

# 641M-4 4G-LTE IOT Router

Cellular 4G-LTE router for IOT and Gateway applications



## Features

- Cellular 3G/4G/LTE CAT4 router, including Band 28 support
- IEEE 802.11b/g/n, Access Point (AP), Client, 2\*2 MIMO 300Mbps
- Compact industrial metal enclosure with DIN rail mounting for easy integration into machines or electrical cabinets
- 4 x Ethernet Ports- 10/100M LAN / WAN
- RS232/RS485 Serial, 2 digital Inputs and 2 digital outputs
- Dual SIM card support
- IPsec & OpenVPN Client & Server, L2TP, PPTP, GRE, Port Forward, DMZ
- NMEA 0183 GPS Reporting
- Modbus RTU, TCP, MQTT and SparkplugB support
- Internal serial server
- Very wide power supply range supporting 9 to 48Vdc input
- SMS to read or control inputs/outputs, router status/alarm/state
- LAN Fallback for redundant networks
- Enhanced security for both cyber and data transmission
- Antenna diversity for Cellular bands

## Applications

- Water/Waste Water municipal applications
- Oil & Gas and Mining connectivity
- Embedding in machines for factory automation
- Traffic control systems
- Extending SCADA radio networks in water and oil and gas systems
- Alternative energy systems, such as Wind Turbines

## Ordering

PRODUCT CODE	DESCRIPTION
EL-641M-4	4G/LTE Cellular IoT Modem & Router

## Description

The ELPRO 641M-4 is targeted at enabling your devices to access the Internet of Things (IoT) and Industry 4.0.

Secure connectivity of your devices has never been so important in today's industrial world. With the 641M-4 cellular modem, there is a secure, fast, reliable, and simple way to IIoT enable devices for remote monitor and control of industrial plant/equipment and environmental applications

Using the 4G /LTE broadband cellular technology including 4GX, the 641M-4 ensures fast, reliable, and consistent connectivity with mission-critical field devices and assets.

For Internet of Things or Industry 4.0 applications the 641M-4 offers a cost-effective full featured industrial grade router for WAN connectivity. Additionally, the 641M-4 can provide gateway from Modbus to MQTT or MQTT with SparkplugB to suit a range of SCADA applications.

Supporting a wide range of interfaces including, Ethernet, RS232, RS485 and discrete inputs/outputs, the 641M-4 is a flexible and reliable connectivity solution for remote access to IIOT/Industry 4.0 devices.



Effective December 2022

**Specifications**

SPECIFICATION	DESCRIPTION
<b>Communications</b>	
Frequency	4G LTE Global
LTE-FDD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/ B19/B20/B25/B26/ B28
LTE-TDD	B38/B39/B40/B41
WCDMA	B1/B2/B4/B5/B6/B8/B19
GSM/EDGE	B2/B3/B5/B8
WiFi	802.11b/g/n: 300Mbps, RF Power; 20dBm 100mW, Access Point / Client / WDS
Data Rate	LTE Cat4: Max 150Mbps DL/50Mbps UL
GPS	NMEA-0183
SIM	2 x SIM slots (Standard size) Auto-switch: data, no network, connect fail

<b>Protocols and Configuration</b>	
User Configuration	Web Page
Configurable Parameters	Network connection, tunnelling protocol, security, gateway protocols, LAN configuration
Network Protocols	TCP, UDP, IPv4, ICMP, NTP, DNS, HTTP, HTTPS, ARP, PPP, PPPoE, DHCP, IP Passthrough, VRRP
Industrial Protocols	Modbus RTU/TCP, Enhanced MQTT SparkplugB
Firewall	Flexible access control of TCP, UDP, ICMP packets, MAC address filter
VPN	OpenVPN: client/server up to 5 connections GRE: Layer2/3, up to 5 GRE tunnels IPsec: IKEv1, IKEv2, up to 5 IPsec tunnels
Remote Management	HTTP/HTTPS, Firmware Upgrade, SSHv2 and TELNET Central Management Platform
Applications	Additional applications available (max of 5): DNP3, Email notification, AT command, IEC101/104, dynamic routing and many more
SMS	SMS Configuration, SMS Gateway, SMS Notification on input/outputs or events

<b>Interfaces &amp; I/O</b>	
Ethernet	1 x WAN, 3 x LAN or 4 x LAN, Auto 10/100Mbps
Cellular Antenna	2 x SMA Female Diversity switched Main / AUX
Terminals IO/ RS232/RS485	Pluggable, push connect terminals Up to 1.5 mm <sup>2</sup> (28- 16 AWG) 300V / 8A
Terminals Supply	Pluggable, push connect terminals Up to 1.5 mm <sup>2</sup> (28- 16 AWG) 300V / 8A
RS-232	2 wire interface (Tx and Rx) Terminal block
RS-485	2 wire data interface (A and B) Terminal block
Discrete input/ Outputs	2 digital inputs, 2 digital outputs Max voltage 36Vdc, Max current 100mA Isolation 3kVdc or 2kVrms
LEDs	SYS, NET, USR and RSSI (3)

<b>Power Supply</b>	
Nominal supply	9-48Vdc, under/over voltage protection
Idle current draw	100mA @ 12 Vdc
TX current draw	400mA peak @ 12 Vdc
Power connection	Terminal block

<b>General</b>	
Size	106mm x 106mm x 40mm (4.2" x 4.2" x 1.6")
Housing	Sheet metal powder coating IP30
Mounting	DIN rail mount
Temperature rating	-40 to +75°C (-40 to +158°F)
Humidity rating	0-99% RH noncondensing

SPECIFICATION	DESCRIPTION
Weight	370g (0.8lb)
Altitude	0-3000m (0-10000ft)
Pollution Degree	4
<b>Compliance</b>	
Regulatory	Australia: RCM, Europe: CE, USA: FCC, Canada: IC
Safety	EN/IEC 62368 (RoHS compliant)

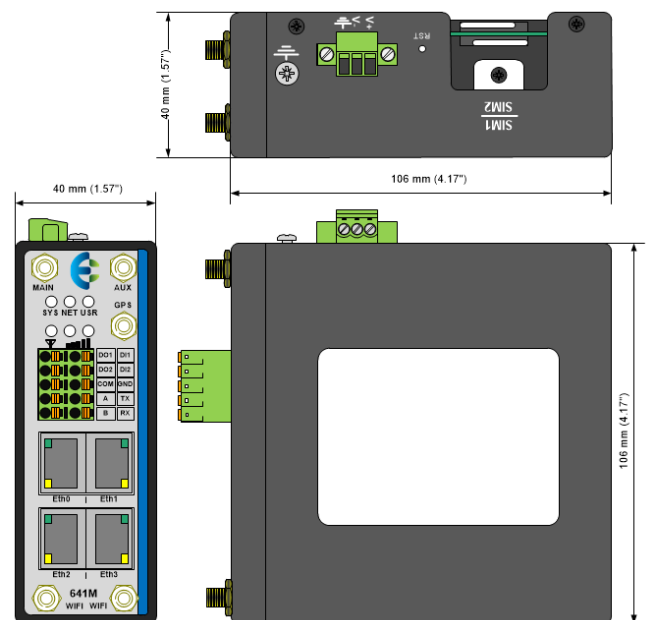
**Note:** Specifications subject to change.

**Accessories**

PRODUCT CODE	DESCRIPTION
<b>Accessories</b>	
ANTWHLTE-3	Omni-directional LTE Cellular Antenna: 115mm (4.5") long, 690-960/1710-2700MHz, 2dBi gain, includes 3m (10ft) cable w/ SMA (male) connector & magnetic base mount
ANTCSNEXTG-GSM3G-2	824-2500MHz 1.8/2.0/3.5 dBi Omni-directional Cellular Antenna, IP65 , 1,250mm Cable, SMA Male connector with integral 13mm stud mount
CSD-N-6000	Coaxial surge diverter, bulkhead N-female to N-female
PS-WW-XP-24DC-AU	AC Plug Pack Universal Input, 24V DC 1.25A Output- wall plug
PS-DINAC-24DC-OK	Power Supply: DIN mount, transforms 85-264Vac to 24Vdc @ 2.5A.
CBLETH-C5A	Ethernet cable: 1.8m (6ft) long, RJ45(male) to RJ45(male)-Straight

**Input/Output Ethernet and Serial Expansion Modules**

EL-115E-2	Ethernet to I/O Expansion Module: I/O = (8)DI/O + (4)AI + (2)AO + (4)PI/O, Modbus RTU/TCP master/slave gateway
EL-115S-11-24	Serial to I/O Expansion Module: I/O = (16)DIO + (4)PI
EL-115S-12-24	Serial to I/O Expansion Module: I/O = (8)DIO + (4 floating / 8 common)AI
EL-115S-13-24	Serial to I/O Expansion Module: I/O = (8)DIO + (8)AO



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