3. CHARACTERISTICS

MODULE

Name	Teltonika TM2500
Technology	GSM, GPRS, GNSS, BLUETOOTH (4.0 + LE)

GNSS

GNSS	GPS, GLONASS, GALILEO, BEIDOU, SBAS, QZSS, DGPS, AGPS
Receiver	33 channel
Tracking sensitivity	-165 dBM
Accuracy	< 3 m
GNSS receiver start times	Hot < 1s, Warm < 25s, Cold < 35s

CELLULAR

Technology	GSM
2G bands	Quad-band 850 / 900 / 1800 / 1900 MHz
Data transfer	GPRS Multi-Slot Class 12 (up to 240 kbps), GPRS Mobile Station Class B
Data support	SMS (text)

POWER

Input voltage range	10-97 V DC with overvoltage protection
Back-up battery	1800 mAh Li-Ion battery 3.7 V (6.66 Wh) internal back-up battery

INTERFACE

Modifications*	CAN, RS485, RS232, UART
GNSS antenna	Internal High Gain
Cellular antenna	Internal High Gain
Sensors	Accelerometer
Interface	2.0 Micro-USB, Micro-SIM with eSIM possibility, 128 MB internal flash memory (220'000 records)
LED indication	2 status LED lights

*One modification per device.

PHYSICAL SPECIFICATION

Dimensions	72,5 x 73 x 27,3 mm (L x W x H)
Ingress Protection Rating	IP67

SOFTWARE

Configuration and firm-ware update	FOTA WEB (cloud-based solution), Teltonika Configurator (USB, Blue-tooth)
Scenarios	Eco/Green Driving, Over Speeding, Jamming, Excessive Idling, FallDown, Towing detection, Crash detection, Auto Geofence, Manual Geofence, Trip, Immobilizer, iButton, DOUT control via call, DOUT control via Ignition, Last Known Position and many more.
Sleep modes	GPS Sleep, Online Deep Sleep, Deep Sleep, Ultra Deep Sleep
Protocols	UDP/TCP/SMS
Data sending	Main, Duplicate and Backup servers
Security	Configuration password, SMS login and password, Authorized GSM numbers list
Time Synchronization	GNSS, NTP, NITZ
Supported peripherals	Temperature and humidity sensor, Universal BLE sensors support

SUPPORTED COMMUNICATION PROTOCOLS

CAN	Bosch, Askoll, Default J1939, Manual J1939, Manual CAN
RS485	Super Soco
RS232	-
UART	e-floater

4. LED INDICATIONS

BEHAVIOR	MEANING
Blinking every second	Normal mode
Blinking every two seconds	Sleep mode
Blinking fast for a short time	Modem activity
Off	Device is not working or Device is in boot mode
Permanently switched on	GNSS signal is not received
Blinking every second	Normal mode, GNSS is working
Off	GNSS is turned off because Device is not working or Device is in sleep mode
Blinking fast constantly	Device firmware is being flashed

5. WARRANTY AND RETURN POLICIES

TELTONIKA devices are given with **24 months** warranty. **All batteries carry a reduced 6 month warranty period**. If a product fails within mentioned warranty period the product can be:

- Repaired
- Replaced with a new product
- Replaced with an equivalent repaired product fulfilling the same functionality
- Replaced by an equivalent product if the production is discontinued.

How to submit a warranty claim

To obtain warranty service, please register Return Merchandise Authorization (RMA) query in VIP Helpdesk or contact your sales manager. After gathering information support engineer will initiate RMA form, which the user would need to fill in. Once the form is confirmed, it must be printed and sent with the shipment.

https://teltonika-iot-group.com/warranty-repair/

6. CERTIFICATIONS AND APPROVALS

- TFT100 CE / RED
- TFT100 EAC
- TFT100 RoHS
- REACH Regulation Declaration
- TFT100 E-Mark
- TFT100 Declaration of IP rating
- Declaration of IMEI assignment
- Declaration of IMEI security

7. SAFETY INFORMATION

This message contains information on how to operate the device safely. By following these requirements and recommendations, you will avoid dangerous situations. Please read these instructions carefully and follow them strictly before operating the device!

Do not disassemble the device
If the device is damaged, the power supply cables are not isolated or the isolation is damaged, **DO NOT** touch the device before unplugging the power supply

Interference
All wireless data transferring devices produce interference that may affect other devices which are placed nearby.

The device must be connected only by qualified personnel.

The device must be firmly fastened in a predefined location.

The programming must be performed using a PC with autonomic power supply.

Installation and/or handling during a lightning storm is prohibited.

The device is susceptible to water and humidity if the device housing is not properly closed.

Risk of explosion if battery is replaced by an incorrect type.
Dispose of used batteries according to the instructions.

Battery should not be disposed of with general household waste.
Bring damaged or worn-out batteries to your local recycling center or dispose them to battery recycle bin found in stores.

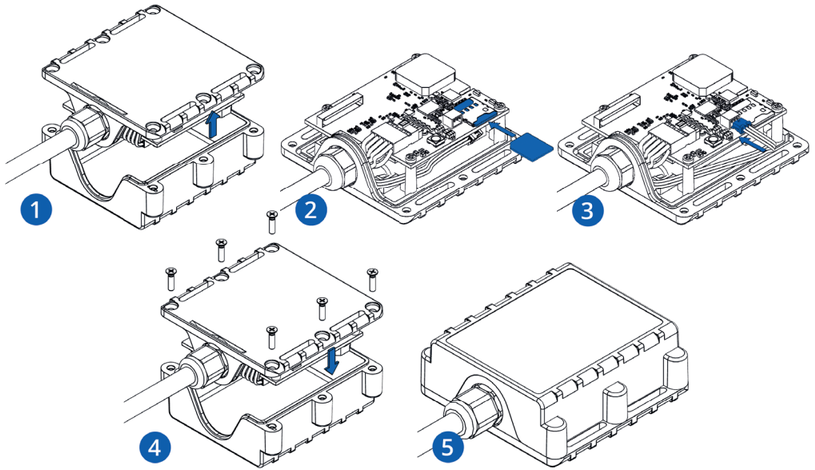
TELTONIKA | Mobility

TFT100

Quick Start Guide V 1.00

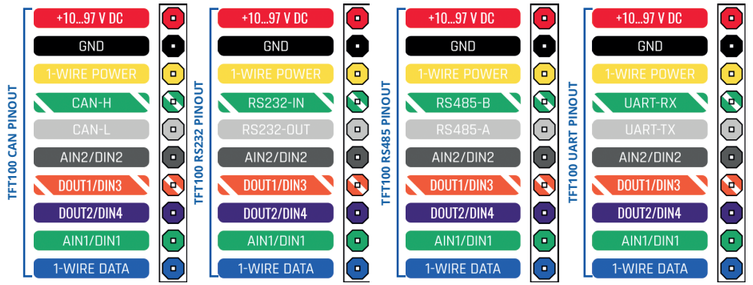
1. SET UP YOUR DEVICE

1. **Remove** the top cover.
2. Insert **Micro-SIM** card as shown with **PIN request disabled**. Make sure that Micro-SIM card **cut-off corner** is pointing forward to slot.
3. Connect the **battery** as shown to the device.
4. **Configure** the device by connecting micro-USB from TFT100 to PC. After configuration, reattach device **cover** and put the screws back in as shown.
5. Device is ready to be connected.



Micro-SIM card insertion/removal must be performed when device is powered off – external voltage and battery are disconnected. Otherwise, Micro-SIM card might be damaged or device will not detect it.

1.1. PINOUT



PIN COLOR	CAN PIN NAME	CAN DESCRIPTION	RS232 PIN NAME	RS232 DESCRIPTION	RS485 PIN NAME	RS485 PIN NAME	UART PIN NAME	UART DESCRIPTION
RED	VCC (10-97)V DC (+)	Power supply (+10...97 V DC).	VCC (10-97)V DC (+)	Power supply (+10...97 V DC).	VCC (10-97)V DC (+)	Power supply (+10...97 V DC).	VCC (10-97) V DC (+)	Power supply (+10...97 V DC).
BLACK	GND (-)	Ground.	GND (-)	Ground.	GND (-)	Ground.	GND (-)	Ground.
YELLOW	1WIRE POWER	+3,8 V output for 1–Wire devices.	1WIRE POWER	+3,8 V output for 1–Wire devices.	1WIRE POWER	+3,8 V output for 1–Wire devices.	1WIRE POWER	+3,8 V output for 1–Wire devices.
WHITE/ GREEN	CAN-H	CAN interface High.	RS232-IN	Input wire for RS232.	RS485-B	Signal wire B for RS485.	UART-RX	Input for data reception through UART.
WHITE	CAN-L	CAN interface LOW	RS232-OUT	Output wire for RS232.	RS485-A	Signal wire A for RS485.	UART-TX	Output for data transmission through UART.
GREY	AIN 2 / DIN 2	Analog input, channel 2 / Digital input, channel 2.	AIN 2 / DIN 2	Analog input, channel 2 / Digital input, channel 2.	AIN 2 / DIN 2	Analog input, channel 2 / Digital input, channel 2.	AIN 2 / DIN 2	Analog input, channel 2 / Digital input, channel 2.
WHITE/ ORANGE	DOUT 1 / DIN 3	Digital output, channel 1 / Digital input, channel 3.	DOUT 1 / DIN 3	Digital output, channel 1 / Digital input, channel 3.	DOUT 1 / DIN 3	Digital output, channel 1 / Digital input, channel 3.	DOUT 1 / DIN 3	Digital output, channel 1 / Digital input, channel 3.
VIOLET	DOUT 2 / DIN 4	Digital output, channel 2 / Digital input, channel 4.	DOUT 2 / DIN 4	Digital output, channel 2 / Digital input, channel 4.	DOUT 2 / DIN 4	Digital output, channel 2 / Digital input, channel 4.	DOUT 2 / DIN 4	Digital output, channel 2 / Digital input, channel 4.
GREEN	AIN 1 / DIN 1	Analog input, channel 1 / Digital input, channel 1.	AIN 1 / DIN 1	Analog input, channel 1 / Digital input, channel 1.	AIN 1 / DIN 1	Analog input, channel 1 / Digital input, channel 1.	AIN 1 / DIN 1	Analog input, channel 1 / Digital input, channel 1.
BLUE	1WIRE DATA	Data channel for 1–Wire devices.	1WIRE DATA	Data channel for 1–Wire devices.	1WIRE DATA	Data channel for 1–Wire devices.	1WIRE DATA	Data channel for 1–Wire devices.

1.2. ABSOLUTE MAXIMUM RATINGS

CHARACTERISTIC DESCRIPTION	VALUE		
	MIN.	MAX.	UNIT.
Supply Voltage	+10	+97	V
Digital Input Voltage (if AIN is configured to 15 V, DIN state 0->1)	+2.5	+15	V
Digital Input Voltage (if AIN is configured to 150 V, DIN state 0->1)	+8.5	+150	V
Analog Input Voltage	0	+150	V
Digital Output Voltage	0	+150	V
Digital Output Voltage	0	300	mA

2.CONFIGURE YOUR DEVICE

2.1. PC PREPARATION (WINDOWS)

1. Please download COM port drivers from Teltonika here:
https://wiki.teltonika-mobility.com/wikibase/images/d/d0/TeltonikaCOMDriver.zip
2. Extract and run **TeltonikaCOMDriver.exe.**
3. Click **Next** in driver installation window.
4. In the following window click **Install** button.
5. Setup will continue installing the driver and eventually the confirmation window will appear. Click **Finish** to complete the setup.

2.2. CONFIGURATOR (WINDOWS)

At first the device will have default factory settings set unless you order pre-configured device. These settings should be changed according to the user's needs. Main configuration can be performed via **Teltonika Configurator** software. Configurator operates on Microsoft Windows OS and uses prerequisite MS .NET Framework. Make sure you have the correct version installed: *MS .NET Framework 4.6.2* or newer.

2.3. DEVICE CONNECTION TO CONFIGURATOR (WINDOWS)

1. Power-up the device with **DC voltage 10-97 V** power supply using supplied power cable. LED's should start blinking, see **LED behavior description**.
2. Connect device to computer using **Micro-USB** cable or **Bluetooth** *(Device Bluetooth is enabled by default, default password **5555**)* connection:
3. You are now **ready** to use the device on your computer.

2.4. CONFIGURE THE DEVICE

1. Connect device to computer using Micro-USB cable and open Teltonika Configurator.
2. Configuration process begins by pressing on connected device:

3. After you have finished configuring the device, press **Save to device** button.
4. When configuration is saved, disconnect the device from USB and reattach the cover.

More details about device configuration using Teltonika Configurator can be found in the Teltonika TELEMEDIC **wiki knowledge base** ***https://wiki.teltonika-mobility.com***