

AirLink® XR90 5G High-Performance Multi-Network Vehicle Router

The supercharged AirLink XR90 is purpose-built for public safety and transit with available dual-5G cellular radios and dual independent 4x4 MU MIMO Wi-Fi 6 antennas. It is the highest performing, most flexible router in the Sierra portfolio. It supports complete device-to-cloud security, reduces your total cost of ownership with ALMS Out-of-Band management, and with the cartridge-based design, enables long-term expandability and upgradability.



AirLink® XR90 Single/Dual 5G

- Expandable 5G
- Single 5G: 5 Gigabit Ethernet
- Dual 5G: 6 Gigabit Ethernet
- GNSS with Dead Reckoning

- Dual 4x4 MU MIMO Wi-Fi 6
- Single/Dual Serial
- IP64 Rated
- AirLinkOS with AirLink Premium



AirLink® XR90 – Router Specifications

KEY FEATURES

Cellular Radios	Single & Dual 5G LPWA for ALMS Out of Band Management
Wi-Fi	Dual 4x4 MU MIMO Wi-Fi 6
Ethernet	Single 5G: 4x Gigabit, 1x 5 Gigabit Ethernet Port Dual 5G: 5x Gigabit, 1x 5 Gigabit Ethernet Port

KEY FEATURES	
Serial	Single/Dual RS-232 (DB9) with optional cables
GNSS	48 Channel GNSS with Dead Reckoning
CAN	CAN bus/OBD-II (J1979)/J1939)
I/O	5 GPIO
USB	USB 3.1 USB-C
Bluetooth	Selectable Bluetooth 4.x Classic or Bluetooth LE (Future)
IP Rating	Sealed Aluminum Housing (IP64 Rated)
Services	AirLink Premium
Operating System	AirLink OS
Management System	ALMS

Region	North America	EMEA & APAC
CELLULAR		
Variant	North America	EMEA, APAC
Technology	Single/Dual 5G	Single/Dual 5G
Peak Downlink (Theoretical)	4.14 Gbps	4.14 Gbps
Peak Uplink (Theoretical)	660 Mbps	660 Mbps
LTE Category	5G	5G
Region	NAM	EMEA, APAC
Radio	EM9190	EM9190
MIMO	Single/Dual 4x4	Single/Dual 4x4
RF Connectors	FAKRA	FAKRA
SIM	Dual SIM (Mini-2FF)	Dual SIM (Mini-2FF)

FREQUENCY BANDS		
5G Bands	n1, n2, n3, n5, n28, n41, n66, n71, n77, n78, n79 (NSA & SA Support) Future Variant adds support for: n7, n8, n12, n20, n25, n38, n40, n48 (NSA & SA Support)	n1, n2, n3, n5, n28, n41, n66, n71, n77, n78, n79 (NSA & SA Support) Future Variant adds support for: n7, n8, n12, n20, n25, n38, n40, n48 (NSA & SA Support)

4G LTE Bands FREQUENCY BANDS	B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B34, B38, B39, B40, B41, B42, B46, B48, B66, B71	B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B34, B38, B39, B40, B41, B42, B46, B48, B66, B71
3G HSPA+ Bands	B1, B2, B3, B4, B5, B6, B8, B9, B19	B1, B2, B3, B4, B5, B6, B8, B9, B19
2G GPRS Bands	–	–
LPWA	B1, B2, B3, B4, B5, B8, B9, B10, B12, B13, B17, B18, B19, B20, B25, B26, B27, B28, B66	B1, B2, B3, B4, B5, B8, B9, B10, B12, B13, B17, B18, B19, B20, B25, B26, B27, B28, B66
WIRELESS CERTIFICATION		
Regulatory	FCC, IC/ISED, PTCRB	GCF, CE, RED, RCM, ESN
Carrier	AT&T, FirstNet® 4G, T-Mobile, Verizon, Rogers, Telus, Bell, CBRS	BT
Public Safety	FirstNet® 4G	ESN
Part Numbers	1104785 Single 5G 1104786 Dual 5G 1104757 XP 5G Cartridge (Optional)	1104722 Single 5G 1104723 Dual 5G 1104757 XP 5G Cartridge (Optional)
WI-FI (OPTIONAL)		
Wi-Fi Standard	Wi-Fi 6 802.11ax	
Access Point	Dual	
Client (Depot/WAN)	Yes	
Client & AP	Yes	
Peak Throughput (Theoretical)	2400 Mbps	
MIMO	Dual 4x4	
Security	WPA2/3 Enterprise	
Clients	128 per radio	
SSID	4 per radio	
Output Power	23.3 dBm per chain	
Frequency	2.4/5 GHz	
RF Connectors	FAKRA (Beige)	
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 @ 60°C	
Military Specification	MIL-STD-810G (Shock, Vibration, Thermal Shock, Humidity)	

ENVIRONMENTAL

IP Rating IP64

INDUSTRY CERTIFICATIONS

Safety IECCE Certification Bodies Scheme (CB Scheme), UL 60950

Vehicle Usage E-Mark (72/245/EEC, 2009/19/EC), ISO7637- 2, SAE J1455 (Shock & Vibration, Electrical)

Environmental Directives RoHS2, REACH, WEEE, Prop 65

Hazardous Environments Class 1 Div 2 – Ambient temperatures of -30°C to +60°C
IECEX & ATEX

Rail Usage EN50155/EN45545 (Rolling Stock)

POWER

Input Voltage 7 to 36 VDC

Power Consumption Dual 5G Peak: 68W (5.7A @12V)
Standby 55mW: (4.5mA@12V)

Power Modes Built-in protection against voltage transients including 5 VDC engine cranking and +200 VDC load dump
Ignition Sense with time delay shutdown

SECURITY

AAA 802.1x /Radius authentication with Wi-Fi and Ethernet

Firewall Stateful firewall with port forwarding, DMZ

WLAN Encryption WPA2/WPA3 Personal/Enterprise FIPS 140-2

Firmware Update Secure Firmware Update

NETWORK AND ROUTING

Sierra Cognitive Wireless
IPv4 and IPv6 Routing
Network Address Translation (NAT)
Port Forwarding
DHCP Server
IP Passthrough
LAN Segmentation
IPv4 Passthrough and IPv6 Prefix Extension
WAN/LAN Connection Policy Management
Policy-Based Routing
Configurable MTU size
Static Routing
WAN Ethernet

NETWORK AND ROUTING

QoS Application/Traffic Priority Queuing

WAN Monitors Connection Failure Recovery

LAN (ETHERNET/USB)

USB to Ethernet

VPN

Integrated with ACM VPN Server
IPsec protocol with IKEv1/IKEv2
FIPS 140-2 Level 1 compliant

Encryption AES128/AES192/AES256

Hashing SHA256/SHA384/SHA512

Key Exchange DHGroup14/15/16/17/18/19/20/21

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)

ROUTER MANAGEMENT INTERFACES

ALMS
Local web user interface
REST API (Beta)

EDGE COMPUTING

Support for Edge Compute Containerized Applications (Beta)

RAM^{1,2} 200 MB

Storage (Flash)¹ 750 MB

CPU Quad Core ARMv8 64 bit

¹ Approximation available to containers (not device total)

² Depends on other enabled features

AIRLINK SERVICES

Services AirLink Premium

Support 24/7

Warranty 1 year standard warranty with up to 5 years extended warranty with current

AIRLINK SERVICES	AirLink Premium subscription
Device Management	ALMS with Advanced Mobility Reporting
Software Updates	Unrestricted critical firmware updates

RELIABILITY

MTBF	Single 5G: 19.0 years Using Telcordia SR-332 Issue 3 Method 1
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ACCESSORIES

In The Box	XR90, DC Power cable, LPWA Antenna, Quick Start Guide, AirLink Premium Leaflet
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Other Accessories (sold separately)

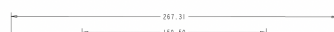
6001004 XR80/90/MP/LX I/O Cable
 6001192 XR80/90/MP70 J1939 Y Cable
 6001204 XR80/90/MP70 OBD-II Y Cable
 6001350 XR80/90 Mounting Bracket
 6001372 XR80/90 AC Adaptor, 24 VDC
 6001406 XR80/90 DC Power Cable
 6001409 XR80/90 RJ45 to Dual DB9
 6001410 XR80/90 RJ45 to Single DB9
 6001433 XR80/90 DIN Rail Mounting Bracket
 6001440 XR80/90 FAKRA Replacement Kit (8 Pieces)
 6001456 XR80/90 to MG90 Mounting Bracket
 1104757 XR80/90 XP-5G XR-Cartridge Global & NAM
 For Antenna options visit: [here](#)

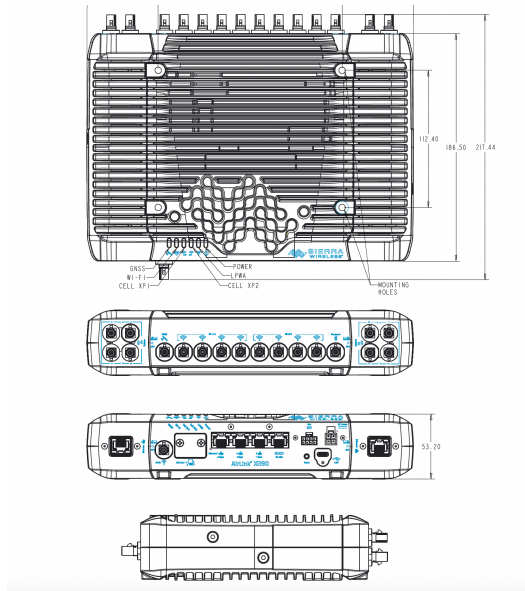
DIMENSIONS

Size	Base: 220mm x 170mm x 53mm Single XP: 220mm x 220mm x 53mm Dual XP: 268mm x 220mm x 53mm
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Weight

Base: 2.06 Kg
 Single XP: 2.64 Kg
 Dual XP: 3.22 Kg





**For carrier specific band support please refer to the hardware user guide.*