

615M-1 Multi-Service Provider Cellular Modem and Router

Wide Area Ethernet/Serial Connectivity Solution



Description

The ELPRO 615M-1 is a powerful Multi-Service Provider Cellular Broadband Router that delivers wireless data connectivity for up to two LAN connections and one serial port through public cellular networks at 3G network speeds. UMTS technology leverages high-speed HSPA to provide data access at speeds up to 14.4Mbps with backward compatibility to GSM's EDGE and GPRS. CDMA technology leverages high-speed EV-DO Rev A to provide data access at speeds up to 3.1Mbps with backward compatibility to EV-DO Rev 0 and CDMA 1 x RTT.

It provides real-time redundancy between Carriers in case of a network failure, reliable connectivity for Programmable Logic Controllers (PLC's), Remote Terminal Units (RTUs), Ethernet web cameras or any other Ethernet connectivity device. The ELPRO 615M-1 features an integrated DHCP server, port forwarding and port mapping capabilities.

Product Features

- Multicarrier Protocols: GPRS/EDGE, UMTS/HSPA; EVDO Rev0/A, 1xRTT
- Receive Antenna Diversity
- Client and Router Configuration
- TCP/IP Packet Assembler/Dis-assembler for Serial Devices
- Internal PPTP VPN Server and Client
- IPsec, GRE Tunneling, PPTP, VPN, RADIUS/802.1x
- Built-in DHCP Server and Port Forwarding
- MAC and IP Address Filtering
- ARP/GARP Filtering – Whitelist/Blacklist
- Dual 10/100baseT IEEE 802.3 Ethernet
- RS-232 Serial Port
- Analog I/O and Digital I/O
- Over-The-Air Network Diagnostics and Configuration
- Auto-Redial for Always-On Connection
- USB Configuration and Firmware Programming

Applications

- Networking Wind Turbines and Solar Collectors
- Electricity Network Control
- Tank Farm Monitoring
- Water Distribution Network
- Environmental Monitoring

Specifications

Specifications	
Transmitter/Receiver	
Frequency	Quad-band 850/900/1900/2100MHz/AWS ^(1,2) Quad-band 850/900/1800/1900MHz ^(3,4) 800MHz Cellular/1900MHz PCS/2100MHz ⁽⁵⁾ 800MHz Cellular/1900MHz PCS/2100MHz ⁽⁶⁾ 800MHz Cellular/1900MHz PCS ⁽⁷⁾
Transmit Power (Max)	250mW ^(1,2) ; 2W ^(3,4) ; 250mW ^(5,6,7)
Transmission	UMTS, HSPA, EDGE, GPRS, EVDO Rev A (IS-856-A), 1xEVDO Rev 0 (IS-856), 1xRTT (IS-2000)
Modulation	UMTS, HSPA, EDGE, GPRS, EVDO Rev A (IS-856-A), 1xEVDO Rev 0 (IS-856), 1xRTT (IS-2000)
Receive Sensitivity	-109dBm ⁽¹⁾ ; -109dBm ⁽²⁾ ; -105dBm ^(3,4) ; -107dBm ^(5,6,7)
Channel Spacing	5MHz ^(1,2) ; 10MHz ⁽²⁾ ; 1.25MHz ^(5,6,7)
Data Rate	Downlink up to 384kbps; Uplink up to 384kbps ⁽¹⁾ Downlink up to 14.4Mbps; Uplink up to 5.76Mbps ⁽²⁾ Downlink up to 236kbps; Uplink up to 236kbps ⁽³⁾ Downlink up to 115kbps; Uplink up to 115kbps ⁽⁴⁾ Downlink up to 3.1Mbps; Uplink up to 1.8Mbps ⁽⁵⁾ Downlink up to 2.4Mbps; Uplink up to 153.6kbps ⁽⁶⁾ Downlink up to 153.6kbps; Uplink up to 153.6kbps ⁽⁷⁾
Range (LoS)	Cellular depends on service provider
Antenna Connector	2 x Female SMA Standard Polarity ^(1,2,3,4,5,6,7)
Input/Output	
Discrete Input	ON 2.3Vdc, OFF 0.7Vdc, 5.5Vdc max ⁽⁸⁾
Discrete Output	NPN Transistor close to Digital Ground, Pull down 100ohm ⁽⁸⁾
Relay Outputs	Max voltage 30Vdc, Max current 1A ⁽⁸⁾
Analog Inputs	Voltage input range 0 – 30Vdc, Accuracy +/-0.2Vdc ⁽⁸⁾
Ethernet Port	
Ethernet Port	10/100baseT; RJ45 Connector – 2 x IEEE 802.3 (auto MDIX)
Link Activity	Activity LED
Note: Specifications subject to change. 1) UMTS 2) HSPA 3) EDGE 4) GPRS 5) EVDO Rev A (IS-856-A) 6) 1xEVDO Rev 0 (IS-856) 7) 1xRTT (IS-2000) 8) Access via SNMP only	
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Serial Port	
RS232	DB9 Female DCE
Data Rate (Bps)	1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 76800, 115200bps
Serial Settings	8 Data Bits; No Stop/1 Start/Parity (Configurable)
Protocols and Configuration	
Protocols Supported	TCP/IP, UDP, ARP, ICMP, FTP, TFTP, TELNET, PING, GPS-NMEA (optional), DHCP; MAC Filtering (Whitelist), IP Filtering (Blacklist), DMZ, Dynamic DNS, Port Forwarding; SNMP, HTTP embedded web server; IPsec, GRE Tunneling, PPTP, VPN, RADIUS/802.1x
User Configuration	Configuration and Firmware upgrades via HTTP/OTA (Over-the-Air)
Configurable Parameters	Client/Router, Serial Client Server Simultaneous RS232 connection
Security	VPN, SIM Card PIN, RADIUS, IPsec
Bandwidth Protection	MAC Address – Whitelist/Blacklist, IP Filtering – Whitelist/Blacklist
Network Management	SNMP V2c, V3
LED Indication/Diagnostics	
LED Indication	RSSI; SVC; NET; GPS; AUX Please refer to product manual for further information
Reported Diagnostics	Diagnostics available through web pages
Compliance	
EMC	FCC Part 15; Industry Canada; CE; A-Tick
RF (Radio)	EN 300 328; FCC Part 15
Hazardous Area	Class I, Division 2
Safety	IEC 60950-1
UL	UL Listed
Environmental	MIL-STD-810F
Approvals	PTCRB, Carrier Specific Approvals
General	
Size	109 x 153 x 45mm (4.3" x 6" x 1.8")
Housing	Powder-coded Aluminum
Mounting	DIN Rail, Panel Mount (optional)
Terminal Blocks	I/O: Removable terminal block, Screwless-Push in wire, 18 - 28AWG
Temperature Rating	-30 to +70°C; -22 to +158°F
Humidity Rating	5 – 95% RH Non-condensing
Weight	1.13kg (2.5lb)
Power Supply	
Nominal Supply	9 to 28Vdc; Under/Over Voltage Protection and Reverse Polarity Molex 43025-0400 4-pin locking connector
Average Current Draw	130mA @ 13.8Vdc (Idle)
Transmit Current Draw	350mA @ 13.8Vdc
Note: Specifications subject to change.	

Ordering

To order, select product code from the table and specify country of application.

Product Code	Description	Frequency	RF Power
615M-1	Cellular Modem and Router Supplied with BR-615-DINCLIP	Quad-band	Up to 2W
Note: Available RF power and frequency may vary depending on country of application.			

Accessories

The following accessories can assist with compatibility when commissioning.

Product Code	Description	Data Sheet #
Antennas - Cellular		
WHGSM-3	Cellular Antenna - 130mm (5"), SMA Male, Magnetic Base Mount, 2dBi gain	7941
Cables		
CC3/10-SMA	Coaxial Cable Kit - 3m (9.8')/10m (32'), N-type to SMA	7932 7947
CCTAIL-SMA-F/M	Coaxial Cable Tail - 600mm (24"), SMA to N-type Female or Male	7951
SER-RJ45	Configuration Cable - RS232 Serial, DB9 Female to RJ45	7956
SER-DB9NULL	RS232 Serial, Null Modem	7988
ETH-C5X	Ethernet Cable - 1.8m (6'), Crossover, RJ45 to RJ45	7952
ETH-C5A	Ethernet Cable - 1.8m (6'), Direct, RJ45 to RJ45	7953
Surge Diverters		
CSD-SMA-2500	SMA Surge Diverter for use with CC10, CC20 - SMA	7959
CSD-N-6000	Coaxial Surge Diverter, Bulkhead N Female to N Female	7960
IOP32D	Signal Surge Diverter - 2 wire/4 wire	7961
Power Supplies		
PS-WW-XP	100Vac Input Power Supply	7934
PS-DINAC-12DC-OK	DIN Rail Power Supply, 100 - 250Vac, 12Vdc/2.5A	7935
PS-DINAC-24DC-OK	DIN Rail Power Supply, 100 - 250Vac, 24Vdc/2A	7958
Mounting Brackets		
BR-615-DINCLIP	DIN Rail Mount Kit for 615M-xx Series	7986
BR-615-PLATE	Panel Mounting Plate Kit: for 615M-xx Series	7987

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