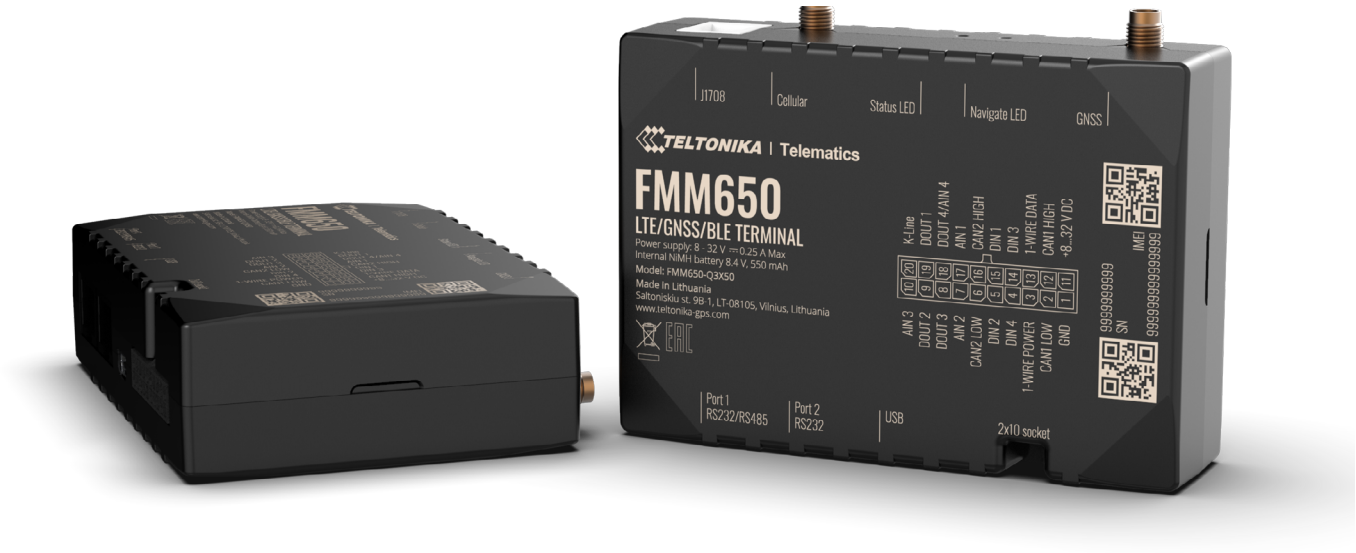
FMM650

PROFESSIONAL LTE CAT M1 & NB IOT/ GNSS/BLE TERMINAL

Product page

LTE M1 | 4 DIN | 4 DOUT | 4 AIN



RELIABLE GLOBAL COVERAGE AND SEPARATE GNSS MODULE

Reliable 4G connection with fallback to 2G network ensures wide-ranging coverage of your fleet management needs. This model uses a separate module to gather GNSS data and has dual-channel, L1 + L5 support.

REMOTE DOWNLOAD OF TACHOGRAPH FILES AND LIVE DATA

Tachograph live data reading via K-Line, Tacho CAN or FMS connections for everyday driver management and fleet efficiency

CAN DATA READING FROM HEAVY VEHICLES AND SPECIAL MACHINERY

Read J1939 data that includes standard CAN FMS from heavy vehicles like trucks and raw J1939 data from special machinery, such as construction cranes or electric buses. Possibility to connect to CAN line with multiple nodes.

CONNECTING EXTERNAL DEVICES

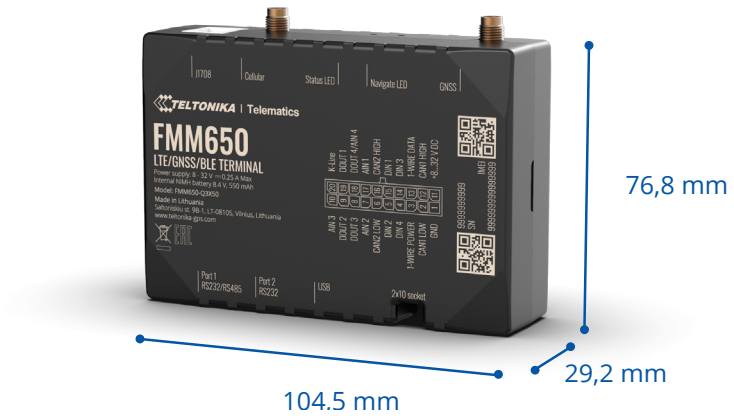
2x RS232 and 1x RS485 serial communication interfaces for connecting external devices, such as thermographs, sensors, RFID readers and more

CONSTRUCTION & MINING | HEAVY DUTY TRANSPORT | PUBLIC SAVETY SERVICES | REFRIGERATED TRANSPORT | INTERNATIONAL LOGISTICS | AGRICULURE TRANSPORT

The FMM650 from Teltonika is the latest addition to their 4G PROFESSIONAL lineup. This device boasts LTE CAT M1 & NB IoT/GNSS/BLE Terminal network coverage, complete with 2G (GSM) fallback compatibility, as well as external GNSS and LTE antennas. The inclusion of a separate GNSS module results in improved tracking accuracy, making it perfect for integration with free flow electronic tolling systems.

FMM650 main features and changes are new processor that increases the device's computation power and internal memory, allowing for more specialized use cases. Additionally, it is equipped with switchable CAN terminators, enabling it to be used on CAN networks with numerous nodes. To simplify the configuration process, the device can also be powered via USB.

Additionally, FMM650, including FMS CAN data (J1939), fuel CAN data (J1708), tachograph live data (K-Line), remote tachograph file download, and support for various third party RS232 or RS485 devices. The device also supports Dual-SIM or eSIM compatibility, making it suitable for a wide range of applications, such as international logistics, refrigerated transport, agriculture, construction and mining, and security and emergency services.



Module

Name	FMM650-Q3X50: Quectel BG95-M3
Technology	LTE CAT M1/NB-IoT/GSM

GNSS

Module Name	Airoha AG3335MB
GNSS	GPS, GLONASS, GALILEO, BEIDOU, QZSS
Receiver	L1 and L5 dual-band GNSS receiver
Tracking sensitivity	-165 dBM
Position Accuracy	< 2.5 CEP
Hot start	< 1.5 s
Warm start	< 25 s
Cold start	< 32 s

Cellular

Technology	LTE CAT M1/CAT NB1, GSM
2G bands	FMM650-Q3X50: B2/B3/B5/B8
4G bands & NB Iot FMM650-Q3X50:	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B27/B28/B66/B71/B85
Data transfer	LTE FDD: LTE: Max. 588Kbps (DL)/Max.1119Kbps (UL)
GPRS	Max. 107Kbps (DL)/Max. 85.6Kbps (UL)
Data support	SMS (text/data)
Transmit power	Class 4 for GSM850/900: 23±2dBm Class 1 for GSM1800/1900: 20±2dBm Class 3 for LTE-TDD: 23±2.7dBm Class 3 for LTE-FDD: 23±2.7dBm

Power

Input voltage range	8 - 32 V DC with overvoltage (compatible with pulse 5a and pulse 5b) and reverse polarity protection
Back-up battery	550 mAh 8,4V Ni-MH battery
Internal fuse	3 A, 125 V
2 W max. Current consumption at 12 V	At 12V < 4 mA (Deep Sleep) At 12V < 11 mA (Online Deep Sleep) At 12V < 32 mA (GPS Sleep) At 12V < 45 mA (nominal with no load) At 12V < 0.25 A Max. (with full Load / Peak)

2 W max. Current consumption at 24 V	GPRS: average 35 mA Nominal: average 24 mA (with no load) GNSS sleep: average 17 mA Deep Sleep: average 2,9 mA Online Deep Sleep: average 7 mA Full Load/Peak: <0.25A Max

Bluetooth

Bluetooth Name	Blue NRG232
Specification	5.0 + LE
Supported peripherals	Temperature and Humidity sensor, Universal BLE sensors support

Physical specification

Dimensions	104,1 x 76,8 x 31,5 mm (L x W x H)
Weight	197 g

Operating environment

Operating temperature (without battery)	-40 °C to +85 °C
Storage temperature (without battery)	-40 °C to +85 °C
Battery Charging temperature	Ta = 20 ± 5 °C (Ambient Temp.)
Battery Discharge temperature	Ta = 20 ± 5 °C (Ambient Temp.)
Battery storage temperature	-20 °C to +45° C
Operating humidity	5% to 95% non-condensing
Ingress Protection Rating	IP41

Interface

Digital Inputs	4
Digital Outputs	4
Analog Inputs	4
1-Wire	1
RS232	2
RS485	1
CAN J1939	2
J1708	1
K-line	1
GNSS antenna	External High Gain (L1+L5)
GSM antenna	External High Gain
USB	2.0 Mini-USB — device can be powered by USB for easier device configuration
LED indication	2 status LED lights
SIM	2x SIM Card (Dual-SIM) or 1x eSIM
Memory	16 MB internal flash memory and external Micro SD card up to 32GB
Switchable CAN terminators	Supported on CAN1 and CAN2 lines

Features

Movement detection	Accelerometer
Scenarios	Green/Eco Driving, Over Speeding detection, Jamming detection, Excessive Idling detection, Towing detection, Crash detection, Immobilizer, iButton Read Notification
Functionalities	Auto Geofencing, Manual Geofencing, Trip detection, Odometer, Fuel counter, GNSS Unplug Detection, DDD download and Tacho online data, Offline tracking
Supported peripherals	Garmin, RFID RS232, RFID 1-Wire, iButton 1-Wire, Temperature 1-Wire, LV-CAN200, CAN FMS (J1939, J1708), K-line data, Continental tire pressure measurement sensor, Iridium SBD (Iridium Edge/TSM232), Carrier freezer, Log Mode, NMEA, TCP ASCII/Binary, Temperature and humidity sensor, Universal BLE sensors support
Sleep modes	GPS Sleep, Online Deep Sleep, Deep Sleep
Configuration and firmware update	FOTA Web, FOTA, Teltonika Configurator
SMS	Configuration, Events, DOUT control, Debug
GPRS commands	Configuration, DOUT control, Debug
Time Synchronization	GNSS, NITZ, NTP
Fuel monitoring	LLS (Analog), Digital LLS (RS232, RS485), LV-CAN200, CAN FMS, Ultrasonic level sensor
Ignition detection	Digital Input, Accelerometer, External Power Voltage
RS485 input voltage range on A or B pin (common-mode voltage)	-7V to +12V

Certification & Approvals*

Regulatory	TBA

* In progress