AirLink® XR90 5G

Highest Performance Multi-Network 5G/ Wi-Fi 6 Router

The supercharged AirLink XR90 is purpose-built for public safety and transit with available dual-5G cellular radios and dual independent 4×4 MU MIMO Wi-Fi 6 antennas. It is the highest performing, most flexible router in the Semtech (formerly Sierra Wireless) 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.

Single/Dual Serial	Single or Dual 5G
GNSS with Dead Reckoning	Dual 4×4 MU-MIMO Wi-Fi 6
IP64 Rated	Single 5G: 4x Ethernet (3×1 Gbps + 1×5 Gbps)
AirLink OS with AirLink Premium	Dual 5G: 5x Ethernet (4×1 Gbps + 1×5 Gbps)

AirLink® XR90 – Router Specifications

KEY FEATURES

Cellular Radios	Single & Dual 5G LPWA for ALMS Out of Band Management
Wi-Fi	Dual 4×4 MU MIMO Wi-Fi 6
Ethernet	Single 5G: 3x Gigabit, 1x 5 Gigabit Ethernet Port Dual 5G: 4x 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

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 4×4	Single/Dual 4×4
RF Connectors	FAKRA	FAKRA
SIM	Dual SIM (Mini-2FF)	Dual SIM (Mini-2FF)

FREQUENCY BANDS

	1	2	3	4	5	6	7	8	9	10	12	13	14	17	18	19	20	25	26
5G (SA & NSA)	n1	n2	n3	–	n5	–	n7*	n8*	–	–	n12	–	–	–	–	–	n20	n25	–
4G LTE	B1	B2	B3	B4	B5	–	B7	B8	–	–	B12	B13	B14	B17	B18	B19	B20	B25	B26
3G (HSPA+)	B1	B2	–	B4	B5	B6	–	B8	B9	–	–	–	–	–	–	B19	–	–	–
LPWA	B1	B2	B3	B4	B5	–	–	B8	B9	B10	B12	B13	–	B17	B18	B19	B20	B25	B26

FREQUENCY BANDS

	27	28	29	30	32	34	38	39	40	41	42	43	46	48	66	71	77	78	79
5G (SA & NSA)	–	n28	–	–	–	–	n38	–	n40	n41	–	–	–	n48	n66	n71	n77	n78	n79
4G LTE	–	B28	B29	B30	B32	B34	B38	B39	B40	B41	B42	B43	B46	B48	B66	B71	–	–	–
3G (HSPA+)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
LPWA	B27	B28	–	–	–	–	–	–	–	–	–	–	–	–	B66	–	–	–	–

*Full-band models only (SKUs ending by 'FB')
**Downlink only

WIRELESS CERTIFICATION

Regulatory	FCC, IC/ISED, PTCRB	GCF, CE, RED, RCM, ESN
Carrier	AT&T, FirstNet® 4G, T-Mobile, Verizon, Rogers, Telus, Bell, CBRS, C-Band	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

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 4×4
Security	WPA2/3 Enterprise
Clients	Up to 256
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)
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 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
Firewall	Stateful firewall with port forwarding, DMZ
WLAN Encryption	WPA2/WPA3 Personal/Enterprise
Firmware Update	Secure Firmware Update

NETWORK AND ROUTING

Throughput	1150 Mbps Firewall TCP throughput
Features	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

Throughput	350 Mbps IPSec VPN TCP throughput
Features	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 technical support and advance hardware replacement*
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 through at least December 31st, 2029

*With current AirLink Premium subscription
Full warranty terms are available at **www.sierrawireless.com/end-user-warranty
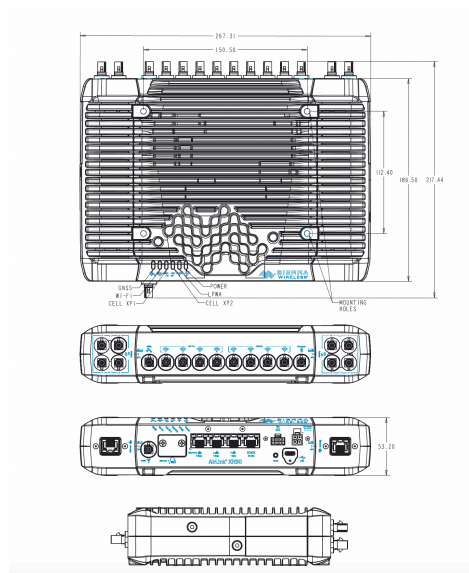
RELIABILITY

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: *here*

DIMENSIONS

Size	Base: 220mm x 170mm x 53mm / 8.7 x 6.7 x 2.1 in Single XP: 220mm x 220mm x 53mm / 8.7 x 8.7 x 2.1 in Dual XP: 268mm x 220mm x 53mm / 10.5 x 8.7 x 2.1 in
Weight	Base: 2.06 Kg / 4.54 lb Single XP: 2.64 Kg / 5.82 lb Dual XP: 3.22 Kg / 7.09 lb

AirLink XR90 Dual 5G

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

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