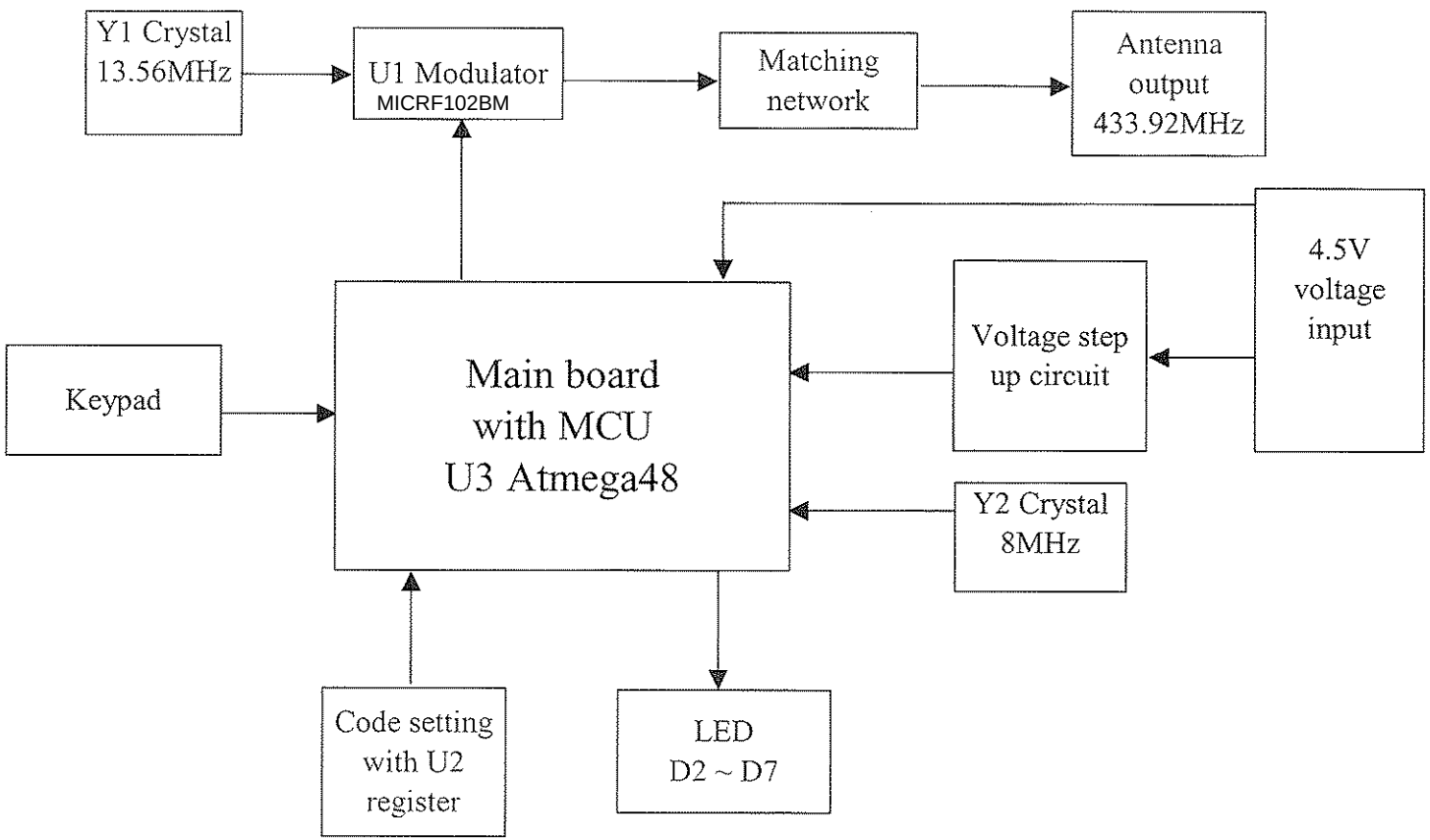
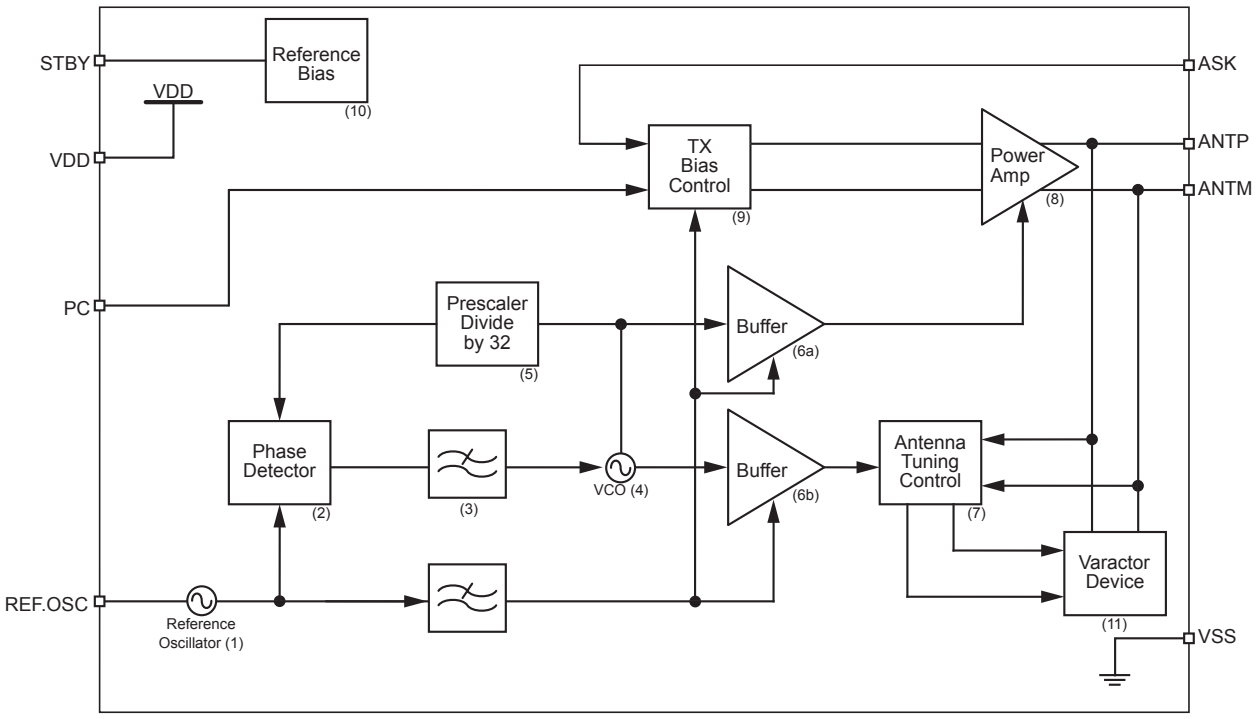
The block diagram of remote control



Block Diagram



Functional Description

The block diagram illustrates the basic structure of the MICRF102. Identified in the figure are the principal functional blocks of the IC, namely the (1, 2, 3, 4, 5) UHF Synthesizer, (6a/b) Buffer, (7) Antenna tuner, (8) Power amplifier, (9) TX bias control, (10) Reference bias and, (11) Process tuner.

The UHF synthesizer generates the carrier frequency with quadrature outputs. The in-phase signal (I) is used to drive the PA and the quadrature signal (Q) is used to compare the antenna signal phase for antenna tuning purposes.

The Antenna tuner block senses the phase of the transmit signal at the antenna port and controls the varactor capacitor to tune the antenna.

The Power control unit senses the antenna signal and controls the PA bias current to regulate the antenna signal to the transmit power.

The Process tune circuit generates process independent bias currents for different blocks.

A PCB antenna loop coupled with a resonator and a resistor divider network are all the components required to construct a complete UHF transmitter for remote actuation applications such as automotive keyless entry.

Included within the IC is a differential varactor that serves as the tuning element to insure that the transmit frequency and antenna are aligned with the receiver over all supply and temperature variations.