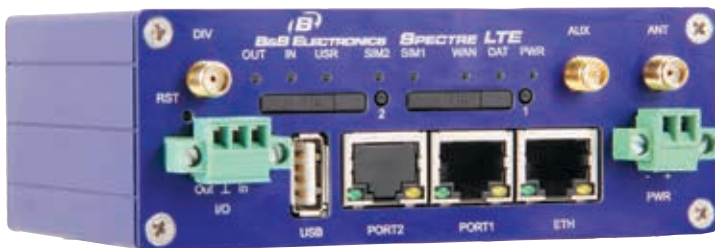




***YOUR BEST CONNECTION
FOR CELLULAR SOLUTIONS***



**LTE/HSPA+/UMTS/CDMA/EDGE/GPRS
Cellular Router Technology**

Designed for M2M Applications





Whatever Your Challenge, We Have a Cellular Solution

We help companies and organizations around the world integrate, connect and upgrade their networks and devices. No matter what you do, build or sell, our experience in your industry and broad portfolio of device connectivity solutions makes it easy to create a powerful, rugged and efficient network.



Transportation and Security

- Transfer video and images from security IP cameras to central control and monitoring stations
- Remote monitoring and control of traffic management systems, such as traffic signs, traffic light signals, tunnels, parking, etc.
- Connectivity to vehicles and mobile assets (buses, trains, ships, trucks, containers) for AVL and telematics applications
- Remote management of digital signage (devices) for messaging and advertising



IT and Communication

- Monitor key elements of telecommunication networks
- Back-up connections of traditional landline telecommunication lines
- Easy remote office deployment to ensure quick connectivity to corporate wide area networks



Self-Service Terminals

- Secure networks for point-of-sale systems, ATMs, lottery terminals and vending machines
- Remote monitoring of information kiosks, vending machines, self-service gas stations and other point-of-sale systems

The Challenge

Reducing traffic density and preventing traffic jams in cities is not an easy problem to solve.

Connected wirelessly via cellular technology, traffic cameras are a vital part of a complete traffic system. Dynamically managing traffic flow requires the ability to send pictures or streaming video, direct from roads and streets, to control rooms. By monitoring this traffic information, action can be taken to avoid a bad traffic situation or prevent a bad situation from getting worse.

Traffic dispatchers control traffic by changing the display of online road LED boards or other automatic signs, at any given moment, to slow down or speed up traffic in defined locations or to navigate drivers to clearer roadways. The ability to transfer data via LTE/GSM/CDMA infrastructures, is a very effective solution for problematic city traffic situations.



Spectre LTE Cellular Routers

The Solution

Spectre LTE cellular network routers, from B&B Electronics, are connected directly to traffic cameras placed above the road or street. Digital images, videos and traffic data are transferred instantaneously to the traffic control center.

Using their software application, traffic control room dispatchers can change traffic speeds by adjusting the status on LED boards along the roadways. Command data is wirelessly delivered back to LTE cellular routers connected directly to road LED boards. Reaction time to traffic situations can be measured in the tenths of a second.

Secure, Reliable, Advanced Networking

- **Secure & Reliable:**
 - VPN support, industrial design
 - Stateful Firewall
- **LINUX Platform & Advanced Networking Functions**
 - Easy to use, open source platform
- **Designed for M2M Applications:**
 - Industrial Systems
 - Remote Monitoring & Service
 - Telemetry & SCADA
 - ATM, Lottery, Kiosks
 - TELCO & IT



Industrial Automation

- Remote management of industrial control systems and computers
- Remote control and servicing of machinery and equipment
- Remote programming of control machines and SCADA systems



Energy & Natural Resources

- Remote monitor production and distribution SCADA systems
- Remote monitor power plants, water treatment facilities, wind and solar installations
- Utility metering for power, water and gas
- Oil and gas pipeline monitoring



Meteorology, Alarm & Warning Systems

- Transfer data provided by meteorological stations and sensors
- Air quality measurement and monitoring
- Flood control systems, early warning information systems
- Gas and radiation detection systems
- Prediction of seismic events and other natural disasters
- Monitoring of volcanic activity

The Challenge

Point-of-sale (POS) machines are everywhere in our daily life. The convenience, speed and ease of these transactions for consumers depends on highly secure data communications technology performing reliably in locations at the very edge of the network. Consider the complex interactions required to:

- Withdraw money from an ATM
- Purchase a ticket from a ticketing machine to ride a city bus
- Deposit money into a vending machine to purchase a bottled soda or packaged food
- Pay a parking meter in order to park an automobile at a designated location

A cellular mobile operator network for data transfer from devices offering POS services, is frequently used.



Spectre 3G Cellular Routers

The Solution

Spectre 3G cellular routers, from B&B Electronics, are connected to POS devices and transfer transactional data wirelessly from devices, over a secure GSM/CDMA network, to a control room server, where the data is stored and processed. Spectre 3G cellular routers use VPN tunneling and other advanced networking features for secure data transfer and device communications. They are fast, secure and cost effective, backed by B&B Electronics' industry expertise, and the router's field-proven performance in countries around the world.

An important cellular router advantage is mobility. Whether you transfer data from a busy city street or a bus ticketing device far from the nearest town, if a mobile operator GSM/CDMA signal is available, you can use Spectre 3G cellular routers to connect devices and collect data to a central PC or server. Welcome to digital freedom.



Flexible Features & Specifications

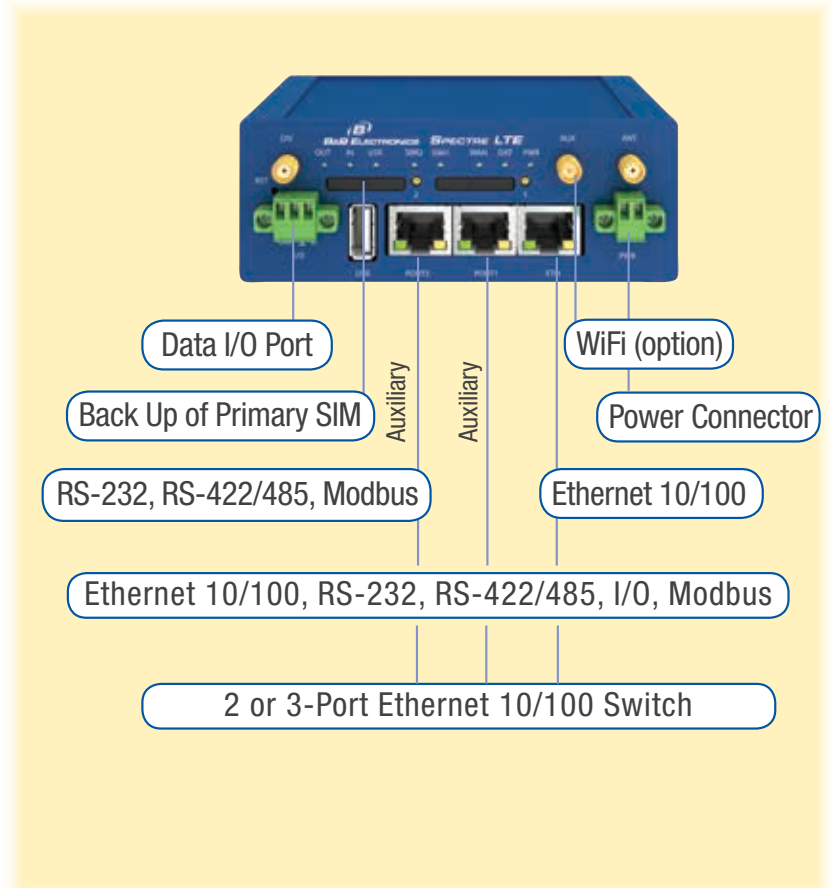
Buy exactly what you need

Standard interfaces:

- Ethernet 10/100
- USB Host
- I/O port with 1x input and 1x output
- 2 SIM card holders

Optional interfaces to optimize according to your application, with the ability to add additional interfaces in the future:

- 1-2x ETHERNET 10/100 with possible modes:
 - 2-port Ethernet switch
 - 3-port Ethernet switch
 - 2x independent LAN
 - 1x independent LAN and 2-port Ethernet switch
- RS-232 serial port
- RS-422/485 galvanic separation possible
- Modbus master for up to 30 slave meters
- I/O CNT interface including 4x binary inputs (2 inputs may be configured as counter 2x analogue inputs and 1x binary output)
- 802.11 b/g/n WiFi Access Point
- -30 to +60 °C operating temperature
- 10-30 VDC power
- Metal enclosure; TS35/TS32 DIN rail mountable
- UL Class 1/Division 2 rated



Certified for use with these networks:
AT&T, PTCRB, Rogers, Sprint, T-Mobile, Verizon
Contact B&B Electronics for latest approvals and product specifics.

LTE/HSPA+/UMTS/CDMA/EDGE/GPRS Routers



ROUTER	CELLULAR WIRELESS NETWORK TECHNOLOGY	MAXIMUM DOWNLOAD	MAXIMUM UPLOAD
Spectre LTE 4G routers	LTE/UMTS/HSPA+ & GPRS/EDGE & CDMA	100 Mbps	50 Mbps
Spectre 3G routers	EVDO/CDMA, UMTS/GSM	14.4 Mbps	5.5 Mbps

USA, Canada.

Contact your local distributor for availability and options.

Functions & Software Features

B&B Electronics routers offer enhanced functionality, incorporating self-diagnostics and a hardware watchdog, ensuring secure and consistent operability and ultra-reliable wireless connections.

For critical applications, these routers offer SMS and email messaging and control capability for remote alerts and resets. They support the most commonly used LAN/WAN network protocols and B&B Electronics's custom software allows for easy, flexible and effective networking and management.

Networking

- **DHCP:** automatic IP addressing in LAN network
- **NAT/PAT:** IP address and port translation
- **Firewall:** filtering of addresses, ports, protocols
- **VRRP:** virtual backup router function
- **DynDNS client:** access to the dynamic IP address
- **VLAN 802.1Q:** virtual LAN
- **QoS:** quality of service
- **PPPoE Bridge:** PPP over Ethernet Bridge mode
- **Dial-in:** communicate over dial CSD call
- **NTP client, NTP server:** time synchronization

VPN Tunneling

- IPSec, OpenVPN, PPTP, L2TP, EasyVPN, GRE
- Authentication by certificates, shared keys, name/pass-word

Remote Router Supervision & Mass Network Management

- HTTP/HTTPS, Telnet/SSH for local and remote configuration and firmware updates
- Automatic configuration and firmware updates from FTP/HTTP server by schedule
- Up to 4 independent configuration profiles can be stored and remotely switched using scripts, SMS messages, I/O, etc.

Diagnostics

- Detailed logs of operational information, including signal status and data traffic
- Signal level data, cell identifiers and data traffic are saved in router's memory for up to 2 months
- SNMP: router diagnostics, communication with I/O and MBUS
- LED indication: signal strength, connection status, ports

SMS & Email Information

- Information about status, connection, disconnection and many others
- SMS control: on/off connection, switching SIM, router profile, I/O, etc.
- SMS communication: AT commands (RS232 and TCP/IP), I/O or HTTP

Modular LINUX Software Environment

Open LINUX based system allows use of common LINUX commands, scripts and other features. B&B Electronics routers offer an extension of standard firmware with optional software plug-ins. You can create your own plug-in and simply apply it to the router. The router has non-volatile RAM memory, ready for data collection and processing applications that can be expanded with USB port if desired.

Software Plug-ins

- Easy VPN client: secure, encrypted VPN
- Dynamic routing protocols: BGP, OSPF, RIP
- QoS: quality of service
- IGMP: multicast protocols
- Modbus RTU/TCP gateway and mapping: convert data from RTU to TCP/IP format



Spectre™ Cellular Router Solutions

Wireless Data Transfer Technology

Sometimes the answer isn't just great products – it's a great solution that's more than the sum of the products. B&B Electronics can provide unique solutions for your toughest networking challenges. Whether it's combining cellular routers with wireless radios to support dual cellular networks, or a custom design, B&B Electronics is your best connection for innovative cellular solutions.



Series	LTE	EVDO/CDMA	UMTS/GSM
RTLTE-3xx-AT series	✓		✓
RTLTE-3xx-W-AT series	✓		✓
RTLTE-3xx-VZ, -SP series	✓	✓	
RTLTE-3xx-W-VZ, -SP series	✓	✓	
RT3G-3xx series		✓	✓
RT3G-3xx-W series		✓	✓

LTE Wireless Routers – Port Configurations

Model Number	10/100 Ethernet	RS-232	RS-422/485	12 Bit I/O	802.11 b/g/n Wi-Fi
RTLTE-300 (-AT, -SP, -VZ)	1				
RTLTE-302 (-AT, -SP, -VZ)	1	1			
RTLTE-304 (-AT, -SP, -VZ)	1		1		
RTLTE-322 (-AT, -SP, -VZ)	1	2			
RTLTE-324 (-AT, -SP, -VZ)	1	1	1		
RTLTE-330 (-AT, -SP, -VZ)	1			1	
RTLTE-311 (-AT, -SP, -VZ)	3				
RTLTE-310 (-AT, -SP, -VZ)	2				
RTLTE-300-W (-AT, -SP, -VZ)	1				1
RTLTE-310-W (-AT, -SP, -VZ)	2				1
RTLTE-320-W (-AT, -SP, -VZ)	1	1			1
RTLTE-330-W (-AT, -SP, -VZ)	1			1	1
RTLTE-340-W (-AT, -SP, -VZ)	1		1		1

3G Wireless Routers - Port Configurations

Model Number	110/100 Ethernet	RS-232	RS-422/485	12 Bit I/O	802.11 b/g/n Wi-Fi
RT3G-300	1				
RT3G-302	1	1			
RT3G-304	1		1		
RT3G-322	1	2			
RT3G-324	1	1	1		
RT3G-330	1			1	
RT3G-311	3				
RT3G-310	2				
RT3G-300-W	1				1
RT3G-310-W	2				1
RT3G-320-W	1	1			1
RT3G-330-W	1			1	1
RT3G-340-W	1		1		1

R-SEENET

Smart Decisions – Intelligent Monitoring & Management Software

R-SeeNet is the software system used for monitoring B&B Electronics routers. It continuously collects information from individual network routers and records the data into an SQL database. Data is presented in a clear and concise dashboard for the network administrator to effectively manage devices. Model# R-SeeNet-5 consists of two parts:

- **R-SeeNet Server** - Server application can be programmed to automatically send SNMP queries (Simple Network Management Protocol) to each router defined in the network. The application retrieves status information from the routers and records it in the SQL database.
- **R-SeeNet PHP** - A web-based application that accesses the SQL database and provides the network administrator detailed information on individual routers and health of the network.



Available Data - Everything you need to know about your network's current status plus a historical view of information transferred today, yesterday, this week, this month and last month.

- Signal strength
- Data traffic
- Response time
- Router availability
- Number of PPP connections
- Number of channels connected
- Visual reports, tables and graphs
- Up to 2 months of past data for each router

Industrial Wired Routers – Secure VPN, IPsec, Open VPN. NEMA TS2 compliant.

Spectre RT™ wired routers secure connections between two local networks (LAN) using VPN tunneling protocols, IPsec, OpenVPN or L2TP. Password-protected web interface allows remote configuration and management. Automatically upgrades configuration and firmware from the operator's central server, allowing simultaneous mass reconfiguration of every router on the network.

With Ethernet, USB, I/O and auxiliary ports, these devices handle multiple data communication protocols and fit into almost any network topology. Configuration and Diagnostics options include: HTTP server for configuration via web server, Telnet for configuration and access to the file system, SNMP router diagnostics.

Model Number	110/100 Ethernet	RS-232	WAN	USB	Digital I/O
ERT-310	1		✓	✓	✓
ERT-312	1	1	✓	✓	✓



- DHCP: automatic IP addressing in LAN network
- NAT/PAT: IP address and port translation
- Firewall: filtering of addresses, ports, protocols
- VRRP: virtual backup router function
- VLAN 802.1Q: virtual LAN
- Wide temperature range: -40 to 75°C
- DHCP, NAT/PAT, NAT-T, DynDNS, NTP, VRRP, SMS
- NEMA TS1/TS2 – Environmental Requirements for Traffic Control

Cellular M2M Solutions

We're the experts – so you don't have to be



You build your business and we'll build your communication solution. Whether you choose standard products or require special designs for specific applications – consider B&B Electronics your best cellular connection.



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