



EXPANDING GPS TRACKER FUNCTIONALITY WITH OBD-II DONGLE

INTRO

The vehicle tracking market is surely and rapidly growing around the world, but so is the competition among the telematics service providers and integrators too. Prevailing vehicle basic Track & Trace scenario might not be good enough anymore to compete efficiently and sustain the business long term. To address the concern and assist these companies, Teltonika Telematics is ready to offer a cost-efficient solution.

CHALLENGE

Did you know, the market size value for vehicle tracking systems is estimated to reach **USD 19.38 billion** in the year 2021? Even more, the revenue is forecast to grow more than double to USD 46.33 billion by 2028. According to the same report, the passenger vehicles segment accounted for the dominant share in 2020 - over 41%.

That explains (and confirms) the popularity of the simple vehicle **GPS** trackers with basic Track & Trace scenario. They have an essential feature set, easy to install and set up, compact, affordable and should be perfectly suitable to satisfy the needs of the passenger cars, corporate or private, and light commercial vehicles market segment. All good so far, but there is a challenge to deal with - not only increasing competition among telematics service providers and integrators, **electronic components shortage** but also drivers and/or fleet managers growing expectations in a quickly changing environment. They demand more value without paying a premium.

For that reason, basic vehicles (especially corporate ones) GPS coordinates tracking, and use of Trip scenario is not good enough anymore. Nowadays, critical factors when choosing a GPS tracker model are additional features and value that integrators will be able to offer for the end-users and clients without spending a fortune. Ideally, the currently installed and deployed vehicle tracker portfolio, as well as fast and easy installation or upgrade option, have to be considered too. Altogether, this attractive combo would help to compete in the market successfully, get more projects and expand the business or at least ensure its sustainability.

Keeping all this in mind, here at Teltonika Telematics, we are ready to address this rising concern and offer a cost-efficient solution right away.

SOLUTION



To showcase and explain it, we choose Teltonika SPECIAL category GPS tracker **FMT100** model specifically developed for the insurance telematics industry. You can learn more about its use case and benefits [here](#). Additionally, we utilise the **on-board diagnostics** dongle, the device that plugs directly into the vehicle OBD-II (aka OBD2) port and connects wirelessly to the tracker via **Bluetooth** connectivity.

Please note, the FMT100 is a non-OBD type device. But having access to OBD-II and **diagnostic trouble codes** (DTC) data combined with its own feature set gives fleet management significant extra benefits - vehicle diagnostic parameters of interest and their performance monitoring in real-time, timely maintenance procedures avoiding pricey major repairs and downtime. Also, customised reports on-demand, drivers' behaviour and discipline improvement, lower insurance and business running cost, etc.

How it works - OBD-II dongle reads relevant vehicle parameters and/or codes and sends them to FMT100 tracker via Bluetooth connectivity utilising the dedicated data transfer protocol, respectively. Afterwards, the FM device sends this data, combined with its **GNSS** location details and, in this case, insurance telematics related tracking info, via **GSM** network to a server for further analysis and reports.

This way, fleet managers can monitor two data streams at once - one from the vehicle tracker and another from the OBD-II port. Convenient, practical, and simple as that. Please note, Teltonika FMB modules only work with OBD-II dongles based on **ELM327** or **STN1110** microcontrollers.

What to track - the most common and reasonable parameters to monitor are vehicle speed, engine RPM, engine oil temperature, fuel level, fuel rate, coolant temperature, EGR error, fault codes and so on. Overall, it depends on a particular fleet specifics. The list can be revised anytime upon demand.

How to set up - firstly, the Bluetooth OBD-II dongle has to be connected to a vehicle OBD port. It takes only a moment, no special tools or premises are required. Secondly, the Bluetooth setting of the FMT100 model has to be set up using [Teltonika configurator](#) as shown below. To do so, please navigate to the menu section 'Bluetooth' and enable relevant features accordingly.

The screenshot shows the Teltonika configurator interface. On the left is a navigation menu with various settings categories. The 'Bluetooth' category is selected. The main area displays the 'General' settings for the BT Radio, including options to enable or disable it, local name and PIN, and security mode. Below this is the 'Auto Connect To External Device' section, which includes connection mode options and fields for external MAC, name, and PIN. At the bottom is the 'Authorized Devices MAC List' section, which contains a table with five rows, the first of which is populated with the MAC address '123412341234'. There are also 'Import CSV' and 'Export CSV' buttons.

General	
BT Radio	
Disable	Enable (hidden)
Enable (visible)	
Local Name	FMBxx_2452936
Local PIN	5555
Security Mode	
PIN only	PIN + MAC list
MAC list only	None

Auto Connect To External Device	
Connection Mode	
None	Hands Free
OBDII	Data Link
Inateck Scanner	User ID
External MAC	
External Name	DONGLE
External PIN	

Authorized Devices MAC List	
1	123412341234
2	
3	
4	
5	
Import CSV	
Export CSV	

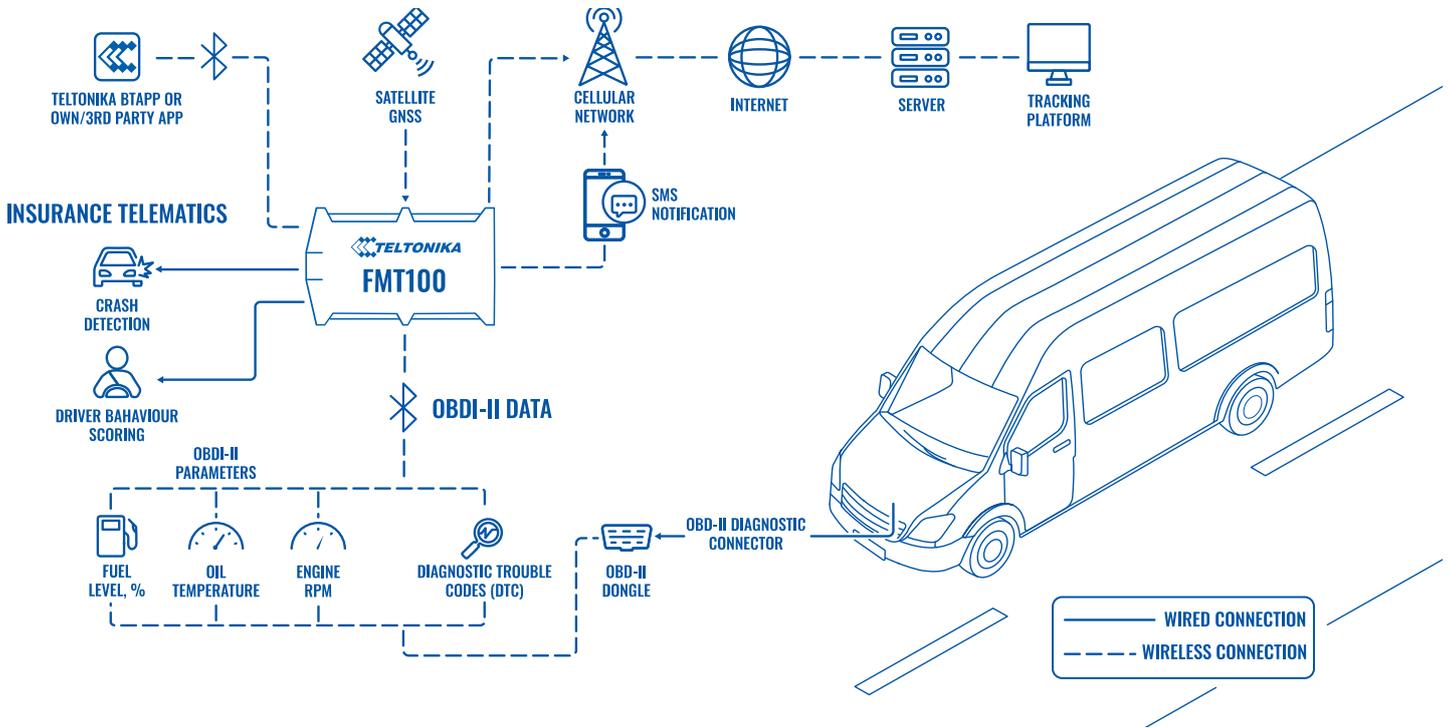
Finally, in the menu section 'OBD II' choose parameters (aka 'Input name') in the presented list you are interested in, select a priority of each of them and save the configuration by clicking 'Save to device'. The exact standard parameter and code list available for tracking will depend on a vehicle maker, model and the year of manufacturing. Learn exact steps on how to connect Bluetooth OBD-II dongle to Teltonika FMB devices [here](#).

TELTONIKA													
OBD II													
Input Name	Units	Priority				Low Level	High Level	Event Only			Operand	Send SMS To	SMS Text
Engine RPM	rpm	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Engine RPM
Vehicle Speed	km/h	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Vehicle speed
Timing Advance	°	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Timing advance
Intake Air Temperature	°C	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Intake air temperature
MAF	g/sec	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		MAF rate
Throttle Position	%	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Throttle position
Run Time Since Engine Start	s	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Run time since engine start
Distance Traveled MIL On	km	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Distance traveled MIL on
Relative Fuel Rail Pressure	kPa	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Relative fuel rail pressure
Direct Fuel Rail Pressure	kPa	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Direct fuel rail pressure
Commanded EGR	%	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Commanded EGR
EGR Error	%	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		EGR error
Fuel Level	%	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Fuel level
Distance Traveled Since Codes Clear	km	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Distance traveled since codes clear
Barometric Pressure	kPa	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Barometric pressure
Control Module Voltage	V	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Control module voltage
Absolute Load Value	%	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Absolute load value
Ambient Air Temperature	°C	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Ambient air temperature
Time Run With MIL On	min	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Time run with MIL on
Time Since Trouble Codes Cleared	min	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Time since trouble codes cleared
Absolute Fuel Rail Pressure	kPa	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Absolute fuel rail pressure
Hybrid Battery Pack Remaining Life	%	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Hybrid battery pack remaining life
Engine Oil Temperature	°C	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Engine oil temperature
Fuel Injection Timing	°x100	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Fuel injection timing
Fuel Rate	L/hx100	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring		Fuel Rate
Fault Codes		None	Low	High	Panic			Crash	Yes	No	On Change		OBD Fault Codes
VIN		None	Low	High	Panic			Crash	Yes	No	Monitoring		VIN

The OBD-II dongle hardware installation process is quick, hassle-free, and takes literally a few seconds. The best part - these devices are broadly available worldwide and affordable to any fleet budget.

To sum up, with this solution, businesses can get the best of both - already up and running Teltonika GPS tracker feature set, as well as abundant OBD-II and DTC data benefits simultaneously helping to considerably improve fleet vehicle tracking, monitoring, and management. Teltonika vehicle trackers firmware updates and configuration changes can be made using the recently renewed [FOTA WEB](#) tool too. It is a powerful software solution helping to manage GPS devices swiftly and efficiently.

TOPOLOGY



BENEFITS

- **Get more by paying less** - now fleet managers can track and monitor two data streams, from the vehicle GPS tracker and the OBD-II port, simultaneously without spending a fortune.
- **Fast and simple installation** - Bluetooth OBD-II dongle can be plugged in a matter of a few seconds, literally. No wiring, no soldering, no special tools, no mess. The solution applies to any non-OBD type Teltonika vehicle tracker supporting Bluetooth connectivity.
- **Customisable OBD-II parameter set for every project** - to get the maximum value out of it, choose only the relevant data to your project or business in the Teltonika configurator tool, and skip the rest. Pay telecoms only for the data you really need and actually use.
- **Improved profitability and competitiveness** - by utilising extra OBD-II and DTC data, businesses will achieve noticeable cost savings, improve drivers' habits and discipline, lessens risky driving behaviours, accidents, repairs, maintenance, insurance and operational cost, resulting in a better ROI, cash flow, profits, and competitive ability.

WHY TELTONIKA?

We offer not only Bluetooth LE technology and OBD-II based swift solution to get extra fleet tracking features, but also top-notch Teltonika vehicle GPS trackers with advanced firmware and handy accessories. Extensive and practical feature sets, multiple usage scenarios bring plentiful benefits and help to optimise business operations, lower their running cost, improve any business competitiveness and return on invested capital.

From the start of the company 23 years ago until today, Teltonika 1,700 strong and growing team has manufactured 15.5 million IoT devices, helped to succeed thousands of customers and partners worldwide. We are the right place to get all you need to succeed - an impressive variety of certified GPS devices and software tools for any use case imaginable in vehicle telematics. Our innovative approach, extensive global market knowledge, state-of-the-art production facilities with [automated robotic assembly](#) lines and customer support meeting your expectations give us a competitive edge and make Teltonika Telematics a business partner of choice.

FEATURED PRODUCT

FMT100

RECOMMENDED PRODUCTS

FMB900, FMB920, FMP100, FMB202, FMB204, FMB110

