

MRC-11 Technical Description

1. TX Unit:

1) Phase Lock Loop (PLL)

Q6 is VCO circuit , Q4 is the switch that can convert the TX & RX VCO.

X2 can provide the basic oscillator frequency of the lock . TB31202 is the PLL IC .

2) Radio Frequency Amplifier Circuit :

The transmit that VCO required can be made , through buffer Q7,Q8 & after Q9 pushes into the C-power amplifier Q10 zoom out 500MW, then through sending switch D1 & antenna matching network (C1,C2,C3,L1,L2) transmit to antenna.

3) Modulation Circuit & Auto-level Control :

MIC signal can be amplified with U202D pre-phases, U202B, Q218 is the auto-level limiting. Then U204 band-filter output.

4) Modulation Circuit :

Amplified audio can be modulated with D6. (VR2 Modulate DIV control)

2. RX Unit :

1) RF Amplifier & Discriminated :

Input signal can be amplified by Q1, then through SAW (CF1) & basic Mixer (Q2) convert the fist RF (21.6MHz) ; this IF signal is filtered externally and fed into the U2 Mixer (the 2nd IF 455KHz) limiting amplifier , quadrature discriminator, the amplifier audio can be output by U2 pin 9 .

2) Amplifier Audio :

The audio signal is filtered (BW) & phases (R317, R228, C222, C223). After into the amplifier (U207) and is outputted by SPK.

3. Digital Control Circuit (CPU control)

1) Control keyboard

? mode (SW207) ?m up (SW204) ?u down (SW205) ?d call(SW202) ?c mon (SW203)

2) Data Memory :

U2006 (IC93C46)

4. Power Circuit :

External power 4.5V can be converted 3V through regulator IC (U208), and transistor (Q210), RX & TX power is controlled by CPU & Q208, Q209 are the RX & TX power switch transistors , the ON/OFF of the Q208, Q209 are controlled with CPU, when Q209 is intermission on or off , the circuit is battery save model .

5. Access Circuit :

CTCSS

When TX, CTCSS frequency is outputted with CPU after through low-filter (U202A) into modulator. When RX, CTCSS code through low-filter (U201) reshaped (U209B) to the CPU for detection.