



## Technical description

BOOTLOADER VERSION: 04.01  
FIRMWARE VERSION: 04.01



AtikoEI is a device for monitoring the air condition (temperature, humidity, pressure and carbon dioxide level) and further transmitting of this information via radiolink.

The device has an ingress protection level of IP30 and is available in two versions:

- AtikoEI.0 - measures temperature, humidity, pressure and carbon dioxide level;
- AtikoEI.I - measures temperature, humidity and pressure.

### Characteristics:

- LoRaWAN protocol support;
- 868 MHz frequency range;
- ABP and OTAA support;
- work in Class A;
- internal antenna;

- ability to customize all functions and set software updates via Bluetooth connection to a mobile device (smartphone, tablet, laptop)

### For AtikoEI.0

- working range (temperature measurement range) – from +5 to + 50°C ( $\pm 0.5^{\circ}\text{C}$ );
- humidity measurement range – from 0 to 90% ( $\pm 3\%$ );
- pressure measuring range – from 300 to 1100 hPa( $\pm 1$ );
- CO2 concentration measuring range – from 400 to 2000 ppm( $\pm 5\%$ );
- power supply from AC with the voltage of 85-265 V.

### For AtikoEI.I

- working range (temperature measurement range) – from -40 to +85°C ( $\pm 0.5^{\circ}\text{C}$ );
- humidity measurement range – from 0 to 90% ( $\pm 3\%$ );
- pressure measuring range – from 300 to 1100 hPa( $\pm 1$ );
- internal replaceable power supplier: 2xAAA 1.5V batteries.

## Turning on the device

The device starts working from the moment the microswitch on the board located under the case cover is turned on. If the device is set in OTAA mode, the process of connecting to the LoRaWAN network will be cyclical until a successful exchange with the server is attempted.



## Device parameters setting

The mobile application "Atiko Setter" allows you to set the signal parameters (power, prevalence rate, etc.), type of activation (ABP or OTAA), encryption keys, transmission channels (frequencies), sensor polling period, message sending period, device name, and also to update software. It is possible to set the minimum and maximum temperature / humidity / pressure / CO2 limits for unscheduled sending of "alarm" messages. AtikoEI is connected to a mobile device via a Bluetooth adapter. For more detailed information refer to the documentation in "Atiko Setter".

## Work 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 1440 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.

Type	LPP (Low Power Payload)	Data size	Data bit resolution
Temperature	I03	2	0,1 °C
Humidity	I04	1	0.5 %
Pressure	I15	2	0,1 hPa
Carbon dioxide level	2	2	0,01
Analog Input	2	2	0.01 V

## Example of data received from the device:

```
{ "applicationID": "2", "applicationName": "70b3d57ed0000a5d", "deviceName": "d004a30b001e52d1", "devEUI": "d004a30b001e52d1", "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": 3.02}, "analogOutput": {"1": 567}, "humidity": {"1": 32}, "pressure": {"1": 1025}, "temperature": {"1": 19.5}}}}
```

The carbon dioxide level is transmitted in the analogOutput format. The voltage of the internal battery (or the output voltage of the power supply) is transmitted in the "Analog input" format (analogInput) on the zero channel (in the example -3.02 V).

## 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.

