DOLPHIN
Self-powered IoT by EnOcean

TCM 300 / TCM 320 (868 MHz), TCM 300U / TCM 320U (902 MHz) Transceiver Modules

The transceiver modules TCM 300 and TCM 320 enable the realization of highly efficient radio actors, repeaters and other line powered applications for the EnOcean systems with 868 MHz & 902 MHz.

The module provides several built-in operating modes. In addition repeater functionality (1 or 2 level) can be activated. Using the Dolphin API library it is possible to write custom specific software for the module. The modules are in-system programmable.

Built-in operating modes

- Unidirectional serial communication (ESP2)
- Bidirectional serial communication (ESP2)
- 1-channel relay mode
- 4-channel relay mode
- 1-channel dimming mode

Features accessible via API:

- Integrated 16 MHz 8051 CPU with 32 kB FLASH and 2kB SRAM
- Various power down and sleep modes down to 0.2 µA current consumption
- Up to 14 configurable I/Os
- 10 bit ADC, 8 bit DAC

Type	Ordering Code
TCM 300	**S3003-K300 (SMD)**
TCM 320	**S3003-K320**
TCM 300U	**S3053-K300 (SMD)**
TCM 320U	**S3053-K320**

Features overview

Antenna	Pre-installed whip antenna (TCM 320/300U) External whip or 50 Ω antenna mountable (TCM 300/300U)
Frequency and data rate	868.300 MHz / 125 kbps (TCM 300/320)[1)] · 902.875 MHz / 125 kbps (TCM 300U/320U) [1)]
Receiver Sensitivity (at 25°C)	typ. –96 dBm (868MHz)[2)] typ. -98 dBm (902MHz)[2)]
Conducted Output Power @50 Ω	3 dBm(868MHz) 1 dBm (902MHz)
Power Supply	2.6 – 3.3 V (TCM 320 / TCM 320U) 2.6 – 4.5 V (TCM 300 / TCM 300U)
Current Consumption	Receive mode: typ. 33mA Transmit mode: typ. 24mA
Dimensions of PCB	36.5 x 18 x 5.5 mm (TCM 320 / TCM 320U) 22 x 19 x 3 mm (TCM 300 / TCM 300U)
Operating temperature	–25 up to +85°C
Radio Regulations	TCM 300 (max. Radiated power +1.4 dBm with whip): RED (EU) TCM 320 (max. Radiated power +3.0 dBm with whip): RED (EU) TCM 300U/320U : FCC (US) / ISED (CA)

1) According to ISO/IEC 14543-3-10

2) 0.1% telegram error rate (based on the combination of 3 received sub-telegrams)