

### Product Highlights

The WirelessGRID™ series of rugged mobile radios deliver a comprehensive range of product features, ensuring fast, secure and reliable networking services, including...

- ◆ **Easy to Configure and Use**  
Simple mounting and installation, configuration, and management
- ◆ **Rugged NEMA4 Design** for reliable operation and long-term use in public safety and transportation environments
- ◆ **12 and 24 Volt (8-30VDC Input) Power Connection** for installation in buses, cars, trucks, and solar systems
- ◆ **N-Type Female Connector** for easy external trunk and magnetic mount antennas
- ◆ **Rugged, Weatherproof Ethernet Connector** for network connection, cable protection and strain relief
- ◆ **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 1000/100 Mbps Ethernet switches, routers, 802.11q, 802.11p VPN, Trunk and VoIP protocols. Up to 1600 byte packets
- ◆ **Integrated VLAN Support** for logical network segmentation
- ◆ **Data rates** of 108 to 1 Mbps using AIRAYA's Adaptive Intelligence (AI) engine, advanced bridging protocols, and 40, 20, 10, & 5 MHz wide channels
- ◆ **Optimized for Video** with very low latency layer 2 protocol, and tunable Multicast filters and video optimization parameters
- ◆ **Adaptive Modulation** which optimizes link quality and maximizes system throughput
- ◆ **Real-time monitoring of WirelessGRID™** radios via HTML, Telnet, and SNMP. Displays signal strength, connected MSU's, radio statistics, throughput and more...



### Rugged Compact Design

The WirelessGRID™ Mobile Subscriber Unit (MSU) is designed for use in harsh environments where wireless multipoint communication is needed between base stations/mobile command centers and vehicles, or between two or more vehicles in a hotspot. This unit features a ruggedized enclosure, integrated vehicle mount brackets, a 12 or 24 Volt (8-30VDC Input) vehicle power cable, and weather protected Ethernet cable connector.

The Mobile Subscriber Unit (MSU) provides ease of installation, maximum range and capacity, delivering outstanding performance in a ruggedized design. Utilizing OFDM technology in the 4.90-5.85 GHz frequency range, the WirelessGRID™ MSU provides the maximum operating frequency capability with a data rate up to 108 Mbps.

### Proven Performance and Simple Configuration

Ideally suited for bandwidth-hungry applications in harsh environments that require secure, reliable, and affordable multipoint connectivity, the ruggedized WirelessGRID™ Mobile Subscriber Unit (MSU) provides optimal delivery of IP video, voice, and data 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.

Built-in support for up to 124 mobile subscriber units per base station means you can use one product family to support many different types of applications. Whether you are connecting a public safety hotspot or a transportation network, the WirelessGRID™ architecture provides you with the flexibility to deploy proven, fast, and affordable outdoor mobile networks quickly and cost effectively.

### 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.

# Airaya

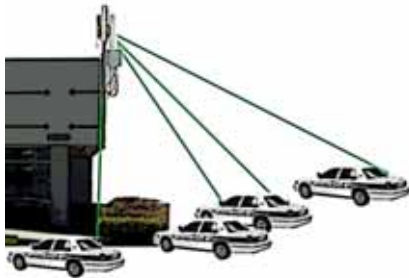
Proven, Fast, Reliable

## WirelessGRID™ Mobile Subscriber Unit (4.90-5.85 GHz, Up to 108 Mbps)

Model #: AI 108-4958-MSU Specifications  
For Mobile Public Safety and Transportation Systems

| 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 |
| Operating Modes   | Point to Multipoint and Hotspot, Ad-Hoc for Vehicle to Vehicle  |                |                          |
| External Antenna Option(s)  | Antennas Ordered Separately. 4, 6 or 9 dBi Omni Trunk or Magnetic Mount Antennas Supported  |                |                          |

| Models and Ordering Information |  |
|---------------------------------|--|
| <b>AI 108-4958-MSU</b>          | Mobile Subscriber Unit (MSU) w/15ft. Power Cable, 1 x N-type Female Connector, 1 x Bulkhead Ethernet Connector     |
| <b>AI 108-4958-BSU</b>          | Outdoor BASE Station w/150ft. PoE Cable, 1 x Radio and 1 x N-type Female Connector (Up to 42 Mbps TCP/IP Capacity) |
| <b>AI 108-4958-BSU2</b>         | Outdoor SuperBASE w/150ft. PoE Cable, 2 x Radios and 2 x N-type Female Connectors (Up to 84 Mbps TCP/IP Capacity)  |
| <b>AI 108-4958-BSU3</b>         | Outdoor SuperBASE w/150ft. PoE Cable, 3 x Radios and 3 x N-type Female Connectors (Up to 100 Mbps TCP/IP Capacity) |
| <b>AI 108-4958-BSU4</b>         | Outdoor SuperBASE w/150ft. PoE Cable, 4 x Radios and 4 x N-type Female Connectors (Up to 100 Mbps TCP/IP Capacity) |
| <b>AI 108-2-4-FM</b>            | 4 dBi Fixed Mount Antenna, 12" RF Cable, N-Type Female Bulkhead Connector  |



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| SecureRF™ Radio Security          |   |
|-----------------------------------|---|
| SecureRF™ Layered Security Design | SecureRF™ Architecture – Unique radio mask in 4.9 GHz, mandatory radio authentication, 128-bit AES data encryption, VLAN termination. |

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

| 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 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, and SNMP |

| Mechanical Dimensions                 |  |
|---------------------------------------|--|
| AI108-4958-MSU Mobile Subscriber Unit | 10 x 8 x 3 in (25.4 x 20.3 x 7 cm)                         |
| Mounting                              | Support 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 Rated for use in Harsh Environments | IDU: 5 to 95% non-condensing         |
| Shock                 | Thermal: 1° drop in temperature over 15° Range<br>6g Peak (Instantaneous)     |                                      |
| Vibration             | 0.3g RMS, 5-200 Hz  |                                      |

| Electrical                     |   |
|--------------------------------|---|
| Power System Mobile/Solar Unit | Input: 8-30 DVC<br>Max. Power Draw (Full Transmit) = 6.6 Watts Continuous |

| 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        | 4.90 GHz: 5M00X1D, 10M0X1D, 15M0X1D, 20M0X1D  |