

WT-432 Circuit Description

一. transmitting

1.Low frequency amplifying:

After amplified by U1B and U1C ,the MIC audio signal come into the LPF(Low pass filter) network which is consisted of U1D, then to the D5 FM modulation.

2.VCO:

Q7, Q9, D6 work as VCO, the varactor D6 value (frequency) is controlled by PLL, Q9 is a frequency band switch for RX and TX, Q19 is a power switch for power-save mode.

4. Power amplifying:

Q4 is a buffer transistor and Q11 is a driver, Q1 acts as power amplifier, when the signal had been amplified by Q1, it will pass to a switch diode D1 and send out from the antenna.

二. Receiving section

1.RF amplifying:

The signal received by antenna passed to LPF network, which is consisted of L6 and L7, then amplified by Q5, and passes to the band-pass filter CF2, after frequency selection it comes into mixing frequency network Q8.

2.Local-oscillator and mixing frequency:

Q8 is frequency mixing transistor, the VCO forms a local-oscillator circuit, the frequency is controlled by PLL, after mixing, L15 and C80

output the first IF frequency 21.6MHz.

3. IF amplifying:

CF2 is a 21.6MHz band-pass filter,the second IF is 455KHz,U6 (3361D01) works as the second mixing,local-oscillator(X3 local-oscillator link exterior crystal),IF amplifier,demodulation,S/N controller,etc.

4. Mute noise:

Low pass filtered by VC1 and RC network, then it will be amplified and outputted by U7 (DBL5018V), 12 pins input,14 pins output.

5. The audio frequency power amplifying:

After VOL1A, then the signal comes into U9 (UTV34119), the power amplifier lever, The U6 first pins is the power control pins.

三. Others section

1. PLL:

The U5 (KB8825) works as PLL, X1 is a local-oscillation crystal, VC1 is a trimmer. The X1 is fixed on 12.8MHz and the U5 fourteenth pins output constant current to control the VCO oscillation frequency, the required frequency is controlled by CPU.

2. LCD:

LCD1,CPU([U3]EM73P361A) is LCD,it works on the frequency 32.768KHz(X1), the CPU decides the display content of LCD.

3. Recharge check:

Q2,Q3 form the recharge check circuit.

4. Low battery check:

U8A, R43, R42, R41, R27, R35 form the low-battery check circuit.

5. Supper Power

There are 6 groups power source, +4.5V, V+, TX-V+, RX-V+, VDD, V1+. In which:

V+ is sourced for PLL, U1, U8 and as RX low-frequency part, CPU power on reset.

+4.5V is a power amplifier source that contains low-frequency and hi-frequency power amplifier.

VDD is a power for CPU power.

TX-V+ is a TX section power and it is controlled by CPU.

RX-V+ is a RX section power and it is controlled by CPU.

+V1 is a energy supply for **local-oscillator**.

6. CPU RESET :

It is composed of D4, R34, C63, etc.

7. Poor light:

It is composed of LED1, R113, R73, Q16, etc.

8. CPU:

[U3] EM73P361A is a 4-bit MCU, it's the core in the whole circuit, and it's function can be operated by function keys, as PTT, CALL, UP, DOWN, ect.