Radio Modems

Transparent data communication
Modems transfer data without conditioning it, e.g. pass data transparently via the RS232 serial connection. This could be any form of data, including PLC programs, audio and video information, logged data or signals to open a valve. Some units offer remote communication and configuration.

Licensed and license-free radio channels,

- **455U-D**: 360 - 512 MHz, 10mW - 5W, 1.2 to 19.2 kbaud
- **805U-D**: 869MHz (Fixed Frequency), 5mW - 500mW, 19.2 to 76.8 kbaud
- **905U-D**: 915MHz (Frequency Hopping Spread Spectrum), 1W, 19.2 to 230 kbaud

**455U Module types**

- **D**: Data modem, full functionality
- **C**: Data modem compatible with ELPRO 405U with the possibility of upgrading retrospectively to full 455U-D functionality
- **B**: Data modem, Bell 202 or V23 messaging
- **A**: External modem, 600 ohm audio input

Ethernet Radio Modems

Transparent Ethernet communication
Modems transfer data without conditioning it. ELPRO Ethernet radio units are transparent to Ethernet data.

**Design Features include:**
- Access Point or Client/Station
- Bridge or Router
- Serial Server capability
- WDS Mesh via AP-AP repeatability
- On-board digital I/O point available
- Simultaneous use of RJ45, RS232 and RS485 ports

By design ELPRO's Ethernet modems are inherently flexible. Every module can act as a Router/Bridge for AP/Client mode. Extend reach via AP to AP connectivity in ELPRO 240U-E. Incorporate ELPRO 11S serially for I/O expansion. Simultaneously connect 10/100 Ethernet, RS232 and RS485 devices via on-board ports.

**Security features include:**
- Firewall protection via filtering of MAC and/or IP addresses
- Encryption to WPA-PSK (AES) standard

**Types**

- **240U-E**: 2.4GHz, 100mW or 300mW
- **805U-E**: 870MHz
- **905U-E**: 90MHz

ELPRO Technologies designs and manufactures Industrial Wireless products that provide secure, reliable solutions for your next project.

**The reasons for selecting ELPRO are clear:**
- 25 years of industrial wireless experience
- Consistent, innovative product design
- Industrial Specifications and high security

A complete wireless offering...

- Smart Gateways
- Wireless I/O
- Serial Modems
- Ethernet Modems

Contact us now to receive your free Industrial Wireless Handbook: sales@elprotech.com
ELPRO Technologies manufactures wireless products for instrumentation, process control and factory automation applications. Our products are found in every industry as an alternative to signal and data wiring. ELPRO’s products are sold in over 50 countries, across all continents.

ELPRO offers a range of solutions for a number of industries.

- Process Industries
- Factory Automation
- Mining
- Transport (road, rail & air)
- Petrochemical
- Water and Utilities
- Warehouse Automation
- Building Management

• Inputs/Outputs also known as radio telemetry, connect directly to transducer and control signals and transmit the signal values by radio. The signals are either re-created as similar signals or output as a data connection - Ethernet, Profibus, Modbus etc.

• Wireless Gateway products provide wireless connectivity between data-buses; connectivity between devices using the same data-bus or between different data-buses; Ethernet to Profibus to DeviceNet etc.

• Serial radio modems transmit serial data via radio, providing a wireless link between intelligent devices. Modems can communicate in either a broadcast or ‘dial up/point to point’ mode.

• Ethernet radio modems provide transparent Ethernet communications with serial server capability and onboard digital I/O.

ELPRO Technologies has been a manufacturer of industrial wireless products for over 25 years and offers experience in the support of local and global solutions through its team of application engineers on call 24 hours every working day.

All ELPRO software, application notes, brochures and manuals are free to download from the website.

With experience spanning the globe, we offer solutions for licensed and unlicensed bands conforming to local regulations in all parts of the world.

Telemetry Modules (Inputs/Outputs) ELPRO Multi-I/O Transceiver Products - 105U

The ELPRO 105U Fixed Frequency and 905U Frequency Hopping Spread Spectrum radio transceiver provides multiple I/O channels with two-way communication. Four different versions of the 105U and 905U are available depending on the mix of I/O required (see I/O table over). Inputs on one module can be transferred to outputs on another. The I/O expansion unit, the 11S module which does not have an integral radio, can be connected directly to a 105U or a 905U via an RS485 port. Up to 31 of these units can be linked in this way over a distance of 2 km.

These units can be powered by AC or DC supply and provide regulated 24VDC for powering analog loops. The units also have an internal battery charger suitable for sealed lead acid batteries and can be used with solar panels.

505U - Low power, Transmit Only Products

The 505U fixed frequency ultra low power consumption modules have a smaller I/O input capability for transmission to other ELPRO I/O and/or Gateway modules. The unit reverts to sleep mode between measurements thereby conserving power. The unit may even be powered by battery for extended periods and can power an analogue loop powered device - see module specifications. Capable of thousands of modules in a network and enclosed in a NEMA 4 enclosure to IP66, the 505U is typically applied to small I/O applications where remote and/or difficulties in accessing power are constraints.

Simple (uni-directional) radios - 105U-L

Again smaller I/O count transmit only devices, the 105U-L (T - transmit and R - receive) come pre-configured but are readily incorporated into a wider ELPRO wireless network. DIN rail mounted, the 105U-L can also power 24VDC loop powered devices and is a cost effective alternative to hard wired installations.

Serial Telemetry (11S5)

11S5 units are made exclusively as serial I/O expansion modules and are capable of communicating via Modbus RTU or ELPRO protocol, as required. These units can also be used with other types of modem, e.g. fibre-optic or GSM modules.

Easy Configuration

Configuration software is supplied with each wireless unit. “Inputs” on units are re-created as “outputs” on other units or as I/O registers in the ELPRO interface units, the Gateway modules. Individual inputs can be transferred to outputs on different modules and each input can be sent to multiple outputs. There is the option of password protection on configuration files for added security.

Wireless Gateways

105U-G

The 105U-G Fixed Frequency products interface between a wireless I/O network and external data-buses such as Ethernet, Profibus, DF1, Modbus +, DeviceNet, etc. These products also provide wireless connectivity between different high-speed data-buses in a single network.

The Wireless Gateway units have 8 digital I/O on-board and can be powered from an AC or DC supply through an internal battery charger.

**Types**

- 105U-G-M01: Modbus RTU Master/Slave or DF1
- 105U-G-PR1: Profibus dp Slave
- 105U-G-PR2: Profibus dp Master
- 105U-G-ET1: Ethernet/IP/Modbus TCP/HTTP-FTP-SMTP
- 105U-G-DE1: DeviceNet Slave
- 105U-G-M+1: Modbus +
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**Telemetry Modules (Inputs/Outputs)**

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**Serial Telemetry (115S)**

115S units are made exclusively as serial I/O expansion modules and are capable of communicating via Modbus RTU or ELPRO protocol, as required. These units can also be used with other types of modem, e.g. fibre-optic or GSM modules.

**Easy Configuration**

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**Overview of ELPRO Gateway module**

**ELPRO Module I/O Count Table**

Note: Pulse and digital I/O are same connection. 905U/105U-4 has 4 fixed inputs and 4 fixed outputs and a further 12 which may be configured as input or output.

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**Types**

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105U-G-DE1 DeviceNet Slave
105U-G-M+ Modbus +
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