FMB920 General description

FMB920 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

Package contents

The FMB920 device is supplied to the customer in a cardboard box containing all the equipment that is necessary for operation. The package contains:

- Already implemented FMB920 device into case;
- Top and bottom device cover parts;
- 3.7 V 170 mAh rechargeable Li-ion battery;
- and output power supply cable with a 1x5 connection pins, which is already installed into device.

Basic characteristics

GSM / GPRS / GNSS features:

- Teltonika TM2500 quad band module (GSM 850 / 900 / 1800 / 1900 MHz);
- GPRS class 12 (Up to 85,6 kbps);
- SMS (text, data);
- Integrated GNSS receiver;
- Up to -165 dBm GNSS receiver sensitivity.

Hardware features:

- Built-in movement sensor;
- Built-in Bluetooth 4.0;
- Internal High Gain GNSS antenna;
- Internal High Gain GSM antenna;
- 128 MB Flash (422 400 Records);

- 170 mAh Li-ion rechargeable 3.7 V battery.

Interface features:

- Power supply: +6... +30 V;
- 1 digital input;
- 1 impulse input (DIN1)
- 1 analog input;
- 1 open collector digital output (connecting external relays, LED, buzzers etc);
- 2 LEDs indicating device status.

Special features:

- Fast position fix (Outdoor areas);
- High Quality track even in high density urban canyon;
- Ultra small case;
- Ready for harsh environment;
- Easy to mount in limited access areas;
- Firmly fasten;
- 2 LED status indication;
- Real time tracking;
- Smart data acquisition based on:
  - Time;
  - Speed;
  - 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;
- Color ribbon non-detachable cable;
- 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

Technical details	
2 W max. Current consumption at 12 V (Power supply 6...30 V DC)	GPRS: average 63.48 mA Nominal: average 24.40 mA GNSS sleep: average 5.58 mA Deep Sleep: average 4.06 mA Online Deep Sleep: average 4.62 mA Ultra Deep Sleep: average 2.08 mA Rated current: 250 mA
Battery charge current	Average: 140 mA
Operating temperature (without battery)	-40 ... +85 °C
Storage temperature (without battery)	-40 ... +85 °C
Storage relative humidity	5 ... 95% (no condensation)
Device + case weight + battery weight	54 g

Dimension drawing:

Technical information about internal battery

Internal back-up battery	Battery voltage (V)	Nominal Capacity (mAh)	Power (Wh)	Charge temperature (°C)	Discharge temperature (°C)	Storage temperature (°C)
Li-ion rechargeable battery	3.75□3.90	170	0.64 – 0.66	0 to +45	-20 to +60	-20 to +45 for 1 month -20 to +35 for 6 months

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			
	Min.	**Typ.**	**Max.**	**Unit**
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			
	Min.	**Typ.**	**Max.**	**Unit**
Supply Voltage (Absolute Maximum Ratings)	-32		+32	V
Drain-Source clamp threshold voltage (Absolute Maximum Ratings), (I_{drain} = 2 mA)			+36	V
Digital Input Voltage (Absolute Maximum Ratings)	-32		+32	V

Analog Input Voltage (Absolute Maximum Ratings)	-32	+32	V