

RevFire T2

Radio Operational Description

The RevFire T2 radio is the Bluetooth Low Energy (BLE) v4.0 compliant CC2541 single chip radio manufactured by Texas Instruments.

Standard BLE characteristics of the Texas Instruments C2541 radio are as follows:

- 1 Mbit/s data rate
- Data modulation Scheme: Gaussian Frequency Shift Keying (GFSK) with a modulation index of 0.5
- Advertising packets transmitted on three channels: 2402 MHz, 2426 MHz, 2480 MHz
- 37 data channels from 2404 MHz to 2478 MHz

As shown in “Block Diagram.pdf” and “Radio Schematics.pdf” the CC2541 single chip radio requires a 32 MHz clock input. The CC2541 controls transmit frequency, suppresses spurious radiation, limits modulation, limits transmit power, and drives the baluns that feeds the antenna. The operation of the CC2541 is determined by flash-based firmware that cannot be modified by the user.

The RevFire T2 radio is configured such that:

- It is a transmit only design.
- It transmits at a fixed unchangeable 0 dBm power level
- It's maximum transmit time in any 100 millisecond period is 1.2 milliseconds
- It never operates in receive mode.
- It transmits using advertising packets on advertising channels 2402 MHz, 2426 MHz, 2480 MHz.
- Each advertisement packet is transmitted on channel 2402 MHz, then 2426 MHz, then 2480 MHz. This pattern is repeated 5 times with 100 ms between each repeat.
- It has a fixed inaccessible antenna and battery.