

# SATELLINE®-M3-TR4

SATELLINE-M3-TR4 is a UHF data transceiver module in a lightweight single PCB structure. It is designed to be integrated into a host device, for instance for transfer of GNSS correction data in a land surveying rover or RTK base station.

It is equipped with all necessary features; such as 70 MHz tuning range (403...473 MHz) in one hardware, selectable channel width and low power consumption. The radio module configuration can be done with the SATEL SL-commands or SATEL Configuration Manager -software.

SATELLINE-M3-TR4 is compatible with widely used SATELLINE-3AS and -EASy radio modems and also with other manufacturers' radio protocols.

Available as:

VHF
▶ <b>UHF</b>
Licence free
NMS
IP67
Product type:
Classic
Smart
▶ <b>OEM</b>



[www.satel.com](http://www.satel.com)

Setting up a local data transfer network is quick and cost effective with SATEL radio modems. The wireless network is independent and free of operator services. The cost of operation is either free of charge or fixed, depending on the frequency used. SATELLINE radio modems are type-approved in over 50 countries.

SATELLINE radio modems are always on line and provide reliable, real-time data communications over distances ranging from tens or hundreds of metres up to around 80 kilometres. Thanks to a store and forward function, any radio modem in a network can be used as a master station, substation and / or repeater.

SATELLINE radio modem networks are flexible, easy to expand and can cover a wide variety of solutions from simple point-to-point connections to large networks comprising hundreds of modems. Even for expanded networks, only one operating frequency is required.

For the latest information, please visit [www.satel.com](http://www.satel.com)

**SATEL**

SATELLINE-M3-TR4 is a flexible module which makes it a suitable unit for different uses. It is an updated version of M3-TR3 module. It has two modulations more; 8FSK and 16FSK which gives more speed to the radio interface.

Following items in the module can be customized upon request\*:

- Mechanical fastening and its type
- Interface and antenna connector types

SATELLINE-M3-TR4 can be added to existing systems; it is compatible with widely used SATELLINE-3AS and -EASy radio modems and it supports also other manufacturers' radio protocols (such as Pac-Crest-4FSK, -GMSK, -FST).

The channel bandwidths 12.5 and 25 kHz are software selectable and SATELLINE-M3-TR4 has a wide 70 MHz tuning range. End-users can select the operation frequency within the range of 403...473 MHz.

The module can be manufactured with an option for 128-bit encryption on the air interface to ensure the privacy.

*\*For larger orders also shape of the PCB can be customized. Please contact us to learn more about the customization options.*

**Technical Specifications**

SATELLINE-M3-TR4 complies with the following international standards: EN 300 113-2 Annex A, EN 301 489-1,-5, EN 60950-1 and FCC CFR47 Part 90.

Values are subject to change without notice.

TRANCEIVER MODULE				
Frequency	403...473 MHz			
Channel Width	12.5 kHz / 25 kHz (software selectable)			
Tuning Range	70 MHz			
Frequency Control	Synthesized 6.25 kHz tuning resolution			
Modulation	4FSK, 8FSK, 16FSK, GMSK			
Carrier Power	0.1, 0.2, 0.5, 1 W programmable			
Radio Interface Characteristics				
Radio compatibility	Error Correction	Channel Width	Data Speed of Radio Interface	Sensitivity (appr.) BER < 10 E-3
SATEL-4FSK	FEC ON	12.5 kHz	9600 bps	-116 dBm
		25 kHz	19200 bps	-112 dBm
SATEL-8FSK	FEC OFF	12.5 kHz	14400 bps	-103 dBm
		25 kHz	28800 bps	-102 dBm
	FEC ON (2/3 coding)	12.5 kHz	9600 bps	-114 dBm
		25 kHz	19200 bps	-113 dBm
SATEL-16FSK-1	FEC ON (3/4 coding)	12.5 kHz	14400 bps	-107 dBm
		25 kHz	28800 bps	-104 dBm
DATA MODEM				
Electrical Interface	CMOS-UART			
Interface Connector	1.27 mm pitch socket			
Data Speed of Serial Interface	1200 ... 115200 bps			
Air Interface Encryption	AES128			
GENERAL				
Input Voltage	+4 Vdc			
Power Consumption, Typical	0.83 W (Receive) 4.7 W (Transmit 1W)			
Temperature Range	-25 °C ... +55 °C (complies with the standards) -30 °C ... +70 °C functional -40 °C ... +80 °C storage			
Antenna Connector	HIROSE U.FL compatible type (Adapter cables available for TNC, SMA, MCX, MMCX etc.)			
Construction	PCB with RF-shielding			

Distributor:

Manufacturer:

**SATEL**

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