



5G

AirLink® XR – The World's Most Advanced 5G Router Solution

Introduction

Public safety, transit, industrial, mission-critical and businesscritical applications require alwayson connectivity to ensure safety, security, transparency, and efficiency. Sierra Wireless AirLink XR is the world's most advanced router that addresses these real-world needs with unmatched 5G, Wi-Fi 6, and gigabit Ethernet supercharged performance in a ruggedized, flexible, and secure purpose-built solution



TABLE OF CONTENTS

- Who Needs Always-On Real-Time Connectivity?
- Advantages of 5G Connectivity
- 6 Introducing the AirLink® XR90 and AirLink XR80
- Architected for 5G Performance
- 8 Operational Simplicity
- End-To-End Security

- The AirLink XR Series Solution Components
- AirLink XR90 and AirLink XR80 Router Details
- AirLink XR90 and AirLink XR80 In the Field
- AirLink XR90 Applications
- AirLink XR80 Applications
- Why Sierra Wireless?





PUBLIC SAFETY ORGANIZATIONS

Law enforcement, fire, and ambulance/EMS organizations are focused on increasing safety by gaining real-time situational analysis from fellow first responders, dispatch, and the network of cameras and sensors around them. Always-on connectivity also helps public safety organizations accelerate collaboration and ensure transparency and accountability.



TRANSIT BUSES, SCHOOL BUSES, AND RAIL

Secure and reliable always-on communications between transit/school buses and depots helps ensure driver and passenger safety. Multi-channel routers can deliver one secure Wi-Fi channel for passengers and a second secure channel for bus systems including security cameras, fare payment, and navigation. Improvements in railway communications enable higher train speeds with increased safety levels.



UTILITY, COMMERCIAL, AND DELIVERY FLEETS

Improved communications can help fleet managers better track asset location, improve routing, and manage driver behavior. Robust routers integrate with onboard navigation and sensors to facilitate emergency responses and gain access to real-time vehicle maintenance information. Real-time video and data transfer helps increase worker safety.



UTILITY INFRASTRUCTURE

5G wireless speeds allow utilities to reliably and securely connect critical power grid components and renewable energy sources for remote monitoring and management. This helps utilities gain flexibility and cost savings compared to running fiber optic or copper cables. 5G speeds and low latency reduces detection and isolation of faults down to milliseconds.



Sierra Wireless Premier Reseller Tel: 1-888-RUGGED-3 | www.TransCOR-IT.com





MANUFACTURING

Manufacturers can leverage the speed and reliability power of 5G through secure private network implementations. This lets manufacturers leverage the potential of Industry 4.0 and smart factories through improved automation and supply chain control. Companies gain flexibility and cost savings by reliably connecting machinery to cloud-based programmable logic controllers (PLCs).



HEALTHCARE POP-UP CLINICS & VACCINATION SITES

Teams at pop-up clinics and vaccination sites need secure internet connectivity to access appointment schedules, patient electronic health records, and supply chain status. Routers must be simple to set up and manage, and be up and running quickly with provisioning for multiple stations.



REMOTE LEARNING

Students learning remotely need access to reliable secure internet. Those without broadband access can leverage Wi-Fi hotspots and private networks set up by school districts and municipalities. Router monitoring can alert administrators when devices/students have gone offline.



FIXED WIRELESS ACCESS FOR LAST MILE CONNECTIVITY

Telecom providers and businesses are now using Fixed Wireless Access to gain lowcost and effective last-mile connectivity on par with cable/broadband. High-speed wireless networking eliminates the need to run copper or fiber cables delivering effective connectivity at a fraction of the cost. Fixed Wireless Access can also be installed in hours versus weeks or months for cable.



PRIVATE CELLULAR NETWORKING

Private cellular networks are proving to be an attractive option to shipping ports, cities, utilities, airports, mining companies, warehouses, and manufacturing plants that need high-reliability coverage, increased security, and better flexibility. With Private Cellular Networking, 5G connectivity is delivered over a dedicated spectrum providing improvements over Wi-Fi networks and spotty public cellular coverage.



Sierra Wireless Premier Reseller Tel: 1-888-RUGGED-3 | www.TransCOR-IT.com

Advantages of 5G Connectivity

5G delivers a significant upgrade to 4G LTE including lower latency, higher capacity, and higher speeds. Lower latency will help drive improvements in automation and real-time monitoring that can be beneficial for power grid and industrial applications. Higher capacity provides more connections that work concurrently which is important for fixed wireless access. Higher speed enables real-time video and data connectivity which is critical for public safety mission-critical applications.



Speed: 100 times faster than LTE, with 1-10 Gb/s



Latency and reliability: improvement from 20 ms to <1 ms with 99.999% reliability



Masive Connections: 100 - fold increase of supported devices to 1 mn devices/km²



Energy efficiency: power consumption reduced by 90%

Note: Not all performance dimensions can be maximized at the same time. There are trade-offs between speed, range, energy efficiency and latency.

Source: McKinsey analysis

Technology Benefits of 5G Reference McKinsey



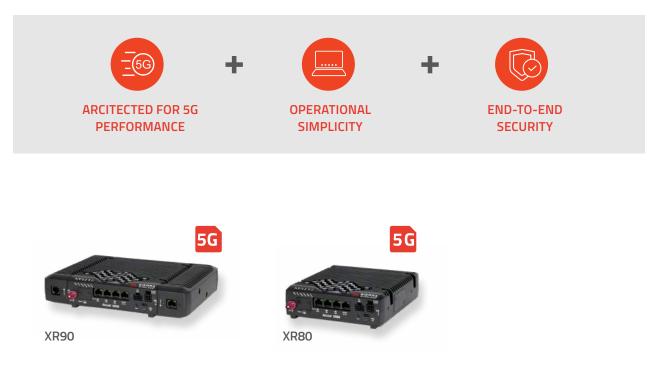
Sierra Wireless Premier Reseller Tel: 1-888-RUGGED-3 | www.TransCOR-IT.com





Introducing the AirLink XR90 and AirLink XR80

The AirLink XR90 and AirLink XR80 are architected for the highest 5G performance through a combination of hardware acceleration, robust software including our patented cognitive wire switching, and Wi-Fi 6. These cellular routers deliver ultimate operational simplicity with best-in-class provisioning, deployment, and management of your devices with a zero-touch out-of-box experience. The AirLink XR Series is built on a secure networking platform delivering end-to-end security including secure boot, cryptographic keys, and WPA-3. Both the AirLink XR90 and AirLink XR80 are purpose-built for rugged environments with aluminum die cast housings rated to IP64 and Mil-STD 810G.



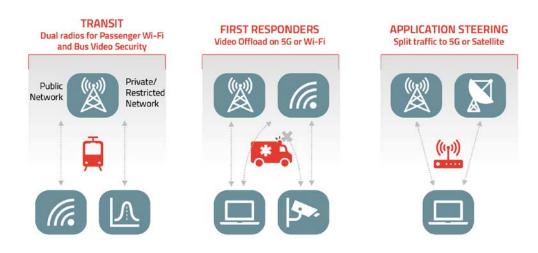






The AirLink XR Series routers were designed from the ground up to deliver the highest-performance 5G, Wi-Fi 6 and gigabit Ethernet connectivity. The quad-core architecture with packet acceleration greatly improves traffic routing and the new AirLink OS delivers AirLink Cognitive Wireless network switching for always-on connectivity. Use cases for Cognitive Wireless Switching include dual networks for transit applications, rapid video offload for first responders, and application steering that saves cost and improves performance.

AirLink XR's advanced CPU and extensive memory allow you to run enhanced Edge Computing with lower latency performance, less hardware, and improved visibility. The AirLink XR Edge computing uses a modern Linux-based container approach with a broadly adopted docker ecosystem that is configurable through AirLink Management Services (ALMS). AirLink XR Edge computing supports Linux Open Container Initiative and Azure IoT. (Available H1 2022)



AIRLINK XR PERFORMANCE CHARACTERISTICS

- 5G with 4.1Gbps/660 Mbps (upload/download)
- 4G LTE CAT 20 with 2.0 Gbps/210 Mbps (upload/download)
- Wi-Fi 6 with dual-band concurrent 2.4/5 GHz with high output 21 dBm
- High-speed 5Gbps and 1 Gbps Ethernet ports
- GNSS navigation with inertial dead reckoning and integrated vehicle telemetry





Sierra Wireless Premier Reseller Tel: 1-888-RUGGED-3 | www.TransCOR-IT.com



AirLink XR Series was designed to make setup, configuration, and management as easy as possible. Live UI data delivers real-time data including device location, temperatures, signal strengths, and in-use band technologies. AirLink OS enables immediate configuration changes without a reboot and delivers a steady stream of data to the AirLink Management Service (ALMS).

Our updated <u>AirLink Management Service (ALMS)</u> delivers a unified experience with a single pane of glass for device management and connectivity management. You can now see real-time data showing device location, signal strength, and wireless band information, and immediately see any configuration updates.

For mobile applications, <u>Advanced Mobility Reporting (AMR)</u> delivers best-in-class vehicle analytics based on 25 years of experience in mobile deployments. AMR includes trip reports, fleet management, driver behavior monitoring, coverage maps, and troubleshooting.

Out-of-Band Management

AirLink XR routers leverage the Sierra Wireless low-power wide-area (LPWA) network to simplify deployments, improve support and offer new services. Out-of-Band Management lets you configure and deploy routers before they are connected to a cellular network. It also facilitates troubleshooting and repair of off-line routers. AirLink XR routers will also be able to leverage new LPWA network services as they become available.

Flexible Design

The AirLink XR expandable cartridge design greatly increases router flexibility. New IPv6 routing and firewalling capabilities allow every addressable device to have its own public IP address helping you grow IoT and remote applications while improving efficiency, performance, and security. Color-coded FAKRA connectors greatly simplify AirLink XR installation.



AirLink XR90



AirLink XR80

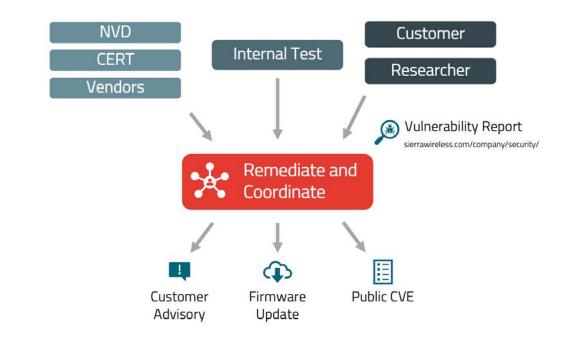






The AirLink XR is our most secure wireless connectivity solution with enhanced internal hardening, unique factory crypto keys, secure boot, and secure firmware updates. AirLink XR routers work with AirLink Connection Manager (ACM) to deliver a complete end-to-end VPN security solution.

Sierra Wireless is committed to delivering end-to-end security for all our devices. We deliver continuous monitoring of vulnerability advisories and release new firmware and mitigation steps as needed.



For more information on Sierra Wireless Security visit the <u>Sierra Wireless Security Update Page</u> and download the <u>Sierra Wireless Security White Paper</u>





The AirLink XR solution components includes hardware, device management, security and services

Supercharged Routers	Multi-Network Antennas	Secure VPN	Device Management & Technical Support
AirLink XR 90/80 Routers	AirLink Antennas	AirLink Connection Manager (ACM)	AirLink Premium (XR90) AirLink Complete (XR80)



AirLink XR90 and AirLink XR80 Router Details

TOP FEATURES	AIRLINK XR90	AIRLINK XR80/XR80 5G	
Target Applications	Transit, Rail, and First Responder Fleets	Public Safety and Field Service Fleets, Fixed Wireless Access, SCADA, and Industrial IoT	
Expansion Modules Available	2	1	
Cellular Technology Supported	AirLink XR90 5G Up to 4.14 Gbps DL/660 Mbps UL 4G LTE Cat 20 - Up to 2 Gbps DL/210 Mbps UL Optional dual 5G cellular LPWA exclusively for ALMS Out-of- Band Management CBRS for Private Networks	AirLink XR80 5GAirLink XR80 4G LTE CatUp to 4.14 Gbps DL/660 Mbps ULUp to 2 Gbps DL/210 Mb4G LTE Cat 20 - Up to 2 GbpsOptional 5G CartridgeDL/210 Mbps ULLPWA exclusively for OutOptional dual 5G cellularBand ManagementLPWA exclusively for Out-of-CBRS for Private Networks	ps UL -of-
Wi-Fi	Dual Wi-Fi 6 2.4/5GHz 802.11 b/g/n/ac/ax Dual 4x4 MIMO High output power 21 dBm per channel 128 Clients, WPA2/3 Enterprise	Single Wi-Fi 6 2.4/5GHz 802.11 b/g/n/ac/ax Single 4x5 MIMO High output power 21 dBm per channel 128 Clients, WPA2/3 Enterprise	
Interfaces	4x RJ-45 Ethernet ports (1x 5Gbps, 3x 1Gbps) Single 5G 5x RJ-45 Ethernet ports (1x 5Gbps, 4x 1Gbps) Dual 5G USB 3.2 Type-C port RS-232 serial port (RJ-45 connector) Aux Port (GPIO/CAN) Bluetooth	3x RJ-45 Ethernet ports (1x 5Gbps, 2x 1Gbps) Single 5G USB 3.2 Type-C port RS-232 serial port (RJ-45 connector) Aux Port (GPIO/CAN)	
Construction	Die-cast aluminum housing that meets Mil-810/IP64		
Navigation	48 Channel Dedicated GNSS with Inertial Dead Reckoning		
Industry Certifications	Safety: IECEE Certification Bodies Scheme (CB Scheme), UL 60950 Vehicle Usage: E-Mark (72/245/EEC, 2009/19/EC), ISO7637-2, SAE J1455 (Shock & Vibration) Environmental: RoHS2, REACH, WEEE Rail Usage: EN50155 (Rolling Stock)		
Support	AirLink Premium	AirLink Complete	
Dimensions	Single 5G: 220mm x 220mm x 53mm (8.66in x 8.66in x 2.08in) Dual 5G: 268mm x 220mm x 53mm (10.55in x 8.66in x 2.08in)	Main body: 170mm x 220mm x 53mm (6.69in x 8.66in x 2.08in) With cartridge: 220mm x 220mm x 53mm (8.66in x 8.66in x 2.08in)	



Sierra Wireless Premier Reseller Tel: 1-888-RUGGED-3 | www.TransCOR-IT.com







Sierra Wireless MG90 5G Dome Antenna



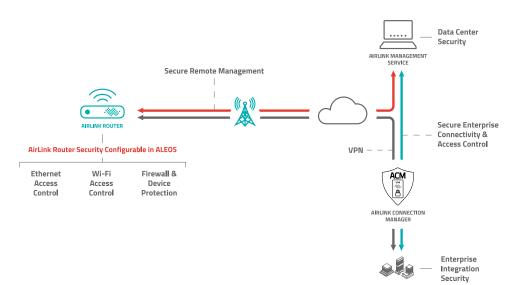
Antennas

The AirLink XR 5G antennas are designed to maximize router performance at 5G frequencies and power levels. Our single antenna solution combines cellular, Wi-Fi, and GNSS functionality reducing overall antenna footprint. All AirLink antennas are serviced and supported by Sierra Wireless with a 3-year warranty.

The AirLink Connection Manager (ACM)

The AirLink® Connection Manager (ACM) is a mobile-optimized VPN server that securely extends the enterprise network to the vehicle. Designed to work with AirLink® gateways and routers, the ACM consolidates security onto a single platform for all connected devices and applications in the vehicle area network.

Eliminating the need for VPN software clients for individual devices and applications, the ACM simplifies deployments, enables organizations to retain management control over network access and mobile assets, and significantly reduces the costs of ensuring data security.





Sierra Wireless Premier Reseller Tel: 1-888-RUGGED-3 | www.TransCOR-IT.com







AirLink XR Services and Support

AirLink Premium for AirLink XR90

AirLink Premium is a subscription service that combines our best-in-class AirLink Management Service (ALMS), Advanced Mobility Reporting, Out-of-Band Management, and direct access to technical support from Sierra Wireless. AirLink Premium is included with all AirLink XR90 routers, along with our advanced replacement program, extended hardware warranty, firmware updates, and access to The Source for all technical documentation and software downloads.

For more information visit: AirLink Premium

AirLink Complete for AirLink XR80

AirLink Complete is a subscription service that combines our best-in-class AirLink Management Services (ALMS), Out-of-Band Management, and direct access to technical support from Sierra Wireless. AirLink Complete is included with all AirLink XR80 routers, along with our extended hardware warranty, firmware updates, and access to The Source for all technical documentation and software downloads.

For more information visit: AirLink Complete

Sierra Wireless Professional Services

Sierra Wireless Professional Services use a proven, structured approach to deliver a faster time-to-success by getting your projects completed on time and in scope. The Professional Services team has extensive experience with complex organization implementations and integration of third-party equipment, video systems, and depot Wi-Fi. They are well-versed in modern security protocols including FIPS and non-FIPS compliant VPNs. Our team of experts will ensure you have a solution that suits your unique needs and delivers the best possible performance.



Sierra Wireless Premier Reseller Tel: 1-888-RUGGED-3 | www.TransCOR-IT.com

AirLink XR90 and AirLink XR80 In the Field

The AirLink XR routers are purpose-built to maximize connectivity, reliability, and security for mission-critical and business-critical applications.

AirLink XR90

Best for mobile mission-critical applications in transit, rail and first responder fleets

- Buses/Transit/Rail
- Law Enforcement
- Fire
- Ambulance/EMS
- Utilities
- Private Networking



Best for fixed and mobile applications in public safety and field service fleets, Fixed Wireless Access, SCADA and industrial IoT

- Ambulance/EMS (Smaller agencies)
- Law Enforcement (Smaller agencies)
- Utility Bucket Trucks
- Commercial Fleets
- Manufacturing
- Fixed Utility Applications
- Pipeline Monitoring
- Remote Learning
- Retail, Digital Signage and Security
- Private Networking



Sierra Wireless Premier Reseller Tel: 1-888-RUGGED-3 | www.TransCOR-IT.com



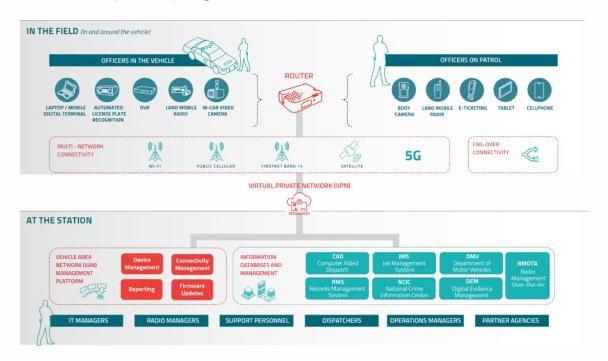
AirLink XR90 Applications

The Sierra Wireless AirLink XR90 is built for transit organizations, public service providers, and private networking to deliver always-on real-time communications.

For mobile applications, the AirLink XR90 creates a Vehicle Area Network (VAN) that generates a bubble of connectivity in and around a vehicle connecting people, equipment, and devices. The VAN also connects to the vehicle itself, providing the ability to monitor and record engine diagnostics, auxiliary equipment status, and vehicle speed and location.

TESTED AND TRUSTED

Sierra Wireless solutions have been deployed in 7 of the top 10 state police agencies, a majority of the top 100 law enforcement agencies, and 75% of high-performance EMS supporting paramedics in the field. Vehicle area networks from Sierra Wireless deliver the intelligence, collaboration, communications, and critical connectivity necessary for agencies to serve their communities and deliver safe outcomes.



A Vehicle Area Network for Law Enforcement

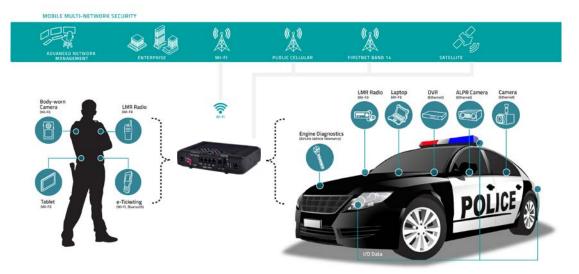




Public Safety Organizations

CONNECTED LAW ENFORCEMENT

With the AirLink XR90, law enforcement officers will gain real-time access to cloud-based data and applications with critical information being delivered in seconds versus minutes or even hours. The AirLink XR90's dual 5G radio configuration delivers unmatched uplink and downlink speeds to ensure always-on video and data transmission. With AirLink Cognitive Wireless, vehicles automatically switch to the best network to ensure maximum uptime and fill coverage holes, and with AirLink's advanced VPN, communications between vehicles and depots are secure. The AirLink XR90's rugged design ensures high reliability in extreme vehicle environments.



FIREFIGHTERS

Real-time access to critical data including building/room temperature, hydrant location, security footage, and floor plans means that firefighters will be safer and better prepared in extreme environments. With 5G bandwidths, firefighters can now leverage augmented reality (AR) to see in smokey buildings and to find victims faster. 5G can also enable reliable remote control of robots with real-time access to video and sensor data.

With a powerful high-speed vehicle area network, fire crews can use these new technologies at greater distances from their vehicles. And with advanced navigation technologies firefighters can get to their locations faster.







EMERGENCY MEDICAL SERVICES (EMS)

5G will enable Ambulance/EMS technicians to better connect with doctors and medical staff at the hospital to expedite expert patient care on-site. Real-time, high-resolution video transmission will enable doctors to immediately see the condition of a patient.

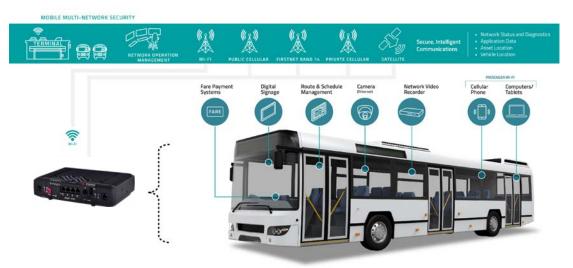
With 5G connectivity, EMS personnel can securely access electronic patient care records (EPCR) to better understand a patient's medical history. They can also use the in-vehicle Wi-Fi to connect portable ECG/ EKGs and other health monitoring devices which can be viewed remotely by telemedicine teams.



Public Transit Organizations

With the AirLink XR90, transit organizations can monitor multiple live video feeds to ensure driver and passenger security. The dual radios allow each bus to have one internal transit network and a separate passenger Wi-Fi network to ensure security. The internal transit network integrates with driver and passenger security cameras, fare payment systems, digital signage, vehicle navigation systems, and vehicle diagnostic systems.

Advanced navigation capabilities can now connect in real-time with the transit depots' computer-aided dispatch/automated vehicle location (CAD/AVL) systems. This helps transit agencies monitor real-time passenger flow, optimize schedules and provide real-time arrival predictions for waiting passengers. Using vehicle location data, traffic signal priority (TSP) can control traffic lights ahead of the bus for optimized passage through intersections.







Private Networking

With a secure AirLink XR90 private network in place, mining corporations can leverage autonomous vehicles and automated drilling equipment to increase safety and efficiency. They can also continuously monitor equipment and mine conditions in real-time lowering costs and increasing safety.

The AirLink XR90's ruggedized dust and waterproofed exterior is a great match for this environment with internal hardening that delivers ultimate security to protect against malicious attacks which could bring down the mine. With AirLink Cognitive Wireless, the mining operations can route critical traffic over the best network channel available.





Sierra Wireless Premier Reseller Tel: 1-888-RUGGED-3 | www.TransCOR-IT.com



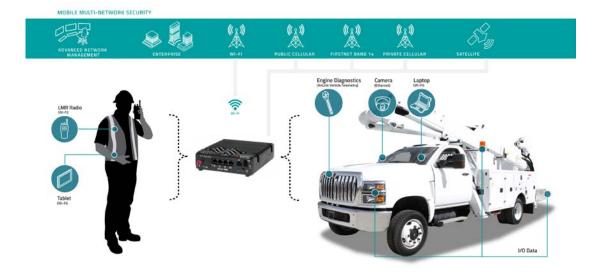
AirLink XR80 Applications

Utility Applications

UTILITY VEHICLES – MOBILE WORKFORCE

Utility vehicles and workers often work alongside first responders helping to cut or restore power during a fire or other natural disaster. Gaining real-time data and situational analysis information enables better utility collaboration with these teams. High-speed connectivity can also help utilities better manage routine power grid operations and maintenance.

With AirLink XR80's advanced navigation system, utilities can better leverage computer-aided dispatch and automated vehicle location (CAD/AVL) platforms that improve communications and lets dispatch know the position and status of all vehicles at all times. And with AirLink Management Service (ALMS) and ALMS Out-of-Band Management, a utility can easily monitor and maintain the health and security of their routers, even when not connected to a cellular network.

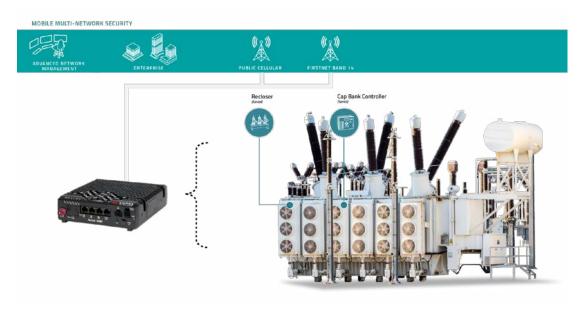




Sierra Wireless Premier Reseller Tel: 1-888-RUGGED-3 | www.TransCOR-IT.com

UTILITY GRID – FIXED UTILITY INFRASTRUCTURE

Utilities can now easily expand the use of automation to increase grid reliability and safety. The AirLink XR80 helps utilities improve their Feeder Automation (FA) systems simplifying the integration of renewable energy into the grid. And the AirLink XR80 can be configured to run within a private network, further increasing the reliability of the wireless automation connections.



Healthcare Applications

HEALTHCARE POP-UP CLINICS & VACCINATION SITES

The AirLink XR80 enables healthcare pop-up clinics & vaccination sites to be up and running in a matter of hours, without having to run cables or connect to an existing Wi-Fi system. The AirLink XR80's security protocols ensure electronic health records (EHR) security compliance and patient confidentiality. And with AirLink Management Service (ALMS), it's easy to verify that all the various sites are up and running securely with the latest software and security updates.





Industrial and Manufacturing Applications

PRIVATE NETWORKS

The AirLink XR80 connected into a private network helps manufacturers gain flexibility and cost savings by reliably connecting machinery to cloud-based programmable logic controllers (PLCs). With 5G Gigahertz speeds and millisecond latency, the AirLink XR80 can deliver the real-time connectivity needed with advanced security to ensure that connectivity to individual machines is uncompromised.

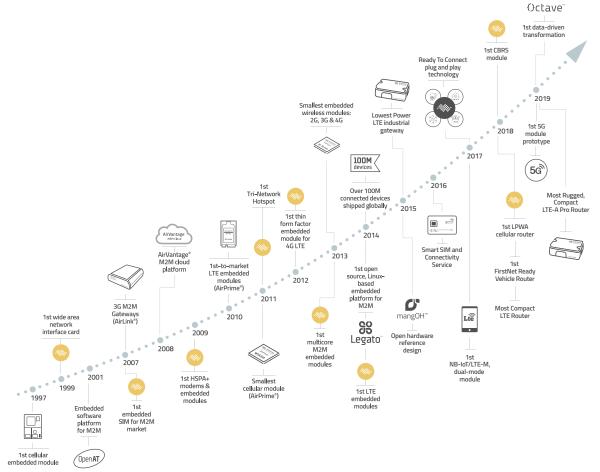




Sierra Wireless Premier Reseller Tel: 1-888-RUGGED-3 | www.TransCOR-IT.com

Why Sierra Wireless?

Sierra Wireless has more than 25 years of cellular-first experience helping public safety and infrastructure organizations deploy reliable and cost-effective wireless solutions. As a part of the global cellular technology ecosystem, our partnership with all major cellular carriers ensures you have the performance and connectivity required for your mission-critical and business-critical applications.







Sierra Wireless has delivered innovation and leadership throughout every cellular evolution.

- 150 million devices shipped worldwide
- 80+ networks supported globally
- 400+ patents in wireless technology
- 130+ countries
- \$75M+ invested annually in cellular technology R&D

In addition, Sierra Wireless provides mission-critical and business-critical solutions where they are needed most.

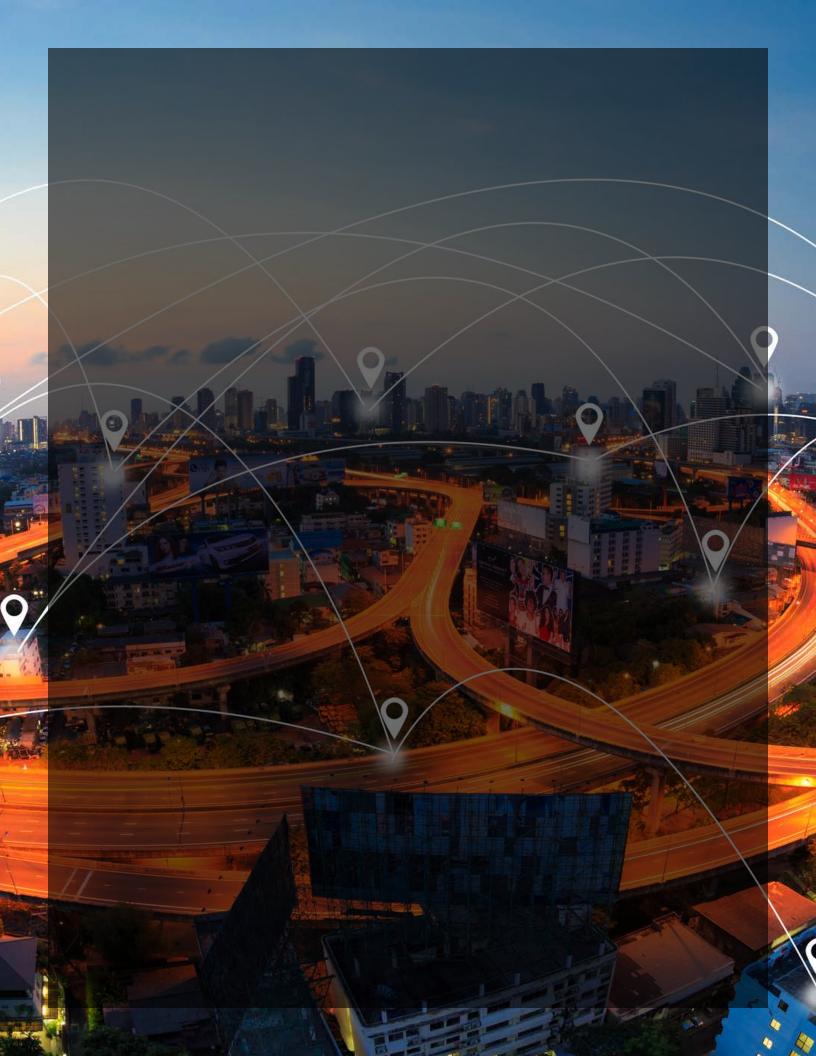
- More than 25% of the Top 50 US Transit Agencies depend on Sierra Wireless to improve passenger services and operations.
- More than 80% of the Top 20 US Utilities use AirLink routers for smart grid deployments and vehicle fleets.
- More than 75% of high-performance EMS Systems trust Sierra Wireless routers to support paramedics in the field.
- 70% of the Top 10 State Police Agencies use Sierra Wireless purpose-built routers in their vehicles.
- More than 50% of the Top 100 Police Departments rely on Sierra Wireless routers in cruisers and incident response vehicles.

Next Steps

To learn more about the AirLink XR90 and AirLink XR80 solutions from Sierra Wireless call us at **1-888-RUGGED-3** or visit **www.TransCOR-IT.com**.



Sierra Wireless Premier Reseller Tel: 1-888-RUGGED-3 | www.TransCOR-IT.com





About TransCOR Information Technologies

Our mobile workforce demands powerful, lightweight and durable computing solutions that are much tougher and more reliable than traditional computers and tablets – with wireless communications capabilities that are equal to the most advanced networking options currently available. Rugged computers optimized with embedded wireless systems, global mobile broadband, lightning-fast processors and huge storage capabilities enable the most sophisticated computing in the harshest environments. www.TransCOR-IT.com



About Sierra Wireless

Sierra Wireless (NASDAQ: SWIR) (TSX: SW) is the leading IoT solutions provider that combines devices, network and software to unlock value in the connected economy. Companies globally are adopting IoT to improve operational efficiency, create better customer experiences, improve their business models and create new revenue streams. Whether it's a solution to help a business securely connect edge devices to the cloud, or a software/API solution to help manage processes associated with billions of connected assets, or a platform to extract real-time data to make the best business decisions, Sierra Wireless will work with you to create the right industry-specific solution for your next IoT endeavor.

For more information, visit www.sierrawireless.com.

Connect with Sierra Wireless on the IoT Blog at www.sierrawireless.com/iot-blog, on Twitter at @SierraWireless, on LinkedIn at www.linkedin.com/company/sierra-wireless and on YouTube at www.youtube.com/SierraWireless

Sierra Wireless, the Sierra Wireless logo, AirPrime, AirLink, AirVantage and the red wave design are trademarks of Sierra Wireless. Other registered trademarks that appear on this brochure are the property of the respective owners. © 2020 Sierra Wireless, Inc. 2021.08.31