



FMC650

4G LTE Cat 1 tracker for advanced applications with high capacity backup battery and external antennas



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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

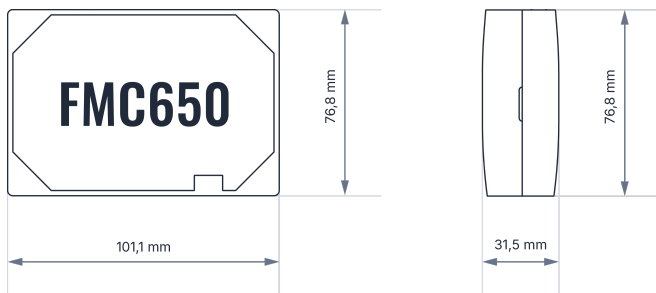
Tachograph live data reading via K-Line, Tacho CAN or FMS connections for everyday driver management and fleet efficiency

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



Module

Name	FMC650-MBX50: MeiG SLM320-PE2C with Airoha AG3335MB FMC650-MCX50: MeiG SLM320-L16B with Airoha AG3335MB
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Technology	LTE CAT 1/GSM/GPRS/GNSS/BLE [®] LE
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GNSS

Module name	Airoha AG3335MB
GNSS	GPS, GLONASS, GALILEO, BEIDOU, QZSS, DGPS
Receiver	L1: 75 acquisition/tracking channels L5: 60 tracking channels
Tracking sensitivity	-165 dBm
Position Accuracy	< 2.5 m CEP
Velocity Accuracy	< 0.1 m/s (within +/- 15% error)
Hot start	1 s
Warm start	< 25 s
Cold start	< 32 s

Cellular

Technology	LTE Cat 1, GSM
2G bands	FMC650-MBX50: B2/B3/B5/B8 FMC650-MCX50: B2/B3/B5/B8
4G LTE bands	FMC650-MBX50: LTE-FDD:B1/B3/B7/B8/B20/B28 LTE-TDD:B38/B40/B41 FMC650-MCX50: LTE-FDD:B1/B2/B3/B4/B5/B7/B8/B20/B28 LTE-TDD:B40
Data transfer	LTE FDD: Max 10Mbps (DL)/Max 5Mbps (UL) LTE TDD: Max 8Mbps (DL)/Max 2Mbps (UL) GPRS: Max 85.6Kbps (DL)/Max 85.6Kbps (UL)
Data support	SMS (text/data)

Power

Input voltage range	8–32 V DC with overvoltage (compatible with pulse 5a and pulse 5b) and reverse polarity protection
Internal Back-up battery	550 mAh Ni-Mh, 8.4 V battery
2 W max. Current consumption at 12 V	At 12V < 22 mA (Deep Sleep) At 12V < 28 mA (Online Deep Sleep) At 12V < 51 mA (GPS Sleep) At 12V < 79 mA (nominal with no load) At 12V < 96 mA Max. (with full Load / Peak) 2 W max. Current
2 W max. Current consumption at 24 V	At 24V < 15 mA (Deep Sleep) At 24V < 18 mA (Online Deep Sleep) At 24V < 36 mA (GPS Sleep) At 24V < 41 mA (nominal with no Load) At 24V < 55 mA Max. (with full Load / Peak)
RS485 input voltage range on A or B pin (common-mode voltage)	-7V to +12V
RS232 input voltage range (common-mode voltage)	+/-15V
RS232 input voltage range (maximum operational voltage)	+/-25V

Bluetooth® Technology

Name	Blue NRG232
Specification	5.2 + LE
Supported peripherals	Temperature and Humidity sensor, Universal BLUETOOTH® LE sensors support

Physical specification

Dimensions	105 x 78 x 29 mm (L x W x H)
Weight	199 g

Operating environment

Operating temperature (without battery)	-40 °C to +85 °C
Storage temperature (without battery)	-40 °C to +85 °C
Operating temperature (with battery)	-20 °C to +45°C
Storage temperature (with battery)	-20 °C to +45°C
Operating humidity	5% to 95% non-condensing
Ingress Protection Rating	IP41
Battery charge temperature	0°C to +40°C
Battery discharge temperature	-25°C to +45°C
Battery storage temperature	-20 °C to +45°C

Interface

Digital Inputs	4
Digital Outputs	4
Analog Inputs	4
1-Wire	1
RS232	2
RS485	1
CAN J1939	2
CAN J1708	1
K-line	1
GNSS antenna	External High Gain
Cellular 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	Dual Nano SIM or 1x eSIM
Memory	16 MB internal flash memory and external Micro SD card up to 32GB
Switchable CAN terminals	Supported on CAN1 and CAN2 lines

Features

Sensors	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, 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
RS232 Modes	Log Mode, NMEA, LLS, LCD, RFIH HID/MF7, Garmin FMI, TCP ASCII/Binary
RS485 Modes	LLS (Analog), Digital LLS (RS232, RS485), LV-CAN200, CAN FMS, Ultrasonic level sensor

Certification & approvals

Regulatory	CE-RED, UKCA, E-mark, RCM, Pulse 5a, SIRIM QAS, ICASA, CITC
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