Remote Keyfob block diagram

(5 Pushbutton Keys)

Microcontroller
(HC908QT1)

(Internal 3.2Mhz osc)

P
O
W
E
R

(3v Lithium Batt.)
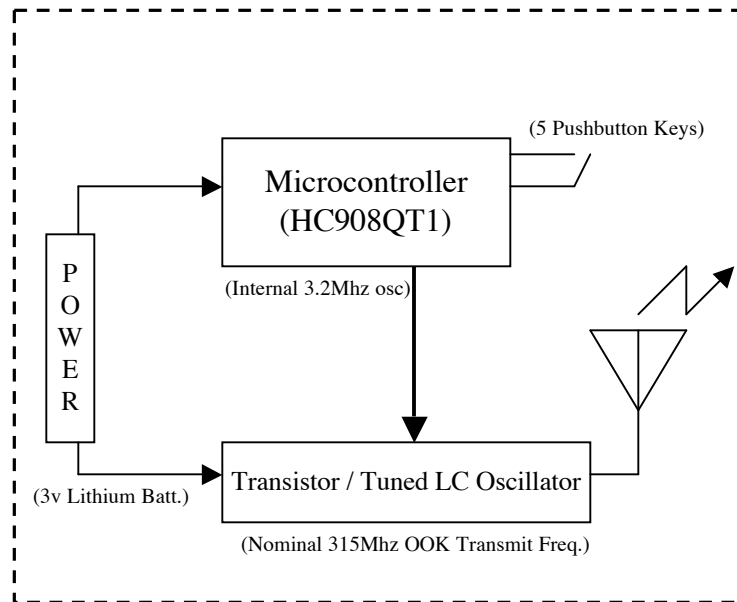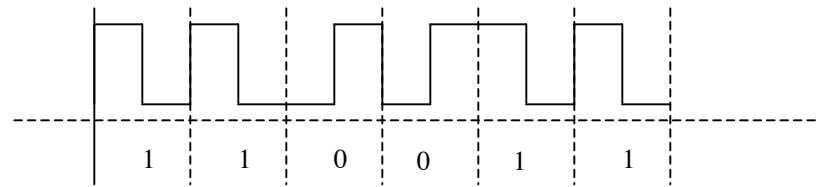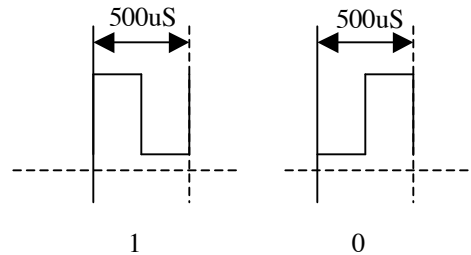
Transistor / Tuned LC Oscillator

(Nominal 315Mhz OOK Transmit Freq.)

Keyfob Transmit Timing

Manchester Encoding.

The RemoteRemote Keyfob uses a small microcontroller to Manchester "encode" its data before transmission. For the Keyfob, the period of each bit is 500uS, with a "1" being high for the first 250uS, and then low for the next 250uS of a period. A "0" is indicated by a low for the first 250uS, followed by a high for 250uS.

A complete frame of transmitted data consists of a "Front Porch" (2mS high followed by 1mS low), Sync Byte (8 bits), Control Byte (8 bits), Serial Number (16 bits), Command Byte (8 bits), Checksum (8 bits). Further, if the user holds a key down, it will repeat this pattern every 100ms, for up to 4 seconds.

So, the total number of transmitted bits is 8+8+16+8+8 = 48.
Total data period is 3ms (Front Porch) + 48 * 500uS = 27ms
Total high (on) time is 2ms (Front Porch) + 48 * 250uS = 14 mS.