Antenna Specification

Remote product GMSSL-G200 is an aftermarket replacement keyless entry remote for automobiles. The remote is designed such that it can emulate the functionality of a wide range of existing OEM remotes operating at 314.9 MHz and 433.92MHz with ASK and FSK modulation. The emulated remote is configured from a predetermined list of car remotes by the user. The remote features a microcontroller/transmitter, 6 tactile switch buttons, user LED, and a PCB trace loop antenna. The antenna has a -15.8dBi gain for 314.9MHz and a -11.7dBi gain for 433.92MHz.

GMSSL-G200 uses a commercially available vehicle access IC which integrates a 16-bit microcontroller, a UHF frequency agile transmitter and an LF receiver in a single package. The microcontroller is driven by an internal 2 MHz RC oscillator. The transmitter system uses an external 27.12 MHz crystal oscillator to feed an internal phase locked loop to generate the RF carrier for transmission. The power level and center frequency of the transmitter are configured in the microcontroller firmware.

The packet contains various authentication data, including, but not limited to, serial numbers, “rolling” access codes, button function codes, wake-up patterns, and checksums. The 314.9 MHz or 433.92 MHz transmit frequency is then ASK or FSK modulated by the binary data in the packet at a baud rate of approximately **4.2 kbps**. The modulated carrier signal is output from the microcontroller/transmitter IC into a low-pass filter. The network attenuates any out of band noise generated by the transmitter. The filtered signal is then radiated via a loop antenna implemented as a copper trace on the PCB.