

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.