

# SATELLINE® -3AS(d) Epic

## Wireless World – Local Solution

The SATELLINE-3AS Epic exhibits a high power (10 W) transmitter and two receivers operated in a Diversity Reception mode. These features are particularly useful in demanding network conditions. The Diversity Reception improves the reliability of the connection where there is a lot of signal fading caused by reflections. The high output power and the Diversity Reception make it possible to more than double the connection distances in comparison to ordinary SATELLINE-3AS radio modems with 1 W output power.

The SATELLINE-3AS Epic is compatible with the interface types RS-232, RS-422 and RS-485, and is configured through the interface from a PC. The model SATELLINE-3ASd Epic is equipped with a Liquid Crystal Display (LCD) of its own, which facilitates on-site programming of the radio modem.

VHF with NMS

UHF with NMS

UHF

Licence Free

IP67

OEM



With SATEL radio modems, setting up a local data transfer network is quick and cost effective. Your 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. For the latest information, please visit our website [www.satel.com](http://www.satel.com).

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.

All SATELLINE radio data modems fulfil RoHS requirements (EU directives 2002/95/EC and 2002/96/EU) as of 1 July 2006.



# Versatility and functionality

## Diversity Reception

Radio signals are reflected from buildings and terrain obstacles such as hills. Fading occurs when a signal reflected from several objects is caught by the antenna of a radio modem and reaches the 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 causing signal fading. The 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.

## Dependable data transfer

In the SATELLINE-3AS Epic the error rate is minimised 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.

The standard SATELLINE-3AS Epic is designed for transmission and reception in the ratio 10/90. The maximum duration of a continuous transmission is 50 s. If continuous transmission is required, the SATELLINE-3AS Epic with a heat sink is the appropriate choice. The SATELLINE-3AS Epic features embedded Message Routing software, which ensures that messages are routed automatically across a radio modem network after proper settings have been made. Communication is completely transparent, which makes Message Routing directly compatible with most user protocols. The SATELLINE-3AS Epic is also fully compatible with the SATELLINE-3AS, which can be used for shorter-range connections in the same network.

## Expert's help always at hand

With over 20 years of experience, SATEL Oy has grown into one of the leading radio modem manufacturers in the world. As a result of our persistent and innovative work in both product design and international marketing, we now offer an extremely large selection of radio modems, and operate through an extensive and skilled distributor network all over the world.

SATEL Oy is an ISO 9001:2000 certified company. The quality of our operations and products is kept as flawless and at as high level as possible.

We have also accumulated a considerable amount of know-how in different radio modem applications. So, whatever your application is, do not hesitate to ask for our expert help whenever you need it. SATELLINE radio modems have been used, for example, at airports, waterworks and electricity plants for various monitoring and control applications, as well as to set up location data-based fleet management systems in cities.

SATEL Oy has prepared an extensive set of Application Notes describing the different ways of utilising SATEL radio modems in various applications. For further information about our products and their applications, please visit our home page [www.satel.com](http://www.satel.com) or contact your local dealer.

Manufactured:



SATEL Oy,  
Meriniitynkatu 17, P.O. Box 142,  
FI-24101 Salo, FINLAND

Tel. +358 2 777 7800 info@satel.com  
Fax +358 2 777 7810 www.satel.com

## Technical Specifications SATELLINE-3AS(d) Epic

The equipment complies with the EN 300 113-1, ETS 300 279, IEC 60950 and FCC CFR47 section 90 specifications.

### TRANSCEIVER

|                     |                                  |
|---------------------|----------------------------------|
| Frequency Range     | 360...470 MHz                    |
| Channel Spacing     | 12.5 kHz / 20 kHz / 25 kHz       |
| Number of Channels  | 160 / 80 (or 2 x 160 / 80) *Note |
| Frequency Stability | < ± 1.5 kHz                      |
| Type of Emission    | F1D                              |
| Communication Mode  | Half-Duplex                      |

### TRANSMITTER

|                         |                           |
|-------------------------|---------------------------|
| Carrier Power           | 1, 2, 5 or 10 W / 50 ohm  |
| Carrier Power Stability | + 2 dB / - 3 dB           |
| Adjacent Channel Power  | according to EN 300 113-1 |
| Spurious Radiations     | according to EN 300 113-1 |

### RECEIVER

|                              |                                      |
|------------------------------|--------------------------------------|
| Sensitivity                  | < -115dBm (BER < 10 E-3)             |
| Co-channel rejection         | > - 12 dB                            |
| Adjacent channel selectivity | > 60 dB @ 12.5 > 70 dB @ 25 kHz      |
| Intermodulation attenuation  | > 65 dB                              |
| Spurious radiation           | < 2 nW                               |
| Diversity Scheme             | Space diversity, selection combining |

### DATA MODEM

|                               |  |
|-------------------------------|--|
| Interface                     | RS-232, RS-485 or RS-422                   |
| Interface Connector           | D15, female                                |
| Data speed of RS interface    | 300 - 38400 bps                            |
| Data speed of radio interface | 19200 bps @ 25 kHz, 9600 bps 12.5 @ 20 kHz |
| Data format                   | Asynchronous RS-232, RS-422, RS-485        |

### GENERAL

|                               |  |
|-------------------------------|--|
| Operating voltage             | + 11.8 ...+ 30 Vdc   |
| Power consumption             | 3 VA typical (Receive)<br>30 VA typical (Transmit)<br>0.1 VA typical (when DTR is "0") |
| Temperature range - Operating | -25 °C...+55 °C (tests acc. to ETSI standards)   |
| - Storage                     | -40 °C ...+75 °C (absolute minimum / maximum)<br>-40 °C ... +85 °C                     |
| Antenna Connector             | TNC, 50 ohm, female  |
| Construction                  | Aluminium enclosure  |
| Size H x W x D                | 154 x 123 x 29 mm without cooling part<br>154 x 151 x 77 mm with cooling part          |
| Weight                        | 580 g without cooling part<br>1520 g with cooling part                                 |
| MTBF                          | 60 years   |

Values are subject to change without notice.

\*Note: The Dual Band version operates on two separate 2 MHz frequency band.

Distributor: