AIRAYA

Fast and Affordable

WirelessGRID™ Fixed Wireless Bridge (4.940-5.850 GHz, Up to 108 Mbps)

(AI108-4958-1, AI108-4958-N, AI108-4958-SU)

Product Highlights

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

♦ **Data rates** of 108 to 1 Mbps using AIRAYA's adaptive intelligence (AI) engine, proprietary bridging protocols, and 40, 20, 10, 5 MHz wide channels.

♦ **Range** to 30 miles (50 km) with external antenna options and radio output power settings (local regulations apply).

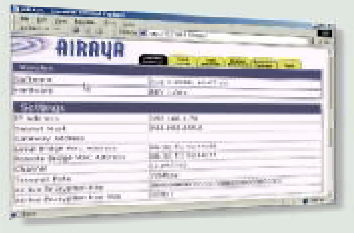
♦ **Compatibility** with all standard 100Mbps Ethernet switches and routers, 802.11q, 802.11p, and VPN, VoIP.

♦ **LED diagnostics** for power, Ethernet and activity, radio and activity.

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

♦ **SecureRF** bridge authentication and AES-128/WEP data encryption for secure point-to-point, point-to-multipoint and repeater communication.

♦ **Real-time monitoring of WirelessGRID** displays signal strength, connected stations, bridge stats, data rate, channels...



Cost-effective Design

The indoor WirelessGRID fixed wireless bridge is designed for use with an indoor/outdoor RF cable and outdoor antenna. It provides maximum range and capacity, delivering outstanding performance in a simple, cost-effective design. Utilizing OFDM technology in the 5GHz (4.940-5.850 GHz) frequency range, WirelessGRID bridges operate at a range of up to 30 miles and at speeds up to 108 Mbps.

The design of the indoor WirelessGRID bridge provides many of the same features as our WirelessGRID outdoor wireless bridge series, enabling seamless integration into existing Ethernet networks, while simplifying installation, diagnostics, and management, at a reduced cost.

Optimized Performance

Ideally suited for bandwidth-hungry applications that require fast, affordable and reliable building-to-building connectivity, WirelessGRID bridges provide optimal delivery of IP voice, data, and video services in multipoint and point-to-point networks at speeds up to 108 Mbps.

With AIRAYA's exclusive use of 5, 10, 20 and 40 MHz wide channels, 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 WirelessGRID bridge authentication, AES-128 or WEP-152 data encryption, and optional radius authentication, ensuring the prevention of hacking, data theft and unauthorized intrusions.

Typical High-Speed WirelessGRID Applications

- ♦ Business-class point-to-multipoint service provider networks
- ♦ Point-to-point backhaul for service provider networks
- ♦ Connecting two or more enterprise Ethernet networks
- ♦ Licensed Public Safety Networks in 4.940-4.990 GHz
- ♦ Backup links for primary inter-building network connections
- ♦ Military and Government COTS-based mesh networks
- ♦ T1, E1 VoIP extension and 802.11B bridge upgrades

Ordering Information by Model

AI108-4958-Kit	(complete bridge kit)
AI108-4958-1	(bridge, antenna, cable)
AI108-4958-N	(bridge only no antenna, no cable)
AI108-LA5	(5GHz RF cable lightning arrestor)

Ordering Note: Two (2) AI108-4958 units (unless ordered as the kit) are required to setup a complete building to building bridge.

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WirelessGRID™ Fixed Wireless Bridge

(AI108-4958-1, AI108-4958-N, AI108-4958-SU Specifications)

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 70, licensed Intl.) Non-overlapping Channels: 8 x 5 MHz, 4 x 10 MHz, 2 x 20 MHz, 1 x 40 MHz		
	5.25-5.35 GHz license-exempt (FCC, Industry Canada, Mexico) Non-overlapping Channels: 19 x 5 MHz, 9 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: 44 x 5 MHz, 22 x 10 MHz, 11 x 20 MHz, 5 x 40 MHz		
	5.725-5.850 GHz licence exempt UNII & ISM Bands (ETSI, FCC, MII) Non-overlapping Channels: ISM, UNII: 25 x 5 MHz, 12 x 10 MHz, 5 x 20 MHz, 2 x 40 MHz		
Radio Type	Orthogonal Frequency Division Multiplexing (OFDM)		
Standards Compliance	802.3, 802.11i, 802.11a hardware with proprietary bridging extensions		
Total System EIRP and radio output power	Radio output power: Max: 21dBm (Set to local regulatory requirements to comply with transmit, conducted and EIRP power limits)		
Radio Receiver Sensitivity	Data Rate	Sensitivity (dBm)	Modulation
	108 to 1 Mbps	-73 to -91	64QAM, 16QAM, QPSK, BPSK
WirelessGRID Operating Modes	Point to Multipoint, Point to Point, Repeater (See Ordering Guide)		
Antenna Types (5 GHz)	AI108-4958-BSU, AI108-4958-ON2 - Order a Sector, Omni, GRID, or Panel AI108-4958-SU and -1: Flat Panel Directional Antenna AI108-4958-0-xxx: 23 dBi integrated or 28 dBi external directional antenna		

Range	
Industry Canada/FCC	Up to 7.5 miles (12km) with included 23 dBi panel antennas. To 30 miles with external antenna options in 5.8 GHz.
International Maximum	Up to 30 miles (48.27km) - max radio output power with optional parabolic antennas. Local regulations apply

Security	
Authentication and Encryption	SecureRF Architecture: WirelessGRID bridge authentication, AES - 128 or WEP-152 data encryption. Optional radius authentication

Configuration and Management	
Configuration Utility	Built-in webserver. Available at all times through secure interface.
Software Upgrades	FTP download
Antenna Alignment Tool	Real-time RSSI (signal strength) monitor, link optimization and throughput maximization utility
LED Status Indicators (3)	Power, Ethernet Link and Activity, Radio Link and Activity
Real-time Monitoring	Secure Management Interface - Centralized real-time statistics, signal strength monitor

Indoor Radio to Outdoor Antenna Cable	
Cable Type	LMR-400
Cable Length	25 feet (7.62m) For other lengths, please contact AIRAYA
Cable Connectors	N-Type male to N-Type male

Interfaces	
Antenna Connector	N-Type female input
Radio Bridge Connector	N-Type female input
Ethernet	100/10Mbps Ethernet (RJ-45) *100Mbps full-duplex recommended

Electrical	
Power Input	100-120V Auto-ranging (~50Hz-60Hz) . 220v option available.
Power Output	5 VDC, 2 Amps (2.1mm Coax, center-pin positive)

Mechanical Dimensions	
Outdoor Antenna	12 x 12 x 1 in, 30 x 30x 2.5 cm
Wireless Bridge	7.6 x 5.5 x 1.2 in, 19.3 x 14.0 x 3.05 cm
Outdoor Antenna Mount	Includes mast mounts and clamp kits for 1" (26mm) diameter thru 4.5" (115 mm) diameter masts.

Environmental	
Radio Operating Temperature	32ºF to 149ºF, 0°C to 55°C
Radio Operating Humidity	Max. 95% non-condensing
Outdoor Antenna	-40°C to 70°C. Antennas are weather protected

Compliance and Certification	
EMC	FCC Part 15, Industry Canada RSS-210, Mexico, ETSI
Safety	UL - Canada, USA, CE
Radio	Public Safety (Part 70), FCC 15.407 (UNII, ISM), Industry Canada RSS-210, ETSI (w/TPC & DFS), MII SRRC

About AIRAYA

AIRAYA was formed in November, 2001 by a team of wireless industry veterans with more than twenty years of combined experience in the field. The company's mission is to provide fast and affordable wireless bridges for the broadband fixed wireless marketplace. Our portfolio includes a complete line of high-performance indoor and outdoor 4.9-5.85 GHz wireless multipoint and point-to-point bridges and accessories for connecting IP networks at distances up to 30 miles.

Contact AIRAYA today and find out why AIRAYA fixed wireless bridges are the preferred choice of customers in more than 30 countries worldwide.

AIRAYA

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