

PTM 330U Radio Transmitter Module

Operational Description

The EnOcean energy-harvesting magnet contact transmitter module is a fully integrated radio transmitter module powered by an external energy-harvesting device such as the ECO 200 energy converter for motion energy harvesting.

It contains the EnOcean ASIC EO1000I, which integrates several voltage regulators, an 8051 microcontroller (uC) core, 32kB Flash memory, 2kB SRAM, 14 configurable I/O, three sleep timers, ADC and DAC as well as a radio transmitter core.

The module also contains a 16MHz crystal, a Balun and filter circuit as well as some resistors, capacitors and inductors.

Two printed meander structures provide button input functionality in combination with external electricity-conducting button structures such as conductive rubber buttons.

All components are mounted on a common PCB with ground plane shielding. Transmission occurs via the integrated whip antenna.

The uC is clocked by the external 16MHz crystal; the radio frequency is generated and modulated by a fractional n phase lock loop which is locking on the same crystal-based 16MHz clock.

After the ASIC EO1000I power up, it checked the button inputs and sends a data telegram. After this the ASIC EO1000I power down.

The operating frequency is single channel 902.875 MHz, FSK - modulated (+/- 62.5 kHz, NRZ). The output power level is fixed and below the limit of 81.9 dBuV/m @ 3m.

The length of a single transmission is two pulses within 100ms, each pulse being 768µs long. Radio transmissions of the device are controlled by built-in firmware and triggered by random external or internal events.

For further details, please refer to the user manual.

NN 04/26/2013