

EMSIU Easyfit Multisensor

EMSIU enables the realization of energy harvesting wireless sensors communicating according to EnOcean Alliance radio standard. Key applications are wall-mounted or equipment-mounted sensor solutions for the measurement of temperature, humidity, illumination or acceleration / orientation.

EMSIU integrates dedicated sensors for temperature, humidity, illumination, acceleration and magnet contact. These sensors measure and transmit the current status every 60 seconds.

EMSIU will immediately wake-up and transmit an update if an acceleration event occurs (e.g. due to being moved or shaken) after a period without such change.

EMSIU contains an integrated solar cell optimized to generate the required energy based on available ambient lighting. Under typical indoor lighting scenarios (200 lux for 6 hours per day) they operate fully self-supplied. For use cases with insufficient available light, it is possible to mount a dedicated backup battery.



EMSIU provides an integrated NFC interface that can be used for device configuration and device commissioning and an LRN button that can be used for simple commissioning tasks.

EMSIU is delivered as white label product (WLP) in single unit packaging containing module, wall mount, front cover, magnet and adhesive tape.

Alternatively, STM 550U KIT provides module, wall mount, front cover, magnet and adhesive tape in one box for volume deliveries while STM 550U provides only the module in PTM 21x form factor for integration into OEM designs.

Order information

| Type | Frequency | Variant | Order Code |
|--------------|-------------|---------|------------|
| EMSIU | 902.875 MHz | WLP | E6251-K516 |
| STM 550U KIT | | Kit | B6251-K516 |
| STM 550U | | Module | S6251-K516 |

Features overview

| | |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Transmission Frequency / Data Rate | 902.875 MHz / 125 kbps |
| Transmission Power | +99 dBμV/m |
| Transmission Range (for guidance only) | typ. 200 m free field / 30 m indoor environment |
| Temperature Measurement Range / Accuracy | -20 °C ... +60 °C (NOTE 1) / ± 0.3 K |
| Humidity Measurement Range / Accuracy | 0 ... 100 % r.h. (NOTE 1) / ± 3% r.h. |
| Illumination Measurement Range / Accuracy | 0 ... 65000 Lux (NOTE 1) / ± 10 % |
| Acceleration Measurement Range / Accuracy | ± 2 g / ± 0.03 g |
| Acceleration Wake Threshold | 0.03 g (default, configurable via NFC) |
| Update Rate (excl. random offset) | Every 60 seconds (configurable via NFC) |
| Device Configuration | NFC (ISO 14443) |
| Supported EEP (selectable via NFC) | D2-14-41 (default) D2-14-40, A5-02-05, A5-04-01, A5-04-03 A5-06-02, A5-06-03, A5-14-05, D5-00-01 |
| Power Supply | Integrated solar cell |
| Operating Time In Darkness (at 25°C) | 4 days (after full charge) |
| Backup Power Supply (optional) | CR1632 |
| Dimensions (EMSIU) | 49 mm x 49 mm x 13 mm |
| Operating Temperature / Humidity | -5°C ... +45°C / 0 ... 90% r.h. (non-condensing) |

Note 1: Sensor measurement range is dependent on the selected EEP

EMSIU should only be used in the operating conditions (temperature / humidity) specified above