SATELLINE®-3AS 869 MHz

New Frequency Version of Satelline-3AS

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 at channel spacing 25 kHz SATELLINE-3AS offers a number of features and functions. 869 MHz is a new frequency version of SATELLINE-3AS for narrow band telemetry, alarms, data etc. applications.

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.

New Frequency Band

According to the recommendation CEPT/ERC/REC 70-03 new common spectrum allocations for Short Range Devices (SRD) have been taken into use in the countries within the CEPT (The European Conference of Postal and Telecommunications Administrations). The 868 ... 870 MHz band is divided into subbands according to transmit power (max 0.5 W) and duty cycle allowed for transmitter.

Satel's newest version of SATELLINE-3AS uses the 869.4 ... 869.65 MHz frequency band. This band has 10 separate 25 kHz channels for a maximum power of 0.5 W ERP* and 10 % of transmitter duty cycle. Transmitter duty cycle and the maximum constant transmission time (max 36 seconds) must be controlled by data terminal equipment. Other features of the SATELLINE-3AS 869 MHz version are equivalent with the older 450 MHz version. The receiver of the SATELLINE-3AS/869 has been designed to meet the requirements of receiver class 1 according to EN 300 220-1 standard. High performance of the receiver enables it to be used in an environment with potentially interfering transmitters.

**ERP means antennas effective radiated power relative to a half-wave dipole in a certain direction. 0.5 W ERP is achieved with 0.5 W fed to a dipole antenna, or for example 0.25 W fed to an antenna with 3 dBd (5,2 dBi) gain.*

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. Within the new frequency range 869 MHz there is 10 separate 25 kHz channels. SATELLINE-3AS 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 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.

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 of 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.

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

Note! Propagation of radio signals at higher frequencies differs from the propagation at lower frequencies. The rule of thumb is that when you double the frequency you cut the communication distance in half. So compared to the 450 MHz version the maximum communication distance is half when SATELLINE-3AS 869 MHz version is used. By using properly designed antenna installations or repeater stations required communication distances can be achieved.

Technical Specifications • SATELLINE®-3AS 869 MHz

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.

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TRANSCEIVER	
Frequency Range	869,400 ... 869,650 MHz
Channel Spacing	25 kHz
Number of Channels	10
Frequency Stability	< ± 2,5 kHz
Type of Emission	F1D
Communication Mode	Half-Duplex
TRANSMITTER	
Carrier Power	10 mW ... 500 mW / 50 ohm
Carrier Power Stability	+ 2 dB / -3 dB
Adjacent Channel Power	According to EN 300 220-1
Spurious Radiations	According to EN 300 220-1
RECEIVER	
Classification	Class 1, acc. to EN 300 220-1
Sensitivity	< -108 dBm (BER < 10-3)
Co-channel Rejection	> -12 dB
Adjacent Channel Selectivity	> 60 dB
Intermodulation Attenuation	> 60 dB
Spurious Radiations	< 2 nW
DATE 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
Data Formats	Asynchronous data
GENERAL	
Operating Voltage	+ 9 ... + 30 Vdc
Power Consumption	1.7 VA typical (Receive) 4.0 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:

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