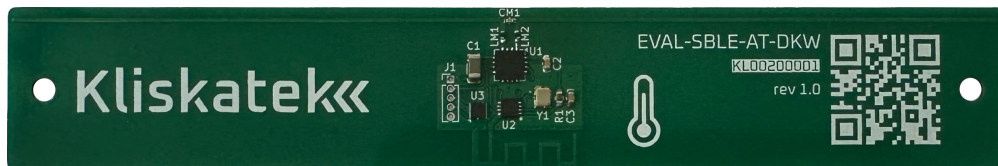


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## BATTERYLESS BLE AMBIENT TEMPERATURE TAG

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

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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**
- **Ambient temperature sensor**
  - **Operation range: -40°C to 85°C**
  - **Accuracy: 0.2°C**
  - **Resolution: 0.01°C**

### DESCRIPTION

EVAL-SBLE-AT 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 an ambient temperature sensor.

These sensor tags are wirelessly powered by UHF power transmitters such as standard UHF RFID readers. With a 2W ERP setup, the batteryless temperature sensor 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-AT 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-AT 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 (4 byte):



- \* T (1 byte): tag type identifier 0x01.
- \* V (1 byte): tag version.
- \* AT (2 bytes): ambient temperature raw data. Data formatted as int16 little endian. Convert to centidegrees Celsius as follows:

$$Temperature_{Celsius} = AT \times 7.8125 \cdot 10^{-3}$$

## 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>AMBIENT TEMPERATURE SENSOR</b>					
$AT_{range}$	Temperature range	-40		85	°C
$AT_{acc}$	Temperature accuracy				°C
	-40 °C to 85 °C	-0.2	±0.1	0.2	°C
$AT_{res}$	Temperature resolution		0.01		°C

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

## REFERENCES

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

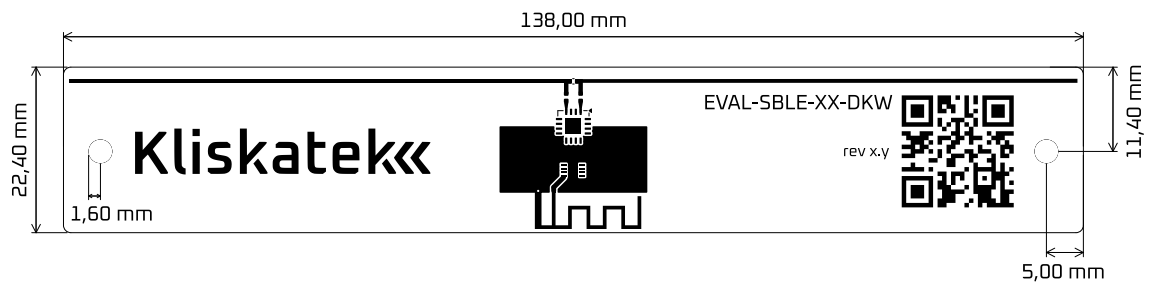
Ref.	Name	Description
KL00200001	EVAL-SBLE-AT-DKW	EVAL-SBLE-AT, dipole wideband antenna, PCB format

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

## MECHANICAL DIMENSIONS

### DKW

#### 2D VIEW



#### 3D VIEW

