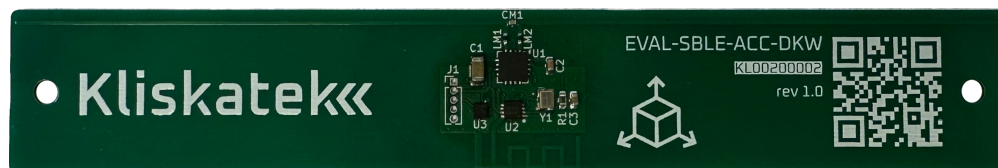


---

## BATTERYLESS BLE ACCELEROMETER TAG

Check for samples: [EVAL-SBLE-ACC](#)

---



### FEATURES

- **Battery free**
- **Power harvesting from UHF**
- **Long self-powering range: 5m**
- **Bluetooth communication**
- **Data broadcast as BLE beacon**
  - **Tag type identifier**
  - **Unique serial number**
  - **Sensor data**
- **Optional AES-128 based security**
- **Accelerometer**
  - **Full scale:  $\pm 16g$**
  - **Sensitivity accuracy: 3%**
  - **Zero-g level offset accuracy: 30mg**
  - **Resolution: 1.95mg**

### DESCRIPTION

EVAL-SBLE-ACC is a wireless and battery free sensor tag that belongs to the SenseBLE (SBLE) family by Kliskatek. Built in a compact PCB format, the tag includes a 3 axis accelerometer.

These sensor tags are wirelessly powered by UHF power transmitters such as standard UHF RFID readers. With a 2W ERP setup, the batteryless accelerometer can power-up to over 5 meters – 16 feet.

The SBLE family tags use Bluetooth technology to communicate. When energized, the tags broadcast BLE beacons that can be seen by any BLE compatible device.

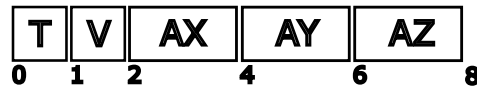
Optionally, AES-128 based beacon authentication and payload privacy can be requested. Contact [sales@kliskatek.com](mailto:sales@kliskatek.com) for security customized units.

EVAL-SBLE-ACC is powered with UHF power transmitters. Standard ISO/IEC 18000-6 UHF RFID readers and/or simple UHF CW transmitters can be used for this purpose. The tag will not respond to any RFID command.

Unidirectional data communication is implemented with Bluetooth technology. When energized, EVAL-SBLE-ACC will emit custom BLE beacons periodically including a the tag type identifier, version and sensor data. Sensor data is updated in every new beacon broadcast. Every tag has a unique MAC (included in the beacon) which identifies the tag unequivocally.

The structure of the beacon is as follows:

- Local Name (2 bytes): "KL"
- Manufacturer Specific Data (8 byte):
  - Company UUID: 0xFFFF (development)
  - Data (8 byte):



- \* T (1 byte): tag type identifier 0x02.
- \* V (1 byte): tag version.
- \* AX (2 bytes): X-axis acceleration raw data. Data formatted as int16 little endian. Convert to g as follows:

$$ACC_X = 16 \times \frac{AX}{2^{15}}$$

- \* AY (2 bytes): Y-axis acceleration raw data. Data formatted as int16 little endian. Convert to g as follows:

$$ACC_Y = 16 \times \frac{AY}{2^{15}}$$

- \* AZ (2 bytes): Z-axis acceleration raw data. Data formatted as int16 little endian. Convert to g as follows:

$$ACC_Z = 16 \times \frac{AZ}{2^{15}}$$

## CHARACTERISTICS

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT
<b>POWER</b>					
$r_{sp}$	Self-powering range <sup>1</sup>		5		m
<b>COMMUNICATION</b>					
$P_{BLE}$	BLE output power		0		dBm
<b>OPERATING CONDITIONS</b>					
$T_{OP\_TOP}$	Operating temperature range	-40		85	°C
<b>ACCELEROMETER</b>					
$ACC_{range}$	Acceleration range	-16		16	g
$ACC_{acc}$	Acceleration accuracy				
	Sensitivity	-3		3	%
	Zero-g level offset	-30	±20	30	mg
$ACC_{res}$	Acceleration resolution		1.95		mg

<sup>1</sup>With a 2W ERP setup

## REFERENCES

The next table shows the available references of the EVAL-SBLE-ACC.

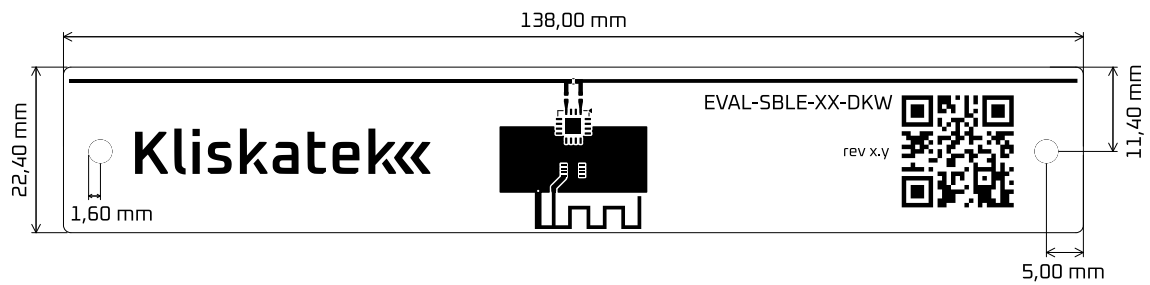
Ref.	Name	Description
KL00200002	EVAL-SBLE-ACC-DKW	EVAL-SBLE-ACC, dipole wideband antenna, PCB format

For custom references with other antennas and housings, please contact us at sales@kliskatek.com.

## MECHANICAL DIMENSIONS

### DKW

#### 2D VIEW



#### 3D VIEW

