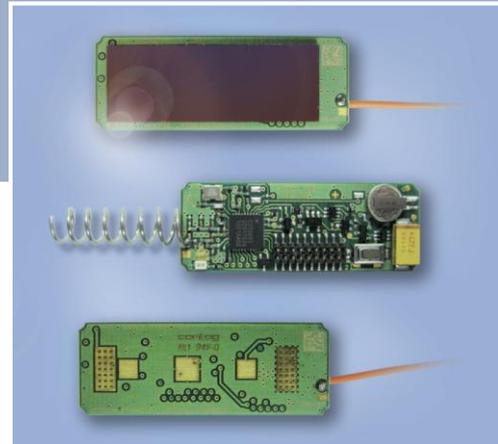


General Purpose Sensor Transmitter Module STM 31x / STM 31xC

The extremely power saving RF transmitter module STM 31x of EnOcean enables the realization of a wide range of wireless and maintenance free sensors such as temperature sensors, humidity sensors, or room operating panels.

Functional Principle

Power supply is provided by a small solar cell, an external energy harvester, or an external 3V battery. An energy storage element is installed to bridge periods with no supply from the energy harvester. The module provides a user configurable cyclic wake up. After wake up a radio telegram will be transmitted in case of a change of any digital input value compared to the last sending or in case of a significant change of measured analogue values. In case of no relevant input change a redundant retransmission signal is sent after a user configurable number of wake-ups to announce all current values. In addition a wake up can be triggered externally. The firmware can be configured. Customer specific firmware can be developed using the Dolphin API.



- STM 310/310C: including solar cell and whip antenna
- STM 311/311C: including solar cell and helical antenna
- STM 312/312C: including whip antenna but no pre-installed solar cell

| Type | Ordering Code |
|----------|---------------|
| STM 310 | S3001-D310 |
| STM 311 | S3001-D311 |
| STM 312 | S3001-D312 |
| STM 310C | S3031-D310 |
| STM 311C | S3031-D311 |
| STM 312C | S3031-D312 |

Features Overview

| | |
|---|--|
| Power supply | Pre-installed solar cell (except STM 312 / STM 312C) 2.1 V–5.0 V, 2.6 V needed for start-up |
| Variants: | |
| Antenna | pre-installed whip or helical antenna |
| Frequency | 868.3 MHz (STM 31x) / 315.0 MHz (STM 31xC) |
| Radiated output power | STM 310, STM 312: +8dBm (EIRP) STM 310C, STM 312C: +92dBµV/m STM 311: +5dBm (EIRP) STM 311C: +92dBµV/myp. 2 dBm at antenna base |
| Data rate / Modulation type | 125 kbps / ASK |
| Start-up time with empty energy storage | typ. <2.5 min @ 400 lux, 25°C |
| Initial operation time in darkness @25°C¹ | typ. 4 days, if energy storage fully charged wake-up every 100 s, transmission every 1000 s on average |
| Input Channels | 20 pin connector: 3x digital input, 3x analog input, 2x WAKE input |
| Teach-in button | 1x internal |
| Transmission indicator | 1x LED |
| Module dimensions | 34 x 16 x 8 mm |
| Operating temperature¹ | -20 up to +60 °C |

¹ Full performance is achieved after several days of operation (up to two weeks) at good illumination level. Performance degrades over life time, especially if energy storage is exposed to higher temperatures. Each 10 K drop in temperature doubles the expected life span.