



## Technical description

BOOTLOADER VERSION: 04.01  
FIRMWARE VERSION: 04.02



AtikoTI is a device that is used to measure the temperature of liquid, bulk and semi-solid environments using a measuring probe and then transmit this information over a radiolink. The device has an ingress protection of IP63 and works in the temperature range from -40 to +60°C.

### Characteristics:

- LoRaWAN protocol support;
- 868 MHz frequency range;
- ABP and OTAA support;
- work in Class A;
- internal antenna;
- up to 2m dipstick length;
- Internal replaceable 3.7 V(I8500) power supplier ;
- range of measurable temperatures (operating temperature of the probe) – from -55 to +125°C;
- temperature measurement accuracy is  $\pm 0.5^{\circ}\text{C}$ ;
- ability to customize all functions and set software updates via Bluetooth connection to a mobile device (phone, tablet, laptop).

### Turning on the device

The device starts working from the moment the microswitch on the board is turned on. If the device is set in OTAA mode, the process of connection to the LoRaWAN network is accompanied by a blinking luminodiode, which goes out upon a successful attempt.

### Setting device parameters

The mobile application "**Atiko Setter**" allows you to set the signal parameters (power, prevalence rate, etc.), activation type (ABP or OTAA), device address, encryption keys, transmission channels (frequencies), temperature polling period, device name and also to update software. The message sending period is once an hour.

It is possible to set the minimum and maximum temperature limits for unscheduled sending of "alarm" messages.

AtikoTI is connected to a mobile device via a Bluetooth adapter. For more detailed information refer to the documentation in the "**Atiko Setter**".

### Working in class A

In this mode, the device is in sleep mode with minimum power consumption, except for the time of data transmission over the radiolink and the polling time of the temperature sensor. The frequency of polling can be set in the range from 2 to 60 minutes via the mobile application "**Atiko Setter**".

In class A, it is possible to transfer commands (data) to the device. For more detailed information refer to the [MQTT integration](#) (Sending section). The following are the commands supported by the device.

Command	Description
get_data	A request to receive an out-of-order data packet from a device
reset	Program reset of the device

## Format of the transmitted data

The device transmits data on the internal battery condition, information from the universal inputs and the digital outputs' condition in Cayenne format.

Тип	LPP (Low Power Payload)	Data size	Data bit resolution
Temperature	103	2	0.1 °C
Analog input	2	2	0.01 V

## Example of data received from device

```
{
  "applicationID": "2",
  "applicationName": "70b3d57ed0000a5d",
  "deviceName": "d004a30b00le52dl",
  "devEUI": "d004a30b00le52dl",
  "rxInfo": {
    "mac": "aa55cc0000000000",
    "time": "2018-12-16T12:26:36.888607Z",
    "rssi": -60,
    "loRaSNR": 8,
    "name": "",
    "latitude": 0,
    "longitude": 0,
    "altitude": 0
  },
  "txInfo": {
    "frequency": 868100000,
    "dataRate": {
      "modulation": "LORA",
      "bandwidth": 125,
      "spreadFactor": 7,
      "adr": false,
      "codeRate": "4/5"
    },
    "fCnt": 1,
    "fPort": 1,
    "data": "AAIBagEAAAIAAAMCAAEEAgAABQIAAA==",
    "object": {
      "analogInput": {
        "0": 3.62
      },
      "temperature": {
        "1": 19.5
      }
    }
  }
}
```

Internal battery voltage is transmitted in “Analog input” format on the zero channel (3.62 V in the example).

## Connecting the programmer

The device allows to connect a universal Bluetooth programmer to a 14-pin port located under the case cover for setting parameters via the “Atiko Setter” mobile application.

