SIERRA WIRELESS IS NOW
SEMTECH®

TransCOR
RUGGED & CONNECTED

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 antennas. The XR90 is the highest performing, most flexible router in the Semtech portfolio. It supports complete device-to-cloud security, reduces your total cost of ownership with AirLink® Management Service (ALMS) Out-of-Band management, and with the cartridge-based design, enables long-term expandability and upgradability.

A Fully Integrated Solution

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

KEY FEATURES

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

Ideal Applications

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

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

Benefits

- Designed for rugged mobile applications with military-grade 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 coverage and fleet reporting, as well as advance hardware replacement

XR90 Services and Support

AIRLINK PREMIUM

AirLink Premium helps ensure 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)** for remote device and security management
- **Advanced Mobility Reporting (AMR):** comprehensive coverage and fleet reporting to monitor your network and vehicles
- **24/7 technical support**
- **Extended hardware warranty** up to 5 years maximum
- **Advance Replacement:** Provides same-day shipping for in-warranty router replacements, minimizing downtime, spare inventory and keeping your operations running smoothly
- For more information on AirLink Premium visit our _web page_

* With active subscription. 1-year subscription included with the XR90 purchase.

HYBRID CLOUD

This optional feature merges the benefits of cloud technology with on-premise security controls for the management of your AirLink XR and RX routers, offering ultimate security and control.

Hybrid Cloud is available to add to an active AirLink Complete or Premium subscription.

AIRLINK CONNECTION MANAGER (ACM) – **MOBILE VPN**

This purpose-built VPN solution securely extends your enterprise network to your AirLink router and its connected devices and applications.

Optimized for use in a mobile, multi-network environment it seamlessly maintains VPN tunnels as users roam between multiple carrier and Wi-Fi networks to prevent downtime and loss of communications.

Available in a FIPS 140-2 compliant offering.

ANTENNAS

- Tested and certified to provide guaranteed performance with all AirLink routers
- 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: 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

	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)

FREQUENCY BANDS				
	5G (SA & NSA)	4G LTE	3G (HSPA+)	LPWA
1	n1	B1	B1	B1
2	n2	B2	B2	B2
3	n3	B3		B3
4		B4	B4	B4
5	n5	B5	B5	B5
6			B6	
7	n7*	B7		
8	n8*	B8	B8	B8
9			B9	B9
10				B10
12	n12*	B12		B12
13		B13		B13
14		B14		
17		B17		B17
18		B18		B18
19		B19	B19	B19
20	n20*	B20		B20
25	n25*	B25		B25
26		B26		B26
27				B27
28	n28	B28		B28
29		B29		
30		B30		
32		B32		

FREQUENCY BANDS				
	5G (SA & NSA)	4G LTE	3G (HSPA+)	LPWA
34		B34		
38	n38*	B38		
39		B39		
40	n40*	B40		
41	n41	B41		
42		B42		
43		B43*		
46		B46**		
48	n48*	B48		
66	n66	B66		B66
71	n71	B71		
77	n77			
78	n78			
79	n79			

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

	NAM	EMEA & APAC
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 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 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 5VDC 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	Semtech 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)
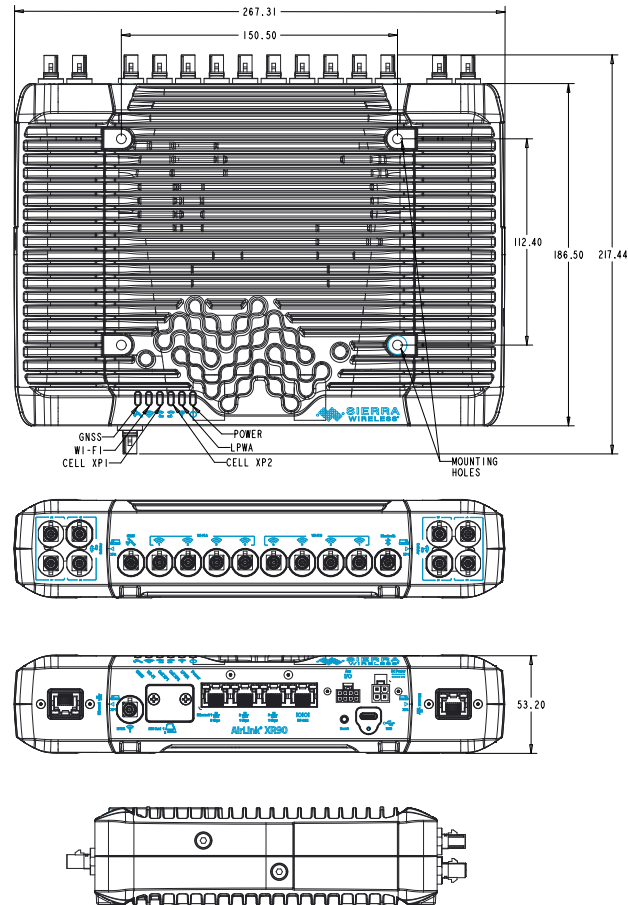2. Depends on other enabled features

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

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 / 8.7 x 6.7 x 2.1 in Weight: 2.06 Kg / 4.54 lb
AirLink XR90 – Main body with Single Expansion Cartridge	220mm x 220mm x 53mm / 8.7 x 8.7 x 2.1 in Weight: 2.64 Kg / 5.82 lb
AirLink XR90 – Main body with Dual Expansion Cartridge	268mm x 220mm x 53mm / 10.5 x 8.7 x 2.1 in Weight: 3.22 Kg / 7.09 lb

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

AirLink XR90 – Router Dimensions Diagram

AirLink XR90 Dual 5G

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About Semtech
Semtech Corporation (Nasdaq: SMTC) is a high-performance semiconductor, IoT systems and cloud connectivity service provider dedicated to delivering high-quality technology solutions that enable a smarter, more connected and sustainable planet. Our global teams are committed to empowering solution architects and application developers to develop breakthrough products for the infrastructure, industrial and consumer markets.

To learn more about Semtech technology, visit us at **Semtech.com** or follow us on **LinkedIn** or **X.**

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