

# CELLULAR ROUTERS FOR INDUSTRIAL IoT



**B+B SMARTWORX**

Powered by

**ADVANTECH**

**LTE/HSPA+/UMTS/CDMA/EDGE/GPRS  
SMART CELLULAR ROUTERS & GATEWAYS**

*DESIGNED FOR M2M APPLICATIONS*



# WHATEVER YOUR CHALLENGE, WE HAVE A MOBILE SOLUTION

Advantech B+B SmartWorx helps companies and organisations 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, traffic signs, light signals, tunnels, parking, etc.
- Internet access for vehicles and mobile devices (buses, trains, ships, trucks)
- Remote management of digital signage for messaging and advertising



## IT and Communication

- Monitor key elements of telecommunication networks
- Back-up connections for telecommunication lines



## 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 LTE technology, traffic cameras are a vital part of a complete traffic system. The need to dynamically manage traffic flow requires the ability to send pictures or streaming video, direct from roads and streets, to control rooms. By monitoring traffic information, action can be taken to avoid a bad traffic situation or prevent a bad situation from getting worse.

Traffic monitors have the ability to 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 navigate drivers to clearer roadways. The ability to transfer data, via GSM mobile operator infrastructures, from traffic cameras and to road LED boards (automatic signs) is a very effective solution for problematic city traffic situations.



SmartFlex router

## THE SOLUTION

SmartFlex LTE mobile network routers from Advantech B+B SmartWorx are connected directly to a camera placed above the road or street. Digital images, videos and traffic data are transferred instantaneously to the traffic control center. Using their software application, control room dispatchers can change traffic speeds by changing the status on LED boards along roadways.

From the control room, command data is delivered wirelessly to the SmartFlex router connected directly to the road LED boards. Reaction time to traffic situations can be measured in tenths of a second.

# SECURE, RELIABLE, ADVANCED NETWORKING

**Modular & Flexible:**

- Modular HW and SW concept

**Secure & Reliable:**

- VPN support, industrial design

**LINUX Platform & Advanced**

**Networking Functions:**

- Easy to use, open source platform

**M2M Applications:**

- Industrial Systems
- Remote Service
- Telemetry & SCADA



## 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, gas
- Oil and gas pipeline monitoring



## Meteorology & Alarm 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
- Monitoring of volcanic activity, prediction of seismic events or other natural disasters

## THE CHALLENGE

Point-of-sale (POS) machines are everywhere in our daily life. The convenience, speed and ease of these transactions for the consumer 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 city bus tickets from a machine
- Deposit money into a vending machine to purchase a bottled soda or packaged food
- Pay a parking meter to park an automobile at a designated location



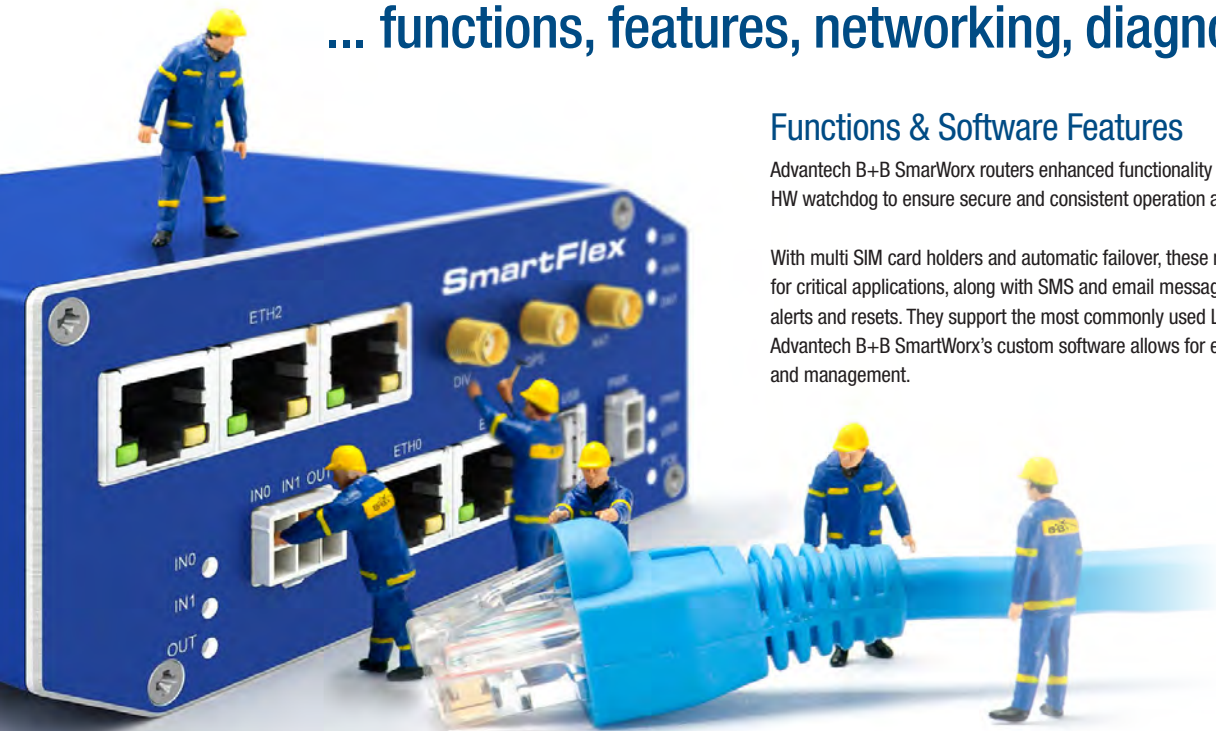
UR5i v2 router

## THE SOLUTION

A UMTS wireless mobile operator network for data transfer from machines offering POS services is frequently used. The UR5i v2 router is connected to a POS machine and transfers information and transactional data from the machine over a secure UMTS/HSDPA network to a control room server, where the data is then stored and processed. UR5i v2 routers use VPN tunnels and other advanced networking features for secure data transfer and machine communications.

An important advantage of the UR5i v2 router is mobility. Whether you transfer data from a busy city street or from a bus ticketing machine placed far away from a town, when you have the mobile operator UMTS signal available, you can use UR5i v2 routers to connect devices and collect data to a central PC or server. Welcome to digital freedom.

# LTE/HSPA+/UMTS/CDMA/EDGE/GPRS Smart Cellular Routers ... functions, features, networking, diagnostics ...



## Functions & Software Features

Advantech B+B SmartWorx routers enhanced functionality incorporates self-diagnostics and a HW watchdog to ensure secure and consistent operation and ultra-reliable wireless connections.

With multi SIM card holders and automatic failover, these routers provide wireless redundancy for critical applications, along with SMS and email messaging and control capability for remote alerts and resets. They support the most commonly used LAN/WAN network protocols and Advantech B+B SmartWorx's custom software allows for easy, flexible and effective networking and management.

## Networking

- DHCP: automatic IP addressing in LAN network
- NAP/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: communication via CSD
- NTP client, NTP server: time synchronization

## Multiple SIM for carrier fail-over

- Back-up by switching between up to 4 independent mobile carriers
- Switch when data limit is exceeded, when roaming is detected or by any other programmable option

## VPN Tunneling & Security

- IPSec, OpenVPN, PPTP, L2TP, EasyVPN, GRE
- Authentication by certificates, shared keys, name/password, RADIUS

## Remote Router Supervision & Mass Network Management

- HTTP/HTTPS, Telnet/SSH for local and remote configuration and firmware updates
- Schedule automatic configuration and firmware updates from your FTP/HTTP servers
- Up to 4 independent configuration profiles can be stored and remotely switched using scripts, SMS messages, I/O, etc.
- Additional software for easy networking and monitoring, like SmartWorx HUB, SmartCLUSTER and R-SeeNet

## 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, customer's application LED

## SMS & E-mail Info

- Information about status, connection or disconnection and many other parameters
- SMS control: on/off connection, switching SIM, router profile, I/O
- 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. Conel 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 128kb non-volatile RAM memory, ready for data collection and processing applications.

## User Modules

- Easy VPN client: secure, encrypted VPN
- Dynamic routing protocols: BGP, OSPF, RIP, IS-IS
- IGMP: multicast protocols
- MODBUS RTU/TCP gateway and mapping: convert data from RTU to TCP/IP format
- Captive Portal
- Need more UM? Please do not hesitate to contact us ...



# GLOBAL **ADVANTECH** B+B SMARTWORX Smart Cellular Routers & Gateways



## NAM region

## EMEA, LATAM, APAC



**LTE router**  
Max download / Max upload  
100 / 50 Mbit/s

NEW 06/2016



**LTE router**  
Max download / Max upload  
100 / 50 Mbit/s



**Intelligent LTE router cat. 1**  
Max download / Max upload  
10 / 5 Mbit/s

From Q3/2016



**UMTS/HSPA+ router**  
Max download / Max upload  
14.4 / 5.76 Mbit/s



**LAN router**



**LR77 v2 Libratum**



**Balanced LTE router**  
Max download / Max upload  
100 / 50 Mbit/s

**LTE routers**  
Max download / Max upload  
100 / 50 Mbit/s



**Intelligent LTE router cat. 4**  
Max download / Max upload  
150 / 50 Mbit/s

From Q3/2016



**UR5i v2 Libratum**



**UMTS/HSPA+ router**  
Max download / Max upload  
14.4 / 5.76 Mbit/s

**Balanced UMTS/HSPA+ router**  
Max download / Max upload  
14.4 / 5.76 Mbit/s



**GPRS/EDGE router**  
Max download / Max upload  
236.8 / 236.8 Kbit/s



**Twin Module Design**  
Max download / Max upload  
by the modules / by the modules

NEW 06/2016



**LAN routers**

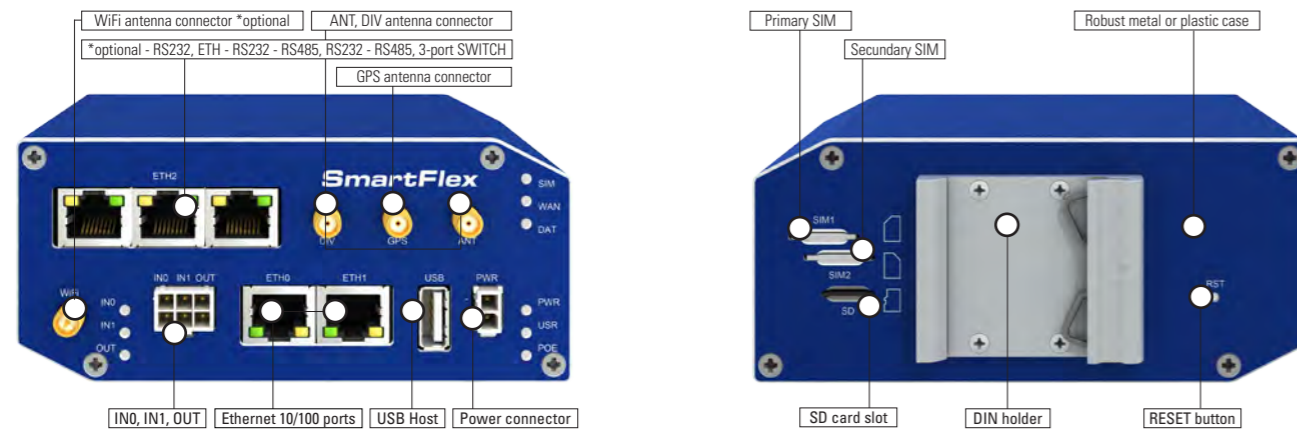
# SmartFlex™

... more power, more features, more ideas

The **SmartFlex™** cellular router provides secure Internet connectivity for devices and LANs via the cellular networks. It can be used to provide automatic wireless failover for wired networks, wireless connectivity for devices in remote locations where cable connections are impractical, and wireless connectivity for mobile assets. With upload speeds of up to 50 Mbit/s and download speeds of up to 100 Mbit/s, the **SmartFlex™** provides ample bandwidth, even for applications that require video.

The **SmartFlex™** is designed and manufactured for use in tough environmental conditions. Specifications include wide operating temperature ranges from -40 to +75 °C. It accepts input voltage ranges from 10 V DC to 60 V DC and is equipped with sleep mode for reducing electrical consumption.

The **SmartFlex™** places intelligence out at the network edge with an extremely powerful Cortex A8 CPU at 1GHz, 256 MB flash memory, 512 MB RAM and 128kB M-RAM, providing full support for LTE (long Term Evolution) speeds and applications. A secure Web interface allows users to configure and manage the **SmartFlex™** from remote locations. The router can also upgrade its configuration and firmware from the operator's central server, allowing for simultaneous mass reconfiguration of every router on the network. Users may insert Linux scripts and they can create multiple configurations for the same router. Users may switch from one configuration to another at any time.



## Product Features:

- Powerful CPU and enhanced memory to support high demand customer applications
- Extended operational temperature range from -40 °C to +75 °C
- 10-60 VDC operated with transient and reverse polarity voltage protection
- Flexible Port options, such as 3-port Switch, Ethernet and RS232/422/485 serial ports with isolation
- GPS and GLONASS support
- MicroSD card holder
- Low power consumption mode for solar and battery power applications
- Optional industrial grade WiFi
- PoE PD, PoE PSE, In/Out, USB Host
- Advanced security features

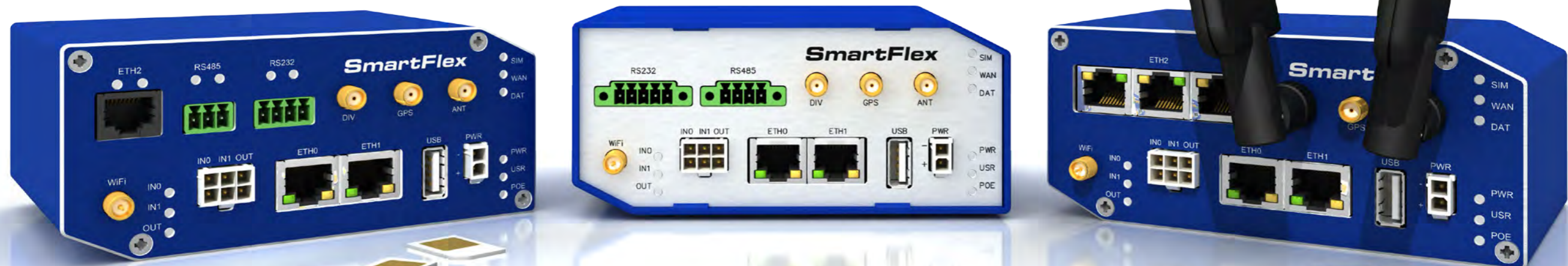


**SmartFlex™** is compatible with:

**SMARTWORX HUB™**  
**R-SEENET™**  
**SMARTCLUSTER™**

The flexible **SmartFlex™** can be configured to suit any application. The standard configuration includes 2 Ethernet ports with 2 independent LANs/IP addresses. The standard configuration also includes 1 USB host port, 1 microSD card holder, 2 SIM card holders for automatic failover to an alternate service provider, 2 binary inputs (I/O), 1 binary output (I/O) and onboard GPS. An optional built-in Wi-Fi module is also available, with industrial grade operating temperature ranges from -40 to +75 °C. Further optional boards available: 3x ETH (the router can be configured with up to 5 total Ethernet ports and 3 independent LANs/IP addresses) or ETH - RS232 - RS485 (isolation strength up to 2.5kV) or RS232 - RS485 or RS232.

The **SmartFlex™** supports real time data encryption and the creation of VPN tunnels using IPsec, OpenVPN and L2TP. It supports DHCP, NAT, NAT-T, DynDNS, NTP, VRRP, control by SMS, and numerous other functions, as well as additional software like SmartCluster VPN Server and R-SeeNet.



# SmartMotion™

## TWIN Cellular Module Router

NEW 06/2016

### Product Features:

- Two Independent cellular modules for advanced fail over feature
- Powerful CPU and enhanced memory to support high demand customer applications
- Load Balancing
- Extended operational temperature range from -40 °C to +75 °C
- 10-60 VDC operated with transient and reverse polarity voltage protection
- GPS and GLONASS support
- MicroSD card holder
- Low power consumption mode for solar and battery power applications
- Optional industrial grade WiFi
- PoE PD, PoE PSE, In/Out, USB Host
- Advanced security features

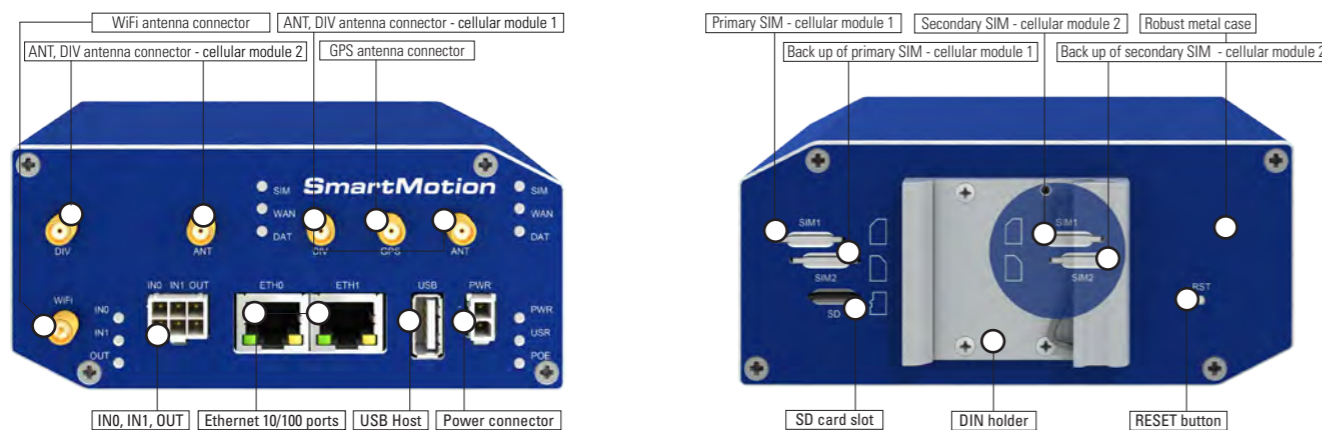


The **SmartMotion™** cellular router provides a reliable, secure network, with failover protection for devices and LANs.

Two interdependent cellular modules with 2 SIMs slots each to support multiple cellular carriers. Business continuity is never a problem with this advanced fail over architecture and Load Balancing feature which simultaneously receives Cellular, Wi-Fi and Ethernet data.

**SmartMotion™** automatic wireless failover protects against loss of communications in wired or wireless networks by using dual LTE/4G cellular module technology that accommodates multiple cellular carriers. Smartmotion provides transfer speeds up to 50 Mbit/s and download speeds of up to 100 Mbit/s meeting the high demand required for video transfer.

The **SmartMotion™** is designed and tested to meet the requirements of industrial, mobile, security and other harsh environment application where standard commercial designs fail. Specifications include wide operating temperature ranges from -40 to +75 °C, input voltage range 10 V DC to 60 V DC, and advanced sleep mode feature to allow low power consumption for solar and battery power applications.



The **SmartMotion™** places intelligence out at the network edge with an extremely powerful CPU and enhanced embedded memory capacity providing full support for LTE/4G (long Term Evolution) speeds and applications. A secure Web interface allows users to configure and manage the **SmartMotion™** from remote locations. The router can also upgrade its configuration and firmware from the operator's central server, allowing for simultaneous mass reconfiguration of every router on the network. Users may insert Linux scripts and they can create multiple configurations for the same router. Users may switch from one configuration to another at any time.

The flexible **SmartMotion™** concept includes 2 Ethernet ports with 2 independent LANs/IP addresses. The standard configuration also includes 1 USB host port, 1 microSD card holder, 4 SIM card holders for automatic failover to an alternate service provider, 2 binary inputs(I/O) , 1 binary output (I/O) and onboard GPS. An optional built-in Wi-Fi module is also available, with industrial grade operating temperature ranges from -40 to +75 °C.

The **SmartMotion™** supports real time data encryption and the creation of VPN tunnels using IPsec, OpenVPN and L2TP. It supports DHCP, NAT, NAT-T, DynDNS, NTP, VRRP, control by SMS, and numerous other functions, as well as additional software like SmartWorx HUB, SmartCluster VPN Server and R-SeeNet.

# SmartStart™

## NEW Intelligent 4G LTE Router & Gateway

NEW 06/2016

### Product Features:

- For Industrial IoT and consumer focused high speed data applications
- Ethernet, serial RS-232 and I/O for connecting a wide array of field assets with DIN rail or wall mounting
- Low power consumption for solar and battery power applications
- Exceptionally resilient wireless and wired connection
- Enhanced memory to host custom software applications and a wide variety of protocols
- Easy deployment, mass maintenance and troubleshooting with our SmartWorx remote management and monitoring tools
- Loaded with advanced features to secure your data



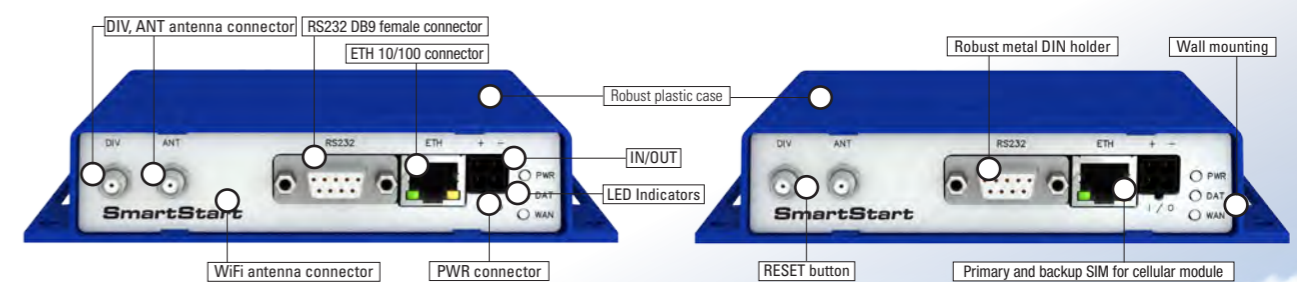
The **SmartStart™** LTE Cat.4 family of cellular routers and gateways are the perfect way to connect RS-232 and Ethernet devices to a cellular network. Industrial M2M and IoT applications include Ethernet lottery machines, ATM stations, kiosk locations, gaming terminals along with RS-232 traffic controllers, meters, UPS systems, PLCs and much more.

The processor is powerful enough to handle the full range of LTE communications capabilities, including video streams. The internal memory provides ample storage for custom scripts, software applications and a wide variety of protocols.

In addition to its Ethernet and RS-232 ports, **SmartStart™** has built-in digital I/O connectivity. Competing routers in the same price range generally provide only Ethernet or RS-232. StartSmart™ provides all three.

**SmartStart™** provides best-in-class power consumption combined with LTE performance, and is optimized for solar and battery powered applications. Low Power Mode extends battery life by dropping power consumption to 40 mW, and can be triggered by timers, low voltage detection or I/O.

**SmartStart™** is the industry's only cellular gateway with power consumption equivalent to 2G devices. It is DIN rail and panel mountable.



**SmartStart™** is an excellent fit for applications that are migrating to LTE technology. **SmartStart™** provides fallback to 3G/2G technologies to ensure that connectivity is reliable in areas where LTE is still under development. This future proofs your existing installations and protects your investment. You can upgrade your systems according to your own schedule, as **SmartStart™** will continue to connect your legacy devices, even after the cellular providers sunset their 2G and 3G cellular networks.

**SmartStart™** is easy to install using SmartWorx HUB™, a full featured configuration and monitoring tool. Our VPN configuration tool, SmartCluster™, makes it easy to configure multiple routers via the same VPN tunnel.

**SmartMotion™ SmartStart™** routers are compatible with:

**SMARTWORX HUB™**  
**R-SEENET™**  
**SMARTCLUSTER™**



# GLOBAL ROUTERS

## Smart Cellular Routers



ER75i v2

LR77 v2 Libratum

UR5i v2 Libratum

UR5i v2

LR77 v2

CR10 v2

XR5i v2F

XR5i v2E

SmartFlex

SmartMotion

SmartStart

MOBILE WIRELESS NETWORK TECHNOLOGY											
GPRS	✓	✓	✓	✓	✓	✓	✓	✓	✓	optional	✓
UMTS/HSPA+		✓	✓	✓	✓	✓	✓	✓	✓	optional	✓
LTE		✓			✓				✓	optional	✓
LTE 450					optional				optional	optional	
CDMA 2000 1X, EV-DO Rev. A, B						✓				optional	
WAN ETHERNET	optional	✓	✓	optional	optional	optional	✓	✓	✓	✓	
Two VF modules										✓	
COMMUNICATION INTERFACES AND EXPANSIONS											
Ethernet 10/100	✓	2x	2x	✓	✓	✓	✓	2x	2x	2x	✓
Ethernet 10/100 3-port switch	optional			optional	optional	optional			optional		
Maximum number of ETH ports	3	2	2	3	3	3	3	2	5	2	1
SD Card Holder	optional			optional	optional	optional	optional	✓	✓	✓	
Wi-Fi (IEEE 802.11 b, g, n)	optional	optional	optional	optional	optional	optional	optional	optional	optional	optional	optional
USB Host	✓			✓	✓	✓	✓	✓	✓	✓	
RS232/RS422/RS485	optional			optional	optional	optional	optional	optional	✓	✓	RS232
MBUS, Wireless MBUS	optional			optional	optional	optional	optional				
I/O CNT (4x bin. IN, 2x analog IN, 1x output)	optional			optional	optional	optional	optional				
I/O (1xIN/1xOUT)	✓			✓	✓	✓	✓		2xIN / 1xOUT	2xIN / 1xOUT	1xIN / 1xOUT
GPS Receiver				optional	optional				by module	✓	
CPU, RAM, CONSUPTION, SIM, DESIGN, ENVIRONMENTAL, DIMENSIONS											
CPU Power (MHz)	333	333	333	333	333	333	333	333	1000	1000	1000
Flash RAM / RAM / M-RAM (MB / MB / kB)	16 / 64 / 128	16 / 64 / 128	16 / 64 / 128	16 / 64 / 128	16 / 64 / 128	16 / 64 / 128	16 / 64 / 128	16 / 64 / 128	256 / 512 / 128	256 / 512 / 128	256 / 512 / 128
Consumption - Idle / Average / Peak / Sleep Mode	2,3 / 4,5 / 6,5W / -	2,3 / 3,5 / 5,5W / -	2,3 / 3,5 / 5,5W / -	2,3 / 4 / 6W / -	2,3 / 4 / 6W / -	2 / 3,5 / 4W / -	2 / 2,5 / 3W / -	2 / 2,5 / 3W / -	2,5 / 4 / 11 W / 10mW	2,5 / 4 / 11 W / 10mW	2,7 / 5,5 / 11 W / 40mW
2xSIM Card	optional	✓	✓	optional	optional	optional			✓	4	✓
Antenna Rx Diversity		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Power Supply (V DC)	10 - 30	10 - 30	10 - 30	10 - 30	10 - 30	10 - 30	10 - 30	10 - 30	10 - 60	10 - 60	10 - 36
Op. Temperature (°C)	-40 to +75	-40 to +75	-40 to +75	-40 to +75	-40 to +75	-30 to +60	-40 to +75	-40 to +75	-40 to +75 (-20 to +60 LTE450)	-40 to +75 (-20 to +60 LTE450)	-40 to +75
Plastic Casing (mm)	51x87x116	51x87x116	51x87x116	51x87x116	51x87x116	51x87x116	51x87x116	51x87x116	55x97x125	55x97x125	30x87x127
Metal Casing (mm)	42x87x113	42x87x113	42x87x113	42x87x113	42x87x113	42x87x113	42x87x113	42x87x113	55x97x125	55x97x125	
DIN holder TS35/TS32	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FUNCTIONS											
Linux	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IPSec, OpenVPN, PPTP, L2TP, GRE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Authentication (X.509 certificate, Pre-shared key, PW)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EasyVPN	optional	optional	optional	optional	optional	optional	optional	optional	optional	optional	optional
Firewall, NAT/PAT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DHCP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HTTP/HTTPS Server, Telnet/SSH, NTP Server, NTP Client	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DynDNS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FTP Server	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SNMP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VRRP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SMTP, E-mail, SMS Functions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VLAN 802.1Q	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
QoS, IGMP, BGP, OSPF, RIP	optional	optional	optional	optional	optional	optional	optional	optional	optional	optional	optional
PPPoE Bridge	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
COM Port TCP/UDP server/client	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MODBUS RTU/TCP Gateway	optional			optional	optional	optional	optional	optional	✓	✓	✓
4 Configuration Profiles	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Automatic Configuration and FW Update	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ADDITIONAL SOFTWARE SUPPORT											
Support of Software User Modules	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SmartWorx HUB™	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
R-SeeNet™	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Smart Cluster™	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓



## MODULAR DESIGN of v2 ROUTERS

...choose exactly what you need

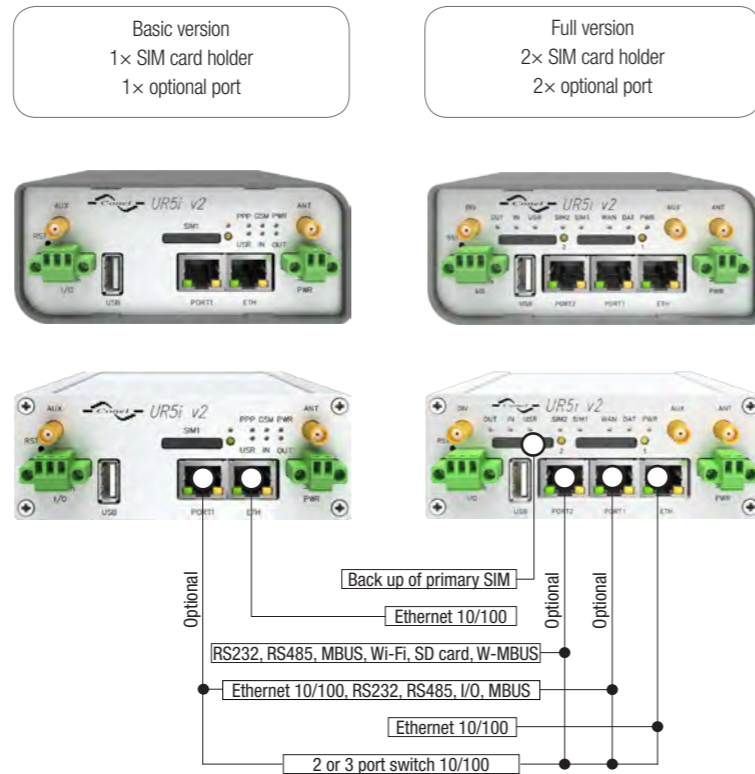
Basic and full versions are available, with different combinations of optional ports and SIM card holders.

Fixed communication interfaces:

- Ethernet 10/100
- USB Host
- I/O port with 1× input and 1× output

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

- 1-2× Ethernet 10/100 with available modes:
  - 2-port Ethernet switch
  - 3-port Ethernet switch
  - 2× independent LAN
- Wi-Fi: AP or client mode
- RS232 serial port
- RS485 galvanic separation available
- RS422 galvanic separation available
- MBUS master for up to 30 slave meters
- SD card holder
- Wireless MBUS
- I/O CNT interface including 4× binary inputs (2 inputs may be configured as counter) 2× analogue inputs and 1× binary output



For all routers, you can choose either a metal or plastic casing.

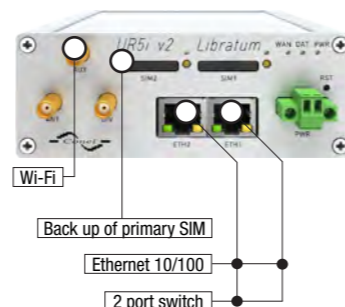
## BALANCED DESIGN - Libratum v2

... great value, balanced price

All the best from "Modular design" - Balanced routers UR5iv2 Libratum and LR77v2 Libratum HSPA+ and LTE wireless routers featuring high speed data rates (14.4 Mbit/s / 100 Mbit/s).

- 2× Ethernet 10/100 with possible modes:
  - 2-port Ethernet switch
  - 2× independent LAN
- Optional Wi-Fi: AP or client mode
- Dual-SIM fail over
- Antenna Rx Diversity
- Temperature up to +75 °C
- You can choose either a metal or plastic casing

LR77v2 Libratum, UR5iv2 Libratum  
2× SIM card holder  
2× LAN port, Wi-Fi optional



All routers are compatible with:

**SMARTWORX HUB™**  
**R-SEENET™**  
**SMARTCLUSTER™**

## CELLULAR ROUTERS ARE NOT ALL THE SAME.

Most companies selling routers today use the same words to describe their products. Reliable. Secure. Easy to use. But do those words mean the same thing to everyone? We think it's always good to clarify marketing terms into what's really engineered into the product. Here's what those words mean at Advantech B+B SmartWorx.

### Why choose us?

#### Reliability

- An average meantime between failure rate of 49 years
- Existing networks with more than 15,000 routers successfully deployed
- Self-diagnostics software and a hardware watchdog built in
- Dual SIM cards and automatic failover
- Signal level data, cell identifiers and data traffic retained in memory for 60 days
- More than 30 years of experience in designing industrial wireless products



#### Secure

- FIPS 140-2 Certified FW version for SmartFlex router
- Firewall
- VPN Tunneling with dynamic routing protocols
  - IPSec, OpenVPN, PPTP, L2TP, EasyVPN, GRE
  - Authentication by certificates, shared keys, name/password
- Secure network management tool – SmartCluster, SmartWorx HUB

#### Easy-to-Use

- Modular hardware design means you choose just what you need
  - On-line product selection tool walks you through the available options
  - You don't pay for hardware you don't need
- Wide range of feeding voltages and running temperatures
- Simple and intuitive web-based configurator for router set-up
  - Online HelpDesk Support
  - Online Knowledge base
  - Free application consulting
- Linux scripting easily supports writing custom applications for your own software plug-in.

#### Free User Module Library

User modules complement and expand the functionality of a standard router. Whether you do it or we do it for you, customized user modules let our routers meet your needs – rather than trying to modify your operations to fit the limitation of someone else's router. The free module library allows you to enhance hardware, software, functionality, add protocols or layers of security. Here are just a few examples of the many of modules that are available:

- AT Modem Emulator
- DNP3 Outstation
- EasyVPN Client
- MODBUS-TCP2RTU
- Transparent Mode
- IEC 101/104 protocol conversion



## AT THE CENTER OF OPERATIONS

device configuration, diagnostics & management platform

# SMARTWORX HUB™

### Management for your devices

SmartWorx Hub takes management of your devices to new levels of flexibility and efficiency. Giving you a complete view of your installed device population, SmartWorx Hub delivers invaluable configuration, diagnostic and management facilities directly to your desktop, wherever you are.

- Lower installation costs
- Lower upgrade costs
- Less downtime
- More coherent deployments
- Faster problem diagnosis
- Faster upgrade rollout
- Spend less time on unproductive tasks
- Access diagnostics & configuration data anywhere



### Product Overview

Manage a single device or your entire device population at the same time. Whether you need to modify configuration parameters, download or upgrade installed firmware and applications or view detailed information regarding network statistics, you can do it all from any location.

### Significantly Reduces the Cost of Ownership

#### Device Configuration

Instantly access the latest configuration data for any unit. Create profiles to accelerate configuration of new devices. Upload current configurations for units that have been modified on site. Update parameters remotely in real time. (If a device is not normally connected, SmartWorx Hub will provide the device with the updates the next time the device connects.)

#### Firmware & Application Downloads

View the firmware versions and user applications deployed on any device. Download upgrades or new user modules to individual devices or groups of devices. Schedule the time that downloads should be initiated. Synchronize updates with other events.

#### Network Diagnostics

You can view the networking status of individual routers or your entire network at any time.

### Zero Touch Provisioning

SmartWorx Hub not only saves you time and money after devices have been installed, its Zero Touch Provisioning feature can dramatically reduce the cost of the installation process itself. When a new, unconfigured device is installed and powered on, it can automatically download its initial configuration and application code from the central provisioning server. This means that new units can be installed by electrical contractors who possess no specialist knowledge of any kind.



## SMART DECISIONS BEGIN

with Intelligent Management Software

# R-SEENET™

### Monitoring & Management Software

R-SeeNet is the software system used for monitoring Advantech B+B SmartWorx routers. It continuously collects information from individual routers in the network and records the data into a SQL database. Then it creates visual forms and reports for the network administrator.

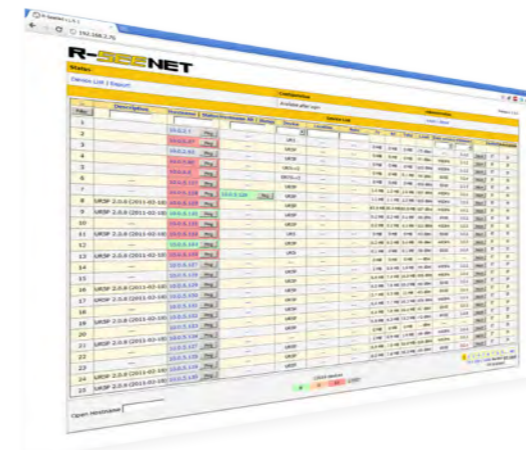
R-SeeNet consists of two parts:

- **R-SeeNet Server**  
A server application that 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 to the SQL database and provides the user or network administrator with information about the status of individual routers as well as the status of the entire network.

### Available Data

Everything you need to know about your network's current status as well as a historical view of the 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



# SMARTCLUSTER™

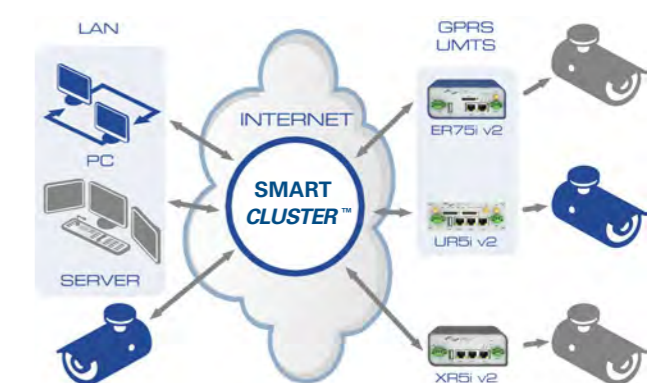
### SmartCLUSTER – Internet VPN Portal

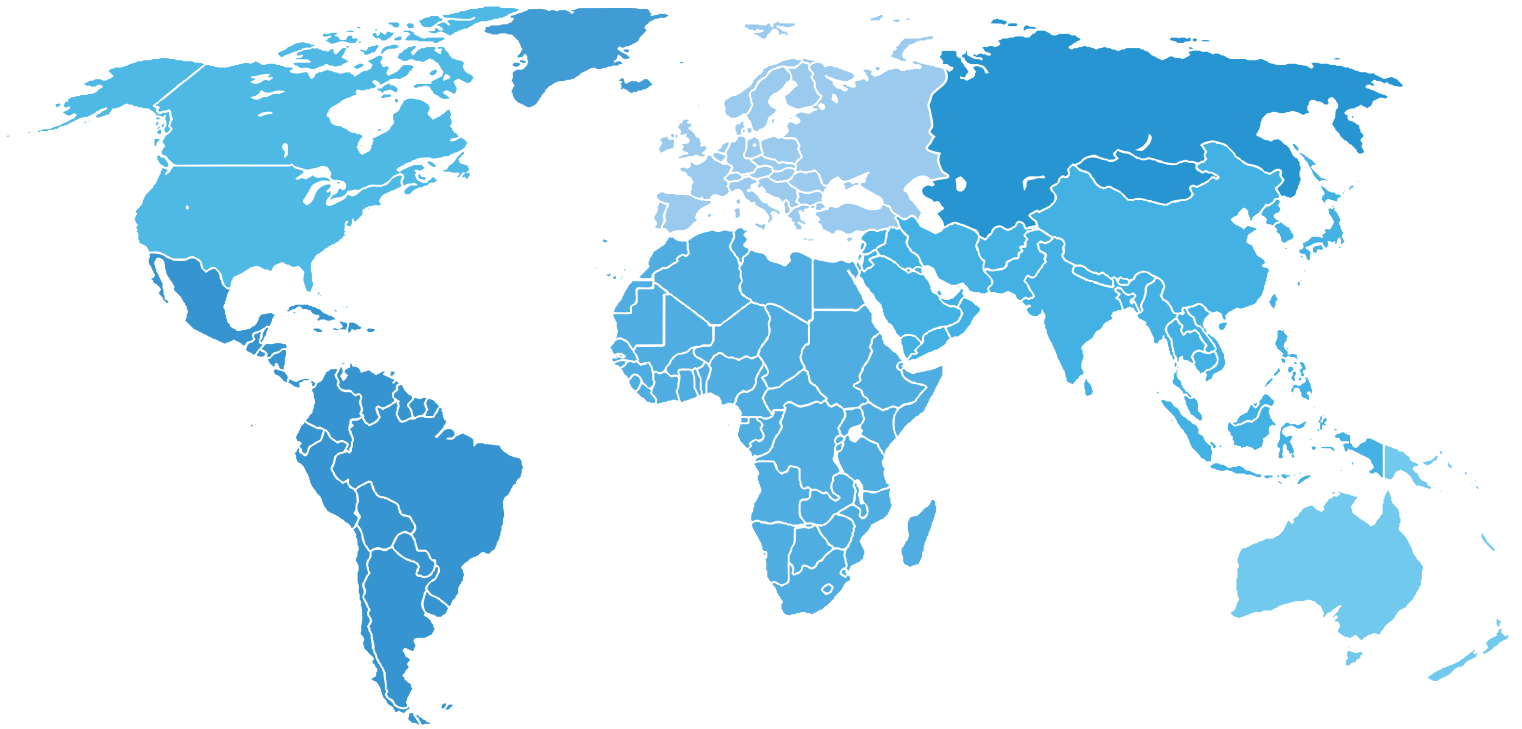
SmartCLUSTER is software designed to create safe communications systems while using a public network - the Internet. SmartCLUSTER is an OpenVPN server that offers three functions for the creation of safe private networks in a public environment.

1. As an OpenVPN server it connects clients (Advantech B+B smartWorx routers and end-user computers) via an OpenVPN tunnel. It creates communication links between individual tunnels and thereby enables individual devices to communicate with each other.
2. Based on the user-defined network configuration and connection parameters of VPN tunnels, SmartCLUSTER creates a configuration file for Conel routers and also creates secure certificates for both sides of the secured OpenVPN tunnel. This makes it easy for users to add individual Conel routers to a virtual private network, and be confident that the system will be secure against attacks or unauthorized access.
3. SmartCluster informs the user about the connection status of individual routers and can be used as an instrument for basic network management.

### The SmartCLUSTER solution

- SmartCLUSTER makes it easy to connect to devices on local area networks that are behind a router when the router does not have a public IP address.
- SmartCLUSTER solves network security problems and provides secure connections for individual LANs.
- SmartCLUSTER makes it easy to use SIM cards from multiple GSM/UMTS operators.
- SmartCLUSTER also makes it easy to provide inexpensive connectivity for devices that are located in countries with roaming tariffs.





## ANOTHER REASON OUR ROUTERS & GATEWAYS ARE REALLY GREAT.

Routers transform to gateways as they host application specific software and protocol solutions. Putting ever-increasing levels of intelligence at the Networks Edge demands increased processor and memory capabilities.

Smart Cellular Routers were designed to meet demands as a platform for advanced routers and IoT gateway solutions. Routers support applications from a wide array of Industrial Internet of Things PaaS clients like:



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