

Introduction

The MCTA3 is a frequency hopped spread spectrum transceiver module designed to be compatible with US (FCC Part 15.249) and Canadian (RSS-210) regulations for license free use in the 900 MHz ISM band. The MCTA3 transceiver is integrated into the Mega 143 remote control products.

Theory of Operation

The MCTA3 is a radio transceiver for the 900 MHz ISM bands. The transceiver microcontroller includes a CPU, GPI/O, a fully integrated frequency synthesizer, a power amplifier, a modulator and a receiver unit. The MCTA3 microcontroller GPI/O port is connected to switches, display and LEDs through protection circuit. The switch data is sent through Serial port to RF processor and then to RF circuit to the antenna and the data received from antenna is sent to the LEDs and display. The microcontroller is responsible for the control of the entire board. The MCTA3 transceiver contains a linear regulator which generates a constant 2.5 VDC. It also includes a battery charger circuit for charging a LiPO battery when connected to the external 5 VDC car charger or universal wall charger.

Specifications

Frequency Range:

Min.: 902.2 MHz

Max.: 927.8 MHz

Supply Voltage: 4.2 VDC Nominal

Operating Temperature: -40 +85 degree C

Transmitter R.F. Power Output: +10 dBm Max.

Receive sensitivity: -100 dBm

Type of Emission: Frequency Hopping Spread Spectrum

Transmitted data rate (Manchester-encoder embedded): 100 kbps