

FMB964 General description

[Main Page](#) > [EOL Products](#) > [FMB964](#) > [FMB964 Manual](#) > **FMB964 General description**

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.

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Contents

- [1 Package contents](#)
- [2 Basic characteristics](#)
- [3 Technical features](#)
- [4 Technical information about internal battery](#)
- [5 Electrical characteristics](#)
- [6 Absolute maximum ratings](#)

Package contents

The FMB964 device is supplied to the customer in a cardboard box containing all the equipment that is necessary for operation. The package contains:

- Already implemented FMB964 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.
- 1800 mAh Li Po rechargeable 3.7 V battery

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 embedded SIM;
- Built-in movement sensor;
- Built-in Bluetooth 3.0;
- Built-in Bluetooth 4.0;
- Internal High Gain GNSS antenna;

- Internal High Gain GSM antenna;
- 128 MB Flash (422 400 Records);
- 1800 mAh Li Po rechargeable 3.7 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.

Description	Voltage	Duration
Normal operation	+6 ... +30 V	Unlimited
Protection turns on, device turns off	34 V	Unlimited
Maximum voltage	<70 V	Unlimited
Maximum voltage impulse	90 V	5ms

Technical features

Part name **Physical specification**

Navigation indication	LED
Modem indication	LED
Socket	Soldered inner socket
USB	Micro USB socket
GNSS	Internal GNSS antenna
GSM	Internal GSM antenna

Technical details

2 W max. Current consumption at 12 V	GPRS: average avg mA rms Nominal: average 22,7 rms GPS sleep: average avg mA Deep Sleep: average 4,6 mA Online Deep Sleep: average 5 mA Ultra Deep Sleep: average 3,4 mA Rated current: 250 mA
Battery charge current	Average 140 mA
Operating temperature	-22..+55
Storage temperature	-20..+45
Storage relative humidity	5..85% (no condensation)
Cable + Device + case + battery weight	100 g

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

Characteristic description	Value			Unit
	Min.	Typ.	Max.	
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