



Features

- LonWorks based RF Transceiver
- Low power RF
- License exempt operation on
 - 418MHz to MPT1340
 - 433MHz to ETC300-220
 - 914MHz FCC, tba
- 19.5 kilobits per second plus, half duplex network bit rate
- Range –
 - 30 metre typical range within buildings, 120 metres open ground at 418 MHz;
 - 100 metre typical range within buildings, 200 metres open ground at 433 MHz.
- Sub-miniature compact form factor allows easy integration into OEM products

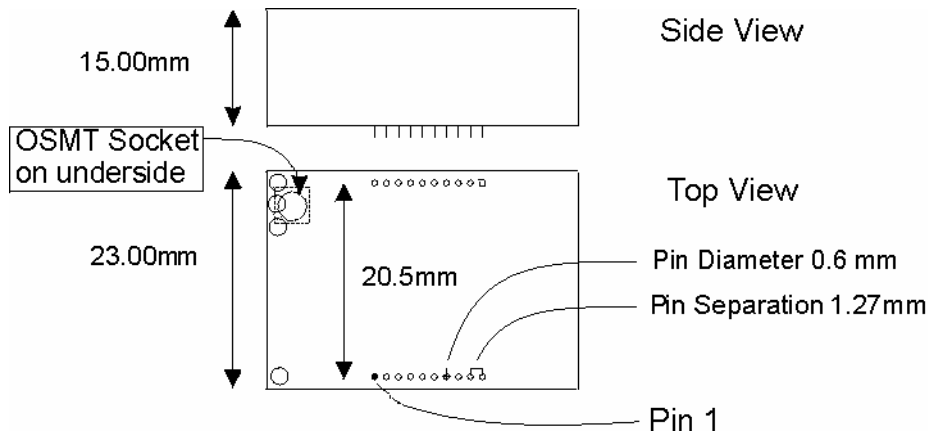


Description

The CNSEMRFTSCVR418/433 provides a simple, cost-effective way of adding LONWORKS technology to any control system where local conditions make an RF solution ideal for network communications. The embedded module easily interfaces with a 3150 Neuron and only requires the addition of a suitable aerial and user application interface to provide a complete system. The 22-pin I/O connector provides access to Power, Ground, and Reset that connects to the comms port of the 3150. The unit itself consists of the UHF transceiver, oscillator circuit and a DSP chip to provide robust and reliable operation over the RF medium. In addition, an under-voltage sensing reset circuit, which can be used to protect the long term stability of the EEPROM writes in the 3150 is also included.



Hardware Overview



22-Pin Connector Pin-out

1 N/C, Not Connected	12 RS, Reset input/output
2 N/C “	13 N/C, Not Connected
3 N/C “	14 N/C “
4 N/C “	15 N/C “
5 N/C “	16 N/C “
6 N/C “	17 N/C “
7 N/C “	18 N/C “
8 RX Led, Receive LED output	19 GND, Ground
9 TXLed, Transmit LED output	20 VCC, +5v Input
10 CP1, Neuron comms port 1	21 CP3, Neuron comms port 3
11 CP0, Neuron comms port 0	22 CP2, Neuron comms port 2

Antenna

An OSMT socket is provided for connection to an antenna. Helical stub or whip antennas are suitable types. A whip antenna can be formed from a straight length of wire 16.5cm long for 418MHz, and 15.5cm long for 433MHz. A helical stub antenna can be formed from 0.5mm enamelled copper wire, close wound on a 3.2mm diameter former; 26 turns for 418MHz, and 24 turns for 433MHz. It is preferable to source these items encapsulated in a plastic or rubber sheath to prevent damage to the RF module during EMC susceptibility testing.



RF Type Approval

The RF module used in these products is approved to MPT1340 for use in the UK and ETS-300-220 for use in Europe. In order to maintain conformance the following rules must be applied:

1. The transmitting antenna must be one of 3 types; whip, helical stub, or loop. Antenna structures, which yield ERP gain, are not permitted.
2. The module must be directly and permanently connected to the transmitting antenna without the use of an external feeder. Increasing the RF power by any means is not permitted.
3. The module must not be modified nor used outside its specification limits.
4. The equipment in which the module is used must carry an inspection mark located on the outside of the equipment and be clearly visible. The minimum dimensions of the inspection mark shall be 10x15mm and the letter and figure height must be no less than 2mm. The wording shall read:
 "MPT 1340 W.T. LICENSE EXEMPT"
5. Products intended for UK commercial application must be notified to the Radiocommunications Agency (RA) on form RA249 (Cat I), obtainable from the RA's library service, Tel 0171 211 0502/0505. For Non UK applications you should contact your local Radio Authority and notify them of your intention to use these products.

Specifications

RF Module	418MHz license exempt MPT1340 single channel FM module or 433MHz license exempt ETS300-220 single channel FM module
Network Bit Rate	19.5Kb/s +
Aerial	OSMT socket provided for separate connection to a helical stub or whip aerial.
Operating Input Voltage	+5vDC \pm 5% or 3.3v \pm 5%
Operating Input Current	23mA – Transmit @ 5v 12mA – Transmit @ 3.3v 28mA – Receive @ 5V 23mA – Receive @ 3.3v



Sleep Mode	10uA
I/O Connectors	2 x 11 pins on 1.27mm centres
Plugs	2 x 11 pin socket – Samtech SLM-111-01-G-S
Operating Temperature	-10°C to + 55°C
Extended Operating Temperature	-20°C to + 70°C (Reduced specification)
Dimensions	33mm x 23mm x 15mm

Ordering Information

CNSEMRFTSCVR418	RF Transceiver with 418MHz-radio module fitted
CNSEMRFTSCVR433	RF Transceiver with 433MHz-radio module fitted
CNSEMRFTSCVR914	RF Transceiver with 914MHz-radio module fitted

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