SETUP GUIDE · TELTONIKA + DUT-E S7

Connect a wireless DUT-E S7 fuel level sensor to a Teltonika FMB120

Pair a Bluetooth DUT-E S7 fuel level sensor with a Teltonika FMB120 tracker, send fuel level, frequency, temperature and error codes to the server, and set up the sensors in Wialon. Covers both DUT-E S7 types, 0113 and 0107.

wagencontrol.eu/compatibility/teltonika/fmb120-dut-e-s7/

TRACKER Teltonika FMB120	SENSOR DUT-E S7 wireless fuel level sensor, type 0113 or 0107
INTERFACE Bluetooth (S7), no wiring between sensor and tracker	TRACKER FIRMWARE 03.27.01 Rev:00 or later (type 0107)
CONFIGURATOR Teltonika Configurator 1.6.4 B.3.27 R2 or later	SENSORS PER TRACKER Up to 4 DUT-E S7 (type 0107)
SERVER IN THIS GUIDE Wialon Hosting (any server that reads Teltonika IO elements works)	

Before you start: which DUT-E S7 do you have?

The setup depends on the sensor's firmware type, printed in its serial number: numbers starting **0113** or **0107**. Type 0107 is the current one: it supports up to four sensors per tracker and uses the presets built into the Teltonika Configurator. Read the DUT-E S7 manual first and switch the sensor to operating mode.

Type 0113 →

Type 0107 →

Type 0113

1. Find the sensor's MAC address

The tracker finds the sensor by its Bluetooth MAC address, which is the sensor's serial number converted from decimal to hexadecimal.

1. Read the serial number on the sensor body, e.g. `113 001 300 014`.
2. Convert it to hexadecimal, e.g. with a calculator in Programmer mode: `1A 4F 67 00 2E`.

3. The MAC address has 6 bytes, so add leading zeros: `00 1A 4F 67 00 2E`.
4. Alternatively, scan for the sensor with the Fuel Tanks Monitor app for Android: it shows the MAC address directly.



Figure 1. The serial number on the sensor body.



Figure 2. Decimal to hexadecimal in a calculator's Programmer mode.



Figure 3. The Fuel Tanks Monitor app shows each sensor's MAC address.

2. Set up the tracker

1. Insert a SIM card into the FMB120 and power it up.
2. In the Teltonika Configurator, enter the SIM operator's **APN** and the **server domain and port**.
3. Set the data protocol to **Codec 8 Extended**.

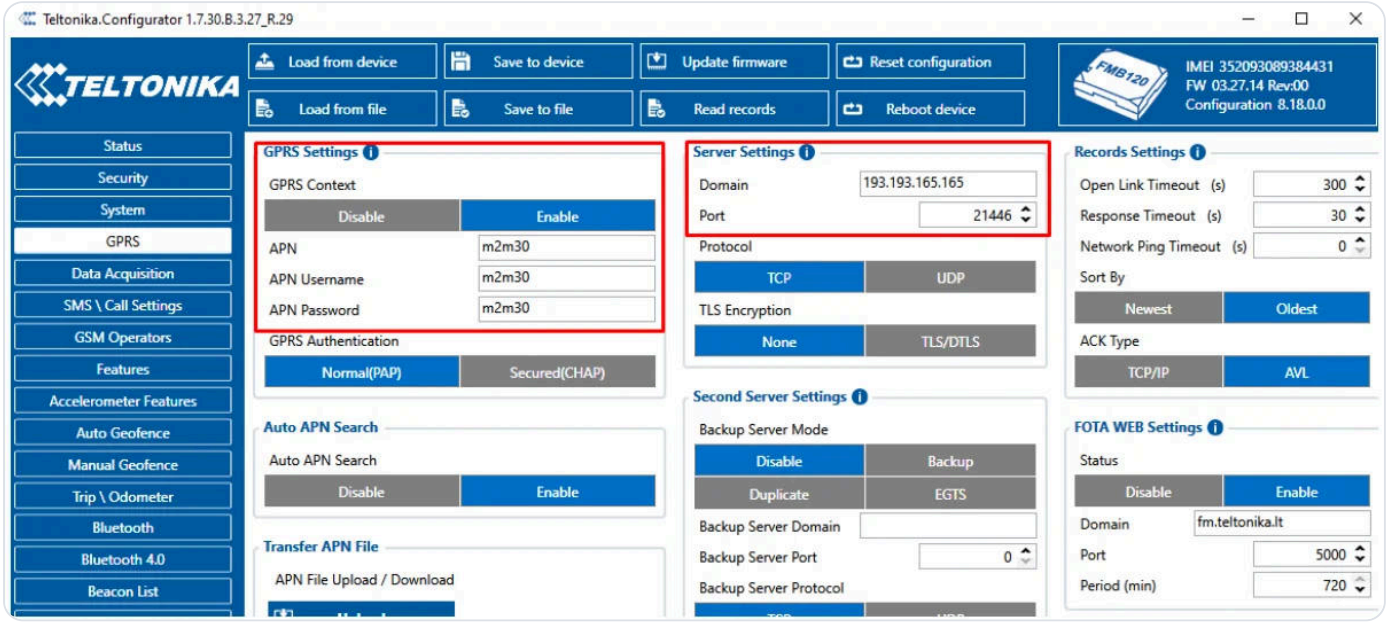


Figure 4. GPRS settings: APN and server address.

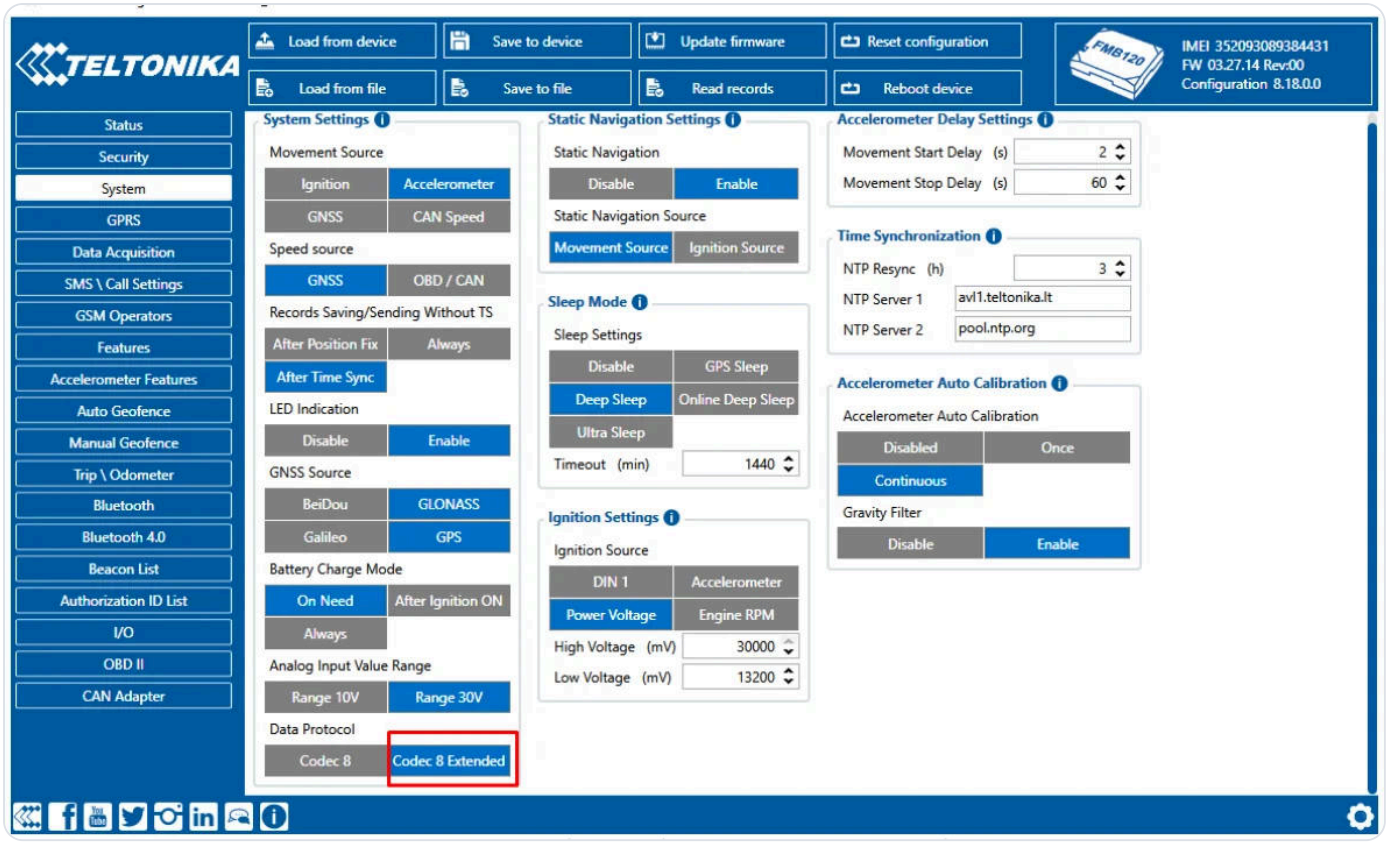


Figure 5. Data protocol: Codec 8 Extended.

3. Pair the sensor

1. Place the sensor near the tracker and run a Bluetooth search (**Discover BLE**).
2. Find your sensor in the list by the MAC address from step 1 and enter it in the sensor's settings.
3. Set up which sensor values the tracker reads (frequency, temperature, error mask, level, volume).

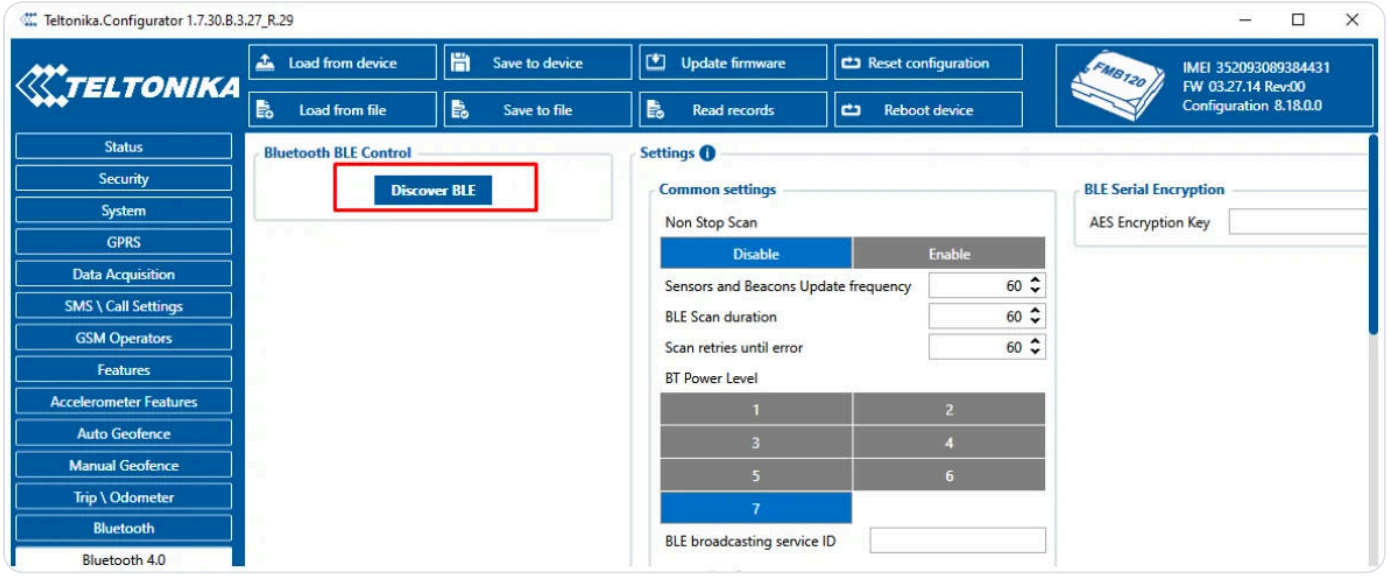


Figure 6. Search for sensors.

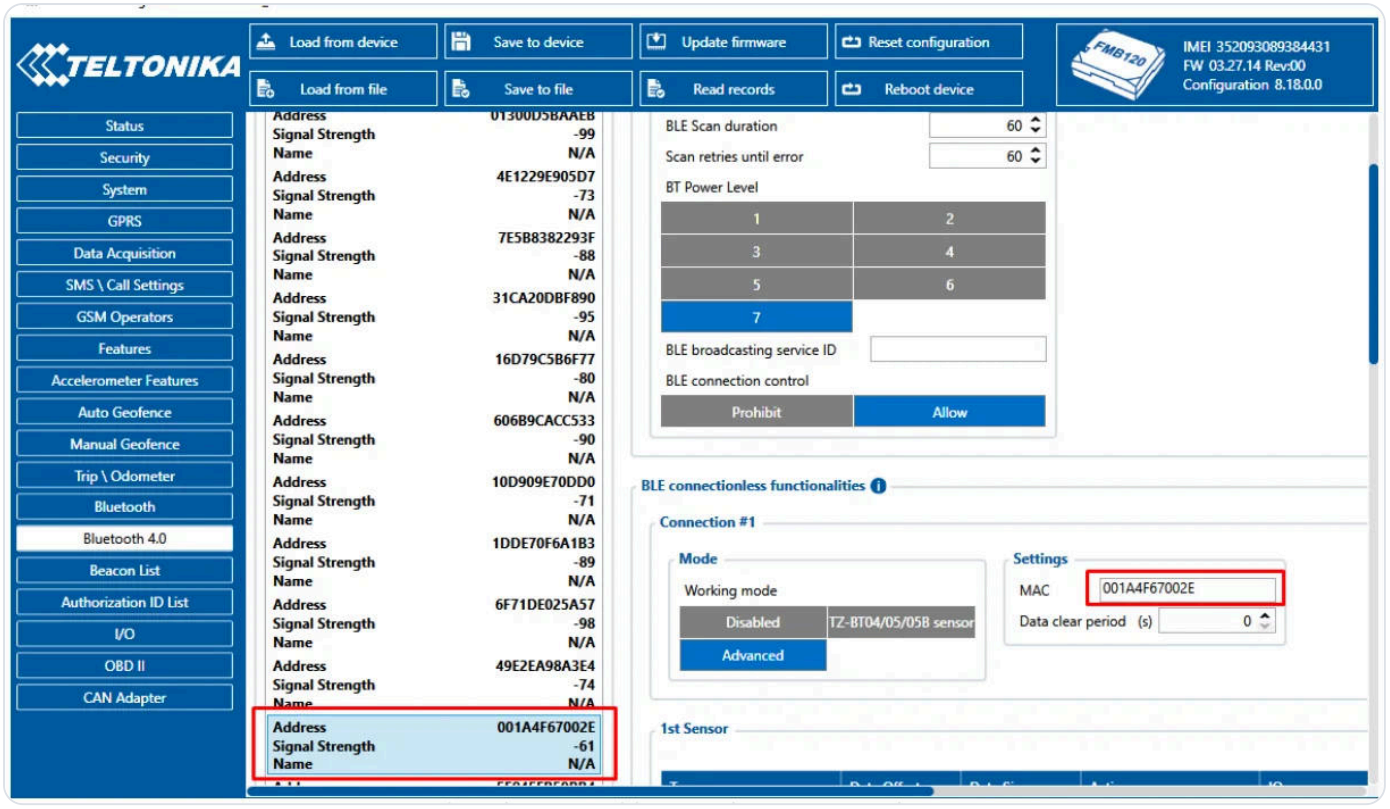


Figure 7. Pick the sensor by its MAC address.

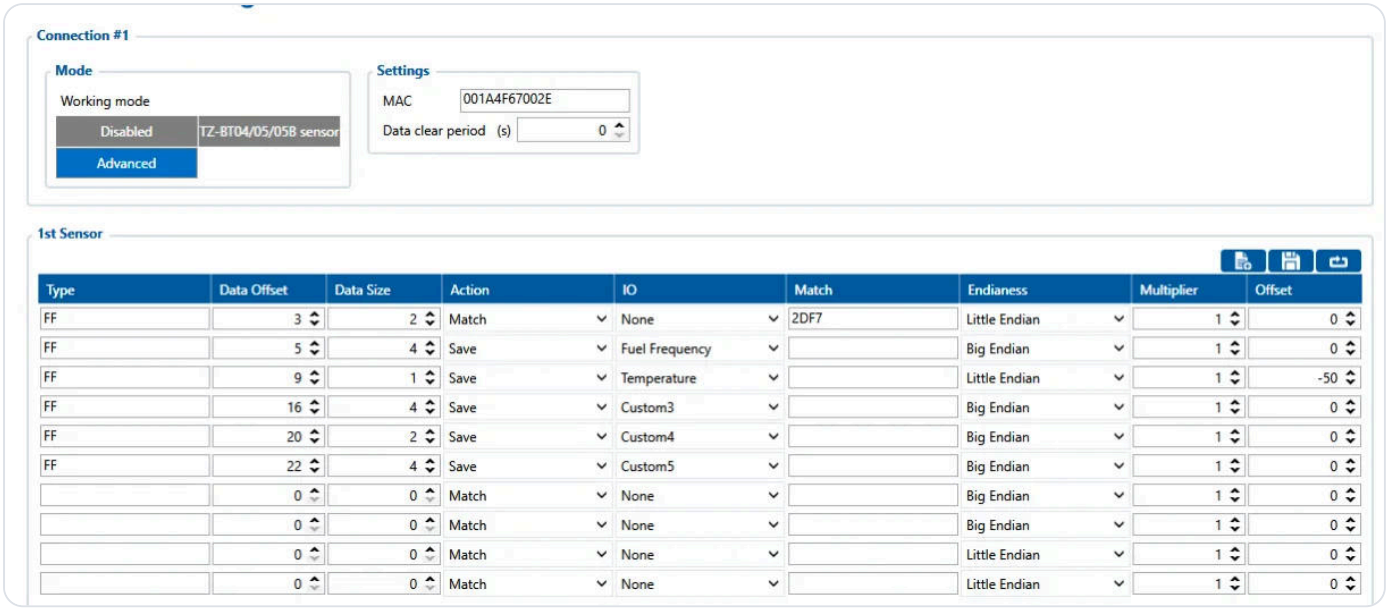
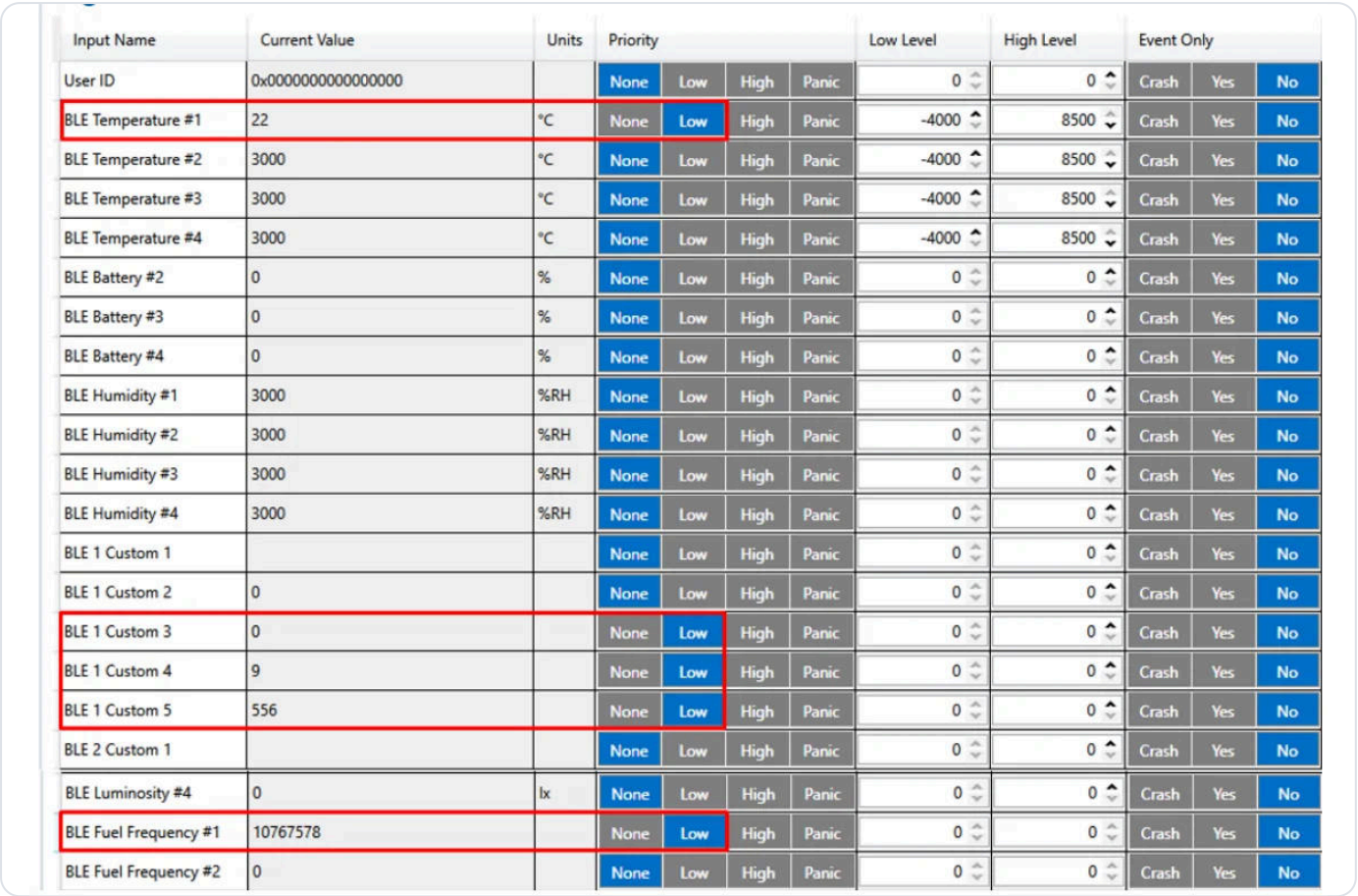


Figure 8. Sensor parameters read by the tracker.

4. Choose what goes to the server

On the I/O tab, set the priority of each value to **Low** so the tracker sends it to the server:

IO ELEMENT	VALUE	UNIT
BLE Temperature 1	Sensor temperature	°C
BLE Fuel Frequency 1	Output frequency (fuel level)	Hz
Custom3	Error code mask (DTCs)	–
Custom4	Fuel level (reserve)	mm
Custom5	Fuel volume	L



Input Name	Current Value	Units	Priority				Low Level	High Level	Event Only		
User ID	0x0000000000000000		None	Low	High	Panic	0	0	Crash	Yes	No
BLE Temperature #1	22	°C	None	Low	High	Panic	-4000	8500	Crash	Yes	No
BLE Temperature #2	3000	°C	None	Low	High	Panic	-4000	8500	Crash	Yes	No
BLE Temperature #3	3000	°C	None	Low	High	Panic	-4000	8500	Crash	Yes	No
BLE Temperature #4	3000	°C	None	Low	High	Panic	-4000	8500	Crash	Yes	No
BLE Battery #2	0	%	None	Low	High	Panic	0	0	Crash	Yes	No
BLE Battery #3	0	%	None	Low	High	Panic	0	0	Crash	Yes	No
BLE Battery #4	0	%	None	Low	High	Panic	0	0	Crash	Yes	No
BLE Humidity #1	3000	%RH	None	Low	High	Panic	0	0	Crash	Yes	No
BLE Humidity #2	3000	%RH	None	Low	High	Panic	0	0	Crash	Yes	No
BLE Humidity #3	3000	%RH	None	Low	High	Panic	0	0	Crash	Yes	No
BLE Humidity #4	3000	%RH	None	Low	High	Panic	0	0	Crash	Yes	No
BLE 1 Custom 1			None	Low	High	Panic	0	0	Crash	Yes	No
BLE 1 Custom 2	0		None	Low	High	Panic	0	0	Crash	Yes	No
BLE 1 Custom 3	0		None	Low	High	Panic	0	0	Crash	Yes	No
BLE 1 Custom 4	9		None	Low	High	Panic	0	0	Crash	Yes	No
BLE 1 Custom 5	556		None	Low	High	Panic	0	0	Crash	Yes	No
BLE 2 Custom 1			None	Low	High	Panic	0	0	Crash	Yes	No
BLE Luminosity #4	0	lx	None	Low	High	Panic	0	0	Crash	Yes	No
BLE Fuel Frequency #1	10767578		None	Low	High	Panic	0	0	Crash	Yes	No
BLE Fuel Frequency #2	0		None	Low	High	Panic	0	0	Crash	Yes	No

Figure 9. Send the values to the server by setting them to Low.

5. Set up the sensors in Wialon

Register the tracker in Wialon Hosting with its IMEI. The raw values arrive as IO parameters; create sensors with these formulas:

SENSOR	WIALON PARAMETER	UNIT
Temperature	`io_25*const10`	°C
Frequency	`io_306*const0.001`	Hz
Error mask (DTCs)	`io_464` (decimal)	–
Fuel level	`io_465*const0.1`	mm
Fuel volume	`io_466*const0.1`	L

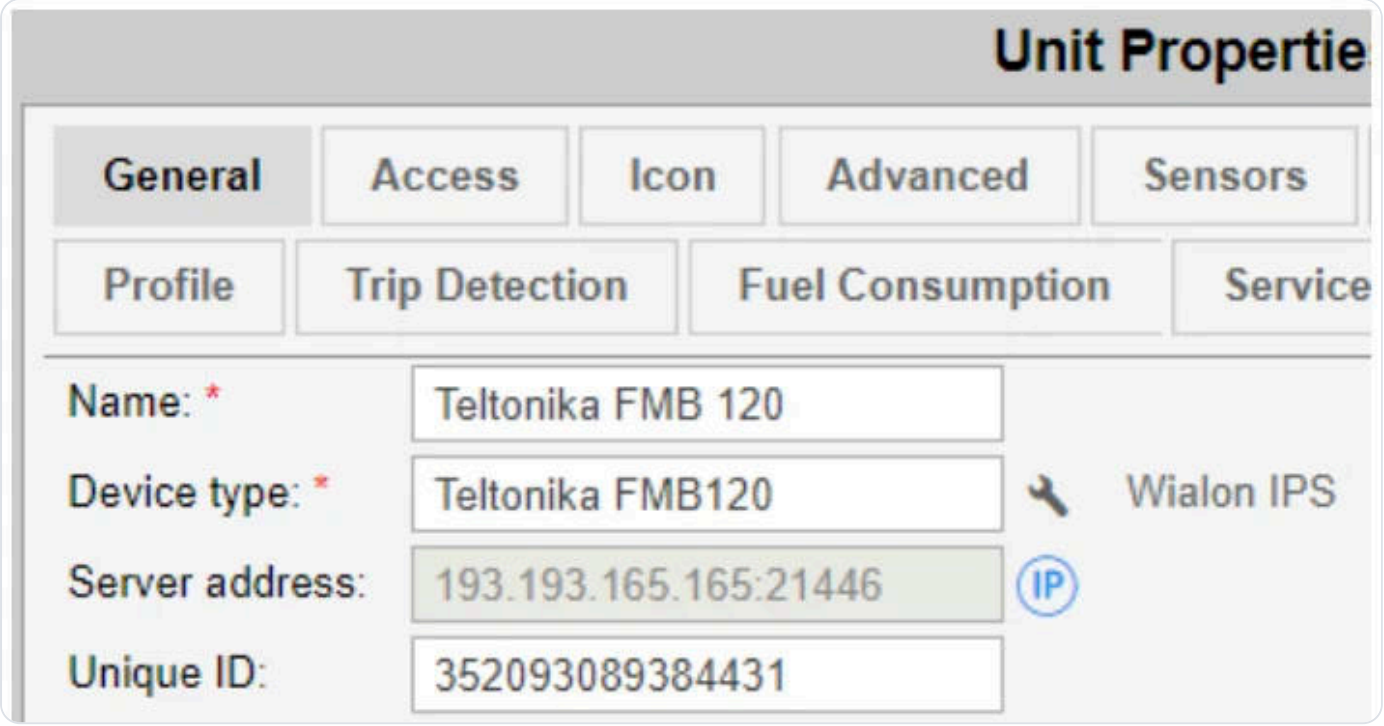


Figure 10. Register the FMB120 in Wialon.

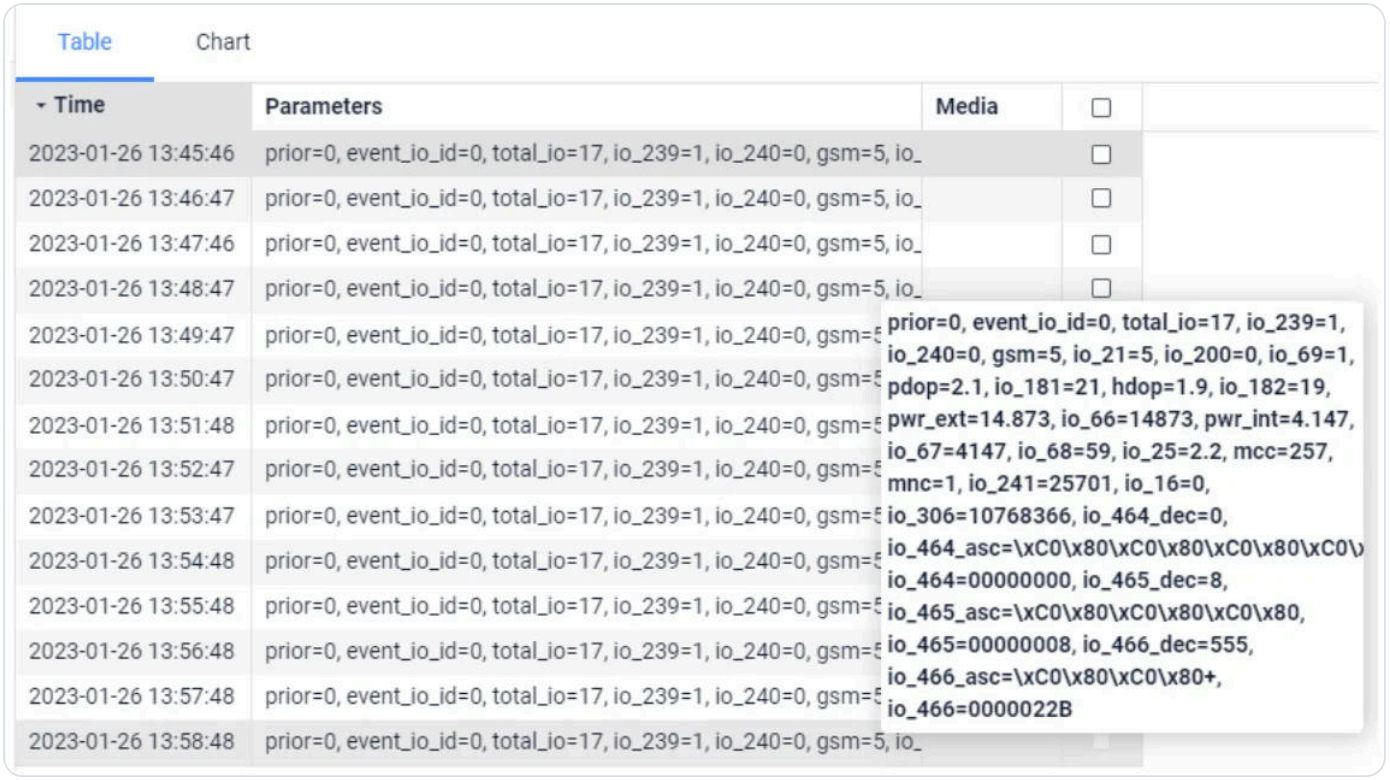


Figure 11. Raw data on the server.

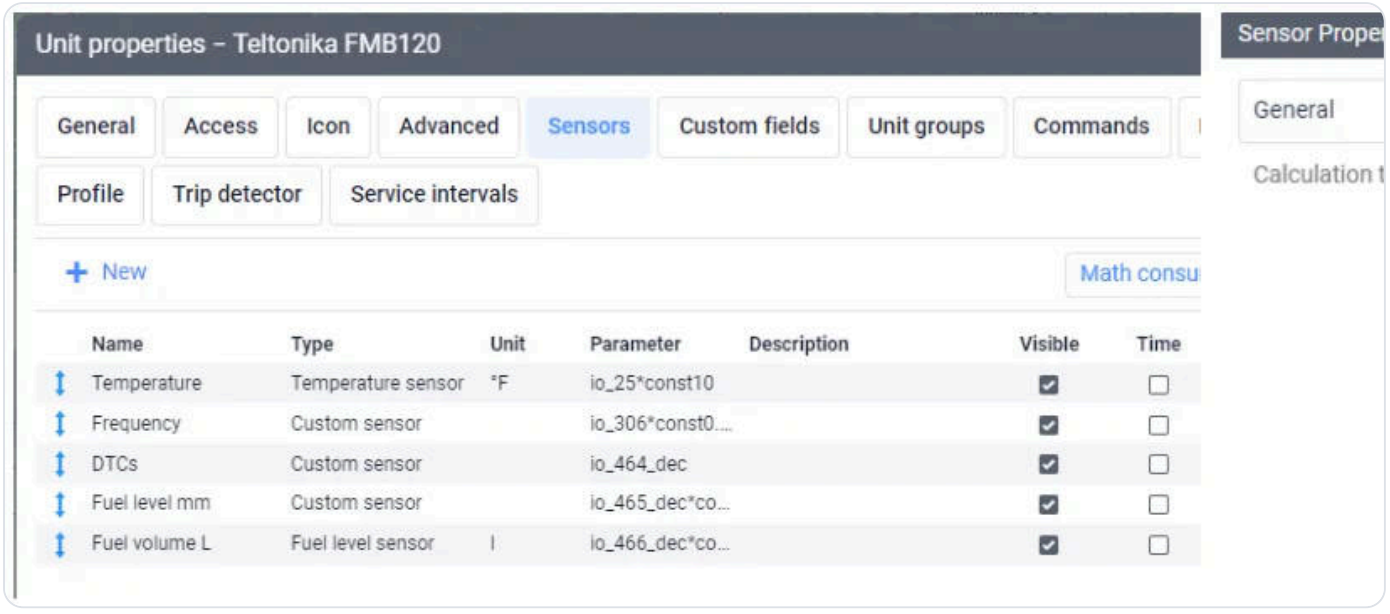


Figure 12. The five sensors in Wialon.

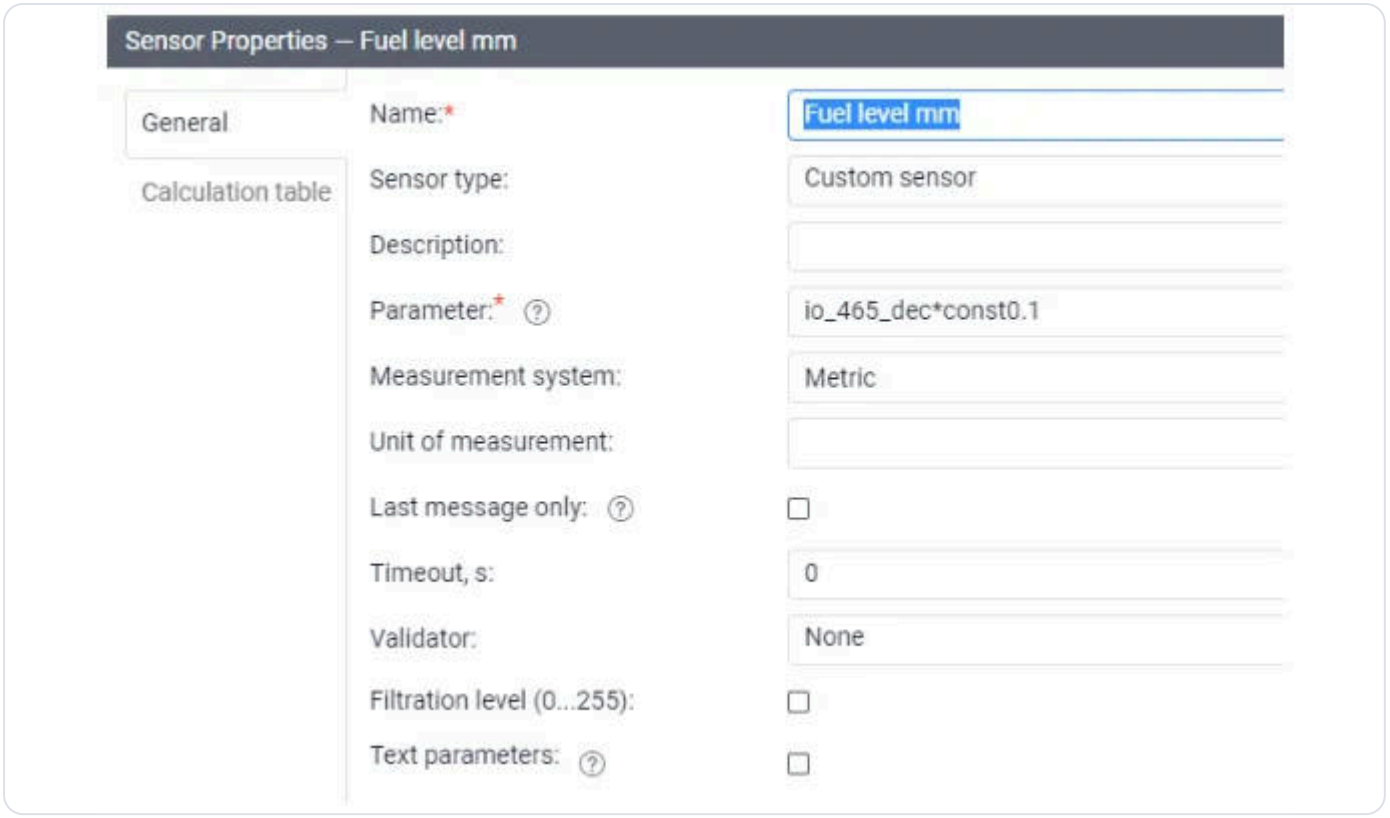


Figure 13. Fuel level sensor.

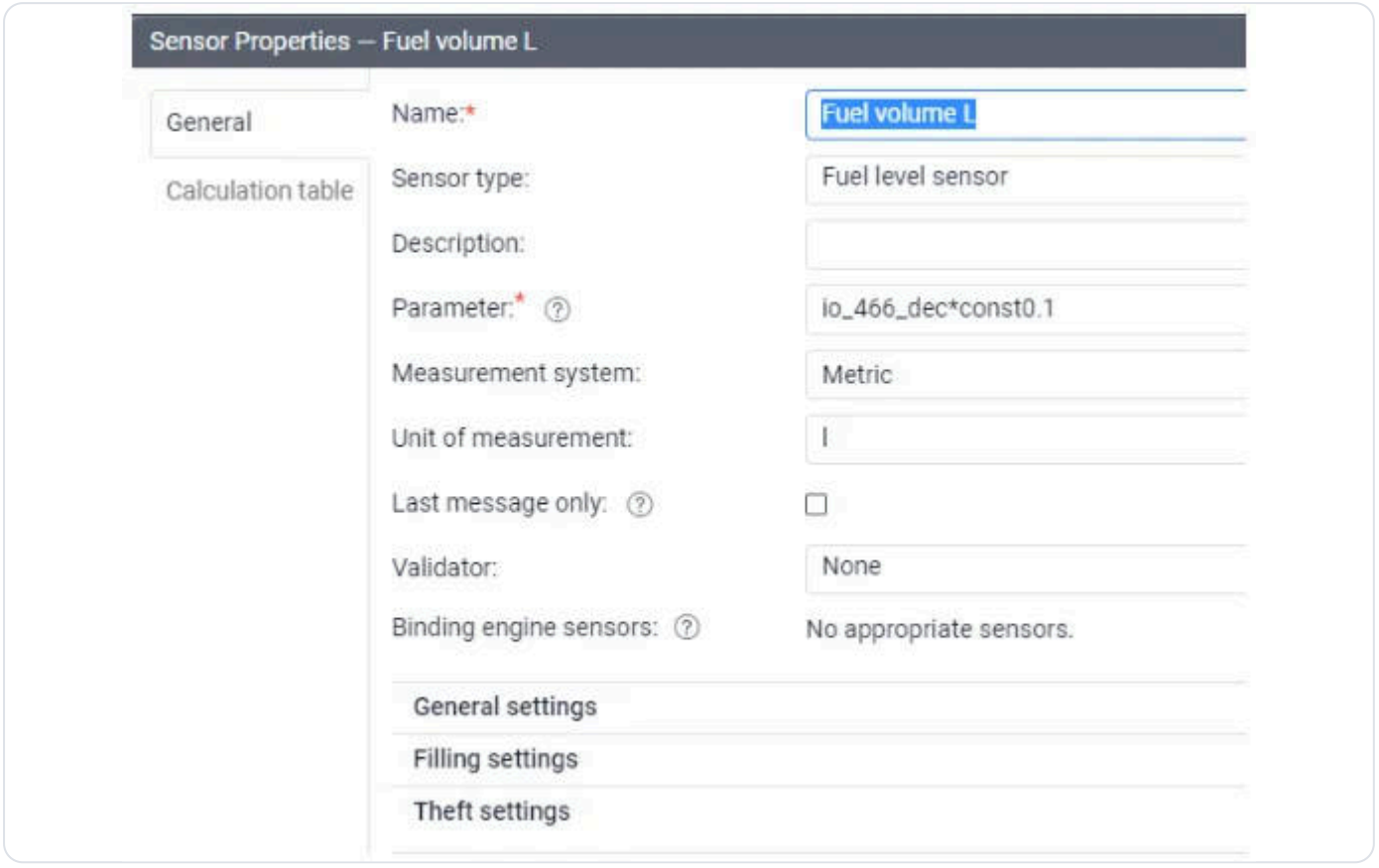


Figure 14. Fuel volume sensor.

Table | Chart

Time	Temperature	Frequency	DTCs	Fuel level mm	Fuel volume L
2023-01-26 13:57:48	22.00 °F	10768.31	0.00	0.80	55.50 l
2023-01-26 13:58:48	22.00 °F	10768.37	0.00	0.80	55.50 l
2023-01-26 13:59:48	22.00 °F	10768.97	0.00	0.80	55.50 l

Figure 15. Check: all values arrive on the server.

Type 0107

1. Find the sensor's MAC address

As for type 0113: convert the serial number from decimal to hexadecimal, e.g. `107 001 300 025` → `18 E9C6 4439`, and add leading zeros to make 6 bytes.



Figure 16. Serial number to MAC address.

2. Set up the tracker

Use FMB120 firmware **03.27.01 Rev:00 or later** and Configurator **1.6.4 B.3.27 R2 or later**. Insert the SIM card and power the tracker.

1. Enter the SIM operator's APN and the server domain and port.
2. Set the data protocol to **Codec 8 Extended**.

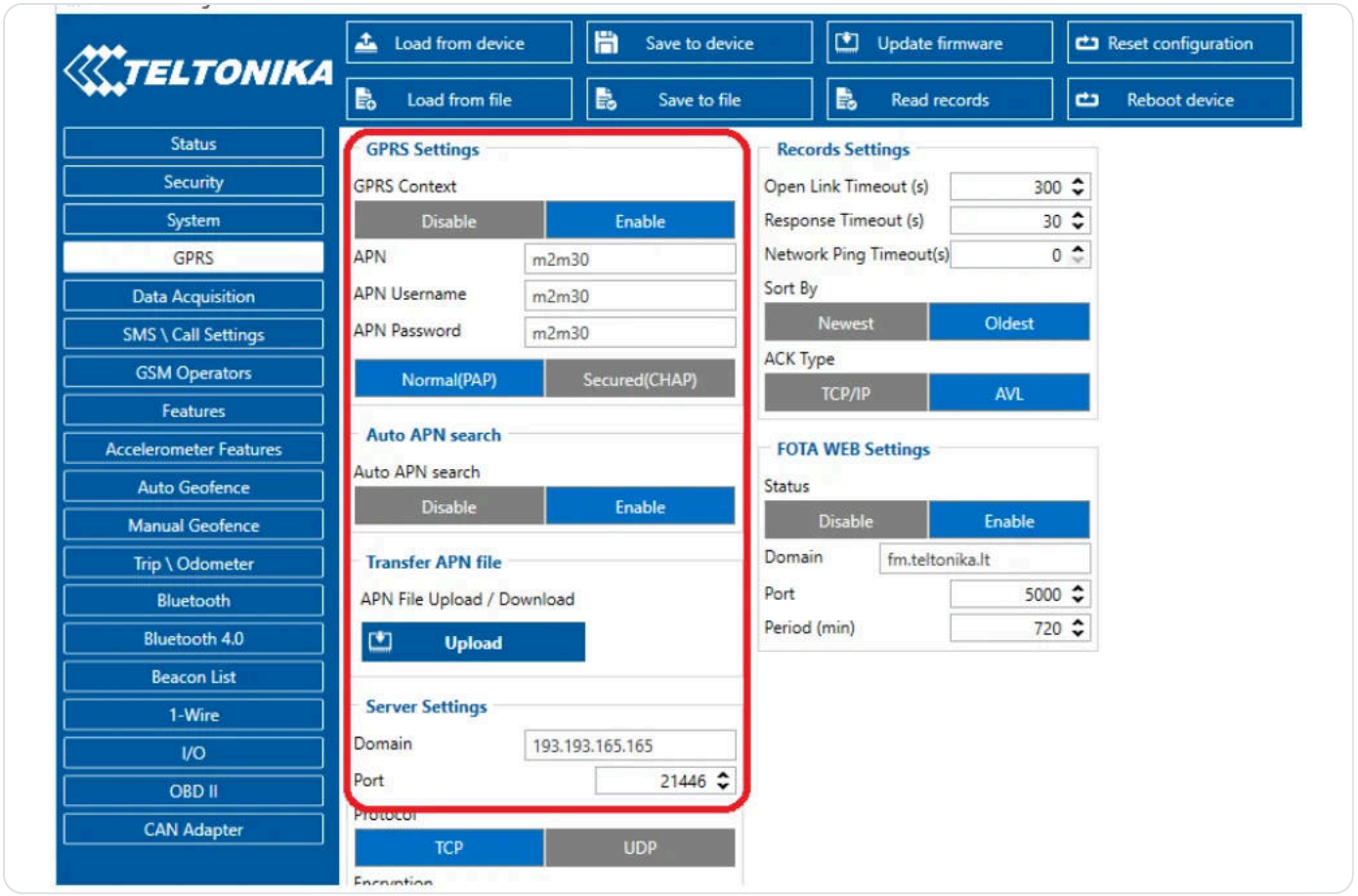


Figure 17. GPRS and server settings.

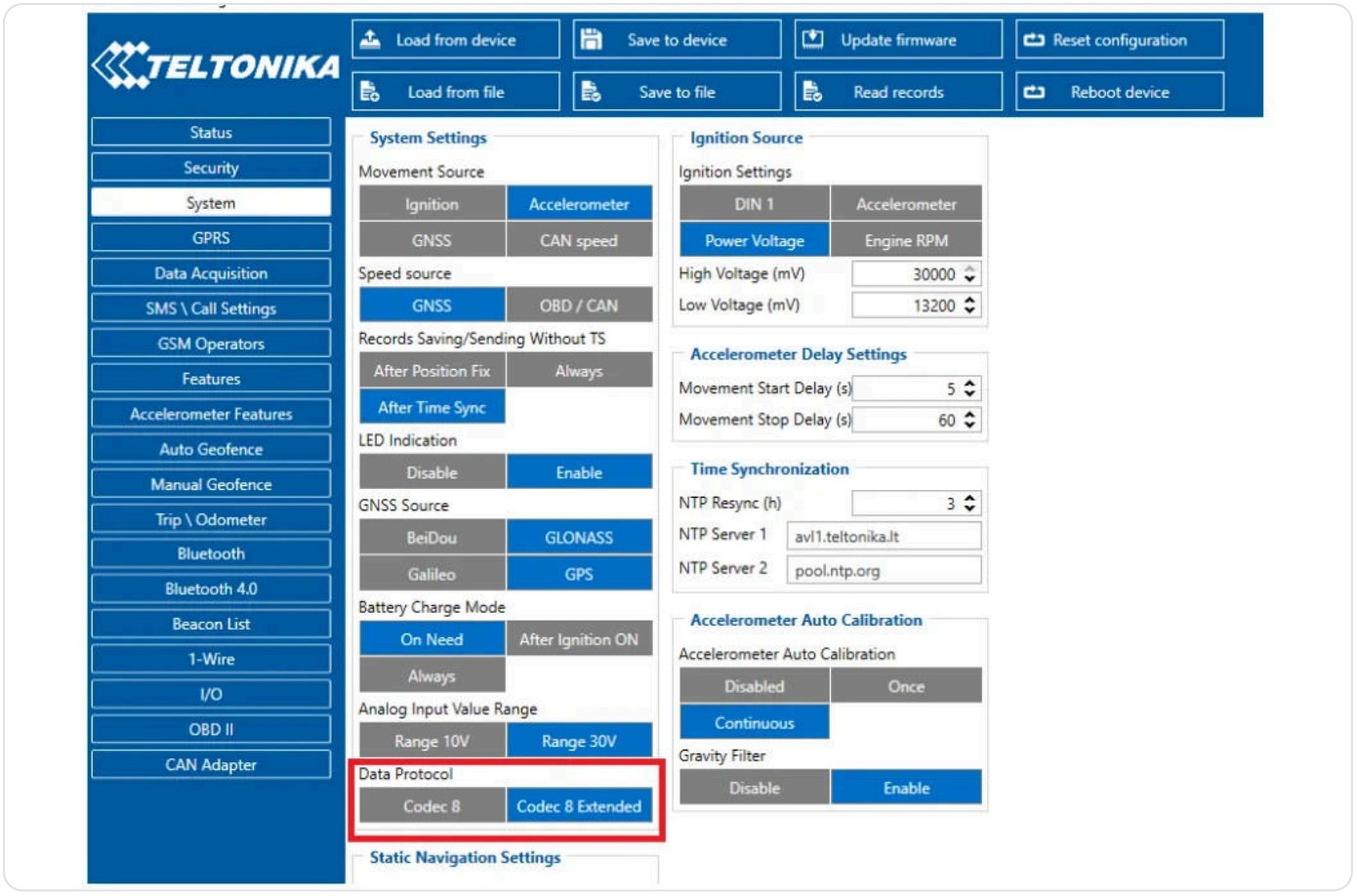


Figure 18. Data protocol: Codec 8 Extended.

3. Pair the sensors

1. Place the sensors near the tracker and press **Discover BLE**.
2. In the list of discovered devices, find the sensor by its MAC address and enter it in the **MAC** field of the sensor slot.
3. In the sensor table, press the add button and choose the **DUT-E S7 preset** from the list: the Configurator fills in the parameters.
4. Repeat for up to four sensors: the settings are the same, only the MAC address changes.

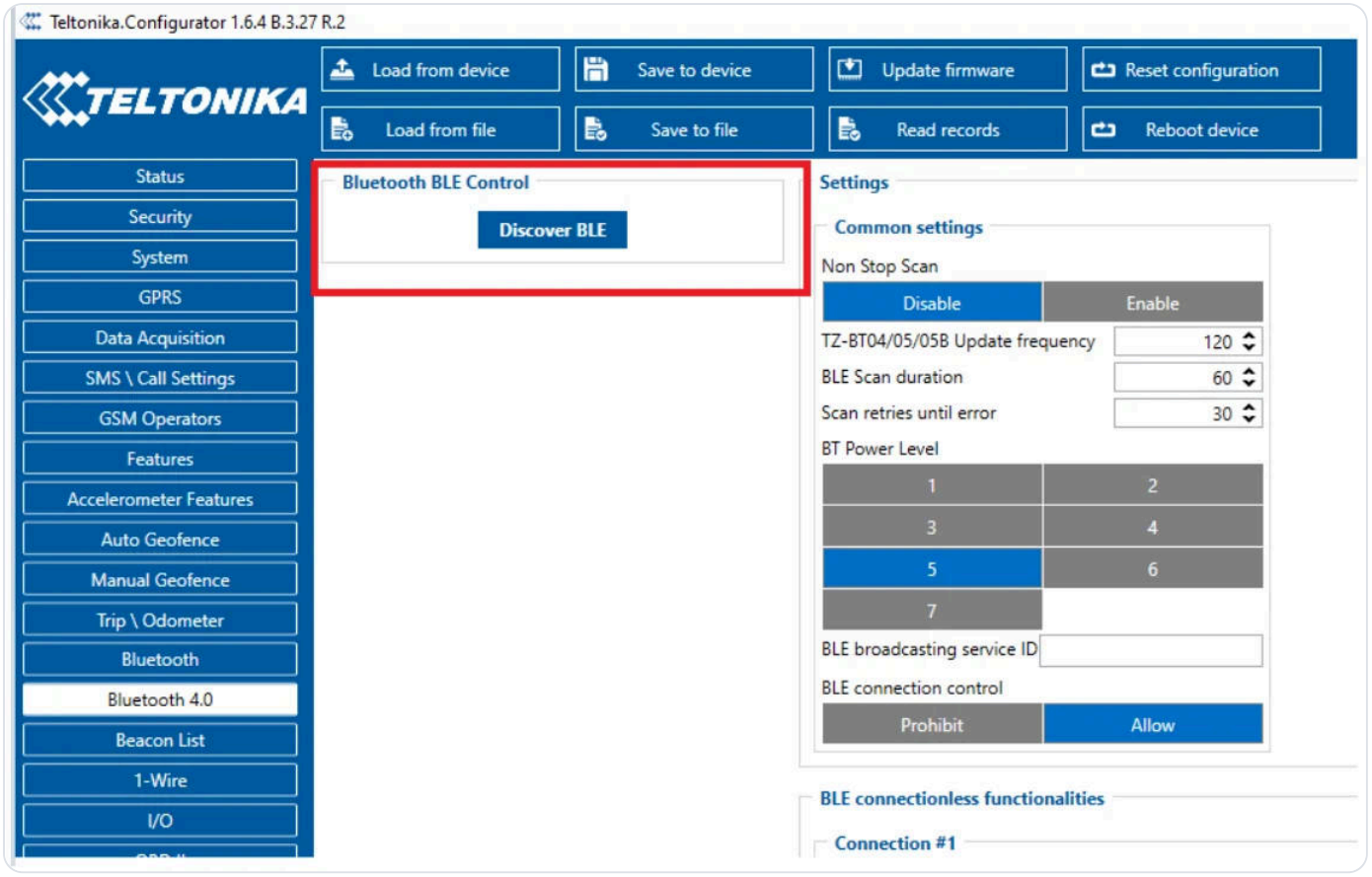


Figure 19. Search for sensors.

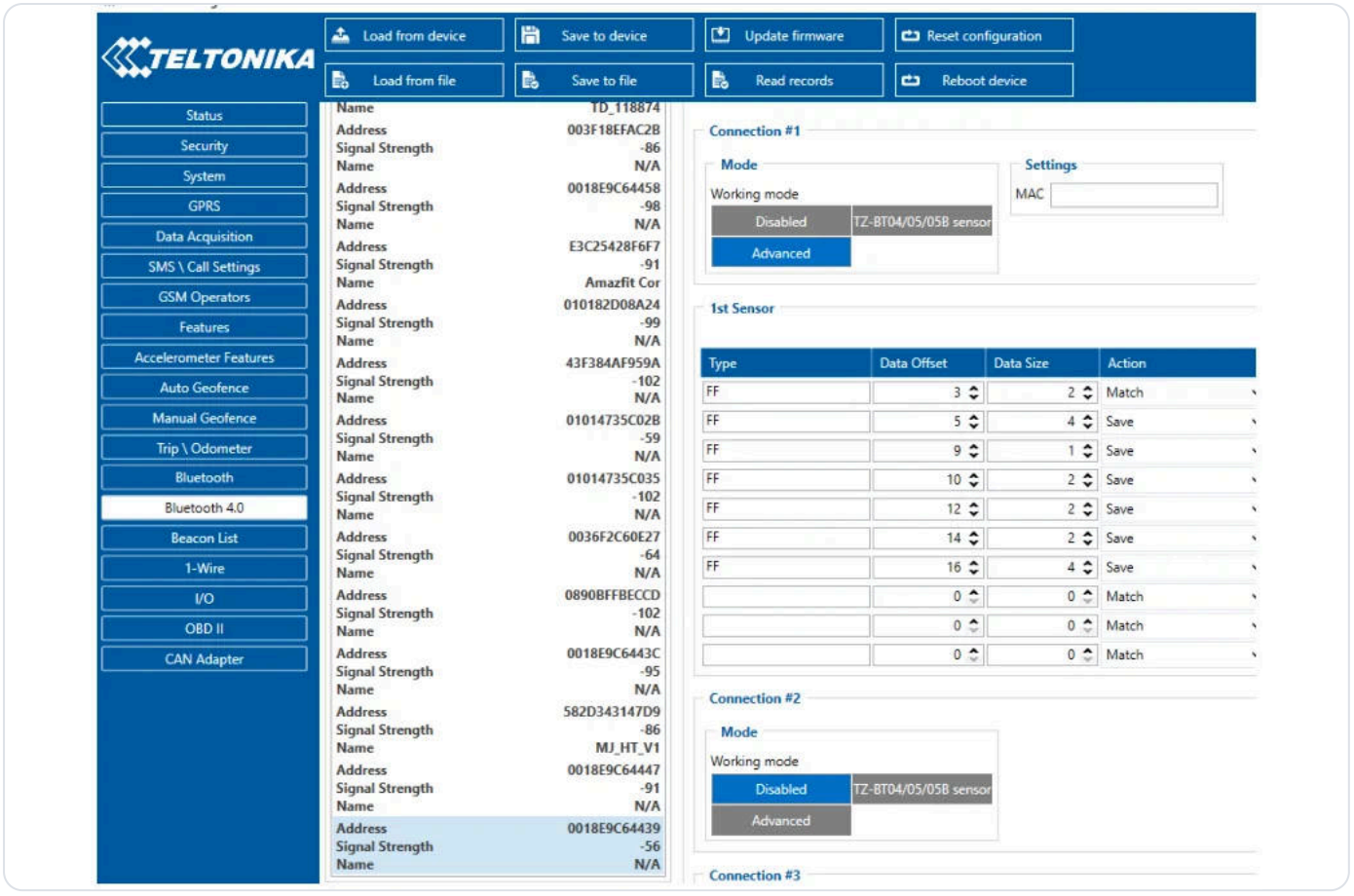


Figure 20. Discovered devices.

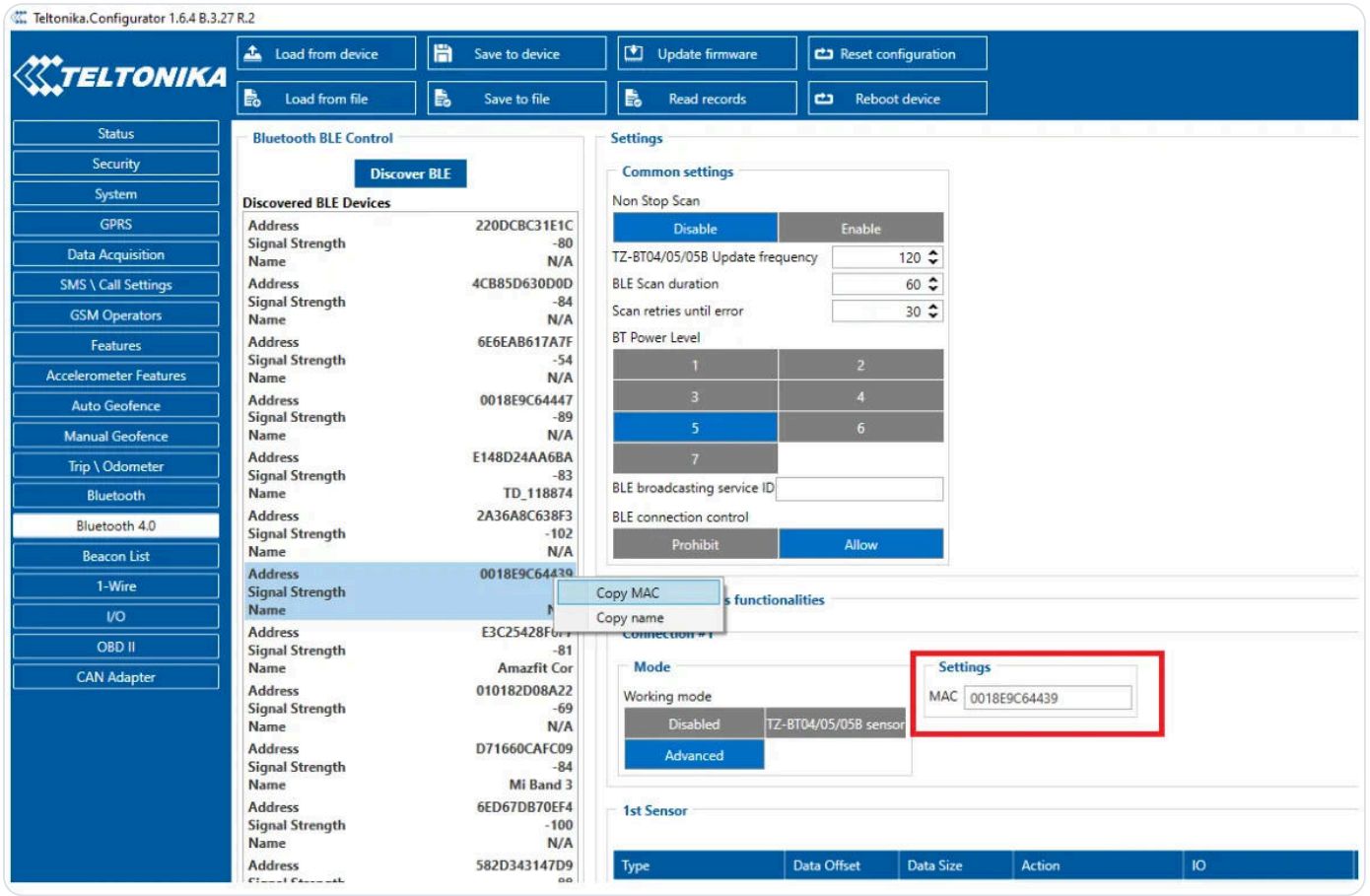


Figure 21. Enter the MAC address.

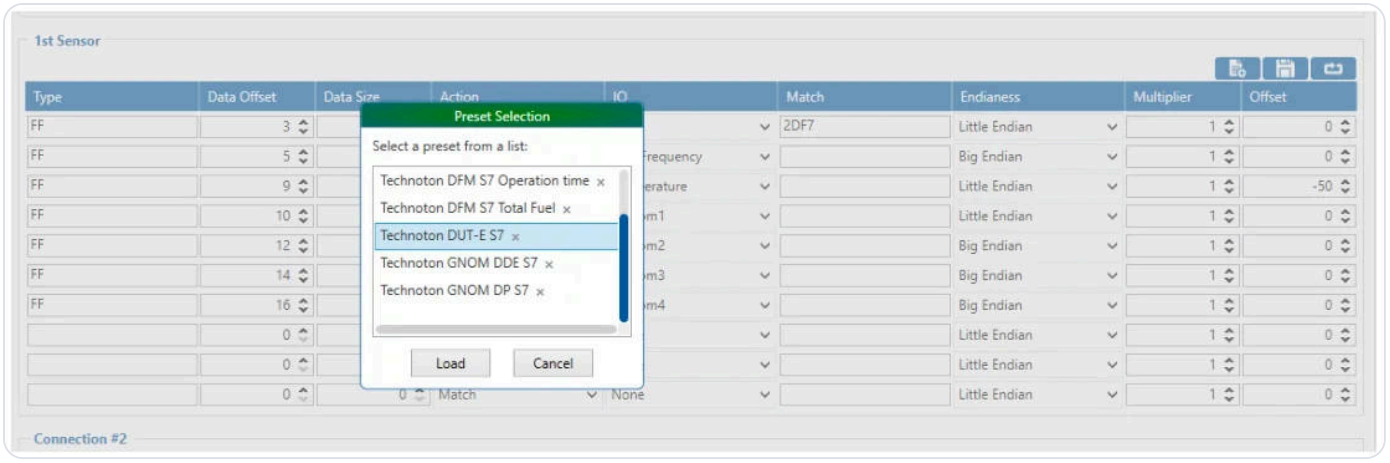
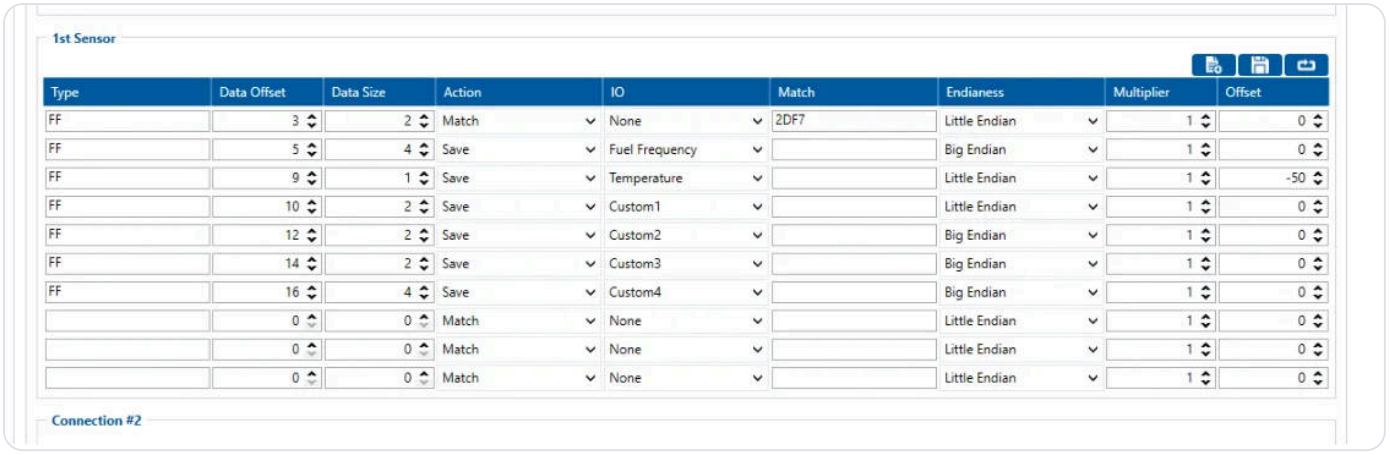


Figure 22. Choose the DUT-E S7 preset.



Type	Data Offset	Data Size	Action	IO	Match	Endianess	Multiplier	Offset
FF	3	2	Match	None	2DF7	Little Endian	1	0
FF	5	4	Save	Fuel Frequency		Big Endian	1	0
FF	9	1	Save	Temperature		Little Endian	1	-50
FF	10	2	Save	Custom1		Little Endian	1	0
FF	12	2	Save	Custom2		Big Endian	1	0
FF	14	2	Save	Custom3		Big Endian	1	0
FF	16	4	Save	Custom4		Big Endian	1	0
	0	0	Match	None		Little Endian	1	0
	0	0	Match	None		Little Endian	1	0
	0	0	Match	None		Little Endian	1	0

Figure 23. Parameters filled in by the preset.

The preset reads these values:

PARAMETER	VALUE
None	PGN 63277
Fuel Frequency	Output frequency in Hz (fuel level)
Temperature	Sensor temperature, °C
Custom1–Custom3	Lateral, longitudinal and vertical acceleration (reserved: current firmware sends 65535)
Custom4	Error code mask (DTCs)

4. Choose what goes to the server

On the I/O tab, set **BLE Temperature 1**, **BLE Fuel Frequency 1** and **BLE 1 Custom4** (error mask) to **Low**.

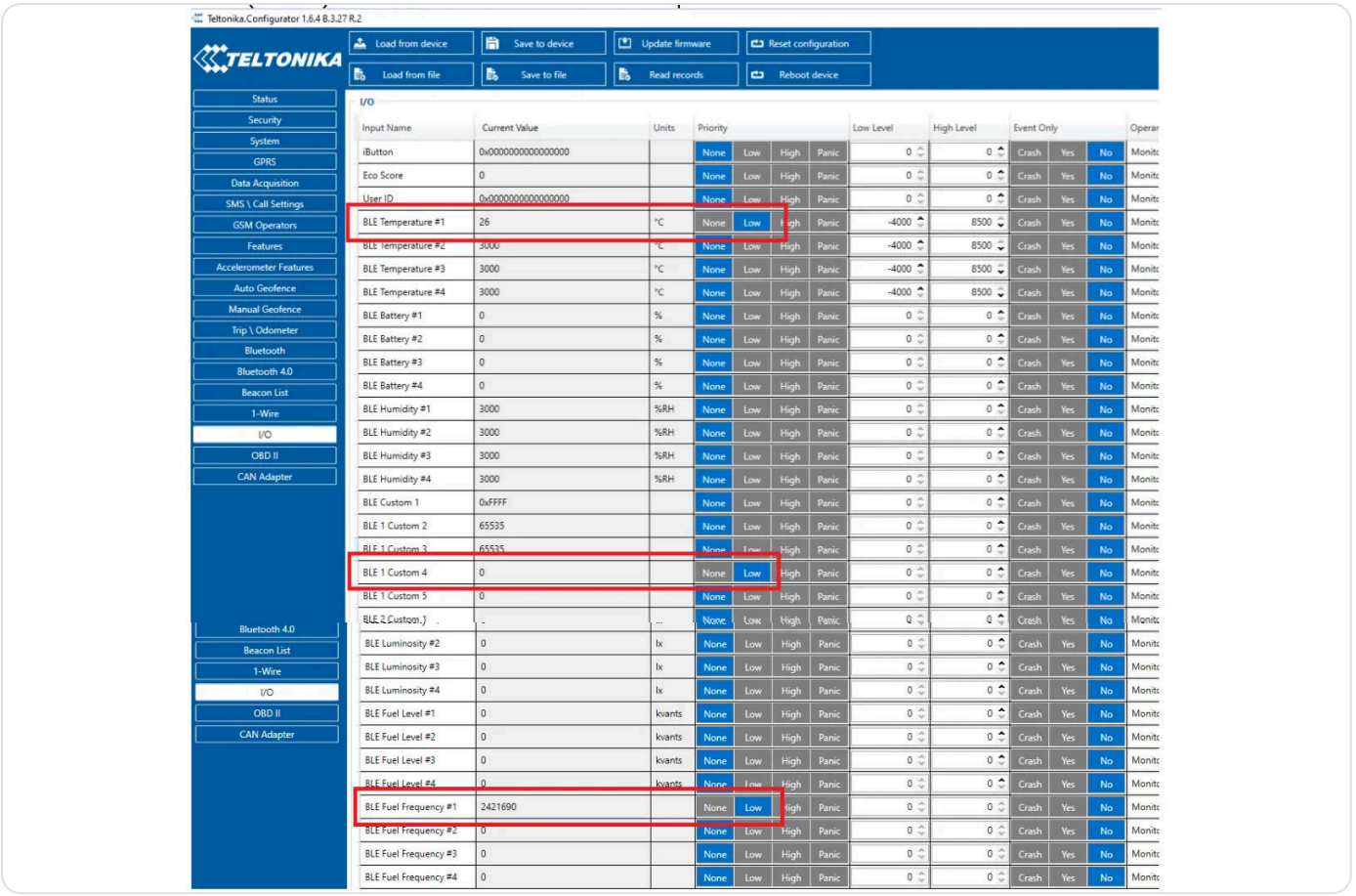
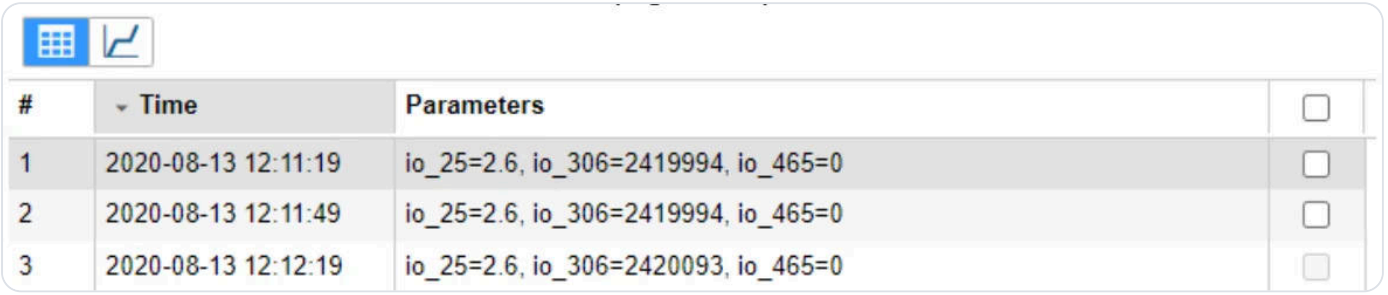


Figure 24. Values sent to the server.

5. Set up the sensors on the server

Register the tracker on your telematics server. In Wialon, create a temperature sensor, a fuel level sensor and an error-mask sensor:

SENSOR	WIALON PARAMETER
Temperature	`io_25*const10`
Fuel level	`io_306*const0.001` (frequency), converted to litres by the calibration table
Error mask (DTCs)	`io_465`



#	Time	Parameters
1	2020-08-13 12:11:19	io_25=2.6, io_306=2419994, io_465=0
2	2020-08-13 12:11:49	io_25=2.6, io_306=2419994, io_465=0
3	2020-08-13 12:12:19	io_25=2.6, io_306=2420093, io_465=0

Figure 25. Raw data on the server.

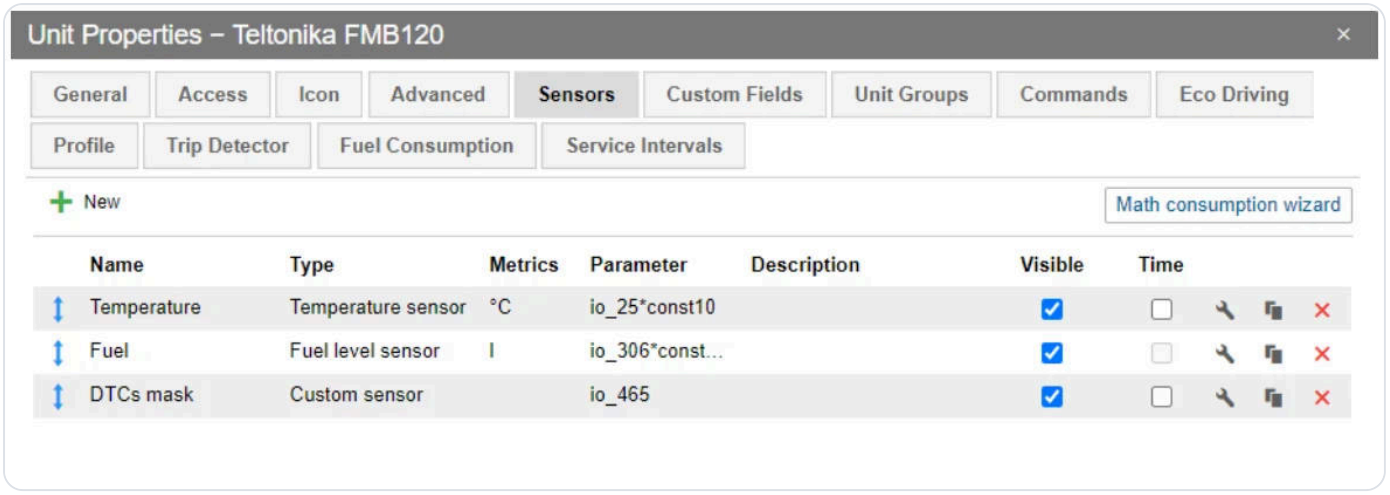


Figure 26. Sensors in Wialon.

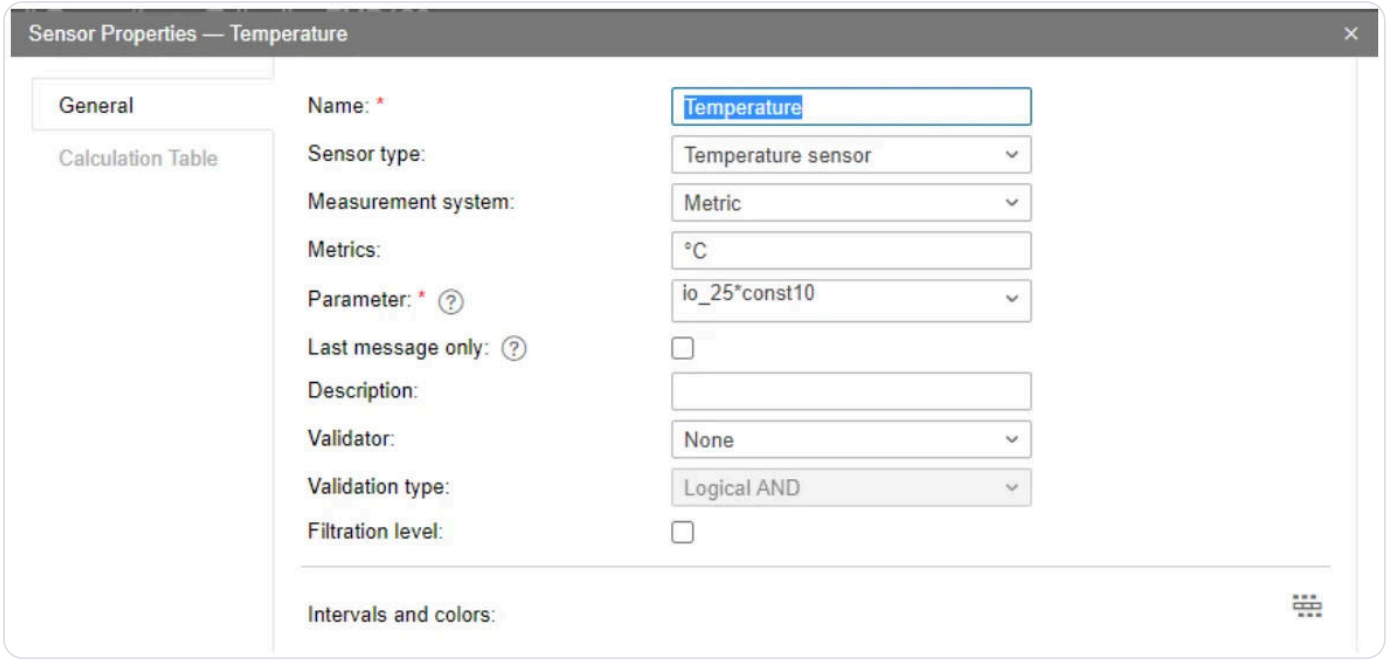


Figure 27. Temperature sensor.

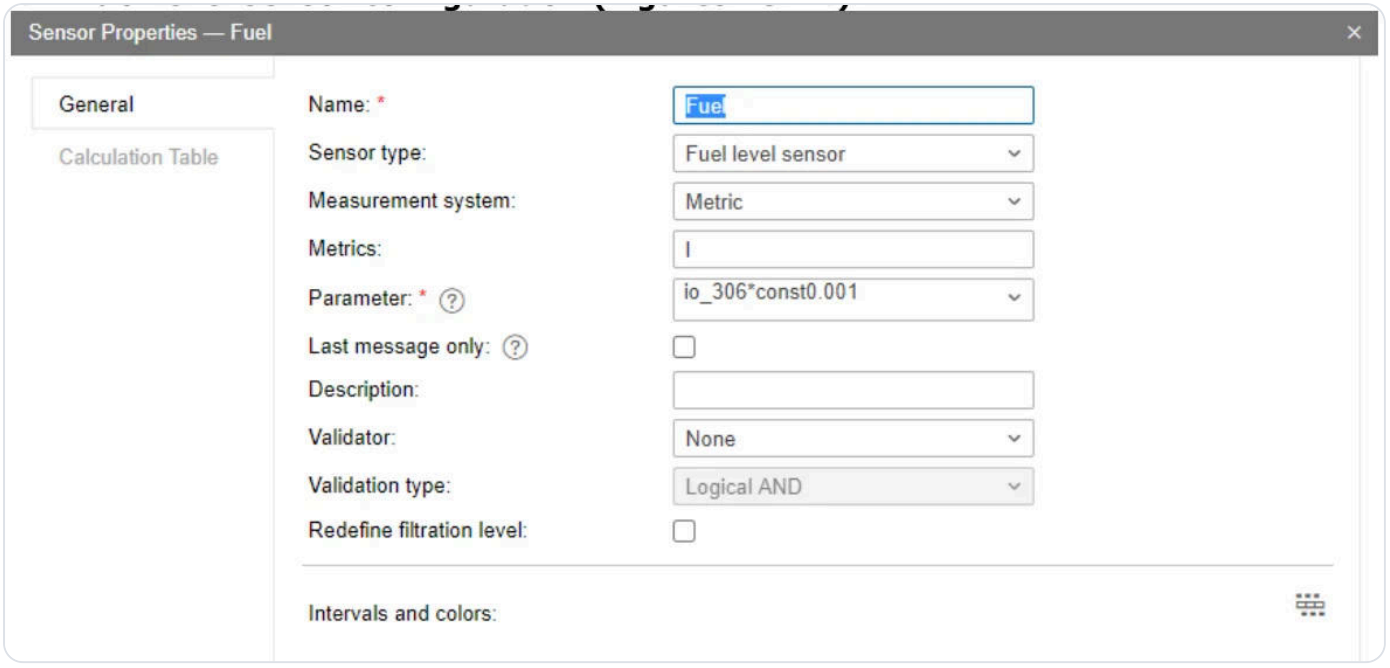


Figure 28. Fuel level sensor.

6. Calibrate

Enter the calibration table: sensor frequency against fuel volume, measured while filling the tank in known portions. Wialon then reports litres.

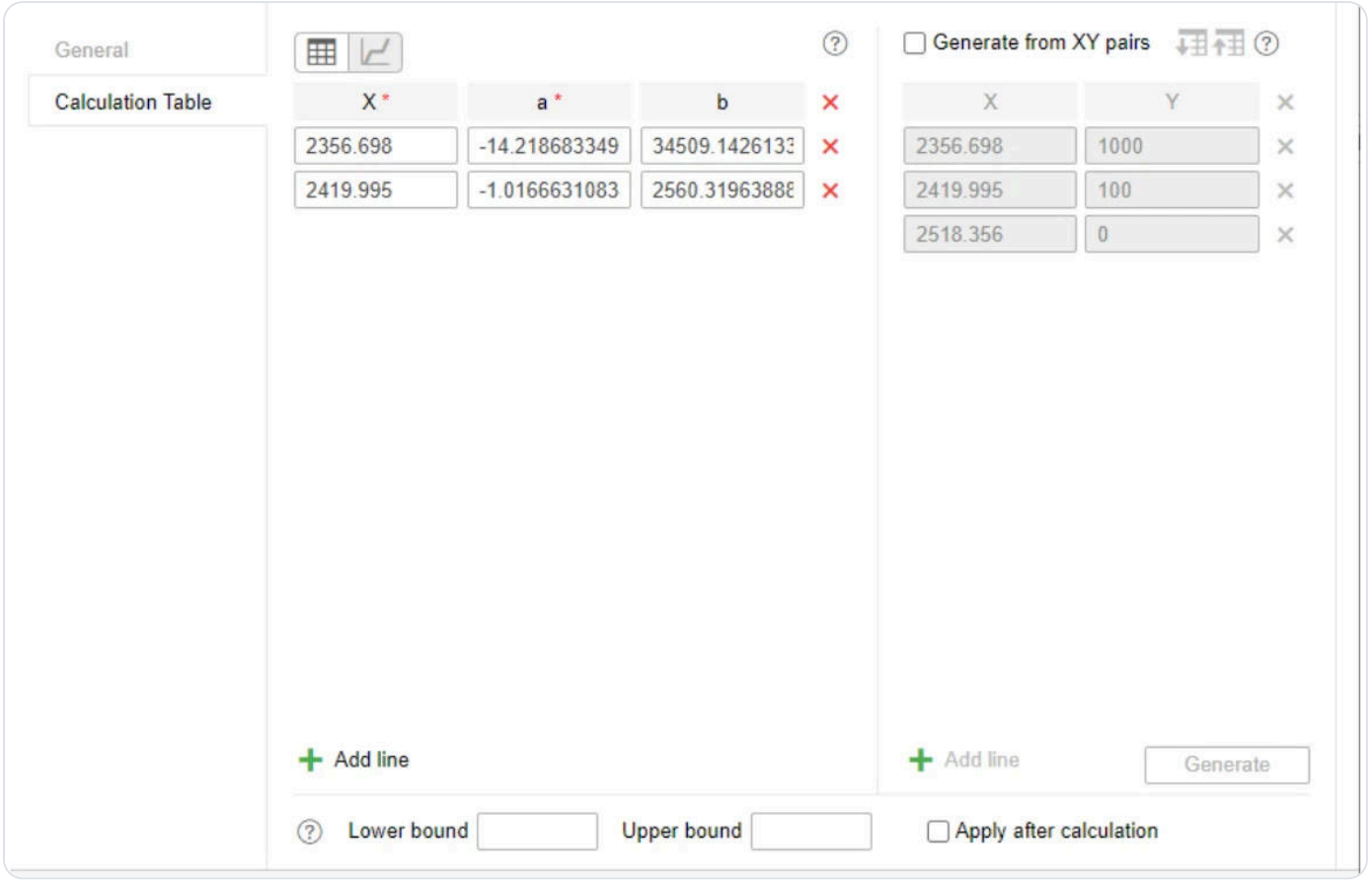


Figure 29. Calibration table: frequency → litres.

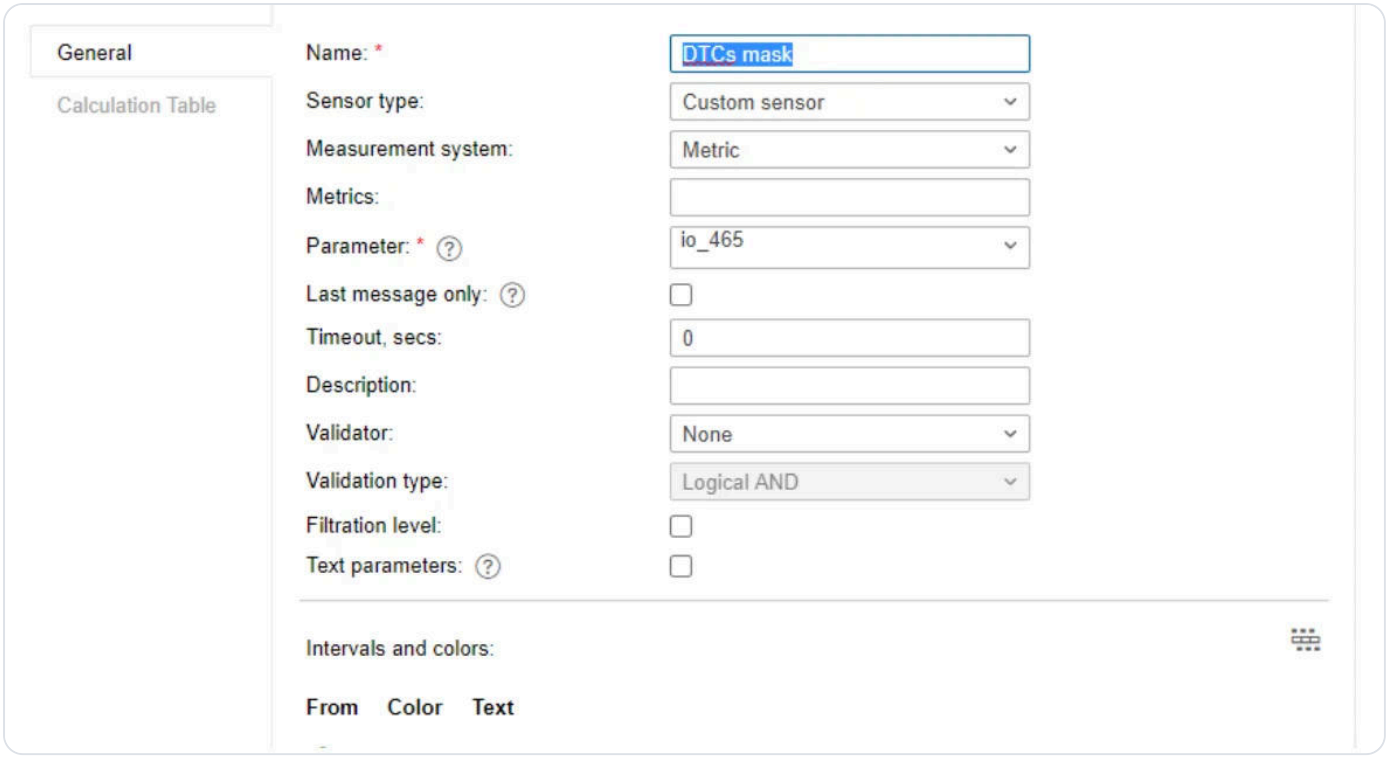


Figure 30. Error-mask sensor.

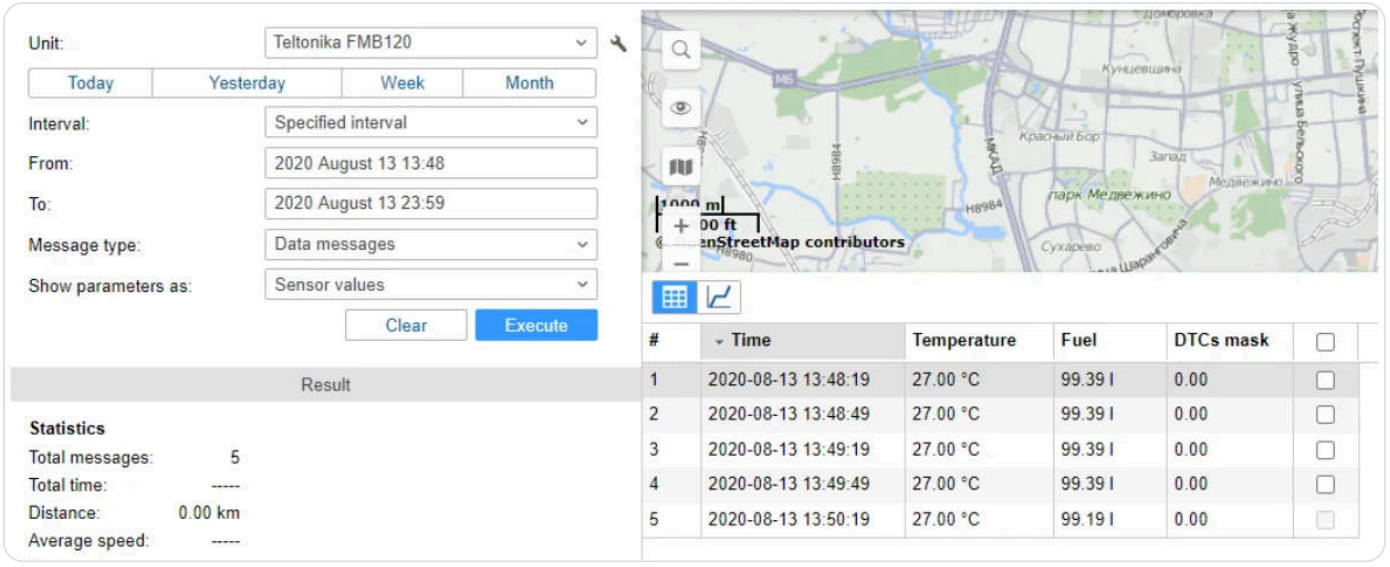


Figure 31. Check: temperature, fuel and error mask on the server.

Last updated 26 November 2026.