DATA SHEET

# Scavenger Transceiver Module
# STM 300 / STM 300U

DOLPHIN
Self-powered IoT by EnOcean

**The extremely power saving RF transmitter module STM 300 of EnOcean enables the realization of wireless and maintenance free sensors and actuators such as room operating panels, motion sensors or valve actuators for heating control.**

Power supply is provided by an external energy harvester, e.g. a small solar cell or a thermal harvester. An energy storage device can be connected externally to bridge periods with no supply from the energy harvester. A voltage limiter avoids damaging of the module when the supply from the energy harvester gets too high.

The module provides a user configurable cyclic wake up (every 1, 10 or 100 sec.). After wake up a radio telegram (input data, unique 32 bit sensor ID, checksum) 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 (different input sensitivities can be selected). 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.


## Features

- 3 A/D converter inputs
- 4 digital inputs
- Configurable wake-up and transmission cycle
- Wake-up via Wake pins
- Voltage limiter
- Threshold detector

| Type | Ordering Code |
|---|---|
| **STM 300** | **S3001-D300** |
| **STM 300U** | **S3051-D300** |

## Technical Data

| | |
|---|---|
| **Antenna** | External whip or 50 Ω antenna mountable |
| **Frequency** | STM 300: 868.300MHz (ASK)[1)]<br>STM 300U:902.875MHz (FSK) [1)] |
| **Data rate** | 125 kbps |
| **Receiver Sensitivity (at 25°C)**<br>only via API | typ. –96 dBm[2)] (868.300 MHz)<br>typ. -98 dBm[2)] (902.875 MHz) |
| **Conducted Output Power** @50Ω | STM 300: 3 dBm<br>*STM 300U: 1 dBm* |
| **Power Supply** | 2.1 V–4.5 V, 2.6 V needed for startup |
| **Current Consumption** | Deep Sleep Mode: 0.2 µA<br>Rx mode (API only): 33 mA / Tx mode: 24 mA |
| **Dimensions of PCB** | 22x19x3 mm |
| **Input Channels** | 4x digital input, 2x WAKE input , 3x analog input<br>Resolution: 3x 8 bit or 1x 10 bit, 1x 8 bit, 1x 6 bit |
| **Operating temperature** | –25 up to +85°C |
| **Radio Regulations** | STM 300 (max. Radiated power +1.4 dBm with whip): RED (EU)<br>STM 300U: FCC (US) / ISED (CA) |

1) according to ISO/IEC 14543-3-1x

2) @ 0.1% telegram error rate (based on transmitted sub-telegrams)