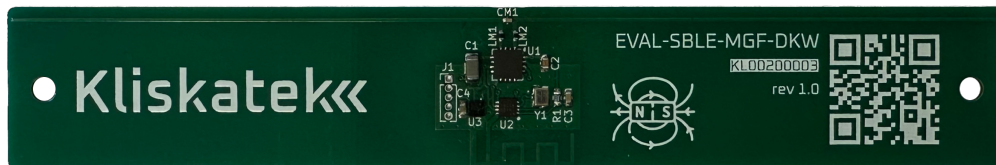


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## BATTERYLESS BLE MAGNETOMETER TAG

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

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### 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**
- **Magnetometer**
  - **Full scale:  $\pm 25$ gauss**
  - **Sensitivity accuracy: 7%**
  - **Offset:  $\pm 60$ mgauss**
  - **Resolution: 1.5mgauss**

### DESCRIPTION

EVAL-SBLE-MGF 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 magnetometer.

These sensor tags are wirelessly powered by UHF power transmitters such as standard UHF RFID readers. With a 2W ERP setup, the batteryless magnetometer 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-MGF 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-MGF 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 0x03.
- \* V (1 byte): tag version.
- \* MX (2 bytes): X-axis magnetic field raw data. Data formatted as int16 little endian. Convert to miligauss as follows:

$$MGF_X = MX \times 1.5$$

- \* MY (2 bytes): Y-axis magnetic field raw data. Data formatted as int16 little endian. Convert to miligauss as follows:

$$MGF_Y = MY \times 1.5$$

- \* MZ (2 bytes): Z-axis magnetic field raw data. Data formatted as int16 little endian. Convert to miligauss as follows:

$$MGF_Z = MZ \times 1.5$$

## 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>MAGNETOMETER</b>					
$MGF_{range}$	Magnetic field range	-25		25	gauss
$MGF_{acc}$	Magnetic field accuracy				
	Sensitivity	-7		7	%
	Offset	-60		60	mgauss
$MGF_{res}$	Acceleration resolution		1.5		mgauss

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

## REFERENCES

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

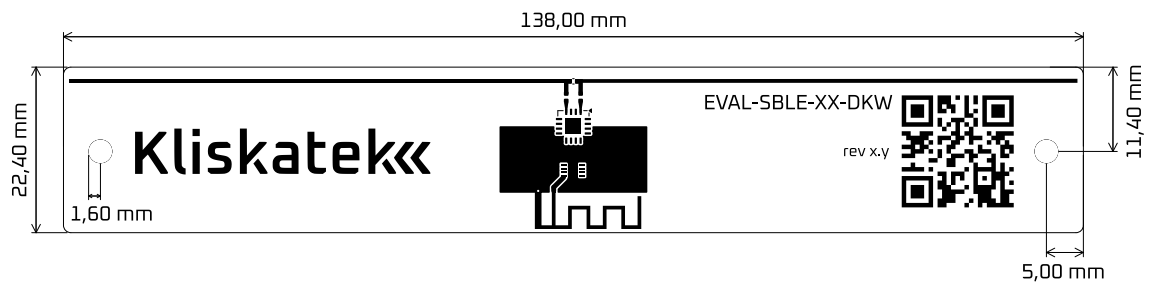
Ref.	Name	Description
KL00200003	EVAL-SBLE-MGF-DKW	EVAL-SBLE-MGF, dipole wideband antenna, PCB format

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

## MECHANICAL DIMENSIONS

### DKW

#### 2D VIEW



#### 3D VIEW

