

Wireless & self-powered Internet of Things

The Dolphin products are based on miniaturized energy converters, ultra-low power electronics and robust radio technology in open standards like EnOcean, zigbee and Bluetooth Low Energy for OEM product manufacturers.



Building automation



Smart home



LED lighting



M2M



Our technology

The Dolphin modules and white label products use the energy harvesting principle, in which energy is obtained from the surroundings, to supply self-powered wireless sensor networks. The modules are based on miniaturized energy converters that convert motion, light or temperature differences into electrical energy. Together with an efficient energy management system, the energy harvesting technology facilitates communication between maintenance-free IoT devices based on open wireless standards, such as EnOcean, zigbee and Bluetooth Low Energy. The solutions are used in building automation, smart homes, LED lighting control systems as well as industrial applications.



Energy harvesting



Wireless



Ultra-low power



Self-powered IoT

The Dolphin portfolio for OEM product manufacturers

The Dolphin portfolio includes the product lines “868 MHz EnOcean” for Europe, “902 MHz EnOcean” for North America and “928 MHz EnOcean” in Japan based on the EnOcean wireless standard introduced by the EnOcean Alliance (ISO/IEC 14543-3-1X) on the sub 1 GHz band, which has proven to be a resounding success in building automation and smart homes. The Dolphin portfolio also includes the “2.4 GHz zigbee” product line in the 2.4 GHz band, which can be used in smart home applications all over the world, and the “2.4 GHz BLE” portfolio for Bluetooth systems for modern lighting control.



Energy converter



Energy harvesting
wireless switches



Energy harvesting
wireless sensors



Controllers



Tools

Products in **868 MHz EnOcean** for Europe

Products with 868 MHz are suitable for Europe and other countries adopting RED.



HIGH RELIABILITY The EnOcean radio standard (ISO/IEC 14543-3-1X) operates in license-free 868 MHz, 902 MHz and 928 MHz frequency bands with 1% duty cycle and a reliable radio range of approx. 30m indoors.

INTEROPERABILITY Sensor profiles are standardized to ensure product interoperability across all product manufacturers and to provide interoperable system solution.

LOW ENERGY REQUIREMENTS Optimized for self-powered switches and sensors with a high data transmission rate of 125 kbit/s for sensor information.

Wireless switch & sensor modules



PTM 210|PTM 215

Push-button transmitter module with 4 channels. PTM 215 has additional security functions.

Application

- Wall switch
- Handheld remote controls



PTM 330|335

The 4-channel transmitter module. PTM 335 has additional security functions. Both can be connected to the energy converter ECO 200.

Application

- Handheld remote controls
- Key card switch
- Industrial switches



PTM 535

The 4-channel transmitter module. PTM 535 has security functions. It can be connected to the energy converter ECO 200.

Application

- Handheld remote controls
- Key card switch
- Industrial switches

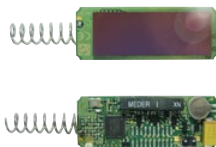


STM 300

SMD mountable bi-directional wireless sensor module with an energy harvesting interface.

Application

- Any kind of self-powered sensor
- Self-powered heating valves
- Actuators
- Room controllers

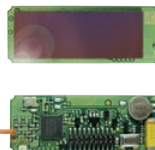


STM 320|STM 329

Energy harvesting magnet contact transmitter module with solar cell, learn button side operation, reed contact and helix antenna. Variant STM 329 has a learn button back operation.

Application

- Window/door contact

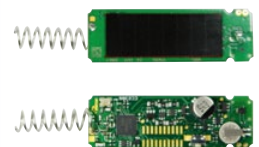


STM 330|STM 331

Energy harvesting wireless temperature sensor module with solar cell, antenna, learn button back operation and pin connector. It supports plug-in humidity sensor module HSM 100.

Application

- Temperature sensor
- Humidity sensor
- Occupancy sensor



STM 350

Energy harvesting wireless temperature sensor module with solar cell, helix antenna and onboard calibrated temperature and humidity sensor.

Application

- Temperature sensor
- Humidity sensor

WHERE TO BUY?

Worldwide



Worldwide



Worldwide



Worldwide



Europe



Germany, Austria,
Switzerland



Italy



SUPPORT

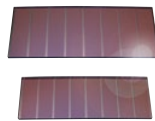
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Energy converters



ECO 200

Kinetic energy converter harvests linear motion for use in energy harvesting wireless switches.



ECS 300|ECS 310

Solar cells harvest indoor light for energy harvesting wireless sensors.



ECT 310 Perpetuum

Thermo-electric energy converter harvests temperature differentials for energy harvesting wireless sensors and actuators.

Wireless transceiver modules



TCM 515

SMD mountable and programmable or plug&play transceiver module with reduced power consumption and smaller size.

Application

- Actuators
- Room Controllers
- Gateways
- Repeater



TCM 300

SMD mountable and programmable transceiver module for line-powered applications.

Application

- Actuators
- Room controllers
- Gateways
- Repeaters



TCM 310

SMD mountable and plug&play transceiver module for gateways for which an externally connected host processor is needed.

Application

- Gateways



TCM 320

Programmable transceiver module for line-powered applications vertical mounting.

Application

- Actuators
- Room controllers
- Gateways
- Repeaters



TCM 330

Transceiver Module for programmable LED controllers.

Application

- LED controllers
- LED drivers

Products in **868 MHz EnOcean** for Europe

Products with 868 MHz are suitable for Europe and other countries adopting RED.



Kits and accessories



EnOcean Starter-Kit ESK 300

The easy way to get started with battery-less wireless technology.



EnOcean Developer-Kit EDK 350

Developer kit for energy harvesting wireless sensor solutions.



EnOcean click

Clickboard for TCM 310 from MikroElektronika.



HSM 100

Humidity sensor module HSM 100 as extension for STM 33x temperature sensor module.

EnOcean software and firmware



EnOcean Decoding Gateway

TCM 300-compatible firmware for decoding of EnOcean telegram with rolling code.



EnOcean Link

Linux-based library for EnOcean radio stack (e.g. ESP3, EEP).



Gateway Controller

Transparent gateway including Smart Acknowledge and Remote Management.

WHERE TO BUY?

Worldwide



Worldwide



Worldwide



Worldwide



Europe



Germany, Austria,
Switzerland



Italy



SUPPORT

www.EnOcean.com/support
www.EnOcean.com/product-finder
www.EnOcean.com/contact
www.EnOcean.com/distributor

Products for OEMs



EOSW

Wall mounted wireless occupancy sensor.



EOSC

Ceiling mounted wireless occupancy sensor.



EKCS

Wireless key card switch.



EMCS

Wireless magnet contact sensor.



ETHS

Wireless temperature and humidity sensor.



USB 300

USB gateway.



NWC

Navigan Wireless Commissioner NWC 300 for easy configuration of EnOcean controllers.

Products in **902 MHz EnOcean** for North America

Products with 902 MHz are suitable for USA adopting FCC specification and Canada adopting IC specification.



HIGH RELIABILITY The EnOcean radio standard (ISO/IEC 14543-3-1X) operates in license-free 868 MHz, 902 MHz and 928 MHz frequency bands with 1% duty cycle and a reliable radio range of approx. 30m indoors.

INTEROPERABILITY Sensor profiles are standardized to ensure product interoperability across all product manufacturers and to provide interoperable system solution.

LOW ENERGY REQUIREMENTS Optimized for self-powered switches and sensors with a high data transmission rate of 125 kbit/s for sensor information.

Wireless switch & sensor modules



PTM 210U

Application

Push-button transmitter module with 4 channels.

Application

- Wall switch
- Handheld remote controls



PTM 330U

The 4-channel transmitter module. It can be connected to the energy converter ECO 200.

Application

- Handheld remote controls
- Key card switch
- Industrial switches

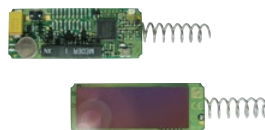


STM 300U

SMD mountable bi-directional wireless sensor module with an energy harvesting interface.

Application

- Any kind of self-powered sensor
- Self-powered heating valves
- Actuators
- Room controllers



STM 320U

Energy harvesting magnet contact transmitter module with solar cell, learn button side operation, reed contact and helix antenna.

Application

- Window/door contact



STM 332U|STM 333U

Energy harvesting wireless temperature sensor module with solar cell, antenna, learn button back operation and pin connector. It supports plug-in humidity sensor module HSM 100.

Application

- Temperature sensor
- Humidity sensor
- Occupancy sensor



STM 350U

Energy harvesting wireless temperature sensor module with solar cell, helix antenna and onboard calibrated temperature and humidity sensor.

Application

- Temperature sensor
- Humidity sensor

Energy converters



ECO 200

Kinetic energy converter harvests linear motion for use in energy harvesting wireless switches.



ECS 300|ECS 310

Solar cells harvest indoor light for energy harvesting wireless sensors.



ECT 310 Perpetuum

Thermo-electric energy converter harvests temperature differentials for energy harvesting wireless sensors and actuators.

WHERE TO BUY?

Worldwide



Worldwide



Worldwide



USA/Canada



USA



www.adhocelectronics.com

USA



www.newark.com

Canada



www.echoflexsolutions.com

SUPPORT

www.EnOcean.com/support
www.EnOcean.com/product-finder
www.EnOcean.com/contact
www.EnOcean.com/distributor

Wireless transceiver modules

TCM 515U

SMD mountable and programmable or plug&play transceiver module with reduced power consumption and smaller size.

Application

- Actuators
- Room Controllers
- Gateways
- Repeaters



TCM 300U

SMD mountable and programmable transceiver module for line-powered applications.

Application

- Actuators
- Room controllers
- Gateways
- Repeaters



TCM 310U

SMD mountable and plug&play transceiver module for gateways for which an externally connected host processor is needed.

Application

- Gateways



TCM 320U

Programmable transceiver module for line-powered applications vertical mounting.

Application

- Actuators
- Room controllers
- Gateways
- Repeaters



TCM 330U

Transceiver Module for programmable LED controllers.

Application

- LED controllers
- LED drivers

Kits and accessories



EnOcean Developer-Kit EDK 350

Developer kit for energy harvesting wireless sensor solutions.



HSM 100

Humidity sensor module HSM 100 as extension for STM 33x temperature sensor module.



EnOcean Link

Linux-based library for EnOcean radio stack (e.g. ESP3, EEP).



Gateway Controller

Transparent gateway including Smart Acknowledge and Remote Management.

Software and firmware

Products in **902 MHz EnOcean** for North America

Products with 902 MHz are suitable for USA adopting FCC specification and Canada adopting IC specification.



Products for OEMs



EDRP/ESRP

Wireless switch (double/single).



EKCSU

Wireless key card switch.



EDWSU

Wireless door and window contact.



ETHSU

Wireless temperature and humidity sensor.



EOSWU

Wall mounted wireless occupancy sensor.



EOSCU

Ceiling mounted wireless occupancy sensor.



ELLSU

Wireless light level sensor.



EPSMU

Plug-in switch module.

WHERE TO BUY?

Worldwide



Worldwide



Worldwide



USA/Canada



USA



USA



Canada



SUPPORT

www.EnOcean.com/support
www.EnOcean.com/product-finder
www.EnOcean.com/contact
www.EnOcean.com/distributor



EISMU
In-line switch module.



EHSMU
HVAC setback module.



LEDRU
LED controller – dimming
with relay (0–10V).



LEDDU
LED controller – dimming
w/o relay (0–10V).



NWC 300U
With Navigan™ Wireless
Commissioner you can
easily configure EnOcean
controllers EISM, LEDR
and LEDD.



USB 300U
USB gateway.

Products in **928 MHz EnOcean** for Japan

Products with 928 MHz are suitable for Japan adopting ARIB specification.



HIGH RELIABILITY The EnOcean radio standard (ISO/IEC 14543-3-1X) operates in license-free 868 MHz, 902 MHz and 928 MHz frequency bands with 1% duty cycle and a reliable radio range of approx. 30m indoors.

INTEROPERABILITY Sensor profiles are standardized to ensure product interoperability across all product manufacturers and to provide interoperable system solution.

LOW ENERGY REQUIREMENTS Optimized for self-powered switches and sensors with a high data transmission rate of 125 kbit/s for sensor information.

Wireless switch & sensor modules



PTM 210J

Push-button transmitter module with 4 channels.

Application

- Wall switch
- Handheld remote controls



PTM 430J

The 4-channel transmitter module. It can be connected to the energy converter ECO 200.

Application

- Handheld remote controls
- Key card switch
- Industrial switches



STM 400J

SMD mountable bi-directional wireless sensor module with an energy harvesting interface.

Application

- Any kind of self-powered sensor
- Self-powered heating valves
- Actuators
- Room controllers



STM 429J

Energy harvesting magnet contact transmitter module with solar cell, learn button side operation, reed contact and helix antenna.

Application

- Window/door contact



STM 431J

Energy harvesting wireless temperature sensor module with solar cell, whip antenna, learn button back operation and pin connector. It supports plug-in humidity sensor module HSM 100.

Application

- Temperature sensor
- Humidity sensor
- Occupancy sensor

Wireless transceiver modules



TCM 410J

SMD mountable and plug&play transceiver module for gateways for which an externally connected host processor is needed.

Application

- Gateways



EDK 400J

Developer kit for energy harvesting wireless sensor solutions.



HSM 100

Humidity sensor module HSM 100 as extension for STM 431J temperature sensor module.

WHERE TO BUY?

Worldwide



Worldwide



Worldwide



Worldwide



Japan



www.rohm.com/web/global/enOcean

Japan



www.ermine.co.jp

SUPPORT

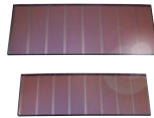
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www.EnOcean.com/contact
www.EnOcean.com/distributor

Energy converters



ECO 200

Kinetic energy converter harvests linear motion for use in energy harvesting wireless switches.



ECS 300 | ECS 310

Solar cells harvest indoor light for energy harvesting wireless sensors.



ECT 310 Perpetuum

Thermo-electric energy converter harvest temperature differentials for energy harvesting wireless sensors and actuators.

EnOcean software and firmware



EnOcean Link

Linux-based library for EnOcean radio stack (e.g. ESP3, EEP).



Gateway Controller

Transparent gateway including Smart Acknowledge and Remote Management.

Products for OEMs



EOSCJ

Ceiling mounted wireless occupancy sensor.



EOSWJ

Wall mounted wireless occupancy sensor.



STM 255J

Wireless window contact with advanced security functionality.



USB 300J

USB gateway.

Products for 2.4 GHz zigbee systems (worldwide)

Products with 2.4 GHz for ZigBee and IEEE 802.15.4 networks



Dolphin's portfolio for zigbee systems in the 2.4 GHz band is for use in smart home applications all over the world.

SUPPORT

www.EnOcean.com/support
www.EnOcean.com/product-finder
www.EnOcean.com/contact
www.EnOcean.com/distributor

Wireless switch & sensor modules



PTM 215ZE

2.4 GHz push-button transmitter module PTM 215ZE including rolling code.

Application

- Wall switch
- Handheld remote controls



PTM 535Z

Transmitter module with enhanced security features. It can be connected to the energy converter ECO 200.

Application

- Handheld remote controls
- Key card switch
- Industrial switches

Wireless transceiver modules



TCM 515Z

Transceiver module for programmable system components.

Application

- Actuators
- Room Controllers
- Gateways
- Repeaters



ECO 200

Harvests linear motion for use in energy harvesting wireless switches.

Kit

EnOcean 2 click
Clickboard for TCM 515Z offered by MikroElektronika.



WHERE TO BUY?

Worldwide



Worldwide



UK & Ireland



Germany, Austria, Switzerland Italy



Products for **2.4 GHz Bluetooth** systems (worldwide)



Self-powered and wireless
Easyfit switches with Near Field
Communication (NFC) make it
possible to come up with simple
or complex lighting scenes and
effects and let you install lighting
applications easily and flexibly.

SUPPORT

www.EnOcean.com/support
www.EnOcean.com/product-finder
www.EnOcean.com/contact
www.EnOcean.com/distributor

Products for OEMs



**Wall switch
(ESRPB/EDRPB)**



**Wall switch European design
(EWSSB/EWSDB)**

Wireless switch module



PTM 215B
BLE push-button transmitter
module PTM 215B with
NFC interface.

Application

- Wall switch
- Handheld remote controls

WHERE TO BUY?

Worldwide



Worldwide



USA/Canada



UK & Ireland



Germany, Austria, Switzerland



Germany, Austria, Switzerland



Italy



SYSTEM PARTNER

CASAMBI
www.casambi.com

SILVAIR
www.silvair.com

XICATO
www.xicato.com

Helvar

www.helvar.com



About EnOcean

EnOcean GmbH is the developer of the patented energy harvesting wireless technology marketed under the brands Dolphin and Easyfit. We produce and market self-powered wireless sensor solutions for batteryless applications in the Internet of Things, which are used for building and industrial automation, smart homes and LED lighting control.

Our products are based on miniaturized energy converters, ultra-low power electronics and robust radio technology in open standards like EnOcean, zigbee and Bluetooth Low Energy. Leading product manufacturers have been relying on our products for their system solutions for the past 15 years and have installed the products in several hundreds of thousands of buildings around the world.

www.EnOcean.com www.Easyfit-Controls.com



No batteries



No wires



No limits

Contact

Together with our value-added distributors we provide customers with applications support and technical expertise.

www.EnOcean.com/contact www.EnOcean.com/distributor

Support

Please find further support materials and development tools:

www.EnOcean.com/support www.EnOcean.com/product-finder