

CKW2000 Circuit Description of Weather Band Radio

1. Weather Band Receiver.

Weather band signal passed from **WB** antenna into band pass filter (L/C network C40.C01~C04 / L01~L03) and RF amplifier Q01 to amplify it. Local oscillator frequency is derived from IC02/Q04/D01 by main coil / capacitors to generate frequency 141.0Mhz to 141.15Mhz. So the channel selection from 162.4MHz to 162.55MHz depend on MCU IC301 to control IC02. **2nd fixed ref oscillator frequency 20.95MHz by XTAL01.**

Both Weather band signal and local oscillation frequency will feed to the mixer IC01,FLT03,DIS01 to generate 455KHz IF signal.

455KHz IF signal will be amplified and feed to narrow band FM demodulated by modulator IC01 and then pass audio signal to audio amplifier IC202 and output to speaker.

2. Alarm Hazardous alert Bell Sounds generator.

S.A.M.E decoded by IC204, decoded information controlled by MCU IC301. MCU IC301 will generate hurry Bell or Bell sounds or hazardous alert signal pass to buffer amplifier Q305 then through audio amplifier IC202 and output to speaker .

3. Real time clock and alarm clock and S.A.M.E Display.

MCU IC301 has 32.768KHz(Y301) crystal oscillator generate real time clock. It also contains LCD driver to show real time clock, alarm time and S.A.M.E information onto LCD display

Antenna and Ground Circuitry:

This unit makes use of an external flexible **12** centimeter long antenna. The antenna is inductively coupled. The unit relies on the ground track of the printed circuit board. No external ground is provided.

***NOTE:**

This product has two power supply, AC adaptor DC is for main unit and battery is backup for main AC shut down , so it has battery low detect circuit which Q214 and Q213 for 6V (AAx4) . Weather band receiver will switch on/off and tone sound control by MCU IC301/Q307.

MCU IC301 also control Q302,Q303 and Q304 for alert LED on/off while S.A.M.E. information are in.