AIRAYA

Fast, Reliable, Affordable

WirelessGRID™ Mobile Subscriber Unit (MSU)

(4.90-5.850 GHz, Up to 108 Mbps)

Model#: AI108-4958-MSU for Mobile Public Safety and Transportation

Product Highlights

The WirelessGRID series of rugged mobile bridges 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 (IP66) Design** for reliable operation and long-term use in public safety and transportation environments
- **12 Volt Power Connection** for installation in buses, cars, trucks, and 12 to 24 Volt solar systems
- **N-Type Female Connector** for easy external trunk and magnetic mount antennas
- **Weatherproof Ethernet Connector** for network connection and cable protection and strain relief
- **SecureRF™ Architecture** combines mandatory radio authentication and 128-bit AES data encryption for secure mobile communication
- **Compatible** with all standard 100/10 Mbps Ethernet switches, routers, 802.11q, 802.11p VPN, Video, and VoIP protocols. Up to 1600 byte packets
- **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 stats, data rate, channels...

Rugged Compact Design

The AI108-4958-MSU **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 Volt 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.

Reliable Performance and Frequency Agility

Ideally suited for bandwidth-hungry applications in harsh environments that require secure, reliable, and affordable multipoint connectivity, the ruggedized WirelessGRID Mobile Subscribe 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.

Advanced SecureRF™ Security

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

Design Flexibility

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.

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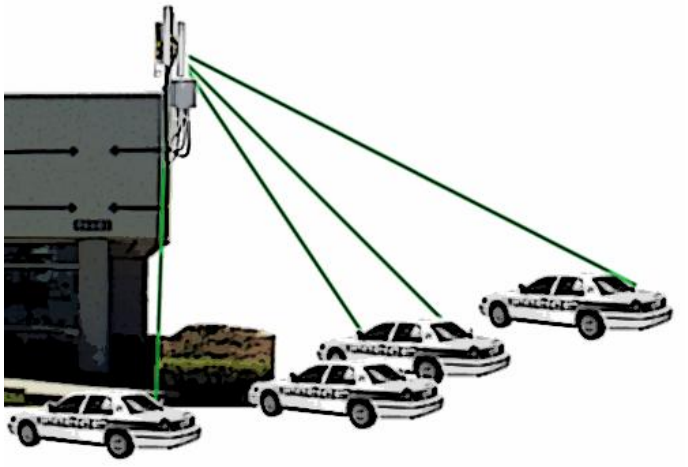
WirelessGRID™ Mobile Subscriber Unit

Model#: AI108-4958-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		
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 to 108 Mbps	-73 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. 6 or 9 dBi Omni Trunk or Magnetic Mount Antennas Supported		



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 via HTML, Telnet
Real-time Monitoring	Secure Management Interface - Real-time signal strength, authentication data, system uptime, data rate, channel selection via HTTP, Telnet, and SNMP

SecureRF Radio Security	
SecureRF™ Bridge Authentication and Data Encryption	SecureRF Architecture – Mandatory radio authentication. 128-bit AES data encryption. Unique radio mask in 4.9 GHz

Mechanical	
AI108-4958-MSU Mobile Subcriber 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	-30 to 60°C
Operating Humidity and Dust Protection	NEMA4, IP66 Rated for use in Harsh Environments
Shock	Thermal: 1° drop in temperature over 15° Range 6g Peak (Instantaneous)
Vibration	0.3g RMS, 5-200 Hz

Electrical	
Power System	Input: 12 Volt (7-24V) Auto-ranging Output for Radio: 5V, 2A Max

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

Models and Ordering Information	
AI108-4958-MSU	Mobile Subscriber Unit (MSU) w/15ft. Power Cable, 1 x N-type Female Connector, 1 x Bulkhead Ethernet Connector
AI108-4958-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)
AI108-4958-BSU4	Outdoor SuperBASE w/150ft. PoE Cable, 4 x Radios and 4 x N-type Female Connectors (Up to 100 Mbps TCP/IP Capacity)

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