

5) Circuit Description

Five momentary contact pushbuttons on the top panel of the unit operate a microcontroller which in turn keys a radiating LC oscillator on and off to transmit an NRZ code. The code contains 16 bits of identification plus three bits relating to function, plus several framing bits.

Four of the buttons determine the three-bit function code while the fifth may be pressed momentarily up to three times before any of the other four to select one of four different identification codes. The software is designed so that if a button is depressed (stuck) for more than 30 seconds, the unit will cease operating until the button is released.

The transmitted code bursts occur at intervals of 130 milliseconds start-to-start. Each chip (bit) lasts 1024 microseconds. Bursts last 23 milliseconds or less and contain no more than 13 transmitter-on chips, yielding an actual duty factor of 10% worst case, or 13% duty factor in any 100 millisecond interval.

The transmitter is configured as a radiating Pierce oscillator. Keying is accomplished by applying positive bias to the oscillator transistor. The transmitter is factory tuned to 312 MHz.