Elpro 905U-D

High Speed Industrial Radio Modem

the wireless highspeed industrial radio modem

The ELPRO 905U-D 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 905U-D 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 license in many countries.

The module is fully integrated with radio, power supply, serial ports and microprocessor controller housed in a strong industrial aluminum case.

features

- Radio data rate up to 115 200 bits/sec
- RS232 and RS485
- License-free 900MHz frequency hopping
- Single hop distance to 20+ miles
- Repeater function for longer distances, unlimited repeater hops
- Forward error correction, CRC error checking with ARQ
- Turn-around time 5 msec
- Radio signal strength and BER indication
- Configurable on-line by Hayes AT commands or Windows configuration software
- Transparent broadcast mode, peer to peer
- 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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Elpro 905U-D
Specifications

Power Supply

- 10 - 30 VDC or 10 - 24 VAC supply
- Normal current drain 70mA/12VDC or 50mA/24VDC
- Current when transmitting 350mA/12V or 250mA/ 24V
- Low power mode current drain 20mA/12VDC or 15mA/24VDC

General

- Environmental -40 to +140 degF (-40 to 70 degC)
- EMC Compliant FCC Part 15 Class A
- Housing, extruded aluminum case 4.5"x 7.3"x 1.2"(114 x 185 x 30mm) 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).

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.
- Characters supported 7 or 8 data bits, even/odd/no parity, 1 or 2 stop bits
- 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.
- Input and output buffers 2Kbyte

Radio Transceiver

- Frequency Hopping Spread Spectrum Transceiver
- Frequency - USA/Canada 902 - 928 MHz
  - Australia 915 - 928 MHz
  - NZ 921 - 928MHz
- Hop Sequence - 16 x 50
- Transmit Power 1W
- RSSI –120 to -60 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 (selectable)
- Range may be extended by: - up to five intermediate repeaters in controlled mode - unlimited repeaters in 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 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.
- CTS/RTS flow control 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.

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