

### Product Highlights

The WirelessGRID™ series of outdoor wireless bridges deliver a comprehensive range of product features, ensuring fast, secure and reliable networking services, including...

- ◆ **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

- ◆ **Range** up to 30 miles (50 km) with external antenna option and maximum radio output power settings (local regulations apply)

- ◆ **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



### Integrated Architecture

The integrated outdoor architecture of WirelessGRID™ outdoor bridges provides ease of installation, maximum range and capacity, delivering outstanding performance in a fully integrated design. Utilizing OFDM technology in the 5GHz (4.90-5.85 GHz) frequency range, WirelessGRID™ bridges operate at a range of up to 30 miles\* and at speeds up to 108 Mbps.

### Optimized Performance

Ideally suited for bandwidth-hungry applications that require fast, affordable, reliable, and secure point-to-point connectivity, the fully-integrated outdoor series of WirelessGRID™ bridges provides optimal delivery of IP voice, data, and video services. With AIRAYA's exclusive 5, 10, 20 and 40 MHz wide channel plan, more than 170 available channels can be used to meet your capacity, speed, scalability, and user needs, while optimizing frequency usage and complying with local regulations.

### Advanced Security

Radio network security is provided with mandatory mutual radio authentication and embedded AES-128 data encryption. In addition, a unique radio mask, an advanced radio protocol and channelization ensure the prevention of hacking, data theft and unauthorized intrusions.

### Configuration Flexibility

Built-in support for point to multipoint and point to point modes means you can use one product family to support many different applications. Whether you are connecting two buildings, a campus, or a city-wide municipal network, the WirelessGRID™ architecture provides you with the flexibility to deploy fast, affordable and proven outdoor wireless bridge solutions.

### Simplified Antenna Alignment and Monitoring

Simply run the integrated tool between any two points and the signal strength in dB is streamed across your computer screen, allowing you to maximize signal quality and improve the performance and reliability. While in operation, you can also monitor signal strength between local and remote locations in real time to check for changes in the environment and troubleshoot technical problems.



Proven, Fast, Reliable

# WirelessGRID™ Outdoor Wireless Backhaul Link (4.90-5.850 GHz, Up to 108 Mbps)

Model #'s: AI108-4958-0, AI108-4958-ON Specifications  
For low-latency, high performance point to point applications

Radio			
Multiple Frequency Bands Supported. 40, 20, 10, 5 MHz wide channel selections (Local regulations apply)	4.940-4.990 GHz Public Safety Band (FCC Part 90, licensed Intl.) Non-overlapping Channels: 9 x 5 MHz, 5 x 10 MHz, 2 x 20 MHz, 1 x 40 MHz		
	5.25-5.35 GHz license-exempt Non-overlapping Channels: 15 x 5 MHz, 8 x 10 MHz, 4 x 20 MHz, 2 x 40 MHz		
	5.47-5.72 GHz license-exempt (ETSI, FCC, ITU) with TPC and DFS Non-overlapping Channels: 50 x 5 MHz, 25 x 10 MHz, 12 x 20 MHz, 5 x 40 MHz		
	5.725-5.850 GHz license-exempt UNII & ISM Bands Non-overlapping Channels: ISM, UNII: 22 x 5 MHz, 11 x 10 MHz, 5 x 20 MHz, 2 x 40 MHz		
Radio Type	Orthogonal Frequency Division Multiplexing (OFDM). Dual Radio Architecture for dedicated transmit (TX) and receive (RX) Paths		
Standards	802.3, 802.1Q, 802.1P, Cisco ISL, VLAN		
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)	AI108-4958-0-xxx: 23 dBi integrated AI108-4958-ON-xxx: Parabolic Dish, GRID, Sector, Panel, or Omni		
Operating Modes	Point-to-Multipoint and Backhaul (Point-to-Point)		

SecureRF Radio Link Security	
SecureRF™ Bridge Authentication and Data Encryption	SecureRF™ Architecture – Mandatory bridge authentication. 128-bit AES data encryption. Proprietary radio mask

Range	
AI108-4958-0-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

IDU to ODU Communication – Outdoor Models	
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. 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 segmentation per radio
Bandwidth Management	Set 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, and SNMP

Models and Ordering Information	
AI108-4958-0-050	Complete kit includes 2 radio bridges with 50ft. PoE Cables, Integrated 23 dBi antennas and outdoor mounting brackets
AI108-4958-0-150	Complete kit includes 2 radio bridges with 150ft. PoE Cables, Integrated 23 dBi antennas and outdoor mounting brackets
AI108-4958-0-300	Complete kit includes 2 radio bridges with 300ft. PoE Cables, Integrated 23 dBi antennas and outdoor mounting brackets
AI108-4958-ON-050	Complete kit includes 2 radio bridges with 50ft. PoE Cables, N-type Female Connectors, and outdoor mounting brackets. No antennas
AI108-4958-ON-150	Complete kit includes 2 radio bridges with 150ft. PoE Cables, N-type Female Connectors, and outdoor mounting brackets. No antennas
AI108-4958-ON-300	Complete kit includes 2 radio bridges with 300ft. PoE Cables, N-type Female Connectors, and outdoor mounting brackets. No antennas
AI108-LA-POE	Inline Power and Ethernet Surge Protector

Mechanical Dimensions	
AI108-4958-0 Outdoor Unit with integrated 23 dBi Antenna	11 x 11 x 7 in (26 x 26 x 17.8 cm)
AI108-4958-ON Outdoor Unit with N-Type Female Connector	10 x 8 x 6 in (25.4 x 20.3 x 15.2 cm)
Indoor Unit	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 / wall mounts

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 Options Available	
Wind Survivability	130 MPH Sustained	

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
Safety	UL - Canada, USA, CE Mark, RoHS, WEEE
EMC	FCC Part 15, Industry Canada RSS-210, Mexico, ETSI
Emissions Designators	4.9 GHz: 5M00X1D, 10M0X1D, 15M0X1D, 20M0X1D



AI108-4958-0



AI108-4958-ON

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