

Company: Klipsch  
Product: iFi Remote  
FCC ID#: STI-IFIR  
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### IFi Remote Control Keyfob Circuit Description

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The iFi remote keyfob is a simple PLL based FM modulated keyfob-style transmitter with an internal, integrated patch antenna. The remote keyfob receives its power from a small 3 volt Lithium button cell battery (type CR2032), and is normally in sleep mode until the user presses one of 5 buttons. As the user presses a button, that action wakes the microcontroller, which is a Freescale MC68HC908QY1 - operating at a bus frequency of 3.2 MHz, which corresponds to an internal oscillator frequency of 12.8 MHz. The microcontroller then sends out manchester encoded data (at a rate of 10Khz) to the transmitter section. The transmitter section consists of a Freescale MC33493 PLL based transmitter IC. That device uses a 14.3203 MHz crystal to set a final carrier frequency of 916.7 MHz. The overall FM deviation is set to 260 kHz, with "0" data corresponding to 916.572 MHz, and "1" data corresponding to 916.831 MHz. Once the user releases any buttons, the unit automatically stops transmitting.