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Sensor Transmitter Module
STM 435J / STM 431J

The extremely power saving RF transmitter modules STM 43XJ of EnOcean are optimized for realization of wireless and maintenance free temperature sensors, or room operating panels including set point dial and occupancy button with a minimum number of external components. The modules provide an integrated calibrated temperature sensor.

Functional Principle

Power supply is provided by a small solar cell, an external energy harvester, or an external 3V battery. An energy storage element is installed to bridge periods with no supply from the energy harvester. The module provides a user configurable cyclic wake up.

After wake up a radio telegram will be transmitted in case of a significant change of measured temperature or set point values or if the external occupancy button is pressed.

The firmware can be configured to use different EEPs / GPs according to the availability set point dial and occupancy button.
STM 43xJ modules also support the plug-in humidity sensor module HSM 100. Additionally STM 435J provides enhanced security features with encrypted communication.

Type	Ordering Code
STM 435J	S3061-D435
STM 431J	S3061-D431

Features Overview

Power supply	Pre-installed solar cell
Antenna	Helix antenna (STM 43XJ)
Frequency	928.35 MHz
Conducted Output Power	typ. 0 dBm
Data rate / Modulation type	125 kbps FSK
Start-up time with empty energy storage	typ. <2.5 min @ 400 lux, 25 °C
Initial operation time in darkness @25°C[1]	typ. 4 days, if energy storage fully charged wake-up every 100 s, transmission every 1000 s on average
Input Channels	Internal: temperature sensor, LRN button External via 20 pin connector: occupancy button, set point dial, HSM 100
Temperature sensor	Measurement range 0-40 °C, resolution 0.16 K Accuracy typ. ±0.5 K between 17 °C and 27 °C, typ. ±1 K between 0 °C and 40°C
Transmission indicator	1x LED
Generic Profiles Profiles	Temp : 0 – 40 Celsius, with 8, 10, 12 ,16 bit resolution More options available with source code change
EnOcean Equipment profiles	configurable EEPs: A5-02-05, A5-10-05, A5-10-03 and with HSM 100: A5-04-01, A5-10-10, A5-10-12
Module dimensions	43 x 16 x 8 mm
Operating temperature[1]	-20 up to +60 °C
Security Level Format (STM 435J)	24-bit RLC, No RLC tx, 4-byte CMAC, VAES encryption

[1] Full performance is achieved after several days of operation (up to two weeks) at good illumination level. Performance degrades over life time, especially if energy storage is exposed to higher temperatures. Each 10 K drop in temperature doubles the expected life span.