

# SATELLINE®-1870

## Wireless World – Local Solution

The SATELLINE-1870 uses the pan-European licence-free 868...870 MHz frequency band. Thanks to its small size, multiple functions and low carrier power (max 100 mW), the SATELLINE-1870 is particularly well suited for internal applications within industrial complexes.

The 868...870 MHz band is divided into sub-bands according to the allowable output power and transmitter duty cycle. When changing the frequency, the SATELLINE-1870 automatically sets the output power according to the regulations. Maximum communication distances of the order of 5 km are reached under favourable conditions.

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.



# Low power, high functionality

The SATELLINE-1870 was designed for the transfer of data and alarm messages in a short-range network covering, for example, internal connections in an industrial or office complex. With its small size and low output power of maximum 100 mW it meets both the technical and economic requirements set on wireless communications in this kind of application environment.

In case it is necessary to extend the coverage of the radio modem network, SATELLINE-1870 modems can be used as repeater stations. By using the Store and Forward function, the radio modem buffers the received data and transmits it further using the same radio frequency as in reception. The settings of the radio modem can be changed from an external terminal in the programming mode or through auxiliary SL-commands during normal operation.

To avoid carrier frequency drift, a digital Adaptive Frequency Correction (AFC) function has been included in the SATELLINE-1870. It helps to maintain maximum sensitivity of reception, to ensure high reliability of data transfer.

## 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 9001:2008 and ISO 14001:2004 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.

### Technical Specifications SATELLINE-1870

The equipment complies with the EN 300 220-1, EN 301 489-1 and EN 60950-1 specifications.

#### TRANSCEIVER

|                     |                 |
|---------------------|-----------------|
| Frequency Range     | 868 ... 870 MHz |
| Channel Spacing     | 25 kHz          |
| Number of Channels  | 74              |
| Frequency Stability | ± 2.5 kHz       |
| Type of Emission    | F1D             |
| Communication Mode  | Half-Duplex     |

#### TRANSMITTER

|                         |                                |
|-------------------------|--------------------------------|
| Carrier Power           | 5, 10, 25, 50, 100 mW / 50 ohm |
| Carrier Power Stability | + 1 dB / - 1 dB                |
| Adjacent Channel Power  | < -38 dBm                      |

#### RECEIVER

|                              |                           |
|------------------------------|---------------------------|
| Sensitivity                  | < -108 dBm (BER < 10 E-3) |
| Co-channel rejection         | > - 10 dB                 |
| Adjacent channel selectivity | > 45 dB                   |
| Spurious radiation           | < 2 nW                    |

#### DATA MODEM

|                               |                        |
|-------------------------------|------------------------|
| Interface                     | RS-232                 |
| Interface Connector           | DIN41650-16 pin (male) |
| Data speed of RS interface    | 300 - 19200 bps        |
| Data speed of radio interface | 9600 bps               |
| Data format                   | Asynchronous RS-232    |

#### GENERAL

|                   |                  |
|-------------------|------------------|
| Operating voltage | + 8 ... + 30 Vdc |
| Power consumption |                  |

| Input voltage (V) | Operating mode (typical values) |   |        |      |                 | Standby (uA) |
|-------------------|---------------------------------|---|--------|------|-----------------|--------------|
|                   | Receive (mA)                    | Transmit on different power levels (mA) |        |      | Power save (mA) |              |
|                   |                                 | 500 mW                                  | 100 mW | 5 mW |                 |              |
| 8                 | 136                             | 444                                     | 244    | 168  | 25              | 55           |
| 12                | 89                              | 296                                     | 166    | 105  | 19              | 62           |
| 30                | 40                              | 128                                     | 76     | 47   | 13              | 1717         |

|                               |  |
|-------------------------------|--|
| Temperature range - Operating | -25 °C...+55 °C (tests acc. to ETSI standards) |
|                               | -40 °C ... +75 °C (absolute minimum / maximum) |

|           |                   |
|-----------|-------------------|
| - Storage | -40 °C ... +85 °C |
|-----------|-------------------|

|                   |                     |
|-------------------|---------------------|
| Antenna Connector | SMA, 50 ohm, female |
|-------------------|---------------------|

|              |                     |
|--------------|---------------------|
| Construction | Aluminium enclosure |
|--------------|---------------------|

|                |                  |
|----------------|------------------|
| Size H x W x D | 57 x 125 x 16 mm |
|----------------|------------------|

|                    |                 |
|--------------------|-----------------|
| Installation plate | 130 x 63 x 1 mm |
|--------------------|-----------------|

|        |       |
|--------|-------|
| Weight | 125 g |
|--------|-------|

Values are subject to change without notice.

Manufactured:



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Distributor: