

EMSIB Easyfit BLE Multi-Sensor

EMSIB enables the realization of energy harvesting wireless sensors communicating based on the BLE radio standard.

Key applications are wall-mounted or equipment-mounted sensor applications for the measurement of temperature, humidity, illumination or acceleration / orientation.



EMSIB integrates dedicated sensors for temperature, humidity, illumination, acceleration and magnet contact. These sensors measure and transmit the current status every 60 seconds. The transmission is indicated using a dedicated LED.

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

EMSIB 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) it operates fully self-supplied. For other cases it is possible to mount a dedicated backup battery.

EMSIB contains an integrated NFC interface that can be used for device configuration and device commissioning. In addition, it contains a LRN button that can be used for simple commissioning tasks.

EMSIB is available as finished white label product (WLP) including wall mount and front cover frame.

For integration into own housings, STM 550B is provided as product variant in PTM module form factor.

Order information

| Type | Frequency | Variant | Order Code |
|----------|-------------|---------|------------|
| EMSIB | 2.4 GHz BLE | WLP | E6221-K516 |
| STM 550B | 2.4 GHz BLE | Module | S6221-K516 |

Features overview

| | |
|---|---|
| Antenna | Integrated antenna |
| Radio Standard | 2.4GHz Bluetooth Low Energy (Advertising Mode) |
| Radio Channel | BLE Channels 37, 38 and 39 (Advertising Channels) |
| Sensor Data Encoding | According to EnOcean BLE Sensor Protocol |
| Transmission Interval | Every 60 s (adjustable via NFC) |
| Device Identification | Individual 48 Bit Device ID (factory programmed) |
| Security | AES128 (CBC) authentication with sequence counter |
| Transmission Range (typ.) | 30 m line of sight / 10 m indoor environment |
| Power Supply | Integrated Solar Cell |
| Temperature / Humidity Sensor | -20 °C ... +65 °C (+-0.3 K) / 0 ... 100 % r.h. (+-3 %) ⁽¹⁾ |
| Illumination Sensor | 0 ... 65535 Lux (+- 10%) |
| Acceleration Sensor | - 4g ... +4g (+- 0.05g) with configurable trigger (default 0.0625 g) |
| User Interface | Learn button + LED |
| Required Ambient Lighting | 200 Lux for 6 hours per day |
| Autonomy (operation without light) | 4 days |
| Backup Battery (if required) | CR1632 |
| Operating Conditions | -5 ... 45°C / 0 ... 90 % r.h. (indoor use in dry rooms only) |
| Dimensions (WLP) | 49 mm x 49 mm x 13 mm |

⁽¹⁾ EMSIB / STM 500B should be used only within the specified operating conditions.