Operational description

Technical short form description

Project identifier: AMB2520-T1
Applicant: testo AG

Functional description

The radio module described herein is used to transfer digital messages. Data is transmitted over the serial interface to the microcontroller. After buffering the serial data, the payload is encapsulated by additional information like address information or CRC and forwarded to the radio IC by means of the SPI interface. The radio IC uses frequency modulation to transmit the information.

On the receiver side, incoming radio waves are de-modulated and transferred to the microcontroller. After address and CRC check, the payload is forwarded to the host system over the UART interface.

Detailed description of individual components

Microcontroller

The microcontroller is used to control the radio link (address filtering, CRC check) and forwards data between the serial interface and the RF IC. A 32768 Hz watch crystal is used to provide a clock reference.

Radio IC

A highly integrated RF IC. Only external decoupling, matching and filtering circuitry as well as a 26 MHz crystall oscillator is needed.

Balun / Matching circuit

This circuit is used to transform betwenn the balanced output of the RF IC and the unbalanced antenna port. In addition, it serves for matching and filtering purposes.