AIRAYA

Proven, Fast, Reliable

WirelessGRID™ 375 Mbps Outdoor Base Station

(4.90-5.850 GHz, Up to 375 Mbps per Radio)

Model #: WG-300-BSU, WG-300-BSU2, WG-300-BSU3
for Multipoint, Solar and Mobile Vehicle Systems

Product Highlights

WirelessGRID WG-300 base stations come in 3-radio, 2-radio or single radio configurations. Each configuration delivers a comprehensive range of product features, ensuring fast, secure and reliable networking services.

♦ **Integrated indoor/outdoor architecture** for ease of installation, configuration, and management.

Each base station radio can support up to 32 subscriber unit radios. A 4-radio base station is capable of supporting up to 128 high-capacity subscriber units in a 10"x8"x6" form factor

♦ **Data rates** up to 375 Mbps per base station radio using AIRAYA's Adaptive Intelligence (AI) engine, advanced bridging protocols, and 50, 40, 30, 20, 15, 10, and 5 MHz wide channels for each radio

♦ **SecureRF™** mandatory radio authentication and 128-bit AES data encryption ensure a secure multipoint system

♦ **Compatible** with all standard 1000/100/10 Mbps Ethernet switches, routers, 802.11q, 802.11p VPN, Trunk and VoIP protocols. Up to 1600 byte packets supported

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

♦ **Gigabit PoE Remote power** for installing WirelessGRID base stations up to 328 feet away from your network using power over Ethernet

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

Integrated Outdoor-Ready Architecture

Outdoor-ready WirelessGRID base stations are designed to simplify installation, maximize range and capacity, and deliver outstanding performance in 1-radio, 3-radio or 4-radio configurations. Utilizing Dual-stream MIMO/OFDM technology in the 5GHz (4.90-5.925 GHz) frequency range, WirelessGRID base stations operate in multipoint mode at ranges of up to 10 miles* and at speeds up to 375 Mbps per radio. *Distance is dependent on many factors. Please consult AIRAYA technical personnel regarding design requirements.

Flexible Configuration and Proven Performance

Proven in thousands of networks worldwide, WirelessGRID radios are ideally suited for bandwidth-hungry applications that require robust, reliable, and secure multipoint connectivity.

WirelessGRID base stations provide optimal delivery of IP video, voice, and data services by utilizing AIRAYA's unique video tuning capability (VTC), user-selectable 5, 10, 15, 20, 30, 40 and 50 MHz wide channel and power settings, and more than 170 available channels. This flexibility allows us to meet or exceed your capacity, speed, and scalability, and usage needs, while optimizing frequency usage and complying with local regulations.

Common WirelessGRID Multipoint Applications	
Wireless Video Surveillance and Security Systems	Fixed outdoor and mobile video camera surveillance systems take advantage of AIRAYA's VTC video tuning capability, providing best-in-class wireless video capability for homeland security, military and enterprise security systems. In fact, the largest wireless video installations we know of worldwide run on WirelessGRID infrastructure.
Private Government Network Infrastructure	Private networks for public safety and government use allow agencies to reliably communicate and share information without risk of intrusion. AIRAYA WirelessGRID networks are proven and deployed in many private government networks today.
Service Provider Infrastructure	Rural cities and towns lack cable and telephone plant capacity. WirelessGRID multipoint systems allow for affordable and scalable high speed access in rural communities with minimal investment in new infrastructure. WirelessGRID radios are accepted by the USDA Rural Utility Services program (RUS) for government funded rural broadband use.
Education and Enterprises	WirelessGRID radios have been deployed in many primary/secondary education facilities. In addition, many enterprise have taken advantage of the low cost, ease of installation and high reliability of WirelessGRID radios to quickly expand their operations.

Advanced Security

WirelessGRID security is provided with SecureRF™ link authentication and embedded 128-bit AES data encryption, ensuring the prevention of hacking, data theft and unauthorized intrusions.

Whether you are connecting two facilities, a campus, or a muni network, the WirelessGRID architecture provides you with the flexibility to easily deploy secure, fast, and reliable outdoor wireless bridges as part of your network.

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Radio			
Multiple Frequency Bands Supported. 50, 40, 30, 20, 15, 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		
	5.15-5.25 GHz license-exempt Non-overlapping Channels: 15 x 5 MHz, 8 x 10 MHz, 4 x 20 MHz, 2 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	Dual Chain MIMO/Orthogonal Frequency Division Multiplexing (OFDM)		
Standards	802.3, 802.1Q, 802.1P, 802.3AF Gigabit PoE, Cisco ISL, VLAN		
Total System EIRP and Radio Output Power	Radio output power: Max: 18dBm (Set to local regulatory requirements to comply with transmit, conducted and EIRP power limits)		
Radio Receiver Sensitivity	Data Rate	Sensitivity	Modulation
	1 to 375 Mbps	-73 to –91 dBm	64QAM, 16QAM, QPSK, BPSK
BSU Antennas WG-300-BSU WG-300-BSU2 WG-300-BSU3	Examples (DP = Dual Polarity): 60^0, 90^0 or 120^0 DP Sector antenna is available for purchase Three (3) x 120^0 DP Sector antennas provide 360^0 cell coverage Four (4) x 90^0 DP Sector antennas provide 360^0 cell coverage		
BSU Capacity	Up to 32 subscriber units per single radio base station Up to 64 subscriber units per 2 radio SuperBase™ Up to 96 subscriber units per 3 radio SuperBase™		

Models and Ordering Information – Base Stations and Subscriber Units	
WG-300-BSU3	Outdoor SuperBASE3 w/ weatherproof bulkhead PoE Connector, 3 x Radios and 6 x N-type Female Connectors (Up to 600 Mbps TCP/IP Capacity), (3 dual polarity or equal antennas required)
WG-300-BSU2	Outdoor 2-Radio Base Station w/ weatherproof bulkhead PoE Connector, 2 x Radios and 4 x N-type Female Connectors (Up to 400 Mbps TCP/IP Capacity)
WG-300-BSU	Outdoor Base Station w/ weatherproof bulkhead PoE Connector, 1 x Radio and 2 x N-type Female Connectors (Up to 200 Mbps TCP/IP Capacity)
WG-300-OSU	Outdoor Subscriber w/weatherproof bulkhead PoE Connector, 1 x Radio and 1 x integrated 24dBi Dual Polarity Antenna
WG-300-MSU	Mobile Subscriber Unit (MSU) w/15ft. Power Cable, 2 x N-type Female Connectors, 1 x Bulkhead Ethernet Connector
WG-300-SSU	Solar Subscriber Unit w/6ft. Outdoor Power Cable stubbed out. 2 x N-type Female Connectors, 1 x Bulkhead Ethernet Connector
WG-300-ONSU	Outdoor Subscriber Unit w/ weatherproof bulkhead PoE Connector, 1 x Radio and 2 x N-type Female Connector for external Antennas

AIRAYA

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SecureRF Radio Security	
SecureRF™ Bridge Authentication and Data Encryption	SecureRF Architecture – Mandatory bridge authentication. 128-bit AES data encryption. Proprietary radio mask

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 Status Indicator	Remote Power Indicator
Real-time Monitoring	Secure Management Interface - Real-time signal strength, authentication data, system information, data rate, channel selection via HTTP, Telnet, and SNMP

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 unit

Mechanical	
WG-300-BSU WG-300-BSU2	ODU: 10 x 8 x 3 in (25.4 x 20.3 x 7 cm) ODU: 10 x 8 x 3 in (25.4 x 20.3 x 7 cm)
WG-300-BSU3	ODU: 10 x 8 x 6 in (25.4 x 20.3 x 14 cm)
Indoor Unit for all BSU's	6 x 3 x 1 in (15.2 x 7.6 x 2.5 cm)
Outdoor Unit Mounting	Includes mast mount and clamp kit for 1" (26mm) diameter thru 4.5" (115mm)diameter masts. Also wall mountable

Environmental		
Operating Temperature	ODU: -30 to 60°C	IDU: 0 to 50°C
Operating Humidity	ODU: Fully weather protected	IDU: 5 to 95% non-condensing
Lightning Protection	ETSI CE Certified PoE and RF Protection Options Available	
Wind Survivability	130 MPH Sustained	140 MPH for 3 Seconds

Electrical	
WG-300-BSU WG-300-BSU2	Input: 100-240V , 0.5A Auto-ranging (50Hz-60Hz) Output: 48V, 20Watt 802.3AF Gigabit POE for remote ODU power
WG-300-BSU3	Input: 100-240V , 0.5A Auto-ranging (50Hz-60Hz) Output: 48V, 1.5A Max for remote ODU power

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

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