

## STM 350 / STM 350U

### Dolphin Temperature and Humidity Sensor Module

**Dolphin STM 350 modules enable the realization of energy harvesting temperature and humidity sensors that communicate wirelessly using the EnOcean radio standard.**

**They require no external components and provide an on-board a calibrated temperature and humidity sensor.**

STM 350 modules wake up at a rate of approx. once every 100 seconds to read the status of the integrated temperature and humidity sensor. If there is a significant change in measured temperature or humidity versus the last reported values then a radio telegram will be transmitted immediately. In case of no relevant change, a redundant retransmission signal (heartbeat) is sent after 15 minutes to announce the current values.

#### Features overview

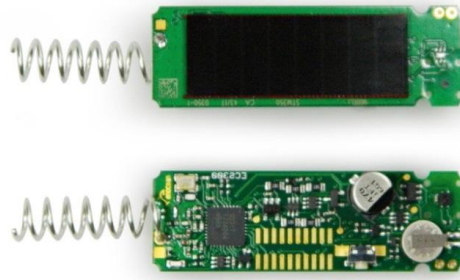
<b>Antenna</b>	50 Ohm helix antenna (on-board)	
<b>Radio Frequency / Data Rate</b>	STM 350	868.3 MHz ASK / 125 kbps <sup>1)</sup>
	STM 350U	902.875 FSK / 125 kbps <sup>2)</sup>
<b>Radiated Output Power (typ.)</b>	+5 dBm	
<b>On-board Power Supply</b>	Pre-installed solar cell	
<b>Auxiliary Power Supply</b>	Option for backup battery (3V)	
<b>Operation time in darkness @ 25°C</b>	min. 10 days, if energy storage fully charged <sup>3)</sup>	
<b>Sensor performance</b>	Temperature: ±0.5 K across entire range Humidity: ±3.0 % r.h. between 20 ... 80 % r.h.	
<b>Measurement interval</b>	Approximately once every 100 s	
<b>Transmission interval</b>	Every 7 ... 14 measurements (affected at random) Immediate transmission in case of significant change	
<b>EnOcean Equipment Profile (EEP)</b>	A5-04-03 SIGNAL 0x06 (Energy Level Reporting) SIGNAL 0x0E (Entering Transport Mode)	
<b>Operating and Storage temperature</b>	Absolute Maximum: -20 °C ... +60 °C Recommended <sup>1)</sup> : +10 °C...+30 °C	
<b>Shelf life (in absolute darkness)</b>	36 months after delivery <sup>2)</sup>	
<b>Operating and storage humidity</b>	Maximum: 0% ... 93% r.h., non-condensing Recommended: < 60% r.h.	
<b>Dimensions</b>	50±0.2 x 16±0.3 x 10mm	

<sup>1)</sup> Recommended for maximum life of energy storage capacitor

<sup>1)</sup> Deep discharge of the energy storage leads to degradation of performance. Therefore products have to be taken into operation after 36 months.

<sup>3)</sup> At default configuration (wake-up cycle 100 s, transmission cycle 1000 s).

Energy storage performance degrades over life time, especially if energy storage is long time exposed to very high temperatures. High temperatures will accelerate aging. Very low temperature will temporary reduce capacity of energy store and this leads to considerable shorter dark time operation.



Power is provided to STM 350 by means of a small pre-installed solar cell which works in conjunction with an integrated energy storage element in order to ensure operation in periods without ambient light.

STM 350 additionally provides the option to connect an external 3 V backup battery to enable operation with little or no available light.

#### TYPE

**STM 350**  
**STM 350U**

#### ORDERING CODE

**S3001-D350**  
**S3051-D350**