

# FMB962 General description

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FMB964 is a tracking terminal with GNSS and GSM connectivity, which is able to collect device coordinates and transfer them via GSM network to a server. This device is perfectly suitable for applications, which require the location acquirement of remote objects.

Package contents<sup>1</sup> The FMB962 device is supplied to the customer in a cardboard box containing all the equipment that is necessary for operation. The package contains:

- Already implemented FMB962 device into case;
- Top and bottom device cover parts;
- Input and output power supply cable with a 1x5 connection pins, which is already installed into device.
- 400 mAh Ni-MH rechargeable 7.2 V battery.

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## Basic characteristics

Basic characteristics GSM / GPRS / GNSS features:

- Teltonika TM2500 quad band module (GSM 850 / 900 / 1800 / 1900 MHz);
- GPRS class 12;
- SMS (text, data).
- Integrated GNSS receiver
- Up to -162 dBm GNSS receiver sensitivity.

Hardware features:

- Built-in movement sensor;
- Built-in blue-tooth 3.0;
- Internal High Gain GNSS antenna;
- Internal High Gain GSM antenna;
- microSD card reader (up to 32Gb, FAT32);
- 400 mAh Ni-MH rechargeable 7.2 V battery.

Interface features:

- Power supply: 6 ÷ 30V;
- 1 digital input;
- 1 analog input;
- 1 open collector digital output (connecting external relays, LED, buzzers etc.);
- 2 LEDs indicating device status.

Special features:

- Fast position fix;
- High Quality track even in high density urban canyon;
- Ultra small case;
- Ready for harsh environment;
- Color ribbon non-detachable cable;
- Easy to mount in limited access areas;
- Firmly fasten;
- High gain internal GNSS and GSM antennas;
- 2 LED status indication;
- Real-Time tracking;
- Smart data acquisition based on:
  - Time;
  - Angle;
  - Distance;
  - Ignition or any other I/O event;
- Sending acquired data via GPRS;
- GPRS and SMS I/O events;
- Virtual odometer;
- Jamming detection
- Configurable using Secured SMS Commands;
- Overvoltage protection.

## Technical features

Part name	Physical specification
Navigation indication	LED
Modem indication	LED
Socket	Soldered inner socket
USB	Micro USB socket

Technical details	
<b>2 W max.</b>	GPRS: average 60 mA rms
<b>Current consumption at 12 V</b>	Nominal: average 27 rms GPS sleep: average 3.27 mA Deep Sleep: average 3 mA Online Deep Sleep: average 2.89 mA Ultra Deep Sleep: average 1.60 mA Rated current: 250 mA
<b>Battery charge current</b>	Average 140 mA
<b>Operating temperature</b>	-25..+55 °C
<b>Storage temperature</b>	-20..+45 °C
<b>Storage relative humidity</b>	5..85% (no condensation)

Dimension drawing:



## Technical information about internal battery

Internal back-up battery	Battery voltage (V)	Nominal capacity (mAh)	Power (Wh)	Charging temperature (°C)
Li-Po rechargeable battery	3.4~4.1	1800	6.21 - 7.38	0 - 45

Batteries are covered by 6 month [warranty](#) support.

- CAUTION: 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 into general household waste.

- Bring damaged or worn-out batteries to your local recycling center or dispose them into a battery recycle bin commonly found in supermarkets.

## Electrical characteristics

Characteristic description	Value			Unit
	Min.	Typ.	Max.	
Supply Voltage:				
Supply Voltage (Recommended Operating Conditions)	6		30	V
Digital Output (Open Drain grade):				
Drain current (Digital Output OFF)			120	µA
Drain current (Digital Output ON, Recommended Operating Conditions)	0.1		0.5	A
Digital Input:			300	mΩ
Digital Output (Open Drain grade):				
Input resistance (DIN1)	47			kΩ
Input voltage (Recommended Operating Conditions)	0		Supply voltage	V
Input Voltage threshold (DIN1)		4		V
Analog Input:				
Input voltage (Recommended Operating Conditions)	0		30	V
Input resistance		150		kΩ
Measurement error on 12 V		3		%
Additional error on 12 V		360		mV
Measurement error on 30 V		3		%
Additional error on 30 V		900		mV

✘ **Analog Input error margin can increase if temperature varies.**

## **Absolute maximum ratings**

<b>Characteristic description</b>	<b>Value</b>		
	<b>Min.</b>	<b>Typ.</b>	<b>Max. Unit</b>
Supply Voltage (Absolute Maximum Ratings)	-32		+32 V
Drain-Source clamp threshold voltage (Absolute Maximum Ratings), ( $I_{\text{drain}} = 2 \text{ mA}$ )			+36 V
Digital Input Voltage (Absolute Maximum Ratings)	-32		+32 V
Analog Input Voltage (Absolute Maximum Ratings)	-32		+32 V