

FMB630 General description

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FMB630 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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Package contents

Usually the FMB630 device sample is supplied to the customer in a cardboard box containing all the equipment that is necessary for operation. The package contains:

- FMB630 device;
- 4 screws for assembling device
- GPS/GLONASS antenna
- GSM antenna
- USB cable
- Port 1/2 cable
- Port 3 cable
- Ni-MH Rechargeable battery, 8.4V, 550 mA.
- Input and output power supply cable with 2x10 connection pins.

Basic characteristics

GSM/GPRS/ features:

- Quad-band 900/1800 MHz; 850/1900 MHz
- GPRS Multi-Slot Class 12(up to 240 kbps)
- GPRS Mobile Station Class B
- SMS (text/data)

Bluetooth:

- Bluetooth specification V3.0
- Bluetooth transceiver fully compliant with Bluetooth specification V3.0 for external

peripherals:

- Voice calls over Bluetooth
- Configuration via Bluetooth

GNSS:

- Tracking: 33/ 99 acquisition channels
- -165 dBm sensitivity
- Hot start <1s
- Warm Start < 25s
- Cold start < 35s
- NMEA-183 protocol
- GPS, GLONASS, GALILEO, BEIDOU, SBAS, QZSS, DGPS
- Accuracy < 3m

Hardware features:

- STM32 processor;
- 1MB internal Flash memory;
- External Micro SD card slot;
- Built-in accelerometer;
- Built-in Bluetooth 3.0;
- Internal backup battery included;

Interface:

- Power supply: 10 ÷ 30V;
- USB port;
- 4 digital inputs;
- 3 analog inputs;
- 4 open collector digital outputs;
- 1Wire® interface;
- LEDs indicating device status;
- K-Line interface for online Tachograph Vehicle Data transfer;
- 2xRS232 port;
- RS485 port;
- J1708 interface;
- CAN messages 2.0 A, B Active support. Speed up to 1 Mbit/s;
- Roaming enabling/disabling;
- Offline working mode;
- Records importing using USB/microSD card;
- Remote logs reading via SMS/GPRS;

Description	Voltage	Duration
Normal operation	+10 ... +30 V	Unlimited
Protection turns on, device turns off	34 V	Unlimited
Maximum voltage	< 70 V	Unlimited

Maximum voltage impulse	90 V	5 ms
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Technical features

Part name	Physical specification
Navigation indication	LED
Modem indication	LED
Socket	Soldered inner socket
USB	Mini USB socket
GNSS	External GNSS antenna
GSM	External GSM antenna

Technical details

2 W max. Current consumption at 12 V	GPRS: average 120 mA rms
	Nominal: average 65 rms
	GNSS sleep: average 28 mA
	Deep Sleep: average 7 mA
	Online Deep Sleep: average 12 mA
2 W max. Current consumption at 24 V	GPRS: average 35 mA
	Nominal: average 20 mA
	GNSS sleep: average 12,5 mA
	Deep Sleep: average 3,8 mA
	Online Deep Sleep: average 1,3 mA
Battery charge current	Average 55 mA
Operating temperature (without battery)	-40..+85
Storage temperature (without battery)	-40..+85
Storage relative humidity	5..95% (no condensation)
Device + case + battery weight	197 g

Dimension drawing:




Technical information about internal battery

Internal back-up battery	Battery voltage (V)	Nominal Capacity (mAh)	Charging temperature (°C)
Ni-MH rechargeable battery	8.4~10.0	550	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		
	Min.	Typ.	Max. Unit
Supply Voltage:			
Supply Voltage (Recommended Operating Conditions)	+10		+30 V
Digital Output (Open Drain grade):			
Drain current (Digital Output OFF)			120 μ A
Drain current (Digital Output ON, Recommended Operating Conditions)			0.5 A
Static Drain-Source resistance (Digital Output ON)		400	300 m Ω
Digital Input:			
Input resistance (DIN1)	15		k Ω
Input resistance (DIN2)	15		k Ω
Input resistance (DIN3)	15		k Ω
Input voltage (Recommended Operating Conditions)	0		Supply voltage V
Input Voltage threshold (DIN1)		7.5	V
Input Voltage threshold (DIN2, DIN3, DIN4)		2.5	V
Analog Input:			
Input voltage (Recommended Operating Conditions), Range 1	0		+10 V
Input resistance, Range 1		120	k Ω
Input voltage (Recommended Operating Conditions), Range 2	0		+30 V

Input resistance, Range 2	147			kΩ
Output Supply Voltage 1-Wire:				
Supply voltage	+4.5	+4.7		V
Output inner resistance	7			Ω
Output current ($U_{out} > 3.0$ V)	30			mA
Short circuit current ($U_{out} = 0$)	75			mA
CAN Interface:				
Internal terminal resistors CAN bus	120			Ω
Differential input resistance	19	30	52	kΩ
Recessive output voltage	2	2.5	3	V
Differential input resistance	0.5	0.7	0.9	V
Common mode input voltage	-30		30	V
Power supply current (Hardware version with internal battery):				
Deep Sleep, average, $I_{cc.ds}$	2.5	4		mA
Sleep, average, $I_{cc.ds}$, $V_{cc}=10V$	45			mA
Sleep, average, $I_{cc.ds}$, $V_{cc}=30V$	25			mA
$U_{cc}=12.6V$, all modules fully working, internal battery is charging, I_{cc1}			350	mA
$U_{cc}=12.6V$, all modules fully working, internal battery is charging, I_{cc2}			300	mA
$U_{cc}=25.2V$, all modules fully working, internal battery is charging, I_{cc3}			195	mA
$U_{cc}=25.2V$, all modules fully working, internal battery is charging, I_{cc4}			140	mA
RS232/RS485 Input Voltage:				
RS485 input voltage range on A or B pin (common-mode voltage)	-7		+12	V
RS232 input voltage range (common-mode voltage)	-15		+15	V

 **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), ($I_{drain} = 2$ mA)			+36	V
Digital Input Voltage (Absolute Maximum Ratings)	-32		+32	V
Analog Input Voltage (Absolute Maximum Ratings)	-32		+32	V

RS232 Input Voltage (Absolute Maximum Ratings)	-25	+25 V
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