

# SATELLINE®-3AS Epic

## High-Speed UHF Radio Modem with 10 W Output Power and Diversity Reception

SATEL's new radio modem SATELLINE-3AS Epic includes a high power (10 W) transmitter and two receivers which gives you numerous useful functions. Due to the powerful transmitter the coverage is better than before and the distances between the stations can be remarkably longer. With the Diversity Reception the modem selects the best signal from the ones received in distinction to the different points. Thus we can improve the reliability of the connection where there is a lot of fadings caused by reflections. These new characteristics, 10 W Output Power and Diversity Reception, make it possible to more than double the distances between the modems compared to the existing SATELLINE-3AS radio modems.

SATELLINE-3AS Epic 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 Epic is equipped with a Liquid Crystal Display (LCD) of its own, which facilitates programming of the radio modem.



### Diversity Reception

In radio systems it is not necessary to have a direct visual connection between a master station and a mobile station. A radio signal reflects from buildings and terrain e.g. such as hills. The fading occurs when a radio signal reflects from several objects to an antenna of a receiver and arrives into a receiver at different times. The signals at the receiving antenna are in different phases so in the worst case two equally strong signals being in opposite phases cancel each other out and thus will cause the fading. The dips of the sum signal appear with half wave intervals. In connection, which are only based on reflections, the reliability of the reception is depending on the position of the receiving antenna even ones fairly

close to a base station.

SATELLINE-3AS Epic is equipped with two separate receivers. By setting two antennas for the diversity reception at least 3/4 x wavelength apart from each other the message can always be received by one of the receivers if not both. When installing the antennas in this way they are rarely at the same time in fading dips.

### 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 Epic 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 Epic radio modem consists of a synthesized transceiver and a modem board, packed in a compact aluminum case. The modem SATELLINE-3ASd Epic is additionally equipped with a user interface Liquid Crystal Display (LDC).

SATELLINE-3AS Epic 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 Epic is compatible with the three most widely used standard data interfaces RS-232, RS-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 Epic 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 Epic the setting of operating parameters and selection of mode and function is performed with a PC through the RS interface. The model SATELLINE-3ASd Epic is equipped with a Liquid Crystal Display (LCD) 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 Epic 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 Epic can be opera-

ted at a voltage range 11.8 ... 30 V. In practice this means that the radio modem is adaptable to both 12 Vdc and 24 Vdc systems.

## Continuous transmission

In the standard unit the cooler of the SATELLINE-3AS Epic is designed for the transmit and receive in the relation of 10 / 90. The maximum duration of a continuous transmission is 1 min. SATELLINE-3AS Epic with the heat sink is the appropriate choice when continuous transmission is required. With the heat

sink the size of SATELLINE-3AS Epic is bigger than that of the standard unit.

## Message Routing

SATELLINE-3AS Epic uses an embedded Message Routing software developed by SATEL Oy. Message Routing features a versatile radio protocol, which takes care of routing messages across a radio modem network automatically after proper settings made. Communication is completely transparent, which makes Message Routing directly compatible for most user protocols.

### Technical Specifications • SATELLINE®-3AS Epic



The equipment complies with the ETS 300 113, ETS 300 279 and IEC 60950 specifications.

#### RECEIVER

Frequency Range	400 ... 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	1 ... 10 W / 50 ohm
Carrier Power Stability	+2 dB / -3 dB
Adjacent Channel Power	According to ETS 300 113
Spurious Radiations	According to ETS 300 113

#### Receivers

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
Diversity Scheme	Space diversity, selection combining

#### 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

Operation Voltage	+11.8 ... +30 Vdc
Power Consumption	3 VA typical (Receive) 25 VA typical (Transmit) 0.05 VA typical (when DTR is "0")
Temperature Range	-25 °C ... +55 °C
Antenna Connectors	TNC, 50 ohm, female
Construction	Aluminium Enclosure
Size H x W x D	151 x 123 x 31 mm
Weight	550 g

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

**Manufacturer:**

**Distributor:**



Satel Oy, Meriniitynkatu 17, P.O. Box 142, 24101 Salo, FINLAND  
Tel. +358 2 777 7800, fax +358 2 777 7810, E-mail info@satel.fi  
www.satel.fi