

UV-82 CIRCUIT DESCRIPTION

UV-82 consists of RF IC, RF Receive Amplifier, RF Transmit Amplifier, AF Amplifier, FM Radio IC, MCU Circuit and LCD.

1. RF IC

RF IC actually is a semiduplex FM transceiver which designed to operate in the frequency range: 136–174MHz and 400–520 MHz. The RF IC is of advanced digital signal processing ability, integrating PLL, ADC/DAC and all RF T/R path circuit. It can transmit and receive the signal with few components.

2. RF Receive Amplifier

1) Receive in the frequency range: 136–174MHz

A coming signal from the antenna is applied to an RF amplifier (Q11) after passing through a transmit/receive switch circuit and LC band pass filter. After the signal is amplified, it enters RF IC.

2) Receive in the frequency range: 400–520MHz

A coming signal from the antenna is applied to an RF amplifier (Q10) after passing through a transmit/receive switch circuit and LC band pass filter. After the signal is amplified, it enters RF IC.

3. RF Transmit Amplifier

1) Transmit in the frequency range: 136–174MHz

The sound signal enters RF IC from MIC1, it would be filtered, amplified and direct modulated, then at the output port of the RF IC will obtain 136–174MHz RF signal. The signal will be input in the RF AMP (Q1) after amplified by RF AMP (Q3), then it is passed to antenna terminal through RF PA (Q5).

2) Transmit in the frequency range: 400–520MHz

The sound signal enters RF IC from MIC1, it would be filtered, amplified and direct modulated, then at the output port of the RF IC will obtain 400–480MHz RF signal. The signal will be input in the RF AMP (Q1) after amplified by RF AMP (Q3), then it is passed to antenna terminal through RF PA (Q5).

4. AF Amplifier

The RF signal is converted to the first intermediate frequency through the low noise amplifier within the RF IC, then amplified and D/A converted to the digital signal, then passed to the digital frequency discriminator for demodulation. The result signal is sent to the speaker through the audio AMP (U4).

5. FM Radio IC

FM radio signal comes from the antenna, the signal amplified by the HF amplifier (Q12) and enters into the FM IC which demodulates output the AF signal. Then the result signal is sent to the speaker through the audio AMP.

6. MCU Circuit and LCD

The 8 bit MCU (U6) controls the transmit/receive of whole circuit and all functions. And the LCD displays all relevant message.