

# 905U-D Spread Spectrum Radio Modem Specifications

## Power Supply

- The 905U-D module may be powered from either a 10 - 30 VDC or 13 - 24 VAC supply
- Normal current drain 70mA (@12VDC) or 50mA (@24VDC)
- Current when transmitting 350mA (@ 12V), 250mA (@ 24V).
- Low power mode, normal current drain is 20mA (@ 12VDC), 15mA (@24VDC)

## General

- Environmental -40 to 60 degC
- 0 to 99 %RH
- EMC Compliant FCC Part 15 Class A
- Housing, extruded aluminium case 4.5" x 7.3" x 1.2" (114 x 185 x 30 mm), DIN rail mounting, removable terminal blocks for ease of module replacement, terminals suitable for 12 gauge (2.5sqmm) conductors.
- LED indication for unit OK, radio TX and RX, serial TX and RX, DCD (comms OK).
- CSA Class 1 Div 2

## Serial Port

- Standard data rates 1200 to 115200 baud.
- RS232 and RS485 standard interface connections provided, each connected to the same serial port. Serial interfaces are asynchronous non-return-zero (NRZ) format.
- The following characters are supported (selectable) - 7 data bits, even or odd parity, 1 start bit, 1 or 2 stop bits; 7 data bits, no parity, 1 start bit, 2 stop bits; 8 data bits, even or odd or no parity, 1 start bit, 1 stop bit
- RS232 connection provides full duplex operation as a DCE device with RTS/CTS hardware handshaking- standard D9 connector.
- RS485 connection provides half duplex operation for twisted-pair multidrop networks.
- Terminal connectors provided for RS485.

## Radio Transceiver

- Frequency Hopping Spread Spectrum Transceiver
- Frequency USA/Canada 902 - 928 MHz, Australia 915 - 928 MHz, NZ 921 - 928MHz
- Frequency hopping, hopping sequence 8 x 50
- Transmit Power 1W
- RSSI -60 to -120 dBm
- Expected line-of-sight range, depending on local conditions
- USA/Canada 20+ miles, Australia/NZ 20+ km
- RF Data Transmission Rate - 19200 baud, 57600 baud, 115200 baud
- Range may be extended by:-
  - up to five intermediate repeaters for controlled mode
  - unlimited repeaters for transparent mode
- Conforms to FCC Part 15 Class A and FCC Part 15.247
- Antenna connection is SMA coaxial

## Data Transmission

- **Transparent mode:** Data is transmitted as a maximum 530 byte packet with a system address.  
Data transmission begins as soon as serial data is received  
For RS232, DCD signal is always high, and CTS is high while there is space in the input buffer.  
All modules, with correct system address, which receive the data packets, output the data without error checking.
- **Controlled mode:** Data is transmitted in packets with a system address, source address, destination address, up to five intermediate repeater addresses, and a 16 bit CRC error check.  
If the packet is received with a correct error check, only the destination module will output the data and will also return an ACK transmission.  
If the source module does not receive the ACK, it will retry a further four times before resetting the DCD output.  
For RS232, the CTS signal is high if there is room in the input buffer.  
Destination and repeater addresses may be configured by host using Hayes AT commands.