

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	AT&T FirstNet Compatible Cellular Wireless Router	12.00000	EA	1050.000000	12600.00

Comm Code	Manufacturer	Specification	Model #
43222609			

Commodity Line Comments: Sierra Wireless Airlink RV55 Rugged LTE-A Pro Router with 5 year Airlink Management Service and Warranty

Extended Description:

AT&T FirstNet Compatible Cellular Wireless Router for Traffic Signal System

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
2	Associate Power Supply for AT&T FirstNet Compatible Router	12.00000	EA	85.000000	1020.00

Comm Code	Manufacturer	Specification	Model #
39121004			

Commodity Line Comments:

Extended Description:

Associate Power Supply for AT&T FirstNet Compatible Cellular Wireless Router for Traffic Signal Systems

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
3	Antenna for AT&T FirstNet Compatible Cellular Wireless Route	12.00000	EA	330.000000	3960.00

Comm Code	Manufacturer	Specification	Model #
43221727			

Commodity Line Comments: Sierra Wireless Airlink Antenna 5-in1 Dome

Extended Description:

Antenna for AT&T FirstNet Compatible Cellular Wireless Router for Traffic Signal



AirLink® RV55 Rugged LTE-A Pro Router

BENEFITS

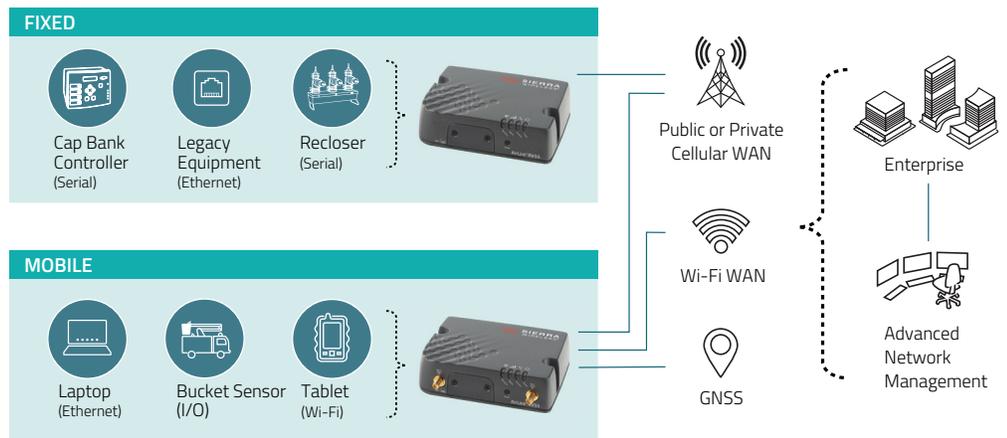
- Centrally managed, secure LTE broadband connectivity for both remote fixed or vehicle applications in harsh environments
- Ultra-Low Power consumption, ideal for solar or battery powered installations.
- Connect your field workers and devices with flexible dual Wi-Fi, and ethernet
- Reduces complexity in connecting legacy equipment with dual-serial, ethernet, and multi-protocol support
- Powerful remote cloud-based or on-premises management solutions
- Proven reliability and over 3 million AirLink routers and gateways deployed
- Peace of mind - included 3-year warranty, direct 24/7 support, and device management access¹

Compact, Industrial Grade, Low Power LTE-Advanced Connectivity

The AirLink® RV55 is the industry's most rugged, compact, LTE-Advanced Pro router. Simple to install, and easy to manage, the RV55 router is designed for connecting critical remote assets, infrastructure, and vehicle fleets. The RV55 is especially well suited for applications in energy, utilities, smart city and public safety. The RV55 provides real-time remote connectivity for SCADA, distribution management systems and metering.

The RV55 high-performance LTE-Advanced Pro connectivity, Wi-Fi and GNSS and location-based applications and dual connectivity for vehicle fleets and mobile workforce. An LTE-M/NB-IoT variant is perfectly suited for hard to reach conditions.

The RV55 supports an extensive range of LTE bands worldwide, and its LTE-Advanced Pro capabilities deliver up to 600 Mbps downlink speeds. The RV55 also supports new unlicensed LTE bands (eg. CBRS) to support dedicated Private LTE service.



¹ 1st year of 24/7 Direct Technical Support and device management access included in purchase at no additional charge.

RV55

	North America	Global	Global
	LTE-A Pro		LTE-M/ NB-IoT
LTE CATEGORY	Cat 12		Cat M1/NB1
Peak D/L	(Up to 600 Mbps DL)		Cat-M1: 300kbps Cat-NB1: 27kbps
Peak U/L	(Up to 150 Mbps UL)		Cat-M1: 375kbps Cat-NB1: 65kbps
4G LTE Frequency Bands	2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 2600(B7), 900(B8), 1800(B9), 700(B12), 700(B13), 700(B14), 850(B18), 850(B19), 800(B20), 850(B26), 700(B29), 2300(B30), 1500(B32), TDD B41, TDD B42, TDD B43, TDD B46, CBRS B48, 1700(B66)	2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 2600(B7), 900(B8), 1800(B9), 700(B12), 700(B13), 850(B18), 850(B19), 800(B20), 850(B26), 700(B28), 700(B29), 2300(B30), 1500(B32), TDD B41, TDD B42, TDD B43, TDD B46, CBRS B48, 1700(B66)	2100(B1), 1900(B2), 1800(B3), AWS(B4), 850(B5), 900(B8), 700(B12), 700(B13), 700(B17), 850(B18), 850(B19), 800(B20), 850(B26), 700(B28)
3G HSPA/HSPA+ Frequency Bands*	2100(B1), 1900(B2), AWS(B4), 850(B5), 800(B6), 900(B8), 1700(B9), 850(B19)	2100(B1), 1900(B2), AWS(B4), 850(B5), 800(B6), 900(B8), 1700(B9), 850(B19)	
2G EDGE/GSM/GPRS Frequency Bands			850, 900, 1800, 1900
APPROVALS			
Regulatory	FCC, IC, PTCRB	GCF, CE, RCM	FCC, IC, PTCRB, GCF, CE, RCM
Carrier	Verizon, AT&T/FirstNet	Planned: Telstra	Planned: Verizon, AT&T
			
PART NUMBER	1104303	1104332	1104333
Regulatory	1104302 (Wi-Fi)	1104331 (Wi-Fi)	

Specification

HOST INTERFACES	10/100/1000 Ethernet (RJ45) RS-232 serial port (DB-9) USB 2.0 Micro-B Connector 3 SMA antenna (cellular, diversity, Active GNSS) 2 RP-SMA antenna (1x1 Wi-Fi, Optional) LTE-M/NB-IoT: 1 SMA (cellular) only, no GNSS or Wi-Fi Active GPS antenna support
WI-FI (Optional)	Dual Band 2.4/5GHz Wi-Fi Dual Radio, 802.11 b/g/n/ac (Wave2 Client Mode) Support for 10 clients, WPA2 Enterprise per radio Output power 16dBm Configurable as Dual Band Access Point (AP) or AP+Client Mode Single SSID Support per radio Captive Portal
INPUT/OUTPUT	Configurable I/O pin on power connector <ul style="list-style-type: none"> Digital Input ON Voltage: 2.7 to 36 VDC Configurable Pull-up for dry contact input Digital Open Collector Output > sinking 500 mA Analog Input: 0.5-36 VDC
LAN (ETHERNET/USB)	DHCP Server IP Passthrough VLAN Host Interface Watchdog PPPoE
SERIAL	TCP/UDP PAD Mode Modbus (ASCII, RTU, Variable) PPP DNP3 Interoperability Dual Serial option (with an accessory)
NETWORK AND ROUTING	Network Address Translation (NAT) Port Forwarding Policy Routing NEMO/DMNR VRRP Reliable Static Route Dynamic DNS Verizon PNTM IPv6 Gateway

Specification

SATELLITE NAVIGATION (GNSS)	30 Channel GPS and GLONASS Receiver Acquisition Time: 1 s Hot Start Accuracy: <2 m (50%), <5 m (90%), <0.2 m/s Tracking Sensitivity: -160 dBm Reports: NMEA 0183 V3.0, TAIP, RAP, XORA Multiple Redundant Servers Reliable Store and Forward
SECURITY	Remote Authentication (LDAP, RADIUS, TACACS+, DMZ) Inbound and Outbound Port filtering Inbound and Outbound Trusted IP MAC Address Filtering PCI compatible Secure Firmware Update
NETWORK MANAGEMENT	Secure mobile network & asset management application available in the cloud or licensed platform in the enterprise data center Fleet wide firmware upgrade delivery Router configuration and template management Router staging over the air and local Ethernet connection Over-the-air software and radio module firmware updates Device Configuration Templates Configurable monitoring and alerting Remote provisioning and airtime activation (where applicable)
ROUTER MANAGEMENT	ALMS Local web user interface AT Command Line Interface (Telnet/SSH/Serial) SMS Commands SNMP
EVENTS ENGINE	Custom event triggers and reports Configurable interface, no programming Event Types: Digital Input, Network Parameters, Data Usage, Timer, Power, Device Temperature and Voltage Report Types: RAP, SMS, Email, SNMP Trap, TCP (Binary, XML, CSV) Event Actions: Drive Relay Output

AirLink® RV55 Rugged LTE-A Pro Router

VPN	IPsec, GRE, and OpenVPN Client Up to 5 concurrent tunnels Split Tunnel Dead Peer Detection (DPD) FIPS 140-2 compatible
APPLICATION FRAMEWORK	ALEOS Application Framework (AAF) Lua Scripting Language
POWER	Input Voltage: 7 to 36 VDC LTE Idle Power: 900mW (75 mA @ 12VDC) Standby Mode Power: 53 mW (4.4 mA @ 12 VDC) triggered on low voltage, I/O or periodic timer Low voltage disconnect to prevent battery drain Built-in protection against voltage transients including 5 VDC engine cranking and +200 VDC load dump Ignition Sense with time delay shutdown Configurable features and ports to optimize power consumption
DIMENSIONS	119 mm x 33 mm x 85 mm (102 mm including wi-fi connectors) 4.69 in x 1.34 in x 3.35 in (3.70 in including connectors) Weight: 320 g

ENVIRONMENTAL	Operating Temperature: -40°C to +70°C / -40°F to +158°F Operating Temperature (Wi-Fi variant): -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 Spec MIL-STD-810G conformance to shock, vibration, thermal shock, and humidity IP64 rated ingress protection
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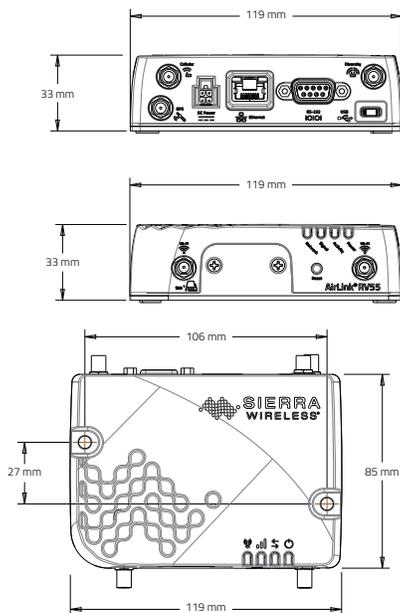
INDUSTRY CERTIFICATIONS	Safety: IECCE Certification Bodies Scheme (CB Scheme), UL 60950** Vehicle Usage: E-Mark (UN ECE Regulation 10.04), ISO7637-2, SAE J1455 (Shock & Vibration) Hazardous Environments: Class 1 Div 2** Environmental: RoHS, REACH, WEEE
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SUPPORT AND WARRANTY	Includes 1st Year AirLink Complete: <ul style="list-style-type: none"> AirLink Management Service (ALMS) Direct 24/7 Technical Support 3-year standard warranty; optional 2-year warranty extension 1-day Accelerated Hardware Replacement available through participating resellers
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ACCESSORIES	In the Box: DC Power Cable, and Quick Start Guide 2000579 AC Adapter, 12VDC 6000659 DIN Rail Mounting Brackets 6001110 Cellular Paddle Antenna 6001111 Wi-Fi 2.4/5GHz Paddle Antenna See website for more antenna options.
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*For carrier specific band support please refer to the hardware user guide.
** Ambient temperatures of -30C to +60C

DIMENSIONS



AirLink Networking Solution - Related Products

AIRLINK NETWORK MANAGEMENT SOLUTIONS

AIRLINK MANAGEMENT SERVICE (ALMS)



- Secure, Cloud-based network and asset management
- Remotely deploy, configure, monitor and manage AirLink devices
- Carrier-grade, high availability, secure, global infrastructure

AIRLINK MANAGER / MOBILITY MANAGER (AM/AMM)



- Deployable in the enterprise data center (on-premises) or in the cloud
- Advanced, end-to-end network and asset management for both fixed and mobile networks.
- Remote, real-time configuration, control and troubleshooting of AirLink devices

AIRLINK VPN APPLIANCE

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-onVPN capability

About Sierra Wireless

Sierra Wireless (NASDAQ: SWIR) (TSX: SW) is an IoT pioneer, empowering businesses and industries to transform and thrive in the connected economy. Customers Start with Sierra because we offer a device-to-cloud solution, comprised of embedded and networking solutions seamlessly integrated with our IoT services. OEMs and enterprises worldwide rely on our expertise in delivering fully integrated solutions to reduce complexity, turn data into intelligence and get their connected products and services to market faster. Sierra Wireless has more than 1,400 employees globally and operates R&D centers in North America, Europe and Asia. For more information, visit www.sierrawireless.com.

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Sierra Wireless AirLink® Antenna: 5-in-1 Dome

The 5-in-1 Dome is a custom single antenna solution for the RV55 Dual Wi-Fi, tested and certified for mobile application.

The antenna has a low-profile design that contains five isolated high performance antenna elements in a single housing for optimal coverage; two ultra-wideband elements spanning 617-6000MHz; a high performance GNSS antenna with an integrated 26dB gain LNA; and two dual band 2.4/5GHz omni-directional Wi-Fi elements.

		Specification	
PART NO.		6001275	
ELECTRICAL DATA			
Frequency Range	3G/4G Elements	617-960MHz / 1710-6000	
	Wi-Fi Elements	2.4/4.9-6GHz	
Peak gain: Isotropic*	3G/4G Elements	617-960MHz	4dBi
		1710-3800MHz	8dBi
	Wi-Fi Elements	4900-6000MHz	9dBi
		2.4 GHz	9dBi
Isolation*	3G/4G Elements	> 15dB	
	Wi-Fi Elements	> 18dB	
Typical Efficiency	3G/4G Elements	> 50%	
	Wi-Fi Elements	> 70%	
Correlation Co-efficient	3G/4G Elements	<0.2	
Pattern	Omni-directional		
Impedance	50Ω		

*Simulated off a groundplane and does not include cable attenuation

		Specification
GPS/GNSS DATA		
Frequency Range		1562-1612MHz
VSWR		<2.1 ± 4MHz
Gain: LNA		26dB
Typical Noise Figure		-2.7dB
Operating Voltage		3-5V DC
Typical Current		15mA
MECHANICAL DATA		
Dimensions	Height	80mm (3.1")
	Diameter	180mm (7.1")
Operating Temp		-40° / +80°C (-40° / +176°F)
Colour		Black
Ingress Protection		IP69K
MOUNTING DATA		
Mounting Type		Bolt Mount
Mounting Hole		19mm (3/4")
CABLE DATA		
Cell / LTE Cables	Type	C32
	Length	5m (16')
	Termination	SMA (m)
GPS Cable	Type	CS29
	Length	5m (16')
	Termination	SMA (m)
Wi-Fi Cables	Type	C32
	Length	5m (16')
	Termination	RP-SMA Plug

About Sierra Wireless

Sierra Wireless (NASDAQ: SWIR) (TSX: SW) is the leading IoT solutions provider that combines devices, network and software to unlock value in the connected economy. Companies globally are adopting IoT to improve operational efficiency, create better customer experiences, improve their business models and create new revenue streams. Whether it's a solution to help a business securely connect edge devices to the cloud, or a software/API solution to help manage processes associated with billions of connected assets, or a platform to extract real-time data to make the best business decisions, Sierra Wireless will work with you to create the right industry-specific solution for your next IoT endeavor. Sierra Wireless has more than 1,300 employees globally and operates R&D centers in North America, Europe and Asia.

For more information, visit www.sierrawireless.com.

Connect with Sierra Wireless on the IoT Blog at www.sierrawireless.com/iot-blog, on Twitter at [@SierraWireless](https://twitter.com/SierraWireless), on LinkedIn at www.linkedin.com/company/sierra-wireless and on YouTube at www.youtube.com/SierraWireless

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ADDENDUM ACKNOWLEDGEMENT FORM

SOLICITATION NO.: ARFQ DOT2100000006

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification. Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Moborrex, Inc

Company

[Signature]

Authorized Signature

9/16/2020

Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Mobotrex, Inc

Authorized Signature: [Signature] Date: 9/16/2020

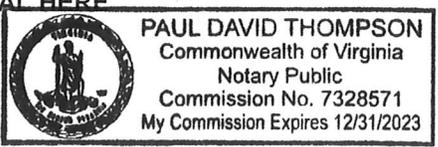
State of VIRGINIA

County of POWHTAN, to-wit:

Taken, subscribed, and sworn to before me this 16 day of SEPTEMBER, 2020.

My Commission expires DECEMBER 31, 2023.

AFFIX SEAL HERE



NOTARY PUBLIC [Signature]