

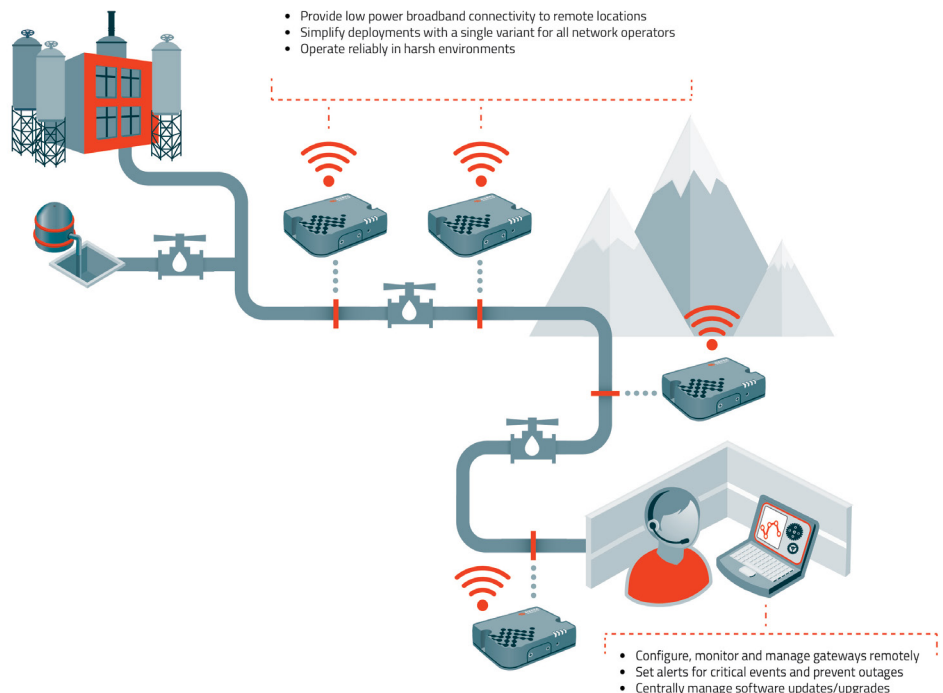


## AirLink® Raven RV50 Industrial LTE Gateway

### Industrial Grade, LTE Performance, Low Power

The AirLink® Raven RV50 is the industry's lowest power consuming LTE gateway. Simple to install and easy to manage, the Raven RV50 industrial gateway is designed to connect critical assets and infrastructure. Ideal for industrial-grade applications in energy, utilities and smart-city infrastructure, the Raven RV50 provides real-time remote connectivity for SCADA, distribution management systems and metering.

With LTE coverage on major global networks, the Raven RV50 brings the benefits of broadband connectivity to the most challenging environments, where servicing is not an option and power is often scarce. It is the industry's only fully operational 4G gateway with 2G power consumption. LTE bandwidth makes it a viable alternative to costly wired and wireless technologies, providing a future-proof solution that protects investment.



## FEATURES

- LTE performance at 2G power consumption (less than 1W in idle mode)
- State-of-the-art LTE coverage spanning 11 LTE frequency bands
- Single product variant for all major North American network operators
- Fully automatic network operator switching: just insert the SIM
- Provides network connectivity via Ethernet, Serial and USB
- Remote configuration, software update, and monitoring with AirLink Management Service (ALMS)
- Meets industrial-grade certifications including Class 1 Div 2, MIL-STD-810G, IP64 ingress protection
- Supports up to 5 VPN tunnels for secure cellular communications
- Events Engine for alert reporting to third party server platforms
- Application Framework (AAF) offers real-time onboard data processing
- GPS for tracking equipment

## RUGGED DESIGN FOR DEMANDING ENVIRONMENTS

The Raven RV50 is the most rugged AirLink gateway ever built. Designed to withstand harsh industrial conditions, it is capable of surviving 5 V brownouts and spikes from -600 VDC to 200 VDC.

Certified as Class I Div 2, it is ideal for hazardous environments. The die cast aluminium housing is sealed to meet IP64 for resistance to dust and water ingress. The Raven RV50 is tested to meet and exceed the MIL-STD-810G specification for shock, vibration, temperature and humidity. The built-in power supply protection make it suitable for harsh electrical environments such as compressors, generators, and excavators.

## ULTRA-LOW POWER CONSUMPTION

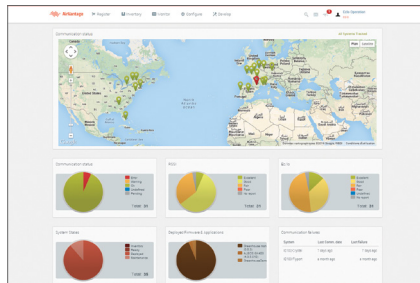
The Raven RV50 offers best-in-class power consumption combined with LTE performance, and is optimized for solar applications. It is the industry's only 4G gateway with 2G power consumption, operating at 900 mW in idle mode. For 2G and 3G deployments migrating to LTE, the Raven RV50 will work with existing power infrastructure, eliminating the need to invest in replacement solar panels.

Standby Mode provides additional protection for batteries by dropping power consumption to 53 mW, and can be triggered by timers, low voltage detection or I/O.

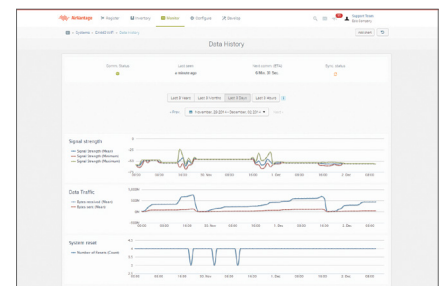
## SIMPLIFIED DEPLOYMENT

The Raven RV50 is the first industrial LTE gateway to offer a single product variant for North American network operators, and a single product variant for international network operators. The Raven RV50 supports network operator switching—automatic configuration of the radio, based on the SIM—providing versatility and simplicity when changing between network operators at any time.

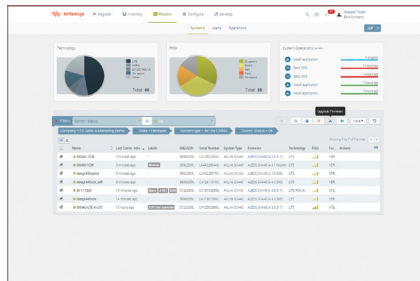
### DASHBOARD



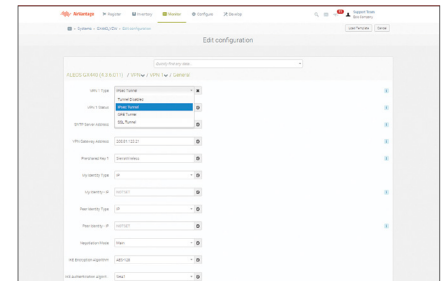
### MONITOR CONNECTIVITY



### SOFTWARE UPGRADES/UPDATES



### SECURITY CONFIGURATION



## BENEFITS

- Provides LTE broadband connectivity to remote locations and in harsh environments
- Ultra-low power consumption, ideal for solar or battery powered installations
- Maximizes longevity of deployed equipment and protects investments with LTE
- Improves ROI by supporting multiple network operators without additional hardware costs
- Powerful remote management solution
- Built-in, class-leading voltage transient protection provides superior reliability and continuous operation
- Proven reliability and over 1 million AirLink gateways deployed
- Industry leading warranty includes support, software updates and advance replacement

## BEST-IN-CLASS REMOTE MANAGEMENT

The Raven RV50 can be remotely managed by AirLink Management Service (ALMS)—the cloud management solution ranked “best-in-class” by ABI Research. ALMS supports over-the-air device registration, configuration and software updates. Variables such as signal strength, network technology, location, temperature and voltage can be remotely monitored to help maintain connectivity. Dashboards display up-to-date views of the entire deployment, and custom reports can be set-up to monitor critical events and prevent downtime.

## INSTANT INTEGRATION

The Raven RV50 is designed to install directly into existing infrastructure. Offering both serial and Ethernet connectivity, it can be used to connect devices like PLCs and RTUs, and transmit a wide variety of protocols like Modbus/DNP3 with ease. The Raven RV50 can also be integrated directly into existing management systems via SNMP.

## INTELLIGENCE AT THE EDGE

The Raven RV50's Application Framework (AAF) provides programmability for leading-edge on-board data gathering, real-time processing and integration with the Sierra Wireless IoT Acceleration Platform. Processing data from connected devices, and making decisions at the edge can all be realized with the Raven RV50.

## SECURE INDUSTRIAL COMMUNICATIONS

The Raven RV50 is loaded with features to secure critical data. It supports secure communications to multiple back-end systems by providing up to five concurrent VPN sessions. Remote authentication management allows enterprise-grade systems to manage access to devices in the field. Finally, port filtering and trusted IP protect the devices connected to the Raven RV50 from unwanted access.

	Specification
CELLULAR WAN	<p>North American Model (Sierra Wireless MC7354)</p> <ul style="list-style-type: none"> <li>Carrier Approvals: Verizon, AT&amp;T, Sprint, T-Mobile USA, US Cellular, Rogers, Bell, Telus</li> <li>Supported Frequency Bands               <ul style="list-style-type: none"> <li>LTE: 1900(B2), AWS(B4), 850(B5), 700(B13), 700(B17), 1900(B25)</li> <li>WCDMA: 2100(B1), 1900(B2), AWS(B4), 850(B5), 900(B8)</li> <li>EV-DO/CDMA: 800(BC0), 1900(BC1), 1700(BC10)</li> <li>GSM/GPRS/EDGE: Quad-band</li> </ul> </li> <li>Industry Approvals: FCC, IC, PTCRB</li> <li>Software defined radio with automatic network operator switching</li> <li>Dual SIM Interfaces (2FF)</li> </ul> <p>International Model (Sierra Wireless MC7304)</p> <ul style="list-style-type: none"> <li>Supported Frequency Bands               <ul style="list-style-type: none"> <li>LTE: 2100(B1), 1800(B3), 2600(B7), 900(B8), 800(B20)</li> <li>WCDMA: 2100(B1), 1900(B2), 850(B5), 900(B8)</li> <li>GSM/GPRS/EDGE: Quad-band</li> </ul> </li> <li>Industry Approvals: CE, RCM, GCF, R&amp;TTE</li> <li>Software defined radio with automatic network operator switching</li> <li>Dual SIM Interfaces (2FF)</li> </ul>
HOST INTERFACES	<p>10/100/1000 Ethernet (RJ45)</p> <p>RS-232 serial port (DB-9)</p> <p>USB 2.0 Micro-B Connector</p> <p>3 SMA antenna connectors (primary, diversity, GPS)</p> <p>Active GPS antenna support</p>
INPUT/OUTPUT	<p>Configurable I/O pin on power connector</p> <ul style="list-style-type: none"> <li>Digital Input ON Voltage: 2.7 to 36 VDC</li> <li>Configurable Pull-up for dry contact input</li> <li>Digital Open Collector Output &gt; sinking 500 mA</li> <li>Analog Input: 0.5-36 VDC</li> </ul>
LAN (ETHERNET/USB)	<p>DNS, DNS Proxy</p> <p>DHCP Server</p> <p>IP Passthrough</p> <p>VLAN</p> <p>Host Interface Watchdog</p> <p>PPPoE</p>
SERIAL	<p>TCP/UDP PAD Mode</p> <p>Modbus (ASCII, RTU, Variable)</p> <p>PPP</p> <p>DNP3 Interoperability</p>
NETWORK AND ROUTING	<p>Network Address Translation (NAT)</p> <p>Port Forwarding</p> <p>Host Port Routing</p> <p>NEMO/DMNR</p> <p>VRRP</p> <p>Reliable Static Route</p> <p>Dynamic DNS</p>
VPN	<p>IPsec, GRE, and OpenVPN Client</p> <p>Up to 5 concurrent tunnels</p> <p>Split Tunnel</p> <p>Dead Peer Detection (DPD)</p> <p>Multiple Subnets</p>
EVENTS ENGINE	<p>Custom event triggers and reports</p> <p>Configurable interface, no programming</p> <p>Event Types: Digital Input, Network Parameters, Data Usage, Timer, Power, Device Temperature and Voltage</p> <p>Report Types: RAP, SMS, Email, SNMP Trap, TCP (Binary, XML, CSV)</p> <p>Event Actions: Drive Relay Output</p>
DIMENSIONS	<p>119 mm x 34 mm x 85 mm (94 mm including connectors)</p> <p>4.69 in x 1.34 in x 3.35 in (3.70 in including connectors)</p>

#### About Sierra Wireless

Sierra Wireless is building the Internet of Things with intelligent wireless solutions that empower organizations to innovate in the connected world. We offer the industry's most comprehensive portfolio of 2G, 3G, and 4G embedded modules and gateways, seamlessly integrated with our secure cloud and connectivity services. OEMs and enterprises worldwide trust our innovative solutions to get their connected products and services to market faster.

	Specification
SECURITY	<p>Remote Authentication (LDAP, RADIUS, TACACS+)</p> <p>DMZ</p> <p>Inbound and Outbound Port filtering</p> <p>Inbound and Outbound Trusted IP</p> <p>MAC Address Filtering</p> <p>PCI compatible</p>
SATELLITE NAVIGATION (GNSS)	<p>12 Channel GPS and GLONASS Receiver</p> <p>Acquisition Time: 1 s Hot Start</p> <p>Accuracy: &lt;2 m (50%), &lt;5 m (90%)</p> <p>Tracking Sensitivity: -145 dBm</p> <p>Reports: NMEA 0183 V3.0, TAIP, RAP, XORA</p> <p>Multiple Redundant Servers</p> <p>Reliable Store and Forward</p>
AIRLINK MANAGEMENT SERVICE	<p>Secure cloud-based device management application</p> <p>Remote provisioning and airtime activation (where applicable)</p> <p>Gateway configuration and template management</p> <p>Gateway staging over the air and local Ethernet connection</p> <p>Over-the-air software and radio module firmware updates</p> <p>Device Configuration Templates</p> <p>Configurable monitoring and alerting</p> <p>Fleet wide firmware upgrade delivery</p> <p>Redundant data centers</p>
GATEWAY MANAGEMENT INTERFACES	<p>ALMS</p> <p>Local web user interface</p> <p>AT Command Line Interface (Telnet/SSH/Serial)</p> <p>SMS Commands</p> <p>SNMP</p>
MANAGEMENT SYSTEM ACCESS/SECURITY	<p>Remote authentication (LDAP, RADIUS and TACACS+)</p>
APPLICATION FRAMEWORK	<p>ALEOS Application Framework (AAF)</p> <p>LUA Scripting Language</p> <p>Eclipse-based IDE</p> <p>Integrated with AirVantage®</p>
POWER	<p>Input Voltage: 7 to 36 VDC</p> <p>LTE Idle Power: 900 mW (75 mA @ 12 VDC)</p> <p>Standby Mode Power: 53 mW (4.4 mA @ 12 VDC) triggered on low voltage, I/O or periodic timer</p> <p>Low voltage disconnect to prevent battery drain</p> <p>Built-in protection against voltage transients including 5 VDC engine cranking and +200 VDC load dump</p> <p>Ignition Sense with time delay shutdown</p> <p>Configurable features and ports to optimize power consumption</p>
ENVIRONMENTAL	<p>Operating Temperature: -30°C to +70°C / -22°F to +158°F</p> <p>Storage Temperature: -40°C to +85°C / -40°F to +185°F</p> <p>Humidity: 90% RH @ 60°C</p> <p>Military Spec MIL-STD-810G conformance to shock, vibration, thermal shock, and humidity</p> <p>IP64 rated ingress protection</p>
INDUSTRY CERTIFICATIONS	<p>Safety: IECCE Certification Bodies Scheme (CB Scheme), UL 60950</p> <p>Vehicle Usage: E-Mark (UN ECE Regulation 10.04), ISO7637-2, SAE J1455 (Shock &amp; Vibration)</p> <p>Hazardous Environments: Class 1 Div 2</p> <p>Environmental: RoHS, REACH, WEEE</p>
SUPPORT AND WARRANTY	<p>3-year standard warranty</p> <p>Optional 2-year warranty extension</p> <p>Unrestricted device software upgrades</p> <p>1-day Accelerated Hardware Replacement available through participating resellers</p>