DATASHEET

AirLink® XR90

5G

5G High-Performance Multi-Network Vehicle Router for Transit, Rail and First Responder Fleets.

XR90 Product Description

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 subsystems. The XR90 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 AirLink® Management Service (ALMS) Out-of-Band management.

A Fully Integrated Solution

The AirLink XR90 is a fully-supported, out-of-the-box solution complete with AirLink Premium for integrated device management, Advanced Mobility Reporting, 24/7 technical support and advanced device replacement. AirLink Connection Manager delivers complete VPN security.

Ideal Applications

KEY FEATURES

- Expandable 5G
- Dual 4x4 MU MIMO Wi-Fi 6
- Single 5G: 5 Gigabit Ethernet
- Dual 5G: 6 Gigabit Ethernet
- Single/Dual Serial
- GNSS with Dead Reckoning
- IP64 Rated
- AirLinkOS with AirLink Premium

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

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

Benefits

- Designed for rugged mobile applications with Mil Standard aluminum die cast housing and adaptive power management
- Real-time connectivity with unmatched uplink and downlink speeds using Data Path Accelerated 5G, Wi-Fi 6 and 5 Gbps Ethernet technology
- "Always-on" connectivity using available dual cellular and dual Wi-Fi radios, and automatic failover using AirLink Cognitive Wireless
- Simplified set up and usability with AirLink OS and upgraded ALMS
- AirLink Premium with ALMS Out-of-Band Management provides zero-touch set up and reduced service calls advanced device replacement

XR90 Services and Support

AIRLINK PREMIUM

AirLink Premium ensures your AirLink XR90 hardware operates at peak efficiency and is always accessible. With device management and robust mobility reporting combined with our best-in-class management service and technical support, this offering includes:

- AirLink Management Service (ALMS) network management
- Advanced Mobility Reporting (AMR)
- 24/7 with current AirLink Complete subscription
- 1 year standard warranty with up to 5 years extended warranty with current AirLink Complete subscription
- For more information on AirLink Premium visit our _web page_

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

ANTENNAS

- Tested and certified to provide guaranteed performance with all AirLink routers and gateways
- Accelerate deployment with always-on, end-to-end connectivity
- For more information on antennas specific to the XR90 router visit our _web page_

AirLink XR90 – Router Specifications

KEY FEATURES	
Cellular Radios	Single & Dual 5G LPWA for ALMS Out of Band Managemnt
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
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

	5G NAM	5G GLOBAL
CELLULAR		
Variant	NAM	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)

	NAM	EMEA & APAC
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	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
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®	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	
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)

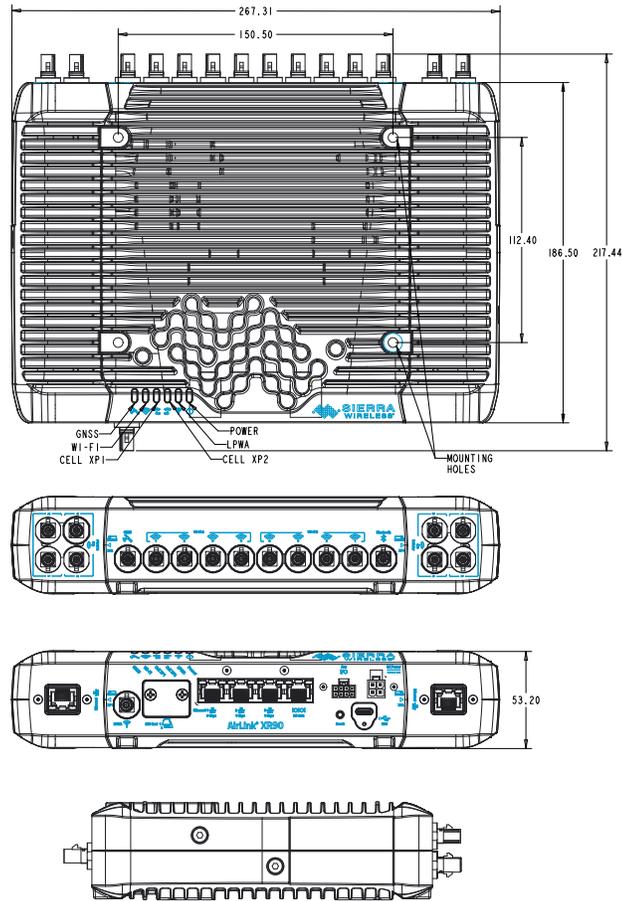| ENVIRONMENTAL	
Operating Temperature	-30°C to +70°C / -22°F to +158°F
Storage Temperature	-40°C to +85°C / -40°F to +185°F
Humidity	95% RH @ 60C
Military Specification	MIL-STD-810G (shock, vibration, thermal shock, humidity)
IP Rating	IP64

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, Electrical)
Environmental Directives	RoHS2, REACH, WEEE, Prop 65
Hazardous Environments	Class 1 Div 2 – Ambient temperatures of -30°C to +60°C
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
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 COMPLETE

Services	AirLink Premium
Support	24/7
Warranty	1 year standard warranty with up to 5 years extended warranty with current 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

ACCESSORIES

In The Box	XR90, DC Power cable, LPWA Antenna, Quick Start Guide, AirLink Premium Leaflet
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: _web page_

DIMENSIONS

AirLink XR90 – Main Body	220mm x 170mm x 53mm Weight: 2.06 Kg
AirLink XR90 – Main body with Single Expansion Cartridge	220mm x 220mm x 53mm Weight: 2.64 Kg
AirLink XR90 – Main body with Dual Expansion Cartridge	268mm x 220mm x 53mm Weight: 3.22 Kg

AirLink XR90 – Router Dimensions Diagram

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