Manuals+ — User Manuals Simplified.

SEMTECH AirLink XR60 Smallest Rugged 5G Router

SEMTECH AirLink XR60 Smallest Rugged 5G Router Owner's Manual

Contents

SEMTECH

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Specifications:

- 5G and Wi-Fi 6 performance
- 5 Gbps Ethernet
- USB-C technologies
- Ultra-compact design
- Shock and vibration resilience (MIL-STD-810H grade)
- Extreme temperature and humidity operating range
- Intrinsic safety (C1D2)
- Edge intelligence with container support
- Redundant USB-C power supply input
- Multi-band support for extensive networking coverage

Product Usage Instructions

Installation:

1. Choose a suitable location for the router that allows for proper ventilation.
2. Connect the power supply to the redundant USB-C power inputs.
3. Connect the Ethernet cable to the appropriate port for network connectivity.
4. If using Wi-Fi, configure the Wi-Fi settings as needed.
5. Power on the router and wait for it to boot up.

Configuration:
To configure the router settings:

1. Access the router's web interface by entering the IP address in a web browser.
2. Log in using the default credentials or set up a new username and password.
3. Configure network settings, including IP addresses, DNS, and Wi-Fi parameters.

4. Set up any specific routing functions required for your application.

5. Safely save and apply the changes before exiting the configuration interface.

Maintenance:
Regular maintenance is essential for optimal performance:

- Check for firmware updates periodically and apply them as needed.
- Clean the router vents and ensure proper airflow for cooling.
- Monitor network performance and troubleshoot any connectivity issues promptly.
- Keep the router away from moisture and extreme temperatures to prolong its lifespan.

FAQ:

- **Q: Can the XR60 router support both 5G and Wi-Fi 6 simultaneously?**

  A: Yes, the XR60 router is designed to provide high-performance connectivity with both 5G and Wi-Fi 6 technologies concurrently.

- **Q: How can I reset the router to factory settings?**

  A: To reset the router, locate the reset button on the device, press and hold it for about 10 seconds until the lights indicate a reset. The router will revert to its factory default settings.

- **Q: Is the XR60 router suitable for outdoor installations?**

  A: Yes, the XR60 router is ruggedly designed to withstand harsh conditions, making it suitable for outdoor installations in various applications.

5G and Wi-Fi 6 Performance in an Ultra- Compact and Rugged Router for Fixed and Mobile Mission-Critical

Applications

KEY FEATURES

- 4×4 5G + LTE Cat-20
- 2×2 Wi-Fi 6 (optional)
- Dual-Band GNSS
- Single Serial / Single
  - Ethernet (1 Gbps) or Dual
  - Ethernet (1 Gbps + 5 Gbps)
- IP64 and MIL-STD-810H Rated
- Powered by AirLink® OS and AirLink® Complete

XR60 Product Description

The ultra-compact and highly ruggedized AirLink® XR60 delivers high performance 5G and Wi-Fi 6 connectivity to space-limited and harsh environments – from tight industrial enclosures to fast-moving vehicles. With advanced networking capabilities, private network support and edge computing capabilities, the XR60 future proofs your connectivity and accelerates your digital transformation.

A Fully Integrated Solution

The AirLink XR60 is fully integrated with AirLink Complete – a comprehensive service package that includes remote device and security management, expert technical support and extended hardware warranty. You can also opt for AirLink Premium – an advanced service package that includes all the benefits of AirLink Complete, enhanced with Advanced Mobility Reporting and Advance Replacement.

Ideal Applications

High-performance and reliable connectivity in fixed and mobile mission-critical applications:

- Critical Infrastructure
- Video Surveillance
- Smart Cities
- Manufacturing
- Public Safety Vehicles
- Fixed Wireless Access
- Fleet Vehicles

Benefits

- Designed for high performance with 5G, Wi-Fi 6, 5 Gbps Ethernet and USB-C technologies
- Ultra-compact design making it ideal for space-constrained industrial settings and vehicle applications
- Designed and thoroughly tested to thrive in the harshest conditions: shock and vibration resilience (MIL-STD-810H grade), extreme temperature and humidity operating range, intrinsic safety (C1D2) and power resilience
- Advanced networking capabilities with flexible software-defined routing functions
- Multi-band support for extensive public and private networking coverage
- Edge intelligence with industry-standard container support
- Redundant USB-C power supply input for increased reliability

XR60 Services and Support

AIRLINK COMPLETE
Maximize your AirLink XR60 hardware investment with AirLink Complete – a comprehensive service package designed to empower you with the tools and support necessary to secure, optimize and effortlessly scale your XR60 deployments.

AirLink Complete includes*:

- AirLink Managerment Service (ALMS) for remote device and security management
- Extended hardware warranty up to 5 years maximum
- Expert technical support
- For more information on AirLink Complete visit our web page

*With active subscription.1-year subscription included with the XR60 purchase

AIRLINK PREMIUM
Ideal for organizations managing mission-critical vehicle fleets, this service upgrade encompasses all the benefits of AirLink Complete*, enhanced with:

- Advanced Mobility Reporting*: Offers comprehensive coverage and fleet reporting to monitor your network and vehicles.
- Advance Replacement*: Provides same-day shipping for in-warranty router replacements, minimizing downtime, spare inventory and keeping your operations running smoothly.

*With active subscription.

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 XR60 router visit our web page

AirLink XR60 – Router Specifications

KEY FEATURES

- Cellular Radios 5G
- Wi-Fi 2×2 MIMO Wi-Fi 6 (Optional)
- Ethernet
    - 1x Ethernet RJ45 (1 Gbps) – Single Serial/Single Ethernet variant
    - 2x Ethernet RJ45 (1 Gbps + 5 Gbps) – Dual Ethernet variant
- Serial Single RS-232 (RJ45) – Single Serial/Single Ethernet variant
- GNSS Dual-band 48 Channel GNSS
- CAN –
- I/O 1 GPIO
- USB USB 3.2 Gen 1 Type-C® with Power Delivery and 5 Gbps LAN networking
- Bluetooth –
- IP Rating Sealed Aluminum Housing (IP64 Rated)
- Services AirLink Complete (1 year included)
- Operating System AirLink OS

- Management System AirLink Management Service (ALMS)

GLOBAL

CELLULAR

- Variant Global
- Technology 5G
- Peak Downlink (Theoretical) 2800 Mbps
- Peak Uplink (Theoretical) 300 Mbps
- Category 5G
- Region Global
- Radio EM9291
- MIMO 4×4
- RF Connectors SMA
- SIM Dual SIM (Nano-4FF)

	FREQUENCY BANDS				FREQUEN CY BANDS			
	5G	**4G LTE**	**3G (HSPA+)**			**5G**	**4G LTE**	**3G (HSPA+)**
1	n1	B1	B1	**41**		n41	B41	
2	n2	B2	B2	**42**			B42	
3	n3	B3		**43**			B43	
4		B4	B4	**46**			B46**	
5	n5	B5	B5	**48**		n48	B48	
7	n7	B7		**66**		n66	B66	
8	n8	B8	B8	**70**		n70		
12	n12	B12		**71**		n71	B71	
13	n13	B13		**75**		n75*		
14	n14	B14		**76**		n76*		
17		B17		**77**		n77		
18	n18	B18		**78**		n78		
19		B19	B19	**79**		n79		
20	n20	B20						
25	n25	B25						
26	n26	B26						
28	n28	B28						
29	n29*	B29**						
30	n30	B30**						
32		B32**						
34		B34						
38	n38	B38						
39		B39						
40	n40	B40						

SA downlink only
** Downlink only

WIRELESS CERTIFICATION

- Regulatory FCC, IC/ISED, PTCRB
- Carrier AT&T, FirstNet® 4G, T-Mobile, Verizon, CBRS. C-Band (Pending)

  Planned: Rogers, Telus, Bell, Telstra

- Public Safety FirstNet® 4G (Pending)
- Part Numbers 1105099 XR60 Dual Ethernet (1 Gbps + 5 Gbps) 1105159 XR60 Dual Ethernet (1 Gbps + 5 Gbps) with Wi-Fi 1105160 XR60 Single Serial, Single Ethernet (1 Gbps) 1105161 XR60 Single Serial, Single Ethernet (1 Gbps) with Wi-Fi

WI-FI

- Wi-Fi Standard Wi-Fi 6
- Access Point Dual (2.4 & 5 GHz)
- Client (Depot/WAN) Yes
- Client & AP Yes
- Peak Throughput (Theoretical) 1200 Mbps
- MIMO Single 2×2
- Security WPA2/3 Personal
    - WPA2/3 Transitional
    - WPA2 Enterprise (Client only)
- Clients Up to 32 maximum
- SSID 3
- Output Power 21 dBm per chain
- Frequency 2.4/5 GHz
- RF Connectors SMA (Reverse Polarity)

ENVIRONMENTAL

- **Operating Temperature**
    - -40°C to +70°C / -40°F to +158°F
    - -30°C to +65°C / -22°F to +149°F (Wi-Fi variant)
- Storage Temperature -40°C to +85°C / -40°F to +185°F
- Humidity 95% RH @ 60°C
- Military Specification MIL-STD-810H (Shock, Vibration, Thermal Shock, Humidity)
- IP Rating IP64

INDUSTRY CERTIFICATIONS

- Safety IECEE Certification Bodies Scheme (CB Scheme)
- Vehicle Usage E-Mark (UN ECE Regulation 10.05), 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 Redundant power input via USB-C (45W)
- Power Consumption

- - Idle Power: 3.5W (290 mA @ 12VDC) – Serial/Ethernet variant
  - Standby Mode Power: 55 mW (4.6 mA @ 12 VDC)
  - Triggered on low voltage, I/O or periodic timer
- Power Modes 7 to 36 VDC:
  - Low voltage disconnect to prevent battery drain
  - Built-in protection against voltage transients including
  - 5VDC engine cranking and +200 VDC load dump
  - Ignition Sense with time delay shutdown
  - Configurable features and ports to optimize power consumption
  - Can switch to redundant power input via USB-C (45W)

SECURITY

- AAA Wi-Fi 802.1x/Radius authentication Firewall Stateful firewall with port forwarding, DMZ
- WLAN Encryption WPA2/3 Personal
- WPA2/3 Transitional
- WPA2 Enterprise (Client only)
- Firmware Update Secure Firmware Update

NETWORK AND ROUTING

- Throughput 800 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 175 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) licensed via ALMS

EDGE COMPUTING

- Support for Edge Compute Docker Containerized
- Applications (Beta) licensed via ALMS
- RAM[1],[2] 1.2 GB
- Storage (Flash)[1] 1.7 GB
- CPU Quad Core Arm A53 64 bit

1. Approximation available to containers (not device total)
2. Depends on other enabled features

AIRLINK COMPLETE (1 Year Included With Router Purchase)

- Support 24/7 technical support*
- Hardware Warranty 1-year standard hardware warranty Extended hardware warranty up to 5 years with current subscription**
- Device Management AirLink Management Service (ALMS)*
- Software Updates Unrestricted critical firmware updates

AIRLINK PREMIUM (Optional Upgrade)
Includes All Airlink Complete Features* and Adds:

- Advanced Mobility Reporting Coverage and fleet reporting***
- Advance Replacement Same-day shipping for in-warranty router replacements***

RELIABILITY

MTBF

- 1105099 XR60 Dual Ethernet: 264010 hours (30.13 years)
- 1105159 XR60 Dual Ethernet, Wi-Fi: 245227 hours (27.99 years)
- 1105160 XR60 Serial, Ethernet: 283666 hours (32.38 years)
- 1105161 XR60 Serial, Ethernet, Wi-Fi: 262094 hours (29.91 years)
- Ground Benign, 25°C
- MTBF calculations performed per Telcordia "Reliability
- Prediction Procedure for Electronic Equipment" document number SR-332, Method I, Issue 3

ACCESSORIES

- In The Box XR60, DC Power Cable, Quick Start Guide, AirLink Complete Leaflet
- Other Accessories (sold separately)
  - 6001503 AC Adapter
  - 6001502 Spare DC Power Cable
  - 6001529 DIN Rail Bracket
  - 6001410 RJ45 to Single DB9
  - 6001409 RJ45 to Dual DB9
  - For Antenna options visit: web page
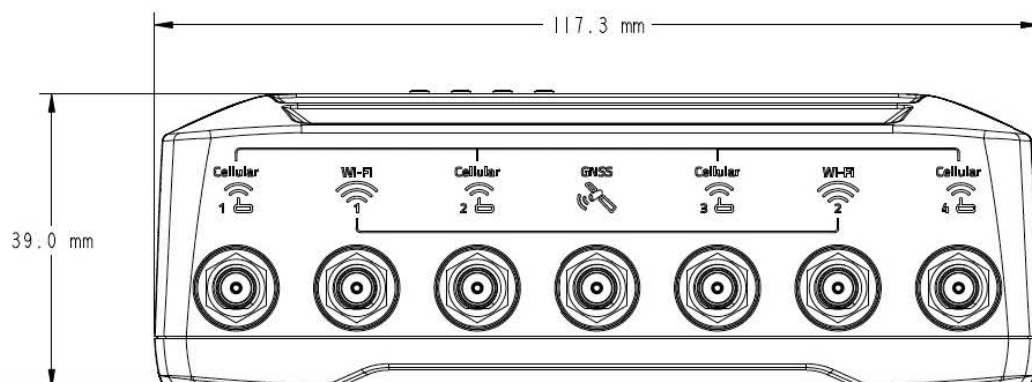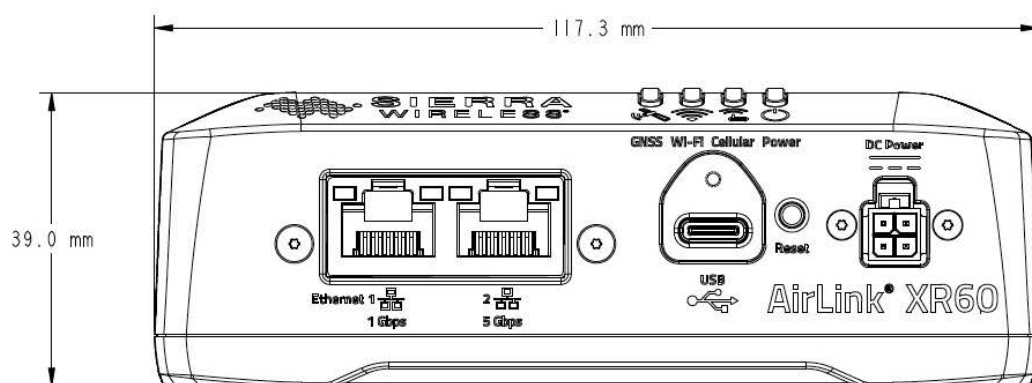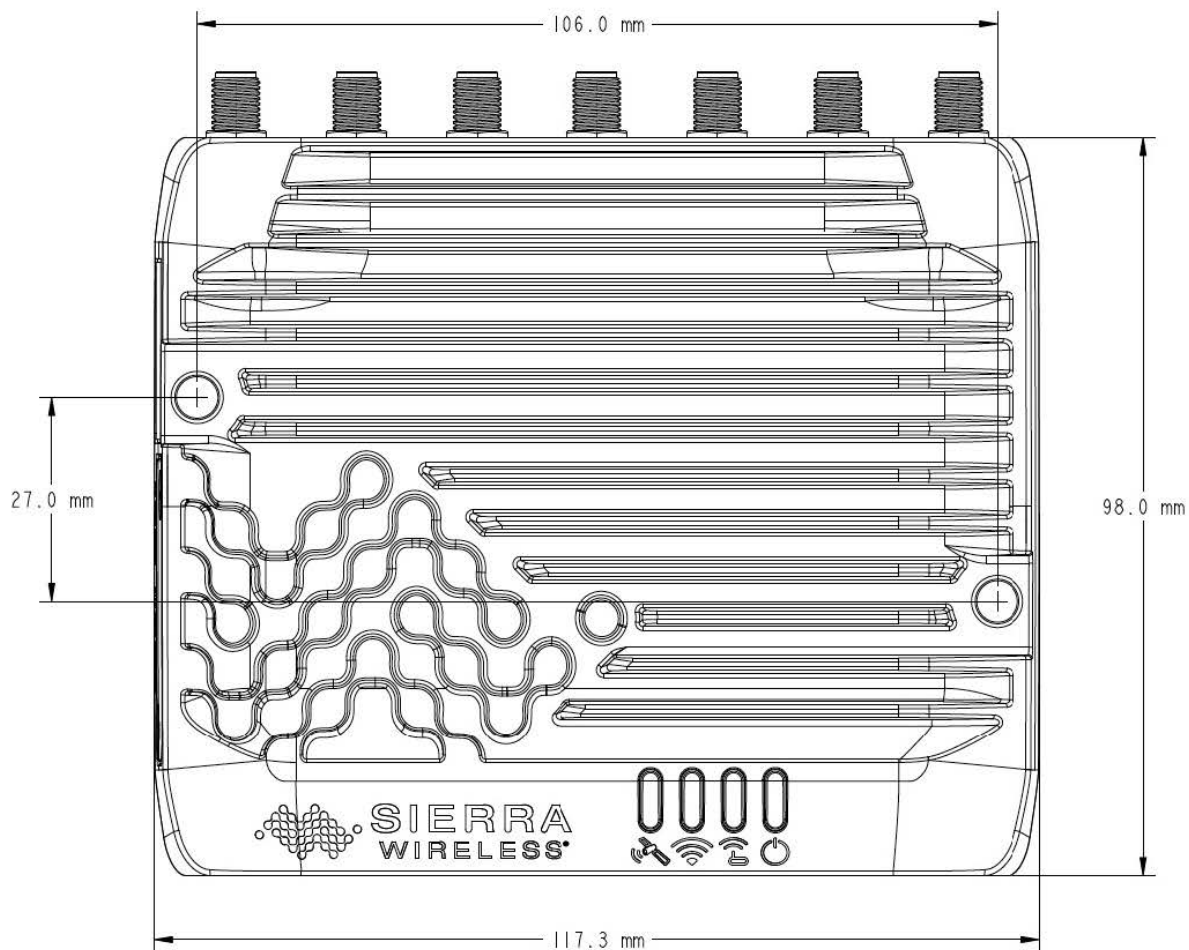
DIMENSIONS

- **AirLink XR60**
  - Size: 118mm x 39mm x 98mm (108 including SMA connectors)
  - 4.6 x 1.5 x 3.9 in (4.2 in including SMA connectors)
  - Same bolt pattern as RV
  - Weight: 522 g / 1.15 lb with Wi-Fi

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

AirLink XR60 – Router Dimensions Diagram

106.0 mm

27.0 mm

98.0 mm

117.3 mm

SIERRA WIRELESS

117.3 mm

39.0 mm

GNSS WI-FI Cellular Power

DC Power

SIERRA WIRELESS

Ethernet 1 1 Gbps

2 5 Gbps

USB

Reset

AirLink XR60

117.3 mm

39.0 mm

Cellular 1

WI-FI 1

Cellular 2

GNSS

Cellular 3

WI-FI 2

Cellular 4

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.
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Documents / Resources

SEMTECH AirLink XR60 Smallest Rugged 5G Router [pdf] Owner's Manual
AirLink XR60 Smallest Rugged 5G Router, AirLink XR60, Smallest Rugged 5G Router, Rugged 5G Router, 5G Router, Router

References

- **User Manual**