SIERRA WIRELESS®

AirLink® MG90

Multi-Network, Dual Radio, 5G LTE Rugged Vehicle Router for Transit, Rail and First Responder Fleets

Performance Series Routers



MG90-5G



MG90



Benefits

- 5G LTE connectivity delivers massive amounts of real-time data needed for mission-critical applications
- Proven solution: More than 25% of the top 50 transit agency vehicles and 75% of high-performance EMS systems depend on Sierra Wireless routers
- Increases safety, transparency and compliance while maximizing system expandability and ROI
- Delivers advanced awareness of fleet operations with built-in vehicle I/O and Bluetooth for remote monitoring of auxiliary devices such as light bars, sirens and gun racks

MG90 Product Description

The best-in-class AirLink® MG90 is purpose built for transit, rail and first responders with dual-LTE radios and dual Gigabit Wi-Fi delivering always-on connectivity with extensions to Land Mobile Radio (LMR) and satellite systems.

MG90 5G

5G router (fallback to LTE Cat20). Rugged Cat 20 LTE router capable of up to 2 Gbps downlink and 1 Gbps uplink speeds. Dual 2x2 or single 4x4 radios. Dual Wi-Fi radios.

MG90 LTE-A PRO

Rugged Cat 12 LTE router capable of up to 600 Mbps downlink and 150 Mbps uplink speeds. FirstNet Ready. Dual or single radios. Dual Wi-Fi radios.

MG90 LTE-A

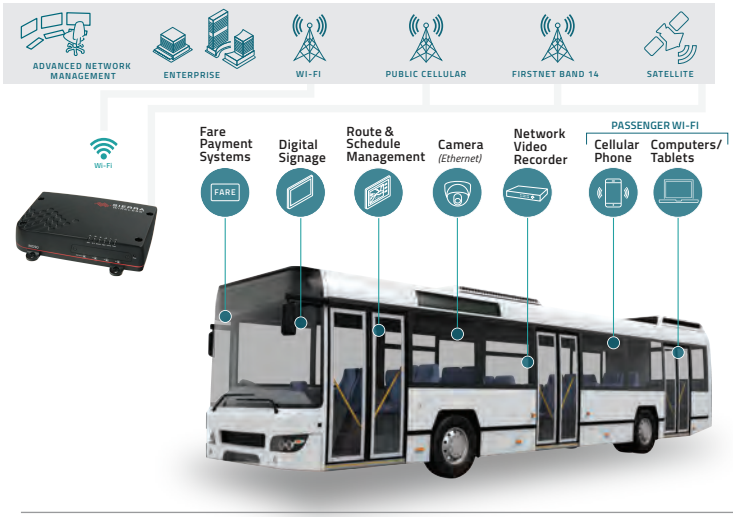
Rugged Cat 6 LTE router capable of 300 Mbps downlink and 50 Mbps uplink speeds. Dual or single LTE radios. Dual Wi-Fi radios.

Ideal Applications

Mobile mission critical applications in public safety, transit and field services. Delivers secure always-on Vehicle Area Networks (VANS) for:

- Buses/Transit
- Ambulance/EMS
- Police
- Fire
- Utilities

MG90 APPLICATION EXAMPLES



TRANSIT BUS



FIRE

AIRLINK MG90 – PERFORMANCE SERIES ROUTER

Top Features	Device Variant	Specifications
LTE Supported	MG90 5G	5G (2/1 Gbps), Dual LTE radios (Option)
	MG90 LTE-A Pro	Cat 12 LTE-A Pro (600/150 Mbps), FirstNet (Band 14) Dual LTE radios (Option)
	MG90 LTE	Cat 6 LTE (300/50 Mbps), Dual LTE radios (Option)
Navigation	All	GNSS with inertial dead reckoning and integrated vehicle telemetry.
Wi-Fi	All	Dual Radio, dual concurrent 3x3 MIMO 802.11 b/g/n/ac, Dual Band 2.4/5 GHz (each radio), Support for 128 clients. WWPA2 Enterprise.
Host Interfaces	All	Gigabit Ethernet ports (5), USB 3.0 (2), RS-232. Configurable GPIO and digital inputs.
Security	All	All Sierra Wireless security features including secure boot and secure firmware update. IPsec, GRE, and OpenVPN client with up to 5 concurrent tunnels.
Construction	All	Aluminum die cast housing rated to IP-64 and Mil-STD 810G.
Industry Certifications	All	FirstNet Ready™ LTE-A Pro Safety: IECEE Certification and SAE J1455 (Shock & Vibration) Vehicle Usage: E-Mark and SAE J1455 (Shock & Vibration) Rail Usage: EN50155 (Rolling Stock)
Dimensions	All	272 mm x 220 mm x 60 mm 10.71 in x 8.66 in x 2.36 in

MG90 Services and Support

Device Management: AirLink Mobility Manager (AMM) delivers end-to-end network management that enables simplified, remote and real-time mass configuration, control and troubleshooting.

VPN: AirLink Connection Manager (ACM) is a mobile-optimized VPN solution that securely extends the enterprise network to the vehicle.

AirLink Support: Best-in-class support services covering MG90 devices, connected mobile assets and applications.

Professional Services: Full product life-cycle services including solution consulting and solution implementation services delivered by Sierra Wireless Network Engineers and Program Managers.

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. Sierra Wireless has more than 1,300 employees globally and operates R&D centers in North America, Europe and Asia.

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

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SIERRA WIRELESS



TECHNICAL SPECIFICATIONS

AirLink® MG90

Performance Series Routers

MG90-5G



MG90



	Global	North America	Global
	5G	LTE-A Pro	
LTE CATEGORY	Cat 20	Cat 12	
Peak D/L	Up to 2 Gbps	Up to 600 Mbps	
Peak U/L	Up to 1 Gbps	Up to 150 Mbps	
5G Frequency Bands	n1, n2, n3, n5, n28, n41, n66, n71, n77, n78, n79		
4G LTE Frequency Bands	2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 2600(B7), 900(B8), 700(B12), 700(B13), 700(B14), 700(B17), 850(B18), 850(B19), 800(B20), 1900(B25), 850(B26), 700(B28), 700(B29), 2300(B30), 1500(B32), TDD B38, TDD B39, TDD B40, TDD B41, TDD B42, TDD B46, CBRS B48, 1700(B66), 600(B71)	2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 2600(B7), 900(B8), 1800(B9), 700(B12), 700(B13), 700(B14), 850(B18), 850(B19), 800(B20), 850(B26), 700(B29), 2300(B30), 1500(B32), TDD B41, TDD B42, TDD B43, TDD B46, CBRS B48, 1700(B66)	2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 2600(B7), 900(B8), 1800(B9), 700(B12), 700(B13), 850(B18), 850(B19), 800(B20), 850(B26), 700(B28), 700(B29), 2300(B30), 1500(B32), TDD B41, TDD B42, TDD B43, TDD B46, CBRS B48, 1700(B66)
3G WCDMA/HSPA+ Frequency Bands	2100(B1), 1900(B2), 1800(B3), AWS(B4),850(B5), 800(B6), 900(B8), 1700(B9), 850(B19)	2100(B1), 1900(B2), AWS(B4), 850(B5), 800(B6), 900(B8), 1700(B9), 850(B19)	2100(B1), 1900(B2), AWS(B4), 850(B5), 800(B6), 900(B8), 1700(B9), 850(B19)
APPROVALS Regulatory	FCC, IC, PTCRB, R&TTE, GCF, CE, RED, RCM	FCC, IC, PTCRB, GCF	CE, RED, RCM
Carrier	Verizon, AT&T	AT&T, Verizon, US Cellular, Sprint, Telus	
PART NUMBERS	1102695 (Single) 1102716 (Dual)	1103981 (Single) 1103982 (Dual)	1103980 (Single) 1103983 (Dual)

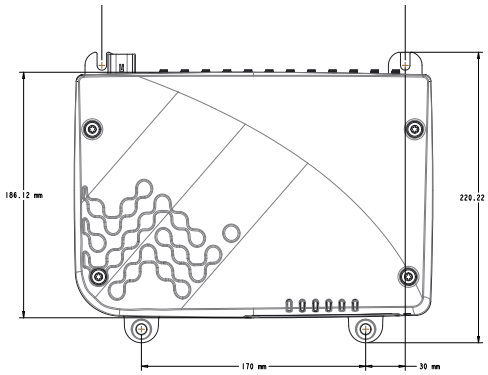
	Specification
HOST INTERFACES	5 Gigabit RJ-45 Ethernet ports 2 USB 3.0 type-A ports 1 RS-232 serial port (DB-9 connector) 1 Auxiliary RJ-45 Input/Output port 4 SIM Slots (Dual SIM per radio) 5 SMA antenna connectors (2 cellular, 2 diversity, 1 GNSS) 7 RP-SMA antenna connectors (3x3 Wi-Fi WAN, 3x3 Wi-Fi AP, 1 Bluetooth)
SECURITY	AAA: 802.1x/Radius authentication with Wi-Fi and Ethernet Firewall: Port forwarding and filtering WLAN Encryption: WPA2 Personal/Enterprise WLAN MAC Address filtering FIPS 140-2
WI-FI	Dual Radio, dual concurrent 3x3 MIMO 802.11 b/g/n/ac Dual Band 2.4/5 GHz (each radio) Support for 128 clients WWPA2 Enterprise Default mode: Wi-Fi as WAN and Wi-Fi built-in vehicle AP High output power 21 dBm (per channel) Captive Portal

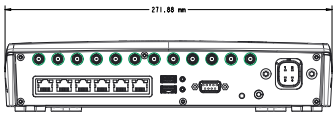
	Specification
LAN (ETHERNET/USB/ WI-FI/BLUETOOTH/ SERIAL)	DHCP Server VLAN Virtual BSSIDs PPPoE AP Isolation
SATELLITE NAVIGATION (GNSS)	Dedicated 48 channel GNSS Receiver supporting GPS, GLONASS, BeiDou, Galileo Tracking Sensitivity: -162 dBm Reports (Update Rate 1Hz): NMEA, TAIP Reliable Store and Forward via serial, TCP or UDP Inertial Navigation Sensors (Accelerometer and Gyro)
NETWORK MANAGEMENT	Airlink Mobility Manager (AMM): available as cloud based service or as licensed enterprise application • Status dashboard showing at-a-glance fleet health • Remote management, configuration and software updates • Location-based analytics and diagnostics: Network Coverage Maps and Trails; Link Utilization; Bandwidth Consumption • Configurable geo-zone based event monitoring and alerting • Live vehicle location tracking • Optional fleet operations pack: vehicle diagnostics reporting and mobile asset tracking

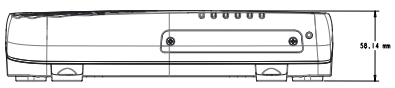
TECHNICAL SPECIFICATIONS

	Specification
INPUT/OUTPUT	Configurable I/O GPIOs (5 pins total – 4 DB9 & 1 Power connector)
	Digital input: 0-36 VDC with optional pullup (Dry contact sense input)
	Digital Open Collector Output > sinking 500 mA
ENVIRONMENTAL	Operating Temperature: -30°C to +70°C / -22°F to +158°F
	Storage Temperature: -40°C to +85°C / -40°F to +185°F
	Humidity: 95% RH @ 60C
	IP64 rated ingress protection
	MIL-STD-810G conformance to shock, vibration, thermal shock, and humidity
POWER	Input/Operating Voltage: 7 to 36 VDC
	Power modes: ON 30W (2.5A @12V); Standby 135mW (11mA@12V)
	Built-in protection against voltage transients including 5 VDC engine cranking
	Ignition Sense with time delay shutdown
NETWORK AND ROUTING	Network Address Translation (NAT)
	LAN Segmentation
	WAN/LAN Connection Policy Management
	QoS: Application/ Traffic Priority Queuing
	Load Balancing Over Multiple WAN Links
	WAN Monitors: Connection Failure Recovery
	Configurable MTU size
	Multiple LAN Support
	Customize transmission buffer size
	Static Routing
	WAN Ethernet
VPN	Integrated with ACM VPN Server
	IPsec protocol with IKEv1/IKEv2
	Encryption: 3DES/AES128/AES256
	Hashing: MD5/SHA1/SHA256/SHA512
	Key Exchange: DHGroup2/5/14/15/16/17
	Support LAN to LAN and Host to LAN
	Up to 10 concurrent tunnels per link
	MOBIKE protocol
	IP compression
	Full/Split Tunnel
	Dead Peer Detection (DPD)

	Specification
VEHICLE TELEMETRY	OBD II/ J1939/ J1708 interface over serial (optional)
	Diagnostic real time alerts/reports (via AMM)
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)
RELIABILITY	MTBF: 23.22 years (Telcordia SR-332 Issue3 Method1)
SUPPORT AND WARRANTY	3-year standard warranty; Optional 2-year warranty Extension
	Unrestricted device software upgrades
ACCESSORIES	In the box: DC Power cable, Quick Start Guide and SMA wrench
	Mounting bracket (6001024)
	AC Adapter (6001023)
	I/O Cable (6001095)
	6-in-1 Dome Antenna (6001121)
	3-in-1 Wi-Fi Antenna (6001143)
	See website for more antenna options
DIMENSIONS	272mm x 220mm x 60mm (10.71in x 8.66in x 2.36in)
	Weight: 2.4kg / 5.3 lb







Related AirLink Products

AIRLINK DEVICE MANAGEMENT SOLUTIONS

AirLink Management service (ALMS)



- Secure, Cloud-based network and asset management
- Remotely deploy, configure, monitor and manage AirLink devices
- Carrier-grade, high availability, secure, global infrastructure

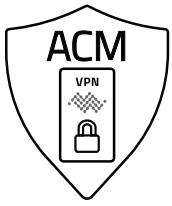
AirLink Manager / Mobility Manager (AM/AMM)



- Deployable in the enterprise data center (on-premises) or in the cloud
- Advanced, end-to-end network and asset management for both fixed and mobile networks.
- Remote, real-time configuration, control and troubleshooting of AirLink devices

AIRLINK VPN APPLIANCE

AirLink Connection Manager



- VPN appliance built from the ground up for Airlink routers & gateways
- Simplify deployment and management of your VPN solution, extending the enterprise to the network edge for fixed and mobile endpoints
- Carrier agnostic – ACM doesn't require fixed and/or public IP
- Compatible with FIPS 140-2, and always-on VPN capability

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For more information, visit www.sierrawireless.com.

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