TM2114 2.4GHz RF Transceiver with 4 Mbps data rate

Introduction

1. TM2114 is a high power out GFSK transceiver operating in the world wide ISM frequency band at 2400~2483.5 MHz Burst mode transmission and up to 4Mbps air data rate make them suitable for applications requiring ultra low power consumption. The embedded packet processing engines enable their full operation with a very simple MCU as a radio system. Auto re-transmission and auto acknowledge give reliable link without any MCU interference.
2. TM2114 operates in TDD mode, either as a transmitter or as a receiver. The RF channel frequency determines the center of the channel used by TM2114. The frequency is set by the RF_CH register in register bank 0 according to the following formula: F0=2400+RF_CH (MHz). The resolution of the RF channel frequency is 1MHz. A transmitter and a receiver must be programmed with the same RF channel frequency to be able to communicate with each other. The output power of TM2114 is set by the RF_PWR bits in the RF_SETUP register.
3. Demodulation is done with embedded data slicer and bit recovery logic. The air data rate can be programmed to 2Mbps or 4Mbps by RF_DR register. A transmitter and a receiver must be programmed with the same setting. In the following chapters, all registers are in register bank 0 except with explicit claim.

Applications and Notes

1. Using SPI interface to connect MCU, it provides up to 4Mbps data rate.
2. Its power out can be 20+ dBm at Antenna in, depending on customers request.
3. The RF out is 50 ohm well matched connecting to an I-PEX pad.