

## SATELLINE®-3AS NMS

### High-Speed UHF Radio Modem with Advanced Network Management Functions

*SATELLINE-3AS NMS introduces SATEL's new concept of remotely manageable radio modems. In addition to ordinary communication functions it exhibits configuration through radio, efficient diagnostics tools and accumulation of operation statistics data.*

*The management and surveillance of a network of 3AS NMS radio modems is effected through the Master Station connected by a serial interface to a PC with dedicated Network Management software. Long-term logs of the operational data on the SATEL NMS PC facilitate follow-up of trends and regularly occurring events.*

*The Network Management System provides easy configuration of the network and advance indication of faults, for maximum reliability, labour-saving maintenance work and efficient system management.*



A SATELLINE-3AS(d) NMS network consists of remotely adjustable radio modems operated in a polling mode, and controlled through the Master Station by dedicated SATEL NMS software residing in a PC. The user data and NMS information are transferred seamlessly together. The Network Management System is compatible with most user protocols, making the NMS network suitable for a wide range of applications.

A SATELLINE-3AS(d) NMS is a half duplex, high speed radio modem, with up-to-date hardware features and completely renovated software architecture. The frequency

range is 380...470 MHz. Channel spacing 12.5 kHz, 20 kHz or 25 kHz is available, with over-the-air data rates 9 600 bps (12.5 and 20 kHz) and 19 200 bps (25 kHz). The SATEL NMS software provides the user with a powerful graphical tool for designing a radio network, which ensures that the NMS radio modems receive and transfer only desired messages.

The radio modem is compatible with the most widely used serial interfaces RS-232, RS-485 and RS-422. Terminal data rates are selectable between 1 200 bps and 38 400 bps. The carrier power level of the trans-

mitter can be set between the limits 10mW...1 W. A connection range from 1 to 40 kilometres can be reached, depending on topography.

SATEL OY is a Finnish electronics and telecommunications company that specialises in wireless data communications. It designs, manufactures and markets radio modems for data and alarm transfer systems. The main user groups include industrial companies, public organisations and private persons. Today SATEL is one of Europe's leading manufacturers of narrow-band radio modems.

## Reliability and Efficiency

The SATELLINE-3AS NMS radio modems monitor the condition of the radio connection: strength of the signal (RSSI) and the voltage level of the power source as well as the inside temperature of the modem, on a continuous basis. The information is transmitted to the SATEL NMS PC, where it is stored and displayed as logs and trend data.

With the help of the graphical display of the network available at the SATEL NMS PC, the user can conveniently configure, add or remove radio modems without need of a terminal, as well as draw message routes and set repeater links.

The Network Management System offers the user several significant benefits, including

- Enhanced reliability, through advance indication of anticipated faults and failures
- Reduced configuration and maintenance costs, through remote configuration
- Efficient network development tool
- Flexibility in adapting to customer protocols and applications

## Wide Range of Applications

A SATELLINE-3AS NMS network provides a working solution to a large variety of wireless data communications applications. It is particularly well suited for frequently changing networks as well as for applications requiring utmost reliability, thanks to efficient monitoring of the signal condition and flexible use of alternative routing.

Remote, continuous monitoring of the voltage level of the power

source as well as the temperature of the radio modem provide early indi-

cation of and possibility of avoiding anticipated problems.

### Technical specifications • SATELLINE-3AS(d) NMS

The equipment complies with the EN 300 113-1, -2, EN 301 489-1, -5 IEC 60950 and FCC CFR47 part 90 specifications. In addition it meets the EN 300 220-1 -3 with 25 kHz channel spacing.

#### TRANSCEIVER

Frequency range	380 ... 470 MHz
Channel spacing	12.5 / 20 / 25 kHz
Number of channels	160 / 100 / 80
Frequency stability	<±1.5 kHz
Type of emission	F1D
Communication mode	Half-Duplex

#### Transmitter

Carrier power	10 mW ... 1 W / 50 Ω
Carrier power stability	+2 dB / -3 dB
Adjacent channel power	According to EN 300 220-1 / EN 300 113-1
Spurious radiations	According to EN 300 220-1 / EN 300 113-1

#### Receiver

Sensitivity	-115 ... -110 dBm (BER < 10 E-3)
Co-channel rejection	> -12 dB
Adjacent channel selectivity	> 60 dB / > 70 dB
Intermodulation attenuation	> 65 dB
Spurious radiations	< 2 nW

#### DATA MODEM

Interface	One port for data and one for NMS
Interface level	RS-232, RS-422 or RS-485
Interface connector	D15, female
Data speed of RS interface	1200 – 38400 bps
Data speed of radio interface	19200 bps (25 kHz channel spacing) 9600 bps (20 / 12.5 kHz channel spacing)
Data formats	Asynchronous data

#### GENERAL

Operating voltage	+9 ... +30 Vdc
Power consumption	1.4 VA typical (receive) 6.0 VA typical (transmit) 0.05 VA typical (when DTR is "0")
Temperature range	-25 ... +55 °C
Antenna connector	TNC, 50 Ω, female
Construction	Aluminium enclosure
Size H x W x D	137 x 67 x 29 mm
Installation plate	130 x 63 x 1 mm
Weight	250 g

**Values are subject to change without notice.**

#### Manufacturer:



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