Dolphin Bluetooth® Low Energy Pushbutton Transmitter Module PTM 215B

PTM 215B enables the realization of energy harvesting wireless switches communicating using the Bluetooth Low Energy technology.

PTM 215B is mechanically compatible with the established PTM 21x form factor which allows quick integration into a wide range of designs.

Key applications are wall-mounted or portable switches either with up to two rockers or up to four push buttons.

PTM 215B contains an electro-dynamic energy transducer actuated by a bow which can be pushed from outside the module on the left or right by an appropriate pushbutton or switch rocker.

When the energy bow is pushed down, electrical energy is created and a set of Bluetooth Low Energy (BLE) advertising frames is transmitted.

These advertising frames transmit the operating status of all four contact nipples at the moment when the energy bow was pushed down or releases.

PTM 215B pushbutton transmitter modules are self-powered (no batteries) and fully maintenance-free. They can therefore be used in all environments including locations that are difficult to reach or within hermetically sealed housings.

PTM 215B radio telegrams are protected with AES-128 (CBC) security based on a device-unique private key.

PTM 215B provides an NFC interface according to ISO 14443 for configuration.

TYPE
PTM 215B

Features overview

Antenna	Integrated PCB antenna
Radio Standard	2.4GHz / Bluetooth Low Energy (Advertising Mode)
Radio Channel	BLE Channels 37, 38 and 39 (Advertising Channels)
Max. transmit power measured	0.4dBm / 1.1mW
Device Identification	Individual 48 Bit Device ID (factory programmed)
Device Configuration	NFC (ISO 14443)
Security	AES128 (CBC) authentication with Sequence Counter
Transmission Range	typ. 75 m outdoor line of sight / 10 m indoor
Power Supply	Integrated Kinetic Energy Harvester
Energy Bow Travel / Force	1.8 mm / typ. 10 N (at room temperature)
Button Inputs	Up to four buttons or two rockers
Number of operations at 25°C	typ. 100.000 (tested according to EN 60669 / VDE 0632)
Module Dimensions	40.0 x 40.0 x 11.2 mm
Operating Temperature	-25°C ... 65°C
Radio Certifications	RED (Europe), FCC (US), ISED (Canada), ARIB (Japan), ACMA (Australia)