DOLPHIN
Self-powered IoT by EnOcean

EnOcean Wireless Transceiver Module TCM 515

The TCM 515 product family enables the realization of transceiver gateways, actuators and controllers for systems communicating based on the EnOcean radio standard.

Compared to the current TCM 300 generation, TCM 515 provides significantly reduced power consumption, smaller size and higher processor performance. Security processing including is fully integrated without the need for external components.

TCM 515 receives radio telegrams based on a whip antenna connected to the host PCB. It can filter, decrypt and authenticate these telegrams before forwarding them to an externally connected host processor or host PC via a serial interface (UART).

The serial interface operates according to EnOcean ESP3 standard with the option to use higher interface speeds (TURBO mode) to reduce latencies.

ESP3 messages received from the external host will be encrypted and authenticated as required and then transmitted as EnOcean radio telegrams.

TCM 515 is planned to support the EnOcean 868 MHz ASK (Europe), 902 MHz FSK (US) and 928 MHz FSK (Japan) protocol variants.

TYPE	ORDERING CODE
TCM 515	**S3003-K515**
TCM 515U	**S3053-K515**

Features overview

Antenna	50 Ohm whip antenna (connected at host board)
Supported Radio Frequencies	868.3 MHz ASK / 902.875 MHz FSK / 928.35 MHz FSK
Data Rate	125 kbps
Receiver Sensitivity (typ, at 25°C) (See Note 1)	868.3 MHz ASK: -93 dBm (Preliminary) 902.875 MHz FSK: -98 dBm (Preliminary) 928.35 MHz FSK: -98 dBm (Preliminary)
Transmit Power (typ, at 25°C)	868.3 MHz ASK: +8 dBm (Preliminary) 902.875 MHz FSK: +1 dBm (Preliminary) 928.35 MHz FSK: +0 dBm (Preliminary)
Supply Voltage	2.0V ... 3.6V
Supply Current RX / TX (at 2.0V)	25 mA / 25 mA
Serial Host Interface	UART according to ESP3 Standard (with TURBO option)
Module Dimensions	19.0 mm x 14.7 mm x 3.0 mm (all +- 0.3 mm)
Operating Temperature	-20°C … +65°C

Note 1: Sensitivity figures based on 0.1% telegram error rate for the combination of 3 received sub-telegrams