

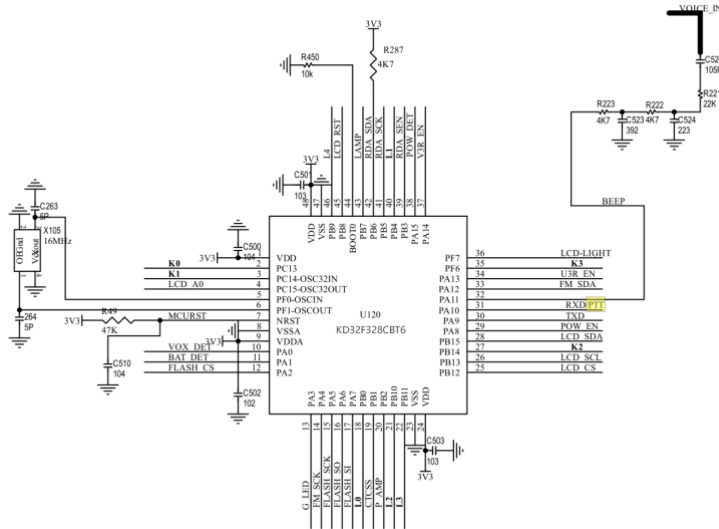
K6-Plus-Open原理说明

该无线电由中央控制器（MCU）、（U/V）低通滤波器、（U/V）段射频接收放大器、（U/V）段射频发射放大器、音频放大器、调频收音机电路、MIC电路、声控电路、APC电路、键盘电路、LDO稳压电路、等部分组成：

1. 中央控制器 (MCU) U120：用于控制整套系统运作。

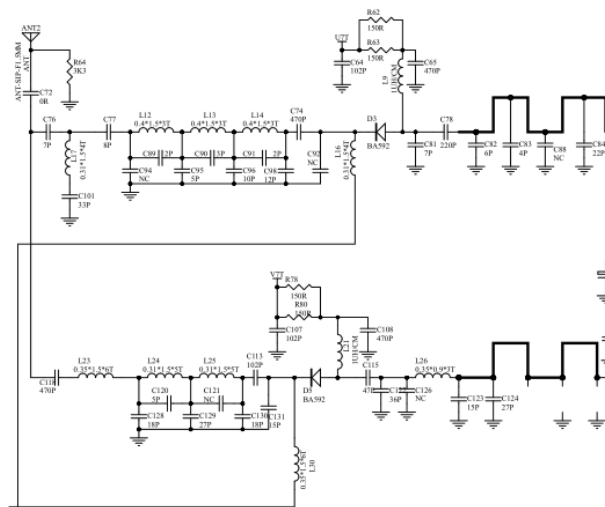
The amateur radio consists of a central controller (MCU), (U/V) low-pass filter, (U/V) band RF receiver amplifier, (U/V) band RF transmitter amplifier, audio amplifier, FM radio circuits, MIC circuits, voice control circuits, APC circuits, keypad circuits, LDO voltage regulator circuits, and other components:

1. Central controller (MCU) U120: used to control the whole system operation.



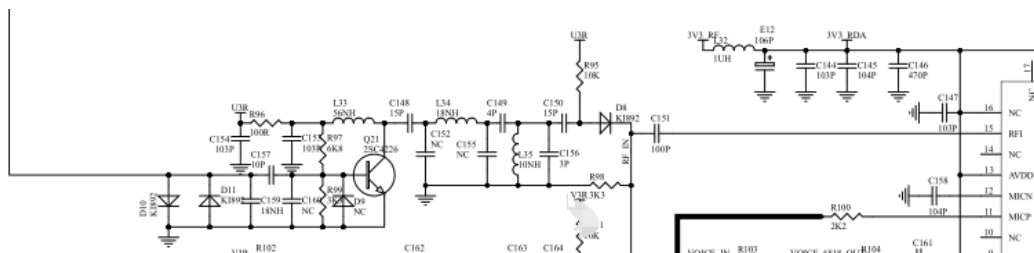
2. （U/V）低通滤波器 (LPF/U; LPF/V)：U段由L12-L14及L16组成的LC低通滤波选出接收和发射435MHZ的中心频率；V段由L23-L25及L30组成的LC低通滤波选出接收和发射145MHZ的中心频率。

2. (U/V) low-pass filter (LPF/U; LPF/V): U section consists of L12-L14 and L16 LC low-pass filtering to select the center frequency of receiving and transmitting 435 MHZ; V section consists of L23-L25 and L30 LC low-pass filtering to select the center frequency of receiving and transmitting 145 MHZ.



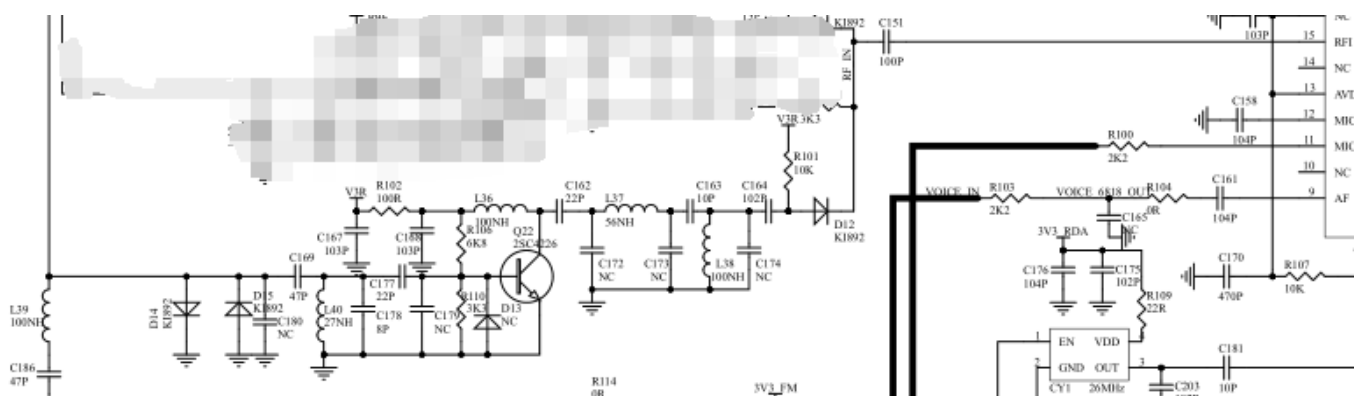
3. U/V-band RF receiver amplifier:

The signal from the low-pass filter circuit LPF/U is fed through the low-noise amplifier Q21 via switching tube D8 to RF (U11) baseband chip pin 15 (RFI).



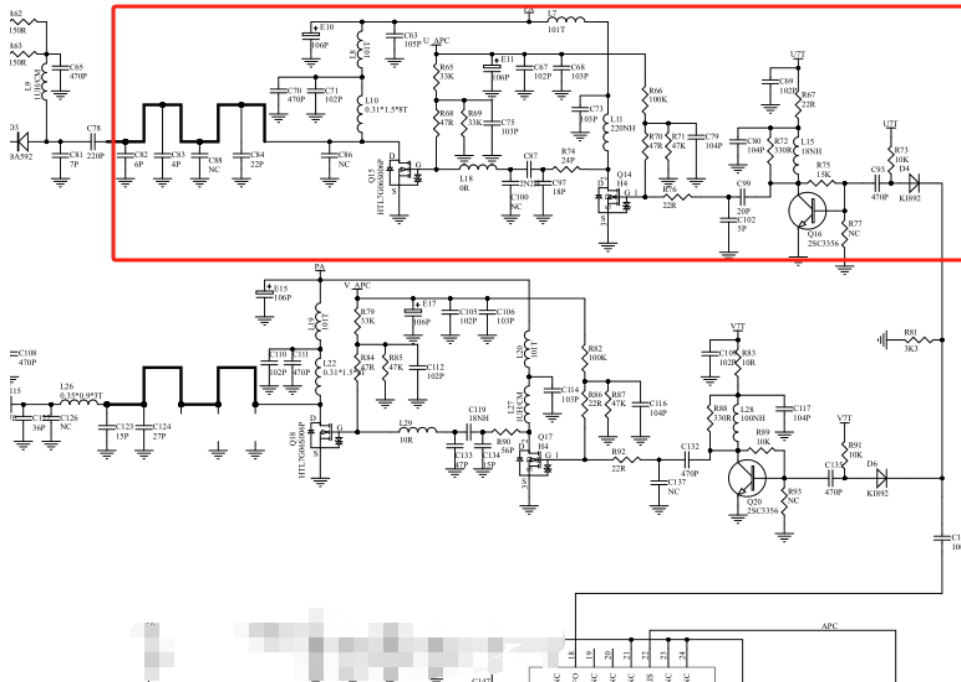
4. 由低通滤波器电路LPF/V来的信号通过低噪声放大器Q22经过开关管D12送入到RF(U11)基带芯片15脚(RFI)。

4. The signal from the low-pass filter circuit LPF/V is fed through the low-noise amplifier Q22 via switching tube D12 to RF (U11) baseband chip pin 15 (RFI).



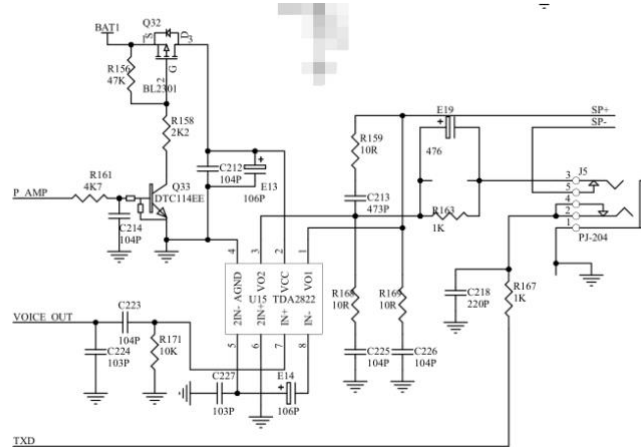
5. (U/V)段射频发射放大器:由射频集成电路U11第18脚输出的“RF0”信号通过切换开关”D4”, 分别由(Q16, Q14, Q15)组成的U段(435MHZ)放大器(TX AMP/U)送往低通“LPF/U”再由天线“ANT2”发射出去; 由射频集成电路U11第18脚输出的“RF0”信号通过切换开关”D6” 分别由(Q20, Q17, Q18)组成的V段(145MHZ)放大器(TX AMP/V)送往低通“LPF/V”再由天线“ANT2”发射出去。

5. (U/V) section RF transmitter amplifier: RF IC U11 pin 18 output “RFO” signal through the toggle switch “D4”, respectively (Q16, Q14, Q15) composed of the U-band (435MHZ) Amplifier (TX AMP/U) to the low-pass “LPF/U” and then transmitted by the antenna “ANT2”; by the radio frequency integrated circuit U11 pin 18 output “RFO” Signal through the toggle switch “D6” respectively (Q20, Q17, Q18) composed of V-band (145MHZ) amplifier (TX AMP/V) to the low-pass “LPF/V” and then by the antenna “ANT2”.



6. AF Amplifier 音频放大器：接收到的射频信号通过射频集成电路内的低噪声放大器和混频转换为中频，再次放大后经过模数转换为数字信号，然后传到数字频率鉴频器。最终被解调出来的语音信号通过音频功率放大器U15第7脚进入，第1和3脚发送到扬声器SPK1。

6. AF Amplifier Audio Amplifier: The received RF signal is converted to IF through the low noise amplifier and mixer in the RF IC, amplified again and converted to digital signal through analog-to-digital conversion, and then transmitted to the digital frequency discriminator. The final demodulated voice signal is sent to the speaker SPK1 through the audio power amplifier U15 pin 7, pins 1 and 3.



7. 收音电路(FM)：FM载波信号由天线(ANT2)经V段低通(LPF/V)通过Q23放大后送入(U12)第2脚，第8/9脚解调出音频信号经U15放大后发送到扬声器SPK1：由MCU(U120)13和33脚控制收音(U12)4和5脚开启/关闭及选台。

7. Radio circuit (FM): FM carrier signal from the antenna (ANT2) through the V-band low-pass (LPF/V) through the Q23 amplified into the (U12) foot 2, foot 8/9 demodulation of the audio signal amplified by the U15 sent to the speaker SPK1: by the MCU (U120) 13 and 33 pins to control the radio (U12) 4 and 5 pins to open/close and select the station.



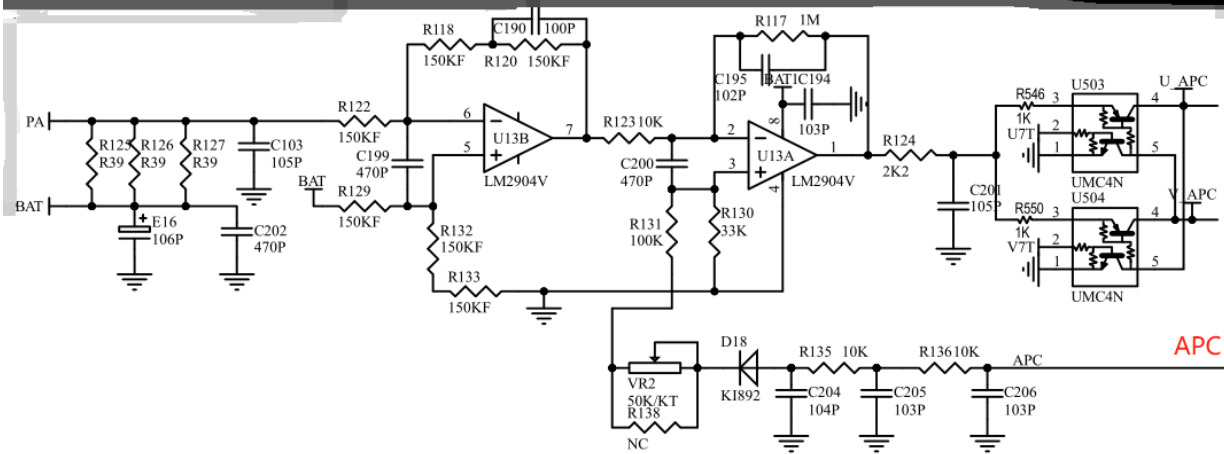
8. MIC circuit: the level signal generated by the MIC through the L46, C221, C220 into the radio frequency IC (U11) pin 11 processing



9. VOX circuit: MIC signal through the C207, through the Q31, D20 converted to high and low levels sent to the MCU (U120) the 10th foot to control the radio transmission.

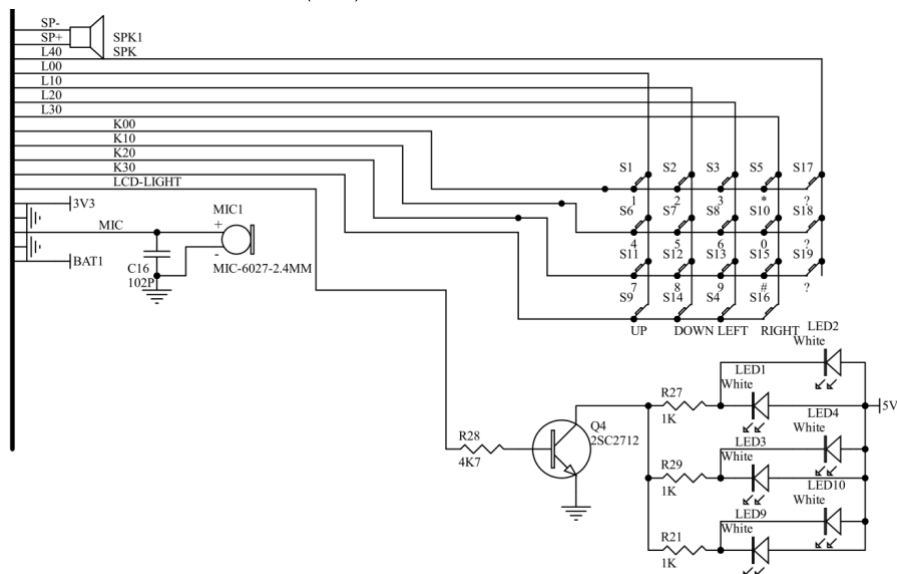


10. APC circuit (APC), VR2 adjustable resistor is to regulate current and power



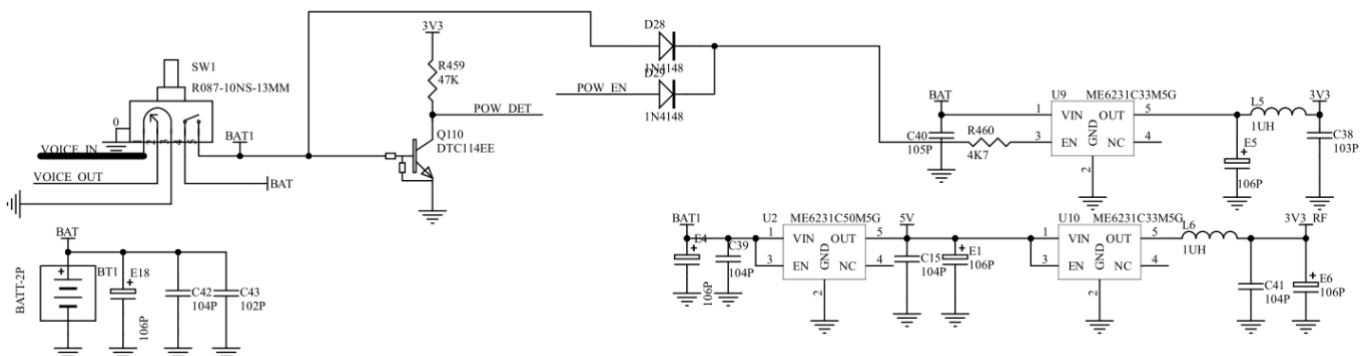
11. 键盘电路、收发指示灯和键盘背光灯电路 (LED): 由MCU(U120)控制LED的打开或者关闭 (KEY):

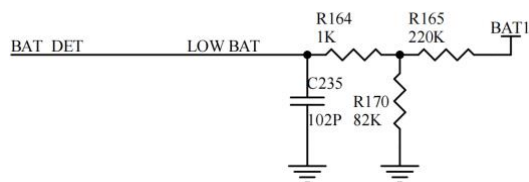
11. Keyboard Circuit, Status Indicator and Keyboard Backlight Circuit (LED): The MCU (U120) controls the LED to turn on or off (KEY):



12. 稳压电路 (LDO) U2, U9, U10; 电压检测电路 (Battery test) R164, R165, R170到U120的第11脚。

12. Voltage regulator circuit (LDO) U2, U9, U10; voltage detection circuit (Battery test) R164, R165, R170 to U120 pin 11.





13. 本设备接收频率FM76-108MHz, VHF136-174, 200-260MHz; UHF350-390, 400-520, 520-600MHz.

14. 本设备发射频率的限制是通过固件来实现。FCC标准144-148/222-225/420-450MHz; 加拿大IC标准144-148/430-450MHz; 欧盟CE标准144-146/430-440MHz。

13.The amateur radio receiving frequency

FM76-108MHz, VHF136-174, 200-260MHz; UHF350-390, 400-520, 520-600MHz.

14.The limitation of the amateur radio transmitting frequency is realized by the firmware.FCC standard 144-148/222-225/420-450MHz; Canada IC standard 144-148/430-450MHz; EU CE standard 144-146/430-440MHz.