

CIRCUIT DESCRIPTION (EVF-625)

RECEIVER UNIT

The receiver is a conventional single conversion superheterodyne with the crystal local oscillator which the operating frequency is below the received frequency to produce the IF 455Khz.

Local Oscillator

C5,C6,R5,L3 , X1(or X2) and internal circuit U1 function as the local oscillator. The local oscillator frequency is 49.435Mhz(CHA) or 49.405(CHB). SW1 is used selected channel A or channel B.

RF amplifier

RF signal from antenna is fed to the base of Q1 through T1. Q1 and T2 are a turn RF amplifier. The output from the collector of T2 is given to pin 16 of U1 for the t mixing.

Mixer Circuit

The mixer is in the internal of IC U1.

IF amplifier

The output of the mixer from pin 3 of IC U1 give to pin 5 of IC U1 through IF 455KHz filter F1.

The IF amplifier is built in IC U1.

Demodulation

T3 and the built circuit of IC U1 function as the demodulation circuit.

Audio Power Amplifier

U2 is an audio power amplifier. The The gain of amplifier determines by C33,R22 is audio buffer before the audio is input U6.

The volume VR1 is used to adjust the sound level on speaker

Auto Squelch

When there is (or not) RF signal, Pin 9 of U1, out the small(larger) noise. The noise is fed to 10 pin of U1. The noise voltage on pin 12 of U1 will down(or rise) below (over) 0.7V and pin 13 goes to low(high) level, which is fed to U6. The audio is into the un-muting(or muting) states. The alarm will not go on until receive signal or out of range, the alarm delays through U6

RF Level indication

LD1, LD2, LD3 are used to indicate the received signal level. The output from pin 9 of U1 is fed to base of Q4, Q5, Q6, Q7 and Q8 through Q14 to Q3 which are give the different voltage level to control Q3, Q4 and Q5 goes to on in the different RF signal level.

Power Supply

AC adapter output 9VDC to DC jack or 4.5V battery is as the power supply, the LD4 indicates green. When working in low voltage through Q12, D11 and U6C, the power LD4 indicates red with beep sound. Q13 and ZD1 is a regulator, which give the stable voltage to IC U1 and RF amplifier. SW3 is ON/OFF switch for power supply.