OB2-STD REMOTE
Circuit Description & Schematic

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Power from a 9 volt battery enters the board and passes through a reverse battery protection diode D1, to the input of a low power three terminal voltage regulator IC1. IC1 regulates the output voltage down to 3.3 volts. C1 is used to stabilize the regulator output and improve the transient response of the regulator.

IC2 is a keyboard scanner and encoder IC. R1 sets the frequency of the internal oscillator which determines the keyboard scanning rate and the timing of the output data stream. When a switch on the keyboard membrane is closed, the TE input of IC1 is pulled low through one of the isolation diodes (D2 - D6) and this brings IC1 out of sleep mode into active operation. IC1 scans the inputs AD11 to AD0 and creates a serial data stream out of pin 18 (DOUT). The output data from DOUT consists of pulses for each bit of 1/3 duty cycle for switches not closed and 2/3 duty cycle for switches that are closed, then the output goes idle (low) for 12 periods. In this application the duty cycle from the DOUT pin is approximately 17%.

Signals from the DOUT pin of IC2 are fed to the data input of IC3. IC3 is an integrated On/Off keyed RF transmitter IC operating at 315 Mhz. Its RF frequency is internally controlled by its internal SAW oscillator, and output harmonics are controlled by its internal SAW output filter.

The RF output of IC3 is fed through an antenna matching capacitor C3 and resistor R2 to a loop PCB trace antenna.