

SAFETY INFORMATION

This message contains information on how to operate FMC130 safely. By following these requirements and recommendations, you will avoid dangerous situations. You must read these instructions carefully and follow them strictly before operating the device!

- The device uses SELV limited power source. The nominal voltage is +12 V DC. The allowed voltage range is +10...+30 V DC.
- To avoid mechanical damage, it is advised to transport the device in an impact-proof package. Before usage, the device should be placed so that its LED indicators are visible. They show the status of device operation.
- When connecting the 2x6 connector wires to the vehicle, the appropriate jumpers of the vehicle power supply should be disconnected.
- Before unmounting the device from the vehicle, the 2x6 connector must be disconnected. The device is designed to be mounted in a zone of limited access, which is inaccessible to the operator. All related devices must meet the requirements of EN 62368-1 standard.
- The device FMC130 is not designed as a navigational device for boats.



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.



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.



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.

CERTIFICATION AND APPROVALS



This sign on the package means that it is necessary to read the User's Manual before your start using the device.



Hereby, Teltonika declare under our sole responsibility that the above described product is in conformity with the relevant Community harmonization: European Directive 2014/53/EU (RED).



REACH addresses the production and use of chemical substances, and their potential impacts on both human health and the environment. Its 849 pages took seven years to pass, and it has been described as the most complex legislation in the Union's history and the most important in 20 years. It is the strictest law to date regulating chemical substances and will affect industries throughout the world.



The RoHS1 is a directive regulating the manufacture, import and distribution of Electronics and Electrical Equipment (EEE) within the EU, which bans from use 10 different hazardous materials (to date).

DECLARATION OF IMEI ASSIGNMENT

The IMEI number is used by a GSM network to identify valid devices and therefore can be used for stopping a stolen phone from accessing that network. For example, if a mobile phone is stolen, the owner can call their network provider and instruct them to blacklist the phone using its IMEI number. This renders the phone useless on that network and sometimes other networks too, whether or not the phone's subscriber identity module (SIM) is changed.



This sign on the package means that all used electronic and electric equipment should not be mixed with general household waste.



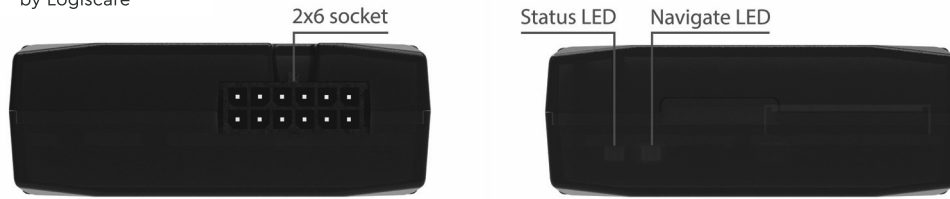
The Declaration EAC and the Certificate EAC in conformity with the technical regulation TR CU of the EurAsEC Customs Union are EAC certification documents issued by independent organizations. Such organizations perform their function through laboratories accredited to the public agencies in charge of the supervision of metrology and standardization in the three countries of the EAC Custom Union, joining at the moment the certification system : Russia, Belarus, Kazakhstan, Armenia and Kyrgyzstan.



E-Mark and e-Mark are the European conformity marks issued by the transport sector, indicating that the products comply with relevant laws and regulations or directives. Vehicles and related products need to go through the E-Mark certification process to be legally sold in Europe.

DECLARATION OF DEVICE OPERATION TEMPERATURE

An operating temperature is the temperature at which an electrical or mechanical device operates. The device will operate effectively within a specified temperature range which varies based on the device function and application context, and ranges from the minimum operating temperature to the maximum operating temperature (or peak operating temperature). Outside this range of safe operating temperatures the device may fail.



Module	
Name	MeiG SLM320-E, MeiG SLM320-LA, Quectel EC21-EC, Quectel EC21-AU, Quectel EC21-J, Quectel EC21-KL, Teltonika TM2500
Technology	LTE(CaT1)/3G(UMTS/HSPA)/2G(GSM/GPRS)/GNSS/BLUETOOTH
GNSS	
GNSS	GPS, GLONASS, GALILEO, BEIDOU, QZSS, AGPS
Receiver	Tracking: 33
Tracking sensitivity	-165 dBm
Position Accuracy	< 2.5 CEP
Velocity Accuracy	< 0.1 m/s (within +/- 15% error)
Hot start	< 1 s
Warm start	< 25 s
Cold start	< 35 s
Cellular	
Technology	LTE Cat 1, UMTS, GSM
2G bands (SLM320)	FMC130-ME1: GSM: B2/B3/B5/B8 FMC130-ME3: GSM: B2/B3/B5/B8 FMC130-ML1: GSM: B2/B3/B5/B8
2G bands (EC21)	EC21-EC: GSM: B3/B8 EC21-AU: GSM: B2/B3/B5/B8
3G bands (EC21)	EC21-AU: WCDMA: B1/B2/B5/B8 EC21-EC: WCDMA: B1/B8
4G bands (SLM320)	FMC130-ME1: LTE FDD: B1/B3/B5/B7/B8/B20 LTE-TDD:B38/B40/B41 FMC130-ME3: LTE FDD: B1/B3/B7/B8/B20/B28 LTE-TDD:B38/B40/B41 FMC130-ML1: LTE FDD: B1/B2/B3/B4/B5/B7/B8/B20/B28 LTE-TDD:B40
4G bands (EC21)	EC21-EC: LTE FDD: B1/B3/B7/B8/B20/B28A EC21-AU: LTE FDD: B1/B2/B3/B4/B5/B7/B8/B28/ LTE TDD: B40 EC21-J: LTE FDD: B1/B3/B8/B18/B19/B26 EC21-KL: LTE FDD: B1/B3/B8/B18/B19/B26
Data transfer (SLM320)	LTE: LTE FDD: Max 10Mbps (DL)/Max 5Mbps (UL) LTE TDD: Max 8Mbps (DL)/Max 2Mbps (UL) GSM: GPRS: Max 85.6Kbps (DL)/Max 85.6Kbps (UL)
Data transfer (EC21)	LTE: LTE FDD: Max 10Mbps (DL)/Max 5Mbps (UL) LTE TDD: Max 8.96Mbps (DL)/Max 3.1Mbps (UL) UMTS: WCDMA: Max 384Kbps (DL)/Max 384Kbps (UL) GSM: GPRS: Max 107Kbps (DL)/Max 85.6Kbps (UL)
3 A, 125 V	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
Data support	SMS (text/data)

Power	
Input voltage range	10 - 30 V DC with overvoltage protection
Internal Back-up battery	170 mAh Li-Ion battery 3.7 V (0.63 Wh)
Internal fuse	3 A, 125 V
Power consumption	At 12V < 3 mA (Ultra Deep Sleep) At 12V < 5 mA (Deep Sleep) At 12V < 16 mA (Online Deep Sleep) At 12V < 18 mA (GPS Sleep) At 12V < 33 mA (nominal with no load) At 12V < 2A Max. (with full Load / Peak)
Bluetooth	
Specification	4.0 + LE
Supported peripherals	Temperature and Humidity sensor, OBDII dongle, Inateck Barcode Scanner, Universal BLE sensors support
Physical specification	
Dimensions	65 x 56,6 x 20,6 mm (L x W x H)
Weight	55 g
Operating environment	
Operating temperature (without battery)	-20 °C to +85°C
Storage temperature (without battery)	-20 °C to +85 °C
Operating temperature (with battery)	-20 °C to +40 °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 +45 °C
Battery discharge temperature	-20 °C to +60 °C
Battery storage temperature	-20 °C to +45 °C for 1 month -20 °C to +35 °C for 6 months
Interface	
Digital Inputs	3
Negative Inputs	1 (Digital Input 2)
Impulse Inputs	2 (Digital Input 1, Digital Input 2)
Digital Outputs	3
Analog Inputs	2
CAN Adapter Inputs	1
1-Wire	1
GNSS antenna	Internal High Gain
Cellular antenna	Internal High Gain
USB	2.0 Micro-USB
LED indication	2 status LED lights
SIM	Micro-SIM + eSIM
Memory	128MB internal flash memory

Features

Sensors	Accelerometer
Scenarios	Green Driving, Over Speeding detection, GNSS Fuel Counter, DOUT Control Via Call, Excessive Idling detection, Immobilizer, iButton Read Notification, Unplug detection, Towing detection, Crash detection, Auto Geofence, Manual Geofence, Trip, Jamming detection*
Sleep modes	GPS Sleep, Online Deep Sleep, Deep Sleep, Ultra Deep Sleep
Configuration and firmware update	FOTA Web, FOTA, Teltonika Configurator (USB, Bluetooth), FMBT mobile application (Configuration)
SMS	Configuration, Events, DOUT control, Debug
GPRS commands	Configuration, DOUT control, Debug
Time Synchronization	GNSS, NITZ, NTP
Fuel monitoring	LLS (Analog), LV-CAN200, ALL-CAN300, CAN-CONTROL, OBDII dongle
Ignition detection	Digital Input 1, Accelerometer, External Power Voltage, Engine RPM (CAN Adapters, OBDII dongle)

Certification & Approvals

Regulatory	CE/RED, E-mark, RCM, TELEC, JATE, EAC, REACH, RoHS
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*Jamming detection supported with
SLM320-E and SLM320-LA modules.