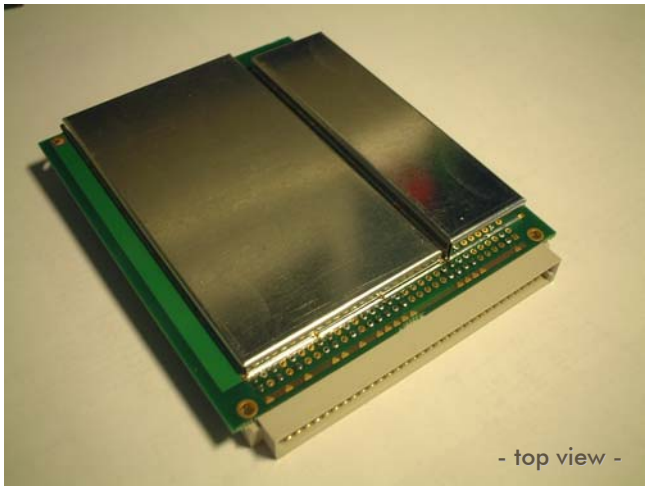
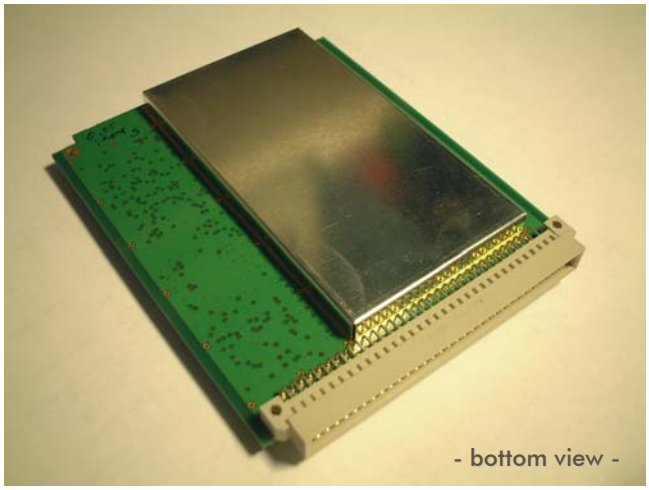
SATELLINE-3AS/TC

Radio Data Modem Module


- top view -


- bottom view -

General Features

SATELLINE-3AS/TC is a member of the versatile SATELLINE-3AS radio modem family. Consisting of a data modem and a UHF radio transceiver, it provides a wireless, transparent and half-duplex serial data link with other similar radio modules or compatible SATELLINE radio modems manufactured by SATEL Oy.

SATELLINE-3AS/TC is designed for integration into the terminal equipment. The component blocks are shielded by metal plates, but the housing and the related mechanics are supplied by the client. Also the EMC characteristics of the radio module are completed for the combined equipment.

A number of new SL commands has been implemented to the modem controller software for full control of the features of SATELLINE-3AS/TC in integrated use.

The implementation of SATELLINE-3AS/TC is based on the widely used SATELLINE-3AS radio modem – the radio communication and the user interface are similar. The main differences to SATELLINE-3AS are:

1. SATELLINE-3AS/TC is delivered without the housing – only the two PCBs (the logic board and the RF board shielded as a one card) are supplied by SATEL
2. Antenna connector is a female MMCX connector.
3. The antenna circuitry of the radio module includes an additional filter on GPS frequencies in order to avoid any interference to the GPS receivers.
4. The main header is a 32-pin Eurocard connector type B.
5. The operating voltage must be 6.5V…18VDC.

SATELLINE-3AS/TC has two pins in the header connector for controlling the external LED indicators, the one for the external green LED and the other for the red LED. By different combination of the LED status, the user of the application device can monitor the status of the SATELLINE-3AS/TC radio module.

SATEL Oy, P.O.Box 142, FIN-24101 Salo, Finland
Street: Meriniitynkatu 17, FIN-24100 Salo, Finland
Tel: +358 2 777 7800, Fax: +358 2 777 7810, E-mail: info@satel.fi
www.satel.fi

Technical Specifications

SATELLINE-3AS/TC complies with the following international standards:

- EN 300 113 (radio requirements)
- EN 301 489-1, -5 (EMC requirements, applicable parts)
- EN 60950 (Electrical safety requirements, applicable parts)

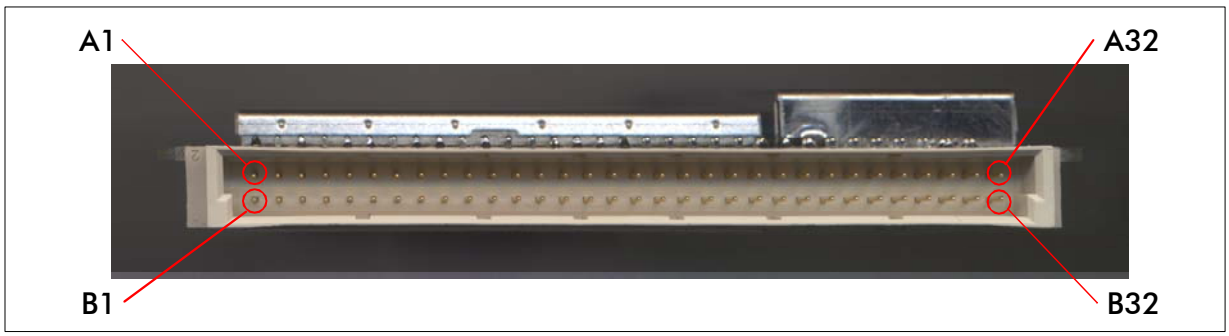
Note: The client is responsible for the final level of EMC and electrical safety characteristics in their product assembly.

RADIO TRANSCEIVER	
Frequency Range	380...470 MHz
Channel Spacing	12.5 kHz/25 kHz
Number of Channels	160 / 80 or (2 x 160 / 2 x 80)
Frequency Stability	< ± 1.5 kHz
Type of Emission	F1D
Communication Mode	Half-Duplex
RADIO TRANSMITTER	
Carrier Power	10 mW...1 W / 50 Ω
Carrier Power Stability	+ 2 dB / - 3 dB
Adjacent Channel Power	according to EN 300 113
Spurious Radiations	according to EN 300 113
RADIO RECEIVER	
Sensitivity	- 116... –110 dBm (BER < 10 E-3) depending on Receiver settings
Common Channel Rejection	> - 12 dB
Adjacent Channel Selectivity	> 60 dB @ 12,5 kHz, > 70 dB @ 25 kHz
Intermodulation Attenuation	> 65 dB
Spurious Radiations	< 2 nW
MODEM	
Interface	RS-232
Interface Connector	32-pin Eurocard connector type B
Data Speed of Serial Interface	1200 – 38400 bps
Data Speed of Radio Interface	19200 bps (25 kHz channel) / 9600 bps (12.5 kHz channel)
Data format	Asynchronous RS-232
GENERAL	
Operating Voltage	+6.0...+14.0 V_{DC}
Power Consumption (average)	1.7 VA (Receive) 5.5 VA (Transmit) 0.05 VA (in *Standby Mode*)
Operating Temperature Range	-25 °C...+55 °C
Vibration	Not specifed
Antenna Connector	MMCX, 50 Ω, female
Housing	SATELLINE-3AS/TC is delivered without the housing. The component blocks on the PCB are covered by metal shields
Size H x W x D	13 x 100 x 123.5 mm
Weight	140 g

SATEL Oy, P.O.Box 142, FIN-24101 Salo, Finland
Street: Meriniitynkatu 17, FIN-24100 Salo, Finland
Tel: +358 2 777 7800, Fax: +358 2 777 7810, E-mail: info@satel.fi
www.satel.fi

Header Connector Pinout

Pin#	Signal Name	In/Out	Level	Description
A1	GND	-	GND	
A3	PWR_ON	In	0..+14VDC	Radio modem On/Off control (OFF = 0...+0.7VDC, ON = higher than +2.0VDC).
A6	PROG	In	0..+14VDC	Must be normally UNCONNECTED or higher than +3.0 VDC Connect to ground in order to: a) access the setup menu b) update the program flash
A14	PWR_LED	Out	High Z / +5V	POWER LED anode
A15	RD_LED	Out	High Z / +5V	RD LED anode
A17	GND	-	GND	
A23	PWR_IN	In	+ 6.0..14VDC	Power Supply
A24	PWR_IN	In	+ 6.0..14VDC	Power Supply
A25	FLASH	In	0..+14VDC	Must be normally UNCONNECTED. Connected to PWR_IN in order to enter the FLASH bootmode programming.
A31	RSSI	Out	0..+4.5VDC	RSSI analog output (option)
B1	GND	-	GND	
B3	TX_A	In	RS-232	Data **FROM** terminal unit **TO** radio modem Port 1
B5	RTS_A	In	RS-232	Request To Send **FROM** terminal unit. Radio modem ignores this.
B8	RX_A	Out	RS-232	Data **TO** terminal unit **FROM** radiomodem Port 1
B9	CTS_A	Out	RS-232	Clear To Send. This signal indicates that radiomodem is ready to receive data FROM terminal unit.
B11	TX_B	In	RS-232	Data FROM Hiper TO radio modem Port 2
B13	RTS_B	In	RS-232	Request To Send **FROM** terminal unit. Radio modem ignores this.
B16	RX_B	Out	RS-232	Data TO terminal unit FROM radio modem Port 2
B17	CTS_B	Out	RS-232	Clear To Send. This signal indicates that radiomodem is ready to receive data FROM terminal unit.
B24	GND	-	GND	



Outside view of the Euro connector

SATEL Oy, P.O.Box 142, FIN-24101 Salo, Finland
Street: Meriniitynkatu 17, FIN-24100 Salo, Finland
Tel: +358 2 777 7800, Fax: +358 2 777 7810, E-mail: info@satel.fi
www.satel.fi