Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

Green.Smart.Wireless.
enocean®

Scavenger Transceiver Module
STM 300 / STM 300C / STM 300U

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
- Application notes for calculation of energy budgets and management of external energy storages
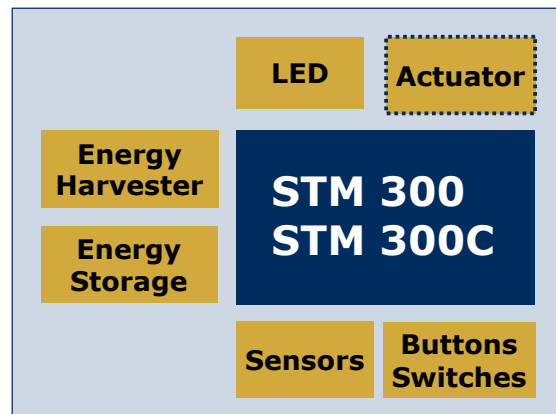
Product variants

- STM 300 / STM 300C / STM 300U:
  SMD mountable module for use with external antenna

Type	Ordering Code
STM 300	S3001-D300
STM 300C	S3031-D300
STM 300U	S3051-D300

.... With custom firmware

Energy Harvesting made easy with EnOcean wireless standard

STM 300 is a bidirectional system module for maintenance-free sensor solutions based on the EnOcean wireless standard.

Using the Dolphin API library it is possible to write custom firmware for the module.
STM 300/C/U is in-system programmable.

Features accessible via API:

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

EnOcean Dolphin System Architecture.
Open. Flexible. Expandable.

The distinguishing feature that sets Dolphin apart from other wireless system architectures is energy harvesting, which enables self-powered wireless sensors and actuators. The Dolphin system architecture joins the components necessary for an energy-autonomous wireless sensor system that operates on a standardized wireless network. These include energy conversion and storage components,
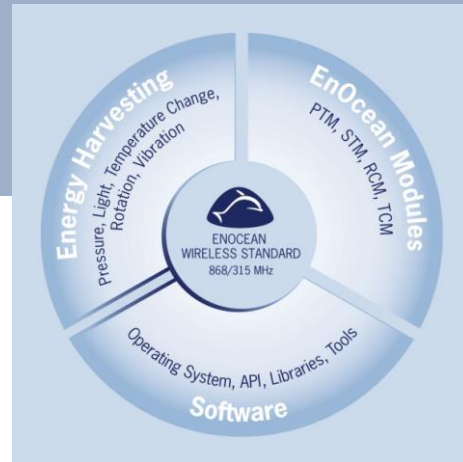
EnOcean wireless modules for energy management, data acquisition, data processing and wireless data transmission, and finally the software blocks operating system, API and application programs.

As an open and expandable hardware and software architecture, Dolphin is future-oriented and fully backward compatible with EnOcean-enabled devices and system components already on the market.
EnOcean modules already have extensive firmware functionality implemented – such as basic switching, dimming and measuring – and can go straight into an application without additional programming. Its built-in application functions enable straightforward start-up and system integration.

Benefits for OEM partner

- Maintenance-free sensor solution with energy harvesting
- Ready available and wide-ranging, interoperable system product portfolio
- Fast implementation and time to market
- Low investment in R&D, T&M, etc
- Various evaluation tools obtainable to support development
- EnOcean Development Kit EDK 350 for STM 300
- Technical support
- Competitive advantage over battery-powered wireless solutions
- Participation in EnOcean's eco-system
- EnOcean is the wireless standard for sustainable buildings

Technical Data

Antenna	External whip or 50 Ω antenna mountable
Frequency	STM 300: 868.300MHz (ASK)[1] STM 300C: 315.000MHz (ASK)1 STM 300U:902.875MHz (FSK)
Data rate	125 kbps
Receiver Sensitivity (at 25°C) only via API	typ. −96 dBm[2] (868.300 MHz) typ. -98 dBm[2] (315.000 MHz) typ. -98 dBm[2] (902.875 MHz)
Conducted Output Power @50Ω min. / typ. / max.	STM 300: 3.0 dBm / 5.7 dBm / 7.0 dBm STM 300C: 5.5 dBm / 7.5 dBm / 9.5 dBm *Preliminary STM 300U: 5.5 dBm / 7.5 dBm / 9.5dBm*
Power Supply	2.1 V–4.5 V, 2.6 V needed for startup
Current Consumption	Deep Sleep Mode: 0.2 µA 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 Resolution: 3x 8 bit or 1x 10 bit, 1x 8 bit, 1x 6 bit
Operating temperature	−25 up to +85°C
Radio Regulations	R&TTE EN 300 220 (STM 300) FCC CFR-47 Part 15 (STM 300C / STM 300U)

1) according to ISO/IEC 14543-3-10   2) @ 0.1% telegram error rate (based on transmitted sub-telegrams)