

CB Transceiver Circuit Theory Of Operation for  
The RBS-CB  
Clenney Communications, Inc.

Power:

The transceiver is powered by 13.8 VDC +/- 15%

RF:

It is a dual conversion super heterodyne, amplitude modulation transceiver, tuned by a crystal controlled PLL. The transmitter uses a crystal controlled PLL to generate each discrete channel frequency limited to channels 1-40 of the citizen band through programming.

No other unauthorized frequencies are possible to the user.

The transmitter features a solid state pi output final amplifier. The carrier is modulated in the final stage by the 2 watt audio amplifier. This is collector modulated via a transformer coupled to the audio amplifier. This produces a double sideband AM transmission limited to 95% modulation. Carrier power is limited to 4 watts into the 50 ohm antenna load.

Audio frequency response is limited to 450-2500 Hz.

Communication:

The microcontroller accepts RS 232 instructions from the single board computer (SBC). The commands include instructions to change to a specific channel (1-40), key the microphone, and monitor squelch. This allows the channel to be monitored for an idle state before transmitting a message.

Transmission audio is supplied from the single board computer sound card. Received audio is fed back to the SBC sound card.