AIRAYA

Proven, Fast, Reliable

WirelessGRID™ 2225 Outdoor Wireless Backhaul Link

(2.20-2.50 GHz, Up to 108 Mbps)

For low-latency, high performance Backhaul and Multipoint
Model #'s: AI108-2225-BSU, AI108-2225-ON-SU, AI108-2225-ON2

Product Highlights

The WirelessGRID™ 2225 Series of outdoor wireless Ethernet bridges deliver fast, secure and reliable networking services.

- **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

Integrated Architecture

The indoor-outdoor architecture of WirelessGRID™ bridges provides ease of installation, maximum range and outstanding performance in both the fully integrated and indoor radio/outdoor antenna models. Utilizing OFDM technology in the 2.20 to 2.50 GHz frequency range, WirelessGRID ™ bridges operate at a range of up to 30 miles and at speeds up to 108 Mbps.

Proven Performance and Simple Configuration

Ideally suited for bandwidth-hungry applications that require fast, affordable, reliable, and secure multipoint and 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.

Built-in support for point to multipoint (up to 124 subscribers per base station radio), point to point, and repeating modes means you can use one product family to support many different types of applications. Whether you are connecting two buildings, a campus, or a municipal network, the WirelessGRID™ architecture provides you with the flexibility to deploy fast, affordable and proven outdoor wireless bridge solutions.

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.

Integrated Antenna Alignment and Link Monitoring

WirelessGRID™ antenna alignment and link optimization is easy using this real-time tool. During setup, simply run the 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 of your wireless links. 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.

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For low-latency, high performance Backhaul and Multipoint

Radio

Multiple Frequency Bands Supported. 40, 20, 10, 5 MHz wide channel selections (Local regulations apply)	2.20-2.30 GHz Band - Channels: 20 x 5 MHz, 11 x 10 MHz, 6 x 20 MHz, 3 x 40 MHz		
	2.30-2.40 GHz Band - Channels: 21 x 5 MHz, 10 x 10 MHz, 5 x 20 MHz, 3 x 40 MHz		
	2.40-2.50 GHz Band - Channels: 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: 16 dBi (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)	Antennas are ordered separately		
Operating Modes	Point-to-Multipoint, Backhaul (Point-to-Point)		

Models and Ordering Information

Multipoint Bridges – Antennas Ordered Separately	
2225-BSU	Outdoor Base Station (BSU) w/150ft. PoE Cable, 1 x N-type Female Connector
225-ON-SU	Outdoor Subscriber Unit (ONSU) w/150ft. PoE Cable, 1 x N-type Female Connector
2225-SU	Indoor Subscriber Unit (SU) w/25ft. RF Cable, AC Power
Backhaul Bridges – Antennas Ordered Separately	
2225-ON-050	Complete kit includes 2 radio bridges with 50ft. PoE Cables, N-type Female Connectors, and outdoor mounting brackets. No antennas
2225-ON-150	Complete kit includes 2 radio bridges with 150ft. PoE Cables, N-type Female Connectors, and outdoor mounting brackets. No antennas
2225-ON-300	Complete kit includes 2 radio bridges with 300ft. PoE Cables, N-type Female Connectors, and outdoor mounting brackets. No antennas
2225-Kit	2 x Indoor Radios, 2 x 25 ft RF Cables, AC Power

Multipoint Model #'s
2225-BSU
2225-ON-SU

*** Indoor Model #'s**
2225-Kit
2225-SU
2225-N
No PoE Power

Backhaul Model #'s
2225-ON-050
2225-ON-150
2225-ON-300

AIRAYA

Information: info@airaya.com

Corporate Headquarters
18449 Technology Drive
Morgan Hill, CA 95037 USA
Toll-free: 866.224.7292
International: 408.776.2846

SecureRF™ Radio Security

SecureRF™ Layered Security Design	SecureRF™ Architecture – Unique radio mask, mandatory radio authentication, 128-bit AES data encryption, VLAN termination

Indoor Unit (IDU) to Outdoor Unit (ODU) Communication

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
RF (Antenna) connector in the ODU	N-Type Female
Baseband (IDU to ODU Units)	ODU: RJ-45 with weatherized sealed gland IDU: RJ-45
Ethernet	Indoor units: 100/10 Mbps Autosensing Ethernet (RJ45)

Range

AI108-2225-BSU	Up to 30 miles (48.27km) with max radio output power and optional external 34.5 dBi antennas
AI108-2225-SU/ON-SU AI108-2225-ON-xxx	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/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
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/CLI, and SNMP

Environmental

Operating Temperature	IDU: 32°F to 122°F (0°C to 50°C)	ODU: -22°F to 140°F (-30°C to 60°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	
Wind Survivability	130 MPH (209 km/h) Sustained	140 MPH (225 km/h) for 3 Seconds

Electrical

Remote Power System	Input: 100-240V , 0.6A Auto-ranging (50Hz-60Hz) Output: 48V, .4A Maximum for remote powered systems (POE)

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