technical datasheet

WMO-900S Series

High Speed Industrial Radio Modems

- Provides wireless connectivity for serial devices
- Licence-free 900MHz radio band
- Single hop distance 20 miles line-of-sight
- Repeater function for longer distances
- Radio data rate up to 115,200 bits/sec
- RS232 / RS485 up to 115,200 bits/sec

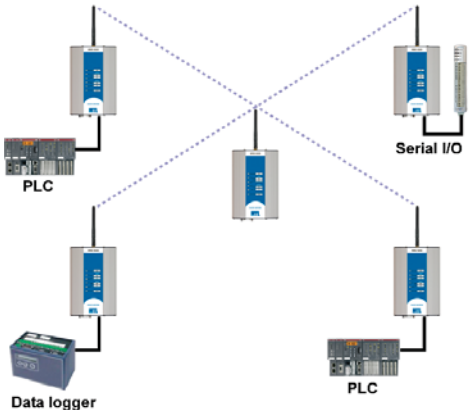
Product Overview

The MTL WMO-900S radio modem provides RS232 or RS485 connections by radio. It is a low cost wireless alternative for linking PLC's, data loggers, supervisory computers and intelligent transducers.

The WMO-900S has been designed to be easy to use and simple to install. It uses a 900MHz spread spectrum radio which does not require a radio licence in many countries. The module is fully integrated with radio, power supply, serial ports and microprocessor controller housed in a strong industrial aluminium case.

Features

- Forward error correction, CRC error checking with ARQ
- Turn-around time 5 msec
- Radio signal strength and BER indication
- Transparent broadcast mode, peer to peer
- Configurable on-line by Hayes AT commands or Windows configuration software
- Addressed mode, multipoint and point-to-point
- Fast point-to-point mode
- Low power mode with DTR control
- On-line "dial-up" control using AT commands
- Repeater functionality in all units
- Repeater routing via address selection
- Security against cross-talk between systems



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SPECIFICATION

RADIO TRANSCEIVER

Frequency hopping, spread spectrum transceiver

Frequency

USA/Canada	902 - 928MHz
Australia	915 - 928MHz
NZ	921 - 928MHz

Hop sequence
16 x 50

Transmit Power
1W

RSSI
-60 to -120dBm

Expected line-of-sight range (depends on local conditions)

USA/Canada	32km+ (20 miles+)
Australia/NZ	20km+ (12 miles+)

RF Data Transmission Rate
19,200 baud, 57,600 baud, 115,200 baud (selectable)

Antenna connection
SMA coaxial

SERIAL PORT

Data rates
1200 to 115200 baud
RS232 and RS485 standard interface connections provided, each connected to the same serial port

Format
Asynchronous, non-return-zero (NRZ)

Characters supported
7 or 8 data bits, even/odd/no parity, 1 or 2 stop bits

RS232 connection
Full duplex operation as a DCE device with RTS/CTS hardware handshaking- standard D9 connector.

RS485 connection
Half duplex operation for twisted-pair multidrop networks.

Input and output buffers
2 kbyte

DATA TRANSMISSION

Transparent mode
Data is transmitted with a system and group address. Data transmission begins as serial data is received – maximum packet size is 530 bytes. All modules, with correct system address, which receive the data packets, outputs the data - error checking is optional.

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. DCD provides communications status.
Auto-connect and dial-up-control modes are available.

Flow control
CTS/RTS provided based on input buffer availability.

CONFIGURATION AND DIAGNOSTICS

Configuration by freeware software package or by Hayes AT commands. Radio noise, signal strength and bit error rate (BER) diagnostics included. Radio signal strength value available on-line to host device.

POWER SUPPLY

Input
10 - 30V DC or 10 - 24 V AC

Normal current drain
70mA @ 12V DC or 50mA @ 24V DC

Current (when transmitting)
350mA @ 12V or 250mA @ 24V DC

Low power mode current drain
20mA @ 12V DC or 15mA @ 24V DC

GENERAL

Environmental
Temperature: -40 to +70°C
Humidity: 0 – 99% RH non-condensing

EMC compliance
To FCC Part 15 Class A

Housing
Powder-coated, extruded aluminium

Dimensions
114 x 185 x 30mm

Mounting
'T' section 35mm DIN rail to EN 50022

Terminals
Pluggable terminal block with up to 12AWG (2.5mm^2) capacity

LED indication
Unit OK, radio TX and RX, serial TX and RX, DCD (comms OK).

ORDERING INFORMATION

WMO-900S-US	902-928MHz, 1W, FHSS serial modem
WMO-900S-AU	915-928MHz, 1W, FHSS serial modem
WMO-900S-NZ	921-928MHz, 1W, FHSS serial modem