

TSM232 and FMB6

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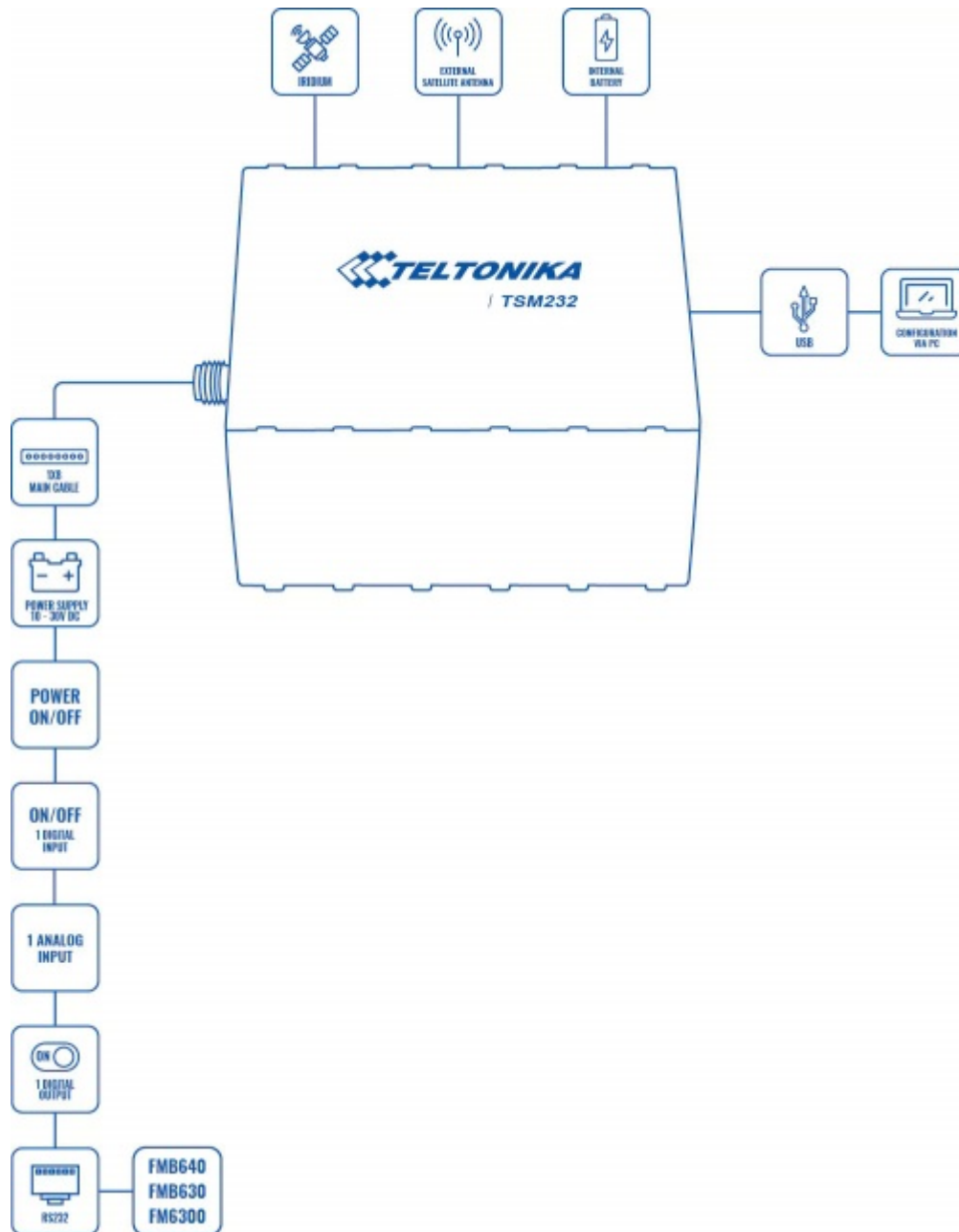


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Description

Teltonika [TSM232](#) is an Iridium SATELLITE terminal with a backup battery. The full solution combines Teltonika [TSM232](#) with Teltonika FM63XY, [FMB630](#), [FMB640](#), [FMC640](#), or [FMM640](#) connected via RS232. This solution allows transferring data to a server via the Iridium satellite network when other terrestrial networks are unavailable. High capacity internal Ni-MH battery ensures long autonomous working hours when the main power source is disconnected. Such a solution meets the demand for high-security logistics, marine transport, construction & mining transport, oil/gas industry, public safety, government/defense, and more.



First Start Guide

The device supports Iridium devices that can send short burst data (SBD) to the server. This means that some data can be sent from the FM device to the server through satellites.

Requirements

To access the iridium functionality you must have:

- Firmware version: 00.03.03+
- Hardware: RJ-45 Cable

TSM232 connection scheme

Port1/2 cable from the FM package can be used for the [TSM232](#) connection. For this, you need to cut a D-SUB connector and connect wires according to the instruction below. (PIN 4 to TSM GND, PIN5 to TSM Rx, PIN6 to TSM Tx).



Configuring FM63XY/FMB630

At first FM63XY/[FMB630](#) device will have the default factory settings set. These settings should be changed according to the user's needs first. Please see our First start guide [here](#).

After you have connected the device to FM COM1 or COM2 port. Select COM1 or COM2 mode Satellite backup mode. Those settings are found in the External devices TAB. Baud rate for satellite devices is 19200 bps

COM1 Settings		COM2 Settings	
Baudrate	115200	Baudrate	115200
Mode	Silent Mode	Mode	Silent Mode
TimeStamp	Disable	TimeStamp	Disable
CMD ID	5	CMD ID	5
Start Byte	0	Start Byte	0
End Byte	0	End Byte	0

FM will enable satellite mode only if the device can not send data via GPRS. Satellite mode has its own Save/Send period. If the timeout is set to 0 no periodic records will be made. It is not recommended to save records often because of satellite traffic prices. 8 kilobytes monthly data limit is hardcoded in firmware. If the data limit is reached – the data limit counter will reset automatically only on next month first day or you can reset counter by SMS command `sbdlimitsreset`

Short burst data settings	
TSM232:	Disabled
Save/Send period	0 min.

Satellite I/OCOM settingsCheck connection

NOTE: In order to get predefined I/O elements in Satellite record select them in I/O settings (Satellite I/O)

In addition, you can select which IO element can generate Satellite records. In order to do that you need to go to the IO tab select IO record priority Panic and check the checkbox "Satellite I/O" for what you want to get that data through satellites if there is no GSM connection.

Property Input	<input type="checkbox"/> Enabled	Priority	LowLevel	HighLevel	GenerateEvent	Averaging Constant	Satellite I/O
Digital input 1	<input checked="" type="checkbox"/>	Disable ▾	0 ▴ ▾	0 ▴ ▾	On Exit ▾	10 ▴ ▾	<input type="checkbox"/>
Digital input 2	<input type="checkbox"/>	Disable ▾	0 ▴ ▾	0 ▴ ▾	Monitoring ▾	10 ▴ ▾	<input type="checkbox"/>
Digital input 3	<input type="checkbox"/>	Disable ▾	0 ▴ ▾	0 ▴ ▾	Monitoring ▾	10 ▴ ▾	<input type="checkbox"/>
Digital input 4	<input type="checkbox"/>	Disable ▾	0 ▴ ▾	0 ▴ ▾	Monitoring ▾	10 ▴ ▾	<input type="checkbox"/>
Digital output 1	<input type="checkbox"/>	Disable ▾	0 ▴ ▾	0 ▴ ▾	Monitoring ▾	3 ▴ ▾	<input type="checkbox"/>
Digital output 2	<input type="checkbox"/>	Disable ▾	0 ▴ ▾	0 ▴ ▾	Monitoring ▾	3 ▴ ▾	<input type="checkbox"/>

In this scenario, then the Digital input record will be generated internal 90 seconds timer will start to tick and if in that timeout device will not send the record through the GPRS network it will be sent with Iridium satellites. Only 9 elements can generate Alarm priority records in the current firmware version. These elements are:

- Digital input 1
- Digital input 2
- Digital input 3
- Digital input 4
- Digital output 1
- Digital output 2
- Digital output 3
- Digital output 4
- Speed

Record which will be sent through the Iridium satellite network will be different than the regular record. It will contain: 4 bytes timestamp, 3 bytes longitude, 3 bytes latitude, 1 byte record generation info, 1 byte DIN, DOUT info, 1 byte speed value.

Configuring FMX640

Since 00.02.05 firmware version device supports Iridium devices which can send short burst data (SBD) to the server. This means that some data can be sent from the FM device to the server through satellites. In order to get those records, you have to connect the device to FMX640 COM1 or COM2 port. Select COM1 or COM2 mode Satellite backup mode. Those settings could be found in RS232/RS485 TAB in the configurator. The Baud rate for satellite devices is 19200 bps. Furthermore, [TSM232](#) functionality should be enabled. These settings can be found in the Features TAB in Short burst data settings. See the picture below.

RS232 Settings

COM1 settings

Mode

Silent Mode

Baudrate

Default

COM2 settings

Mode

Silent

Baudrate

Default

You should also configure periodic Alarm record save. If the timeout is set to 0, no periodic records are going to be made. It is not recommended to save records often because of satellite traffic prices. 8 kilobytes data limit counter is set which is reset every month. In addition, you can select which IO element can generate the Alarm priority record. The configurable IO parameters are shown as SBD IO sources in the picture below. In order to do that you need to configure these IO elements as a Panic priority. If properly configured SBD records are generated and sent if there is no GSM connection.

Short burst data settings

TSM232

Save/Send period(min)

SBD IO source

DIN 1	DIN 2
DIN 3	DIN 4
DOUT 1	DOUT 2
DOUT 3	DOUT 4
Speed	

In addition, you can select which IO element can generate Satellite records. In order to do that you need to go to the IO tab select IO record priority Panic what you want to get that data through satellites if there is no GSM connection.

I/O	Digital Input 1		None	Low	High	Panic	0	0	Yes	No	Monitoring	1
LVCAN	Digital Input 2		None	Low	High	Panic	0	0	Yes	No	Monitoring	1
FMS IO	Digital Input 3		None	Low	High	Panic	0	0	Yes	No	Monitoring	1
Manual CAN IO	Digital Input 4		None	Low	High	Panic	0	0	Yes	No	Monitoring	1
Tachograph Data	Analog Input 1	mV	None	Low	High	Panic	0	0	Yes	No	Monitoring	10
RS232 \ RS485	Analog Input 2	mV	None	Low	High	Panic	0	0	Yes	No	Monitoring	10
CAN \ Tachograph	Analog Input 3	mV	None	Low	High	Panic	0	0	Yes	No	Monitoring	10
ContiPressureCheck	Analog Input 4	mV	None	Low	High	Panic	0	0	Yes	No	Monitoring	10
Custom scenarios	Digital Output 1		None	Low	High	Panic	0	0	Yes	No	Monitoring	10
Mobileye	Digital Output 2		None	Low	High	Panic	0	0	Yes	No	Monitoring	10
Freezer IO	Digital Output 3		None	Low	High	Panic	0	0	Yes	No	Monitoring	10
	Digital Output 4		None	Low	High	Panic	0	0	Yes	No	Monitoring	1

In the scenario shown in the above picture when a panic record is made (generated by Digital Input 1 or Digital Input 2) internal 90 seconds timer will start to tick and if that timeout device will not send a record through the GPRS network it will be sent with Iridium satellites. 9 elements can generate Alarm priority records in the current (00.02.05) firmware version. These elements are:

- Digital input 1
- Digital input 2
- Digital input 3
- Digital input 4
- Digital output 1
- Digital output 2
- Digital output 3
- Digital output 4
- Speed

Record which will be sent through the Iridium satellite network will be different than the regular record. It will contain 4 bytes timestamp, 3 bytes longitude, 3 bytes latitude, 1 byte record generation info, 1 byte DIN, DOUT info, 1 byte speed value.

Video Guide

You can find the connection and configuration video guide by clicking on the link below: