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Product Bulletin

PB00089HE

OWL LTE M12 Industrial Cellular Router

Enable high-speed wireless connectivity and remote access in the varying environmental conditions found across railway and public transportation applications.



The OWL LTE M12 is a single box cellular router with a rich set of features that provide wireless connectivity, internet and remote access solutions to transportation settings using high-speed cellular technologies and embedded GPS functionality.

- **Fast wireless connectivity and reliable remote access** – provide the best wireless experience and manage networks remotely through fast and reliable wireless cellular technologies, including LTE, UMTS/HSPA+ and GSM/GPRS/EDGE technologies.
- **Optimal performance** – achieve high network availability in harsh environmental settings with this ruggedly-designed, feature-rich cellular router.
- **Easy to configure and customize** – install and adjust this device with minimal product knowledge. It's open LINUX platform also allows for advanced customization.

The OWL LTE M12 joins Belden's growing family of OWL industrial cellular routers with specific features to provide reliable wireless connectivity in transportation applications. From its more ruggedized, vibration-proof housing and connections to its distinct industry-specific approvals, the OWL LTE M12 delivers fast connectivity and reliable remote access.

Applications

This industrial cellular router is ideal for any application where high-speed wireless and reliable remote access are critical, despite exposure to harsh industrial conditions. It offers specific value in the railway and public transportation sectors.

The feature set also makes it useful in mobile applications, such as on robots or cranes, where exposure to the elements or heavy vibration is common.

Your Benefits

Meet passengers' onboard experience expectations and your system's connectivity and networking needs with high-speed wireless that delivers on voice, video and data transfers. This can include passenger information systems (PIS), session initiation protocol (SIP), closed-circuit televisions (CCTVs) and onboard internet.

Also, with reliable and fast remote access, you can maintain your network and manage alarms remotely from an office location, always having access to the diagnostic data you need to make real-time decisions.

**A new product to
serve your needs.
Be certain.**



OWL LTE M12 Industrial Cellular Router

The OWL LTE M12 builds on the same great features as the original OWL LTE, but in a more robust configuration. Additionally, the OWL LTE M12 provides a rich set of features that meet the challenging rail environment standards defined by EN 50155.

To guarantee the highest network availability, redundancy is provided through dual SIM cards and two Ethernet ports. Best-in-class integrated firewall protection also addresses growing security concerns.

Even with no product knowledge or training, it's easy to configure the OWL LTE M12 due to a user friendly web interface. Its open LINUX platform enables advanced customization through scripting or user modules.

Benefits at a Glance

- Enables high-speed wireless connectivity through LTE, UMTS/HSPA+ and GSM/GPRS/EDGE technologies
- Operates as a single box Ethernet / WWAN gateway (cellular router)
- Offers many features and interfaces, including two LAN ports (10/100BASE-TX), an RS232 interface, a USB interface, two digital inputs, two digital outputs and a SD card slot
- Provides embedded GPS and dead-reckoning functionalities for innovative navigation and location tracking purposes
- Executes GSM calls via session initiation protocol (SIP)
- Enables a configurable web interface with customizable functionalities through scripting and application specific software modules
- Withstands harsh conditions with a robust, vibration-proof design
 - Wall mountable
 - Extended temperature range from -40°C to +70°C
 - IP40 metal housing
 - M12 connectors
- Meets various standards and approvals including those for the transportation industry:
 - Safety of Industrial Control Equipment: EN 60950-1
 - Radio: EN 301 511, Radio Requirements GSM
EN 301 908-1 and EN 301 908-2, Radio Requirements UMTS/HSPA
EN 62311, Human Exposure restrictions for EM-Fields
 - Transportation: EN 50155, EN 50121-4, EN 45545-2 HL3, E8
 - Environmental: EN 61000-6-2, EN 301 489, EN 61131 for use in automation environment

The OWL LTE M12 Industrial Cellular Router is designed to address high-speed wireless connectivity needs of various applications.





Technical Information

Product Description	
Type	OWL LTE M12-S20T5A12221GTDBHXX.X.XX
Description	LTE, UMTS/HSPA+, GSM/GPRS/EDGE Router
Port Type and Quantity	2 x LAN ports 10/100BaseTX, M12
Order No.	942 147-002
Radio Technology	
Antenna Connector	3 x SMA jack antenna connectors
Antenna Configuration	Main + Rx Div and MIMO DL 2x2 + GPS (supports active/passive antennas)
Frequency Band	Dual Band GSM (2G): 900/1800 Dual Band UMTS (3G): 900/2100 MHz FDD-Band (8,1) Penta Band LTE (4G): 800/900/1800/2100/2600 MHz FDD-Band (20,8,3,7,1)
Transfer Rate (max)	LTE Cat.4: 150 Mbit/s Download, 50 Mbit/s Upload; DC-HSPA+: 42 Mbit/s
SIM-cards	Two SIM card holders, Dual-SIM fail over functionality <ul style="list-style-type: none"> • Switch SIM on disconnect • Switch SIM on roaming • Switch SIM on remaining data volume
Communication Interfaces	
Ethernet	2 x 10/100BASE-TX ports, 4-pin D-coded M12
USB	2.0 USB host, 5 pin A-coded M12
I/O	2 x opto-coupled digital Inputs (max. 60 V DC, max. 7 mA) 2 x opto-coupled digital Outputs (max. 60 V AC/DC, max. 300 mA), 8-pin A-coded M12
Serial	1 x RS232, 8-pin A-coded M12 (TXD, RXD, DCD, DTR, DSR, RTS, CTS and GND)
SD	1 x MicroSD, SDHC up to 32 GB, SDXC from 32 GB up to 64 GB
GPS	Protocol: NMEA-0183 V3.10; Frequency: 1575.42 MHz; Sensitivity: -162 dBm GPS receiver with embedded dead reckoning for innovative navigation solution even if the GPS signal is temporarily lost.
Power Requirements	
Operating Voltage	12 V DC to 48 V DC, 5 pin A-coded M12
Power over Ethernet (PoE)	PoE+ Powered Device (IEEE 802.3at, Type 2, Class 4)
Power Consumption	8 W
Ambient Conditions	
Operation Temperature	-40 °C to +70 °C
Storage/Transport Temperature	-40 °C to +85 °C
Relative Humidity (non-condensing)	max. 95%
Mechanical Construction	
Dimensions (W x H x D)	203 x 58.2 x 113.1 mm
Mounting	Wall mounting
Weight	855 g
Protection Class	IP 40
Software	
VPN Tunneling	OpenVPN (Client/Server), IPsec VPN (Client/Server), L2TP (Client/Server), GRE
Security	HTTPs, Firewall (SPI), NAT, X.509
Diagnostics & Configuration	SNMP, DHCP (Client/Server) network status, syslog, DynDNS, NTP (Client/Server), HiDiscovery
Redundancy	VRRP, ping monitoring with route failover
Configuration Management	Upload/download configuration, change configuration based on SMS
GPS	Multi-GNSS receiver, can support GPS, GLONASS, Galileo, BeiDou and QZSS. Additionally the embedded dead reckoning provides the user with accurate estimates of vehicle's position and velocity when GNSS information is lost or not available by combining the integrated speed and heading sensor data into the solution.
SIP	GSM calls via Session Initiation Protocol (SIP) (RFC 3261)
Scripting	Linux scripting (Bash, Python)
Customization	Application specific user modules are available (RIP, OSPF, BGB, SCEP, modem emulation, ...) or could be developed using (C,C++)
Approvals	
Safety of Industrial Control Equipment	EN 60950-1
Radio	Europe: <ul style="list-style-type: none"> • EN 301 511, Radio Requirements GSM • EN 301 908-1 & EN 301 908-2, Radio Requirements UMTS/HSPA • EN 62311, Human Exposure restrictions for EM-Fields
Transportation	EN 50155, EN 50121-4, EN 45545-2 HL3, E8 (road vehicle approval)
Environmental	EN 61000-6-2, EN 301 489, EN 61131 for use in automation environment

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com



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Belden Competence Center



As the complexity of communication and connectivity solutions has increased, so have the requirements for design, implementation and maintenance of these solutions. For users, acquiring and verifying the latest expert knowledge play a decisive role in this. As a reliable partner for end-to-end solutions, Belden offers expert consulting, design, technical support, as well as technology and product training courses, from a single source: Belden Competence Center. In addition, we offer you the right qualification for every area of expertise through the world's first certification program for industrial networks. Up-to-date manufacturer's expertise, an international service network and access to external specialists guarantee you the best possible support for products from Belden, GarrettCom, Hirschmann, Lumberg Automation and Tofino Security.

Irrespective of the technology you use, you can rely on our full support – from implementation to optimization of every aspect of daily operations.

Always Stay Ahead with Belden

In a highly competitive environment, it is crucial to have reliable partners who add value to your business. When it comes to signal transmissions, Belden is the No. 1 solutions provider. We know your business and want to understand your specific challenges and goals to show how effective signal transmission solutions can push you ahead of the competition. By combining the strengths of our five leading brands, Belden, GarrettCom, Hirschmann, Lumberg Automation and Tofino Security, we are able to offer the integrated solution you need. Today, it may be a single cable, switch or connector, to solve a specific issue; tomorrow, it can be a complex range of integrated applications, systems and solutions. With the rise in smart, connected devices brought on by the Industrial Internet of Things (IIoT), together, we can make sure your infrastructure is ready to handle and make sense of the influx of data. Transform your business now with instant access to information, and make your vision a reality. Visit info.belden.com/iiot to learn more.

About Belden

Belden Inc., a global leader in high quality, end-to-end signal transmission solutions, delivers a comprehensive product portfolio designed to meet the mission-critical network infrastructure needs of industrial, enterprise and broadcast markets. With innovative solutions targeted at reliable and secure transmission of rapidly growing amounts of data, audio and video needed for today's applications, Belden is at the center of the global transformation to a connected world. Founded in 1902, the company is headquartered in St. Louis, USA, and has manufacturing capabilities in North and South America, Europe and Asia.

For more information, visit us at www.belden.com and follow us on Twitter @BeldenIND.

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