

Technical Description

The 2.4GHz Module is a single chip 2.4GHz transceiver with an embedded baseband protocol engine, designed for ultra low power wireless applications. The 2.4GHz Module is designed for operation in the world wide ISM frequency band at 2.400 - 2.4835GHz. An MCU (microcontroller) and very few external passive components are needed to design a radio system with the nRF24L01.

The 2.4GHz Module is configured and operated through a Serial Peripheral Interface. Through this interface the register map is available. The register map contains all configuration registers in the 2.4GHz Module and is accessible in all operation modes of the chip.

The embedded baseband protocol engine is based on packet communication and supports various modes from manual operation to advanced autonomous protocol operation. Internal FIFOs ensure a smooth data flow between the radio front end and the system's MCU. reduces system cost by handling all the high-speed link layer operations.

The radio front end uses GFSK modulation. It has user configurable parameters like frequency channel, output power and air data rate.

The air data rate supported by the 2.4GHz Module is configurable to 2Mbps. The high air data rate combined with two power saving modes makes the 2.4GHz Module very suitable for ultra low power designs.

Internal voltage regulators ensure a high Power Supply Rejection Ratio (PSRR) and a wide power supply range.