

### Product Highlights

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

◆ **Integrated architecture** for ease of installation, configuration, 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

◆ **Integrated VLAN Support** for logical network segmentation

◆ **LED Diagnostics** for power, Ethernet and radio

◆ **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



Proven in thousands of private networks worldwide, WirelessGRID™ radios are designed for seamless integration and bandwidth hungry applications

### 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, secure, and cost-effective design. Utilizing OFDM technology in the 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.

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

### Proven Performance and Simple Configuration

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

With AIRAYA's exclusive user-selectable 5, 10, 20 and 40 MHz wide channel and power settings, and more than 170 available channels in the 4.90-5.850 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.



Proven, Fast, Reliable

# WirelessGRID™ Fixed Wireless Backhaul Link

(4.90-5.85 GHz, Up to 108 Mbps)

AI 108-4958-N, AI 108-4958-1, AI 108-4958-SU, AI 108-4958-Kit Specifications  
For Multipoint, Backhaul, and Repeater Installations

| 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)   |                |                          |
| 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 |
| WirelessGRID Operating Modes  | Point-to-Multipoint, Point-to-Point, Repeater   |                |                          |
| Antenna Type(s)   | AI 108-4958-N – Antenna ordered separately<br>AI 108-4958-SU – Includes a 23 dBi outdoor antenna, 25 ft. LMR-400 cable<br>AI 108-4958-Kit – Includes 2 x 23 dBi outdoor antennas, 2 x 25 ft. LMR-400 cables |                |                          |

| Electrical |  |
|------------|--|
| AC Power   | Input: 100-120V, 0.6A (50Hz-60Hz) 220V available<br>Output: 5V, 2.0A (2.1mm Coax, center-pin positive) |

| Models and Ordering Information |  |
|---------------------------------|--|
| AI 108-4958-Kit                 | Complete bridge kit includes: 2(QTY) - 23 dBi outdoor antenna, 2(QTY) - 25 ft. LMR-400 cable, 2(QTY) - bridges |
| AI 108-4958-1                   | Bridge, antenna, cable   |
| AI 108-4958-N                   | Bridge only no antenna, no cable   |
| AI 108-LA5                      | 0-6 GHz RF cable lightning arrestor  |



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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. |

| Network/Radio Connections |  |
|---------------------------|--|
| Antenna Connector         | N-Type Female input  |
| Radio Bridge Connector    | N-Type Female input  |
| Ethernet                  | 100/10 Mbps Ethernet (RJ45) *100Mbps full-duplex recommended |

| Indoor Unit (IDU) to Outdoor Unit (ODU) Communication |   |
|---|---|
| Cable Type  | LMR-400   |
| Cable Length  | 25 ft (7.62 m) For other lengths, please contact AIRAYA |
| Cable Connectors                                      | N-Type male to N-Type male                              |

| Range                 |  |
|-----------------------|--|
| Industry Canada/FCC   | Up to 7.5 miles (12 km) with included 23dBi panel antennas. To 30 miles with external options in 5.9GHz.     |
| International Maximum | Up to 30 miles (48.27 km) – with maximum radio power and optional parabolic antennas. Local regulation apply |

| 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  |
| LED Status Indicators (3)    | Power, Ethernet and Radio Link activity  |
| 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 |

| 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         |
| Outdoor Antenna       | -40°C to 70°C. Antennas are fully weather protected       |                                      |
| Lightning Protection  | ETSI CE Certified PoE and RF Protection Options Available |                                      |
| Wind Survivability    | 130 MPH Sustained   | 140 MPH for 3 Seconds                |

| Mechanical Dimensions |  |
|-----------------------|--|
| Outdoor Antenna       | 12 x 12 x 1 in (30 x 30 x 2.5 cm)  |
| Wireless Bridge       | 7.6 x 5.5 x 1.2 in (19.3 x 14 x 3.05 cm)   |
| Outdoor Antenna Mount | Includes mast mounts and clamp kit for 1" (26 mm) diameter thru 4.5" (115 mm) diameter masts, wall-mountable |

| Compliance and Certification |  |
|------------------------------|--|
| Radio                        | Part 90 Public Safety, FCC 15.407 (UNII, ISM), Industry Canada RSS-210, ETSI (w/TPC and DFS), Anatel, ICASA Hong Kong, Mexico, Singapore, Part 90 Emission Designators: 5M00X1D, 10M0X1D, 15M0X1D, 20M0X1D |
| Safety                       | UL - Canada, USA, CE Mark, RoHS, WEEE, EN 60950 3rd Edition  |
| EMC                          | FCC Part 15, Industry Canada RSS-210, Mexico, Anatel, EN 301 893, EN 301 489-17, EN 50385, RoHS  |
| Emissions Designators        | 4.90 GHz: 5M00X1D, 10M0X1D, 15M0X1D, 20M0X1D   |