Bluetooth temperature sensor configuration description

Introduction

Bluetooth Temperature Sensor can collect temperature and humidity data from the surrounding environment and transfer it to other devices via Bluetooth 4.0. Wireless connectivity capability removes the need to use wires during device installation. Sensor's characteristics are small-size and low-weight, it is easily portable and provides highly accurate measurements.

Feature was first introduced to FM devices with these firmware versions:

- FM-Tco4 HCV BT 00.02.24.XX
- FM-Tco4 LCV BT 00.02.24.XX
- FM-Pro4 BT 00.02.24.XX

You can get the latest firmware and configurator from our documentation website: doc.ruptela.lt

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Document change log

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Date	Version	Change details
2016-09-07	1.0	Initial draft.



Description

Bluetooth temperature and humidity sensor uses Bluetooth Low Energy technology to transmit temperature and humidity values.

- Every Bluetooth sensor has its own unique ID. In the configurator this ID's is linked to a specific I/O event. Measurement data from the sensor will be sent via this I/O assigned to it.
- Every Bluetooth sensor works in the broadcast mode. That means that they broadcast data periodically. The user cannot change the broadcast frequency.
- The FM device scans its environment searching for a transmission from the device with a known ID. If it detects such transmission, it captures corresponding data packets.
 - If device receives data from the sensor with a known ID, it sends this data via an I/O event assigned to it.
 - •• If there is no data in the package, the "No data" error code is included into the corresponding I/O event.
- If no package is received within two minutes period, the event is triggered with "Sensor not available" error code.
- Currently there can be up to five sensors connected to one FM device.

Configuration

Wireless communication settings

- 1. In the main configurator window choose your device (Tco4 LCV BT, Tco4 HCV BT, Pro4 BT).
- 2. Under **Global** settings, in the **Wireless** section tick the **Enable** check box to make your device discoverable by other Bluetooth devices.
- 3. Click the "Options" button.
- 4. **Device Name, Connection PIN** and **Admin Password** fields are used to set up device connection with the "Universal App". In this case you don't need to change anything.
- 5. Click on the "Accessories List" button. It opens up a new "Bluetooth Accessories" popup window.

	Lock FM device to the SIM card			Wireless Enable 2. Options 3.		
iteration 1:	Configuration Password	GNSS GNSS selection:	GPS+GLONAS ~	Wireless Communication	×	
	Driver registration Options	Geofencing	Options	Device Name FMBT Connection PIN 223344		
	Send data without GPS fix Enable Options Do not use with Taust Table connect	Towing detection Options	Impact detection Options	Admin Password admin1	4.	
	Profile 1 Profile 2 Profile 3 Profile 4		Accessories List 5.			
	Sleep Disabled ✓ after 600 ↓ set	Data collection Enable SD card logging interv	al 0 🌩 s			





Add a Bluetooth temperature sensors to the Bluetooth accessories list

- 1. Enter a Bluetooth temperature sensor ID number in the **BT device ID** field. Only numbers can be used. Allowed ID length is from 1 to 16 digits.
- 2. Select one of the temperature sensors in the **Type of Bluetooth LE accessory** drop down list.
- 3. Click the "Add" button. The Bluetooth temperature sensor ID number will be assigned to the slected sensor and its corresponding I/O parameter. Assignation will be displayed in the list below. Enter another ID, select other temperature sensor and click "Add" again. Repeat this procedure as many times as necessary.

Additional options

- 4. You can assign an ID number to a different sensor. Click on the corresponding assignation in the list below. Choose a different sensor or type in a different ID number and click "Change".
- 5. You can remove assignations from the list. Select the corresponding assignation in the list below and click "Remove".

Wireless Communication X BT device ID Type of Bluetooth LE accessory	Bluetooth Accessories			
Device Name FMBT Connection PIN 223344 Admin Password admin1 Add 3. Change 4. Remove 5. ID Type of accessory 0000 BT temperature and humidity sensor 0 Close Close	Vireless Communication Device Name FMBT Connection PIN 223344 Admin Password admin1 Accessories List Close	Bluetooth Accessories BT device ID Type of Bluetooth LE accessory IIII I. Add Change 4. Remove 5. ID Type of accessory 0000 BT temperature and humidity sensor 0 ID Type of accessory 0000 BT temperature and humidity sensor 0 ID Type of accessory 0000 BT temperature and humidity sensor 0 ID Close		

Enable I/O parameters

- 1. In the **I/O events** section click on the "Options" button. It opens up a new "I/O settings" window.
- 2. In **Protocol selection** section put a tick in **Send I/O data with v1.1 protocol** checkbox. After this step, Bluetooth temperature sensor I/O parameter will be displayed in the I/O list.
- 3. Select a slot that you want to enable.
- 4. In the **I/O properties** section tick the **Enable** check box, otherwise the slot will remain empty.
- 5. **ID** contains the parameters list. Choose a parameter you want to enable for the selected slot. To monitor temperature or humidity data from the Bluetooth temperature sensor, choose one of its parameters. These options could be used: *BT Humidity sensor 0 ... 4, BT temperature Sensor 0 ... 4.*

More details about these parameters available in the next chapter.

Note

You have already added "BT temperature and humidity sensor X" to the Bluetooth accessories list. Make sure to enable its corresponding I/O parameter "BT Humidity Sensor X" or "BT Temperature Sensor X". They are numbered and these numbers should match.



Enable Options Do not use with TrustTrack server!	Options		10 settings 1 : BT Humidity Sensor 0 3	Protocol selection
Profile 1 Profile 2 Profile 3 Profile 4 Sleep Disabled after 600 = sec Data sending Enable Min Records 1 = s Link Timeout 7 = s Enable timetable Timetable	Data collection Data c	2G - 3G Auto ~ Operator list Options IO events Options 1.	IO properties ✓ Enable 4. ID BT Humidity Sensor 0 5. Level 0 ¢ Delta 0 ¢ Average 1000 ∲ ms Event on Monitoring ✓ Include data only on event Priority Low ✓ Switch to No Switch ✓	Interfaces PortA PortB PortC K-Line CAN CAN2 LCV Autoselect
	Radial 60 \$ deg		IO counters Records on event: 1	DOUT1 Disabled ~ DOUT2 Disabled ~

Bluetooth temperature sensor I/O parameters

There are ten I/O parameters assigned to the wireless temperature and humidity sensor.

- Five for the temperature sensing.
- Five for the humidity sensing.

More details about each I/O parameter can be found in "FMIOData+size+description" document, which is available at: <u>https://doc.ruptela.lt/display/AB/FM4</u>

Note

To enable Bluetooth temperature sensor I/O parameters you have to use an extended v1.1 protocol version.



