

Product Highlights

The WirelessGRID 4461 Series of outdoor Backhaul, Multipoint and Mobile radios operate in 4.40-6.10 GHz spectrum designated for use by government and military customers

♦ **Rugged, weatherproof, integrated designs** for ease of installation, configuration, diagnostics and management.

♦ **Data rates** up to 108 Mbps per radio, adaptive and fixed modulation modes operating on 40, 20, 10, or 5 MHz wide channels

♦ **SecureRF™ Architecture** provides 5 layers of security, including unique radio mask and layer-2 protocol, mutual radio authentication, 128-bit AES data encryption, and VLAN termination. Inline Ethernet encryptors can also be used as required

♦ **Compatible** with all standard 100/10 Mbps Ethernet switches, routers, 802.11q, 802.11p VPN, Trunk and VoIP protocols. Up to 1600 byte packet size supported

♦ **Real-time antenna alignment tool** simplifies antenna alignment, optimizes link quality, and maximizes system throughput

♦ **Light-weight Mobile/Solar and Remote Power versions** for installation using 8-30VDC power, or up to 328 feet away from a network drop using power over Ethernet

♦ **Real-time monitoring of WirelessGRID™** displays signal strength, connected radios, and radio statistics via SNMP, CLI, and Web

♦ **Integrated network sniffer** for advanced Ethernet and Radio network diagnostics



Base Stations



Outdoor Subscriber Units



Mobile Subscriber Units



Robust and Flexible Outdoor-Ready Design

Outdoor-ready WirelessGRID™-4461 radios are designed for rapid deployment in harsh environments. Utilizing OFDM technology in the 4.40-6.10 GHz frequency range, these radios are layer-2 bridges, operate in Multipoint and Backhaul (Point to Point) mode, and are available in fixed and mobile/solar configurations.

Proven Performance and Simple Configuration

Proven in thousands of private networks worldwide, WirelessGRID™ radios are ideally suited for bandwidth-hungry applications that require robust, reliable, and secure connectivity.

WirelessGRID™ backhaul radios, base stations and subscriber units provide optimal delivery of IP video, voice, and data services by utilizing AIRAYA's unique video tuning capability (VTC), user-selectable 5, 10, 20 and 40 MHz wide channel and power settings, and more than 500 available channels in the 4.40-6.10 GHz frequency range. These unique capabilities allow us to meet and exceed your capacity, speed, scalability, and usage requirements, while minimizing spectrum usage and complying with local regulations.

Advanced SecureRF™ Security

Our SecureRF™ architecture provides 5 layers of security. A unique radio mask, proprietary bridge protocol, mandatory mutual radio authentication, embedded 128-bit AES encryption, and VLAN termination. Inline Network encryptors can also be used, adding higher levels of encryption and ensuring the prevention of hacking, data theft and unauthorized intrusions.

Common WirelessGRID 4461 Multipoint Applications	
Wireless Video Surveillance and Security Systems	Fixed outdoor perimeter and mobile video camera surveillance systems take advantage of AIRAYA's VTC video tuning capability, providing best-in-class wireless video capability for homeland security, military and government security applications.
Private Government and Military Network Infrastructure	Private networks for public safety and government use allow agencies to reliably communicate and share information without risk of intrusion. AIRAYA WirelessGRID™ networks are proven and deployed in many private government and military networks today.



WirelessGRID™ 4461 Outdoor Wireless Backhaul Link (4.40–6.10 GHz, Up to 108 Mbps)

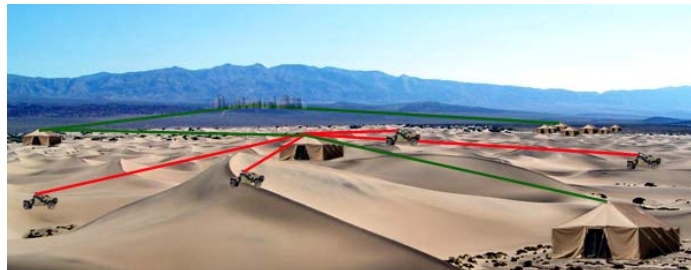
Proven, Fast, Reliable

Model #'s: 4461-BSU, 4461-OSU, 4461-ONSU, 4461-MSU Specifications
For low-latency, high performance Backhaul, Multipoint and Mobile Ad-Hoc

Radio			
1700 MHz of Spectrum in 4.40-6.10 GHz. 40, 20, 10, 5 MHz wide channel selections (Local regulations apply)	4.40-6.10 GHz Band Number of user-selectable channels by channel width: 215 x 5 MHz, 108 x 10 MHz, 53 x 20 MHz, 25 x 40 MHz		
Radio Type	Orthogonal Frequency Division Multiplexing (OFDM)		
Standards	802.3, 802.1Q, 802.1P, Cisco ISL, VLAN Termination		
Total System EIRP and Radio Output Power	Radio output power: Max: 21 dBm (Set to local regulatory requirements to comply with transmit, conducted and EIRP power limits)		
Radio Receiver Sensitivity	Data Rate	Sensitivity	Modulation
	1.5 to 108 Mbps	-69 to -91 dBm	64QAM, 16QAM, QPSK, BPSK
Antenna Type(s)	Antennas are ordered separately		
Operating Modes	Point-to-Multipoint, Backhaul (Point-to-Point), Repeater		

Models and Ordering Information	
4461-BSU	Outdoor Base Station w/150ft. PoE Cable, 1 x Radio and 1 x N-type Female Connector (Up to 42 Mbps TCP/IP Capacity)
4461-OSU	Outdoor Subscriber Unit w/150ft. PoE Cable, 1 x Radio and 1 x 23 dBi Antenna
4461-ONSU	Outdoor Subscriber Unit w/150ft. PoE Cable, 1 x Radio and 1 x N-type Female Connector
4461-MSU	Mobile Subscriber Unit (MSU) w/15ft. 22AWG Power Cable, 1 x N-type Female Connector, 1 x Ruggedized Bulkhead Ethernet Fitting

Electrical	
PoE Powered Units 4461-BSU 4461-ONSU 4461-OSU	Input: 100-240V , 0.5A Auto-ranging (50Hz-60Hz) Injector Output: 48V, 0.4A Max for remote ODU power Max. Power Draw (Full Transmit) = 6.6 Watts Continuous
Mobile/Solar Unit 4461-MSU	Input: 8-30 VDC Max. Power Draw (Full Transmit) = 6.6 Watts Continuous



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SecureRF™ Radio Security	
SecureRF™ Layered Security Design	SecureRF™ Architecture – Unique radio mask, mandatory radio authentication, 128-bit AES data encryption, VLAN termination.

Range	
AI108-4958-O-xxx	Up to 5 miles (8 km) with built-in 23 dBi panel antennas.
AI108-4958-ON-xxx	Up to 30 miles (50 km) with maximum radio output power and optional external high gain parabolic antennas

Indoor Unit (IDU) to Outdoor Unit (ODU) Communication	
Cable Type	CAT 5e 4 x 2 x 24AWG gel-filled (UV protected, weatherized)
Maximum Distance	328 ft (100m) between network connection and outdoor units

Configuration and Management	
Configuration Utility	Built-in Web server. Telnet/CLI. Available at all times through secure interface
Software upgrades	FTP Download
Antenna alignment	Real-time RSSI (signal strength) monitor, link optimization and throughput maximization utility, HTML
Indoor LAN Status Indicator	Remote Power Indicator
VLAN Support	Logical network setting segmentation per radio
Bandwidth Management	Maximum Information Rate(MIR) per radio
Real-time Monitoring	Secure Management Interface - Real-time signal strength, authentication data, system uptime, data rate, channel selection via HTTP, Telnet/CLI, and SNMP

Mechanical Dimensions	
4461-BSU, 4461-ONSU	ODU: 10 x 8 x 3 in (25.4 x 20.3 x 7 cm)
Indoor Unit for 4461-BSU, 4461-ONSU	6 x 3 x 1 in (15.2 x 7.6 x 2.5 cm)
Outdoor Unit Mounting	Includes mast mount and clamp kit for 1" (26mm) diameter thru 4.5" (115mm) diameter masts. Also wall mountable
4461-MSU	10 x 8 x 3 in (25.4 x 20.3 x 7 cm)
MSU Mounting	Supports Vertical and Horizontal Mounting with included kit

Environmental		
Operating Temperature	ODU: -22°F to 140°F (-30° C to 60°C)	IDU: 32°F to 122°F (0° C to 50°C)
Operating Humidity	ODU: Fully Weather Protected, NEMA 4/IP67	IDU: 5 to 95% non-condensing
Lightning Protection	ETSI CE Certified PoE and RF Protection	
Wind Survivability	130 MPH Sustained	140 MPH for 3 Seconds
Shock (MSU)	Thermal: 1° drop in temperature over 15° Range 6g Peak (Instantaneous)	
Vibration (MSU)	0.3g RMS, 5-200 Hz	

Compliance and Certification	
Radio	Public Safety (Part 90), FCC 15.407 (UNII, ISM), Industry Canada RSS-210, ETSI CE Mark (w/TPC and DFS), Anatel, Hong Kong, Mexico, Singapore Part 90 Emission
Safety	UL - Canada, USA, CE Mark, RoHS, WEEE
EMC	FCC Part 15, Industry Canada RSS-210, Mexico, ETSI, EN 301 893, EN 301 489-17, EN 50385, RoHS
Emissions Designators	4.9 GHz: 5M00X1D, 10M0X1D, 15M0X1D, 20M0X1D