

SATELLINE®-3AS and SATELLINE®-3ASd

High-Speed UHF Radio Modem with Developed Data Transfer Characteristics

SATELLINE-3AS is a half-duplex radio modem suitable for a variety of data transfer applications, in particular ones demanding high speed and precision. In addition to the maximum data speed of 19.2 kbps and channel spacing 25 kHz or 12.5 kHz, it offers a number of features and functions. Message Routing is a new feature in SATELLINE-3AS modems, which makes it easier to build up a large radio modem network.

The SATELLINE-3AS software includes a selectable error correction, which improves the functioning of the radio modem under interference.

SATELLINE-3AS is compatible with the interface types RS-232, RS-422 and RS-485. Without changing the hardware all the parameter settings of the radio modem can be modified through the interface from a PC.

The model SATELLINE-3ASd is equipped with a LCD display of its own, which facilitates programming of the radio modem.



Large radio modem network

The amount of data transferred in a local area data communications network exhibits a tendency of continuous growth. On the other hand, the average size of communications systems are increasing. Satel's response to these market tendencies is the SATELLINE-3AS radio modems with Message Routing, a characteristic for networking radio modems within a system.

Message Routing features a versatile radio protocol, which takes care of routing messages across a radio modem network. Communication is completely transparent, which makes Message Routing directly compatible for most user protocols.

Even though the network can cover large areas with multiple hops and repeater stations, only one radio channel is required. Any radio modem in the net-

work can act as a repeater station keeping infrastructure expenses low.

Message Routing has two operating modes to suit the various requirements of different users: Source Mode and Virtual Mode. Virtual Mode has the smallest possible overhead for fast operation identification. Source Mode uses a slightly longer header than Virtual Mode to enable more versatile network handling. In Source Mode it is possible to design failure handling features right in the network, and to use mobile stations.

Support from your radio modem supplier

Satel possesses not only the world's widest selection of UHF and VHF radio modems but also extensive and profound knowledge of their applications.

Starting from the specification of your

problem and the configuration of a wireless data communications solution, the Satel applications experts and your local distributor will help you continually throughout the project.

The installation and start-up of a SATELLINE-3AS based data communication system is easy and straightforward.

Satel Oy is a Finnish electronics and telecommunications company that specializes in wireless data communications. It designs, manufactures and markets radio modems for data communications and alarm transfer systems. The main user groups include industrial companies, public organizations and private persons.

Satel is the leading supplier of radio modems in Europe. The Satel radio modems are type approved in most European countries and elsewhere.

A versatile radio modem with a number of user's choices

The SATELLINE-3AS radio modem consists of a synthesized transceiver and a modem board, packed in a compact aluminium case. The model SATELLINE-3ASd is additionally equipped with a user interface LCD display.

SATELLINE-3AS exhibits a maximum data speed of 19.2 kbps. Two different channel spacing, 25 kHz and 12.5 kHz are available. The corresponding numbers of radio channels are 80 and 160, respectively.

SATELLINE-3AS is compatible with the three most widely used standard data interfaces RS-232, R-422 and RS-485. The radio modem can be connected to a terminal with any one of these interfaces. The data speed is selectable within the limits 300...38 400 bps.

In the SATELLINE-3AS the error rate is minimized by means of advance checking and correction of the data packets. In Forward Error Correction (FEC), the data packets are split in several blocks. The radio modem adds correction information inside the blocks during transmission.

In SATELLINE-3AS the setting of operating parameters and selection of mode and function is performed with a PC through the RS interface. The model SATELLINE-3ASd is equipped with a LCD display and four push buttons. In addition to changing the setups of the radio modem, the display is used for testing operating condition of the radio connection between two stations.

The software of the SATELLINE-3AS resides in a flash memory. The updating of the radio modem programs is entirely software-based. The flash memory is re-programmable through an RS interface.

SATELLINE-3AS can be operated at a voltage range 9...30 V. In practice this means that the radio modem is adaptable to both 12 Vdc and 24 Vdc systems.

Auxiliary functions

With the radio modem in the Test Mode, the state of the radio connection can be tested by means of data packets or the carrier wave.

The Data Transfer mode of the SATELLINE-3AS includes a Command Pro-

gram function in which the radio channel and addresses can be changed on-line from the serial port of the radio data modem. The changes are effected by means of a specific programming package (SL command), which is entered amidst ordinary data.

Technical Specifications • SATELLINE®-3AS and SATELLINE®-3ASd



The equipment complies with the ETS 300 113, ETS 300 683 and IEC 60950 specifications.
In addition it meets to EN 300 220-1 with 25 kHz channel spacing.

TRANSCEIVER

Frequency Range	380...470 MHz
Channel Spacing	12,5 kHz / 25 kHz
Number of Channels	160 / 80
Frequency Stability	< ± 1.5 kHz
Type of Emission	F1D
Communication Mode	Half-Duplex

Transmitter

Carrier Power	10 mW...1 W / 50 ohm
Carrier Power Stability	+ 2 dB / - 3 dB
Adjacent Channel Power	according to EN 300 220-1 / ETS 300 113
Spurious Radiations	according to EN 300 220-1 / ETS 300 113

Receiver

Sensitivity	-116...-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	RS-232 or RS-485, RS-422
Interface Connector	D15, female
Data speed of RS interface	300 - 38400 bps
Data speed of radio interface	19200 bps (25 kHz channel) 9600 bps (12,5 kHz channel)
Data formats	Asynchronous data

GENERAL

Operating voltage	+ 9 ...+ 30 Vdc
Power consumption	1.8 VA typical (Receive) 6.0 VA typical (Transmit) 0.05 VA typical (when DTR is "0")
Temperature range	-25 °C...+55 °C
Antenna Connector	TNC, 50 ohm, 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:

Distributor:

