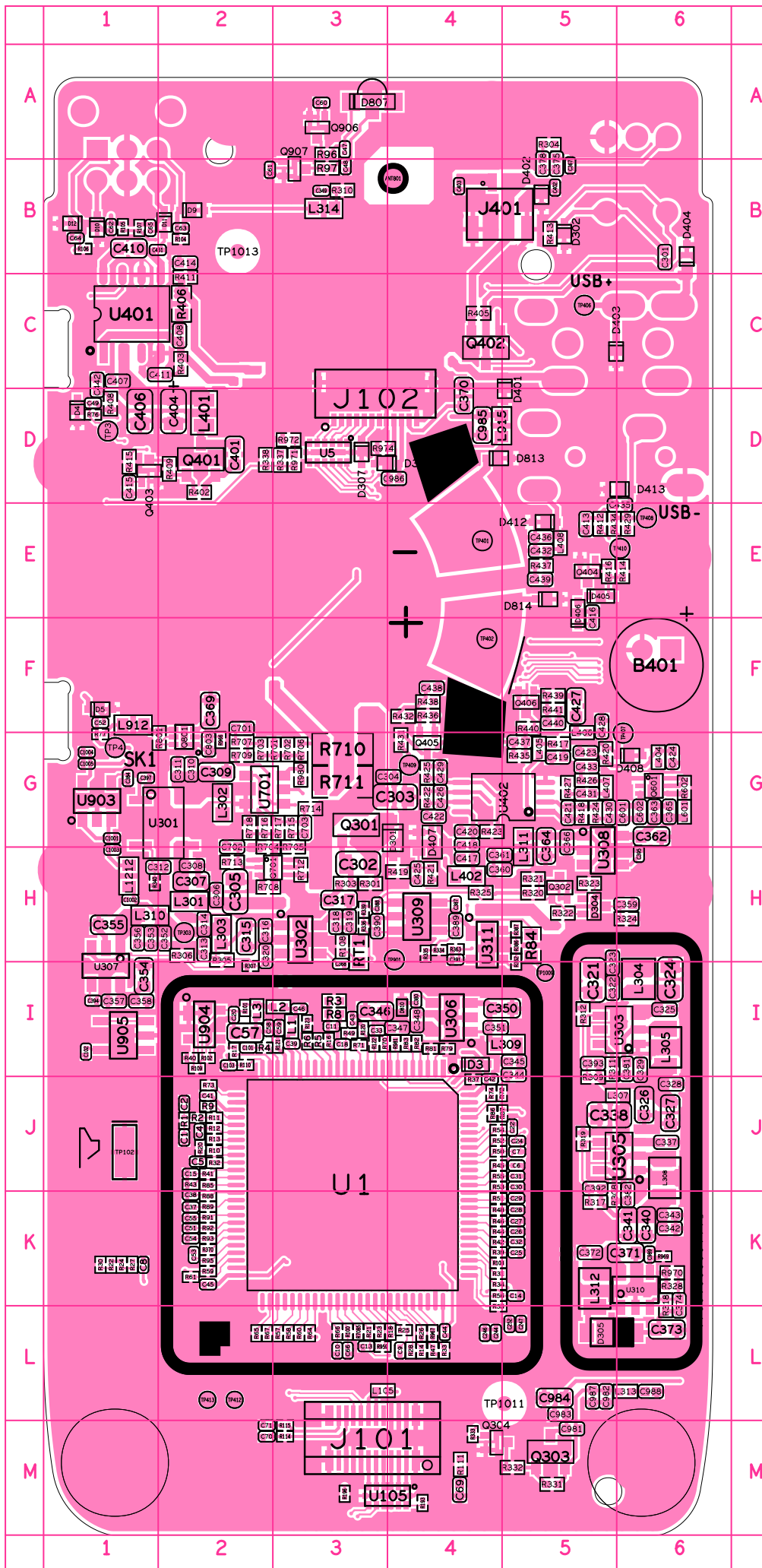
1. Connect the antenna connector of the radio to the T/R port of Aeroflex 3920.
2. Open the Tuner software, and go to **TEST > TX > Transmit BER (0.153)**.
3. Select the channel to be tested, and select **High Power** under **Parameter**.
4. Set Aeroflex 3920 as follows:
 - Frq: the same as the frequency of the channel to be tested
 - STD IB 511 (.153)
5. Click **Transmit On** on the Tuner.
6. Check whether the tested items on Aeroflex 3920 meet the following requirements:
 - Frequency Error: ≤ 100 Hz
 - Transmit Power: 4.2 ± 0.3 W
 - FSK Error: $\leq 5\%$
 - Magnitude Error: $\leq 1\%$

RX Performance

1. Connect the antenna connector of the radio to the T/R port of Aeroflex 3920.
2. Open the Tuner software, and go to **TEST > RX > Receiver BER (0.153)**.
3. Select the channel to be tested.
4. Set Aeroflex 3920 as follows:
 - Frq: the same as the frequency of the channel to be tested
 - STD IB 511(.153)
 - Lvl: -116.0 dBm
5. Click **Start** on the Tuner.
6. Check whether the value of **Average Rate** displayed on the Tuner is less than or equal to 5%.

9. PCB View

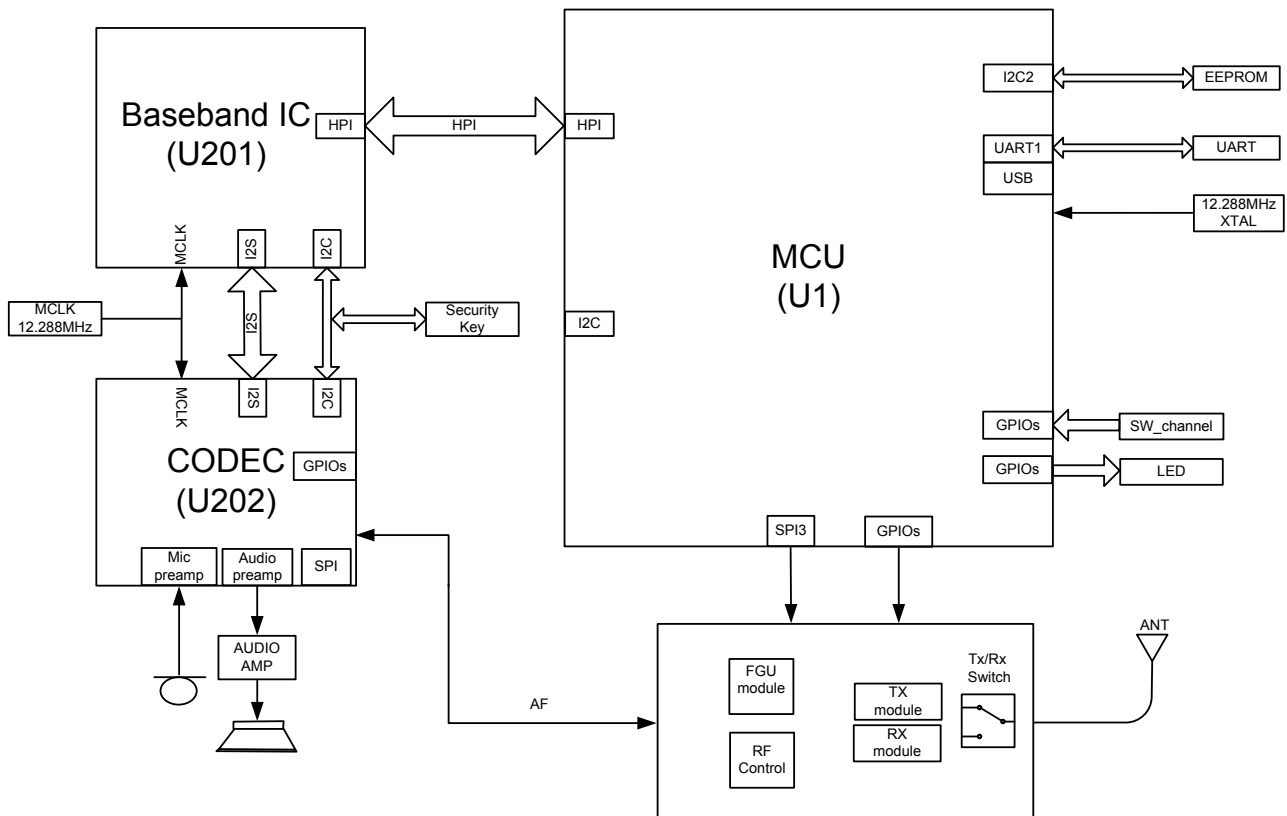
Main Board_Top Layer



Main Board_Bottom Layer

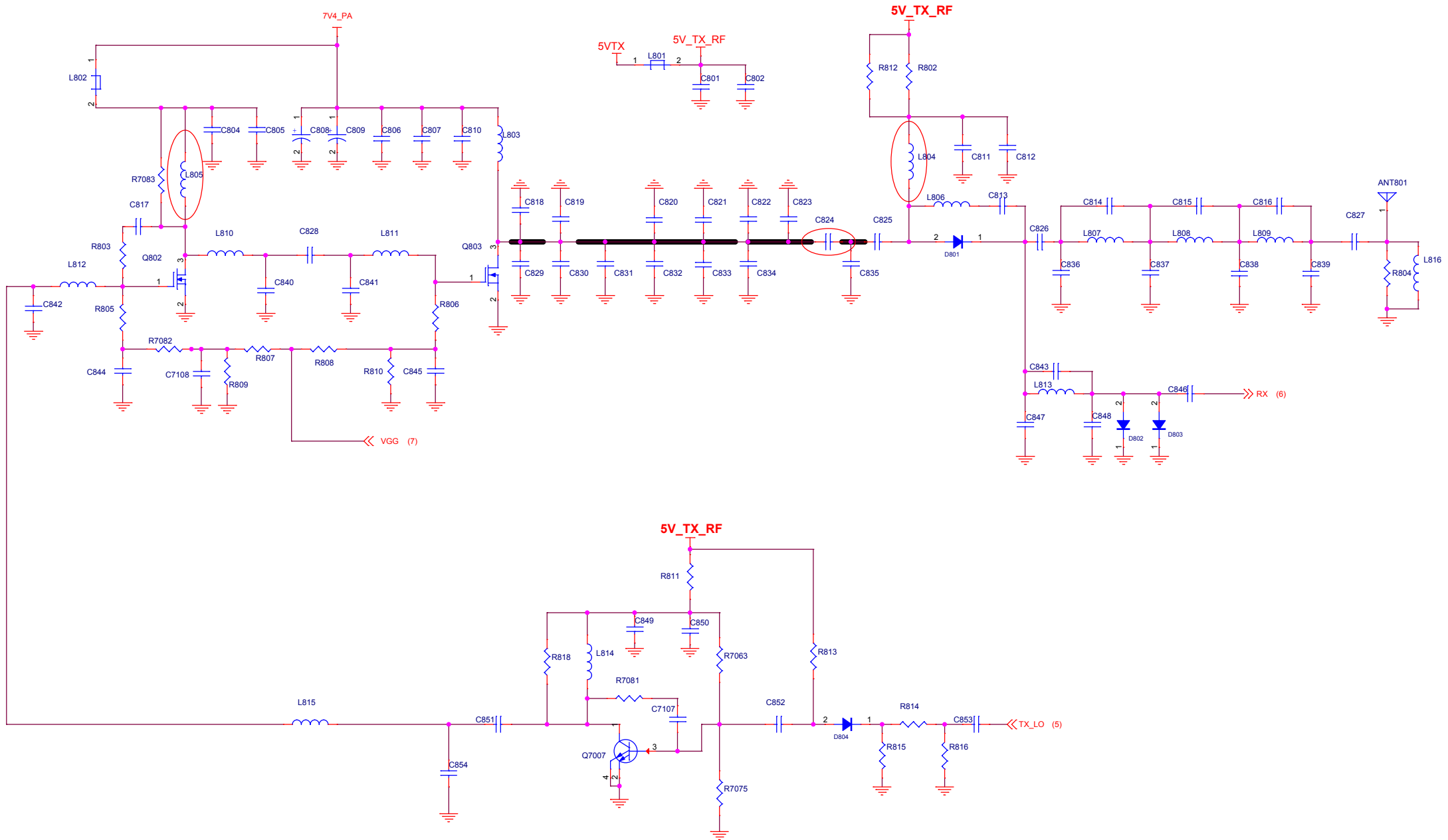
The image shows the bottom layer of a PCB layout for a main board. The board is populated with various components including microprocessors (U600, U501, U202, U201, U304, U905), memory modules (J402, J403, J301), capacitors (C801-C835), resistors (R801-R835), and connectors (SW1, SW2, SW3). The layout is organized into a grid with columns 1-6 and rows A-M. Key components are highlighted with black boxes: U600, U501, U202, U201, U304, U905, J402, J403, J301, and SW1. The board also features a TP1010 test point and a TP1012 test point.

10. Block Diagram

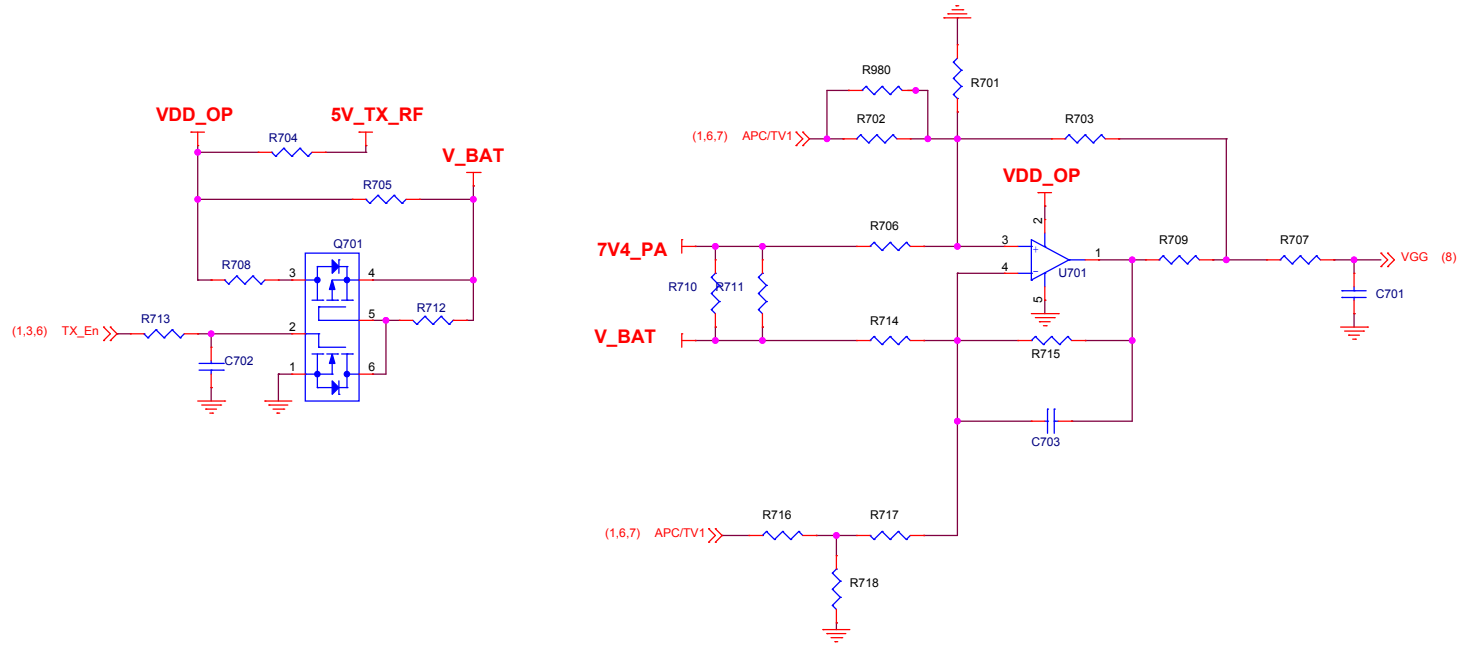


11. Schematic Diagram

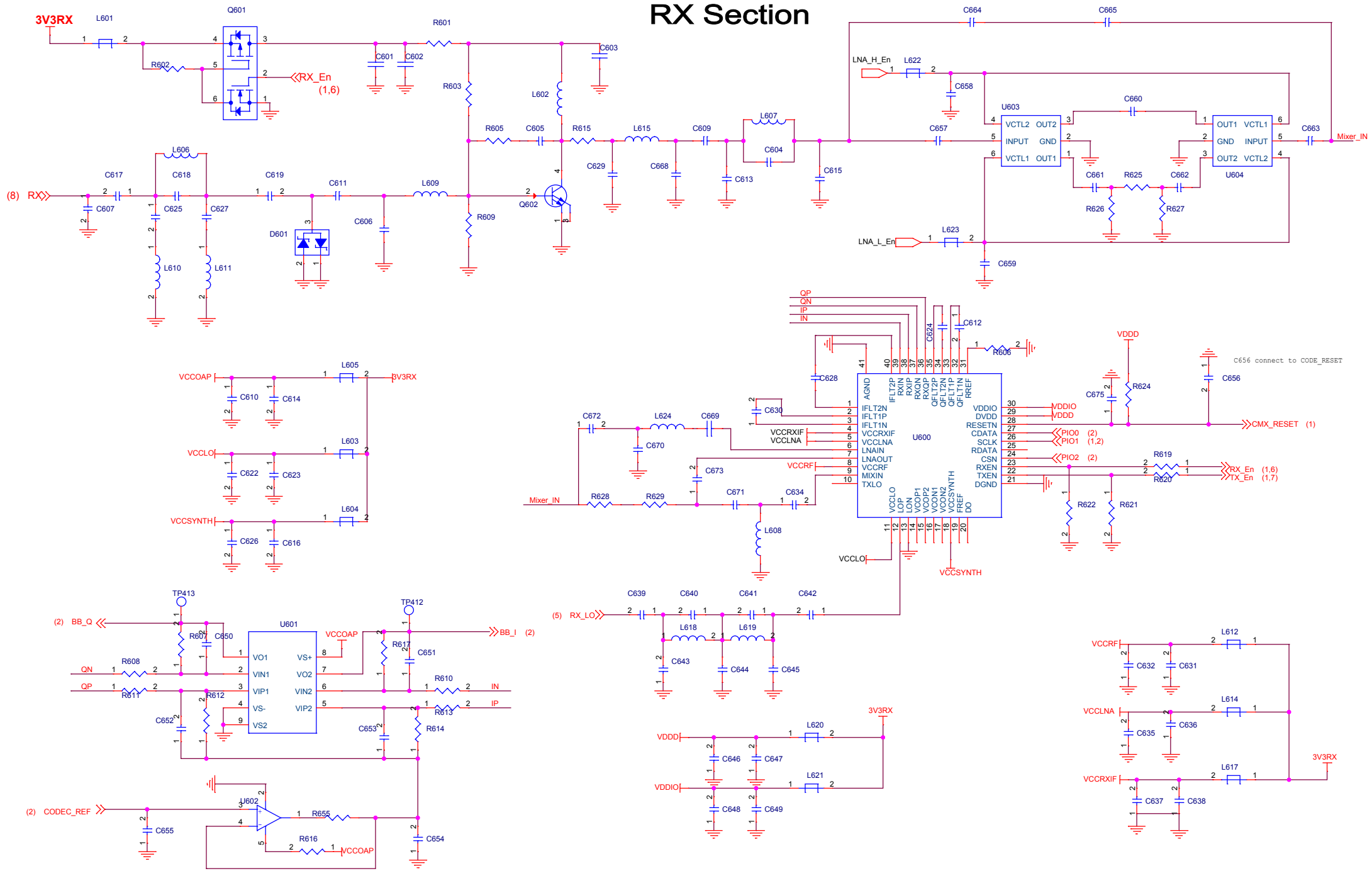
TX Section



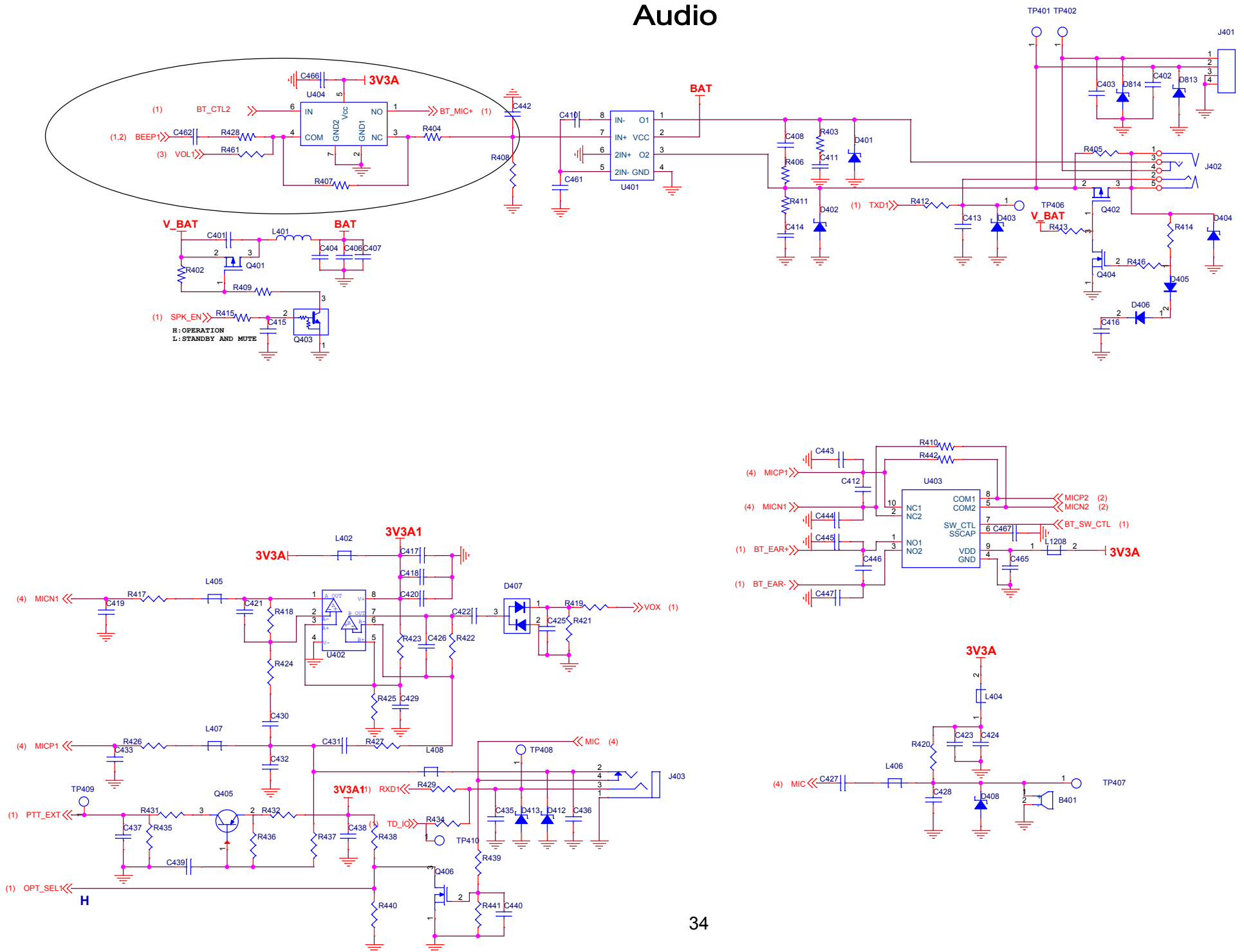
TX Power Control Circuit



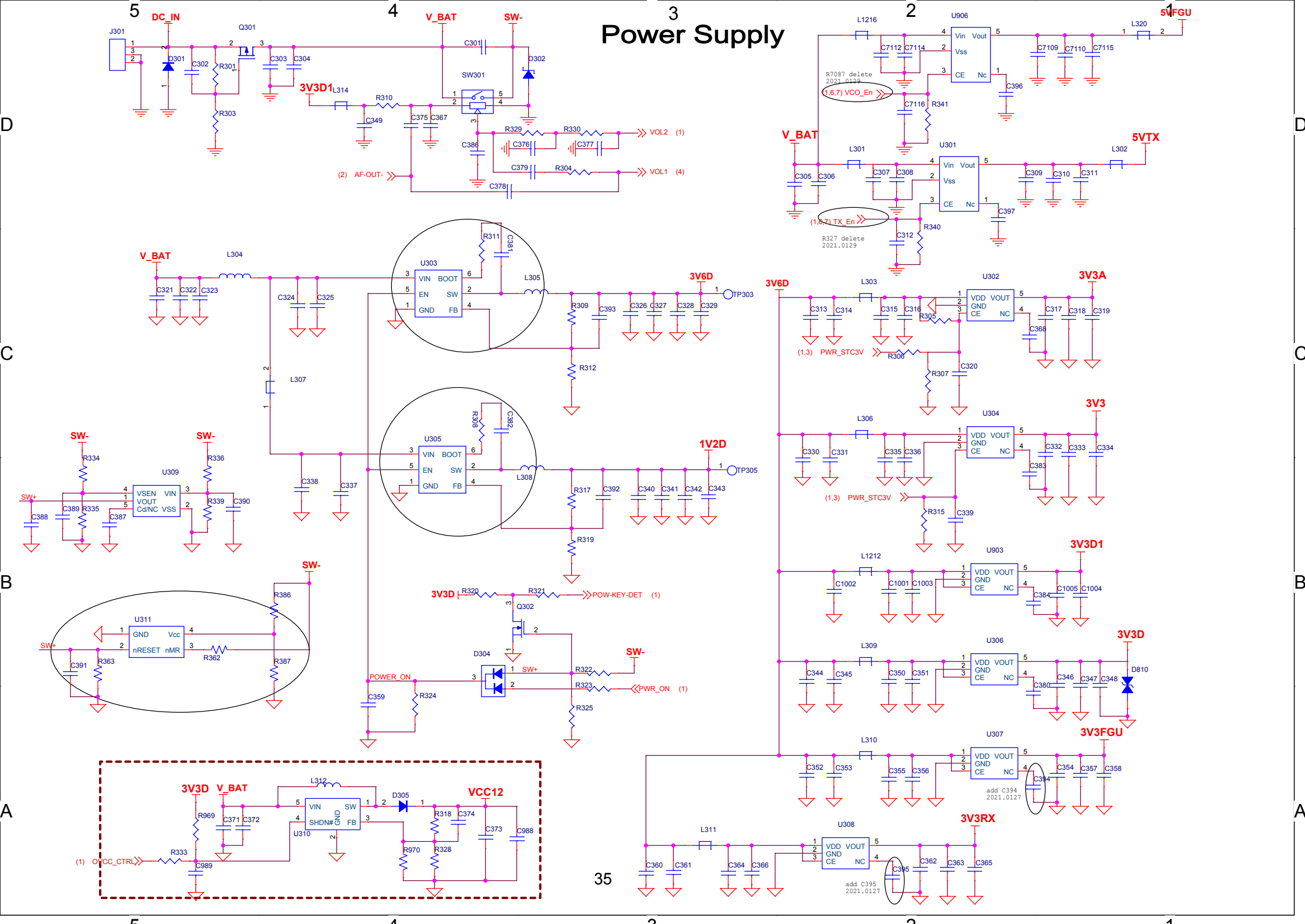
RX Section



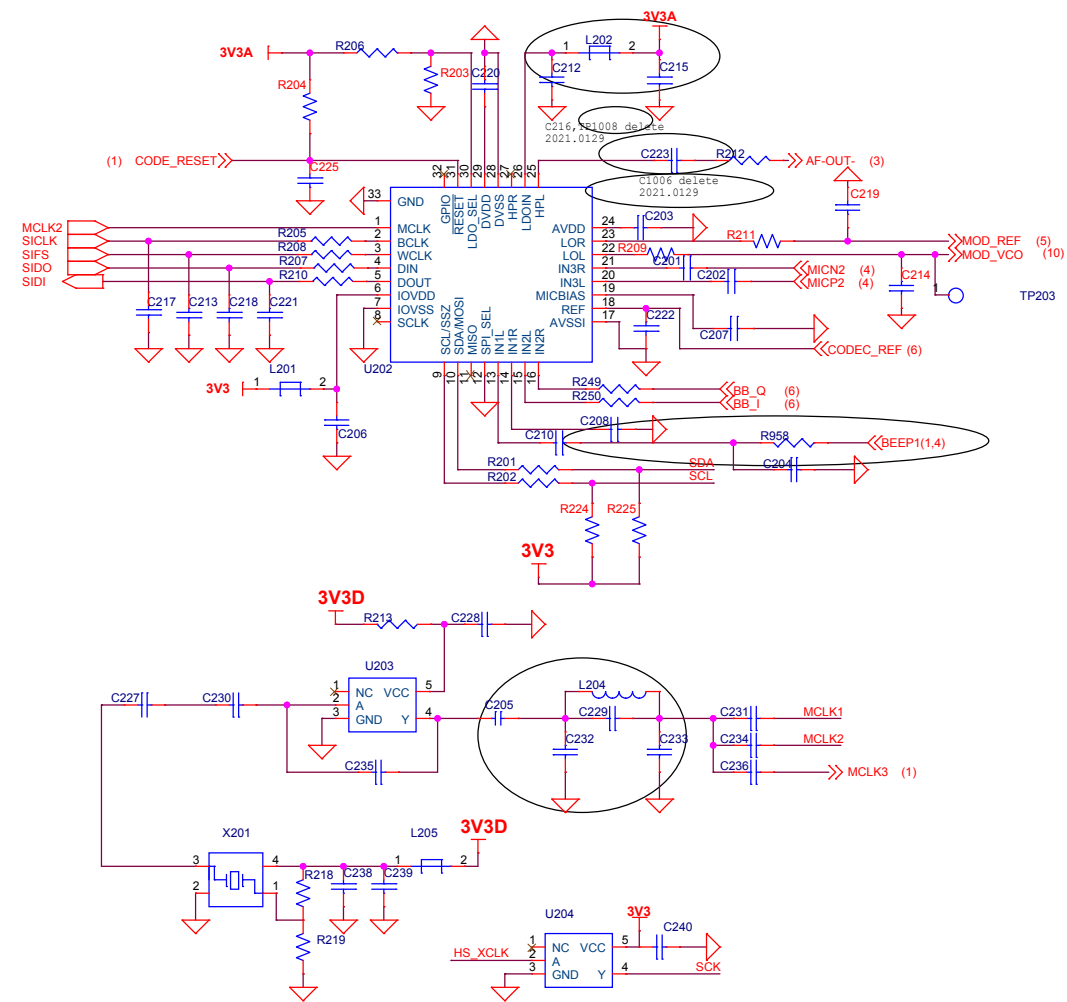
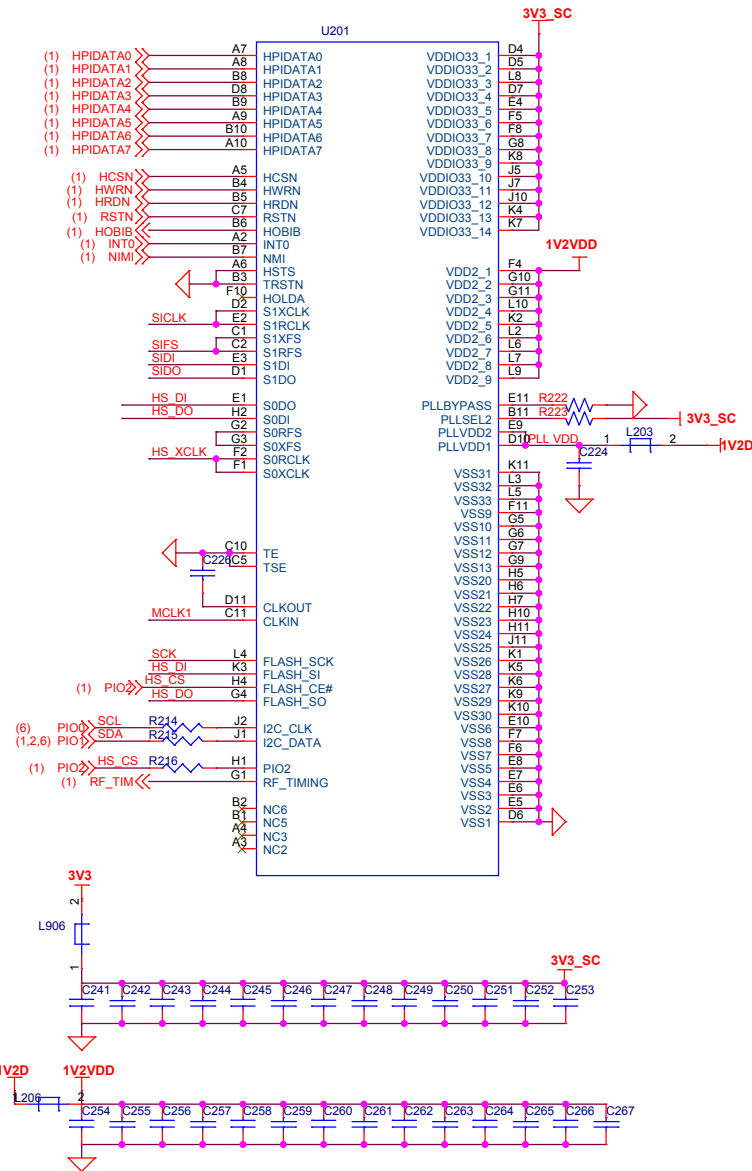
34



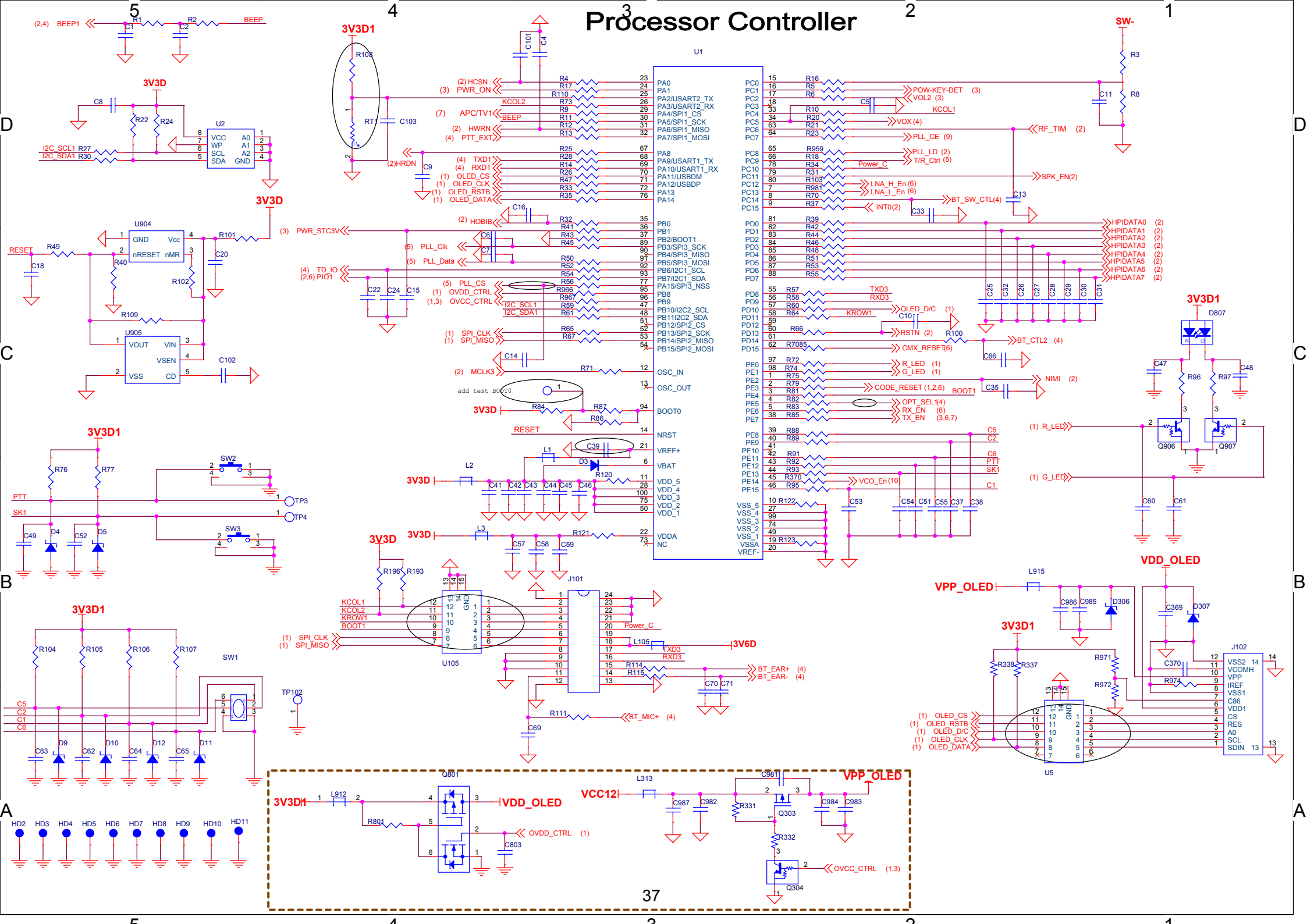
Power Supply



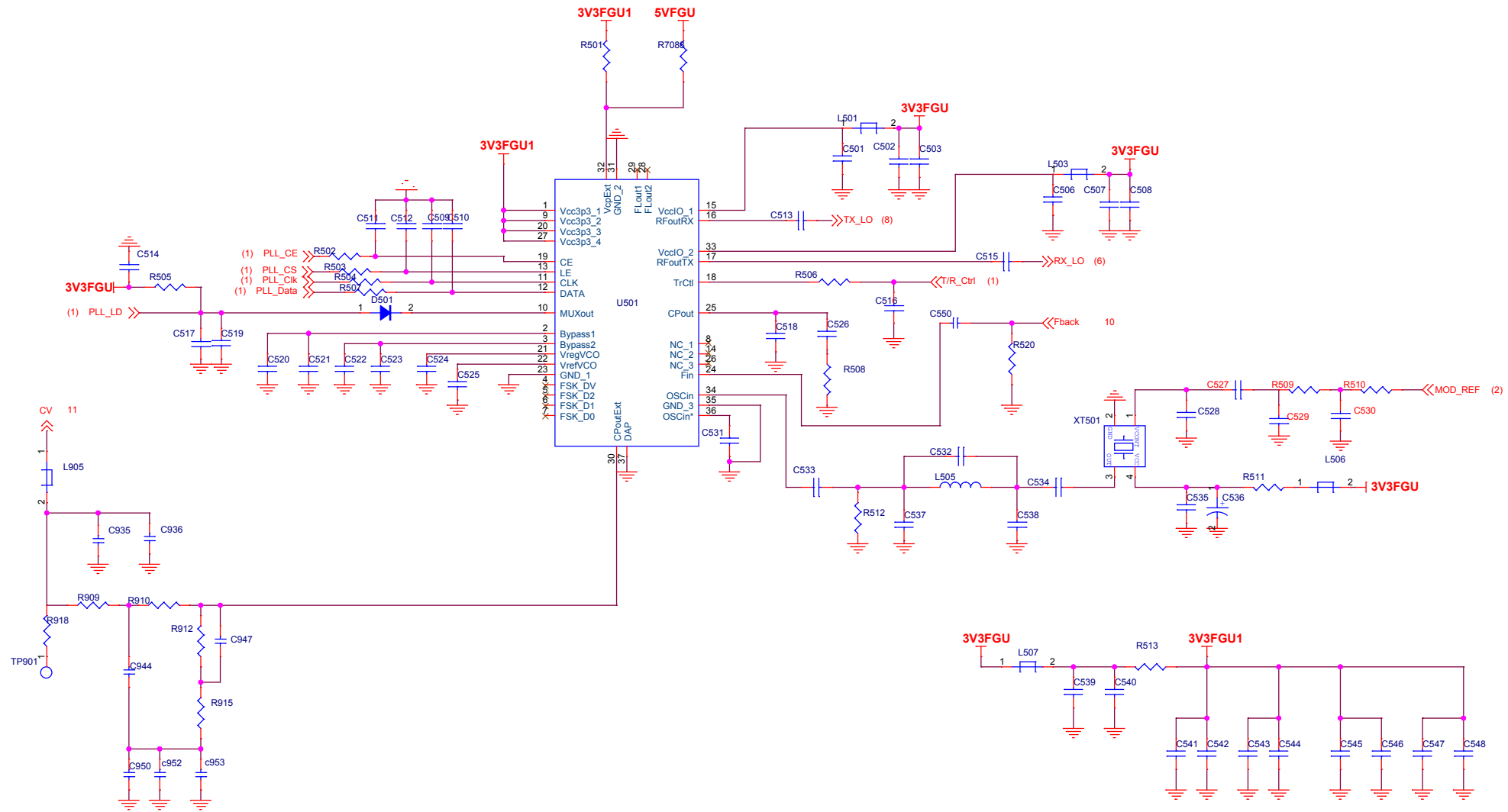
DSP&CODEC



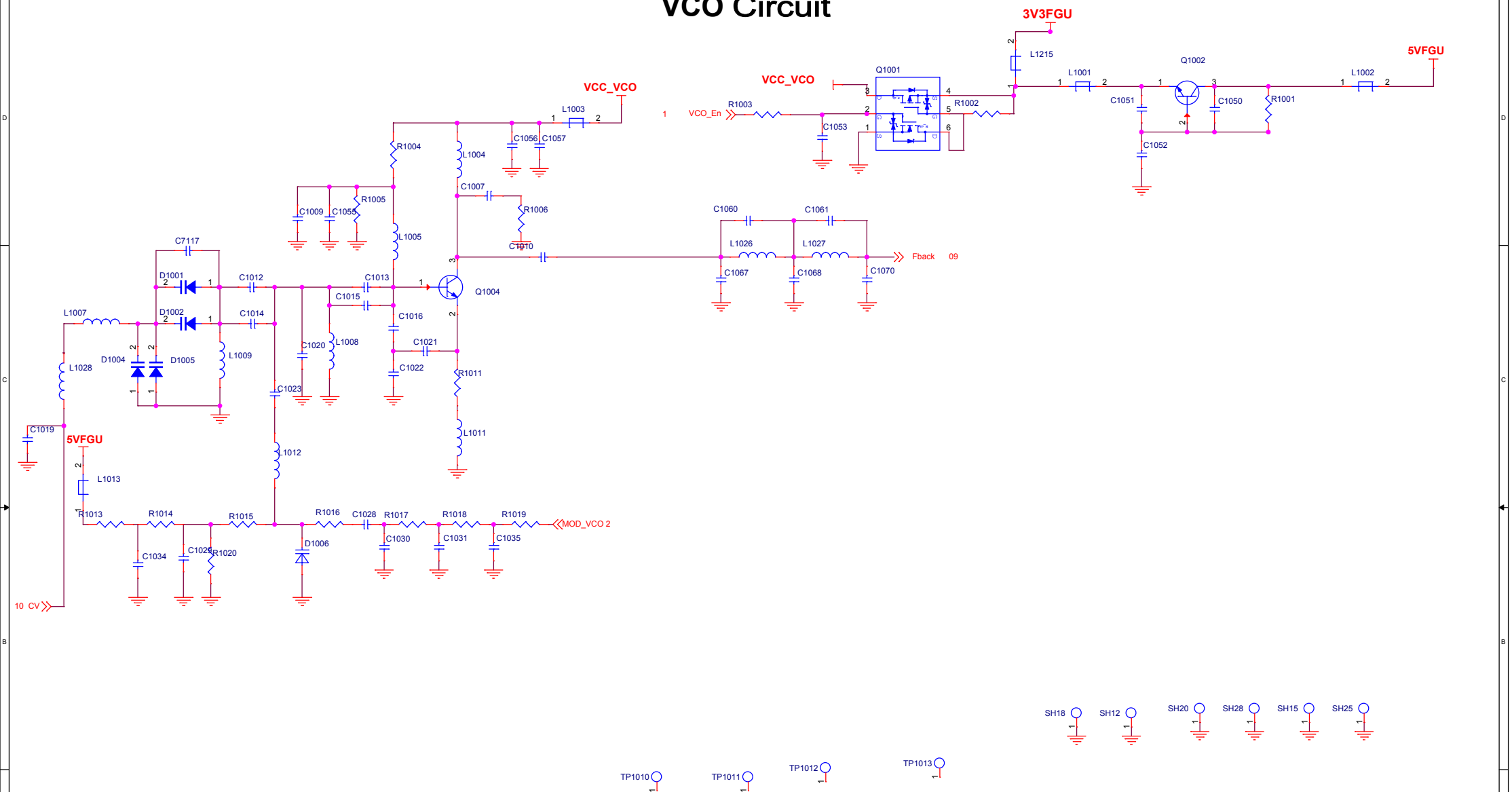
Processor Controller



FGU



VCO Circuit



12. Parts List

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
1	/	/	5001010002126L	PCB	489	D302	T4B	50050800000045	ESD protection diode
2	C1	T2I	50020100001220	3.9nF	490	D304	T5G	50050200000051	Switch diode
3	C10	T3J	50020100001190	33PF	491	D305	T5J	50050100000001	Rectifier diode
4	C1001	T1F	50020100000559	1uF	492	D306	T3C	50050800000046	ESD protection diode
5	C1002	T1G	50020100000559	1uF	493	D307	T3C	50050800000051	ESD protection diode
6	C1003	T1F	50020100001470	470PF	494	D4	T1C	50050800000051	ESD protection diode
7	C1004	T1F	50020100001470	470PF	495	D401	T4C	50050800000045	ESD protection diode
8	C1005	T1F	50020100000559	1uF	496	D402	T4A	50050800000045	ESD protection diode
9	C1007	B3G	50020100001470	470PF	497	D403	T5C	50050800000034	ESD protection diode
10	C1009	B4G	50020100001470	470PF	498	D404	T5B	50050800000045	ESD protection diode
11	C101	T2H	50020100001190	33PF	499	D405	T5D	50050400000008	Varistor
12	C1010	B3G	50020100002077	7PF	500	D406	T4E	50050400000008	Varistor
13	C1012	B4H	50020100062173	6pF	501	D407	T3F	50050900000143	Schottky barrier diode
14	C1013	B4G	50020100062311	3PF	502	D408	T5F	50050800000051	ESD protection diode
15	C1014	B4H	50020100000501	6.8PF	503	D412	T4D	50050800000034	ESD protection diode
16	C1015	B4G	50020100000879	4PF	504	D413	T5D	50050800000034	ESD protection diode
17	C1016	B3G	50020100060515	18pF	505	D5	T1E	50050800000051	ESD protection diode
18	C1019	B3H	50020100061854	470pF	506	D501	B1H	50050400000008	Varistor
19	C102	T1H	50020100001200	0.1uF	507	D601	B3C	50050900000143	Schottky barrier diode
20	C1020	B4H	50020100060547	2PF	508	D801	B2B	50050400000008	Varistor
21	C1021	B3G	50020100000731	47pF	509	D802	B2C	50050400000008	Varistor
22	C1022	B3G	50020100060510	15pF	510	D803	B2C	50050400000008	Varistor
23	C1023	B4H	50020100001966	0.6PF	511	D804	B2F	50050400000008	Varistor
24	C1028	B4H	50020100060550	2.2uF	512	D807	T3A	50050600060369	LED
25	C1029	B4H	50020100000393	0.1uF	513	D810	T3H	50050800000029	ESD protection diode

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
26	C103	T2H	50020100001200	0.1uF	514	D813	T4C	50050800000034	ESD protection diode
27	C1030	B4H	50020100001190	33PF	515	D814	T4E	50050800000034	ESD protection diode
28	C1031	B3H	50020100001191	330PF	516	D9	T2B	50050800000051	ESD protection diode
29	C1034	B5H	50020100000393	0.1uF	517	J101	T3K	51040100000003	Board-to-board connector
30	C1035	B3H	50020100003479	3.3nF	518	J102	T3C	51040700000046	FPC connector
31	C1050	B4G	50020100001470	470PF	519	J301	B3F	51049900000833	Battery connector
32	C1051	B4G	50020100001470	470PF	520	J401	T4B	51040200000337	Board-to-cable connector
33	C1052	B4G	50020100060550	2.2uF	521	L1	T2H	50040200000146	Ferrite bead
34	C1053	B4G	50020100001470	470PF	522	L1001	B5G	50040200000146	Ferrite bead
35	C1055	B4G	50020100000393	0.1uF	523	L1002	B4H	50040200000146	Ferrite bead
36	C1056	B4G	50020100001470	470PF	524	L1003	B4G	50040200000146	Ferrite bead
37	C1057	B4G	50020100000393	0.1uF	525	L1004	B3G	50040100000916	390nH
38	C1060	B2H	50020100062317	4PF	526	L1005	B4G	50040100000916	390nH
39	C1061	B2H	50020100062317	4PF	527	L1007	B3H	50040100064235	470nH
40	C1067	B2H	50020100062317	4PF	528	L1008	B4G	50040100000705	15nH
41	C1068	B2H	50020100001738	8PF	529	L1009	B4H	50040100061674	18nH
42	C1070	B2H	50020100062311	3PF	530	L1011	B3G	50040100000916	390nH
43	C11	T3H	50020100000834	1000PF	531	L1013	B5H	50040200000146	Ferrite bead
44	C13	T3J	50020100001190	33PF	532	L1026	B2H	50040100000475	12nH
45	C14	T4J	50020100001190	33PF	533	L1027	B2H	50040100000475	12nH
46	C15	T2I	50020100000441	100PF	534	L1028	B3H	50040100064235	470nH
47	C16	B4J	50020100001190	33PF	535	L105	T3J	50040200000146	Ferrite bead
48	C18	T3H	50020100000845	0.01uF	536	L1208	B2J	50040200000146	Ferrite bead
49	C2	T2H	50020100001220	3.9nF	537	L1212	T1G	50040200000156	Ferrite bead
50	C20	T2H	50020100001200	0.1uF	538	L1215	B5G	50040200000146	Ferrite bead
51	C201	B2J	50020100061434	0.1uF	539	L1216	B4I	50040200000156	Ferrite bead
52	C202	B2J	50020100061434	0.1uF	540	L2	T2H	50040200000146	Ferrite bead
53	C203	B2J	50020100003390	10uF	541	L201	B2K	50040200000146	Ferrite bead
54	C205	B3L	50020100004095	0.10uF	542	L202	B3J	50030100001109	22Ω
55	C206	B2K	50020100001181	0.1uF	543	L203	B4J	50040200000146	Ferrite bead
56	C207	B2J	50020100001200	0.1uF	544	L205	B3K	50040200000146	Ferrite bead
57	C208	B2L	50020100004095	0.10uF	545	L206	B5J	50040200000146	Ferrite bead
58	C210	B2J	50020100001181	0.1uF	546	L3	T2H	50040200000146	Ferrite bead

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
59	C212	B3J	50020100003390	10uF	547	L301	T2G	50040200000156	Ferrite bead
60	C213	B2K	50020100001190	33PF	548	L302	T2F	50040200000156	Ferrite bead
61	C215	B3J	50020100001181	0.1uF	549	L303	T2G	50040200000156	Ferrite bead
62	C216	B3J	50020100061434	0.1uF	550	L304	T5G	50040100000518	3.3uH
63	C217	B3K	50020100001190	33PF	551	L305	T5H	50040100063675	3.3uH
64	C218	B2K	50020100001190	33PF	552	L306	B5J	50040200000156	Ferrite bead
65	C219	B2J	50020100000845	0.01uF	553	L307	T5H	50040200000146	Ferrite bead
66	C22	T4H	50020100001190	33PF	554	L308	T5I	50040100063675	3.3uH
67	C220	B3J	50020100003390	10uF	555	L309	T4H	50040200000156	Ferrite bead
68	C221	B2K	50020100001190	33PF	556	L310	T1G	50040200000156	Ferrite bead
69	C222	B2J	50020100003390	10uF	557	L311	T4F	50040200000156	Ferrite bead
70	C223	B3J	50020100061434	0.1uF	558	L312	T5J	50040100063675	3.3uH
71	C224	B3J	50020100001181	0.1uF	559	L313	T5J	50040200000146	Ferrite bead
72	C225	B3K	50020100001380	0.01uF	560	L314	T3B	50040200000156	Ferrite bead
73	C227	B3J	50020100001181	0.1uF	561	L320	B4I	50040200000146	Ferrite bead
74	C228	B3J	50020100001181	0.1uF	562	L401	T2C	50040100000518	3.3uH
75	C229	B3L	50030100000297	0Ω	563	L402	T4G	50040200000151	Ferrite bead
76	C230	B3J	50030100001511	1KΩ	564	L404	T5F	50040200000146	Ferrite bead
77	C231	B3J	50020100001181	0.1uF	565	L405	T4F	50040200000146	Ferrite bead
78	C234	B3J	50020100001181	0.1uF	566	L406	T5F	50040200000146	Ferrite bead
79	C235	B3J	50030100001495	330KΩ	567	L407	T5F	50040200000146	Ferrite bead
80	C236	B3J	50020100001181	0.1uF	568	L408	T4D	50040200000146	Ferrite bead
81	C238	B3K	50020100001470	470PF	569	L501	B2H	50040200000146	Ferrite bead
82	C239	B3K	50020100001181	0.1uF	570	L503	B1I	50040200000146	Ferrite bead
83	C24	T4I	50020100000441	100PF	571	L505	B1I	50040100063454	220nH
84	C240	B4K	50020100001181	0.1uF	572	L506	B2I	50040200000146	Ferrite bead
85	C241	B4J	50020100001181	0.1uF	573	L507	B1G	50040200000146	Ferrite bead
86	C242	B4J	50020100001470	470PF	574	L601	T5F	50040200000146	Ferrite bead
87	C243	B4J	50020100001181	0.1uF	575	L602	B4C	50040100000908	82nH
88	C244	T4J	50020100001470	470PF	576	L603	B5E	50040200000146	Ferrite bead
89	C245	B4J	50020100001181	0.1uF	577	L604	B5F	50040200000146	Ferrite bead
90	C246	T4J	50020100001470	470PF	578	L605	B3I	50040200000146	Ferrite bead
91	C247	T4J	50020100001181	0.1uF	579	L606	B3C	50040100000481	33nH
92	C248	B4J	50020100001470	470PF	580	L607	B3D	50040100062036	12nH
93	C249	B4J	50020100001181	0.1uF	581	L608	B5E	50040100064756	20nH
94	C25	T4I	50020100001190	33PF	582	L609	B3C	50040100062057	8.2nH

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
95	C250	B4J	50020100001470	470PF	583	L610	B3D	50040100062039	22nH
96	C251	B4J	50020100001181	0.1uF	584	L611	B3D	50040100064756	20nH
97	C252	T4J	50020100001470	470PF	585	L612	B5E	50040200000146	Ferrite bead
98	C253	B5J	50020100001181	0.1uF	586	L614	B4E	50040200000146	Ferrite bead
99	C254	B4J	50020100001181	0.1uF	587	L615	B4D	50040100064759	33nH
100	C255	B3K	50020100001470	470PF	588	L617	B4E	50040200000146	Ferrite bead
101	C256	B3K	50020100001181	0.1uF	589	L618	B5F	50040100000488	5.6nH
102	C257	B4K	50020100001470	470PF	590	L619	B5F	50040100000488	5.6nH
103	C258	B3J	50020100001181	0.1uF	591	L620	B4G	50040200000146	Ferrite bead
104	C259	B4K	50020100001470	470PF	592	L621	B4G	50040200000146	Ferrite bead
105	C26	T4I	50020100001190	33PF	593	L622	B4D	50040200000137	Ferrite bead
106	C260	B5J	50020100001181	0.1uF	594	L623	B4D	50040200000137	Ferrite bead
107	C261	B5J	50020100001470	470PF	595	L801	B2F	50040200000156	Ferrite bead
108	C262	B3J	50020100001181	0.1uF	596	L802	B2E	50040200000156	Ferrite bead
109	C263	B5J	50020100001470	470PF	597	L803	B2D	50040300060185	Air-core coil
110	C264	B4J	50020100001181	0.1uF	598	L804	B2B	50040100000931	220nH
111	C265	B5J	50020100001470	470PF	599	L805	B2E	50040100064777	18nH
112	C266	B4J	50020100001181	0.1uF	600	L806	B1B	50040100000506	82nH
113	C267	B5J	50020100001470	470PF	601	L807	B3B	50040300060184	Air-core coil
114	C27	T4I	50020100001190	33PF	602	L808	B3B	50040300060184	Air-core coil
115	C28	T4I	50020100001190	33PF	603	L809	B3B	50040300060184	Air-core coil
116	C29	T4I	50020100001190	33PF	604	L810	B2E	50040100000490	8.2nH
117	C30	T4I	50020100001190	33PF	605	L811	B1E	50040100000486	4.7nH
118	C301	T5B	50020100061434	0.1uF	606	L812	B1F	50020100061854	470pF
119	C302	T3F	50020100000078	2.2uF	607	L813	B2C	50040300060184	Air-core coil
120	C303	T3F	50020100003767	10uF	608	L814	B1F	50040100000911	120nH
121	C304	T3F	50020100061434	0.1uF	609	L815	B1F	50040100000490	8.2nH
122	C305	T2G	50020100003833	4.7uF	610	L816	B3A	50040100063654	1uH
123	C306	T2G	50020100060524	100PF	611	L905	B3H	50040200000146	Ferrite bead
124	C307	T2G	50020100003673	1uF	612	L906	B5J	50030100001005	0Ω
125	C308	T2F	50020100061434	0.1uF	613	L912	T1E	50040200000156	Ferrite bead
126	C309	T2F	50020100000686	2.2UF	614	L915	T4C	50040200000156	Ferrite bead
127	C31	T4I	50020100001190	33PF	615	Q1001	B4G	50060400000002	Compound transistor
128	C310	T2F	50020100061434	0.1uF	616	Q1002	B4G	50060100000008	NPN transistor
129	C311	T2F	50020100060524	100PF	617	Q1004	B3G	50060100000019	NPN transistor
130	C312	T1G	50020100061854	470pF	618	Q301	T3F	50070400000105	P-MOSFET

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
131	C313	T2G	50020100060539	0.22uF	619	Q302	T4G	50070300000055	N-MOSFET
132	C314	T2G	50020100061854	470pF	620	Q303	T4K	50070400000105	P-MOSFET
133	C315	T2G	50020100003833	4.7uF	621	Q304	T4K	50060300000009	Bias resistor transistor
134	C316	T2G	50020100061434	0.1uF	622	Q401	T2C	50070400000105	P-MOSFET
135	C317	T3G	50020100000686	2.2UF	623	Q402	T4C	50070400000105	P-MOSFET
136	C318	T3G	50020100061434	0.1uF	624	Q403	T1D	50060300000009	Bias resistor transistor
137	C319	T3G	50020100060524	100PF	625	Q404	T5D	50070300000055	N-MOSFET
138	C32	T4I	50020100001190	33PF	626	Q405	T3F	50060200000036	PNP transistor
139	C320	T2G	50020100061854	470pF	627	Q406	T4E	50070300000055	N-MOSFET
140	C321	T5G	50020100003681	22uF	628	Q601	T5F	50060400000002	Compound transistor
141	C322	T5G	50020100061434	0.1uF	629	Q602	B4C	50060100000003	NPN transistor
142	C323	T5G	50020100061854	470pF	630	Q7007	B1G	50060100000149	NPN transistor
143	C324	T5G	50020100003681	22uF	631	Q701	T2G	50060400000002	Compound transistor
144	C325	T5H	50020100061434	0.1uF	632	Q801	T2F	50060400000002	Compound transistor
145	C326	T5H	50020100060783	22UF	633	Q802	B2F	50070500000003	PA MOSFET
146	C327	T5H	50020100060783	22UF	634	Q803	B1E	50070300000049	N-MOSFET
147	C328	T5H	50020100061434	0.1uF	635	Q906	T3A	50060300000009	Bias resistor transistor
148	C329	T5H	50020100060524	100PF	636	Q907	T2A	50060300000009	Bias resistor transistor
149	C33	T3H	50020100001190	33PF	637	R1	T2H	50030100001582	10KΩ
150	C330	B5J	50020100060539	0.22uF	638	R10	T2I	50030100001961	100Ω
151	C331	B5J	50020100061854	470pF	639	R100	T3J	50030100001961	100Ω
152	C332	B5J	50020100000686	2.2UF	640	R1001	B4G	50030100001299	4.7KΩ
153	C333	B5J	50020100061434	0.1uF	641	R1002	B4G	50030100001851	82KΩ
154	C334	B5J	50020100060524	100PF	642	R1003	B4G	50030100001511	1KΩ
155	C335	B5J	50020100060530	4.7uF	643	R1004	B3G	50030100000590	2.2KΩ
156	C336	B5J	50020100061434	0.1uF	644	R1005	B4G	50030100001723	8.2KΩ
157	C337	T5I	50020100061434	0.1uF	645	R1006	B3G	50030100001961	100Ω
158	C338	T5H	50020100003681	22uF	646	R101	T2H	50030100001961	100Ω
159	C339	B5J	50020100061854	470pF	647	R1011	B3G	50030100001940	220Ω
160	C340	T5I	50020100060783	22UF	648	R1013	B5H	50030100000550	10Ω
161	C341	T5I	50020100060783	22UF	649	R1014	B4H	50030100000949	100KΩ
162	C342	T5I	50020100061434	0.1uF	650	R1015	B4H	50030100000932	27KΩ

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
163	C343	T5I	50020100060524	100PF	651	R1016	B4H	50030100001939	150KΩ
164	C344	T4H	50020100060539	0.22uF	652	R1017	B3H	50030100000788	100KΩ
165	C345	T4H	50020100061854	470pF	653	R1018	B3H	50030100001971	10KΩ
166	C346	T3H	50020100000686	2.2UF	654	R1019	B3H	50030100001130	1K
167	C347	T3H	50020100061434	0.1uF	655	R1020	B4H	50030100001662	39KΩ
168	C348	T3H	50020100060524	100PF	656	R103	T4I	50030100001961	100Ω
169	C349	T3A	50020100000845	0.01uF	657	R104	T2B	50030100000012	47KΩ
170	C35	B4J	50020100001190	33PF	658	R105	T1B	50030100000012	47KΩ
171	C350	T4H	50020100003833	4.7uF	659	R106	T1B	50030100000012	47KΩ
172	C351	T4H	50020100061434	0.1uF	660	R107	T1B	50030100000012	47KΩ
173	C352	T1G	50020100060539	0.22uF	661	R108	T3G	50030100001369	10KΩ
174	C353	T1G	50020100061854	470pF	662	R109	T2H	50030100000522	33KΩ
175	C354	T1G	50020100000686	2.2UF	663	R11	T2H	50030100001961	100Ω
176	C355	T1G	50020100003833	4.7uF	664	R110	T2H	50030100001961	100Ω
177	C356	T1G	50020100061434	0.1uF	665	R111	T4K	50030100000887	4.7KΩ
178	C357	T1H	50020100061434	0.1uF	666	R114	T2K	50030100001961	100Ω
179	C358	T1H	50020100060524	100PF	667	R115	T2K	50030100001961	100Ω
180	C359	T5G	50020100003387	1uF	668	R12	T2H	50030100001961	100Ω
181	C360	T4G	50020100060539	0.22uF	669	R120	T3H	50030100000297	0Ω
182	C361	T4F	50020100061854	470pF	670	R121	T2H	50030100000297	0Ω
183	C362	T5F	50020100000686	2.2UF	671	R122	T3H	50030100000867	0Ω
184	C363	T5F	50020100061434	0.1uF	672	R123	T2H	50030100000867	0Ω
185	C364	T4F	50020100003833	4.7uF	673	R13	T2I	50030100001961	100Ω
186	C365	T5F	50020100060524	100PF	674	R14	T3J	50030100001961	100Ω
187	C366	T4F	50020100061434	0.1uF	675	R16	T3H	50030100001961	100Ω
188	C367	T4A	50020100001392	100pF	676	R17	T2H	50030100001961	100Ω
189	C368	T3G	50020100004095	0.10uF	677	R18	T3J	50030100001961	100Ω
190	C369	T2E	50020100003833	4.7uF	678	R2	T2H	50030100001299	4.7KΩ
191	C37	T2I	50020100001190	33PF	679	R20	T2I	50030100001961	100Ω
192	C370	T4C	50020100060530	4.7uF	680	R201	B2K	50030100001493	33Ω
193	C371	T5I	50020100000686	2.2UF	681	R202	B2K	50030100001493	33Ω
194	C372	T5I	50020100061434	0.1uF	682	R204	B3K	50030100000012	47KΩ
195	C373	T5J	50020100003833	4.7uF	683	R205	B3K	50030100001493	33Ω
196	C374	T5J	50020100061854	470pF	684	R206	B3J	50030100000012	47KΩ
197	C375	T4A	50020100061434	0.1uF	685	R207	B2K	50030100001493	33Ω
198	C376	B4A	50020100061434	0.1uF	686	R208	B2K	50030100001493	33Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
199	C377	B4B	50020100061434	0.1uF	687	R209	B2J	50030100000888	51Ω
200	C379	B4A	50020100061434	0.1uF	688	R21	T3J	50030100001961	100Ω
201	C38	T2I	50020100001190	33PF	689	R210	B2K	50030100001493	33Ω
202	C380	T3G	50020100004095	0.10uF	690	R211	B2J	50030100001644	1KΩ
203	C381	T5H	50020100061434	0.1uF	691	R212	B3J	50030100000876	5.6KΩ
204	C382	T5I	50020100061434	0.1uF	692	R213	B3J	50030100000219	22Ω
205	C383	B5J	50020100004095	0.10uF	693	R214	B4J	50030100000298	10Ω
206	C384	T1F	50020100004095	0.10uF	694	R215	B4J	50030100000298	10Ω
207	C386	B4A	50020100001392	100pF	695	R216	B4J	50030100000298	10Ω
208	C387	T4G	50020100001181	0.1uF	696	R219	B3K	50030100001005	0Ω
209	C388	T3G	50020100001181	0.1uF	697	R22	B1J	50030100001299	4.7KΩ
210	C389	T4G	50020100003387	1uF	698	R222	B4J	50030100001582	10KΩ
211	C39	T2H	50020100000559	1uF	699	R223	B4J	50030100001582	10KΩ
212	C390	T3G	50020100003387	1uF	700	R224	B2K	50030100001299	4.7KΩ
213	C391	T4G	50020100001181	0.1uF	701	R225	B2K	50030100001299	4.7KΩ
214	C392	T5I	50020100060524	100PF	702	R23	T3J	50030100001961	100Ω
215	C393	T5H	50020100060524	100PF	703	R24	B1J	50030100001299	4.7KΩ
216	C394	T1I	50020100004095	0.10uF	704	R249	B2J	50030100000297	0Ω
217	C395	T6H	50020100004095	0.10uF	705	R25	T3J	50030100001961	100Ω
218	C396	B6J	50020100004095	0.10uF	706	R250	B2J	50030100000297	0Ω
219	C397	T1G	50020100004095	0.10uF	707	R26	T3J	50030100001493	33Ω
220	C4	T2H	50020100001190	33PF	708	R27	B1J	50030100000816	47Ω
221	C401	T2C	50020100061434	0.1uF	709	R28	T3J	50030100001961	100Ω
222	C402	T4A	50020100000815	27PF	710	R3	T3H	50030100000747	330KΩ
223	C403	T4A	50020100000815	27PF	711	R30	B1J	50030100000816	47Ω
224	C404	T1C	50020100003767	10uF	712	R301	T3G	50030100000270	470KΩ
225	C406	T1C	50020100003767	10uF	713	R303	T3G	50030100001664	47KΩ
226	C407	T1C	50020100060517	1nF	714	R304	T4A	50030100001537	5.6KΩ
227	C41	T2H	50020100001200	0.1uF	715	R305	T2G	50030100001369	10KΩ
228	C410	T1B	50020100003390	10uF	716	R306	T2G	50030100001005	0Ω
229	C411	T1C	50020100061434	0.1uF	717	R307	T2G	50030100001917	100KΩ
230	C412	B2J	50020100003384	270pF	718	R308	T5I	50030100001005	0Ω
231	C413	T5D	50020100001968	10PF	719	R309	T5H	50030100002253	182K
232	C414	T2B	50020100061434	0.1uF	720	R31	T4J	50030100001961	100Ω
233	C415	T1D	50020100061854	470pF	721	R310	T3A	50030100000179	15KΩ
234	C416	T5E	50020100061434	0.1uF	722	R311	T5H	50030100001005	0Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
235	C417	T4F	50020100060539	0.22uF	723	R312	T5H	50030100002348	49.9K
236	C418	T4F	50020100061434	0.1uF	724	R315	B5J	50030100001917	100KΩ
237	C419	T4F	50020100061854	470pF	725	R317	T5I	50030100003121	51.1K
238	C42	T4H	50020100001200	0.1uF	726	R318	T5J	50030100001364	120KΩ
239	C420	T4F	50020100060517	1nF	727	R319	T5I	50030100001396	91KΩ
240	C421	T4F	50020100060512	22pF	728	R32	T2I	50030100001961	100Ω
241	C422	T3F	50020100003387	1uF	729	R320	T4G	50030100001664	47KΩ
242	C423	T5F	50020100061434	0.1uF	730	R321	T4G	50030100001644	1KΩ
243	C424	T5F	50020100060517	1nF	731	R322	T4G	50030100001664	47KΩ
244	C425	T3G	50020100003387	1uF	732	R323	T5G	50030100001369	10KΩ
245	C426	T3F	50020100060512	22pF	733	R324	T5G	50030100001664	47KΩ
246	C427	T4E	50020100061434	0.1uF	734	R327	T1G	50030100001005	0Ω
247	C428	T5E	50020100003392	1000PF	735	R328	T5J	50030100000179	15KΩ
248	C429	T3F	50020100061434	0.1uF	736	R329	B4A	50030100000250	30KΩ
249	C43	T3H	50020100001200	0.1uF	737	R33	T3J	50030100001493	33Ω
250	C430	T5F	50020100061434	0.1uF	738	R330	B4B	50030100000250	30KΩ
251	C431	T5F	50020100061434	0.1uF	739	R331	T4K	50030100001664	47KΩ
252	C432	T4D	50020100060517	1nF	740	R332	T4K	50030100000276	680Ω
253	C433	T5F	50020100061854	470pF	741	R333	T4K	50030100000012	47KΩ
254	C435	T5D	50020100001968	10PF	742	R334	T4G	50030100000133	51KΩ
255	C436	T4D	50020100060524	100PF	743	R335	T3G	50030100000133	51KΩ
256	C437	T4F	50020100061434	0.1uF	744	R336	T3G	50030100000522	33KΩ
257	C438	T3E	50020100060517	1nF	745	R337	T2C	50030100002036	4.7KΩ
258	C439	T4D	50020100060517	1nF	746	R338	T2C	50030100002036	4.7KΩ
259	C44	T3J	50020100001200	0.1uF	747	R339	T3G	50030100000133	51KΩ
260	C440	T4E	50020100061434	0.1uF	748	R34	T4J	50030100001961	100Ω
261	C442	T1C	50020100062391	15nF	749	R340	T1G	50030100001917	100KΩ
262	C443	B2J	50020100003384	270pF	750	R341	B5I	50030100001917	100KΩ
263	C444	B2J	50020100003384	270pF	751	R35	T4J	50030100001493	33Ω
264	C445	B2J	50020100003384	270pF	752	R363	T4G	50030100001917	100KΩ
265	C446	B2J	50020100003384	270pF	753	R37	T4H	50030100001961	100Ω
266	C447	B2J	50020100003384	270pF	754	R370	T2I	50030100001961	100Ω
267	C45	T2J	50020100001470	470PF	755	R39	T4I	50030100001961	100Ω
268	C46	T2H	50020100001470	470PF	756	R4	T2H	50030100001961	100Ω
269	C461	T1B	50020100000845	0.01uF	757	R40	T2H	50030100001917	100KΩ
270	C462	B3J	50020100001181	0.1uF	758	R402	T2D	50030100001664	47KΩ

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
271	C465	B2J	50020100001200	0.1uF	759	R403	T2C	50030100001040	4.7Ω
272	C466	B3J	50020100001181	0.1uF	760	R404	B3J	50030100001005	0Ω
273	C47	T3A	50020100001200	0.1uF	761	R408	T1C	50030100001369	10KΩ
274	C48	T3A	50020100001200	0.1uF	762	R409	T1D	50030100000276	680Ω
275	C49	T1C	50020100001470	470PF	763	R41	T2I	50030100001961	100Ω
276	C5	T2I	50020100001190	33PF	764	R411	T2B	50030100001040	4.7Ω
277	C501	B2H	50020100060524	100PF	765	R412	T5D	50030100001783	33Ω
278	C502	B1G	50020100060522	470PF	766	R413	T4B	50030100001664	47KΩ
279	C503	B1G	50020100061434	0.1uF	767	R414	T5D	50030100001005	0Ω
280	C506	B1I	50020100060524	100PF	768	R415	T1C	50030100001644	1KΩ
281	C507	B1I	50020100060522	470PF	769	R416	T5D	50030100001644	1KΩ
282	C508	B2I	50020100061434	0.1uF	770	R417	T4F	50030100000469	100Ω
283	C509	B1H	50020100001190	33PF	771	R418	T5F	50030100001369	10KΩ
284	C51	T2I	50020100001190	33PF	772	R419	T3G	50030100001369	10KΩ
285	C510	B1H	50020100001190	33PF	773	R42	T4I	50030100001961	100Ω
286	C511	B2H	50020100001190	33PF	774	R420	T5F	50030100001218	2.2KΩ
287	C512	B1H	50020100001190	33PF	775	R421	T3G	50030100001815	220KΩ
288	C513	B2H	50020100060524	100PF	776	R422	T3F	50030100000710	1MΩ
289	C514	B2G	50020100061434	0.1uF	777	R423	T4F	50030100001664	47KΩ
290	C515	B2H	50020100060524	100PF	778	R424	T5F	50030100001369	10KΩ
291	C516	B2H	50020100001719	33pF	779	R425	T3F	50030100001664	47KΩ
292	C517	B1H	50020100061434	0.1uF	780	R426	T5F	50030100000469	100Ω
293	C518	B2H	50020100062430	390PF	781	R427	T4F	50030100001369	10KΩ
294	C519	B1G	50020100060522	470PF	782	R428	B3J	50030100001582	10KΩ
295	C52	T1E	50020100001470	470PF	783	R429	T5D	50030100001783	33Ω
296	C520	B1H	50020100061434	0.1uF	784	R43	T2I	50030100000012	47KΩ
297	C521	B1H	50020100060522	470PF	785	R431	T3F	50030100000590	2.2KΩ
298	C522	B1H	50020100061434	0.1uF	786	R432	T3E	50030100000252	330Ω
299	C523	B1H	50020100060522	470PF	787	R435	T4F	50030100000949	100KΩ
300	C524	B2H	50020100062306	2.2uF	788	R436	T3E	50030100002036	4.7KΩ
301	C525	B2H	50020100061434	0.1uF	789	R437	T4D	50030100000590	2.2KΩ
302	C526	B2H	50020100003809	8200PF	790	R438	T3E	50030100001369	10KΩ
303	C527	B2I	50030100000316	0Ω	791	R439	T4E	50030100001369	10KΩ
304	C53	T2I	50020100001190	33PF	792	R44	T4I	50030100001961	100Ω
305	C530	B2I	50020100003392	1000PF	793	R440	T4E	50030100000167	56KΩ
306	C531	B1I	50020100061434	0.1uF	794	R441	T4E	50030100000710	1MΩ

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
307	C533	B1I	50020100003392	1000PF	795	R45	T4I	50030100001961	100Ω
308	C534	B1I	50020100003392	1000PF	796	R46	T4I	50030100001961	100Ω
309	C535	B2I	50020100061434	0.1uF	797	R461	B3J	50030100001005	0Ω
310	C536	B2I	50020100003704	10uF	798	R47	T3J	50030100001493	33Ω
311	C537	B1I	50020100000350	30pF	799	R48	T4I	50030100001961	100Ω
312	C538	B1I	50020100001667	20PF	800	R49	T3H	50030100001493	33Ω
313	C539	B1H	50020100061434	0.1uF	801	R5	T3H	50030100001961	100Ω
314	C54	T2I	50020100001190	33PF	802	R50	T4I	50030100001961	100Ω
315	C540	B1H	50020100001470	470PF	803	R501	B2I	50030100001067	5.6Ω
316	C541	B2I	50020100000693	0.1uF	804	R502	B2H	50030100000298	10Ω
317	C542	B2H	50020100001470	470PF	805	R503	B1H	50030100000298	10Ω
318	C543	B1H	50020100001470	470PF	806	R504	B1H	50030100000298	10Ω
319	C544	B1I	50020100000693	0.1uF	807	R505	B1G	50030100000836	10KΩ
320	C545	B2H	50020100000693	0.1uF	808	R506	B2H	50030100000699	10Ω
321	C546	B1H	50020100001470	470PF	809	R507	B1H	50030100000298	10Ω
322	C547	B1I	50020100000693	0.1uF	810	R508	B2H	50030100000640	680Ω
323	C548	B2H	50020100001470	470PF	811	R509	B2I	50030100000316	0Ω
324	C55	T2I	50020100001190	33PF	812	R51	T4I	50030100001961	100Ω
325	C550	B2H	50020100001470	470PF	813	R510	B2I	50030100000570	1KΩ
326	C57	T2H	50020100000686	2.2UF	814	R511	B2I	50030100000699	10Ω
327	C58	T2H	50020100000845	0.01uF	815	R513	B1H	50030100000316	0Ω
328	C59	T2H	50020100001470	470PF	816	R52	T4I	50030100001961	100Ω
329	C6	T4I	50020100001190	33PF	817	R520	B2H	50030100001282	91Ω
330	C60	T3A	50020100001470	470PF	818	R53	T4I	50030100001961	100Ω
331	C601	T5F	50020100061434	0.1uF	819	R54	T4H	50030100001961	100Ω
332	C602	T5F	50020100060522	470PF	820	R55	T4I	50030100001961	100Ω
333	C603	B4C	50020100060522	470PF	821	R56	T4J	50030100001961	100Ω
334	C604	B3D	50020100000625	2.7PF	822	R57	T2J	50030100001961	100Ω
335	C605	B4D	50020100000731	47pF	823	R58	T2J	50030100001961	100Ω
336	C606	B3C	50020100001331	6.8PF	824	R59	T2J	50030100001961	100Ω
337	C607	B3C	50040100062038	30nH	825	R6	T2H	50030100001961	100Ω
338	C609	B3D	50020100061390	330pF	826	R60	T2J	50030100001493	33Ω
339	C61	T2A	50020100001470	470PF	827	R601	B4C	50030100000967	39Ω
340	C610	B3I	50020100000693	0.1uF	828	R602	T5F	50030100000157	82KΩ
341	C611	B3C	50020100061390	330pF	829	R603	B3C	50030100000896	7.5KΩ
342	C612	B4F	50020100003897	0.01uF	830	R605	B3C	50030100000269	430Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
343	C613	B3D	50020100001003	4.3PF	831	R606	B4F	50030100001971	10KΩ
344	C614	B3I	50020100001470	470PF	832	R607	B4I	50030100002029	33KΩ
345	C615	B4D	50020100001003	4.3PF	833	R608	B4I	50030100000022	120K
346	C616	B5F	50020100001470	470PF	834	R609	B3C	50030100000382	3.3KΩ
347	C617	B3C	50020100000243	8.2PF	835	R61	T2J	50030100001961	100Ω
348	C618	B3C	50020100001104	9.1pF	836	R610	B3I	50030100000022	120K
349	C619	B3C	500201000060526	27PF	837	R611	B4I	50030100000022	120K
350	C62	T1B	50020100001470	470PF	838	R612	B4I	50030100002029	33KΩ
351	C622	B5F	50020100000693	0.1uF	839	R613	B3I	50030100000022	120K
352	C623	B5F	50020100001470	470PF	840	R614	B3I	50030100002029	33KΩ
353	C624	B4F	500201000061406	4.7nF	841	R615	B4D	50030100000316	0Ω
354	C625	B3C	50020100001667	20PF	842	R616	B3I	50030100000297	0Ω
355	C626	B5F	50020100000693	0.1uF	843	R617	B3I	50030100002029	33KΩ
356	C627	B3C	50020100001719	33pF	844	R619	B4G	50030100001961	100Ω
357	C628	B4F	500201000061406	4.7nF	845	R620	B5F	50030100001961	100Ω
358	C629	B4D	50020100000625	2.7PF	846	R624	B4G	50030100001971	10KΩ
359	C63	T2B	50020100001470	470PF	847	R625	B4D	50030100001025	120Ω
360	C630	B4E	50020100003897	0.01uF	848	R626	B4D	50030100004140	75Ω
361	C631	B5E	50020100000559	1uF	849	R627	B4D	50030100004140	75Ω
362	C632	B5E	50020100000693	0.1uF	850	R628	B4E	50030100000316	0Ω
363	C634	B5E	500201000061390	330pF	851	R629	B5E	50030100000316	0Ω
364	C635	B4E	50020100000693	0.1uF	852	R64	T2J	50030100001961	100Ω
365	C636	B4E	50020100000559	1uF	853	R65	T2J	50030100001493	33Ω
366	C637	B4E	50020100000693	0.1uF	854	R655	B4I	50030100000297	0Ω
367	C638	B4E	50020100000559	1uF	855	R66	T3J	50030100001961	100Ω
368	C639	B5F	500201000060510	15pF	856	R67	T2J	50030100001493	33Ω
369	C64	T1B	50020100001470	470PF	857	R70	T3H	50030100001961	100Ω
370	C640	B5F	500201000060551	1pF	858	R702	T2F	50030100001525	220KΩ
371	C641	B5F	500201000060551	1pF	859	R703	T2F	50030100000270	470KΩ
372	C642	B5F	500201000061454	33pF	860	R706	T2F	50030100001939	150KΩ
373	C644	B5F	500201000062317	4PF	861	R7063	B2F	50030100001425	9.1K
374	C645	B5F	50020100000242	4.7PF	862	R707	T2F	50030100000922	0Ω
375	C646	B4F	50020100000693	0.1uF	863	R7075	B2G	50030100000273	5.1K
376	C647	B4F	50020100000559	1uF	864	R708	T2G	50030100000922	0Ω
377	C648	B4F	50020100000693	0.1uF	865	R7081	B1G	50030100000365	220Ω
378	C649	B4F	50020100000559	1uF	866	R7082	B1E	50030100000922	0Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
379	C65	T1B	50020100001470	470PF	867	R7085	T3J	50030100001961	100Ω
380	C650	B4I	50020100000690	10PF	868	R7087	B5I	50030100001005	0Ω
381	C651	B3I	50020100000690	10PF	869	R709	T2F	50030100000276	680Ω
382	C652	B4I	50020100000690	10PF	870	R71	T3H	50030100000297	0Ω
383	C653	B3I	50020100000690	10PF	871	R710	T3F	50030100000096	0.25Ω
384	C654	B4I	50020100000693	0.1uF	872	R711	T3F	50030100000096	0.25Ω
385	C655	B4I	50020100000693	0.1uF	873	R712	T2G	50030100000157	82KΩ
386	C657	B4D	500201000061390	330pF	874	R713	T2F	50030100001644	1KΩ
387	C658	B4D	50020100001191	330PF	875	R714	T2F	50030100001939	150KΩ
388	C659	B4D	50020100001191	330PF	876	R715	T2F	50030100000270	470KΩ
389	C66	T3J	50020100001190	33PF	877	R716	T2F	50030100001537	5.6KΩ
390	C660	B4D	50020100001191	330PF	878	R717	T2F	50030100001525	220KΩ
391	C661	B4D	50020100001191	330PF	879	R718	T2F	50030100002029	33KΩ
392	C662	B4D	50020100001191	330PF	880	R72	T4H	50030100001961	100Ω
393	C663	B4E	500201000061390	330pF	881	R73	T2H	50030100001961	100Ω
394	C664	B4D	500201000061390	330pF	882	R74	T4H	50030100001961	100Ω
395	C665	B4E	500201000061390	330pF	883	R75	B4J	50030100001961	100Ω
396	C671	B5E	50020100001868	5.1PF	884	R76	T1C	50030100000012	47KΩ
397	C675	B4F	50020100000693	0.1uF	885	R77	T1F	50030100000012	47KΩ
398	C69	T4K	500201000060509	0.012UF	886	R79	T4H	50030100001961	100Ω
399	C7	T4I	50020100001190	33PF	887	R8	T3H	50030100001939	150KΩ
400	C70	T2K	50020100001470	470PF	888	R801	T1F	50030100000157	82KΩ
401	C702	T2F	500201000061854	470pF	889	R802	B2A	50030100001736	270Ω
402	C703	T2F	50020100001002	39pF	890	R803	B1F	50030100000252	330Ω
403	C71	T2K	50020100001470	470PF	891	R804	B4A	50030100000836	10KΩ
404	C7107	B1G	50020100003784	470P	892	R805	B1F	50030100000882	47Ω
405	C7108	B1E	500201000061426	0.027uF	893	R806	B1E	50030100000882	47Ω
406	C7109	B4I	50020100000686	2.2UF	894	R807	B1E	50030100000887	4.7KΩ
407	C7110	B5I	500201000061434	0.1uF	895	R808	B1E	50030100000170	6.8KΩ
408	C7112	B4I	50020100003673	1uF	896	R81	T3H	50030100001961	100Ω
409	C7114	B5I	500201000061434	0.1uF	897	R810	B1E	50030100000179	15KΩ
410	C7115	B5I	500201000060524	100PF	898	R811	B2F	50030100001073	0Ω
411	C7116	B5I	500201000061854	470pF	899	R812	B2A	50030100001736	270Ω
412	C7117	B4G	500201000062173	6pF	900	R813	B2F	50030100000887	4.7KΩ
413	C8	B1J	50020100001200	0.1uF	901	R814	B2G	50030100000752	18Ω
414	C801	B2F	500201000061434	0.1uF	902	R815	B2G	50030100000381	300Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
415	C802	B2F	50020100061854	470pF	903	R816	B2G	50030100000381	300Ω
416	C803	T2F	50020100061854	470pF	904	R818	B1F	50030100000469	100Ω
417	C804	B2E	50020100061434	0.1uF	905	R82	T3H	50030100001961	100Ω
418	C805	B2E	50020100061854	470pF	906	R83	T3H	50030100001961	100Ω
419	C806	B3E	50020100061434	0.1uF	907	R85	T2I	50030100001961	100Ω
420	C807	B3D	50020100061854	470pF	908	R86	T4H	50030100000012	47KΩ
421	C808	B3D	50020100000635	22uF	909	R87	T4H	50030100001299	4.7KΩ
422	C809	B3D	50020100000635	22uF	910	R88	T2I	50030100001961	100Ω
423	C810	B3D	50020100060516	56pF	911	R89	T2I	50030100001961	100Ω
424	C811	B3A	50020100061854	470pF	912	R9	T2H	50030100001961	100Ω
425	C812	B2A	50020100061434	0.1uF	913	R909	B2I	50030100000469	100Ω
426	C813	B2B	50020100000137	4.3pF	914	R91	T2I	50030100001961	100Ω
427	C814	B3B	50020100001445	1.5PF	915	R910	B2I	50030100000550	10Ω
428	C815	B3B	50020100000625	2.7PF	916	R912	B2I	50030100001788	68Ω
429	C816	B4B	50020100000095	2PF	917	R915	B2I	50030100001527	27Ω
430	C817	B1F	50020100062382	390PF	918	R918	B3H	50030100001917	100KΩ
431	C818	B2D	50020100000879	4PF	919	R92	T2I	50030100001961	100Ω
432	C819	B1C	50020100001738	8PF	920	R93	T2I	50030100001961	100Ω
433	C820	B1D	50020100000731	47pF	921	R95	T2I	50030100001961	100Ω
434	C821	B1D	50020100060512	22pF	922	R958	B2J	50030100001582	10KΩ
435	C822	B1D	50020100000227	12PF	923	R959	T3J	50030100001961	100Ω
436	C824	B1B	50040100064734	4.7nH	924	R96	T3A	50030100001456	120Ω
437	C825	B1B	50020100060524	100PF	925	R966	T2F	50030100001961	100Ω
438	C826	B2B	50020100061854	470pF	926	R967	T3J	50030100001961	100Ω
439	C827	B3A	50020100061854	470pF	927	R969	T5I	50030100000012	47KΩ
440	C828	B2E	50020100060524	100PF	928	R97	T3A	50030100001788	68Ω
441	C829	B1B	50020100000242	4.7PF	929	R970	T5J	50030100001939	150KΩ
442	C831	B2C	50020100000137	4.3pF	930	R972	T2C	50030100001005	0Ω
443	C832	B2C	50020100001738	8PF	931	R974	T3C	50030100000270	470KΩ
444	C833	B1C	50020100061839	2.2pF	932	R981	T3H	50030100001961	100Ω
445	C835	B1B	50020100001492	3PF	933	RT1	T3G	50030300000031	10K
446	C836	B2B	50020100060551	1pF	934	SH12	B4I	5111000001548A	TX-BUFFER shielding cover
447	C837	B3B	50020100001753	5.6PF	935	SH15	B2J	5111000001464A	CODEC shielding cover
448	C838	B3B	50020100000137	4.3pF	936	SH18	B4H	5120000000109A	Mainboard PLL and demodulation IC shielding mask

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
449	C839	B3B	50020100060551	1pF	937	SH20	B2H	5120000000159A	Mainboard IF shielding mask
450	C841	B2E	50020100001667	20PF	938	SH25	T3I	5120000000130A	MCU shielding mask
451	C844	B1F	50020100061862	0.068uF	939	SH28	T5I	5111000001004A	DC_DC shielding mask
452	C845	B1E	50020100061862	0.068uF	940	SW2	B1C	51010600000016	Momentary contact switch
453	C846	B2C	50020100000227	12PF	941	SW3	B1E	51010600000016	Momentary contact switch
454	C847	B2B	50020100002154	2.2pF	942	TP102	T1I	5111000000617A	X1e BT antenna shrapnel
455	C848	B2C	50020100062173	6pF	943	U1	T3I	50080800061983	MCU
456	C849	B1F	50020100061854	470pF	944	U105	T3K	50120400000031	EMI filter
457	C850	B2F	50020100061434	0.1uF	945	U2	B1J	50081000000113	Memory
458	C851	B1F	50020100061854	470pF	946	U201	B4J	50081100060381	Baseband processor IC
459	C852	B2F	50020100061854	470pF	947	U202	B2J	50080500000051	D/A conversion IC
460	C853	B2G	50020100061854	470pF	948	U203	B3J	50082400000173	Logic IC
461	C854	B1F	50020100001738	8PF	949	U204	B4K	50082400000173	Logic IC
462	C9	T3J	50020100001190	33PF	950	U301	T1F	50080700000124	Power management IC
463	C935	B3H	50020100061434	0.1uF	951	U302	T2G	50080700000081	Power management IC
464	C936	B3H	50020100003871	47nF	952	U303	T5H	50080700064533	DC-DC conversion IC
465	C944	B2I	50020100060509	0.012UF	953	U304	B5J	50080700000081	Power management IC
466	C947	B2I	50020100061426	0.027uF	954	U305	T5I	50080700064533	DC-DC conversion IC
467	C950	B2I	50020100003652	0.33uF	955	U306	T4H	50080700000081	Power management IC
468	c952	B2I	50020100000152	0.47uF	956	U307	T1G	50080700000081	Power management IC
469	c953	B2I	50020100000152	0.47uF	957	U308	T5F	50080700000081	Power management IC
470	C981	T4K	50020100061434	0.1uF	958	U309	T4H	50081300000043	Reset IC
471	C982	T5J	50020100061434	0.1uF	959	U310	T5J	50080700000342	Power management IC
472	C983	T4K	50020100061434	0.1uF	960	U401	T1B	50080200000056	Audio amplifier IC
473	C984	T4J	50020100003138	1uF	961	U402	T4F	50080400000092	Operational amplifier

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
474	C985	T4C	50020100060530	4.7uF	962	U403	B2J	50081200000065	Switch IC
475	C986	T3D	50020100061854	470pF	963	U404	B3J	50081200000067	Switch IC
476	C987	T5J	50020100061854	470pF	964	U5	T3C	50120400000031	EMI filter
477	C988	T5J	50020100061854	470pF	965	U501	B2H	50080300000030	PLL IC
478	C989	T5I	50020100001392	100pF	966	U600	B4F	50081700000037	RF transceiver module
479	D10	T1B	50050800000051	ESD protection diode	967	U601	B3I	50080400062006	MSD2 operational amplifier
480	D1001	B4H	50050300000009	Varactor	968	U602	B4I	50080400000327	Operational amplifier
481	D1002	B4H	50050300000009	Varactor	969	U603	B4D	50081200061741	Switch IC
482	D1004	B4H	50050300000009	Varactor	970	U604	B4D	50081200061741	Switch IC
483	D1005	B4H	50050300000009	Varactor	971	U701	T2F	50080400000087	Operational amplifier
484	D1006	B4H	50050300000013	Varactor	972	U903	T1F	50080700000081	Power management IC
485	D11	T1B	50050800000051	ESD protection diode	973	U904	T2H	50081300060241	Reset IC
486	D12	T1B	50050800000051	ESD protection diode	974	U906	B5I	50080700000124	Power management IC
487	D3	T4H	50050900000139	Schottky barrier diode	975	X201	B3K	50110400000033	EOL-TCXO
488	D301	T3F	50051000000078	Zener diode	976	XT501	B2I	50110500000011	VCXO

13. Abbreviations

Abbreviation	Full Name
A	
AD	Analog-to-Digital
AF	Audio Frequency
AGC	Automatic Gain Control
AMP	Amplifier
ANT	Antenna
APC	Automatic Power Control
B	
BER	Bit Error Ratio
BPF	Band-pass Filter
C	
CODEC	Coder-Decoder
D	
DC	Direct Current
E	
EEPROM	Electrically Erasable Programmable read only memory
ESD	Electro-Static Discharge
F	
FGU	Frequency Generator Unit
FM	Frequency Modulation
FSK	Frequency Shift Keying
G	
GND	Ground
H	

Abbreviation	Full Name
HPI	Host Port Interface
HPF	High-pass Filter
I	
I2S	Inter—IC Sound
IC	Integrated Circuit
IEC	International Electrotechnical Commission
IP	Ingress Protection Rating
L	
LED	Light Emitting Diode
LDO	Low Dropout Regulator
LNA	Low-noise Amplifier
LPF	Low-pass Filter
M	
MCU	Microcontroller Unit
MIC	Microphone
MIL-STD	Military Standard
MIPI	Mobile Industry Processor Interface
P	
PCB	Printed Circuit Board
PTT	Push-to-Talk
R	
RF	Radio Frequency
RST	Reset
RX	Receive
RXD	Receive Data

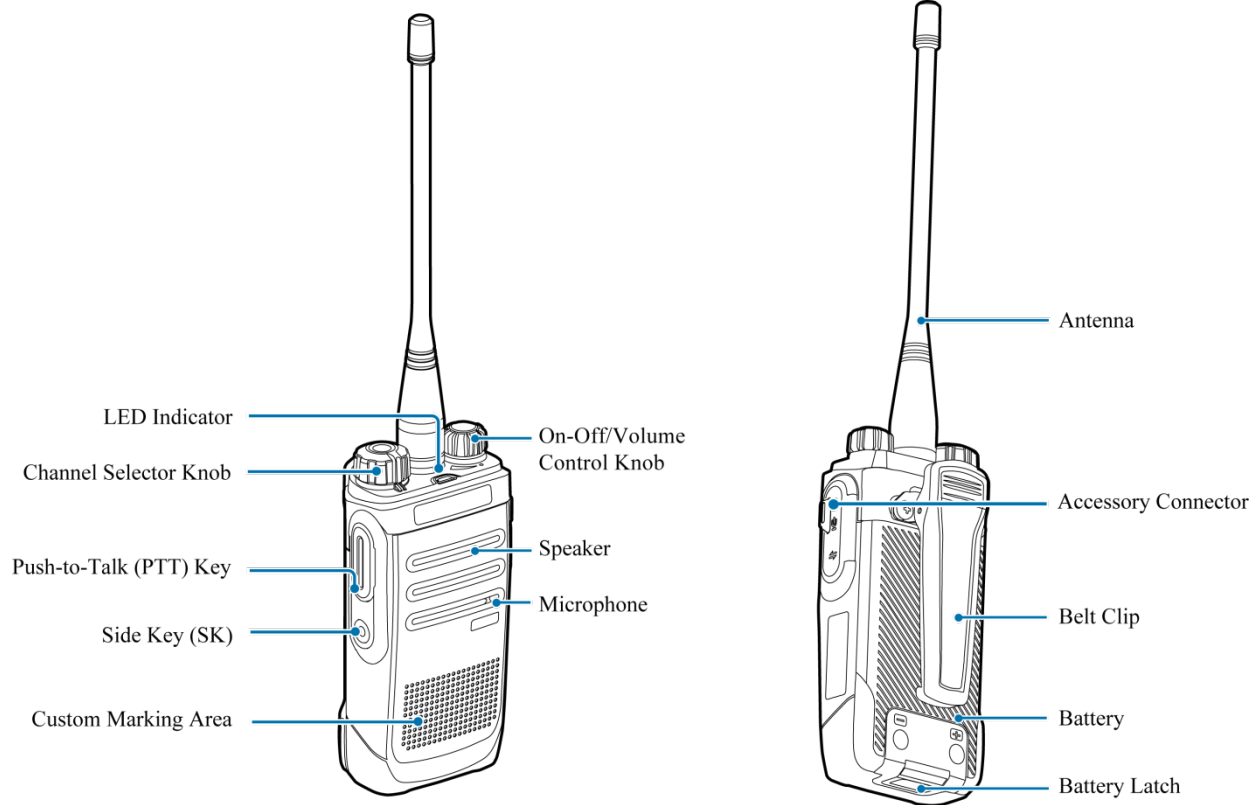
Abbreviation	Full Name
S	
SK	Side Key
SINAD	Signal to Noise and Distortion Ratio
SMA	Sub-Miniature-A
SPI	Serial Peripheral Interface
SPK	Speaker
SW	Switch
T	
TX	Transmit
TXD	Transmit Data
V	
VCO	Voltage Controlled Oscillator
VGG	Gate Voltage

UHF (350–400 MHz)

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1. Product Layout



2. Disassembly and Reassembly

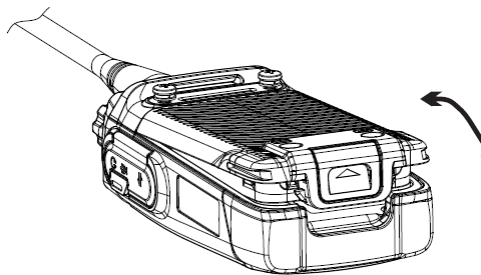
This chapter describes how to disassemble and reassemble the radio.

2.1 Tools

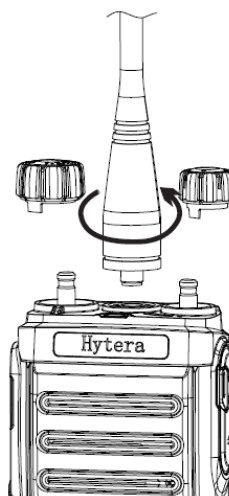
- T9 Screwdriver
- Socket wrench
- Philips screw
- Tweezers
- Soldering iron

2.2 Disassembly Procedure

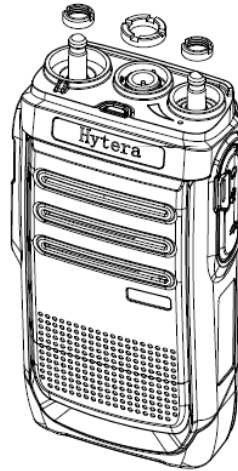
1. Turn off the radio.
2. Move the battery latch upwards to release it, and then remove the battery from the radio.



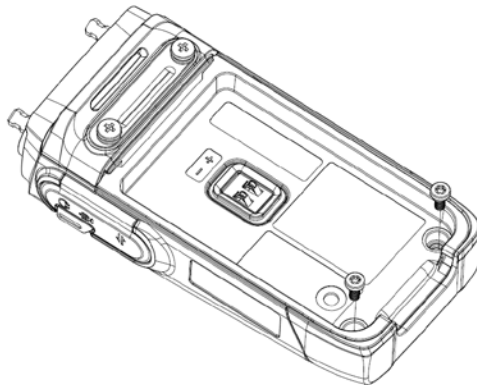
3. Rotate the antenna anticlockwise to remove it, and then pull out the **Channel Selector** knob and **On-Off/Volume Control** knob.



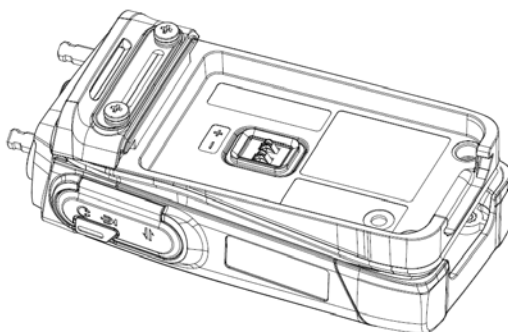
4. Use a socket wrench to remove the nuts from the antenna connector, **Channel Selector** knob, and **On-Off/Volume Control** knob.



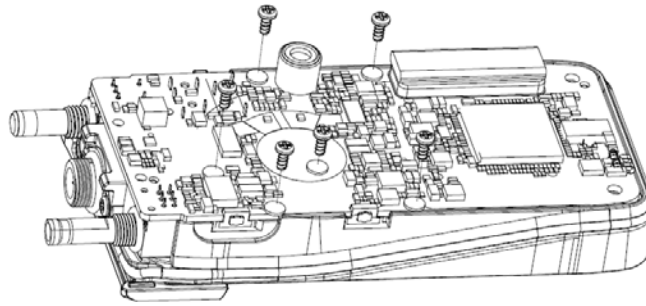
5. Use a T9 screwdriver to remove the two screws in the battery slot.



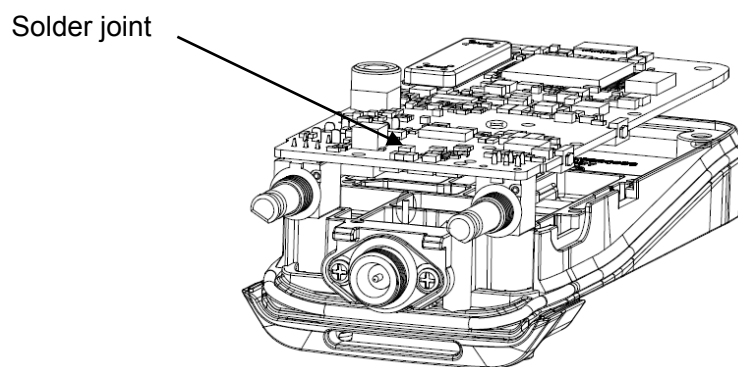
6. Use tweezers to remove the aluminum chassis.



7. Use a Phillips screwdriver to remove the six screws on the main board.



8. Use a soldering iron to unsolder the solder joint of the antenna connector, and then separate the main board from the aluminum chassis.



2.3 Reassembly Procedure



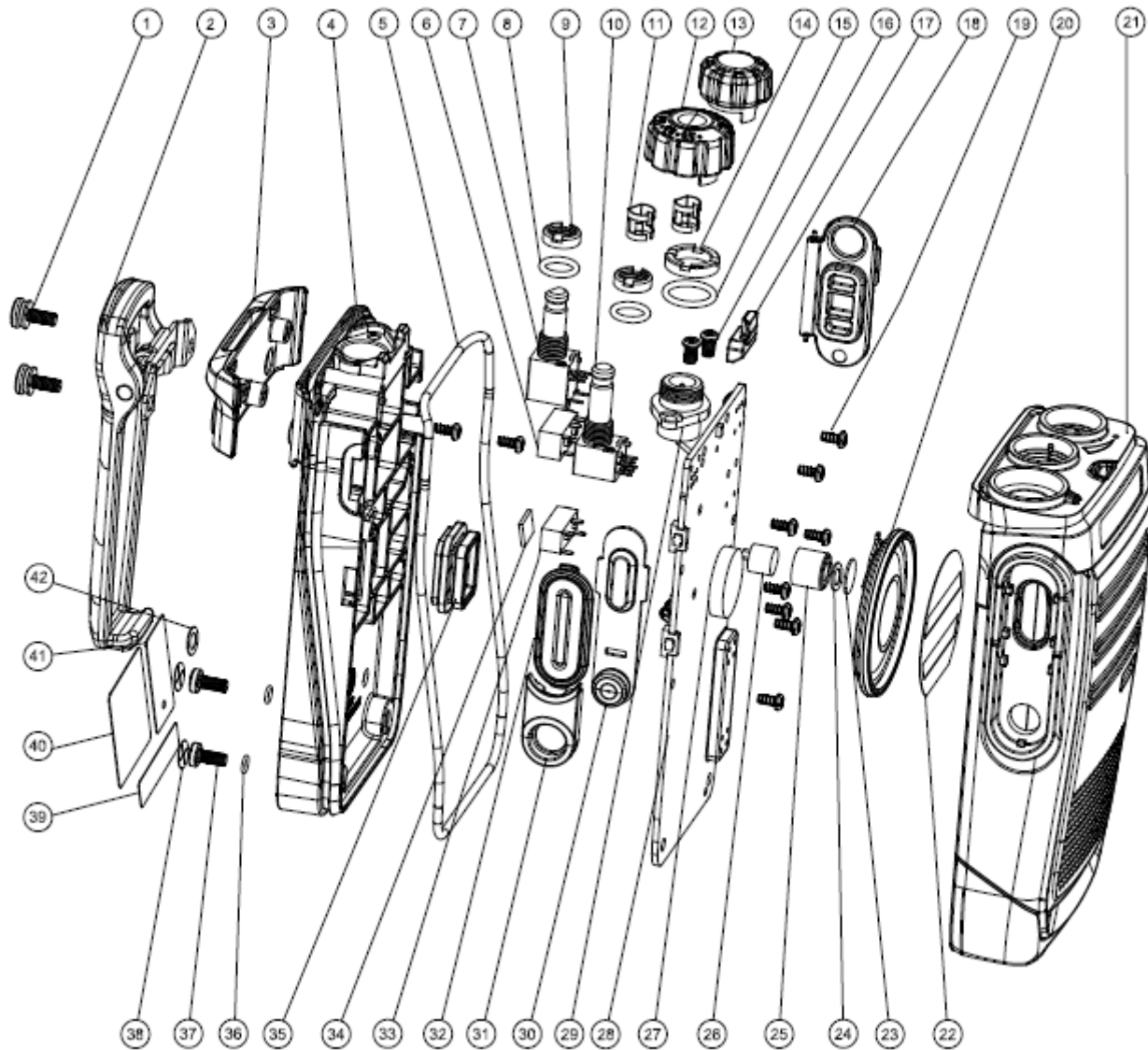
Caution

Make sure the waterproof ring is attached in place.

1. Place the main board back to the aluminum chassis, and then use a soldering iron to solder the solder joint of the antenna connector.
2. Put the six screws back on the main board, and use a Phillips screwdriver to tighten them.
3. Use tweezers to put the aluminum chassis back in place.
4. Put the two screws back in the battery slot, and use a T9 screwdriver to tighten them.
5. Put the nuts back in place for the antenna connector, **Channel Selector** knob, and **On-Off/Volume Control** knob, and use a socket wrench to tighten them.
6. Put the **Channel Selector** knob and **On-Off/Volume Control** knob back in place.
7. Place the antenna in its receptacle, and then rotate it clockwise until hand tight.
8. Align the battery contacts with the contacts in the battery compartment, and then gently press the battery latch downwards to lock it.

3. Exploded View and Packing Guide

3.1 Exploded View



The table below lists the parts.

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	5107000000375A	Machine screw	2	22	5113040000089A	Speaker felt	1
2	31040000000005	Belt clip	1	23	5113030000026A	Waterproof MIC mesh	1
3	51160000000654A	Rear cover	1	24	5113010000110A	MIC pad	1
4	51170000000154A	Aluminum chassis	1	25	51100000000591A	MIC cover	1
5	51100000000693A	Main waterproof ring	1	26	51020200000041	Microphone	1
6	51040600000221	Earpiece connector	1	27	51130500000240A	Speaker foam	1
7	510103000000037	Rotary switch	1	28	5001010002126F	Main PCB	1
8	51100000000841A	O-RING for rotary switch	2	29	510306000000014	SMA RF connector	1

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
9	5108000000070A	Nut for volume switch	2	30	5110000000405A	PTT key	1
10	51010200000005	Volume switch	1	31	5116000000459A	Bracket for PTT key cover	1
11	5111000000193A	Inner lining for knob	2	32	5116000000742A	PTT key cover	1
12	5116000001993C	Channel selector knob	1	33	51040600000050	Earpiece connector	1
13	5116000000518C	Volume control knob	1	34	5119020000046A	Heat sink pad	1
14	5108000000029A	Nut for antenna	1	35	5110000000364A	Waterproof ring for battery connector	1
15	5110000000909A	O_RING for antenna	1	36	5110000000402A	Waterproof ring for M2 screw	2
16	5107000000184A	Machine screw	2	37	5107000000199A	Machine screw	2
17	5116000001533A	Light guide	1	38	5207000000978A	Anti-dismantling label	2
18	5116000002019A	Accessory connector cover	1	39	5207000000719A	Transmission instruction label	1
19	5107000000300A	Self-tapping screw	10	40	5207000001707A	Aluminum chassis label	1
20	51020600000072	Speaker	1	41	5207000000849B	Caution label	1
21	5116000001932A	Front housing	1	42	5113040000021A	Breathable film for battery	2

**Note**

The part number is subject to change without notice due to product upgrade.

3.2 Packing Guide



4. Specifications

General		
Frequency Range	350–400 MHz	
Dimensions (H x W x D) (with battery and without antenna)	108 mm × 54.5 mm × 28 mm	
Weight (with battery and antenna)	240 g	
Zone Capacity	3	
Channel Capacity	48	
Channel Spacing	25 kHz/12.5 kHz	
Operating Voltage	Rated voltage: 7.2 V	
	Extreme Voltage: 6.2–8.4 V	
Battery	1500 mAh Li-ion battery	
Battery Life (5/5/90 duty cycle)	Analog: 12 hours	
	Digital: 16 hours	
Antenna Impedance	50 Ω	
Rx		
Sensitivity	Analog	0.22 μV (12 dB SINAD)
		0.22 μV (typical) (12 dB SINAD)
		0.4 μV (20 dB SINAD)
	Digital	0.22 μV/BER5%
Adjacent Channel Selectivity	12.5 kHz/TIA-603	> 60 dB
	25 kHz/TIA-603	> 70 dB
	12.5 kHz/ETSI	> 60 dB
	25 kHz/ETSI	> 70 dB
Spurious Response Rejection	TIA-603	> 70 dB
	ETSI	> 70 dB

Intermodulation	TIA-603	> 70 dB
	ETSI	> 65 dB
Conducted Emission	< 1 GHz	< -57 dBm
	> 1G Hz	< -47 dBm
Blocking	> 84 dB	
Rx Audio S/N	Analog: > 45 dB / 40 dB	
	Digital: > 40 dB	
Rated Audio Distortion	5%	
Rated Audio Output Power	0.5 W	
Rx Audio Response	+1 dB to -3 dB	
Tx		
Frequency Stability	0.5 ppm	
Output Power	Low power	1.2 W
	High power	4.2 W
FM Modulation	11K0F3E @ 12.5 kHz	
	16K0F3E @ 25 kHz	
4FSK Digital Modulation	12.5 kHz (data only): 7K60FXD	
	12.5 kHz (data and voice): 7K60FXW	
Spurious Emission	< 1 GHz	< -36 dBm
	> 1 GHz	< -30 dBm
Modulation Limiting	2.5 kHz @ 12.5 kHz	
	5.0 kHz @ 25 kHz	
Tx Audio S/N	Analog: > 45 dB / 40 dB	
	Digital: > 40 dB	
Adjacent Channel Power	12.5 kHz	> 60 dB
	25 kHz	> 70 dB

Tx Audio Response	+1 dB to -3dB	
Tx Audio Distortion	3%	
Vocoder	SELP1.7/AMBE++	
Environment		
Operating Temperature	-30°C to +60°C	
Storage Temperature	-40°C to +85°C	
Electrostatic Discharge	IEC 61000-4-2 (level 4)	±15kV (air)
		±8kV (contact)
United States Military Standard	MIL-STD-810 C/D/E/F/G	
Water & Dust Protection	IP54	
Humidity	MIL-STD-810 C/D/E/F/G	
Drop, Shock & Vibration	MIL-STD-810 C/D/E/F/G	

**Note**

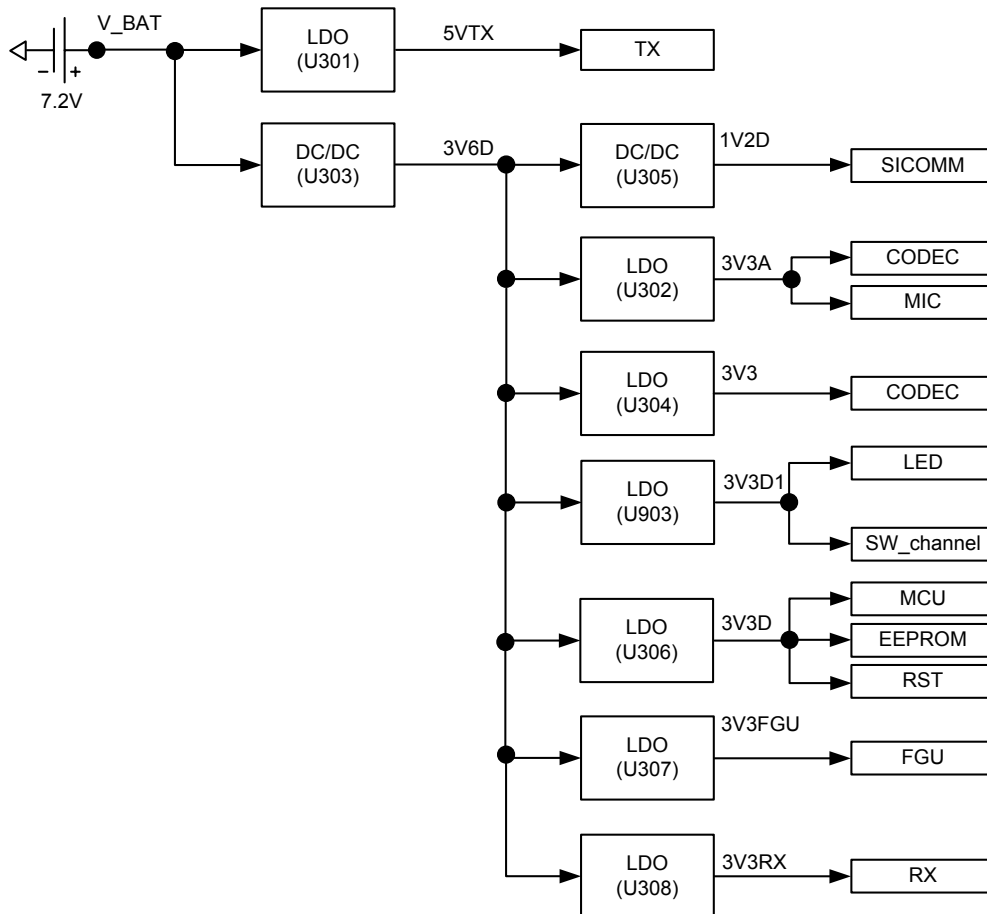
All specifications are tested according to applicable standards, and subject to change without notice due to continuous technological development.

5. Circuit Description

5.1 Baseband Section

5.1.1 Power Supply Module

The power supply employs a 7.2 V dual-cell Li-ion battery.



The 7.2 V voltage powers the RF board and baseband board in the following ways:

RF Board

- The LDO (U301) converts the 7.2 V voltage into a 5.0 V voltage, which powers the Tx circuit.
- The DC/DC (U303) converts the 7.2 V voltage into a 3.6 V voltage. Then the LDOs (U307 and U308) convert the 3.6 V voltage into 3.3 V voltage, which powers the FGU circuit and Rx circuit.

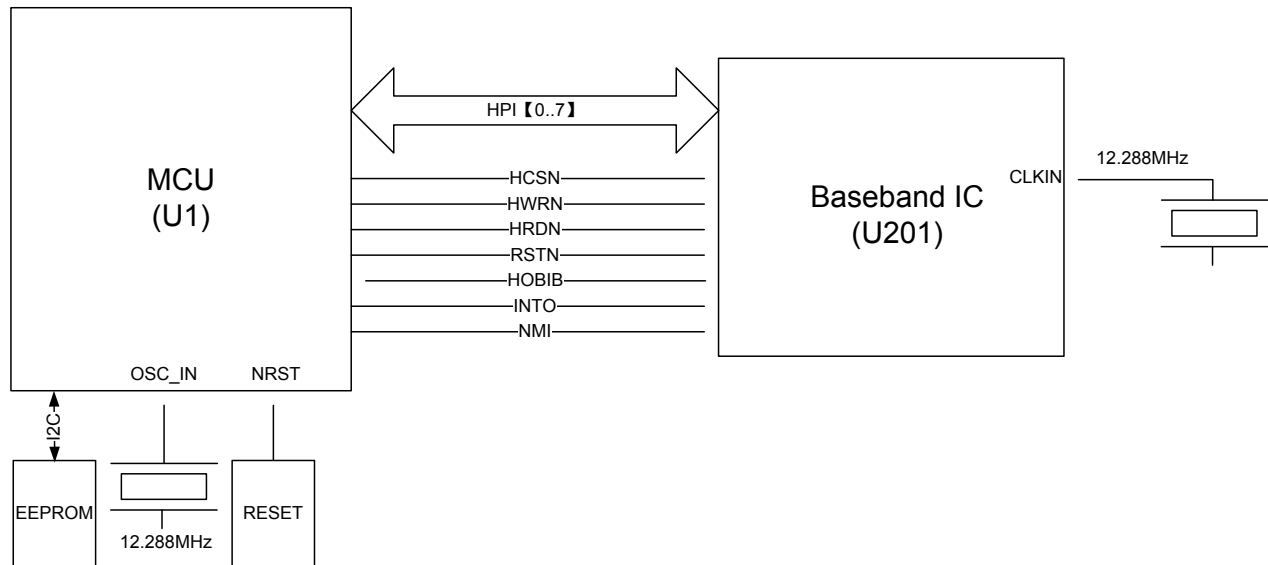
Baseband Board

The DC/DC (U303) converts the 7.4 V voltage into a 3.6 V voltage. The 3.6 V voltage is further processed as follows:

- The LDOs (U302, U304, U903, and U306) convert the 3.6 V voltage into 3.3 V voltages, which power the CODEC, MIC, MCU, EEPROM, and so on.

- The DC/DC (U305) converts the 3.6 V voltage into a 1.2 V voltage, which powers the baseband processor chip SICOMM.

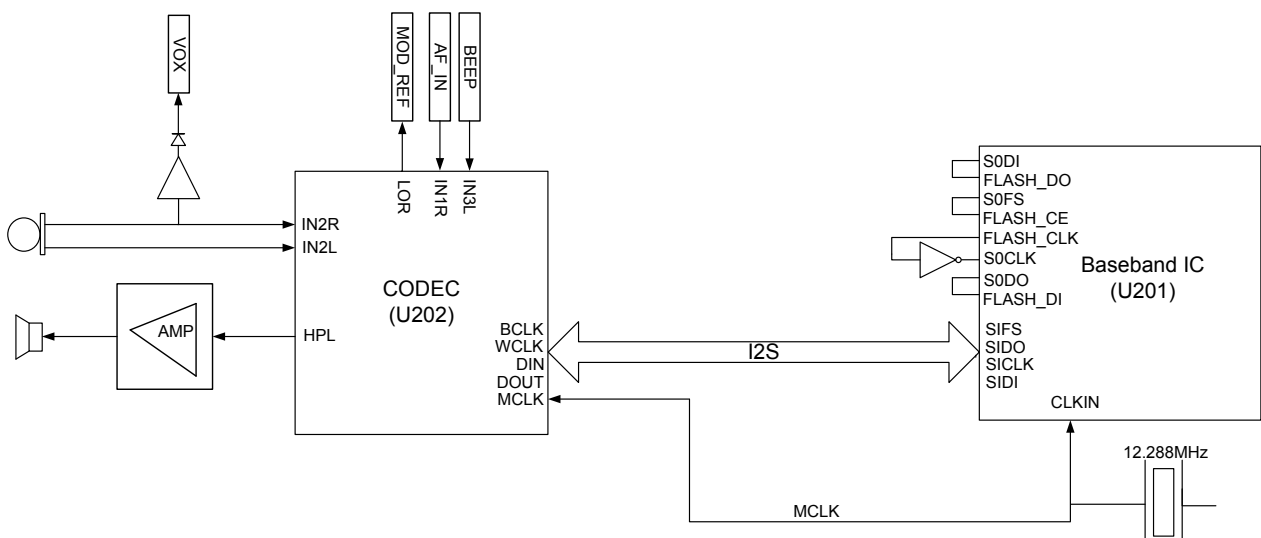
5.1.2 Control Module



The control module consists of the MCU (U1) serving as the main controller and baseband IC (U201) serving as the baseband processor. Both the MCU and baseband IC use the frequency generated by the 12.288 MHz crystal oscillator as the clock signal.

The MCU communicates with the baseband IC through the HPI bus, and connects to the 512 KB EEPROM through the I2C bus for storing programming and debugging data.

5.1.3 Audio Module



The audio module consists of the CODEC (U202), baseband IC (U201), audio power amplifier (AMP), and so on. Both the CODEC and baseband IC use the frequency generated by the 12.288 MHz crystal

oscillator as the clock signal.

Audio Path

- Rx Path

The audio signal received from the RF section goes to the CODEC through the IN1R interface for amplification and A-D conversion. Afterwards, it goes to the baseband IC through the I2S bus for processing, and then goes back to the CODEC for D-A conversion and amplification. Finally, it goes to the AMP through the HPL interface for amplification, and gets output through the speaker.

- Tx Path

The audio signal from the microphone goes to the operational amplifier and is divided into two differential signals. The two signals go to the CODEC through the IN2R and IN2L interfaces for amplification and A-D conversion. Afterwards, the processed signal goes to the baseband IC through the I2S bus for processing, and then goes back to the CODEC for D-A conversion and amplification. Finally, it goes to the FGU circuit through the LOR interface for modulation.

**Note**

With the VOX feature enabled, the audio signal from the microphone is transmitted to the MCU for VOX sampling and detection before being processed.

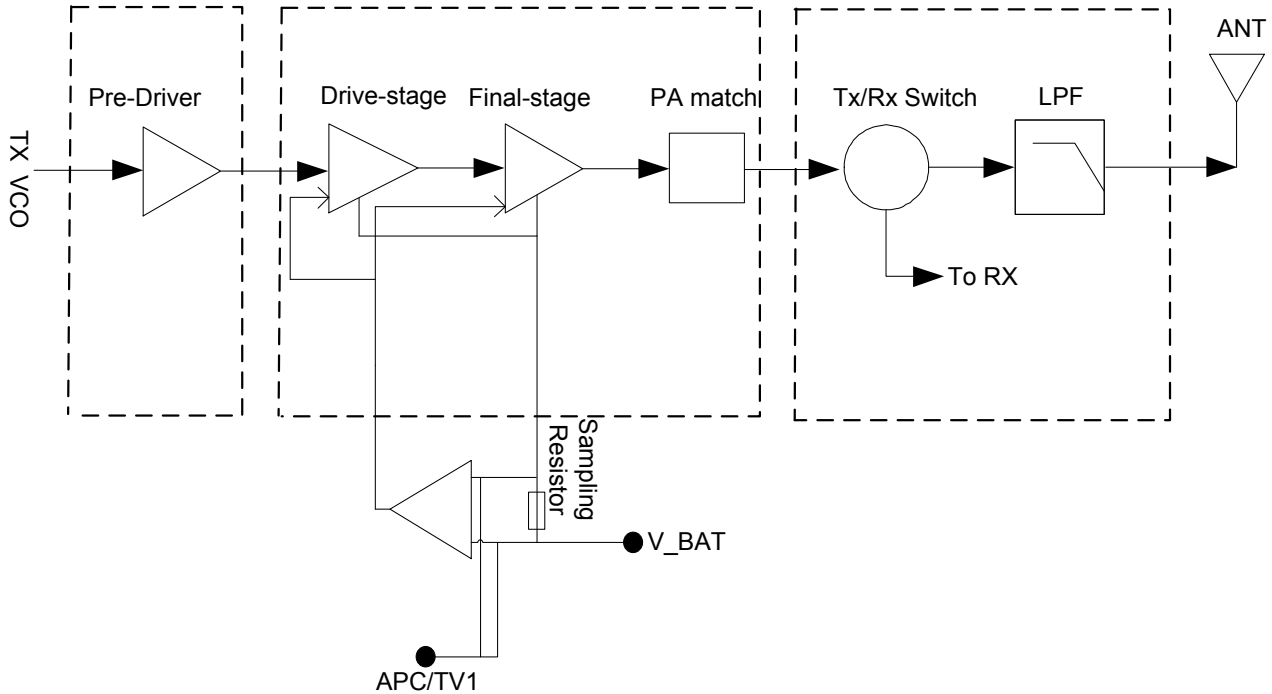
Audio Power Amplifier

The table below lists the main parameters of the audio amplifier.

Parameter	Value
Rated Power (P_o)	0.5 W
Maximum Power (P_{max})	1.6 W
Speaker Impedance (R_L)	16 Ω

5.2 RF Section

5.2.1 Tx Circuit



The Tx circuit consists of RF PA circuit, LPF circuit and APC circuit.

RF PA Circuit

The carrier signal generated by the TX VCO goes to the pre-driver PA for initial amplification, the drive-stage PA for further amplification, and then final-stage PA for final amplification. The amplified carrier signal then passes through the microstrip matcher for output impedance matching, so as to reduce output power loss due to impedance mismatch.

LPF Circuit

After the output impedance matching, the signal goes to the Tx/Rx switch and then to the LPF for suppressing harmonics and spurious signals. Finally, it goes to the antenna for transmission.

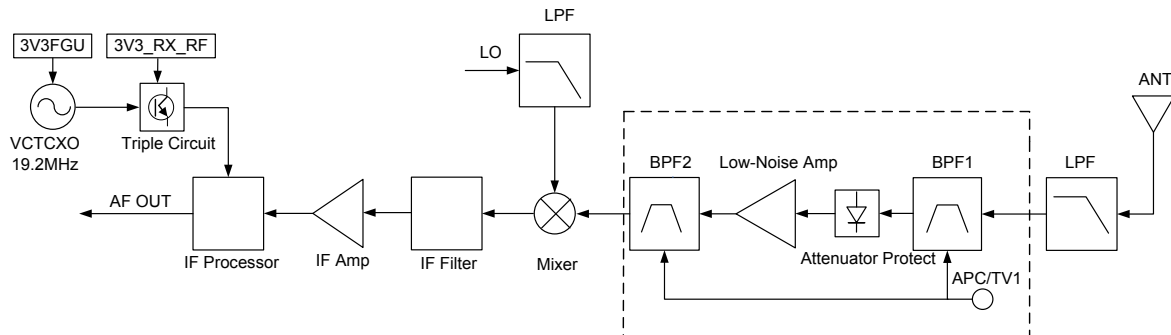
APC Circuit

The APC circuit converts the drain current from the driver-stage PA and final-stage PA into a voltage, and then compares the voltage with the APC control voltage output by the MCU. The error voltage generated from the comparison adjusts the Tx power by controlling the gate bias voltage of the driver-stage PA and final-stage PA.

5.2.2 Rx Circuit

The Rx circuit consists of the BPFs, low-noise amplifier, frequency mixer, IF filter, IF amplifier, IF processor, and so on.

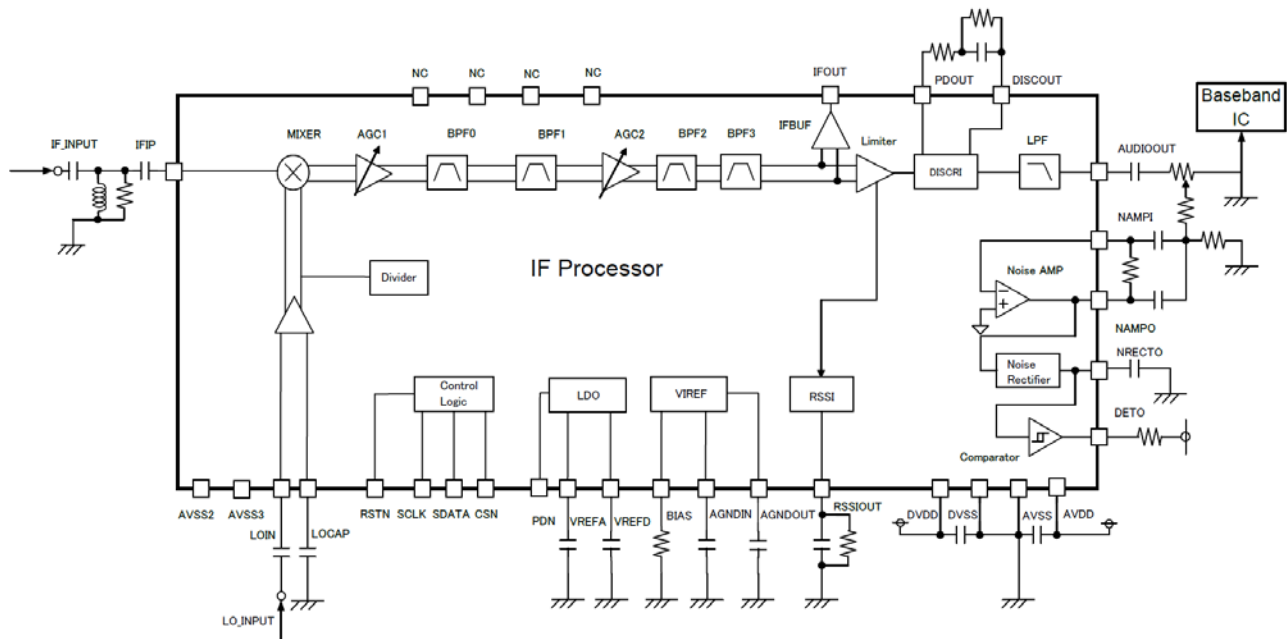
Rx Front-End



The RF signal from the LPF goes to BPF1, which is controlled by the APC/TV1 level, for removing the out-of-band signal. The wanted signal goes to the low-noise amplifier for amplification. The amplified signal goes to BPF2, which is also controlled by the APC/TV1 level, for further filtering.

Then the further filtered signal goes to the frequency mixer, in which it mixes with the first LO signal from the VCO, to generate the first IF signal. The first IF signal goes to the IF filter for filtering, the IF amplifier for amplification, and finally the IF processor for processing.

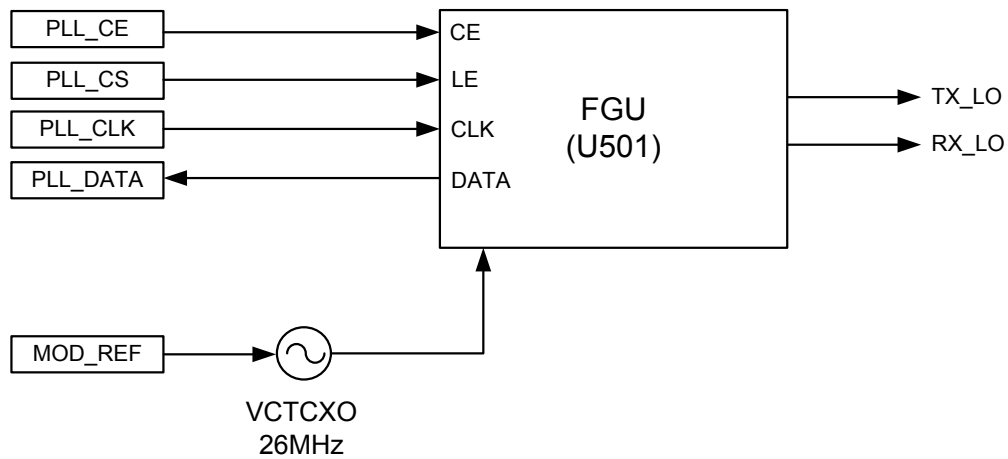
Rx Back-End



The first IF signal goes to the frequency mixer, in which it mixes with the second LO signal to generate the second IF signal (450 kHz). The second IF signal goes to the AGC1 for amplification, and to BPF0 & BPF1 for filtering out-of-band signal. Then the processed signal goes to AGC2, BPF2, and BPF3 for amplification

and filtering again. After that, the signal goes to the frequency discriminator for demodulation to obtain the audio signal, which will go to the baseband IC for processing.

5.2.3 FGU Circuit

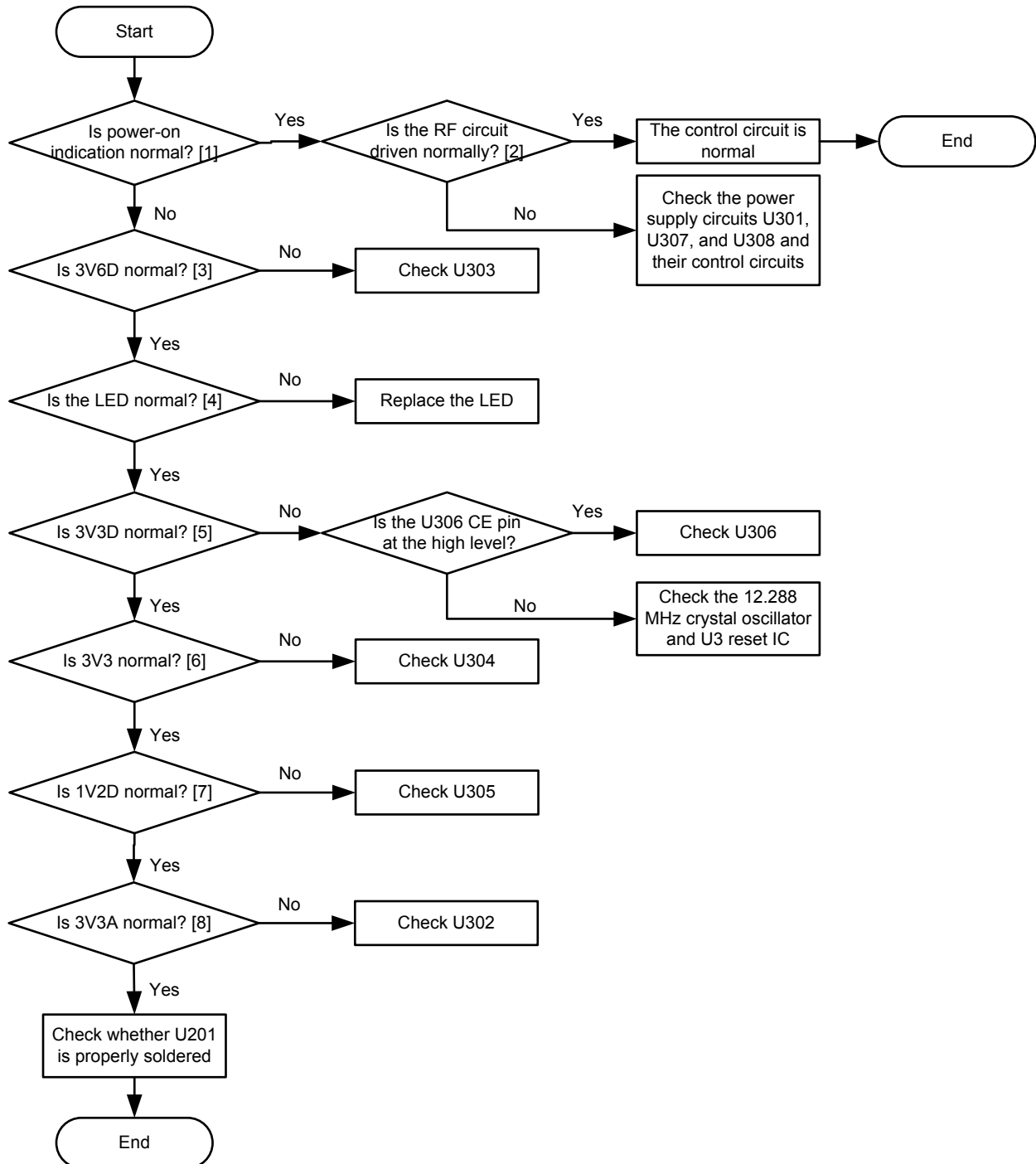


To achieve higher modulation accuracy and a lower 4FSK bit error rate in Tx mode, this circuit adopts the single-point modulation technology. That is, the modulation signal (MOD_REF) only goes to the VCTCXO for modulation. Then the modulated signal will go to FGU.

The MCU controls the VCO through the SPI to provide accurate carrier frequency when the radio is transmitting and stable LO signal when the radio is receiving. The carrier frequency and LO signal then go to the inner Tx channel and Rx channel for transmitting and receiving respectively.

6. Troubleshooting Flow Chart

6.1 Control Circuit



Description of normal situation:

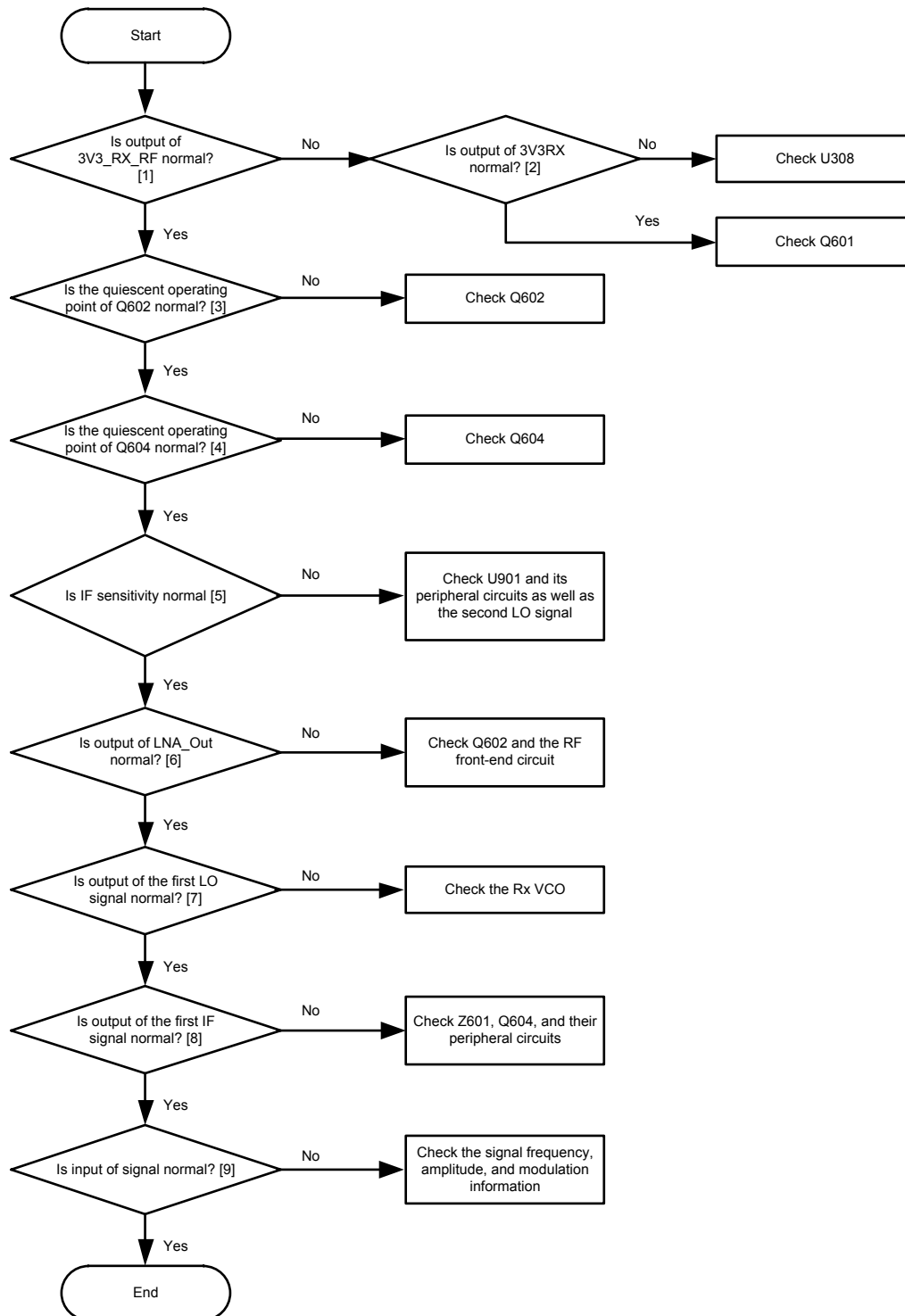
[1] The radio announces the channel number after being turned on.

[2] The RF power supply outputs normally, and the power supply for the Rx path is switched on.

[3] The voltage at TP303 is $3.6 \pm 10\%$ V.

- [4] After the radio is turned on, the LED indicator flashes green for three times.
- [5] The output voltage at Pin 5 of U306 is $3.3 \pm 10\%$ V.
- [6] The output voltage at Pin 5 of U304 is $3.3 \pm 10\%$ V.
- [7] The voltage at TP305 is $1.2 \pm 10\%$ V.
- [8] The output voltage at Pin 5 of U302 is $3.3 \pm 10\%$ V.

6.2 Rx Circuit



Description of normal situation:

- [1] The output voltage at Pin 3 of Q601 is $3.3 \pm 10\%$ V.
- [2] The output voltage at Pin 5 of U308 or the input voltage at Pin 4 of Q601 is $3.3 \pm 10\%$ V.
- [3] Check the base voltage and collector voltage of Q602 when the radio is not receiving. In normal case, the base voltage is $0.7 \pm 10\%$ V, and the collector voltage is $2.7 \pm 10\%$ V.

- [4] Check the base voltage and collector voltage of Q604 when the radio is not receiving. In normal case, the base voltage is $0.7 \pm 10\%$ V, and the collector voltage is $2.9 \pm 10\%$ V.
- [5] Disconnect the front-end circuit of Z601, and input an IF signal (with modulation signal) at C655 to test IF sensitivity. In normal case, the IF sensitivity is -109 dBm.
- [6] Input a -40 dBm RF signal at the antenna port and test the signal strength at C646. In normal case, the gain is greater than 10 dB, and the output power is greater than -30 dBm.
- [7] Test C651 while keeping the post-stage circuit connected. In normal case, the frequency is the sum of the current channel frequency and IF, and the amplitude is greater than -5 dBm.

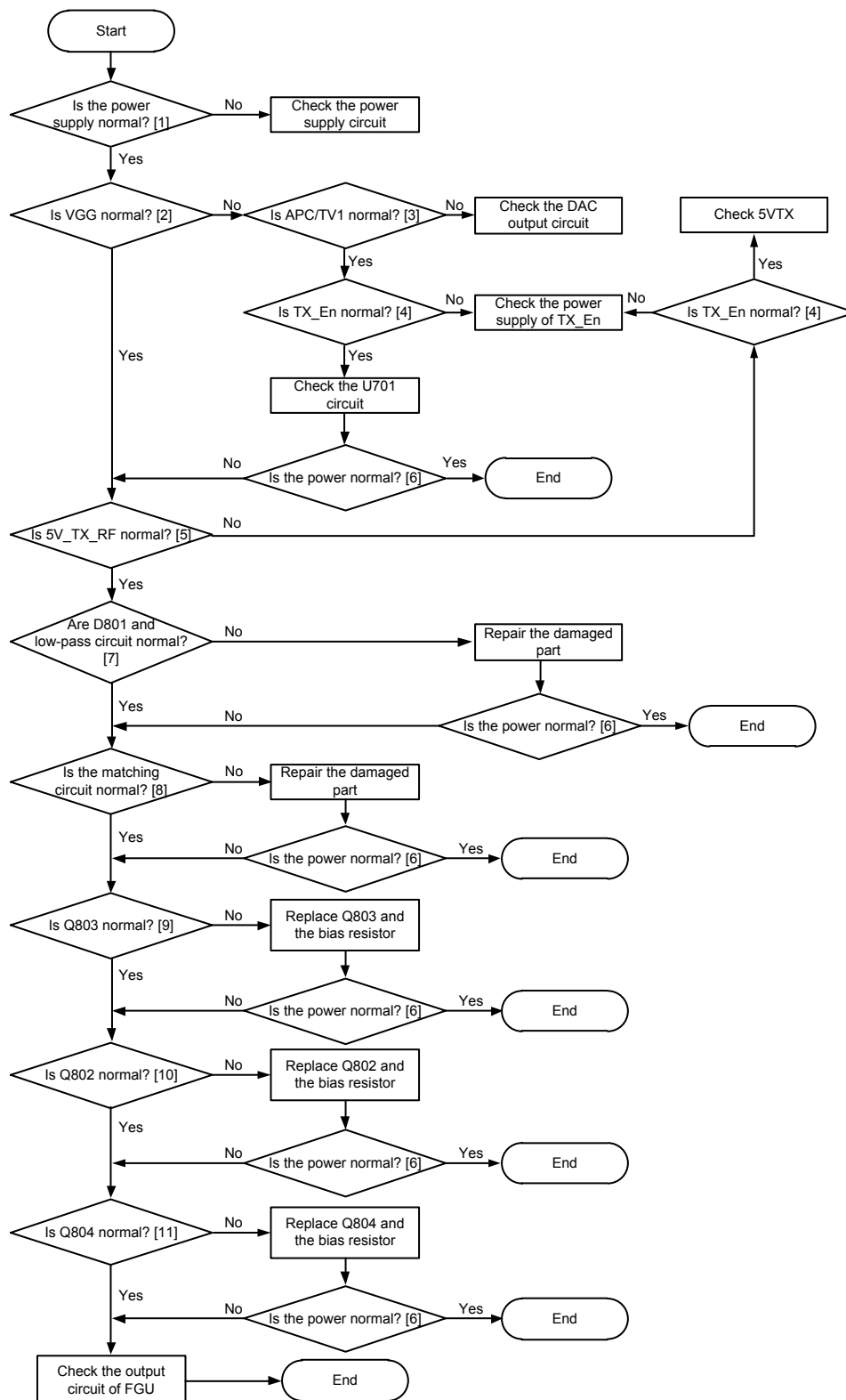
Test C653 while keeping the post-stage circuit connected. In normal case, the frequency is the sum of the current channel frequency and IF, and the amplitude is about 0 dBm.
- [8] The output frequency of the frequency mixer equals the IF.
- [9] At the antenna port, input a -47 dBm signal with standard debugging information (AF = 1 kHz, FM = 3 kHz).

6.3 Tx Circuit



Caution

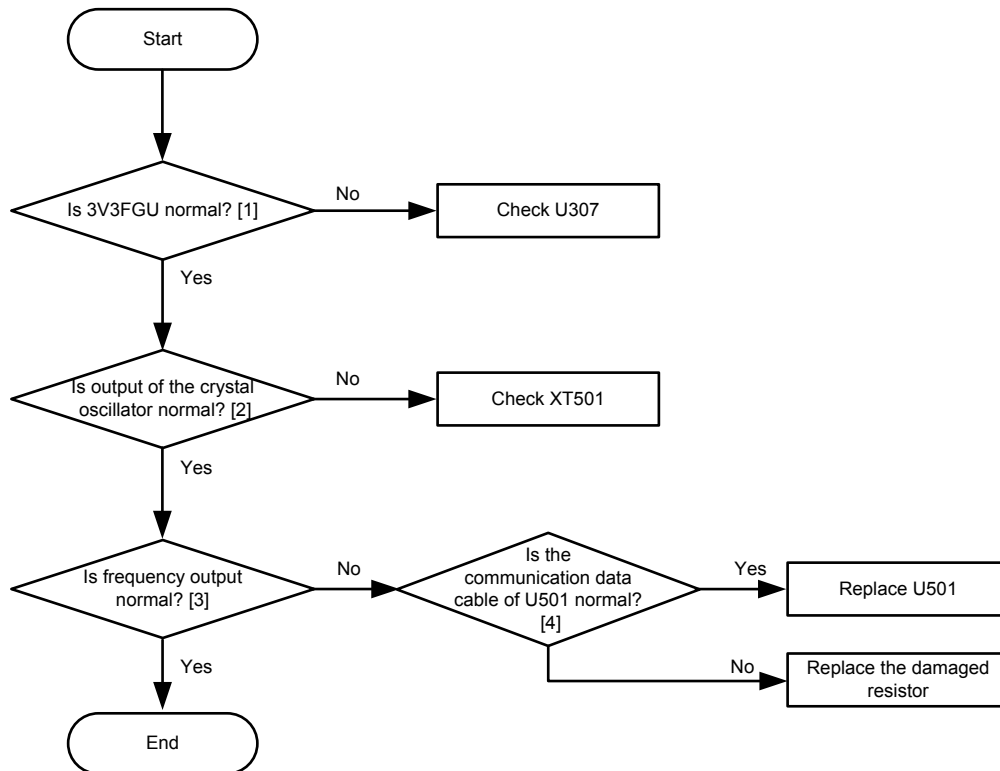
To avoid the impact on Tx power, do the following tests under the 7.2 V power supply.



Description of normal situation:

- [1] The voltage of the power supply is $7.2 \pm 10\%$ V.
- [2] VGG ranges from 1.8 V to 2.1 V for low power and 2.4 V to 2.8 V for high power.
- [3] APC/TV1 ranges from 1 V to 1.3 V for low power and 1.8 V to 2.1 V for high power.
- [4] TX_En is $3.3 \pm 10\%$ V.
- [5] 5V_TX_RF is $5 \pm 10\%$ V.
- [6] The high power is $4.2 \pm 10\%$ W, and the low power is $1.2 \pm 10\%$ W.
- [7] The start-up voltage of D801 is $0.7 \pm 10\%$ V. The low-pass circuit coil is soldered properly. The antenna connector is properly soldered to the main board.
- [8] The matching parts are soldered properly.
- [9] VDD is $7.2 \pm 10\%$ V. VGG of Q803 ranges from 1.0 V to 1.2 V for low power and 1.35 V to 1.55 V for high power.
- [10] VDD is $7.2 \pm 10\%$ V. VGG of Q802 ranges from 1.8 V to 2.1 V for low power and 2.4 V to 2.8 V for high power.
- [11] The voltages at the two ends of R811 are $5.0 \pm 10\%$ V and $3.3 \pm 10\%$ V.

6.4 FGU Circuit

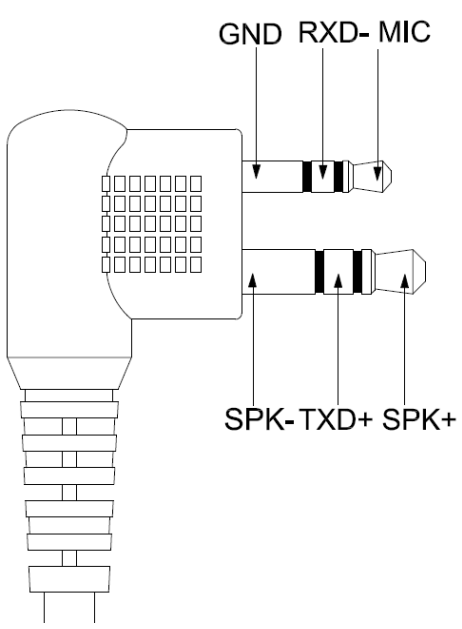


Description of normal situation:

- [1] The output voltage at Pin 5 of U307 is $3.3 \pm 10\%$ V.
- [2] Test C973. In normal case, the output frequency is 26 MHz, and the AC level is greater than 1.1 V.
- [3] The Rx LO frequency is the sum of the Rx frequency and IF. The Tx frequency equals the frequency at which the radio is transmitting.
- [4] The cable is properly connected to the MCU and protected from open circuit.

7. Interface Definition

The table below lists information about the double-pin (J402 and J403) plug for earpiece and programming cable.

Interface	Pin No.	Signal	Illustration
J402	1	SPK-	
	2	TXD+	
	3	SPK+	
	4	SPK+	
	5	SPK-	
J403	1	GND	
	2	MIC	
	3	RXD-	
	4	OPTEL1	

8. Tuning Description

8.1 Tools

- Radio communication test set: Aeroflex 3920 and HP8921
- Power supply: 3 A/10 V
- Multimeter
- Tuner software

8.2 Tuning Procedure

8.2.1 Tuning the Radio

After reassembling the radio, tune it using the Tuner software.

The table below describes the items to be tuned and the corresponding tuning methods. After tuning an item, click **Save** to save the tuned value.

Item	Method
Tx Section	
Reference Oscillator Warp	1. Connect the antenna connector of the radio to the RF port of HP8921, and set HP8921 to Tx test mode. 2. Open the Tuner software, and go to TUNE_DATA > TX > Reference Oscillator Warp in the left navigation tree. 3. Adjust the vernier on the Tuner, until the frequency deviation between the frequency displayed on HP8921 and that displayed on the Tuner is less than or equal to 40 Hz. 4. Click Transmit On.
Transmit Power Calibration	1. Connect the antenna connector of the radio to the RF port of HP8921, and set HP8921 to Tx test mode. 2. Open the Tuner software, and go to TUNE_DATA > TX > Transmit Power Calibration in the left navigation tree. 3. Select the required channel, and then click the spin box under Low or High. 4. Click Transmit On. 5. Adjust the value in the spin box under Low or High to 1.2 ± 0.1 W or 4.2 ± 0.1 W

Item	Method
	respectively.
Modulation Balance	1. Connect the antenna connector of the radio to the RF port of HP8921, and set HP8921 to Tx test mode. 2. Set HP8921 as follows: ● IF Filter: 230 kHz ● Filter1: < 20 Hz HPF ● Filter2: <15 kHz LPF ● De-Emphasis: OFF 3. Open the Tuner software, and go to TUNE_DATA > TX > Modulation Balance in the left navigation tree. 4. Select the required channel, and then click the spin box under LOW_PORT. 5. Click Transmit On. 6. Adjust the value in the spin box until the frequency deviation displayed on HP8921 is 5 kHz $\pm$ 50 Hz. 7. Press the Enter key on the keyboard to confirm the setting.
Rx Section	
Front-end Filter	1. Connect the antenna connector of the radio to the RF port of HP8921. 2. Connect audio accessory connector of the radio to the audio input port of HP8921, and set HP8921 to Rx test mode. 3. Set HP8921 as follows: ● Output RF signal: –118 dBm/Frequency (current channel frequency) ● Modulation frequency: 1 kHz ● Modulation deviation: 3 kHz ● De-Emphasis: 750 μs 4. Open the Tuner software, and go to TUNE_DATA > RX > Front-end filter in the left navigation tree. 5. Adjust the vernier on the Tuner until the value of SIN_AD displayed on HP8921 is greater than 14 dB. 6. Set HP8921 to output a –37 dBm RF signal whose frequency is the sum of the current channel frequency and -29.025 MHz.

Item	Method
	7. Adjust the vernier on the Tuner until the value of SIN_AD displayed on HP8921 is less than 5 dB. 8. Press the Enter key on the keyboard to confirm the setting.

8.2.2 Testing the Radio

After tuning the radio, test the Tx and Rx performance of the radio as follows:

Tx Performance

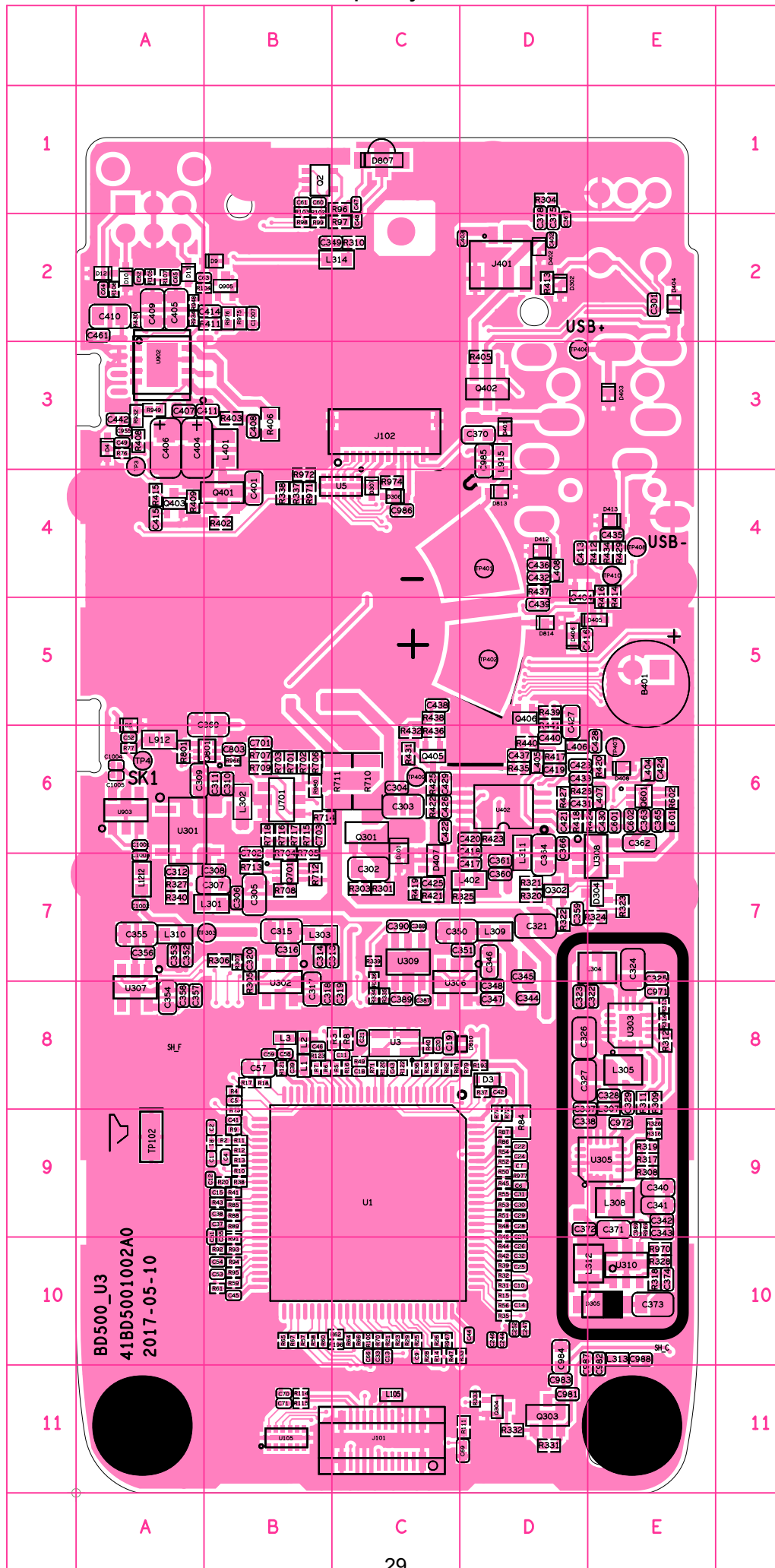
1. Connect the antenna connector of the radio to the T/R port of Aeroflex 3920.
2. Open the Tuner software, and go to **TEST > TX > Transmit BER (0.153)**.
3. Select the channel to be tested, and select **High Power** under **Parameter**.
4. Set Aeroflex 3920 as follows:
 - Frq: the same as the frequency of the channel to be tested
 - STD IB 511 (.153)
5. Click **Transmit On** on the Tuner.
6. Check whether the tested items on Aeroflex 3920 meet the following requirements:
 - Frequency Error: ≤ 100 Hz
 - Transmit Power: 4.2 ± 0.3 W
 - FSK Error: $\leq 5\%$
 - Magnitude Error: $\leq 1\%$

Rx Performance

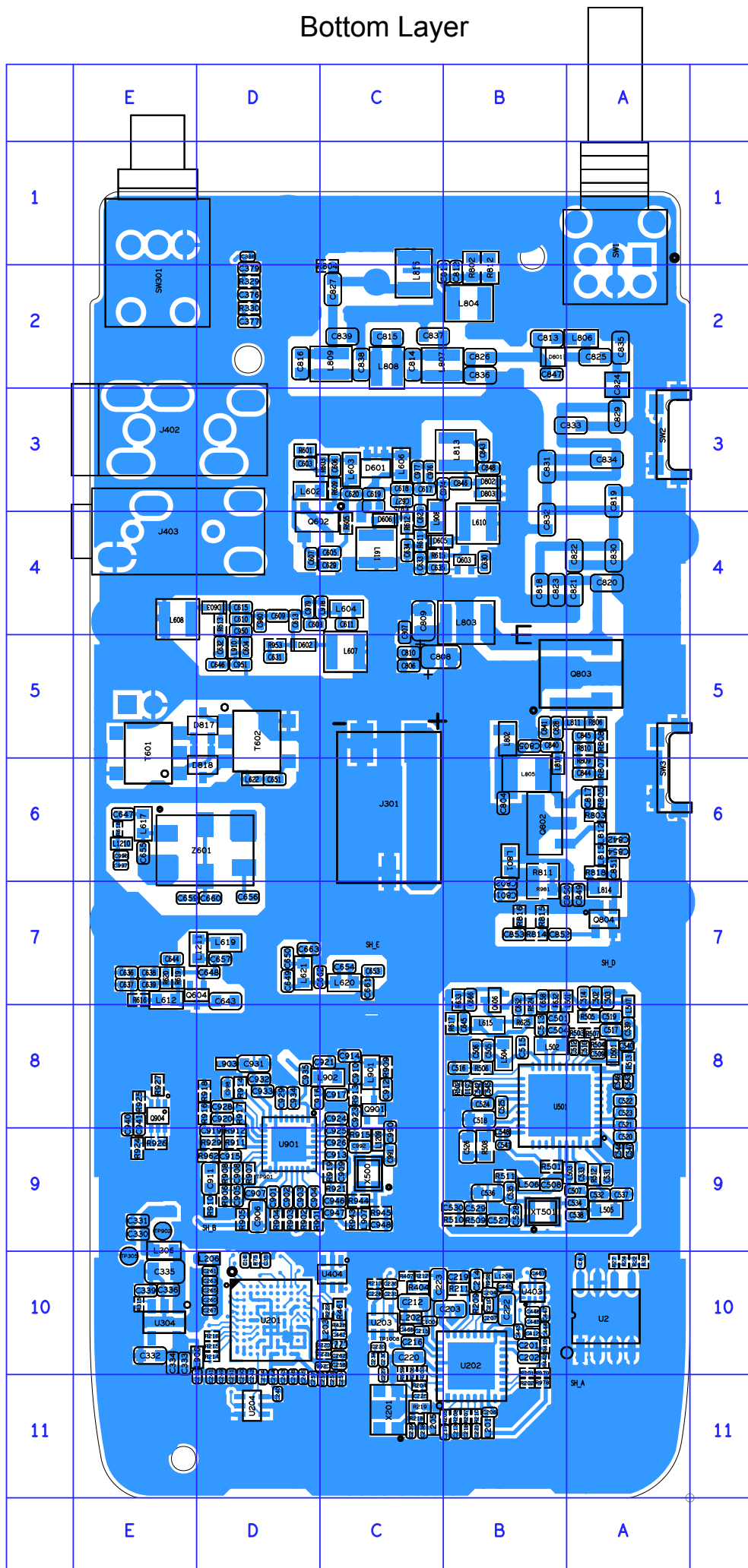
1. Connect the antenna connector of the radio to the T/R port of Aeroflex 3920.
2. Open the Tuner software, and go to **TEST > RX > Receiver BER (0.153)**.
3. Select the channel to be tested.
4. Set Aeroflex 3920 as follows:
 - Frq: the same as the frequency of the channel to be tested
 - STD IB 511(.153)
 - Lvl: -116.0 dBm
5. Click **Start** on the Tuner.
6. Check whether the value of **Average Rate** displayed on the Tuner is less than or equal to 5%.

9. PCB View

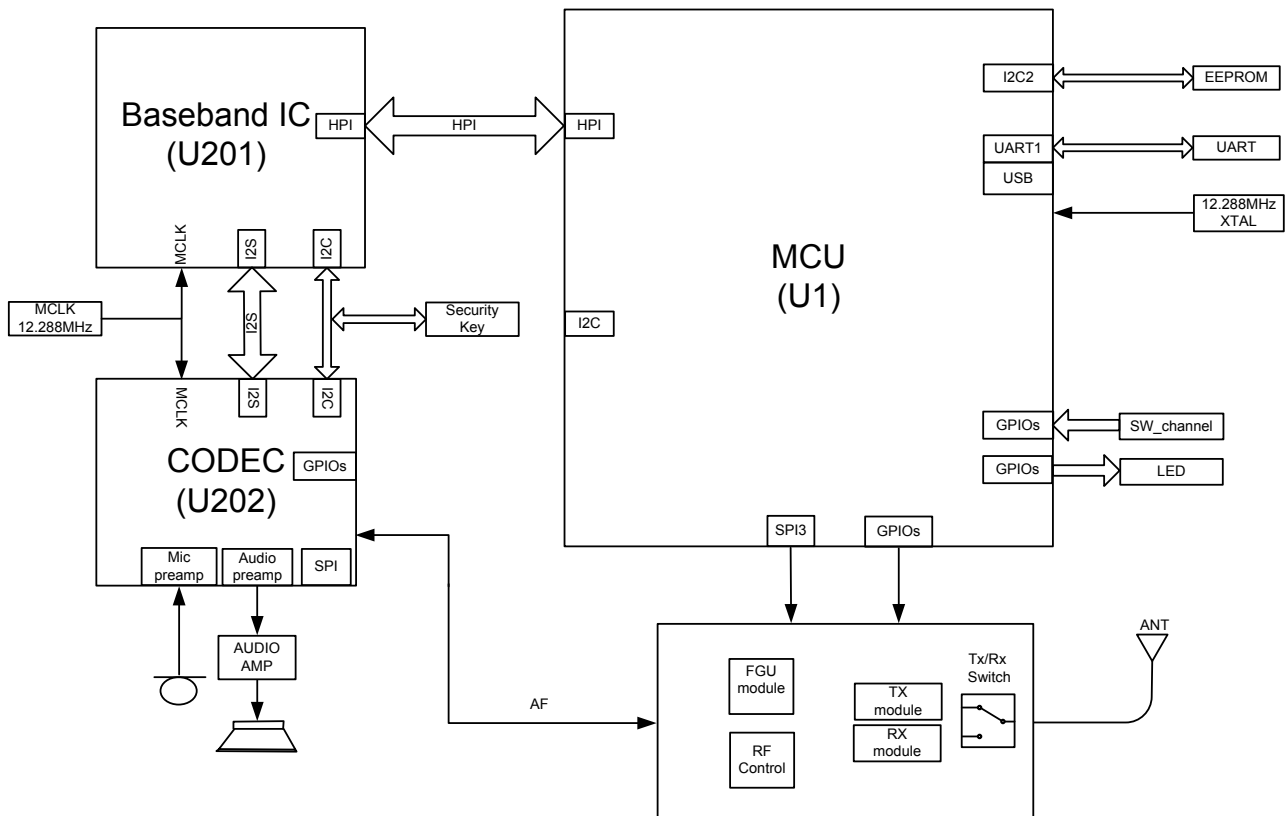
Main Board Top Layer



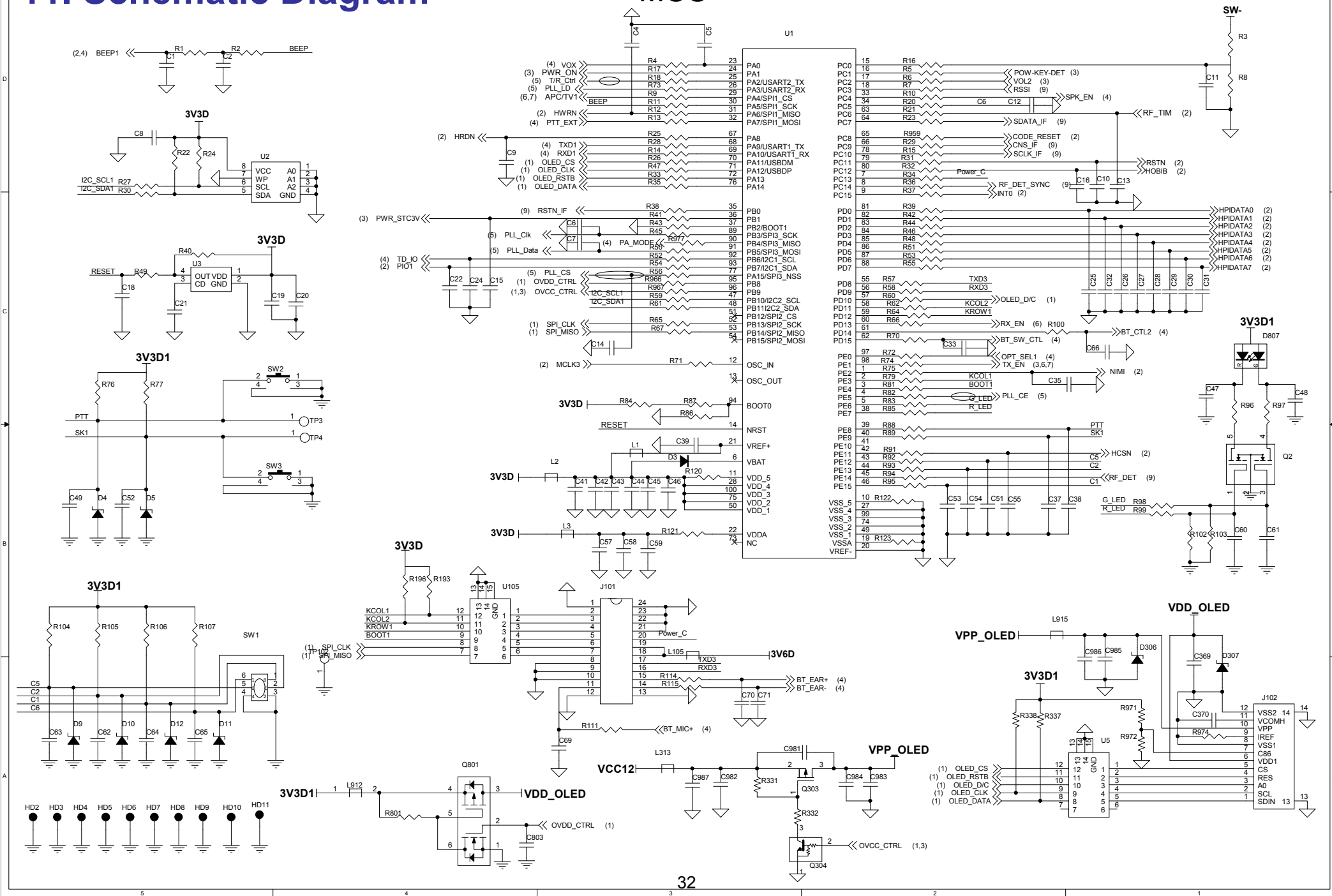
Main Board Bottom Layer



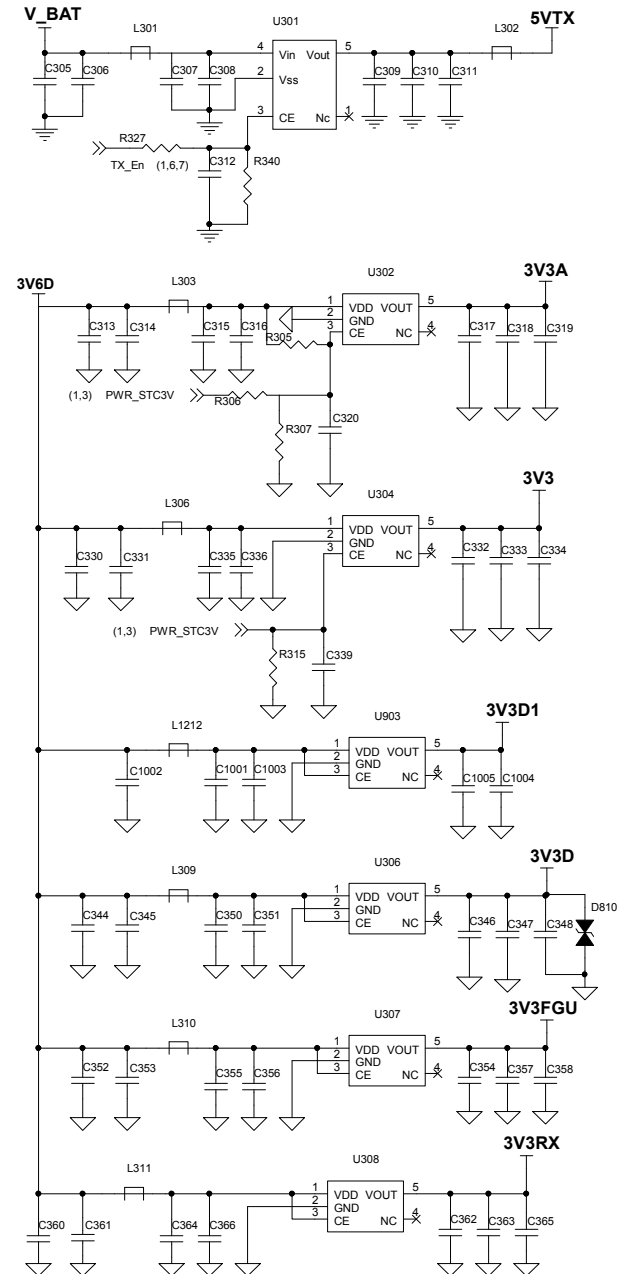
10. Block Diagram



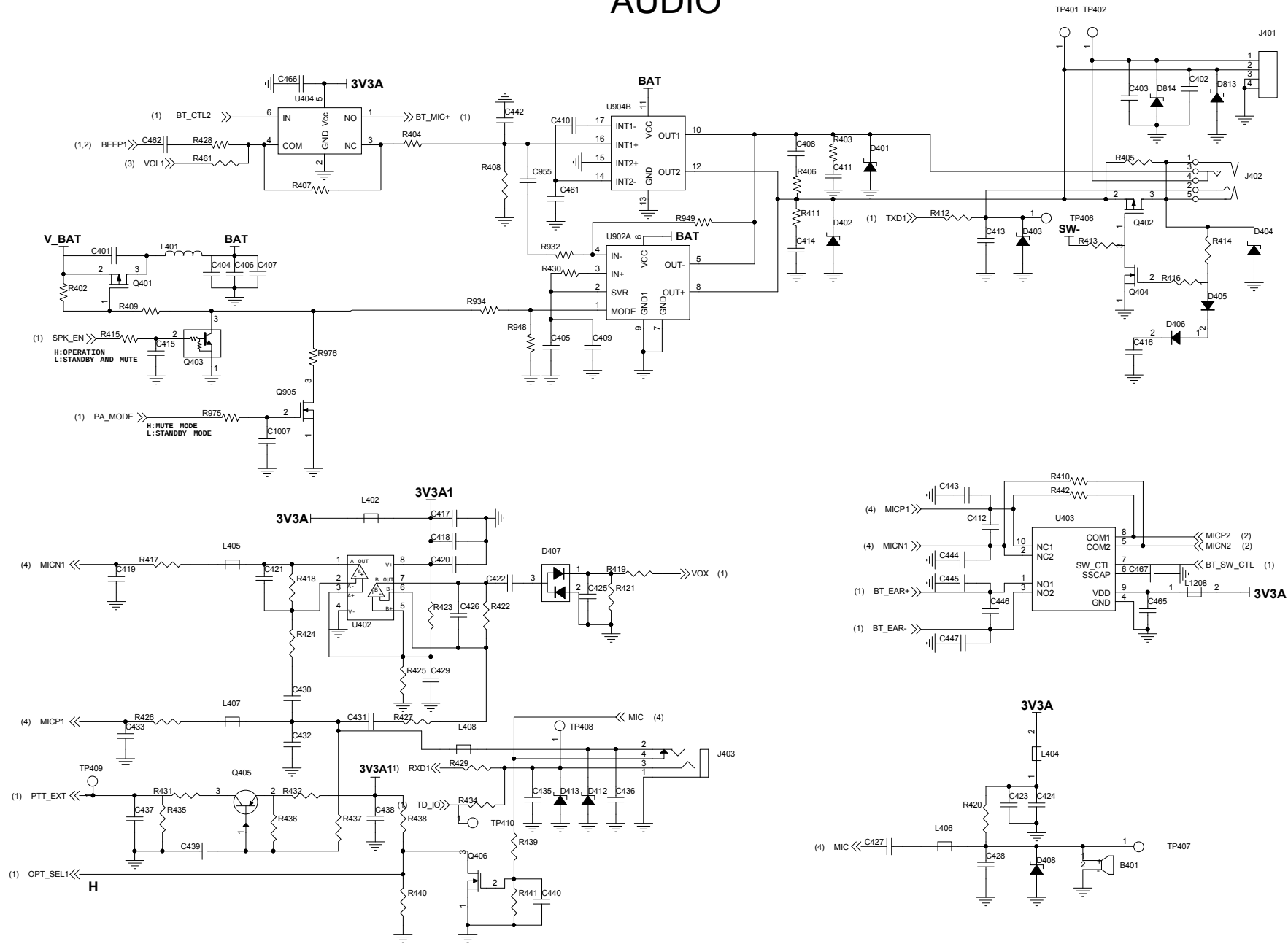
11. Schematic Diagram



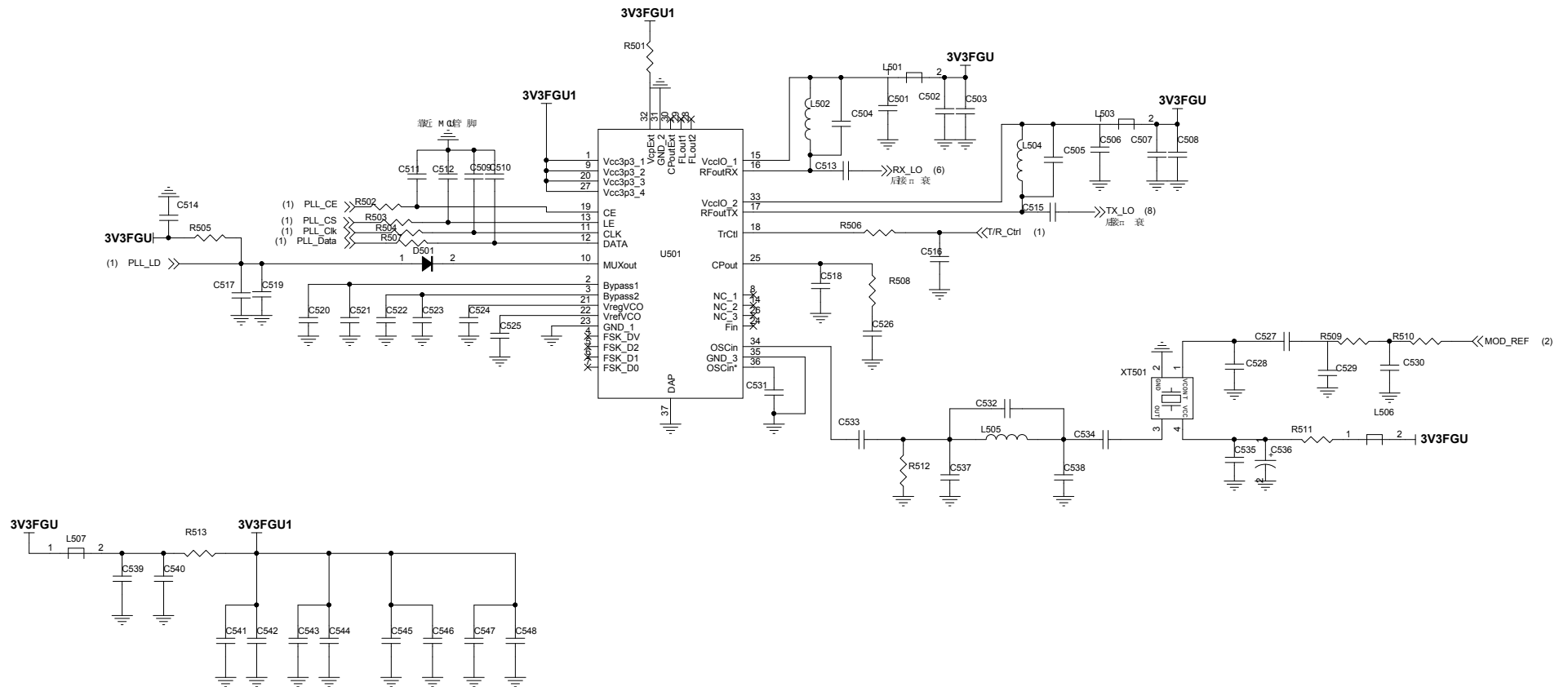
34



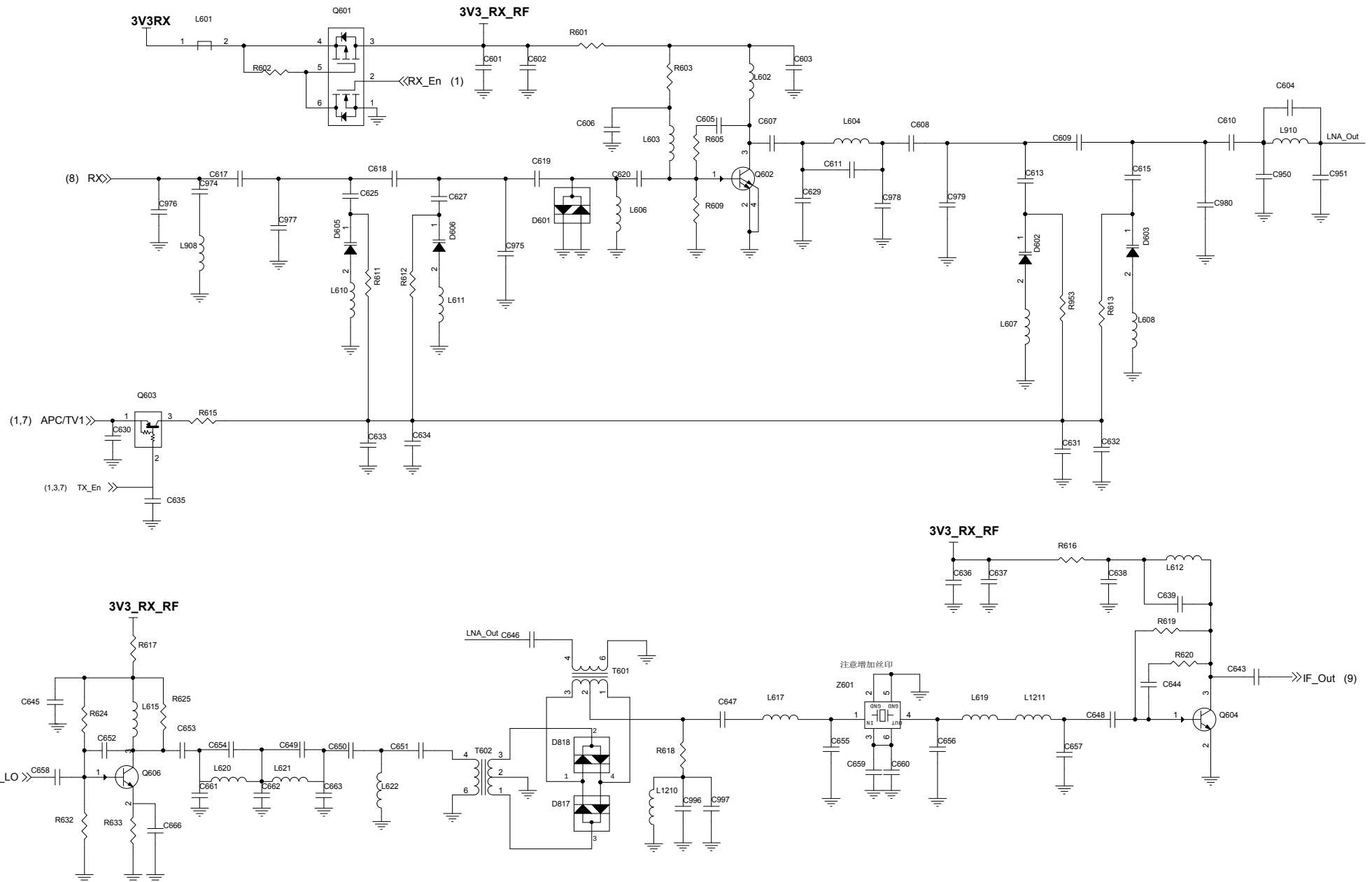
AUDIO



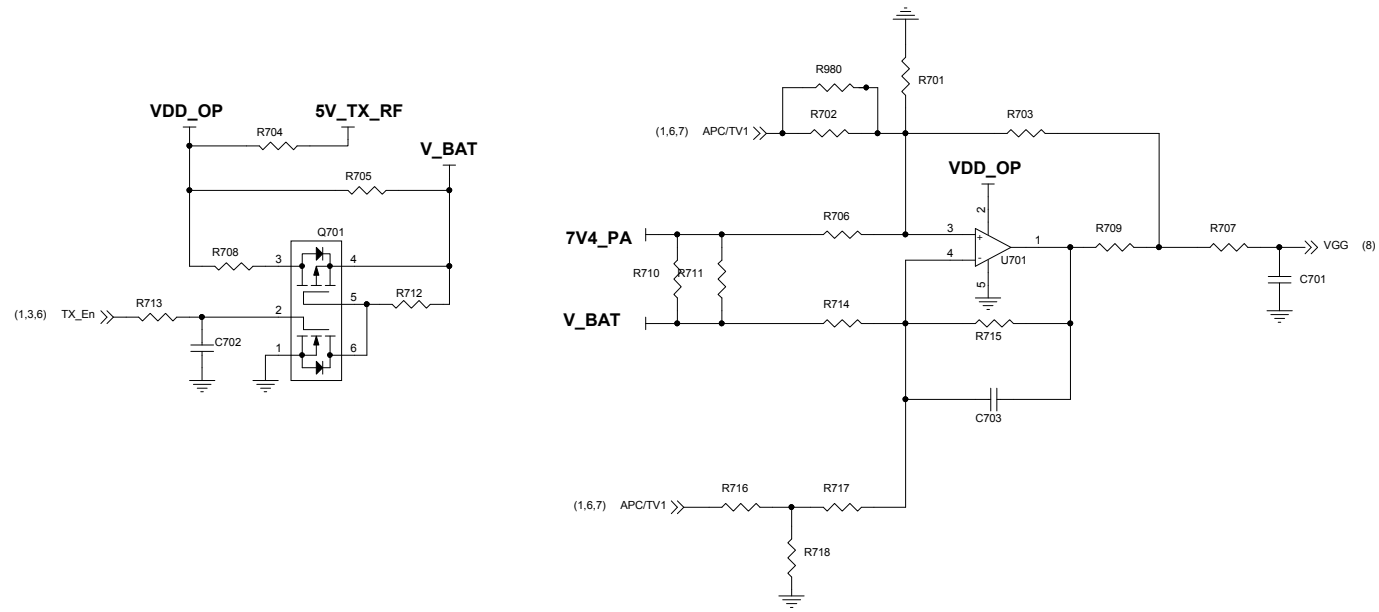
FGU



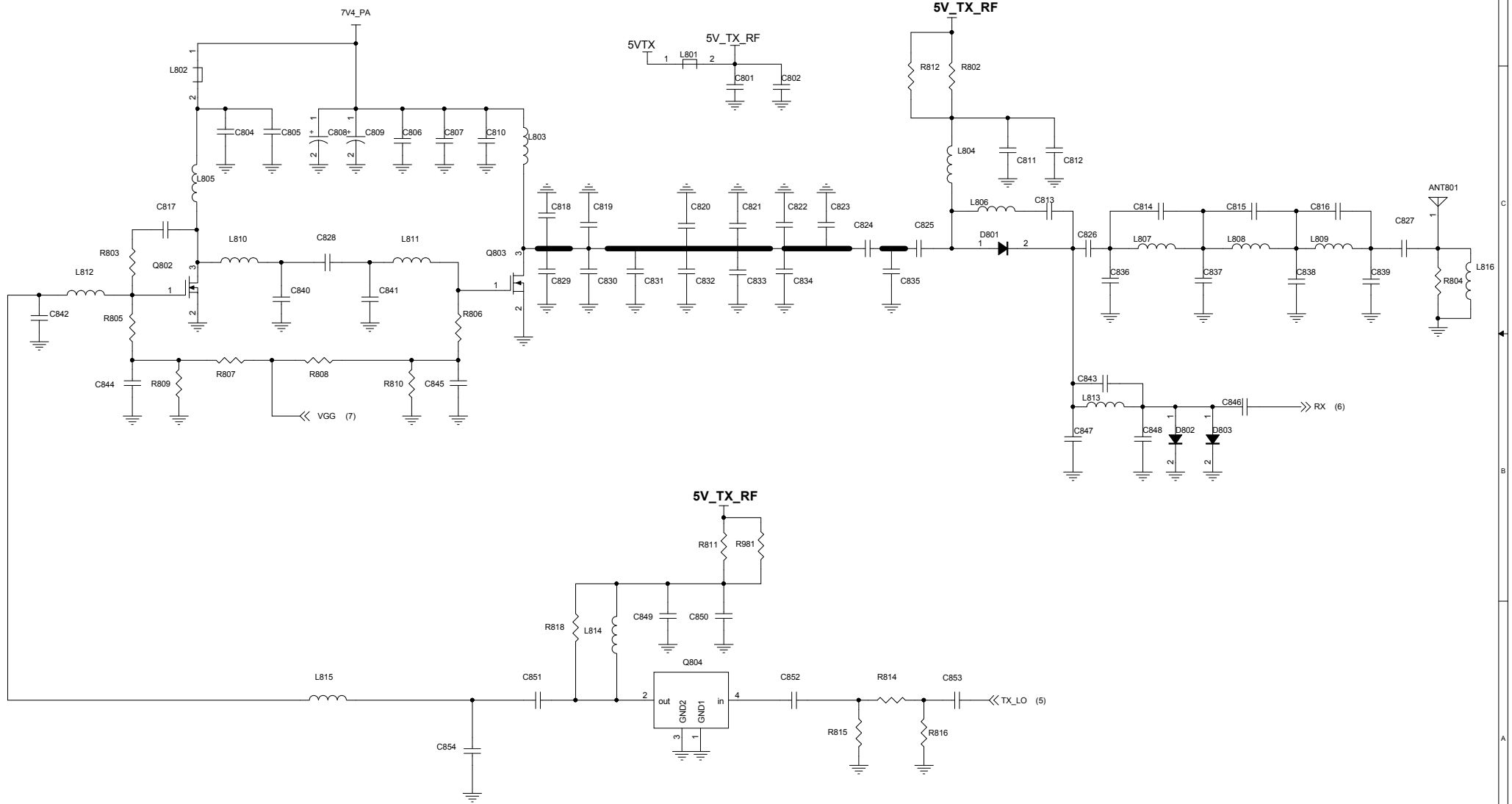
RX MODULE



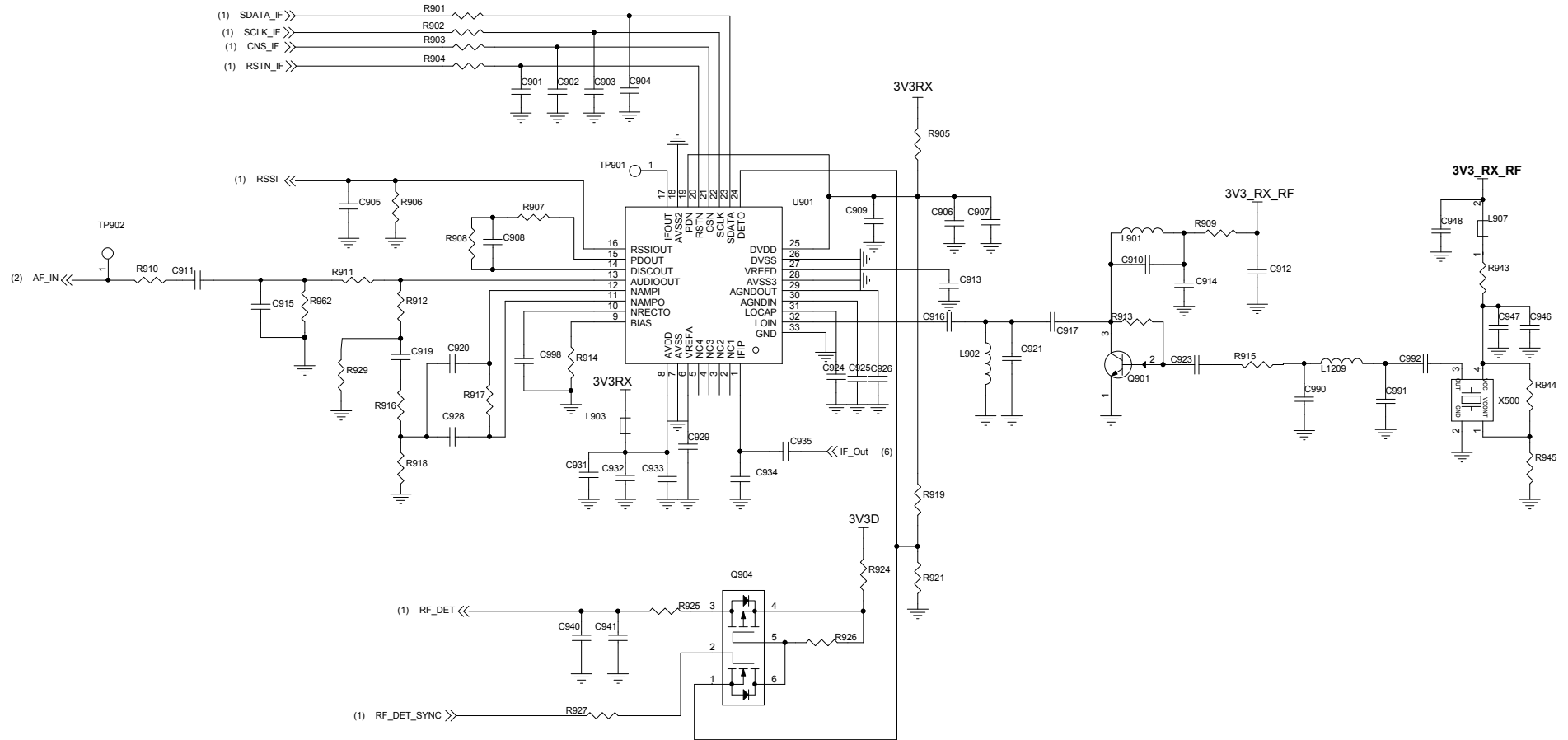
TX-CTRL



TX MODULE



IF PROCESSOR



12. Part List

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
1	/	/	5001010002178A	Main PCB	431	D406	TD5	50050200000044	Switching diode
2	C1	TB9	50020100000306	4700pF	432	D407	TC7	50050900000143	Schottky barrier diode
3	C10	TD10	50020100001190	33pF	433	D408	TE6	50050800000051	ESD protection diode
4	C1001	TA6	50020100000559	1μF	434	D412	TD4	50050800000034	ESD protection diode
5	C1002	TA7	50020100000559	1μF	435	D413	TE4	50050800000034	ESD protection diode
6	C1003	TA7	50020100000093	470pF	436	D5	TA5	50050800000051	ESD protection diode
7	C1004	TA6	50020100000093	470pF	437	D501	BA8	50050200000044	Switching diode
8	C1005	TA6	50020100000559	1μF	438	D601	BC3	50050900000143	Schottky barrier diode
9	C11	TC8	50020100001208	1000pF	439	D602	BD5	50050300000009	Varactor
10	C12	TB9	50020100001190	33pF	440	D603	BD4	50050300000009	Varactor
11	C13	TC10	50020100001190	33pF	441	D605	BC4	50050300000009	Varactor
12	C14	TD10	50020100001190	33pF	442	D606	BC4	50050300000009	Varactor
13	C15	TB9	50020100001392	100pF	443	D801	BB2	50050200000032	Switching diode
14	C16	BD10	50020100001190	33pF	444	D802	BB3	50050200000076	Pin diode
15	C18	TC8	50020100001994	0.01μF	445	D803	BB3	50050200000076	Pin diode
16	C19	TC8	50020100001694	0.22μF	446	D807	TC1	50050600000126	LED
17	C2	TB9	50020100000306	4700pF	447	D817	BD5	50050900000143	Schottky barrier diode
18	C20	TC8	50020100001181	0.1μF	448	D818	BD6	50050900000143	Schottky barrier diode
19	C201	BB10	50020100001050	0.1μF	449	D9	TB2	50050800000051	ESD protection diode
20	C202	BB10	50020100001050	0.1μF	450	J301	BC6	51049900000194	Battery connector
21	C203	BB10	50020100000450	10μF	451	J401	TD2	51040200000337	Board-to-cable connector
22	C206	BB11	50020100001181	0.1μF	452	L1	TB8	50040200000146	Ferrite bead
23	C207	BB10	50020100001181	0.1μF	453	L1209	BC9	50040100000492	220nH
24	C21	TC8	50020100001181	0.1μF	454	L1211	BD7	50040100000543	0.68μH
25	C210	BB10	50020100001181	0.1μF	455	L1212	TA7	50040200000156	Ferrite bead
26	C212	BC10	50020100000450	10μF	456	L2	TB8	50040200000146	Ferrite bead
27	C213	BB11	50020100001190	33pF	457	L201	BB11	50040200000146	Ferrite bead
28	C215	BC10	50020100001181	0.1μF	458	L202	BC10	50040200000146	Ferrite bead

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
29	C216	BC10	50020100001050	0.1μF	459	L203	BC10	50040200000146	Ferrite bead
30	C217	BB11	50020100001190	33pF	460	L205	BC11	50040200000146	Ferrite bead
31	C218	BB11	50020100001190	33pF	461	L206	BD10	50040200000146	Ferrite bead
32	C219	BB10	50020100001166	0.01μF	462	L3	TB8	50040200000146	Ferrite bead
33	C22	TD9	50020100001190	33pF	463	L301	TB7	50040200000156	Ferrite bead
34	C220	BC10	50020100000450	10μF	464	L302	TB6	50040200000156	Ferrite bead
35	C221	BB11	50020100001190	33pF	465	L303	TB7	50040200000156	Ferrite bead
36	C222	BB10	50020100000450	10μF	466	L304	TE7	50040100000337	10μH
37	C223	BC10	50020100001710	0.1μF	467	L305	TE8	50040100000582	3.3μH
38	C224	BC10	50020100001181	0.1μF	468	L306	BE9	50040200000156	Ferrite bead
39	C225	BC11	50020100001994	0.01μF	469	L307	TE8	50040200000146	Ferrite bead
40	C227	BC11	50020100001181	0.1μF	470	L308	TE9	50040100000582	3.3μH
41	C228	BC10	50020100001181	0.1μF	471	L309	TD7	50040200000156	Ferrite bead
42	C230	BC10	50030100001511	1kΩ	472	L310	TA7	50040200000156	Ferrite bead
43	C231	BC10	50020100001181	0.1μF	473	L311	TD6	50040200000156	Ferrite bead
44	C234	BC10	50020100001181	0.1μF	474	L314	TC2	50040200000156	Ferrite bead
45	C235	BC10	50030100001495	330kΩ	475	L401	TB3	50040100000518	3.3μH
46	C236	BC10	50020100001181	0.1μF	476	L402	TD7	50040200000151	Ferrite bead
47	C238	BC11	50020100000093	470pF	477	L404	TE6	50040200000146	Ferrite bead
48	C239	BC11	50020100001181	0.1μF	478	L405	TD6	50040200000146	Ferrite bead
49	C24	TD9	50020100001392	100pF	479	L406	TD6	50040200000146	Ferrite bead
50	C240	BD11	50020100001181	0.1μF	480	L407	TE6	50040200000146	Ferrite bead
51	C241	BD11	50020100001181	0.1μF	481	L408	TD4	50040200000146	Ferrite bead
52	C242	BD11	50020100000093	470pF	482	L501	BA7	50040200000146	Ferrite bead
53	C243	BD11	50020100001181	0.1μF	483	L503	BA9	50040200000146	Ferrite bead
54	C244	TD10	50020100000093	470pF	484	L505	BA9	50040100000532	3.3μH
55	C245	BD11	50020100001181	0.1μF	485	L506	BB9	50040200000146	Ferrite bead
56	C246	TD10	50020100000093	470pF	486	L507	BA8	50040200000146	Ferrite bead
57	C247	TD10	50020100001181	0.1μF	487	L601	TE6	50040200000146	Ferrite bead
58	C248	BD11	50020100000093	470pF	488	L602	BD3	50040100000909	100nH
59	C249	BD11	50020100001181	0.1μF	489	L603	BC3	50040100000513	330nH
60	C25	TD10	50020100001190	33pF	490	L604	BC4	50040100000447	33nH
61	C250	BD11	50020100000093	470pF	491	L606	BC3	50040100000494	18nH
62	C251	BD11	50020100001181	0.1μF	492	L607	BC5	50040300000122	Air-core coil
63	C252	TD10	50020100000093	470pF	493	L608	BE4	50040300000122	Air-core coil
64	C253	BD11	50020100001181	0.1μF	494	L610	BB4	50040300000121	Air-core coil

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
65	C254	BD11	50020100001181	0.1μF	495	L611	BC4	50040300000121	Air-core coil
66	C255	BC11	50020100000093	470pF	496	L612	BE7	50040100000532	3.3μH
67	C256	BC11	50020100001181	0.1μF	497	L615	BB8	50040100000448	39nH
68	C257	BD11	50020100000093	470pF	498	L617	BE6	50040100000540	390nH
69	C258	BC10	50020100001181	0.1μF	499	L619	BD7	50030100001073	0Ω
70	C259	BC11	50020100000093	470pF	500	L620	BC7	50040100000494	18nH
71	C26	TD10	50020100001190	33pF	501	L621	BD7	50040100000494	18nH
72	C260	BD10	50020100001181	0.1μF	502	L622	BD6	50040100000482	39nH
73	C261	BD10	50020100000093	470pF	503	L801	BB6	50040200000156	Ferrite bead
74	C262	BC10	50020100001181	0.1μF	504	L802	BB5	50040200000162	Ferrite bead
75	C263	BD10	50020100000093	470pF	505	L803	BB4	50040300000125	Air-core coil
76	C264	BD11	50020100001181	0.1μF	506	L804	BB2	50040100000969	0.56μH
77	C265	BD10	50020100000093	470pF	507	L805	BB6	50040100000747	1μH
78	C266	BC10	50020100001181	0.1μF	508	L806	BA2	50040100000506	82nH
79	C267	BD10	50020100000093	470pF	509	L807	BC2	50040300000122	Air-core coil
80	C27	TD9	50020100001190	33pF	510	L808	BC2	50040300000122	Air-core coil
81	C28	TD9	50020100001190	33pF	511	L809	BC2	50040300000121	Air-core coil
82	C29	TD9	50020100001190	33pF	512	L810	BB6	50040100000490	8.2nH
83	C30	TD9	50020100001190	33pF	513	L811	BA5	50040100000486	4.7nH
84	C301	TE2	50020100001050	0.1μF	514	L812	BA6	50020100001703	470pF
85	C302	TC7	50020100002216	2.2μF	515	L813	BB3	50040300000122	Air-core coil
86	C303	TC6	50020100001148	10μF	516	L814	BA7	50040100000458	120nH
87	C304	TC6	50020100001050	0.1μF	517	L815	BA6	50040100000490	8.2nH
88	C305	TB7	50020100001247	4.7μF	518	L816	BC2	50040100000960	1μH
89	C306	TB7	50020100000705	100pF	519	L901	BC8	50040100000513	330nH
90	C307	TB7	50020100000371	1μF	520	L902	BC8	50040100000513	330nH
91	C308	TB7	50020100001050	0.1μF	521	L903	BD8	50040200000146	Ferrite bead
92	C309	TA6	50020100000686	2.2μF	522	L906	BD10	50030100001005	0Ω
93	C31	TD9	50020100001190	33pF	523	L907	BC9	50040200000146	Ferrite bead
94	C310	TB6	50020100001050	0.1μF	524	L910	BD5	50030100001005	0Ω
95	C311	TB6	50020100000705	100pF	525	Q2	TB1	50070600000007	Compound MOSFET
96	C312	TA7	50020100001703	470pF	526	Q301	TC6	50070400000010	P-MOSFET
97	C313	TC7	50020100001694	0.22μF	527	Q302	TD7	50070300000055	N-MOSFET
98	C314	TB7	50020100001703	470pF	528	Q401	TB4	50070400000010	P-MOSFET
99	C315	TB7	50020100001247	4.7μF	529	Q402	TD3	50070400000010	P-MOSFET
100	C316	TB7	50020100001050	0.1μF	530	Q403	TA4	50060300000009	Resistor transistor

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
101	C317	TB8	50020100000686	2.2μF	531	Q404	TD4	50070300000055	N-MOSFET
102	C318	TB8	50020100001050	0.1μF	532	Q405	TC6	50060200000036	PNP transistor
103	C319	TC8	50020100000705	100pF	533	Q406	TD5	50070300000055	N-MOSFET
104	C32	TD10	50020100001190	33pF	534	Q601	TE6	50060400000002	Compound transistor
105	C320	TB7	50020100001703	470pF	535	Q602	BD4	50060100000015	NPN transistor
106	C321	TD7	50020100000635	22μF	536	Q603	BB4	50060300000018	Resistor transistor
107	C322	TE8	50020100001050	0.1μF	537	Q604	BE7	50060100000017	NPN transistor
108	C323	TD8	50020100001703	470pF	538	Q606	BB7	50060100000017	NPN transistor
109	C324	TE7	50020100000635	22μF	539	Q701	TB7	50060400000002	Compound transistor
110	C325	TE7	50020100001050	0.1μF	540	Q802	BB6	50070500000003	MOSFET PA
111	C326	TD8	50020100000831	22μF	541	Q803	BA5	50070300000049	N-MOSFET
112	C327	TD8	50020100000831	22μF	542	Q804	BA7	500899000000396	RF IC
113	C328	TE8	50020100001050	0.1μF	543	Q901	BC8	50060100000017	NPN transistor
114	C329	TE8	50020100002156	3900pF	544	Q904	BE8	50060400000002	Compound transistor
115	C33	TC10	50020100001190	33pF	545	R1	TB9	50030100001582	10kΩ
116	C330	BE9	50020100001694	0.22μF	546	R10	TB9	50030100001961	100Ω
117	C331	BE9	50020100001703	470pF	547	R100	TC10	50030100001511	1kΩ
118	C332	BE10	50020100000686	2.2μF	548	R102	TB1	50030100001917	100kΩ
119	C333	BE10	50020100001050	0.1μF	549	R103	TB1	50030100001917	100kΩ
120	C334	BE10	50020100000705	100pF	550	R104	TA2	50030100000012	47kΩ
121	C335	BE10	50020100001247	4.7μF	551	R105	TA2	50030100000012	47kΩ
122	C336	BE10	50020100001050	0.1μF	552	R106	TA2	50030100000012	47kΩ
123	C337	TD8	50020100001050	0.1μF	553	R107	TA2	50030100000012	47kΩ
124	C338	TD9	50020100000709	1μF	554	R11	TB9	50030100001961	100Ω
125	C339	BE10	50020100001703	470pF	555	R12	TB9	50030100001511	1kΩ
126	C340	TE9	50020100001882	22μF	556	R120	TC8	50030100000867	0Ω
127	C341	TE9	50020100001882	22μF	557	R121	TB8	50030100000867	0Ω
128	C342	TE9	50020100001050	0.1μF	558	R122	TC8	50030100000867	0Ω
129	C343	TE9	50020100000705	100pF	559	R123	TB8	50030100000867	0Ω
130	C344	TD8	50020100001694	0.22μF	560	R13	TB9	50030100001961	100Ω
131	C345	TD7	50020100001703	470pF	561	R14	TC10	50030100001961	100Ω
132	C346	TD7	50020100000686	2.2μF	562	R15	TD10	50030100001961	100Ω
133	C347	TD8	50020100001050	0.1μF	563	R16	TC8	50030100001961	100Ω
134	C348	TD8	50020100000705	100pF	564	R17	TB8	50030100001961	100Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
135	C349	TB2	50020100001166	0.01μF	565	R18	TB8	50030100001961	100Ω
136	C35	BD10	50020100001190	33pF	566	R2	TB9	50030100001299	4.7kΩ
137	C350	TC7	50020100001247	4.7μF	567	R20	TB9	50030100001961	100Ω
138	C351	TD7	50020100001050	0.1μF	568	R201	BB10	50030100001493	33Ω
139	C352	TA7	50020100001694	0.22μF	569	R202	BB11	50030100001493	33Ω
140	C353	TA7	50020100001703	470pF	570	R204	BC11	50030100000012	47kΩ
141	C354	TA8	50020100000686	2.2μF	571	R205	BB11	50030100001493	33Ω
142	C355	TA7	50020100001247	4.7μF	572	R206	BC10	50030100000012	47kΩ
143	C356	TA7	50020100001050	0.1μF	573	R207	BB11	50030100001493	33Ω
144	C357	TA8	50020100001050	0.1μF	574	R208	BB11	50030100001493	33Ω
145	C358	TA8	50020100000705	100pF	575	R21	TC10	50030100001511	1kΩ
146	C359	TD7	50020100000709	1μF	576	R210	BB11	50030100001493	33Ω
147	C360	TD7	50020100001694	0.22μF	577	R211	BB10	50030100001644	1kΩ
148	C361	TD7	50020100001703	470pF	578	R212	BC10	50030100000876	5.6kΩ
149	C362	TE6	50020100000686	2.2μF	579	R213	BC10	50030100000219	22Ω
150	C363	TE6	50020100001050	0.1μF	580	R214	BD10	50030100000298	10Ω
151	C364	TD7	50020100001247	4.7μF	581	R215	BD10	50030100000298	10Ω
152	C365	TE6	50020100000705	100pF	582	R216	BD10	50030100000298	10Ω
153	C366	TD6	50020100001050	0.1μF	583	R219	BC11	50030100001005	0Ω
154	C367	TD2	50020100001392	100pF	584	R22	BA10	50030100001299	4.7kΩ
155	C37	TB9	50020100001190	33pF	585	R222	BC10	50030100001582	10kΩ
156	C375	TD2	50020100001050	0.1μF	586	R223	BC10	50030100001582	10kΩ
157	C376	BD2	50020100001050	0.1μF	587	R23	TC10	50030100001961	100Ω
158	C377	BD2	50020100001050	0.1μF	588	R24	BA10	50030100001299	4.7kΩ
159	C379	BD2	50020100001050	0.1μF	589	R25	TC10	50030100001511	1kΩ
160	C38	TB9	50020100001190	33pF	590	R26	TC10	50030100001961	100Ω
161	C386	BD1	50020100001392	100pF	591	R27	BA10	50030100000816	47Ω
162	C387	TC8	50020100001181	0.1μF	592	R28	TC10	50030100001961	100Ω
163	C388	TC7	50020100001181	0.1μF	593	R29	TC10	50030100001961	100Ω
164	C389	TC8	50020100000709	1μF	594	R3	TC8	50030100000747	330kΩ
165	C39	TB8	50020100001181	0.1μF	595	R30	BA10	50030100000816	47Ω
166	C390	TC7	50020100000709	1μF	596	R301	TC7	50030100000270	470kΩ
167	C4	TB9	50020100001190	33pF	597	R303	TC7	50030100001664	47kΩ
168	C401	TB4	50020100001710	0.1μF	598	R304	TD1	50030100001537	5.6kΩ
169	C402	TD2	50020100000815	27pF	599	R305	TB8	50030100001369	10kΩ
170	C403	TD2	50020100000815	27pF	600	R306	TB7	50030100001005	0Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
171	C404	TA3	50020100000326	10μF	601	R307	TB7	50030100001917	100kΩ
172	C406	TA3	50020100000326	10μF	602	R308	TE9	50030100000949	100kΩ
173	C407	TA3	50020100001644	1000pF	603	R309	TE8	50030100001701	180kΩ
174	C41	TB9	50020100001181	0.1μF	604	R31	TD10	50030100001511	1kΩ
175	C410	TA2	50020100001148	10μF	605	R310	TC2	50030100000179	15kΩ
176	C411	TB3	50020100001050	0.1μF	606	R311	TE8	50030100000949	100kΩ
177	C412	BB10	50020100001673	270pF	607	R312	TE8	50030100001017	51kΩ
178	C413	TD4	50020100002051	10pF	608	R313	TE8	50030100001917	100kΩ
179	C414	TB2	50020100001050	0.1μF	609	R314	TE8	50030100001917	100kΩ
180	C415	TA4	50020100001703	470pF	610	R315	BE10	50030100001917	100kΩ
181	C416	TD5	50020100001050	0.1μF	611	R317	TE9	50030100001017	51kΩ
182	C417	TD7	50020100001694	0.22μF	612	R319	TE9	50030100000949	100kΩ
183	C418	TD6	50020100001050	0.1μF	613	R32	TD10	50030100001511	1kΩ
184	C419	TD6	50020100001703	470pF	614	R320	TD7	50030100001664	47kΩ
185	C42	TD8	50020100001181	0.1μF	615	R321	TD7	50030100001644	1kΩ
186	C420	TD6	50020100001644	1000pF	616	R322	TD7	50030100001664	47kΩ
187	C421	TD6	50020100000344	22pF	617	R323	TE7	50030100001369	10kΩ
188	C422	TC6	50020100000709	1μF	618	R324	TE7	50030100001664	47kΩ
189	C423	TD6	50020100001050	0.1μF	619	R326	TE9	50030100001917	100kΩ
190	C424	TE6	50020100001644	1000pF	620	R327	TA7	50030100001005	0Ω
191	C425	TC7	50020100000709	1μF	621	R329	BD2	50030100000250	30kΩ
192	C426	TC6	50020100000344	22pF	622	R33	TD10	50030100001961	100Ω
193	C427	TD5	50020100001710	0.1μF	623	R330	BD2	50030100000250	30kΩ
194	C428	TE6	50020100001644	1000pF	624	R334	TC8	50030100000680	47kΩ
195	C429	TC6	50020100001050	0.1μF	625	R335	TC8	50030100000133	51kΩ
196	C43	TC8	50020100001181	0.1μF	626	R336	TC7	50030100000522	33kΩ
197	C430	TE6	50020100001050	0.1μF	627	R339	TC7	50030100000133	51kΩ
198	C431	TD6	50020100001050	0.1μF	628	R34	TC8	50030100001961	100Ω
199	C432	TD4	50020100001644	1000pF	629	R340	TA7	50030100001369	10kΩ
200	C433	TD6	50020100001703	470pF	630	R35	TD10	50030100001961	100Ω
201	C435	TE4	50020100002051	10pF	631	R36	TC8	50030100001961	100Ω
202	C436	TD4	50020100000705	100pF	632	R37	TD8	50030100001511	1kΩ
203	C437	TD6	50020100001050	0.1μF	633	R38	TB9	50030100001961	100Ω
204	C438	TC5	50020100001644	1000pF	634	R39	TD10	50030100001511	1kΩ
205	C439	TD5	50020100001644	1000pF	635	R4	TB8	50030100001961	100Ω
206	C44	TD10	50020100001181	0.1μF	636	R40	TC8	50030100001582	10kΩ

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
207	C440	TD6	50020100001050	0.1μF	637	R402	TB4	50030100001664	47kΩ
208	C442	TA3	50020100000063	0.027μF	638	R403	TB3	50030100001040	4.7Ω
209	C443	BB10	50020100001673	270pF	639	R404	BC10	50030100001005	0Ω
210	C444	BB10	50020100001673	270pF	640	R407	BC10	50030100000867	0Ω
211	C45	TB10	50020100000093	470pF	641	R408	TA3	50030100001369	10kΩ
212	C46	TB8	50020100000093	470pF	642	R409	TA4	50030100000276	680Ω
213	C461	TA2	50020100001166	0.01μF	643	R41	TB9	50030100001961	100Ω
214	C462	BC10	50020100001181	0.1μF	644	R410	BB10	50030100000867	0Ω
215	C47	TC1	50020100001181	0.1μF	645	R411	TB2	50030100001040	4.7Ω
216	C48	TC2	50020100001181	0.1μF	646	R412	TE4	50030100001783	33Ω
217	C49	TA3	50020100000093	470pF	647	R413	TD2	50030100001664	47kΩ
218	C5	TB8	50020100001190	33pF	648	R414	TE4	50030100001005	0Ω
219	C501	BB8	50020100000705	100pF	649	R415	TA4	50030100001644	1kΩ
220	C502	BA7	50020100001703	470pF	650	R416	TE4	50030100001644	1kΩ
221	C503	BA7	50020100001050	0.1μF	651	R417	TD6	50030100000469	100Ω
222	C506	BB8	50020100000705	100pF	652	R418	TD6	50030100001369	10kΩ
223	C507	BA9	50020100001703	470pF	653	R419	TC7	50030100001369	10kΩ
224	C508	BB9	50020100001050	0.1μF	654	R42	TD10	50030100001511	1kΩ
225	C509	BA8	50020100001190	33pF	655	R420	TE6	50030100000590	2.2kΩ
226	C51	TB9	50020100001190	33pF	656	R421	TC7	50030100001525	220kΩ
227	C510	BA8	50020100001190	33pF	657	R422	TC6	50030100000710	1MΩ
228	C511	BB8	50020100001190	33pF	658	R423	TD6	50030100001664	47kΩ
229	C512	BA8	50020100001190	33pF	659	R424	TE6	50030100001369	10kΩ
230	C513	BB8	50020100000705	100pF	660	R425	TC6	50030100001664	47kΩ
231	C514	BA7	50020100001050	0.1μF	661	R426	TD6	50030100000469	100Ω
232	C515	BB8	50020100000705	100pF	662	R427	TD6	50030100001369	10kΩ
233	C516	BB8	50020100001000	33pF	663	R428	BC10	50030100001582	10kΩ
234	C517	BA8	50020100001050	0.1μF	664	R429	TE4	50030100001783	33Ω
235	C518	BB8	50020100000934	390pF	665	R43	TB9	50030100000012	47kΩ
236	C519	BA8	50020100001703	470pF	666	R431	TC6	50030100000590	2.2kΩ
237	C52	TA6	50020100000093	470pF	667	R432	TC6	50030100000252	330Ω
238	C520	BA9	50020100001050	0.1μF	668	R435	TD6	50030100000949	100kΩ
239	C521	BA8	50020100001703	470pF	669	R436	TC6	50030100002036	4.7kΩ
240	C522	BA8	50020100001050	0.1μF	670	R437	TD4	50030100000590	2.2kΩ
241	C523	BA8	50020100001703	470pF	671	R438	TC5	50030100001369	10kΩ
242	C524	BB8	50020100000724	2.2μF	672	R439	TD5	50030100001369	10kΩ

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
243	C525	BB8	50020100001050	0.1μF	673	R44	TD10	50030100001511	1kΩ
244	C526	BB9	50020100000011	4700pF	674	R440	TD6	50030100000949	100kΩ
245	C527	BB9	50030100001005	0Ω	675	R441	TD6	50030100000710	1MΩ
246	C53	TB10	50020100001190	33pF	676	R442	BB10	50030100000867	0Ω
247	C530	BB9	50020100000736	5600pF	677	R45	TD9	50030100001961	100Ω
248	C531	BA9	50020100001050	0.1μF	678	R46	TD9	50030100001511	1kΩ
249	C533	BA9	50020100001644	1000pF	679	R461	BC10	50030100001005	0Ω
250	C534	BA9	50020100001644	1000pF	680	R47	TC10	50030100001961	100Ω
251	C535	BB9	50020100001050	0.1μF	681	R48	TD9	50030100001511	1kΩ
252	C536	BB9	50020100000450	10μF	682	R49	TC8	50030100001511	1kΩ
253	C539	BA8	50020100001050	0.1μF	683	R5	TC8	50030100001961	100Ω
254	C54	TB10	50020100001190	33pF	684	R50	TD9	50030100001961	100Ω
255	C540	BA8	50020100000093	470pF	685	R501	BB9	50030100001067	5.6Ω
256	C541	BB9	50020100001181	0.1μF	686	R502	BB8	50030100000298	10Ω
257	C542	BB8	50020100000093	470pF	687	R503	BA8	50030100000298	10Ω
258	C543	BA8	50020100000093	470pF	688	R504	BA8	50030100000298	10Ω
259	C544	BA9	50020100001181	0.1μF	689	R505	BA8	50030100001369	10kΩ
260	C545	BB8	50020100001181	0.1μF	690	R506	BB8	50030100000550	10Ω
261	C546	BA8	50020100000093	470pF	691	R507	BA8	50030100000298	10Ω
262	C547	BA9	50020100001181	0.1μF	692	R508	BB9	50030100000640	680Ω
263	C548	BB9	50020100000093	470pF	693	R509	BB9	50030100001005	0Ω
264	C55	TB9	50020100001190	33pF	694	R51	TD9	50030100001511	1kΩ
265	C57	TB8	50020100000686	2.2μF	695	R510	BB9	50030100001644	1kΩ
266	C58	TB8	50020100001994	0.01μF	696	R511	BB9	50030100000550	10Ω
267	C59	TB8	50020100000093	470pF	697	R513	BA8	50030100001067	5.6Ω
268	C6	TD9	50020100001190	33pF	698	R52	TD9	50030100001961	100Ω
269	C60	TB1	50020100000093	470pF	699	R53	TD9	50030100001511	1kΩ
270	C601	TE6	50020100001050	0.1μF	700	R54	TD9	50030100001511	1kΩ
271	C602	TE6	50020100001703	470pF	701	R55	TD9	50030100001511	1kΩ
272	C603	BD3	50020100001644	1000pF	702	R56	TD10	50030100001961	100Ω
273	C605	BC4	50020100000705	100pF	703	R57	TB10	50030100001961	100Ω
274	C606	BC3	50020100001050	0.1μF	704	R58	TB10	50030100001961	100Ω
275	C607	BD4	50020100002192	20pF	705	R59	TB10	50030100001961	100Ω
276	C608	BD4	50020100001829	9pF	706	R6	TB8	50030100001961	100Ω
277	C609	BD4	50020100000877	3.3pF	707	R60	TB10	50030100001961	100Ω
278	C61	TB1	50020100000093	470pF	708	R601	BD3	50030100001788	68Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
279	C610	BD4	50020100000885	6.8pF	709	R602	TE6	50030100000157	82kΩ
280	C611	BC4	50020100002050	3pF	710	R603	BC3	50030100001369	10kΩ
281	C613	BD4	50020100000705	100pF	711	R605	BC4	50030100000590	2.2kΩ
282	C615	BD4	50020100000705	100pF	712	R609	BC3	50030100001653	12kΩ
283	C617	BC3	50020100001829	9pF	713	R61	TB10	50030100001961	100Ω
284	C618	BC3	50020100000313	4pF	714	R611	BC4	50030100000949	100kΩ
285	C619	BC3	50020100001829	9pF	715	R612	BC4	50030100000949	100kΩ
286	C62	TA2	50020100000093	470pF	716	R613	BD4	50030100000949	100kΩ
287	C620	BC3	50020100002192	20pF	717	R615	BC4	50030100001369	10kΩ
288	C625	BC4	50020100000705	100pF	718	R616	BE7	50030100000252	330Ω
289	C627	BC3	50020100000705	100pF	719	R617	BB8	50030100001783	33Ω
290	C629	BC4	50020100000313	4pF	720	R619	BE7	50030100000747	330kΩ
291	C63	TA2	50020100000093	470pF	721	R62	TC10	50030100001961	100Ω
292	C630	BB4	50020100001703	470pF	722	R620	BE7	50030100000170	6.8kΩ
293	C631	BD5	50020100001703	470pF	723	R624	BB8	50030100001653	12kΩ
294	C632	BD5	50020100001703	470pF	724	R625	BB8	50030100000382	3.3kΩ
295	C633	BC4	50020100001703	470pF	725	R632	BB7	50030100000614	8.2kΩ
296	C634	BC4	50020100001166	0.01μF	726	R633	BB7	50030100000550	10Ω
297	C635	BC4	50020100000705	100pF	727	R64	TC10	50030100001961	100Ω
298	C636	BE7	50020100000346	0.022μF	728	R65	TB10	50030100001961	100Ω
299	C637	BE7	50020100001050	0.1μF	729	R66	TC10	50030100001961	100Ω
300	C638	BE7	50020100000346	0.022μF	730	R67	TB10	50030100001961	100Ω
301	C64	TA2	50020100000093	470pF	731	R7	TB8	50030100001961	100Ω
302	C643	BD7	50020100000011	4700pF	732	R70	TC10	50030100001511	1kΩ
303	C644	BE7	50020100001166	0.01μF	733	R702	TB6	50030100001525	220kΩ
304	C645	BB8	50020100001703	470pF	734	R703	TB6	50030100000270	470kΩ
305	C646	BD5	50030100001505	18Ω	735	R706	TB6	50030100001939	150kΩ
306	C647	BE6	50020100001050	0.1μF	736	R707	TB6	50030100001005	0Ω
307	C648	BD7	50020100001166	0.01μF	737	R708	TB7	50030100001005	0Ω
308	C649	BD7	50020100001036	5pF	738	R709	TB6	50030100000276	680Ω
309	C65	TA2	50020100000093	470pF	739	R71	TC8	50030100000867	0Ω
310	C650	BD7	50020100001000	33pF	740	R710	TC6	50030100000096	0.25Ω
311	C651	BD6	50020100000705	100pF	741	R711	TC6	50030100000096	0.25Ω
312	C653	BC7	50020100001633	8pF	742	R712	TB7	50030100000157	82kΩ
313	C654	BC7	50020100000877	3.3pF	743	R713	TB7	50030100001644	1kΩ
314	C655	BE6	50020100001030	15pF	744	R714	TB6	50030100001939	150kΩ

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
315	C656	BD7	50020100001030	15pF	745	R715	TB6	50030100000270	470kΩ
316	C657	BD7	50020100001030	15pF	746	R716	TB6	50030100000590	2.2kΩ
317	C658	BB7	50020100001703	470pF	747	R717	TB6	50030100001525	220kΩ
318	C66	TC10	50020100001190	33pF	748	R718	TB6	50030100001653	12kΩ
319	C660	BD7	50020100000885	6.8pF	749	R72	TD9	50030100001961	100Ω
320	C662	BC7	50020100001829	9pF	750	R73	TB9	50030100001961	100Ω
321	C663	BD7	50020100002050	3pF	751	R74	TD9	50030100001961	100Ω
322	C666	BB7	50020100001703	470pF	752	R75	BD10	50030100001511	1kΩ
323	C7	TD9	50020100001190	33pF	753	R76	TA3	50030100000012	47kΩ
324	C702	TB6	50020100001703	470pF	754	R77	TA6	50030100000012	47kΩ
325	C703	TB6	50020100000731	47pF	755	R79	TD8	50030100001961	100Ω
326	C8	BA10	50020100001181	0.1μF	756	R8	TC8	50030100001939	150kΩ
327	C801	BB7	50020100001050	0.1μF	757	R802	BB2	50030100001736	270Ω
328	C802	BB7	50020100001703	470pF	758	R803	BA6	50030100002013	220Ω
329	C804	BB6	50020100001050	0.1μF	759	R804	BC2	50030100001369	10kΩ
330	C805	BB5	50020100001703	470pF	760	R805	BA6	50030100000729	47Ω
331	C806	BC5	50020100001050	0.1μF	761	R806	BA5	50030100000729	47Ω
332	C807	BC4	50020100001703	470pF	762	R807	BA6	50030100002036	4.7kΩ
333	C808	BC5	50020100000635	22μF	763	R808	BA5	50030100000170	6.8kΩ
334	C809	BC4	50020100000635	22μF	764	R81	TC8	50030100001961	100Ω
335	C810	BC5	50020100001705	56pF	765	R810	BA5	50030100001369	10kΩ
336	C811	BB2	50020100001703	470pF	766	R811	BB6	50030100001314	68Ω
337	C812	BB2	50020100001050	0.1μF	767	R812	BB2	50030100001736	270Ω
338	C813	BB2	50020100000558	120pF	768	R814	BB7	50030100001005	0Ω
339	C814	BC2	50020100001025	1.5pF	769	R818	BA6	50030100000469	100Ω
340	C815	BC2	50020100000362	2pF	770	R82	TC8	50030100001961	100Ω
341	C816	BD2	50020100001025	1.5pF	771	R83	TC8	50030100001961	100Ω
342	C817	BA6	50020100000353	390pF	772	R85	TB9	50030100001961	100Ω
343	C818	BB4	50020100000427	8pF	773	R86	TD9	50030100000012	47kΩ
344	C819	BA3	50020100000427	8pF	774	R87	TD9	50030100001299	4.7kΩ
345	C820	BA4	50020100000798	43pF	775	R88	TB9	50030100001961	100Ω
346	C821	BA4	50020100001659	22pF	776	R89	TB9	50030100001961	100Ω
347	C822	BA4	50020100000145	18pF	777	R9	TB9	50030100001961	100Ω
348	C824	BA2	50040300000109	Air-core coil	778	R901	BD9	50030100001783	33Ω
349	C825	BA2	50020100001986	100pF	779	R902	BD9	50030100001783	33Ω
350	C826	BB2	50020100000281	470pF	780	R903	BD9	50030100001783	33Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
351	C827	BC2	50020100000281	470pF	781	R904	BD9	50030100001783	33Ω
352	C828	BB5	50020100000705	100pF	782	R905	BD9	50030100001040	4.7Ω
353	C831	BB3	50020100001850	2.2pF	783	R906	BD9	50030100001017	51kΩ
354	C832	BB4	50020100000427	8pF	784	R907	BD9	50030100001525	220kΩ
355	C833	BA3	50020100000267	3.6pF	785	R908	BD9	50030100000710	1MΩ
356	C835	BA2	50020100001876	3.3pF	786	R909	BC8	50030100000469	100Ω
357	C836	BB2	50020100000658	4pF	787	R91	TB10	50030100001961	100Ω
358	C837	BC2	50020100000427	8pF	788	R910	BD9	50030100000932	27kΩ
359	C838	BC2	50020100000427	8pF	789	R911	BD9	50030100000382	3.3kΩ
360	C839	BC2	50020100001025	1.5pF	790	R912	BD9	50030100000382	3.3kΩ
361	C841	BB5	50020100002192	20pF	791	R913	BC8	50030100000747	330kΩ
362	C844	BA6	50020100001050	0.1μF	792	R914	BD8	50030100001664	47kΩ
363	C845	BA5	50020100000170	0.068μF	793	R915	BC9	50030100001005	0Ω
364	C846	BB3	50020100001644	1000pF	794	R916	BD8	50030100000270	470kΩ
365	C847	BB2	50020100001036	5pF	795	R917	BD8	50030100001364	120kΩ
366	C848	BB3	50020100000315	6pF	796	R918	BD8	50030100000382	3.3kΩ
367	C849	BA7	50020100001703	470pF	797	R919	BC9	50030100001369	10kΩ
368	C850	BA7	50020100001050	0.1μF	798	R92	TB10	50030100001961	100Ω
369	C851	BA6	50020100001703	470pF	799	R921	BC9	50030100000949	100kΩ
370	C852	BB7	50020100001703	470pF	800	R924	BE9	50030100000550	10Ω
371	C853	BB7	50020100001703	470pF	801	R925	BE8	50030100001644	1kΩ
372	C854	BA6	50020100001633	8pF	802	R926	BE9	50030100001369	10kΩ
373	C9	TC10	50020100001190	33pF	803	R927	BE8	50030100000949	100kΩ
374	C901	BD9	50020100000705	100pF	804	R929	BD9	50020100001703	470pF
375	C902	BD9	50020100000705	100pF	805	R93	TB10	50030100001961	100Ω
376	C903	BD9	50020100000705	100pF	806	R94	TB10	50030100001961	100Ω
377	C904	BD9	50020100000705	100pF	807	R943	BC9	50030100001005	0Ω
378	C905	BD9	50020100001644	1000pF	808	R945	BC9	50030100001005	0Ω
379	C906	BD9	50020100000450	10μF	809	R95	TB10	50030100001961	100Ω
380	C907	BD9	50020100001050	0.1μF	810	R953	BD5	50030100000949	100kΩ
381	C908	BD9	50020100001644	1000pF	811	R958	BB10	50030100001582	10kΩ
382	C909	BC9	50020100001703	470pF	812	R959	BC10	50030100001961	100Ω
383	C910	BC8	50020100002192	20pF	813	R96	TC1	50030100001456	120Ω
384	C911	BD9	50020100000450	10μF	814	R966	TB6	50030100001961	100Ω
385	C912	BC8	50020100001050	0.1μF	815	R967	TC10	50030100001961	100Ω
386	C913	BC9	50020100001694	0.22μF	816	R97	TC2	50030100001788	68Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
387	C914	BC8	50020100001166	0.01μF	817	R977	TD9	50030100001961	100Ω
388	C915	BD9	50020100000236	2200pF	818	R978	BB11	50030100000012	47kΩ
389	C916	BD8	50020100000705	100pF	819	R979	BB10	50030100000012	47kΩ
390	C917	BC8	50020100001036	5pF	820	R98	TB2	50030100001299	4.7kΩ
391	C919	BD9	50020100001644	1000pF	821	R980	TB6	50030100000577	10MΩ
392	C920	BD8	50020100000043	180pF	822	R981	BB7	50030100001314	68Ω
393	C921	BC8	50020100000720	18pF	823	R99	TB2	50030100001299	4.7kΩ
394	C923	BC8	50020100001644	1000pF	824	SH_A	/	5111000001464A	Shielding cover
395	C924	BC8	50020100000705	100pF	825	SH_B	/	5111000001716A	Shielding cover
396	C925	BC9	50020100000709	1μF	826	SH_C	/	5111000001004A	Shielding cover
397	C926	BC9	50020100000709	1μF	827	SH_D	/	5111000000358A	Shielding cover
398	C928	BD8	50020100000043	180pF	828	SH_E	/	5111000001599A	Shielding cover
399	C929	BD8	50020100001694	0.22μF	829	SH_F	/	5120000000130A	MCF shielding mask
400	C931	BD8	50020100000450	10μF	830	SW2	BA3	51010600000016	Momentary contact switch
401	C932	BD8	50020100001050	0.1μF	831	SW3	BA6	51010600000016	Momentary contact switch
402	C933	BD8	50020100001703	470pF	832	T601	BE5	50040500000028	Transformer
403	C935	BD8	50020100000705	100pF	833	T602	BD5	50040500000028	Transformer
404	C940	BE8	50030100000747	330kΩ	834	U1	TC9	50080800000048	MCU
405	C941	BE8	50020100000709	1μF	835	U2	BA10	50081000000026	Memory
406	C946	BC9	50020100001166	0.01μF	836	U201	BD10	50081100000068	Baseband processor
407	C947	BC9	50020100001050	0.1μF	837	U202	BB10	50080500000051	D/A converter
408	C948	BC9	50020100001050	0.1μF	838	U203	BC10	50082400000173	Logic IC
409	C971	TE8	50020100000725	3300pF	839	U204	BD11	50082400000173	Logic IC
410	C972	TE9	50020100000725	3300pF	840	U3	TC8	50081300000021	Reset IC
411	C975	BC3	50020100001829	9pF	841	U301	TA6	50080700000106	Power management IC
412	C977	BC3	50020100001653	12pF	842	U302	TB8	50080700000081	Power management IC
413	C978	BC4	50020100001473	2pF	843	U303	TE8	50080700000393	Power management IC
414	C979	BD4	50020100000885	6.8pF	844	U304	BE10	50080700000081	Power management IC
415	C980	BD4	50020100001036	5pF	845	U305	TE9	50080700000393	Power management IC
416	C992	BC9	50030100001005	0Ω	846	U306	TC8	50080700000081	Power management IC

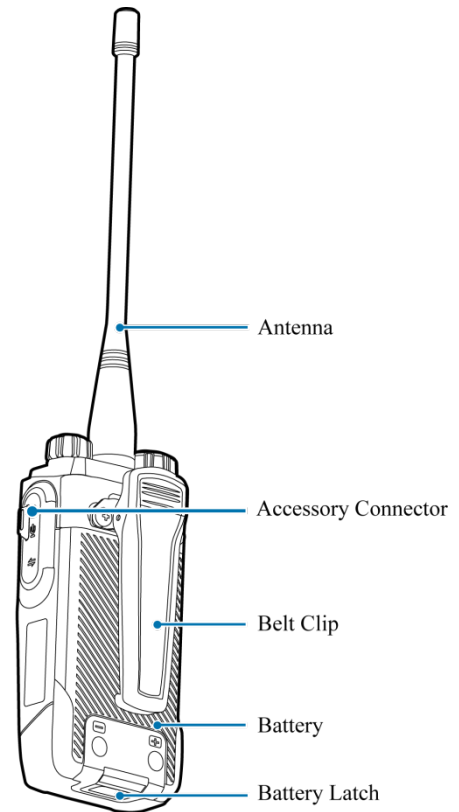
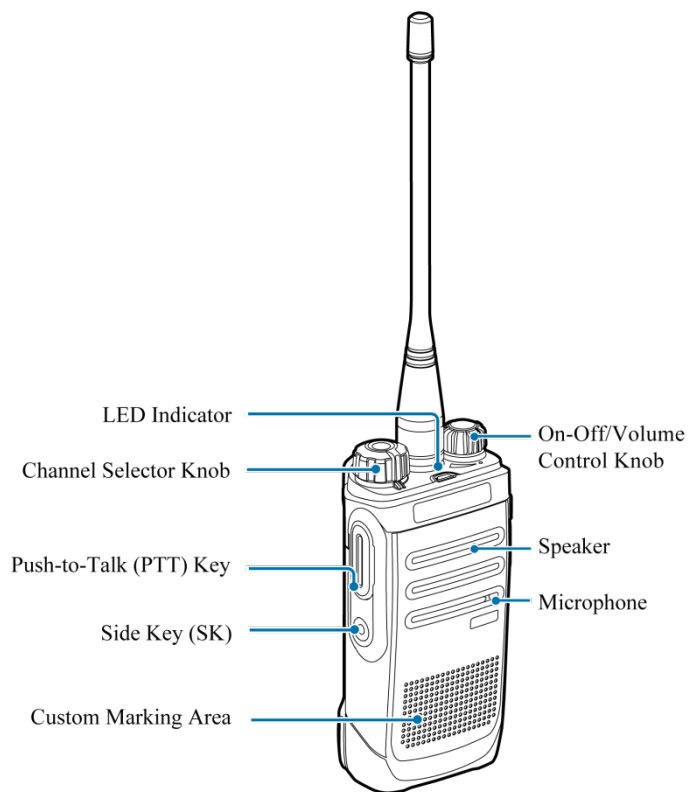
No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
417	C998	BD8	50020100001050	0.1μF	847	U307	TA8	50080700000081	Power management IC
418	D10	TA2	50050800000051	ESD protection diode	848	U308	TE7	50080700000081	Power management IC
419	D11	TA2	50050800000051	ESD protection diode	849	U309	TC7	50081300000043	Reset IC
420	D12	TA2	50050800000051	ESD protection diode	850	U402	TD6	50080400000092	Operational amplifier
421	D3	TD8	50050900000139	Schottky barrier diode	851	U501	BB8	50080300000030	PLL IC
422	D301	TC6	50051000000078	Zener diode	852	U701	TB6	50080400000087	Operational amplifier
423	D302	TD2	50050800000045	ESD protection diode	853	U901	BD9	50082700000009	IF processor
424	D304	TE7	50050200000051	Switching diode	854	U902	TA3	50080400000134	Operational amplifier
425	D4	TA3	50050800000051	ESD protection diode	855	U903	TA6	50080700000081	Power management IC
426	D401	TD3	50050800000045	ESD protection diode	856	X201	BC11	50110400000016	TCXO
427	D402	TD2	50050800000045	ESD protection diode	857	X500	BC9	50110100000096	Crystal
428	D403	TE3	50050800000034	ESD protection diode	858	XT501	BB9	50110500000011	Voltage-Controlled Oscillator (VCO)
429	D404	TE2	50050800000045	ESD protection diode	859	Z601	BD6	50120200000005	Crystal filter
430	D405	TE5	50050200000044	Switching diode	/	/	/	/	/

VHF (136–174 MHz)

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1. Product Layout



2. Disassembly and Reassembly

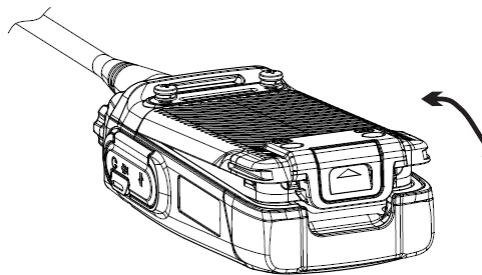
This chapter describes how to disassemble and reassemble the radio.

2.1 Tools

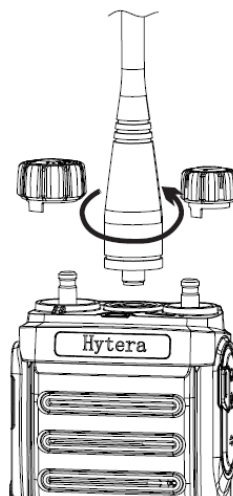
- T9 Screwdriver
- Socket wrench
- Philips screw
- Tweezers
- Soldering iron

2.2 Disassembly Procedure

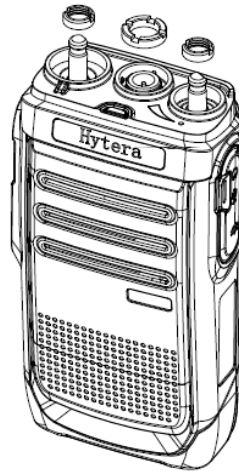
1. Turn off the radio.
2. Move the battery latch upwards to release it, and then remove the battery from the radio.



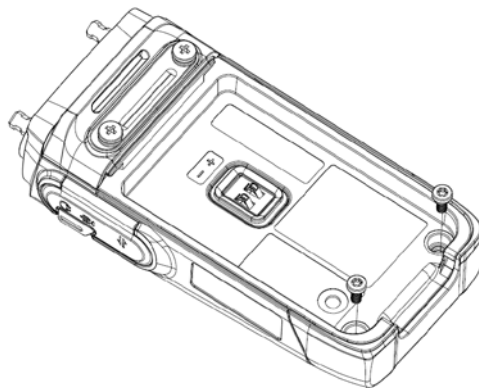
3. Rotate the antenna anticlockwise to remove it, and then pull out the **Channel Selector** knob and **On-Off/Volume Control** knob.



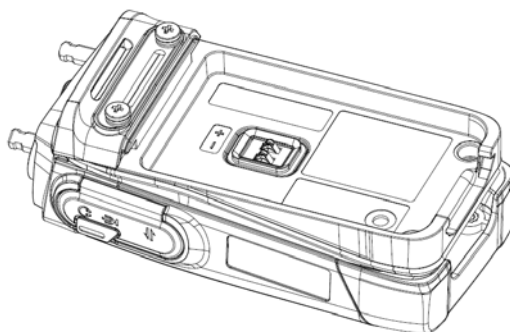
4. Use a socket wrench to remove the nuts from the antenna connector, **Channel Selector** knob, and **On-Off/Volume Control** knob.



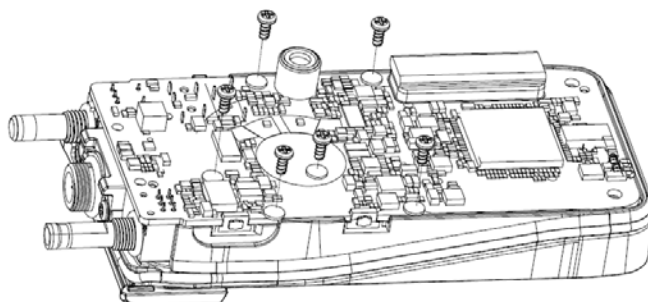
5. Use a T9 screwdriver to remove the two screws in the battery slot.



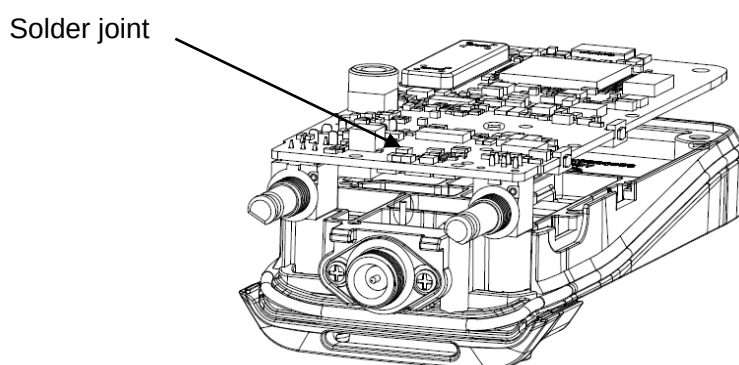
6. Use tweezers to remove the aluminum chassis.



7. Use a Phillips screwdriver to remove the six screws on the main board.



8. Use a soldering iron to unsolder the solder joint of the antenna connector, and then separate the main board from the aluminum chassis.



2.3 Reassembly Procedure



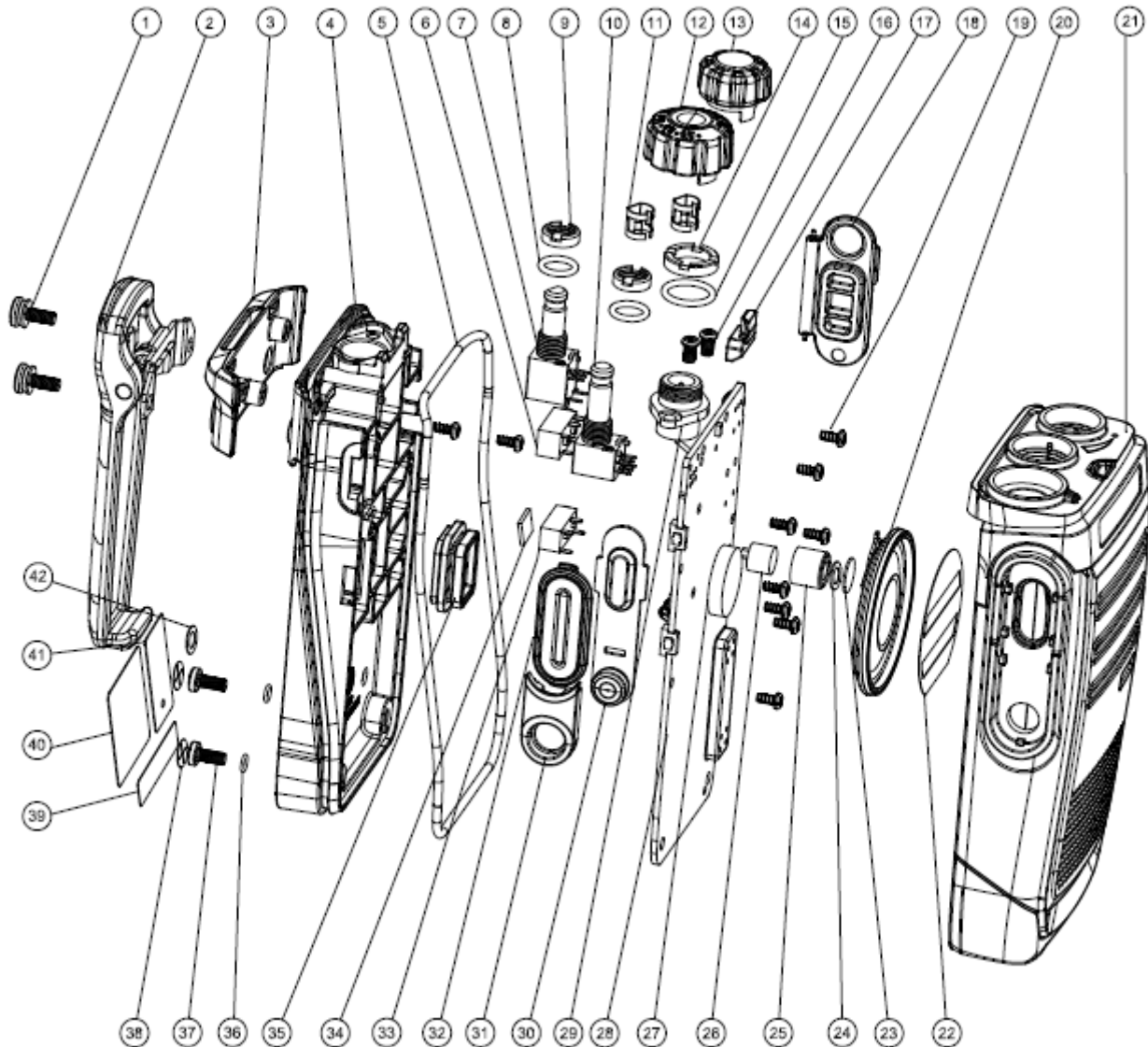
CAUTION

Make sure the waterproof ring is attached in place.

1. Place the main board back to the aluminum chassis, and then use a soldering iron to solder the solder joint of the antenna connector.
2. Put the six screws back on the main board, and use a Phillips screwdriver to tighten them.
3. Use tweezers to put the aluminum chassis back in place.
4. Put the two screws back in the battery slot, and use a T9 screwdriver to tighten them.
5. Put the nuts back in place for the antenna connector, **Channel Selector** knob, and **On-Off/Volume Control** knob, and use a socket wrench to tighten them.
6. Put the **Channel Selector** knob and **On-Off/Volume Control** knob back in place.
7. Place the antenna in its receptacle, and then rotate it clockwise until hand tight.
8. Align the battery contacts with the contacts in the battery compartment, and then gently press the battery latch downwards to lock it.

3. Exploded View and Packing Guide

3.1 Exploded View



The table below lists the parts.

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	5107000000375A	Machine screw	2	22	5113040060802A	Speaker felt	1
2	310400000000005	Belt clip	1	23	51130300000026A	Waterproof MIC mesh	1
3	51160000000654B	Rear cover	1	24	5113010000110A	MIC pad	1
4	5117000060961C	Aluminum chassis	1	25	5110000000591B	MIC cover	1
5	5110000000693A	Main waterproof ring	1	26	51020200000041	Microphone	1
6	51040600000221	Earpiece connector	1	27	5113050000240A	Speaker foam	1
7	510103000000037	Rotary switch	1	28	5001010002072H	Main PCB	1
8	5110000000841A	O-RING for rotary switch	2	29	510306000000014	SMA RF connector	1

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
9	5108000000070A	Nut for volume switch	2	30	5110000000405A	PTT key	1
10	51010200060041	Volume switch	1	31	5116000000459B	Bracket for PTT key cover	1
11	5111000000193A	Inner lining for knob	2	32	5116000000742A	PTT key cover	1
12	5116000001993F	Channel selector knob	1	33	51040600000050	Earpiece connector	1
13	5116000000518F	Volume control knob	1	34	5119020000001A	Heat sink pad	1
14	5108000000029A	Nut for antenna	1	35	5110000000364A	Waterproof ring for battery connector	1
15	5110000000909A	O_RING for antenna	1	36	5110000000402A	Waterproof ring for M2 screw	2
16	5107000000184A	Machine screw	2	37	5107000000199A	Machine screw	2
17	5116000001533B	Light guide	1	38	5207000000978A	Anti-dismantling label	2
18	5116000001665C	Accessory connector cover	1	39	5207000000719A	Transmission instruction label	1
19	5107000000300A	Self-tapping screw	10	40	5207000001707A	Aluminum chassis label	1
20	51020600000072	Speaker	1	41	5207000000849B	Caution label	1
21	5116000001932A	Front housing	1	42	5113040000021A	Breathable film for battery	2

**NOTE**

The part number is subject to change without notice due to product upgrade.

3.2 Packing Guide



4. Specifications

General		
Frequency Range	136–174 MHz	
Dimensions (H x W x D) (with battery and without antenna)	108 mm × 54.5 mm × 28 mm	
Weight (with battery and antenna)	240 g	
Zone Capacity	3	
Channel Capacity	48	
Channel Spacing	25 kHz/12.5 kHz	
Operating Voltage	Rated voltage: 7.2 V	
	Extreme Voltage: 6.2–8.4 V	
Battery	1500 mAh Li-ion battery	
Battery Life (5/5/90 duty cycle)	Analog: 12 hours	
	Digital: 16 hours	
Antenna Impedance	50 Ω	
Rx		
Sensitivity	Analog	0.22 μV (12 dB SINAD)
		0.22 μV (typical) (12 dB SINAD)
	Digital	0.4 μV (20 dB SINAD)
		0.22 μV/BER5%
Adjacent Channel Selectivity	12.5 kHz/TIA-603	> 60 dB
	25 kHz/TIA-603	> 70 dB
	12.5 kHz/ETSI	> 60 dB
	25 kHz/ETSI	> 70 dB
Spurious Response Rejection	TIA-603	> 70 dB
	ETSI	> 70 dB

Intermodulation	TIA-603	> 70 dB
	ETSI	> 65 dB
Conducted Emission	< 1 GHz	< –57 dBm
	> 1 GHz	< –47 dBm
Blocking	> 84 dB	
Rx Audio S/N	Analog: > 45 dB/40 dB	
	Digital: > 40 dB	
Rated Audio Distortion	5%	
Rated Audio Output Power	0.5 W	
Rx Audio Response	+1 dB to –3 dB	
Tx		
Frequency Stability	0.5 ppm	
Output Power	Low power	1.2 W
	High power	4.7 W
FM Modulation	11K0F3E@12.5 kHz	
	16K0F3E@25 kHz	
4FSK Digital Modulation	12.5 kHz (data only): 7K60FXD	
	12.5 kHz (data and voice): 7K60FXW	
Spurious Emission	< 1 GHz	< –36 dBm
	> 1 GHz	< –30 dBm
Modulation Limiting	2.5 kHz@12.5 kHz	
	5.0 kHz@25 kHz	
Tx Audio S/N	Analog: > 45 dB/40 dB	
	Digital: > 40 dB	
Adjacent Channel Power	12.5 kHz	> 60 dB
	25 kHz	> 70 dB

Tx Audio Response	+1 dB to −3 dB	
Tx Audio Distortion	3%	
Vocoder	SELP1.7/AMBE+2™	
Environment		
Operating Temperature	−30°C to +60°C	
Storage Temperature	−40°C to +85°C	
Electrostatic Discharge	IEC 61000-4-2 (level 4)	±15 kV (air)
		±8 kV (contact)
United States Military Standard	MIL-STD-810 C/D/E/F/G	
Water & Dust Protection	IP54	
Humidity	MIL-STD-810 C/D/E/F/G	
Drop, Shock & Vibration	MIL-STD-810 C/D/E/F/G	

**NOTE**

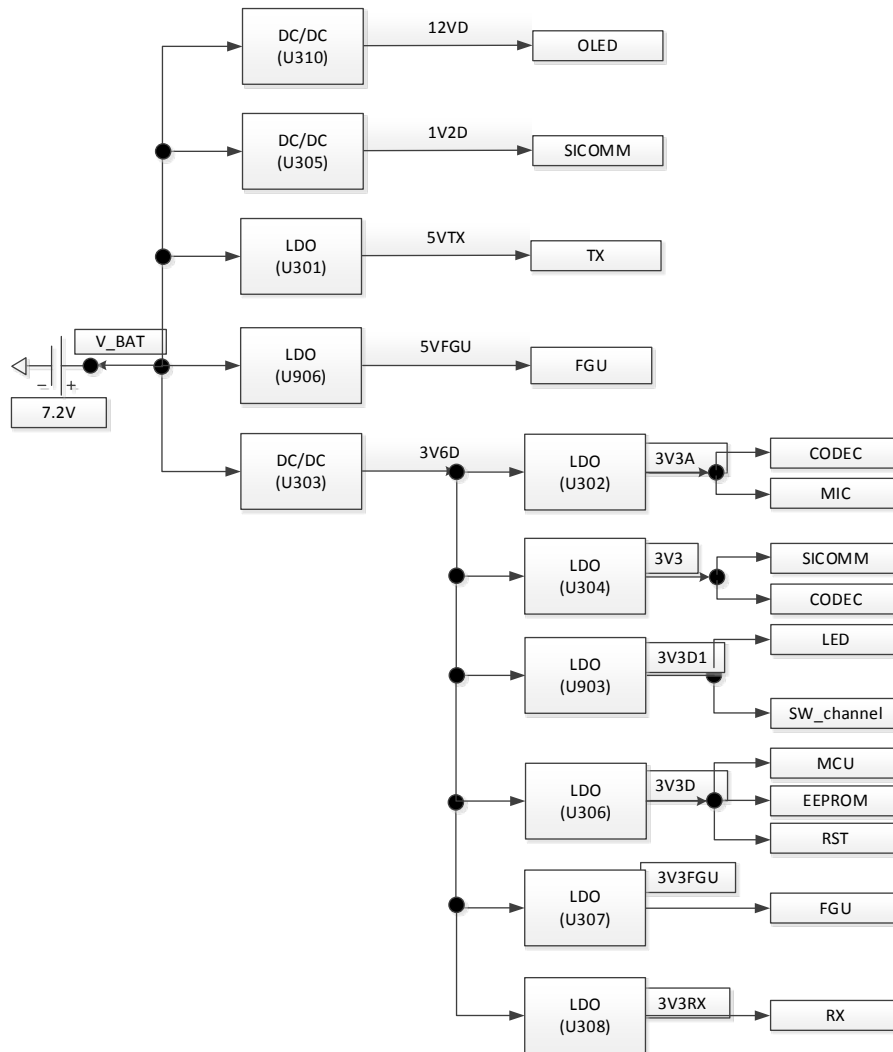
All specifications are tested according to applicable standards, and subject to change without notice due to continuous technological development.

5. Circuit Description

5.1 Baseband Section

5.1.1 Power Supply Module

The power supply employs a 7.2 V dual-cell Li-ion battery.



The 7.2 V voltage powers the RF board and baseband board in the following ways:

RF Board

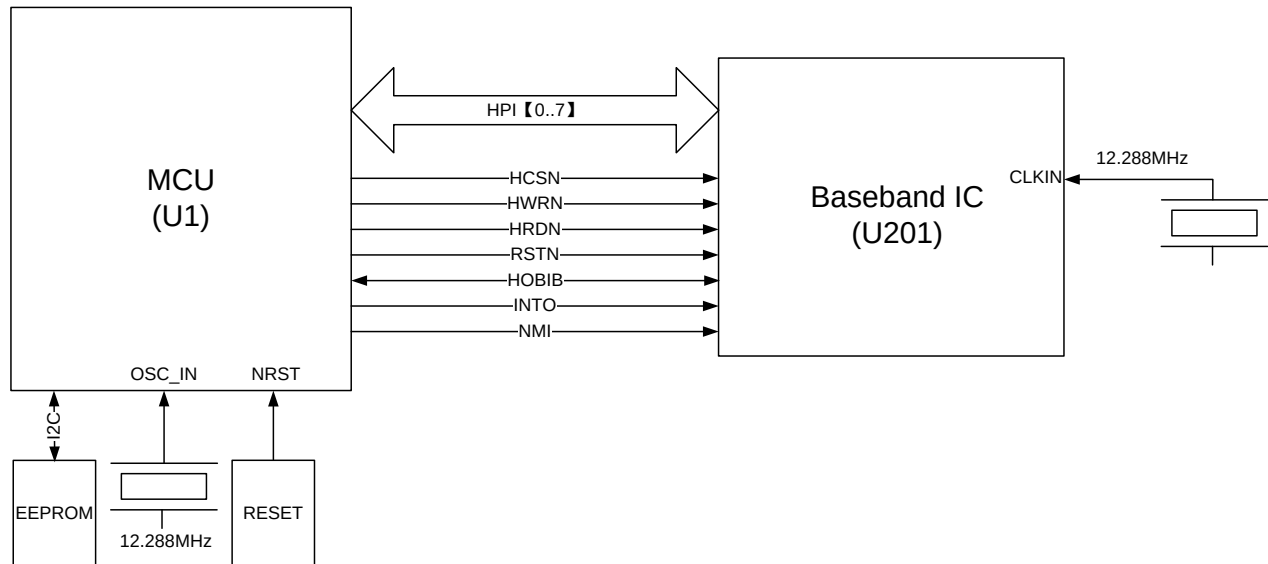
- The LDO (U301) converts the 7.2 V voltage into a 5.0 V voltage, which powers the Tx circuit.
- The DC/DC (U303) converts the 7.2 V voltage into a 3.6 V voltage. Then the LDOs (U307 and U308) convert the 3.6 V voltage into 3.3 V voltage, which powers the FGU circuit and Rx circuit.

Baseband Board

The DC/DC (U303) converts the 7.4 V voltage into a 3.6 V voltage. The 3.6 V voltage is further processed as follows:

- The LDOs (U302, U304, U903, and U306) convert the 3.6 V voltage into 3.3 V voltages, which power the CODEC, MIC, MCU, EEPROM, and so on.
- The DC/DC (U305) converts the 3.6 V voltage into a 1.2 V voltage, which powers the baseband processor chip SICOMM.

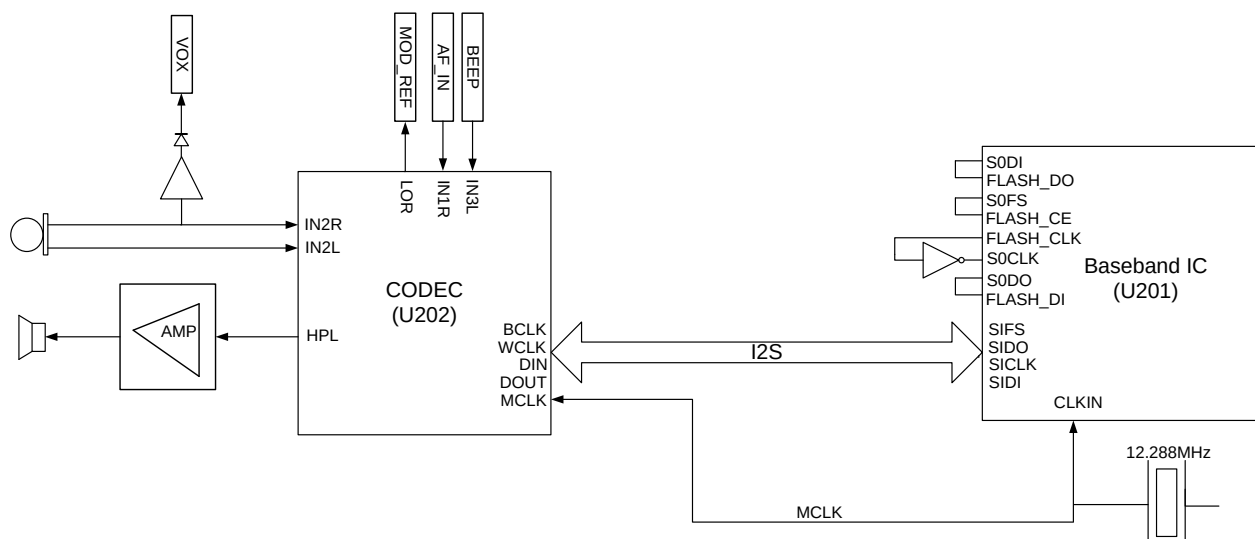
5.1.2 Control Module



The control module consists of the MCU (U1) serving as the main controller and baseband IC (U201) serving as the baseband processor. Both the MCU and baseband IC use the frequency generated by the 12.288 MHz crystal oscillator as the clock signal.

The MCU communicates with the baseband IC through the HPI bus, and connects to the 512 KB EEPROM through the I2C bus for storing programming and debugging data.

5.1.3 Audio Module



The audio module consists of the CODEC (U202), baseband IC (U201), audio power amplifier (AMP), and so on. Both the CODEC and baseband IC use the frequency generated by the 12.288 MHz crystal oscillator as the clock signal.

Audio Path

- Rx Path

The audio signal received from the RF section goes to the CODEC through the IN1R interface for amplification and A-D conversion. Afterwards, it goes to the baseband IC through the I2S bus for processing, and then goes back to the CODEC for D-A conversion and amplification. Finally, it goes to the AMP through the HPL interface for amplification, and gets output through the speaker.

- Tx Path

The audio signal from the microphone goes to the operational amplifier and is divided into two differential signals. The two signals go to the CODEC through the IN2R and IN2L interfaces for amplification and A-D conversion. Afterwards, the processed signal goes to the baseband IC through the I2S bus for processing, and then goes back to the CODEC for D-A conversion and amplification. Finally, it goes to the FGU circuit through the LOR interface for modulation.

NOTE

With the VOX feature enabled, the audio signal from the microphone is transmitted to the MCU for VOX sampling and detection before being processed.

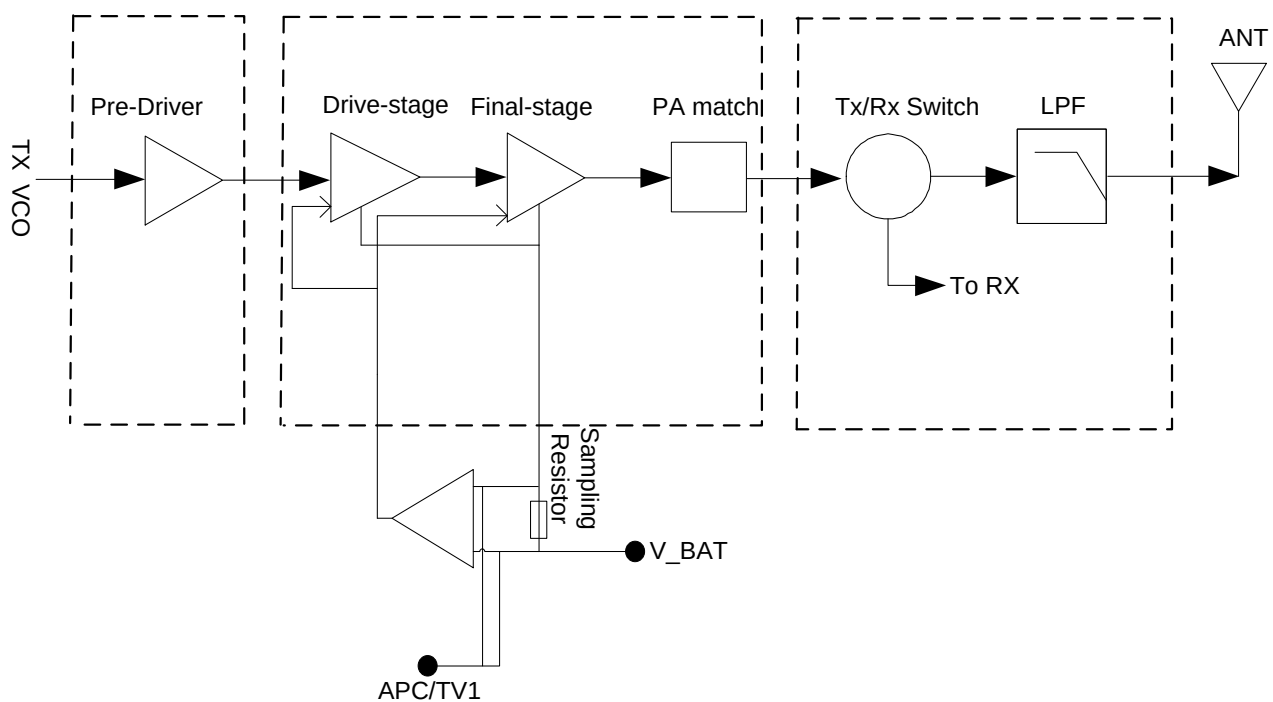
Audio Power Amplifier

The table below lists the main parameters of the audio amplifier.

Parameter	Value
Rated Power (P_o)	0.5 W
Maximum Power (P_{max})	1.6 W
Speaker Impedance (R_L)	16 Ω

5.2 RF Section

5.2.1 Tx Circuit



The Tx circuit consists of RF PA circuit, low-pass filter (LPF) circuit, and automatic power control (APC) circuit.

RF PA Circuit

The carrier signal generated by the TX VCO goes to the pre-driver PA for initial amplification, the drive-stage PA for further amplification, and then final-stage PA for final amplification. The amplified carrier signal then passes through the microstrip matcher for output impedance matching, so as to reduce output power loss due to impedance mismatch.

LPF Circuit

After the output impedance matching, the signal goes to the Tx/Rx switch and then to the LPF for suppressing harmonics and spurious signals. Finally, it goes to the antenna for transmission.

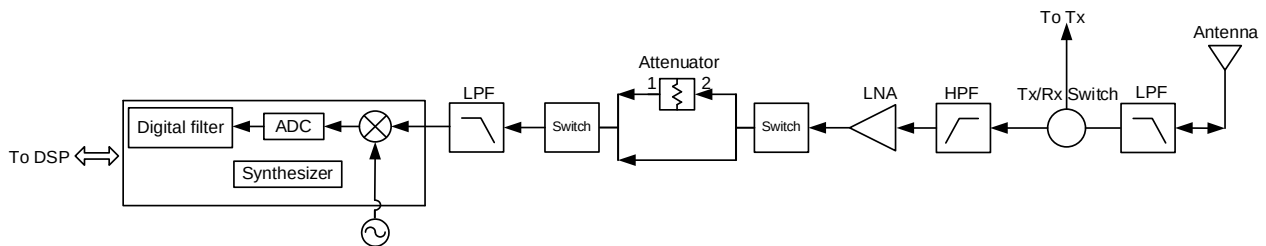
APC Circuit

The APC circuit converts the drain current from the driver-stage PA and final-stage PA into a voltage, and then compares the voltage with the APC control voltage output by the MCU. The error voltage generated from the comparison adjusts the Tx power by controlling the gate bias voltage of the driver-stage PA and final-stage PA.

5.2.2 Rx Circuit

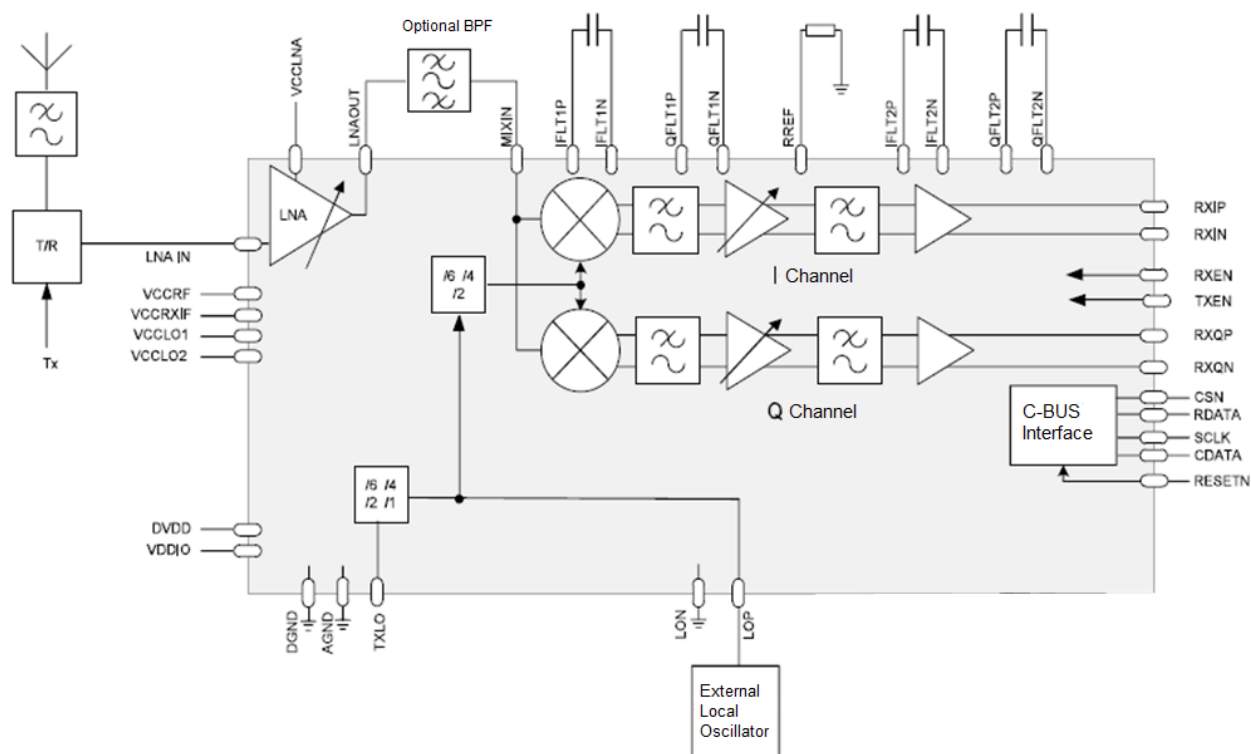
The Rx circuit adopts a zero-IF scheme, which consists of the Rx front-end and Rx back-end. The Rx front-end includes high-pass filter (HPF), low-noise amplifier (LNA), two RF switches, and LPF. The Rx back-end adopts a zero-IF chip for conversion and demodulation..

Rx Front-End



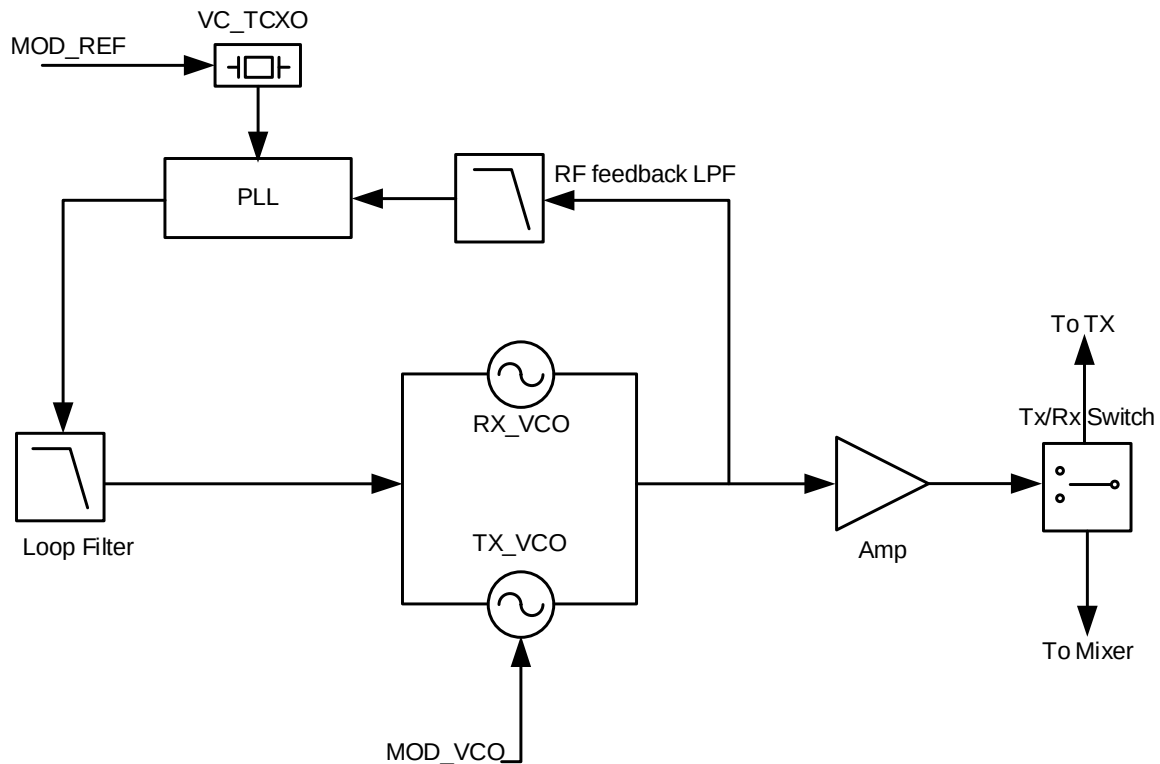
The signal received from the antenna goes to the LPF shared with the Tx circuit for filtering high-frequency signals, to the first-stage RF HPF through the Tx/Rx switch for preliminarily filtering 1/2 RF frequency and other spurious signals, and then to the internal or external LNA for amplification. The amplified signal goes to the LPF and RF switches to further filter and limit the signal entering the frequency mixer.

Rx Back-End



The filtered and amplified signal goes to the zero-IF chip, where the signal mixes with the Rx LO signal generated by the VCO and directly changes to zero frequency. After ADC sampling and decimation filtering, the I/Q digital signal is sent to the DSP for FM/4FSK demodulation. Then the voice data is decompressed, sent to the voice codec chip for D/A conversion, and finally output to the speaker through the audio power amplifier.

5.2.3 FGU Circuit



The FGU circuit consists of VCO and PLL, which can track the frequency and switch the channel under the control of MCU signals. It is the core module of the Tx-Rx system.

PLL

The 19.2 MHz frequency generated by the reference crystal oscillator and VCO signal go to PLL for frequency division. If the signals have different frequencies or phases, the PLL will output a signal corresponding to the phase difference. The pulse current goes to the loop filter for RC integration, and is then converted into CV voltage. Then the CV voltage is sent to the varactor of VCO to adjust the output frequency of VCO directly until the CV voltage becomes constant. Then the PLL is locked, and the stable frequency output by VCO goes to the Tx-Rx channel through two buffer amplifiers.

VCO

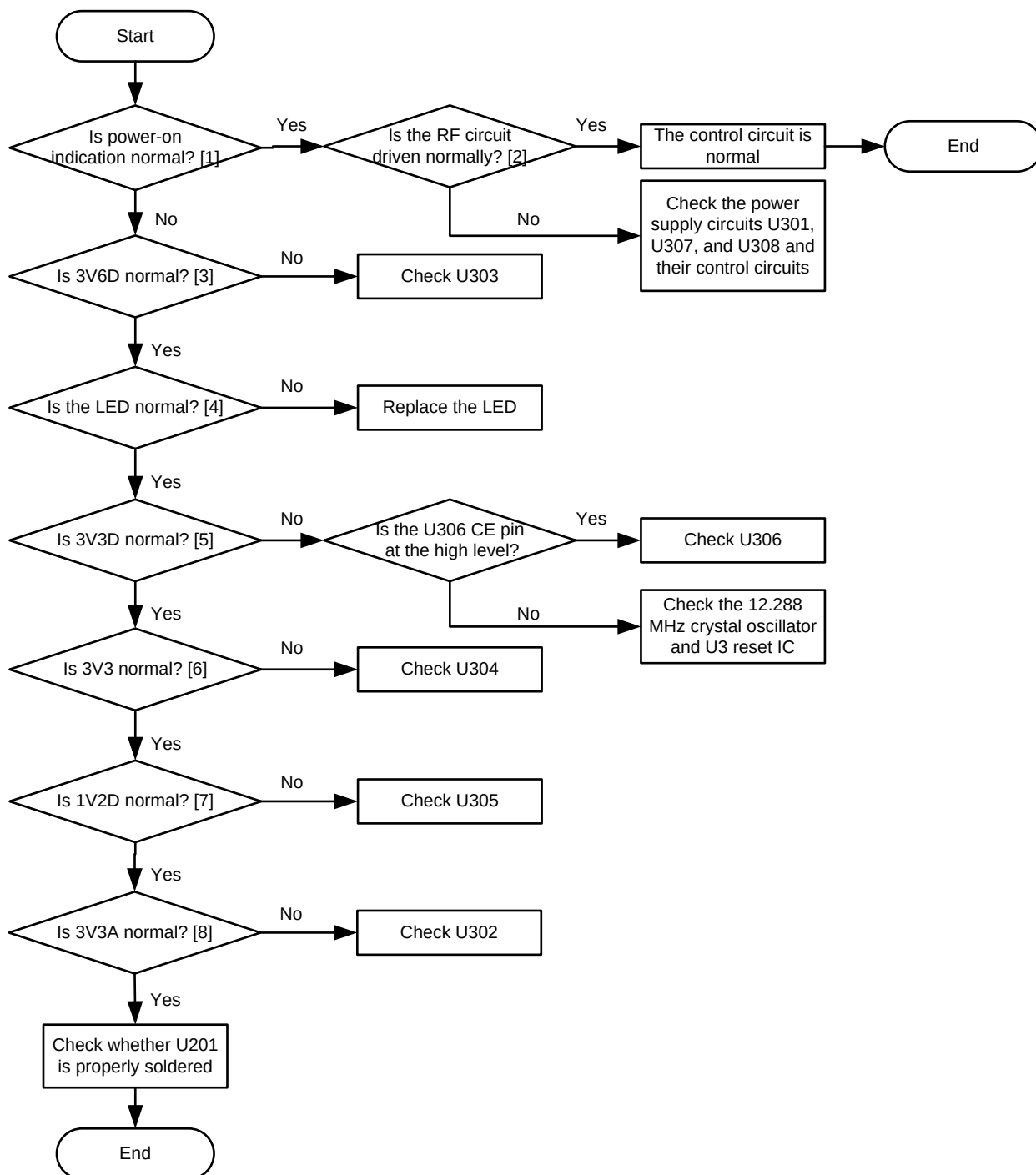
The VCO adopts Colpitts oscillator circuit, and includes RX_VCO and TX_VCO. RX_VCO provides the LO signal, and TX_VCO provides carrier for transmitting signals. When the oscillator is operating, it obtains different output frequencies by changing the varactor's control voltage (namely, CV voltage), and then switches the operating status by controlling the compound transistor.

Two-point Modulation

In Tx mode, the two-point modulation technology of VCO and reference oscillator is adopted to obtain higher modulation accuracy and lower 4FSK bit error rate. MOD_VCO and MOD_REF respectively transmit the modulating signals to TX_VCO and VC_TCXO for modulation.

6. Troubleshooting Flow Chart

6.1 Control Circuit

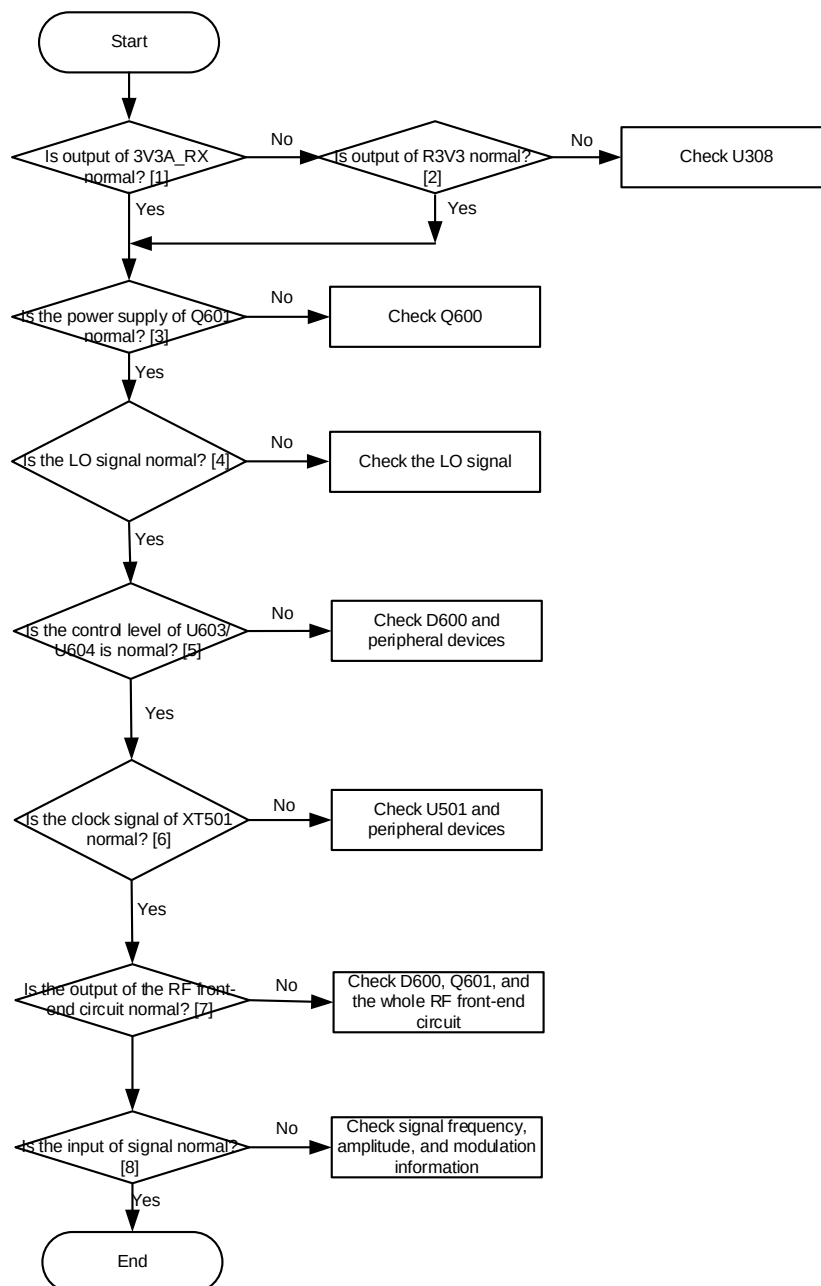


Description of normal situation:

- [1] The radio announces the channel number after being turned on.
- [2] The RF power supply outputs normally, and the power supply for the Rx path is switched on.
- [3] The voltage at TP303 is $3.6 \pm 10\%$ V.

- [4] After the radio is turned on, the LED indicator flashes green for three times.
- [5] The output voltage at Pin 5 of U306 is $3.3 \pm 10\%$ V.
- [6] The output voltage at Pin 5 of U304 is $3.3 \pm 10\%$ V.
- [7] The voltage at TP305 is $1.2 \pm 10\%$ V.
- [8] The output voltage at Pin 5 of U302 is $3.3 \pm 10\%$ V.

6.2 Rx Circuit



Description of normal situation:

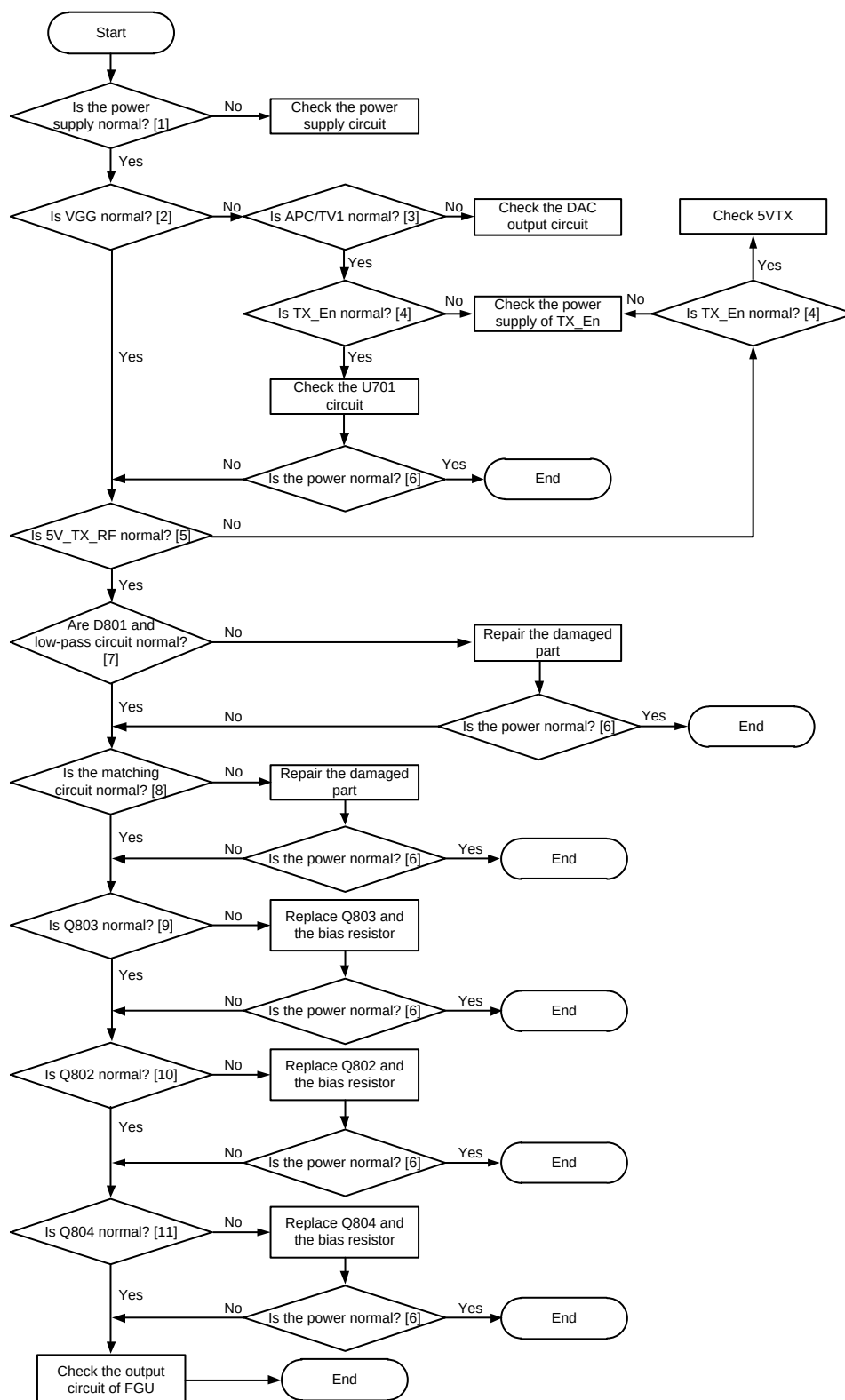
- [1] & [2]: The input voltage at Pin 1 and output voltage at Pin 5 of U308 is respectively about 3.6 V and 3.3 V.
- [3] When the radio receives a signal having an amplitude of less than –35 dBm, the voltage at Pin 4 of Q601 is about 3.3 V.
- [4] When the radio is receiving signals, the frequency of LO signal C642 is about twice the Rx frequency, and the amplitude is about –3 dBm.
- [5] When the radio receives a signal having an amplitude of less than –105 dBm, the voltage at L622 is about 3.3 V, and the voltage at L623 is 0 V. When the radio receives a signal having an amplitude of greater than –95 dBm, the voltage at L622 is about 0 V, and the voltage at L623 is 3.3 V.
- [6] The frequency of the oscillator circuit composed of XT501 and other devices is 19.2 MHz.
- [7] Input a –110 dBm signal at the antenna port, the gain of the Rx circuit is greater than 10 dB, and the amplitude at C669 and C663 is greater than –100 dBm. Input a –90 dBm signal at the antenna port, the Rx circuit will attenuate the signal, the amplitude at C669 is greater than –80 dBm, and the amplitude at C663 is about –90 dBm.
- [8] At the antenna port, input a –47 dBm signal with standard debugging information (AF=1 kHz, FM=3 kHz).

6.3 Tx Circuit



CAUTION

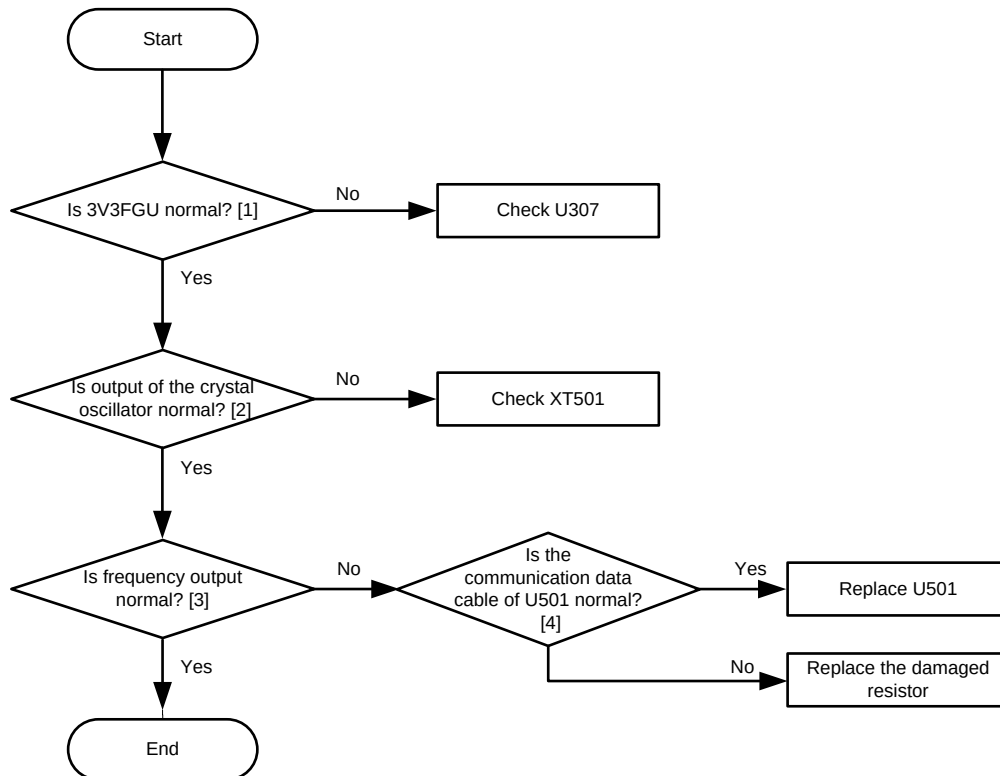
To avoid the impact on Tx power, do the following tests under the 7.2 V power supply.



Description of normal situation:

- [1] The voltage of the power supply is $7.2 \pm 10\%$ V.
- [2] VGG ranges from 1.8 V to 2.1 V for low power and 2.4 V to 2.8 V for high power.
- [3] APC/TV1 ranges from 1 V to 1.3 V for low power and 1.8 V to 2.1 V for high power.
- [4] TX_En is $3.3 \pm 10\%$ V.
- [5] 5V_TX_RF is $5 \pm 10\%$ V.
- [6] The high power is $4.7 \pm 10\%$ W, and the low power is $1.2 \pm 10\%$ W.
- [7] The start-up voltage of D801 is $0.7 \pm 10\%$ V. The low-pass circuit coil is soldered properly. The antenna connector is properly soldered to the main board.
- [8] The matching parts are soldered properly.
- [9] VDD is $7.2 \pm 10\%$ V. VGG of Q803 ranges from 1.0 V to 1.2 V for low power and 1.35 V to 1.55 V for high power.
- [10] VDD is $7.2 \pm 10\%$ V. VGG of Q802 ranges from 1.8 V to 2.1 V for low power and 2.4 V to 2.8 V for high power.
- [11] The voltages at the two ends of R811 are $5.0 \pm 10\%$ V and $3.3 \pm 10\%$ V.

6.4 FGU Circuit

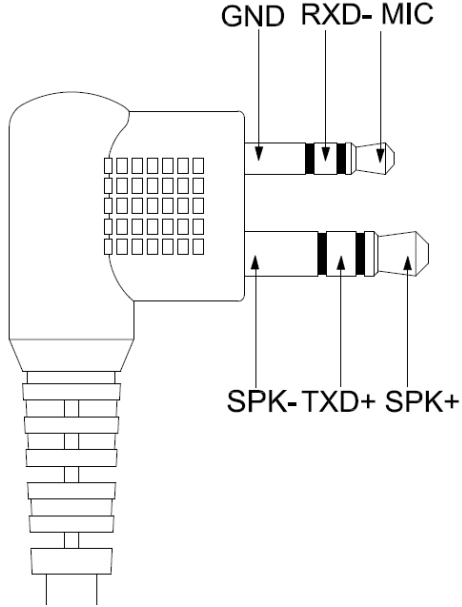


Description of normal situation:

- [1] The output voltage at Pin 5 of U307 is $3.3 \pm 10\%$ V.
- [2] Test C973. In normal case, the output frequency is 26 MHz, and the AC level is greater than 1.1 V.
- [3] The Rx LO frequency is the sum of the Rx frequency and IF. The Tx frequency equals the frequency at which the radio is transmitting.
- [4] The cable is properly connected to the MCU and protected from open circuit

7. Interface Definition

The table below lists information about the double-pin (J402 and J403) plug for earpiece and programming cable.

Interface	Pin No.	Signal	Illustration
J402	1	SPK-	
	2	TXD+	
	3	SPK+	
	4	SPK+	
	5	SPK-	
J403	1	GND	
	2	MIC	
	3	RXD-	
	4	OPTEL1	

8. Tuning Description

8.1 Tools

- Radio communication test set: Aeroflex 3920 and HP8921
- Power supply: 3 A/10 V
- Multimeter
- Tuner software

8.2 Tuning Procedure

8.2.1 Tuning the Radio

After reassembling the radio, tune it using the Tuner software.

The table below describes the items to be tuned and the corresponding tuning methods. After tuning an item, click **Save** to save the tuned value.

Item	Method
Tx Section	
Reference Oscillator Warp	1. Connect the antenna connector of the radio to the RF port of HP8921, and set HP8921 to Tx test mode. 2. Open the Tuner software, and go to TUNE_DATA > TX > Reference Oscillator Warp in the left navigation tree. 3. Adjust the vernier on the Tuner, until the frequency deviation between the frequency displayed on HP8921 and that displayed on the Tuner is less than or equal to 40 Hz. 4. Click Transmit On.
Transmit Power Calibration	1. Connect the antenna connector of the radio to the RF port of HP8921, and set HP8921 to Tx test mode. 2. Open the Tuner software, and go to TUNE_DATA > TX > Transmit Power Calibration in the left navigation tree. 3. Select the required channel, and then click the spin box under Low or High. 4. Click Transmit On. 5. Adjust the value in the spin box under Low or High to 1.2 ± 0.1 W or 4.7 ± 0.1 W

Item	Method
	respectively.
Modulation Balance	1. Connect the antenna connector of the radio to the RF port of HP8921, and set HP8921 to Tx test mode. 2. Set HP8921 as follows: ● IF Filter: 230 kHz ● Filter1: < 20 Hz HPF ● Filter2: <15 kHz LPF ● De-Emphasis: OFF 3. Open the Tuner software, and go to TUNE_DATA > TX > Modulation Balance in the left navigation tree. 4. Select the required channel, and then click the spin box under LOW_PORT. 5. Click Transmit On. 6. Adjust the value in the spin box until the frequency deviation displayed on HP8921 is 5 kHz $\pm$ 50 Hz. 7. Press the Enter key on the keyboard to confirm the setting.
Rx Section	
Front-end Filter	1. Connect the antenna connector of the radio to the RF port of HP8921. 2. Connect audio accessory connector of the radio to the audio input port of HP8921, and set HP8921 to Rx test mode. 3. Set HP8921 as follows: ● Output RF signal: –118 dBm/Frequency (current channel frequency) ● Modulation frequency: 1 kHz ● Modulation deviation: 3 kHz ● De-Emphasis: 750 μs 4. Open the Tuner software, and go to TUNE_DATA > RX > Front-end filter in the left navigation tree. 5. Adjust the vernier on the Tuner until the value of SIN_AD displayed on HP8921 is greater than 14 dB. 6. Set HP8921 to output a –37 dBm RF signal whose frequency is the sum of the current channel frequency and 24.975 MHz.

Item	Method
	7. Adjust the vernier on the Tuner until the value of SIN_AD displayed on HP8921 is less than 14 dB.
	8. Press the Enter key on the keyboard to confirm the setting.

8.2.2 Testing the Radio

After tuning the radio, test the Tx and Rx performance of the radio as follows:

Tx Performance

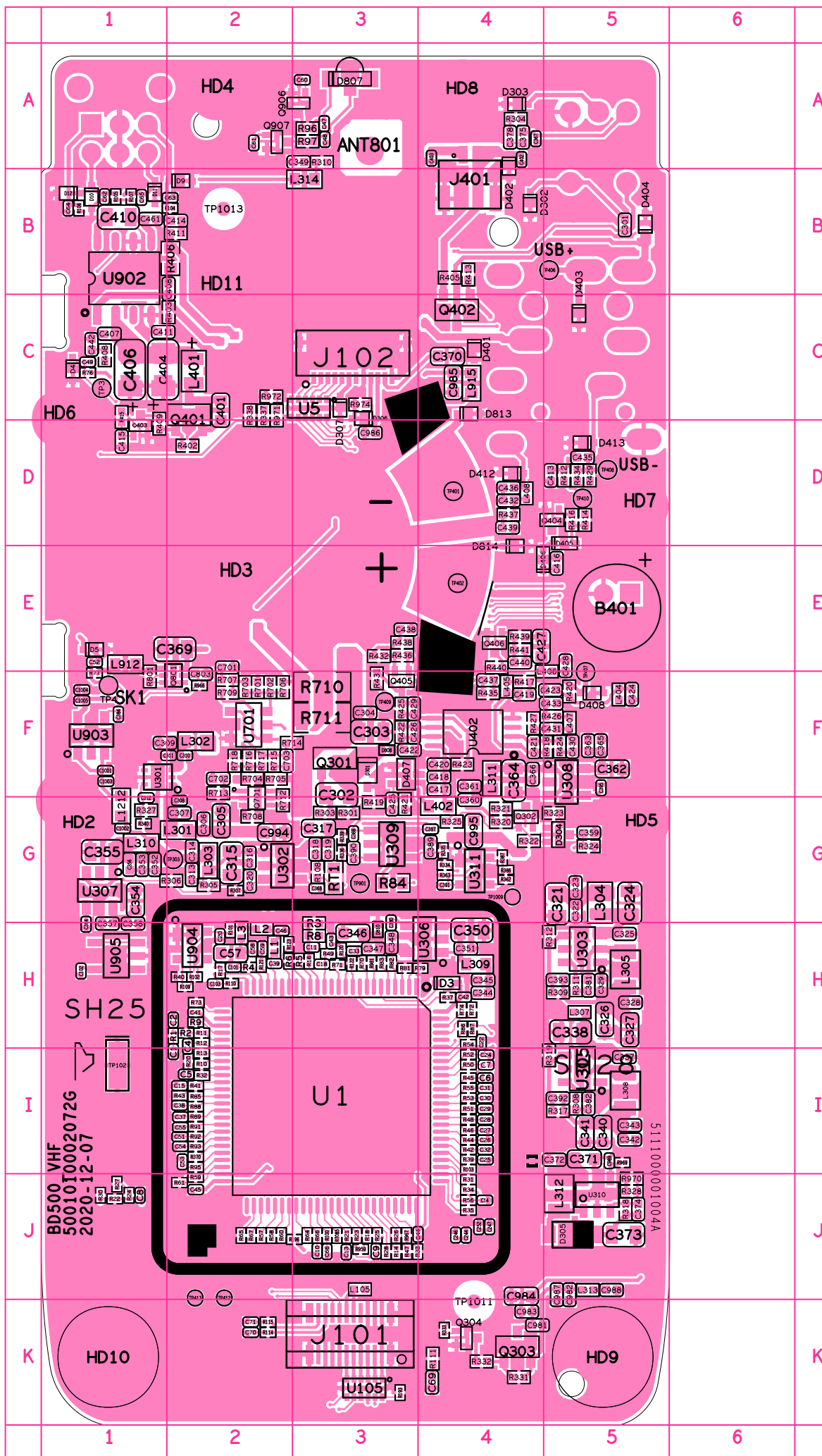
1. Connect the antenna connector of the radio to the T/R port of Aeroflex 3920.
2. Open the Tuner software, and go to **TEST > TX > Transmit BER (0.153)**.
3. Select the channel to be tested, and select **High Power** under **Parameter**.
4. Set Aeroflex 3920 as follows:
 - Frq: the same as the frequency of the channel to be tested
 - STD IB 511 (.153)
5. Click **Transmit On** on the Tuner.
6. Check whether the tested items on Aeroflex 3920 meet the following requirements:
 - Frequency Error: ≤ 100 Hz
 - Transmit Power: 4.7 ± 0.3 W
 - FSK Error: $\leq 5\%$
 - Magnitude Error: $\leq 1\%$

Rx Performance

1. Connect the antenna connector of the radio to the T/R port of Aeroflex 3920.
2. Open the Tuner software, and go to **TEST > RX > Receiver BER (0.153)**.
3. Select the channel to be tested.
4. Set Aeroflex 3920 as follows:
 - Frq: the same as the frequency of the channel to be tested
 - STD IB 511(.153)
 - Lvl: -116.0 dBm
5. Click **Start** on the Tuner.
6. Check whether the value of **Average Rate** displayed on the Tuner is less than or equal to 5%.

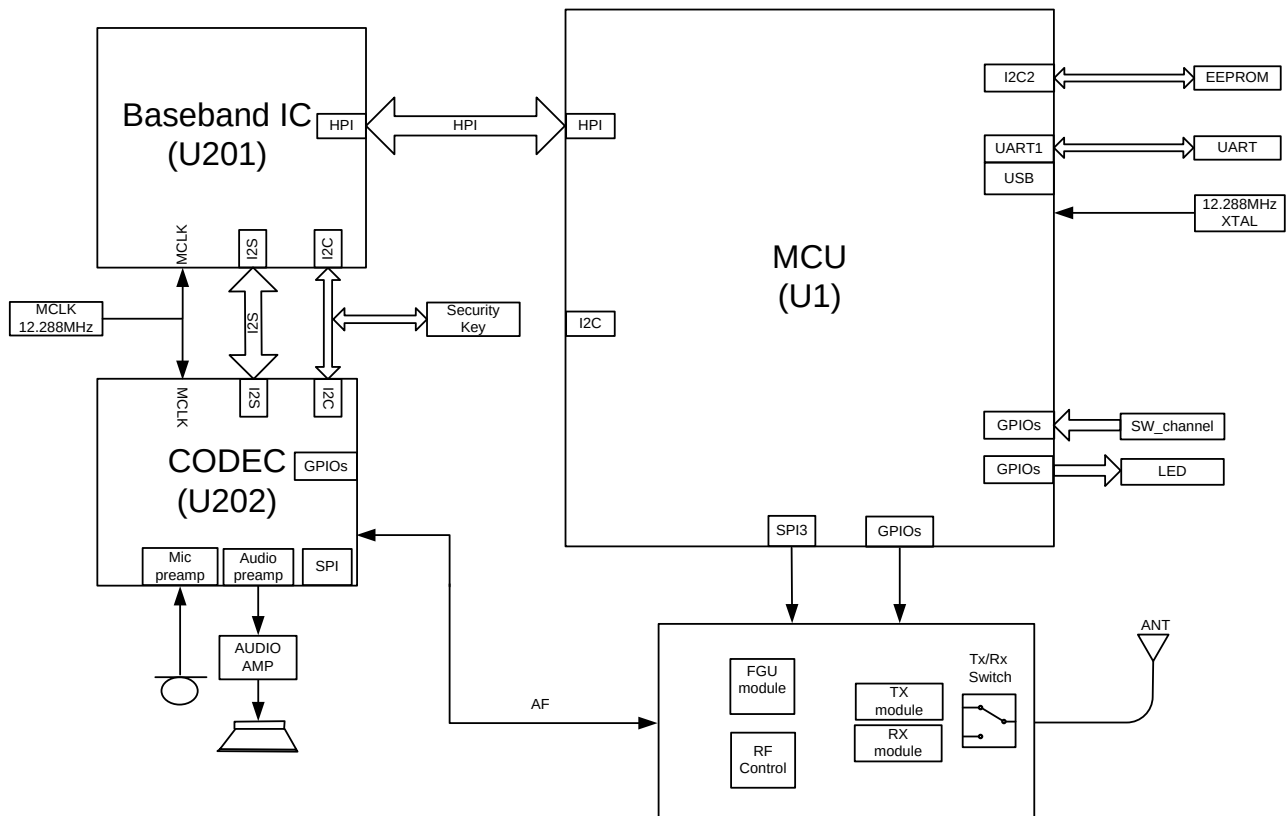
9. PCB View

Main Board_Top Layer



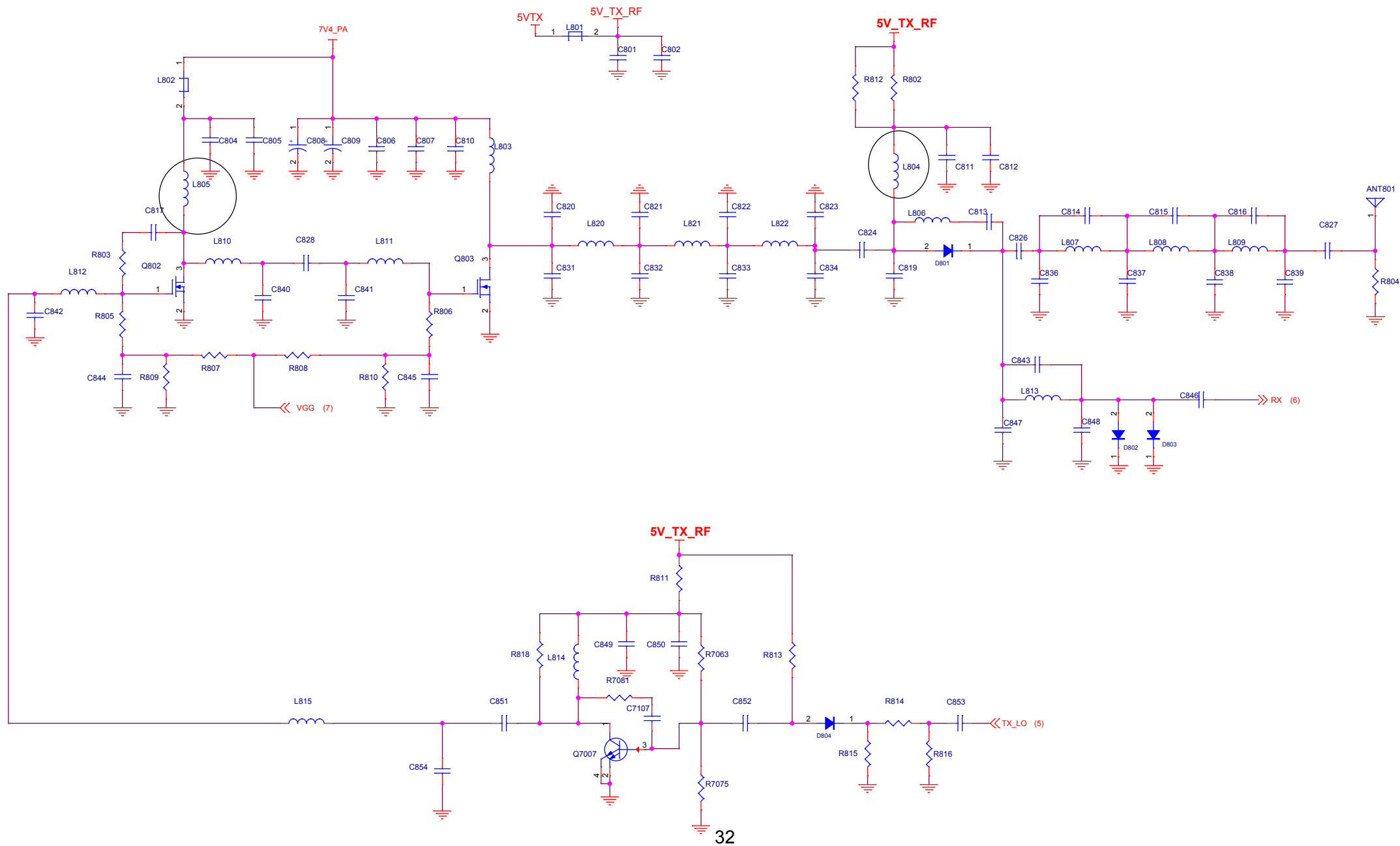
Main Board_Bottom Layer

10. Block Diagram

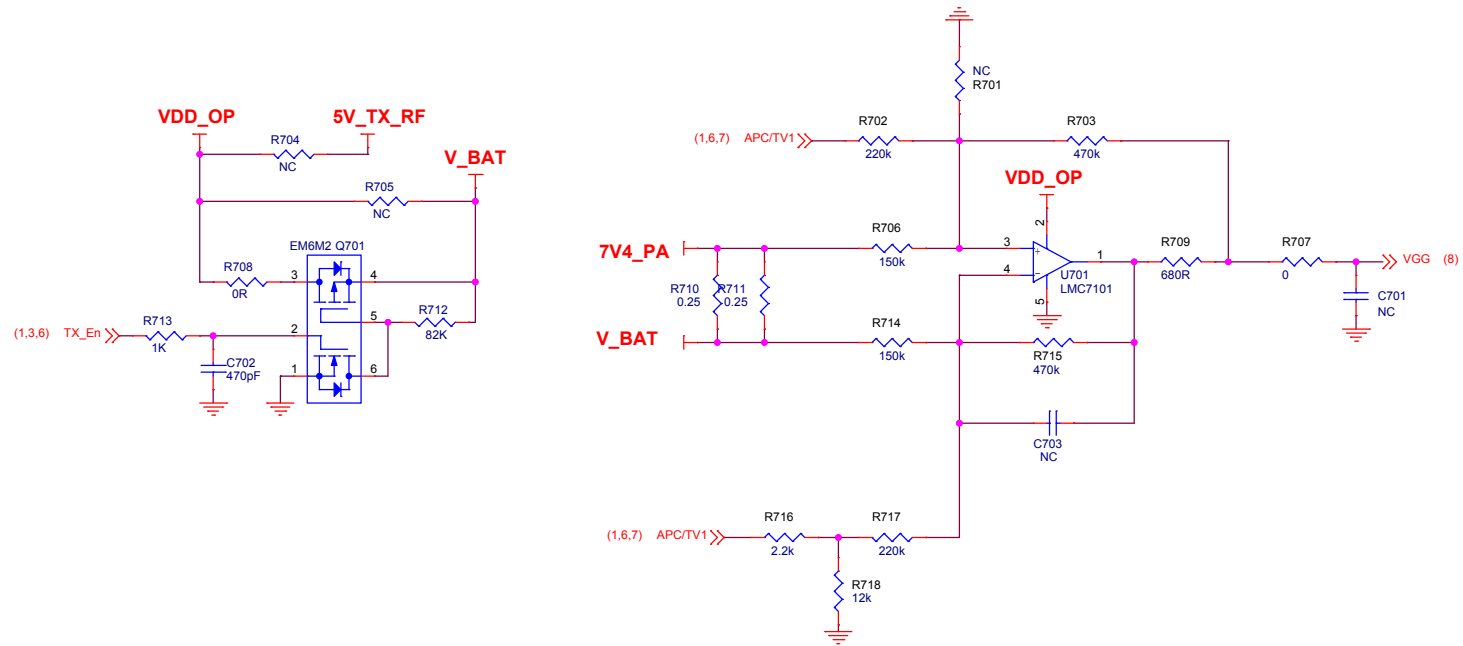


11. Schematic Diagram

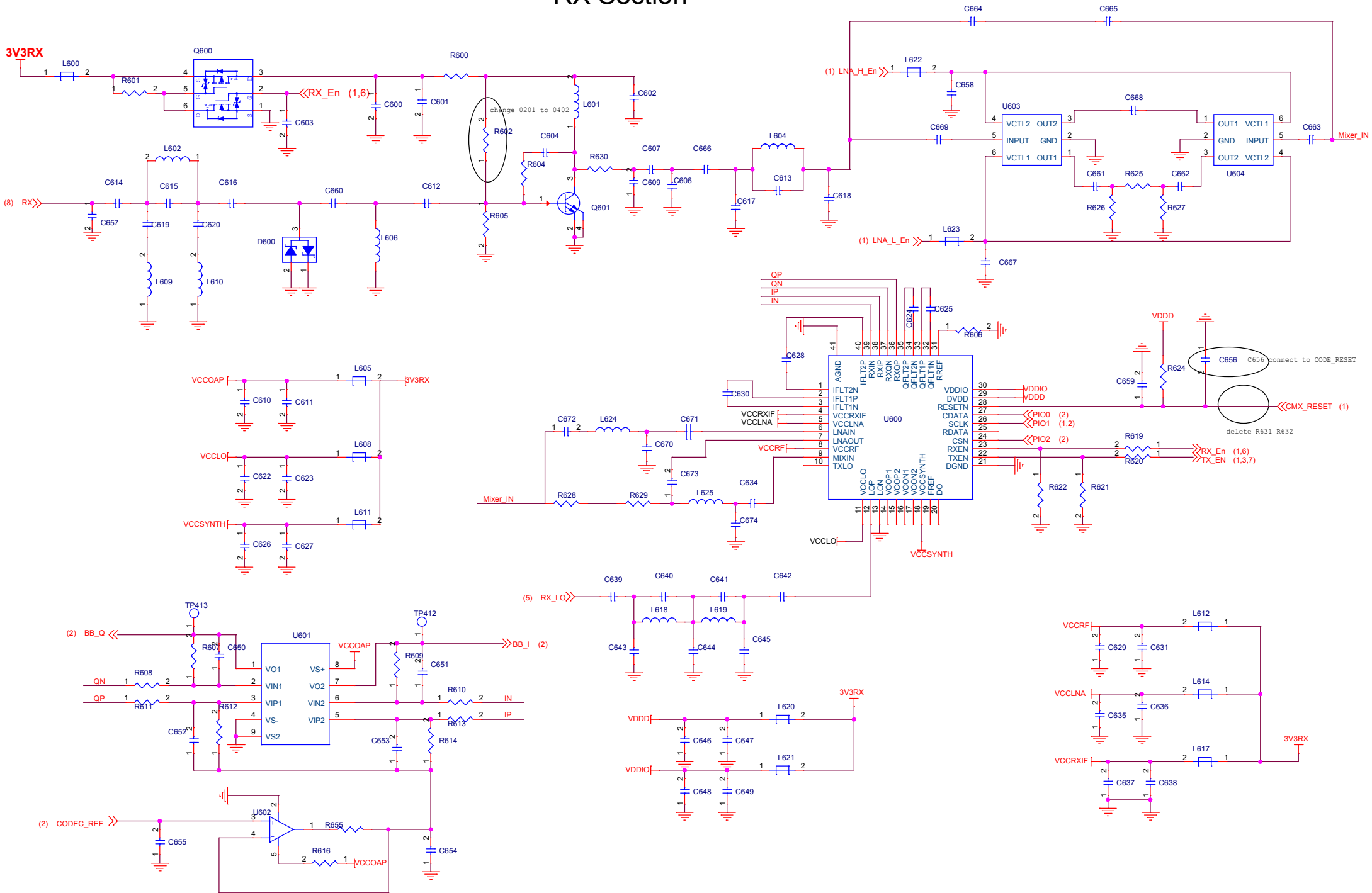
TX Section



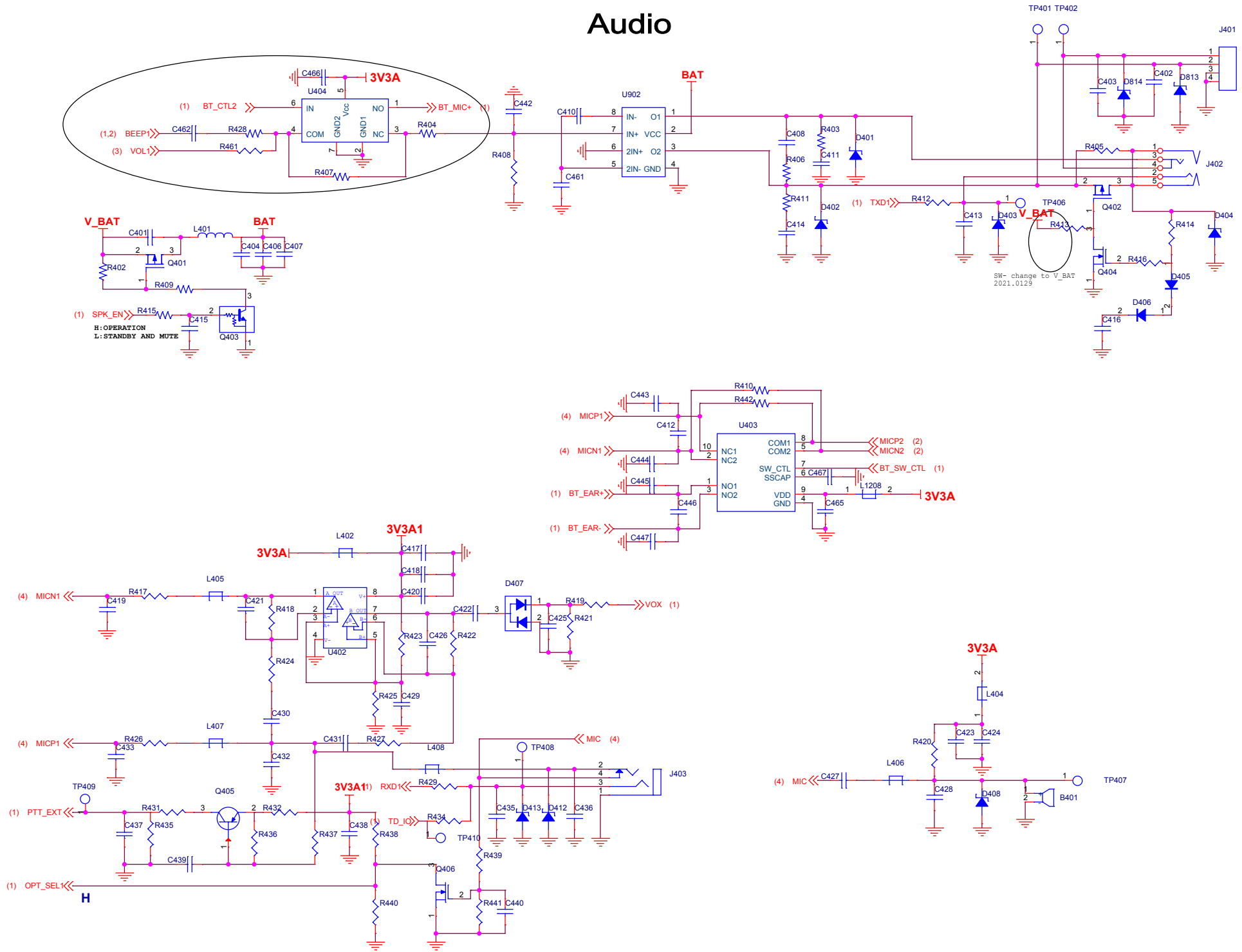
TX Power Control Circuit



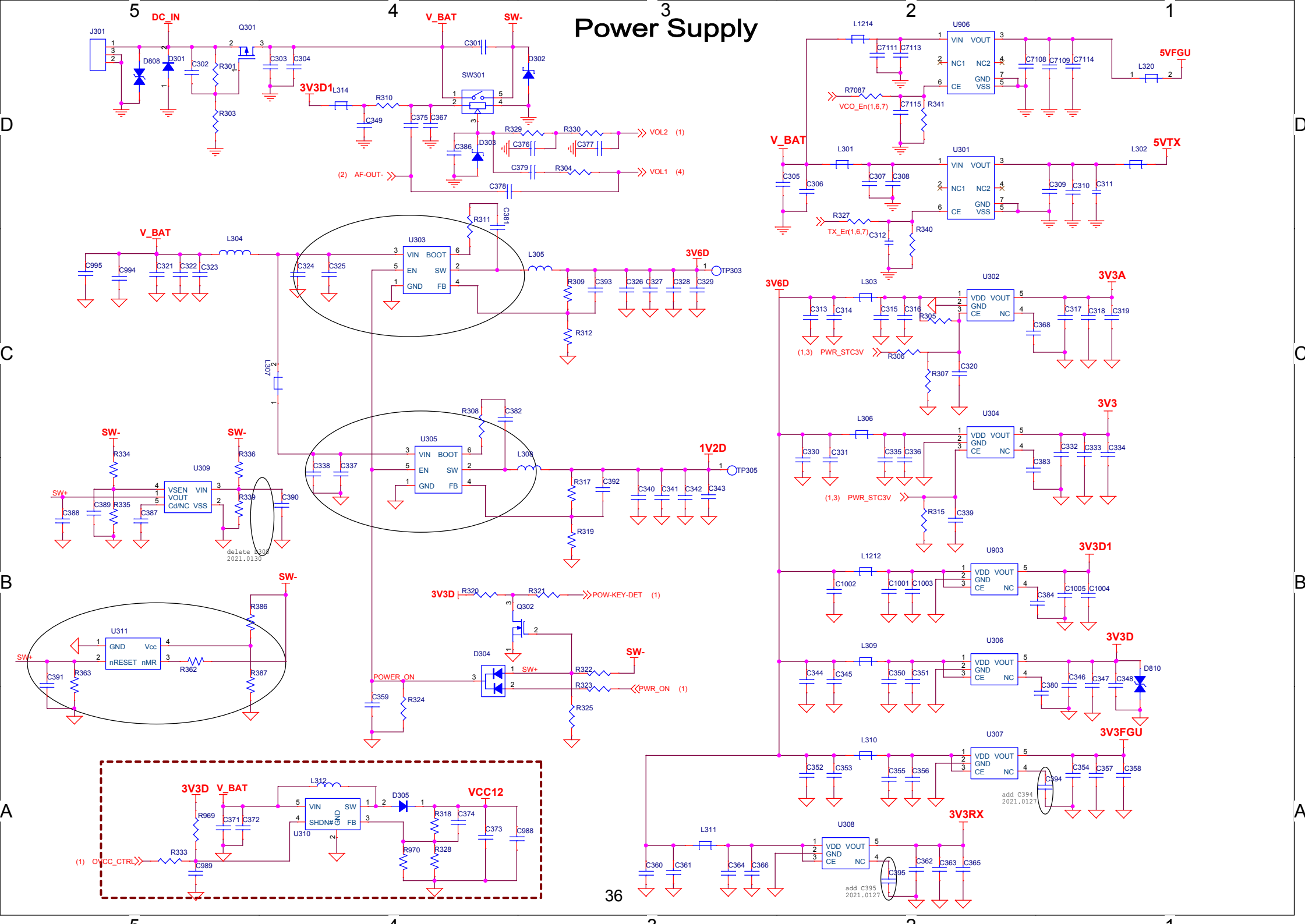
RX Section



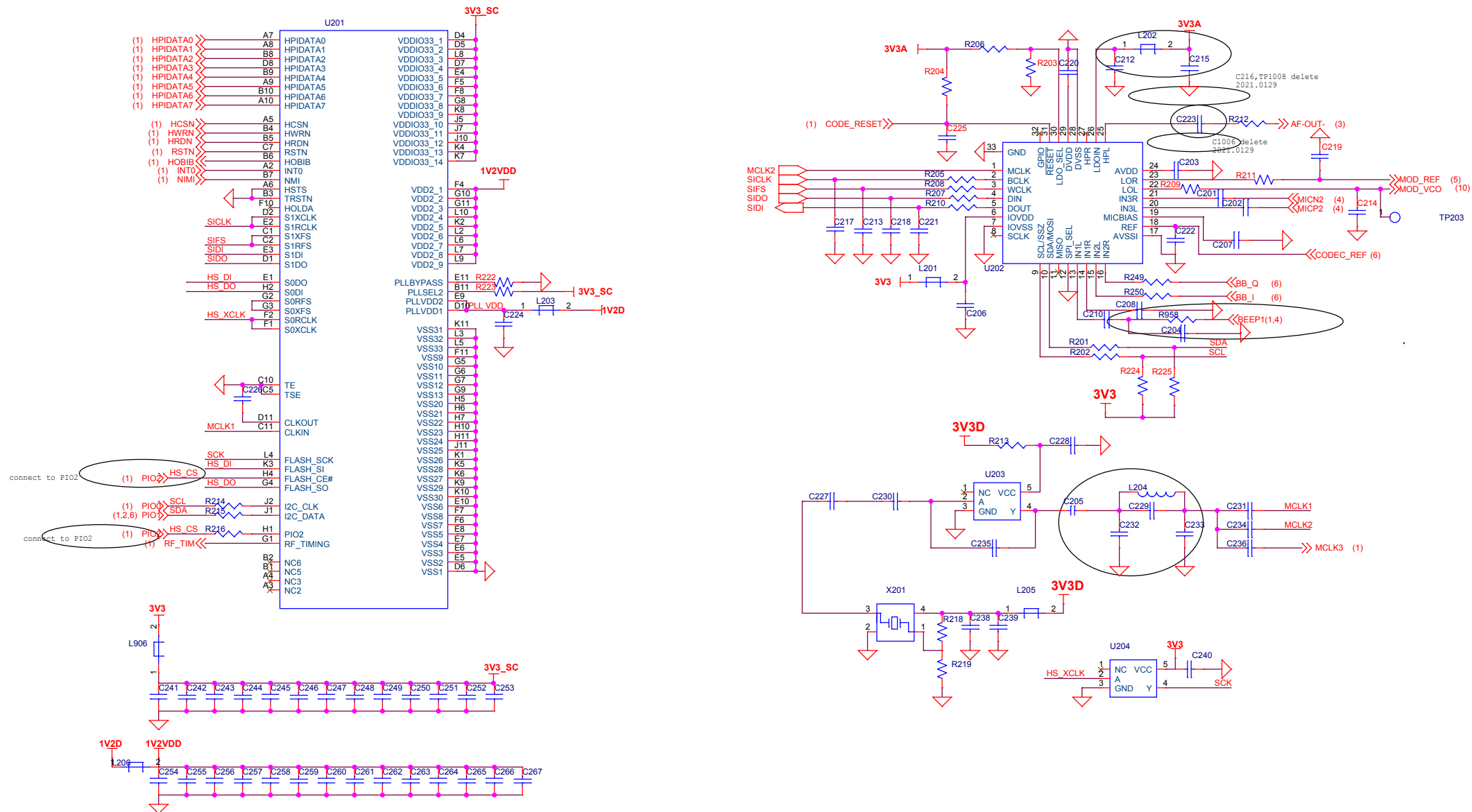
Audio



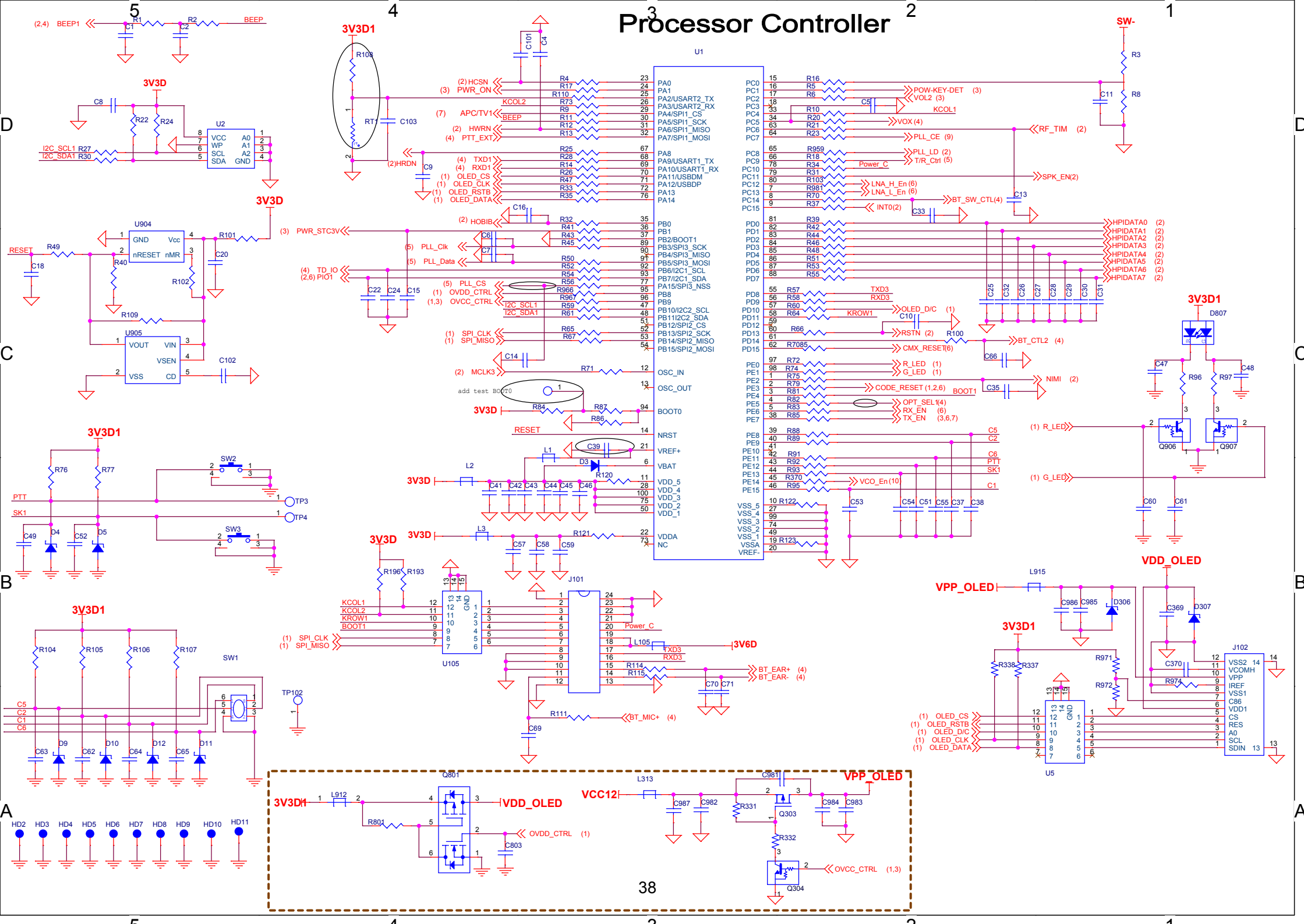
Power Supply



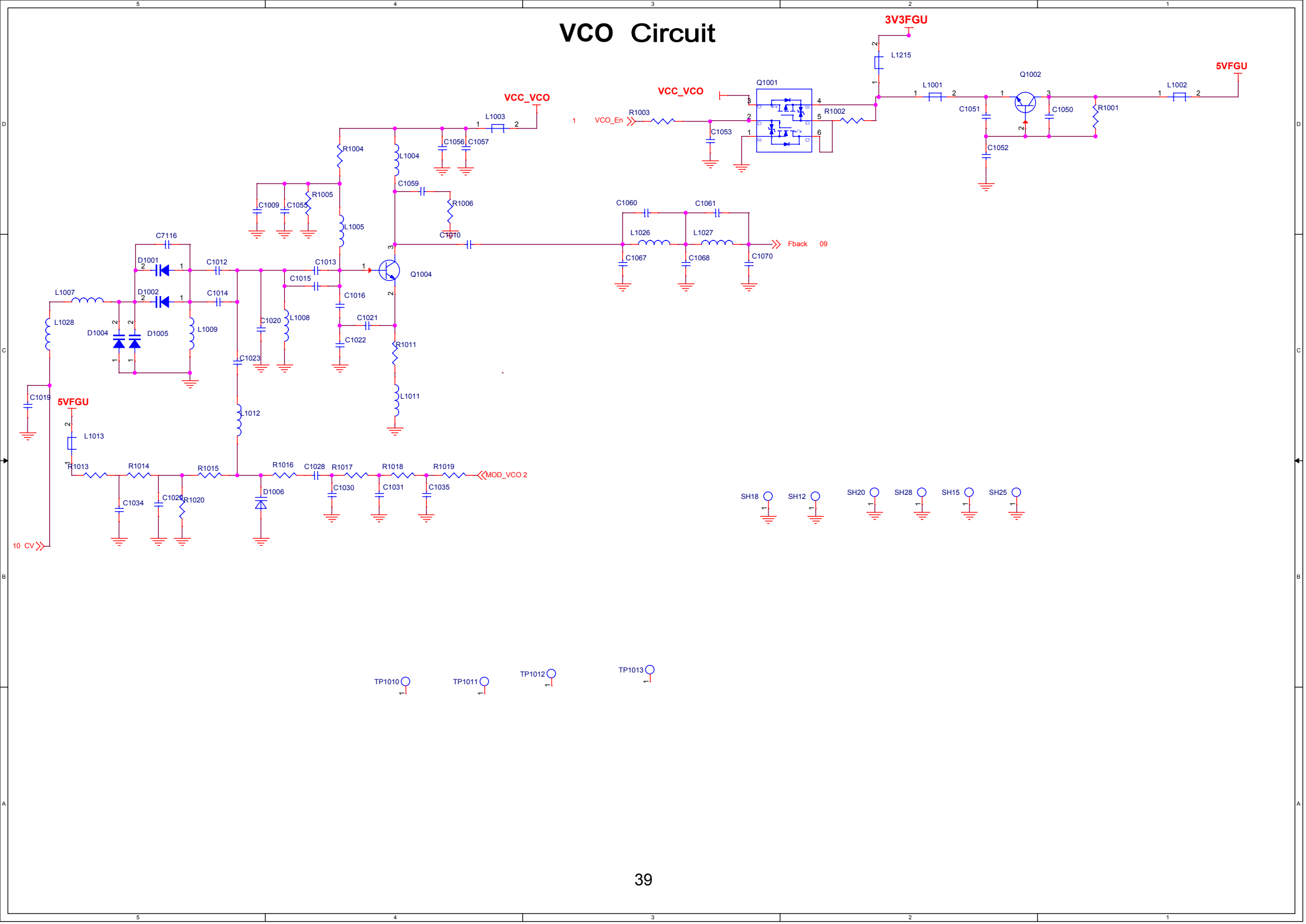
DSP&CODEC



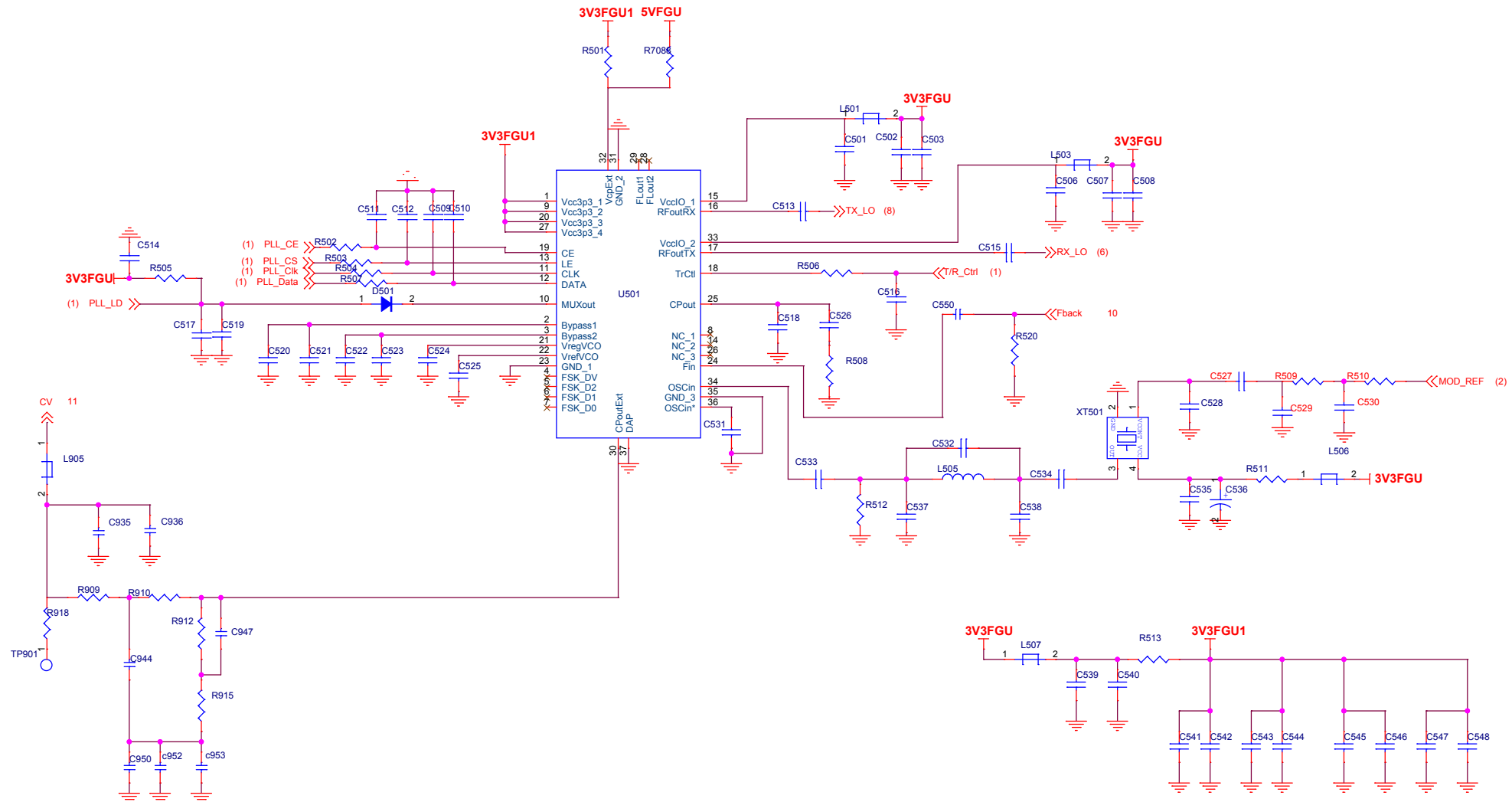
3 Processor Controller



VCO Circuit



FGU



12. Part List

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
1	/	/	5001010002072H	PCB	475	D307	T3C	500508000000051	ESD protection diode
2	C1	T2I	50020100001220	3.9nF	476	D4	T1C	500508000000051	ESD protection diode
3	C10	T3J	50020100001190	33PF	477	D401	T4C	500508000000045	ESD protection diode
4	C1001	T1F	50020100000559	1uF	478	D402	T4A	500508000000045	ESD protection diode
5	C1002	T1G	50020100000559	1uF	479	D403	T5C	500508000000034	ESD protection diode
6	C1003	T1F	50020100001470	470PF	480	D404	T5B	500508000000045	ESD protection diode
7	C1004	T1F	50020100001470	470PF	481	D405	T5D	500504000000008	Varistor
8	C1005	T1F	50020100000559	1uF	482	D406	T4E	500504000000008	Varistor
9	C1009	B4G	50020100001470	470PF	483	D407	T3F	50050900000143	Schottky barrier diode
10	C101	T2H	50020100001190	33PF	484	D408	T5F	500508000000051	ESD protection diode
11	C1010	B3G	50020100002077	7PF	485	D412	T4D	500508000000034	ESD protection diode
12	C1012	B4H	50020100061454	33pF	486	D413	T5D	500508000000034	ESD protection diode
13	C1013	B4G	50020100001323	18PF	487	D5	T1E	500508000000051	ESD protection diode
14	C1014	B4H	50020100002077	7PF	488	D501	B1H	500504000000008	Varistor
15	C1015	B4G	50020100001738	8PF	489	D600	B3D	50050900000143	Schottky barrier diode
16	C1016	B3G	50020100000731	47pF	490	D801	B2B	500504000000008	Varistor
17	C1019	B3H	50020100003392	1000PF	491	D802	B2C	500504000000008	Varistor
18	C102	T1H	50020100001200	0.1uF	492	D803	B2C	500504000000008	Varistor
19	C1020	B4H	50020100060504	5PF	493	D804	B2F	500504000000008	Varistor
20	C1021	B3G	50020100060529	220PF	494	D807	T3A	50050600060369	LED
21	C1022	B3G	50020100000350	30pF	495	D808	T3F	50050800061344	ESD protection diode
22	C103	T2H	50020100001200	0.1uF	496	D810	T3H	500508000000029	ESD protection diode
23	C1050	B4G	50020100001470	470PF	497	D813	T4C	500508000000034	ESD protection diode
24	C1051	B4G	50020100001470	470PF	498	D814	T4E	500508000000034	ESD protection diode

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
25	C1052	B4G	50020100060550	2.2uF	499	D9	T2B	50050800000051	ESD protection diode
26	C1053	B4G	50020100001470	470PF	500	J101	T3K	51040100000003	Board-to-board connector
27	C1055	B4G	50020100000393	0.1uF	501	J102	T3C	51040700000046	FPC connector
28	C1056	B4G	50020100001470	470PF	502	J301	B3F	51049900000833	Battery connector
29	C1057	B4G	50020100000393	0.1uF	503	J401	T4B	51040200000337	Board-to-board connector
30	C1059	B3G	50020100001470	470PF	504	L1	T2H	50040200000146	Ferrite bead
31	C1060	B2H	50020100062459	7PF	505	L1001	B5G	50040200000146	Ferrite bead
32	C1061	B2H	50020100000491	10pF	506	L1002	B4H	50040200000146	Ferrite bead
33	C1067	B2H	50020100060515	18pF	507	L1003	B4G	50040200000146	Ferrite bead
34	C1068	B2H	50020100060548	8PF	508	L1004	B3G	50040100000916	390nH
35	C1070	B2H	50020100060515	18pF	509	L1005	B4G	50040100000916	390nH
36	C11	T3H	50020100000834	1000PF	510	L1007	B3H	50040100064235	470nH
37	C13	T3J	50020100001190	33PF	511	L1008	B4G	50040100001055	68nH
38	C14	T4J	50020100001190	33PF	512	L1009	B4H	50040100000717	56nH
39	C15	T2I	50020100000441	100PF	513	L1011	B3G	50040100064792	470nH
40	C16	B4J	50020100001190	33PF	514	L1026	B2H	50040100000481	33nH
41	C18	T3H	50020100000845	0.01uF	515	L1027	B2H	50040100000481	33nH
42	C2	T2H	50020100001220	3.9nF	516	L1028	B3H	50040100064235	470nH
43	C20	T2H	50020100001200	0.1uF	517	L105	T3J	50040200000146	Ferrite bead
44	C201	B2J	50020100061434	0.1uF	518	L1208	B2J	50040200000146	Ferrite bead
45	C202	B2J	50020100061434	0.1uF	519	L1212	T1G	50040200000156	Ferrite bead
46	C203	B3J	50020100003390	10uF	520	L1214	B4I	50040200000156	Ferrite bead
47	C205	B3J	50020100004095	0.10uF	521	L1215	B5G	50040200000146	Ferrite bead
48	C206	B2K	50020100001181	0.1uF	522	L2	T2H	50040200000146	Ferrite bead
49	C207	B2J	50020100001200	0.1uF	523	L201	B2K	50040200000146	Ferrite bead
50	C208	B2J	50020100004095	0.10uF	524	L202	B3J	50030100001109	22Ω
51	C210	B2J	50020100001181	0.1uF	525	L203	B4J	50040200000146	Ferrite bead
52	C212	B3J	50020100003390	10uF	526	L205	B3K	50040200000146	Ferrite bead
53	C213	B2K	50020100001190	33PF	527	L206	B5J	50040200000146	Ferrite bead
54	C215	B3J	50020100001181	0.1uF	528	L3	T2H	50040200000146	Ferrite bead
55	C216	B3J	50020100061434	0.1uF	529	L301	T2G	50040200000156	Ferrite bead
56	C217	B3K	50020100001190	33PF	530	L302	T2F	50040200000156	Ferrite bead
57	C218	B2K	50020100001190	33PF	531	L303	T2G	50040200000156	Ferrite bead
58	C219	B2J	50020100003897	0.01uF	532	L304	T5G	50040100000518	3.3uH

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
59	C22	T4H	50020100001190	33PF	533	L305	T5H	50040100063675	3.3uH
60	C220	B3J	50020100003390	10uF	534	L306	B5J	50040200000156	Ferrite bead
61	C221	B2K	50020100001190	33PF	535	L307	T5H	50040200000146	Ferrite bead
62	C222	B2J	50020100003390	10uF	536	L308	T5I	50040100063675	3.3uH
63	C223	B3J	50020100061434	0.1uF	537	L309	T4H	50040200000156	Ferrite bead
64	C224	B3J	50020100001181	0.1uF	538	L310	T1G	50040200000156	Ferrite bead
65	C225	B3K	50020100001380	0.01uF	539	L311	T4F	50040200000156	Ferrite bead
66	C227	B3J	50020100001181	0.1uF	540	L312	T5J	50040100063675	3.3uH
67	C228	B3J	50020100001181	0.1uF	541	L313	T5J	50040200000146	Ferrite bead
68	C229	B3J	50030100000297	0Ω	542	L314	T3B	50040200000156	Ferrite bead
69	C230	B3J	50030100001511	1KΩ	543	L320	B4H	50040200000146	Ferrite bead
70	C231	B3J	50020100001181	0.1uF	544	L401	T2C	50040100000518	3.3uH
71	C234	B3J	50020100001181	0.1uF	545	L402	T4G	50040200000151	Ferrite bead
72	C235	B3J	50030100001495	330KΩ	546	L404	T5F	50040200000146	Ferrite bead
73	C236	B3J	50020100001181	0.1uF	547	L405	T4F	50040200000146	Ferrite bead
74	C238	B3K	50020100001470	470PF	548	L406	T5F	50040200000146	Ferrite bead
75	C239	B3K	50020100001181	0.1uF	549	L407	T5F	50040200000146	Ferrite bead
76	C24	T4I	50020100000441	100PF	550	L408	T4D	50040200000146	Ferrite bead
77	C240	B4K	50020100001181	0.1uF	551	L501	B2H	50040200000146	Ferrite bead
78	C241	B4J	50020100001181	0.1uF	552	L503	B1I	50040200000146	Ferrite bead
79	C242	B4J	50020100001470	470PF	553	L505	B1I	50040100063454	220nH
80	C243	B4J	50020100001181	0.1uF	554	L506	B2I	50040200000146	Ferrite bead
81	C244	T4J	50020100001470	470PF	555	L507	B1G	50040200000146	Ferrite bead
82	C245	B4J	50020100001181	0.1uF	556	L600	B4C	50040200000146	Ferrite bead
83	C246	T4J	50020100001470	470PF	557	L601	B4C	50040100064767	120nH
84	C247	T4J	50020100001181	0.1uF	558	L602	B2C	50040100000419	100nH
85	C248	B4J	50020100001470	470PF	559	L604	B3D	50040100000481	33nH
86	C249	B4J	50020100001181	0.1uF	560	L605	B3I	50040200000146	Ferrite bead
87	C25	T4I	50020100001190	33PF	561	L606	B3D	50040100000487	56nH
88	C250	B4J	50020100001470	470PF	562	L608	B5E	50040100000481	33nH
89	C251	B4J	50020100001181	0.1uF	563	L609	B2C	50040100000419	100nH
90	C252	T4J	50020100001470	470PF	564	L610	B2C	50040100000419	100nH
91	C253	B5J	50020100001181	0.1uF	565	L611	B5F	50040100000481	33nH
92	C254	B4J	50020100001181	0.1uF	566	L612	B5E	50040100000481	33nH
93	C255	B3K	50020100001470	470PF	567	L614	B4E	50040100000481	33nH
94	C256	B3K	50020100001181	0.1uF	568	L617	B4E	50040100000481	33nH

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
95	C257	B4K	50020100001470	470PF	569	L618	B5F	50040100000421	22nH
96	C258	B3J	50020100001181	0.1uF	570	L619	B5F	50040100000421	22nH
97	C259	B4K	50020100001470	470PF	571	L620	B4G	50040100000481	33nH
98	C26	T4I	50020100001190	33PF	572	L621	B4G	50040100000481	33nH
99	C260	B5J	50020100001181	0.1uF	573	L622	B4D	50040200000137	Ferrite bead
100	C261	B5J	50020100001470	470PF	574	L623	B4D	50040200000137	Ferrite bead
101	C262	B3J	50020100001181	0.1uF	575	L625	B5E	50040100000419	100nH
102	C263	B5J	50020100001470	470PF	576	L801	B2F	50040200000156	Ferrite bead
103	C264	B4J	50020100001181	0.1uF	577	L802	B2E	50040200000162	Ferrite bead
104	C265	B5J	50020100001470	470PF	578	L803	B2D	50040300060185	Air-core coil
105	C266	B4J	50020100001181	0.1uF	579	L804	B2B	50040100000931	220nH
106	C267	B5J	50020100001470	470PF	580	L805	B2E	50040100062016	780nH
107	C27	T4I	50020100001190	33PF	581	L806	B1B	50040100000494	18nH
108	C28	T4I	50020100001190	33PF	582	L807	B2B	50040300060185	Air-core coil
109	C29	T4I	50020100001190	33PF	583	L808	B3B	50040300060185	Air-core coil
110	C30	T4I	50020100001190	33PF	584	L809	B4B	50040300060185	Air-core coil
111	C301	T5B	50020100061434	0.1uF	585	L810	B2E	50020100062430	390PF
112	C302	T3F	50020100000078	2.2uF	586	L811	B2E	50040100000499	33nH
113	C303	T3F	50020100003767	10uF	587	L812	B1F	50030100001783	33Ω
114	C304	T3F	50020100061434	0.1uF	588	L813	B3C	50040300060185	Air-core coil
115	C305	T2G	50020100060530	4.7uF	589	L814	B1F	50040100064767	120nH
116	C306	T2G	50020100060524	100pF	590	L815	B1F	50040100000490	8.2nH
117	C307	T2G	50020100060534	1uF	591	L820	B1D	50040300060182	Air-core coil
118	C308	T2G	50020100004095	0.10uF	592	L821	B1C	50040300060184	Air-core coil
119	C309	T1F	50020100060550	2.2uF	593	L822	B1C	50040300060184	Air-core coil
120	C31	T4I	50020100001190	33PF	594	L905	B3H	50040200000146	Ferrite bead
121	C310	T2F	50020100004095	0.10uF	595	L906	B5J	50030100001005	0Ω
122	C311	T2F	50020100001392	100pF	596	L912	T1E	50040200000156	Ferrite bead
123	C312	T1G	50020100001470	470PF	597	L915	T4C	50040200000156	Ferrite bead
124	C313	T2G	50020100060539	0.22uF	598	Q1001	B4G	50060400000002	Compound transistor
125	C314	T2G	50020100061854	470pF	599	Q1002	B4G	50060100000008	NPN transistor
126	C315	T2G	50020100003833	4.7uF	600	Q1004	B3G	50060100000019	NPN transistor
127	C316	T2G	50020100061434	0.1uF	601	Q301	T3F	50070400000105	P-MOSFET
128	C317	T3G	50020100000686	2.2UF	602	Q302	T4G	50070300000055	N-MOSFET
129	C318	T3G	50020100061434	0.1uF	603	Q303	T4K	50070400000105	P-MOSFET
130	C319	T3G	50020100060524	100pF	604	Q304	T4K	50060300000009	Bias resistor

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
									transistor
131	C32	T4I	50020100001190	33PF	605	Q401	T2C	50070400000105	P-MOSFET
132	C320	T2G	50020100061854	470pF	606	Q402	T4C	50070400000105	P-MOSFET
133	C321	T5G	50020100003681	22uF	607	Q403	T1D	50060300000009	Bias resistor transistor
134	C322	T5G	50020100061434	0.1uF	608	Q404	T5D	50070300000055	N-MOSFET
135	C323	T5G	50020100061854	470pF	609	Q405	T3F	50060200000036	PNP transistor
136	C324	T5G	50020100003681	22uF	610	Q406	T4E	50070300000055	N-MOSFET
137	C325	T5H	50020100061434	0.1uF	611	Q600	B4C	50060400000002	Compound transistor
138	C326	T5H	50020100060783	22UF	612	Q601	B3D	50060100000015	NPN transistor
139	C327	T5H	50020100060783	22UF	613	Q7007	B1G	50060100000149	NPN transistor
140	C328	T5H	50020100061434	0.1uF	614	Q701	T2G	50060400000002	Compound transistor
141	C329	T5H	50020100060524	100pF	615	Q801	T2F	50060400000002	Compound transistor
142	C33	T3H	50020100001190	33PF	616	Q802	B2F	50070500000003	PA MOSFET
143	C330	B5J	50020100060539	0.22uF	617	Q803	B1E	50070500082004	PA MOSFET
144	C331	B5J	50020100061854	470pF	618	Q906	T3A	50060300000009	Bias resistor transistor
145	C332	B5J	50020100000686	2.2UF	619	Q907	T2A	50060300000009	Bias resistor transistor
146	C333	B5J	50020100061434	0.1uF	620	R1	T2H	50030100001582	10KΩ
147	C334	B5J	50020100060524	100pF	621	R10	T2I	50030100001961	100Ω
148	C335	B5J	50020100003833	4.7uF	622	R100	T3J	50030100001961	100Ω
149	C336	B5J	50020100061434	0.1uF	623	R1001	B4G	50030100001299	4.7KΩ
150	C337	T5I	50020100061434	0.1uF	624	R1002	B4G	50030100001851	82KΩ
151	C338	T5H	50020100003681	22uF	625	R1003	B4G	50030100001511	1KΩ
152	C339	B5J	50020100061854	470pF	626	R1004	B3G	50030100000590	2.2KΩ
153	C340	T5I	50020100060783	22UF	627	R1005	B4G	50030100001723	8.2KΩ
154	C341	T5I	50020100060783	22UF	628	R1006	B3G	50030100001961	100Ω
155	C342	T5I	50020100061434	0.1uF	629	R101	T2H	50030100001961	100Ω
156	C343	T5I	50020100060524	100pF	630	R1011	B3G	50030100001506	180Ω
157	C344	T4H	50020100060539	0.22uF	631	R103	T4I	50030100001961	100Ω
158	C345	T4H	50020100061854	470pF	632	R104	T2B	50030100000012	47KΩ
159	C346	T3H	50020100000686	2.2UF	633	R105	T1B	50030100000012	47KΩ
160	C347	T3H	50020100061434	0.1uF	634	R106	T1B	50030100000012	47KΩ
161	C348	T3H	50020100060524	100pF	635	R107	T1B	50030100000012	47KΩ
162	C349	T3A	50020100003897	0.01uF	636	R108	T3G	50030100001369	10KΩ

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
163	C35	B4J	50020100001190	33PF	637	R109	T2H	50030100000522	33KΩ
164	C350	T4H	50020100003833	4.7uF	638	R11	T2H	50030100001961	100Ω
165	C351	T4H	50020100061434	0.1uF	639	R110	T2H	50030100001961	100Ω
166	C352	T1G	50020100060539	0.22uF	640	R111	T4K	50030100000887	4.7KΩ
167	C353	T1G	50020100061854	470pF	641	R114	T2K	50030100001961	100Ω
168	C354	T1G	50020100000686	2.2UF	642	R115	T2K	50030100001961	100Ω
169	C355	T1G	50020100003833	4.7uF	643	R12	T2H	50030100001961	100Ω
170	C356	T1G	50020100061434	0.1uF	644	R120	T3H	50030100000297	0Ω
171	C357	T1H	50020100061434	0.1uF	645	R121	T2H	50030100000297	0Ω
172	C358	T1H	50020100060524	100pF	646	R122	T3H	50030100000867	0Ω
173	C359	T5G	50020100003387	1uF	647	R123	T2H	50030100000867	0Ω
174	C360	T4G	50020100060539	0.22uF	648	R13	T2I	50030100001961	100Ω
175	C361	T4F	50020100061854	470pF	649	R14	T3J	50030100001961	100Ω
176	C362	T5F	50020100000686	2.2UF	650	R16	T3H	50030100001961	100Ω
177	C363	T5F	50020100061434	0.1uF	651	R17	T2H	50030100001961	100Ω
178	C364	T4F	50020100003833	4.7uF	652	R18	T3J	50030100001961	100Ω
179	C365	T5F	50020100060524	100pF	653	R2	T2H	50030100001299	4.7KΩ
180	C366	T4F	50020100061434	0.1uF	654	R20	T2I	50030100001961	100Ω
181	C367	T4A	50020100001392	100pF	655	R201	B2K	50030100001493	33Ω
182	C368	T3G	50020100004095	0.10uF	656	R202	B2K	50030100001493	33Ω
183	C369	T2E	50020100003833	4.7uF	657	R204	B3K	50030100000012	47KΩ
184	C37	T2I	50020100001190	33PF	658	R205	B3K	50030100001493	33Ω
185	C370	T4C	50020100060530	4.7uF	659	R206	B3J	50030100000012	47KΩ
186	C371	T5I	50020100000686	2.2UF	660	R207	B2K	50030100001493	33Ω
187	C372	T5I	50020100061434	0.1uF	661	R208	B2K	50030100001493	33Ω
188	C373	T5J	50020100003833	4.7uF	662	R209	B2J	50030100000888	51Ω
189	C374	T5J	50020100061854	470pF	663	R21	T3J	50030100001961	100Ω
190	C375	T4A	50020100061434	0.1uF	664	R210	B2K	50030100001493	33Ω
191	C376	B4A	50020100061434	0.1uF	665	R211	B2J	50030100001644	1KΩ
192	C377	B4B	50020100061434	0.1uF	666	R212	B3J	50030100000876	5.6KΩ
193	C379	B4A	50020100061434	0.1uF	667	R213	B3J	50030100000219	22Ω
194	C38	T2I	50020100001190	33PF	668	R214	B4J	50030100000298	10Ω
195	C380	T3H	50020100004095	0.10uF	669	R215	B4J	50030100000298	10Ω
196	C381	T5H	50020100061434	0.1uF	670	R216	B4J	50030100000298	10Ω
197	C382	T5I	50020100061434	0.1uF	671	R219	B3K	50030100001005	0Ω
198	C383	B5J	50020100004095	0.10uF	672	R22	B1J	50030100001299	4.7KΩ

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
199	C384	T1F	50020100004095	0.10uF	673	R222	B4J	50030100001582	10KΩ
200	C386	B4A	50020100001392	100pF	674	R223	B4J	50030100001582	10KΩ
201	C387	T4G	50020100001181	0.1uF	675	R224	B2K	50030100001299	4.7KΩ
202	C388	T3G	50020100001181	0.1uF	676	R225	B2K	50030100001299	4.7KΩ
203	C389	T4G	50020100003387	1uF	677	R23	T3J	50030100001961	100Ω
204	C39	T2H	50020100000559	1uF	678	R24	B1J	50030100001299	4.7KΩ
205	C390	T3G	50020100003387	1uF	679	R249	B2J	50030100000297	0Ω
206	C391	T4G	50020100001181	0.1uF	680	R25	T3J	50030100001961	100Ω
207	C392	T5I	500201000060524	100pF	681	R250	B2J	50030100000297	0Ω
208	C393	T5H	500201000060524	100pF	682	R26	T3J	50030100001493	33Ω
209	C394	T1H	50020100004095	0.10uF	683	R27	B1J	50030100000816	47Ω
210	C395	T5F	50020100004095	0.10uF	684	R28	T3J	50030100001961	100Ω
211	C4	T2H	50020100001190	33PF	685	R3	T3H	50030100000747	330KΩ
212	C401	T2C	50020100000084	0.1uF	686	R30	B1J	50030100000816	47Ω
213	C402	T4A	50020100000815	27PF	687	R301	T3G	50030100000270	470KΩ
214	C403	T4A	50020100000815	27PF	688	R303	T3G	50030100001664	47KΩ
215	C404	T1C	50020100003767	10uF	689	R304	T4A	50030100001537	5.6KΩ
216	C406	T1C	50020100003767	10uF	690	R305	T2G	50030100001369	10KΩ
217	C407	T1C	500201000060517	1nF	691	R306	T2G	50030100001005	0Ω
218	C41	T2H	50020100001200	0.1uF	692	R307	T2G	50030100001917	100KΩ
219	C410	T1B	50020100003830	10uF	693	R308	T5I	50030100000316	0Ω
220	C411	T1C	500201000061434	0.1uF	694	R309	T5H	50030100002253	182K
221	C412	B2J	50020100003384	270pF	695	R31	T4J	50030100001961	100Ω
222	C413	T5D	50020100001968	10PF	696	R310	T3A	50030100000179	15KΩ
223	C414	T2B	500201000061434	0.1uF	697	R311	T5H	50030100000316	0Ω
224	C415	T1D	500201000061854	470pF	698	R312	T5H	50030100002348	49.9K
225	C416	T5E	500201000061434	0.1uF	699	R315	B5J	50030100001917	100KΩ
226	C417	T4F	500201000060539	0.22uF	700	R317	T5I	50030100003121	51.1K
227	C418	T4F	500201000061434	0.1uF	701	R318	T5J	50030100001364	120KΩ
228	C419	T4F	500201000061854	470pF	702	R319	T5I	50030100001396	91KΩ
229	C42	T4H	50020100001200	0.1uF	703	R32	T2I	50030100001961	100Ω
230	C420	T4F	500201000060517	1nF	704	R320	T4G	50030100001664	47KΩ
231	C421	T4F	500201000060512	22pF	705	R321	T4G	50030100001644	1KΩ
232	C422	T3F	50020100003387	1uF	706	R322	T4G	50030100001664	47KΩ
233	C423	T5F	500201000061434	0.1uF	707	R323	T5G	50030100001369	10KΩ
234	C424	T5F	500201000060517	1nF	708	R324	T5G	50030100001664	47KΩ

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
235	C425	T3G	50020100003387	1uF	709	R327	T1G	50030100001005	0Ω
236	C426	T3F	50020100060512	22pF	710	R328	T5J	50030100000179	15KΩ
237	C427	T4E	50020100000084	0.1uF	711	R329	B4A	50030100000250	30KΩ
238	C428	T5E	50020100060517	1nF	712	R33	T3J	50030100001493	33Ω
239	C429	T3F	50020100061434	0.1uF	713	R330	B4B	50030100000250	30KΩ
240	C43	T3H	50020100001200	0.1uF	714	R331	T4K	50030100001664	47KΩ
241	C430	T5F	50020100061434	0.1uF	715	R332	T4K	50030100000276	680Ω
242	C431	T5F	50020100061434	0.1uF	716	R334	T4G	50030100000133	51KΩ
243	C432	T4D	50020100060517	1nF	717	R335	T4G	50030100000133	51KΩ
244	C433	T5F	50020100061854	470pF	718	R336	T3G	50030100000522	33KΩ
245	C435	T5D	50020100001968	10PF	719	R337	T2C	50030100002036	4.7KΩ
246	C436	T4D	50020100060524	100pF	720	R338	T2C	50030100002036	4.7KΩ
247	C437	T4F	50020100061434	0.1uF	721	R339	T3G	50030100000133	51KΩ
248	C438	T3E	50020100060517	1nF	722	R34	T4J	50030100001961	100Ω
249	C439	T4D	50020100060517	1nF	723	R340	T1G	50030100001917	100KΩ
250	C44	T3J	50020100001200	0.1uF	724	R341	B5I	50030100001917	100KΩ
251	C440	T4E	50020100061434	0.1uF	725	R35	T4J	50030100001493	33Ω
252	C442	T1C	50020100062391	15nF	726	R363	T4G	50030100001917	100KΩ
253	C443	B2J	50020100003384	270pF	727	R37	T4H	50030100001961	100Ω
254	C444	B2J	50020100003384	270pF	728	R370	T2I	50030100001961	100Ω
255	C445	B2J	50020100003384	270pF	729	R39	T4I	50030100001961	100Ω
256	C446	B2J	50020100003384	270pF	730	R4	T2H	50030100001961	100Ω
257	C447	B2J	50020100003384	270pF	731	R40	T2H	50030100001917	100KΩ
258	C45	T2J	50020100001470	470PF	732	R402	T2D	50030100001664	47KΩ
259	C46	T2H	50020100001470	470PF	733	R403	T2C	50030100001040	4.7Ω
260	C461	T1B	50020100003897	0.01uF	734	R404	B3J	50030100001005	0Ω
261	C462	B3J	50020100001181	0.1uF	735	R408	T1C	50030100001369	10KΩ
262	C465	B2J	50020100001200	0.1uF	736	R409	T1D	50030100000276	680Ω
263	C466	B3J	50020100001181	0.1uF	737	R41	T2I	50030100001961	100Ω
264	C47	T3A	50020100001200	0.1uF	738	R411	T2B	50030100001040	4.7Ω
265	C48	T3A	50020100001200	0.1uF	739	R412	T5D	50030100001783	33Ω
266	C49	T1C	50020100001470	470PF	740	R413	T4B	50030100001664	47KΩ
267	C5	T2I	50020100001190	33PF	741	R414	T5D	50030100001005	0Ω
268	C501	B2H	50020100060524	100pF	742	R415	T1C	50030100001644	1KΩ
269	C502	B1G	50020100061854	470pF	743	R416	T5D	50030100001644	1KΩ
270	C503	B1G	50020100061434	0.1uF	744	R417	T4F	50030100000469	100Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
271	C506	B1I	50020100060524	100pF	745	R418	T5F	50030100001369	10KΩ
272	C507	B1I	50020100061854	470pF	746	R419	T3G	50030100001369	10KΩ
273	C508	B2I	50020100061434	0.1uF	747	R42	T4I	50030100001961	100Ω
274	C509	B1H	50020100001190	33PF	748	R420	T5F	50030100001218	2.2KΩ
275	C51	T2I	50020100001190	33PF	749	R421	T3G	50030100001815	220KΩ
276	C510	B1H	50020100001190	33PF	750	R422	T3F	50030100000710	1MΩ
277	C511	B2H	50020100001190	33PF	751	R423	T4F	50030100001664	47KΩ
278	C512	B1H	50020100001190	33PF	752	R424	T5F	50030100001369	10KΩ
279	C513	B2H	50020100060524	100pF	753	R425	T3F	50030100001664	47KΩ
280	C514	B2G	50020100061434	0.1uF	754	R426	T5F	50030100000469	100Ω
281	C515	B2H	50020100060524	100pF	755	R427	T4F	50030100001369	10KΩ
282	C516	B2H	50020100061454	33pF	756	R428	B3J	50030100001582	10KΩ
283	C517	B1H	50020100061434	0.1uF	757	R429	T5D	50030100001783	33Ω
284	C518	B2H	50020100062430	390PF	758	R43	T2I	50030100000012	47KΩ
285	C519	B1G	50020100061854	470pF	759	R431	T3F	50030100000590	2.2KΩ
286	C52	T1E	50020100001470	470PF	760	R432	T3E	50030100000252	330Ω
287	C520	B1H	50020100061434	0.1uF	761	R435	T4F	50030100000949	100KΩ
288	C521	B1H	50020100061854	470pF	762	R436	T3E	50030100002036	4.7KΩ
289	C522	B1H	50020100061434	0.1uF	763	R437	T4D	50030100000590	2.2KΩ
290	C523	B1H	50020100061854	470pF	764	R438	T3E	50030100001369	10KΩ
291	C524	B2H	50020100062306	2.2uF	765	R439	T4E	50030100001369	10KΩ
292	C525	B2H	50020100061434	0.1uF	766	R44	T4I	50030100001961	100Ω
293	C526	B2H	50020100003787	4700pF	767	R440	T4E	50030100000167	56KΩ
294	C527	B2I	50030100001005	0Ω	768	R441	T4E	50030100000710	1MΩ
295	C53	T2I	50020100001190	33PF	769	R45	T4I	50030100001961	100Ω
296	C530	B2I	50020100003392	1000PF	770	R46	T4I	50030100001961	100Ω
297	C531	B1I	50020100061434	0.1uF	771	R461	B3J	50030100001005	0Ω
298	C533	B1I	50020100003392	1000PF	772	R47	T3J	50030100001493	33Ω
299	C534	B1I	50020100003392	1000PF	773	R48	T4I	50030100001961	100Ω
300	C535	B2I	50020100061434	0.1uF	774	R49	T3H	50030100001493	33Ω
301	C536	B2I	50020100003704	10uF	775	R5	T3H	50030100001961	100Ω
302	C537	B1I	50020100001667	20PF	776	R50	T4I	50030100001961	100Ω
303	C538	B1I	50020100001667	20PF	777	R501	B2I	50030100001067	5.6Ω
304	C539	B1H	50020100061434	0.1uF	778	R502	B2H	50030100000298	10Ω
305	C54	T2I	50020100001190	33PF	779	R503	B1H	50030100000298	10Ω
306	C540	B1H	50020100001470	470PF	780	R504	B1H	50030100000298	10Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
307	C541	B2I	50020100001181	0.1uF	781	R505	B1G	50030100001369	10KΩ
308	C542	B2H	50020100001470	470PF	782	R506	B2H	50030100000550	10Ω
309	C543	B1H	50020100001470	470PF	783	R507	B1H	50030100000298	10Ω
310	C544	B1I	50020100001181	0.1uF	784	R508	B2H	50030100000640	680Ω
311	C545	B2H	50020100001181	0.1uF	785	R509	B2I	50030100001005	0Ω
312	C546	B1H	50020100001470	470PF	786	R51	T4I	50030100001961	100Ω
313	C547	B1I	50020100001181	0.1uF	787	R510	B2I	50030100001644	1KΩ
314	C548	B2H	50020100001470	470PF	788	R511	B2I	50030100000550	10Ω
315	C55	T2I	50020100001190	33PF	789	R513	B1H	50030100000316	0Ω
316	C550	B2H	50020100001470	470PF	790	R52	T4I	50030100001961	100Ω
317	C57	T2H	50020100000686	2.2UF	791	R53	T4I	50030100001961	100Ω
318	C58	T2H	50020100000845	0.01uF	792	R54	T4H	50030100001961	100Ω
319	C59	T2H	50020100001470	470PF	793	R55	T4I	50030100001961	100Ω
320	C6	T4I	50020100001190	33PF	794	R56	T4J	50030100001961	100Ω
321	C60	T3A	50020100001470	470PF	795	R57	T2J	50030100001961	100Ω
322	C600	B3C	50020100000693	0.1uF	796	R58	T2J	50030100001961	100Ω
323	C601	B3C	50020100001470	470PF	797	R59	T2J	50030100001961	100Ω
324	C602	B3C	50020100001470	470PF	798	R6	T2H	50030100001961	100Ω
325	C603	B4C	50020100001470	470PF	799	R60	T2J	50030100001493	33Ω
326	C604	B3C	50020100003413	120pF	800	R600	B3C	50030100000888	51Ω
327	C606	B4D	50020100000878	3.9PF	801	R601	B4C	50030100000157	82KΩ
328	C607	B4D	50020100000243	8.2PF	802	R602	B3C	50030100001425	9.1K
329	C61	T2A	50020100001470	470PF	803	R604	B3C	50030100001644	1KΩ
330	C610	B3I	50020100000693	0.1uF	804	R605	B3D	50030100000170	6.8KΩ
331	C611	B3I	50020100001470	470PF	805	R606	B4F	50030100001971	10KΩ
332	C612	B3D	50020100000731	47pF	806	R607	B4I	50030100002029	33KΩ
333	C613	B3D	500201000060504	5PF	807	R608	B4I	50030100000022	120K
334	C614	B3C	50020100000731	47pF	808	R609	B3I	50030100002029	33KΩ
335	C615	B3C	500201000061454	33pF	809	R61	T2J	50030100001961	100Ω
336	C616	B2D	50020100000731	47pF	810	R610	B3I	50030100000022	120K
337	C617	B3D	50020100000352	3.6pF	811	R611	B4I	50030100000022	120K
338	C618	B4D	50020100000352	3.6pF	812	R612	B4I	50030100002029	33KΩ
339	C619	B2C	50020100000731	47pF	813	R613	B3I	50030100000022	120K
340	C62	T1B	50020100001470	470PF	814	R614	B3I	50030100002029	33KΩ
341	C620	B2D	50020100000731	47pF	815	R616	B3I	50030100000297	0Ω
342	C622	B5F	50020100000693	0.1uF	816	R619	B4G	50030100001961	100Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
343	C623	B5F	50020100001470	470PF	817	R620	B5F	50030100001961	100Ω
344	C624	B4F	50020100061406	4.7nF	818	R624	B4G	50030100001971	10KΩ
345	C625	B4F	50020100003897	0.01uF	819	R625	B4D	50030100001025	120Ω
346	C626	B5F	50020100000693	0.1uF	820	R626	B4D	50030100004140	75Ω
347	C627	B5F	50020100001470	470PF	821	R627	B4D	50030100004140	75Ω
348	C628	B4F	50020100061406	4.7nF	822	R628	B4E	50030100000316	0Ω
349	C629	B5E	50020100000693	0.1uF	823	R629	B5E	50030100000316	0Ω
350	C63	T2B	50020100001470	470PF	824	R630	B4C	50030100000316	0Ω
351	C630	B4E	50020100003897	0.01uF	825	R64	T3J	50030100001961	100Ω
352	C631	B5E	50020100000559	1uF	826	R65	T2J	50030100001493	33Ω
353	C634	B5E	50020100060517	1nF	827	R655	B4I	50030100000297	0Ω
354	C635	B4E	50020100000693	0.1uF	828	R66	T3J	50030100001961	100Ω
355	C636	B4E	50020100000559	1uF	829	R67	T2J	50030100001493	33Ω
356	C637	B4E	50020100000693	0.1uF	830	R70	T3H	50030100001961	100Ω
357	C638	B4E	50020100000559	1uF	831	R702	T2F	50030100001525	220KΩ
358	C639	B5F	50020100060510	15pF	832	R703	T2F	50030100000270	470KΩ
359	C64	T1B	50020100001470	470PF	833	R706	T2F	50030100001939	150KΩ
360	C640	B5F	50020100001331	6.8PF	834	R7063	B2F	50030100001369	10KΩ
361	C641	B5F	50020100062173	6pF	835	R707	T2F	50030100001005	0Ω
362	C642	B5F	50020100061454	33pF	836	R7075	B2G	50030100000179	15KΩ
363	C643	B5F	50020100000243	8.2PF	837	R708	T2G	50030100001005	0Ω
364	C644	B5F	50020100060510	15pF	838	R7085	T3J	50030100001961	100Ω
365	C645	B5F	50020100000243	8.2PF	839	R7087	B5I	50030100001005	0Ω
366	C646	B4F	50020100000693	0.1uF	840	R709	T2F	50030100000276	680Ω
367	C647	B4F	50020100000559	1uF	841	R71	T3H	50030100000297	0Ω
368	C648	B4F	50020100000693	0.1uF	842	R710	T3F	50030100000096	0.25Ω
369	C649	B4F	50020100000559	1uF	843	R711	T3F	50030100000096	0.25Ω
370	C65	T1B	50020100001470	470PF	844	R712	T2G	50030100000157	82KΩ
371	C650	B4I	50020100000690	10PF	845	R713	T2F	50030100001644	1KΩ
372	C651	B3I	50020100000690	10PF	846	R714	T2F	50030100001939	150KΩ
373	C652	B4I	50020100000690	10PF	847	R715	T2F	50030100000270	470KΩ
374	C653	B3I	50020100000690	10PF	848	R716	T2F	50030100000590	2.2KΩ
375	C654	B4I	50020100000693	0.1uF	849	R717	T2F	50030100001525	220KΩ
376	C655	B4I	50020100000693	0.1uF	850	R718	T2F	50030100001653	12KΩ
377	C658	B4D	50020100003398	1000PF	851	R72	T4H	50030100001961	100Ω
378	C659	B4F	50020100000693	0.1uF	852	R73	T2H	50030100001961	100Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
379	C66	T3J	50020100001190	33PF	853	R74	T4H	50030100001961	100Ω
380	C660	B3D	50020100060517	1nF	854	R75	B4J	50030100001961	100Ω
381	C661	B4D	50020100003398	1000PF	855	R76	T1C	50030100000012	47KΩ
382	C662	B4D	50020100003398	1000PF	856	R77	T1F	50030100000012	47KΩ
383	C663	B4E	50020100060517	1nF	857	R79	T4H	50030100001961	100Ω
384	C666	B3D	50020100060517	1nF	858	R8	T3H	50030100001939	150KΩ
385	C667	B4D	50020100003398	1000PF	859	R801	T1F	50030100000157	82KΩ
386	C668	B4D	50020100003398	1000PF	860	R802	B2A	50030100001736	270Ω
387	C669	B4D	50020100060517	1nF	861	R803	B1F	50030100001940	220Ω
388	C674	B5E	50020100001331	6.8PF	862	R804	B4A	50050800000057	ESD protection diode
389	C69	T4K	50020100060509	0.012UF	863	R805	B1F	50030100000741	33KΩ
390	C7	T4I	50020100001190	33PF	864	R806	B1E	50030100000604	51Ω
391	C70	T2K	50020100001470	470PF	865	R807	B1E	50030100002036	4.7KΩ
392	C702	T2F	50020100061854	470pF	866	R808	B1E	50030100000887	4.7KΩ
393	C703	T2F	50020100000491	10pF	867	R809	B1E	50030100001369	10KΩ
394	C71	T2K	50020100001470	470PF	868	R81	T3H	50030100001961	100Ω
395	C7108	B4I	50020100060550	2.2uF	869	R810	B1E	50030100001653	12KΩ
396	C7109	B4I	50020100004095	0.10uF	870	R811	B2F	50030100001438	33Ω
397	C7111	B4I	50020100060534	1uF	871	R812	B2A	50030100001736	270Ω
398	C7113	B4I	50020100004095	0.10uF	872	R813	B2F	50030100002053	1.2KΩ
399	C7114	B4I	50020100001392	100pF	873	R814	B2G	50030100001005	0Ω
400	C7115	B5I	50020100001470	470PF	874	R815	B2G	50030100001644	1KΩ
401	C8	B1J	50020100001200	0.1uF	875	R818	B1F	50030100000469	100Ω
402	C801	B2F	50020100061434	0.1uF	876	R82	T3H	50030100001961	100Ω
403	C802	B2F	50020100061854	470pF	877	R83	T3H	50030100001961	100Ω
404	C803	T2F	50020100061854	470pF	878	R85	T2I	50030100001961	100Ω
405	C804	B2F	50020100061434	0.1uF	879	R86	T4H	50030100000012	47KΩ
406	C805	B2F	50020100061854	470pF	880	R87	T4H	50030100001299	4.7KΩ
407	C806	B3E	50020100061434	0.1uF	881	R88	T2I	50030100001961	100Ω
408	C807	B3D	50020100061854	470pF	882	R89	T2I	50030100001961	100Ω
409	C808	B3D	50020100000635	22uF	883	R9	T2H	50030100001961	100Ω
410	C809	B3D	50020100000635	22uF	884	R909	B2I	50030100000469	100Ω
411	C810	B3D	50020100060516	56pF	885	R91	T2I	50030100001961	100Ω
412	C811	B3A	50020100061854	470pF	886	R910	B2I	50030100000550	10Ω
413	C812	B2A	50020100061434	0.1uF	887	R912	B2I	50030100001788	68Ω
414	C813	B2B	50020100003787	4700pF	888	R915	B2I	50030100001527	27Ω

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
415	C814	B3B	50020100003888	3pF	889	R918	B3H	50030100001917	100KΩ
416	C815	B3B	50020100062385	5.6PF	890	R92	T2I	50030100001961	100Ω
417	C816	B3B	50020100062433	2.7pF	891	R93	T2I	50030100001961	100Ω
418	C817	B1F	50020100062382	390PF	892	R95	T2I	50030100001961	100Ω
419	C819	B1B	50020100062503	8pF	893	R958	B2J	50030100001582	10KΩ
420	C820	B1D	50020100062503	8pF	894	R959	T3J	50030100001961	100Ω
421	C821	B1C	50020100060779	20PF	895	R96	T3A	50030100001456	120Ω
422	C823	B1C	50020100003892	27PF	896	R966	T2F	50030100001961	100Ω
423	C824	B1B	50020100061458	470pF	897	R967	T3J	50030100001961	100Ω
424	C826	B2B	50020100061458	470pF	898	R969	T5I	50030100000012	47KΩ
425	C827	B3A	50020100061458	470pF	899	R97	T3A	50030100001788	68Ω
426	C828	B2E	50020100062382	390PF	900	R970	T5J	50030100001939	150KΩ
427	C831	B1B	50020100003253	6pF	901	R972	T2C	50030100001005	0Ω
428	C832	B1D	50020100003781	68PF	902	R974	T3C	50030100000270	470KΩ
429	C836	B3B	50020100062503	8pF	903	R981	T3H	50030100001961	100Ω
430	C837	B3B	50020100062457	24PF	904	RT1	T3G	50030300000031	10K
431	C838	B3B	50020100003892	27PF	905	SH12	B4I	5111000001548A	TX-BUFFER shielding cover
432	C839	B3B	50020100003807	15PF	906	SH15	B2J	5111000001464A	CODEC shielding cover
433	C840	B1E	50020100001493	10pF	907	SH18	B4H	5120000000109A	Mainboard PLL and demodulation IC shielding mask
434	C844	B1E	50020100061434	0.1uF	908	SH20	B2H	5120000000159A	Mainboard IF shielding mask
435	C845	B1E	50020100062398	68nF	909	SH25	T3I	5120000000130A	MCU shielding mask
436	C846	B2C	50020100003392	1000PF	910	SH28	T5I	5111000001004A	DC_DC shielding cover
437	C847	B2B	50020100060504	5PF	911	SW2	B1C	51010600000016	Momentary contact switch
438	C848	B2C	50020100062173	6pF	912	SW3	B1E	51010600000016	Momentary contact switch
439	C849	B1F	50020100061854	470pF	913	TP102	T1I	5111000000617A	X1e BT antenna shrapnel
440	C850	B2F	50020100061434	0.1uF	914	U1	T3I	50080800061983	MCU
441	C851	B1F	50020100061854	470pF	915	U105	T3K	50120400000031	EMI filter
442	C852	B2F	50020100061854	470pF	916	U2	B1J	50081000000113	Memory
443	C853	B2G	50020100061854	470pF	917	U201	B4J	50081100060381	Baseband processor IC

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
444	C854	B1F	50020100060498	12PF	918	U202	B2J	50080500000051	D/A conversion IC
445	C9	T3J	50020100001190	33PF	919	U203	B3J	50082400000173	Logic IC
446	C935	B3H	50020100060524	100pF	920	U204	B4K	50082400000173	Logic IC
447	C936	B3H	50020100003871	47nF	921	U301	T1F	50080700000276	Power management IC
448	C944	B2I	50020100060509	0.012UF	922	U302	T2G	50080700000081	Power management IC
449	C947	B2I	50020100061426	0.027uF	923	U303	T5H	50080700064533	DC-DC conversion IC
450	C950	B2I	50020100003652	0.33uF	924	U304	B5J	50080700000081	Power management IC
451	C952	B2I	50020100000152	0.47uF	925	U305	T5I	50080700064533	DC-DC conversion IC
452	C953	B2I	50020100000152	0.47uF	926	U306	T4H	50080700000081	Power management IC
453	C981	T4K	50020100061434	0.1uF	927	U307	T1G	50080700000081	Power management IC
454	C982	T5J	50020100061434	0.1uF	928	U308	T5F	50080700000081	Power management IC
455	C983	T4K	50020100061434	0.1uF	929	U309	T4H	50081300000043	Reset IC
456	C984	T4J	50020100003138	1uF	930	U310	T5J	50080700000342	Power management IC
457	C985	T4C	50020100060530	4.7uF	931	U402	T4F	50080400000092	Operational amplifier
458	C986	T3D	50020100061854	470pF	932	U403	B2J	50081200000065	Switch IC
459	C987	T5J	50020100061854	470pF	933	U404	B3J	50081200000067	Switch IC
460	C988	T5J	50020100061854	470pF	934	U5	T3C	50120400000031	EMI filter
461	C989	T5I	50020100001392	100pF	935	U501	B2H	50080300000030	PLL IC
462	D10	T1B	50050800000051	ESD protection diode	936	U600	B4F	50081700000037	RF transceiver module
463	D1001	B4H	50050300000043	Varactor	937	U601	B3I	50080400062006	MSD2 operational amplifier
464	D1002	B4H	50050300000043	Varactor	938	U602	B4I	50080400000327	Operational amplifier
465	D1004	B4H	50050300000043	Varactor	939	U603	B4D	50081200061741	Switch IC
466	D1005	B4H	50050300000043	Varactor	940	U604	B4D	50081200061741	Switch IC
467	D11	T1B	50050800000051	ESD protection diode	941	U701	T2F	50080400000087	Operational amplifier
468	D12	T1B	50050800000051	ESD protection diode	942	U902	T1B	50080200000056	Audio amplifier IC
469	D3	T4H	50050900000139	Schottky barrier diode	943	U903	T1F	50080700000081	Power management IC

No.	Ref No.	Print No.	Part No.	Description	No.	Ref No.	Print No.	Part No.	Description
470	D301	T3F	50051000000078	Zener diode	944	U904	T2H	50081300060241	Reset IC
471	D302	T4B	50050800000045	ESD protection diode	945	U906	B4I	50080700000276	Power management IC
472	D304	T5G	50050200000051	Switch diode	946	X201	B3K	50110400000033	EOL-TCXO
473	D305	T5J	50050100000001	Rectifier diode	947	XT501	B2I	50110500000015	VCXO
474	D306	T3C	50050800000046	ESD protection diode	/	/	/	/	/



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