

# SATELLINE®-M3-R1

SATELLINE-M3-R1 is a radio receiver module consisting of a data modem and a UHF radio receiver in a lightweight single PCB structure. The receiver module was designed for integration into the user's data communication equipment.

The M3-R1 can be modified to meet the specific requirements of user applications. For example the customer can select type of data bus and antenna connectors. Also the shape of the PCB can be selected in certain limits.

The channel width (12.5, 20 or 25 kHz) and the operating frequency band within the range 403...470 MHz are freely selectable. The M3-R1, used for data reception only, is compatible with the SATELLINE-3AS radio modem. The applicable serial interfaces are RS-232, LVTTTL or TTL.

Thanks to its small size and low power consumption, the M3-R1 is particularly well suited for land surveying applications. It is compatible with the widely used PCC protocol, which facilitates connections with devices in customer application systems using this protocol.

VHF with NMS

UHF with NMS

UHF

Licence Free

IP67

OEM

- The SATELLINE-M3-T1 and R1 products can be supplied without housing, facilitating installation in the customer's own housing or equipment cabinet.
- Or products can be supplied as pictured in an aluminium box. The type of antenna connector can be chosen by the customer.



SATELLINE-M3-R1/T1  
with aluminium housing



SATELLINE-M3-R1/T1  
without housing

# SATELLINE®-M3-T1

SATELLINE-M3-T1 is a radio transmitter module consisting of a data modem and a UHF radio transmitter in a lightweight single PCB structure. The transmitter module was designed for integration into the user's data communication equipment. The transmitter M3-T1 and the receiver M3-R1 can be used as a pair, or independently, where needed.

Like the M3-R1, the M3-T1 also allows free selection of the channel width and operating frequency. Carrier power level can be set between 100 mW and 1 W. The transmitter module is compatible with the SATELLINE-3AS radio modem, and can be included in user systems based on the PCC protocol.

The M3-T1 and M3-R1 modules can be delivered without cover, for flexible installation into the user's equipment. The modules are configured by using the new PC-Tools software, or by means of the SL commands.

The small, light-weight and economical M3-R1 and M3-T1 modules provide a viable solution in land surveying and a number of other applications where only receiving or transmitting function is needed.

## Technical specifications SATELLINE-M3-R1 and SATELLINE-M3-T1

	RECEIVER (R1)	TRANSMITTER (T1)	NOTE
Frequency Range	403...470 MHz		
Channel Spacing	12.5 kHz / 20 kHz / 25 kHz		
Tuning Range	67 MHz		
Spurious Radiations	< 2 nW		
Frequency Error Tolerance	<3 kHz		
Sensitivity	-113...-110 dBm (BER < 10 E-3)		FEC on
Co-channel Rejection	> 10 dB		FEC on
Adjacent Channel Selectivity	> 45 / 50 dB		FEC on
Intermodulation Attenuation	> 55 dB		FEC on
Blocking	74 dB		FEC on
Spurious Rejection	60 dB		-100 dBm on GPS-frequencies
Spurious Emission	-57/-47 dBm		
Power Consumption, Typical	1.2 W	3 W @ 0.5 W output power 6 W @ 1 W output power	
Power Consumption, Sleep ON	0.24 W		
Type Of Emission		F1D	
Carrier Power		100 mW ... 1 W	
Adjacent Channel Power		According to EN 300 113 and CRF47 part 90	
Carrier Stability		<± 1,5 dB	
<b>DATA MODEM</b>			
Timing	RS-232		
Electrical Interface	Standard RS-232 or CMOS 3.3 V Inputs and Outputs. (RTS, CTS, RX, TX, +VCC, GND)		
Interface Connector	D-15 or customer specified		
Data Speed Of I/O Interface	300-38400 bps		
Data Speed Of Radio Interface	19200 bps (25 kHz channel) 9600 bps (12.5 / 20 kHz channel)		
Data Format Asynchronous	RS-232		
Modulation	4FSK		Optional: GMSK
<b>GENERAL</b>			
Operating Voltage	+7.0...+30 Vdc (+/- 5 %)		
Temperature Range -	-25 °C...+55 °C		
Antenna Connector	50 ohm		Customer specific
Construction	PCB with sheet metal EMI shields		
Size L x W x T	96 mm x 56 mm x 9 mm		
Weight	150 g		
<b>OTHER MEASURES</b>			
ESD-failure Threshold	8 kV contact, 15 kV air discharge		

Values are subject to change without notice.

Manufactured:



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