GWS-5500

The GWS-5500 is a significant upgrade to the fifth generation of UHF Broadband Wireless radio developed by 6Harmonics for the TVWS spectrum. Numerous enhancements to the Networking, Mechanical and RF sections greatly improve performance and usability, while remaining backward compatible with the GWS-5000. The GWS-5500 series is the most advanced, highest power 2x2 MIMO UHF Broadband solution currently available in the market. Ideal for challenging links such as those facing in-band noise & interference or even Non-Line- of-Sight conditions, the GWS-5500 has the power and features to ensure a rock-solid, high- capacity PTP & PMP connection.

Key Features

- 2x2 MIMO Bidirectional in PTP or PMP
- Separate Management port and management VLAN
- Highly efficient design for less consumption
- Environmental IP-67 Rating
- L2-transparent network wireless bridge
- Allows bonding of 2 to 4 channels enabling optimum usage of available RF channels.
- Capable of up to 72Mbps user traffic
- Less than 5ms RTD under ideal radio propagation
- Up to 2x +23dBm transmitter power (subject to regulation)
- Rapid Sector Re-selection
- 4 QoS Queues that can be mapped to VLANs
- Remote management via HTTP and SNMP
- Standard WSDB PAWS interface
- All ports Surge and ESD protected
- GNSS for location

Applications

- Rural Backhaul & Access
- Industrial
  - o Oil & Gas
  - o Mining
  - o Forestry
  - o Utilities
  - o Agriculture
- IOT connectivity
- Unmanned connectivity
- Gov.: DOT, MOT, DOD/MOD, MOE
- Onshore and Offshore operations
- Video surveillance & security backhaul
- Public safety communications

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Specification

Radio

Deployment	Line-of-Sight LOS; NLOS
Topology	PMP Sector Controller + Subscriber Stations (1+20) PTP Master + Client (1+1) Product Order Code Specific Unit
Antennas	Directional: Dual-pol V/H or Slant-45 or 2xSingle-pol Omni-Directional: Dual-pol or 2xSingle-pol
Frequencies	470MHz – 608MHz (US) 470MHz – 608MHz (Canada) 470MHz – 694MHz (UK, EU, Africa)
Channel Bandwidth	6, 12, 18, 24MHz (US & Canada) 8, 16, 24MHz (UK, EU, Africa)
Transmit Power	Up to +23dBm per Tx Chain; Total Conducted +26 dBm (regulatory limited by region)
Receive Sensitivity	-98dBm typical @ 6MHz
Modulation / Coding	Automatic MCS selection from QPSK1/2 to 64QAM5/6
Transmission	OFDM, TDD; 2x2 MIMO A/B with STBC & MRRC, High-rejection Tx/Rx filtering
Throughput	95Mbps UDP, 72Mbps TCP @ 24MHz Channel Size
Wireless Link Security	128-bit AES Encryption WPA2 8-63 Character Passphrase
Location	GNSS - GPS, QZSS, GLONASS (1.57542 GHz; 1.602 GHz)

Network

Connectivity	Dual-port 10/100 BaseT Ethernet
IP Management	IPv4
QoS	VLAN - 4 Proportional Priority Levels
Features	L2 Transparent bridge, DHCP pass-through, 802.1Q VLAN (Q-in-Q), VLAN, SNTP

OAM

Management Interface	In-band or Out-of-Band 2 ETH Ports SNMP v2c, HTTP/HTTPS (Web), Management VLAN tagging
Software Upgrades	Over-the-Air OTA
Provisioning	Channel Scanning; SSID-Password
TVWS WSDB	RFC 7545 PAWS Interface

Electrical

Input Power Power Consumption	POE+ 802.3at 25 Watts
Surge & ESD Suppression All Ports Protected	Ethernet: IEC 61000-4-2 Level 4 ESD Protection ±15-kV Contact Discharge ±15-kV Air-Gap Discharge IEC 61000-4-4 EFT Protection – 80 A (5/50 ns) IEC 61000-4-5 Surge Protection – 3 A (8/20 µs) RF: IEC 61000-4-2 Contact Discharge (typical) - 30KV IEC 61000-4-2 Air Discharge (typical) - 30 KV DC Gnd

Mechanical and Environmental

Dimensions	SCU/PTP: 338mm x305mm x 68mm (13.3in x12.0in x2.7in) SSU: 256mm x197mm x 71mm (10.1in x7.8in x2.8in)
Weight	SCU/PTP: 4.15kg (9.1 lbs) SSU: 2.35kg (5.2 lbs)
Interfaces	RF: 2x IP67 N-type female Ethernet: 2x IP67 RJ45 10/100 BaseT GNSS: TNC-F
Cables	RF: Coaxial Ethernet: CAT5/6 100m (300ft) Shielded recommended
Operating Temperature	-40℃ to +55℃ ambient
Storage Temperature	-40℃ to +75℃ ambient
Operating Humidity	5 – 100% non-condensing
Ingress Protection IP	IP-67 rated

Standards and Regulatory Compliance

Canada	RS-222 Issue 3; RSS-GEN; RSS-102
Europe	EN 301 598 V1.1.1, EN 301 598 V2.1.1(partial) EN 301.489-1; EN 301.489-17
USA	FCC CFR 47 Part 15 Sub-part H

| CE Mark	Electromagnetic Compatibility Directive (2014/30/EU) Radio Equipment Directive 2014/53/EU Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS) General Product Safety Directive 2001/95/EC
Safety	IEC, EN, and UL/CSA 60950
IETF	RFC 8290 (SQM)

Models

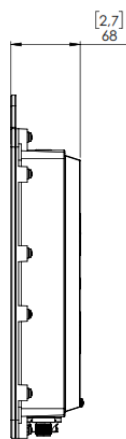**GWS-5500-SCU**
Sector Controller Unit

GWS-5500-SSU
Subscriber Station Unit
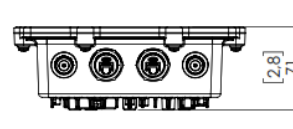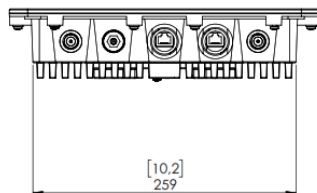
GWS-5500-PTP
PTP-Master/Client

Dimensions
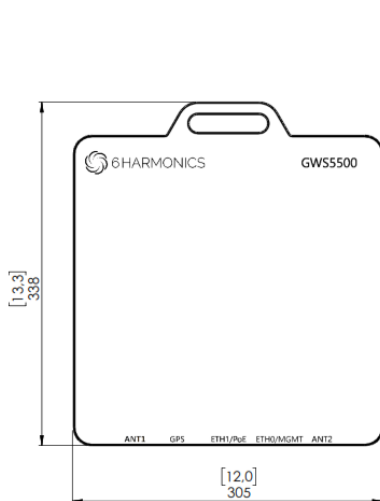
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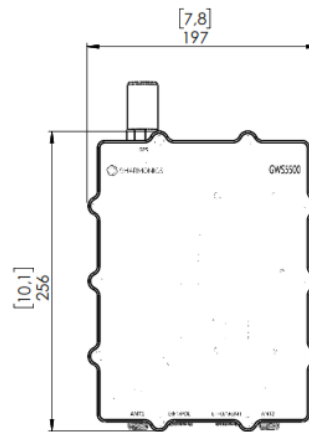
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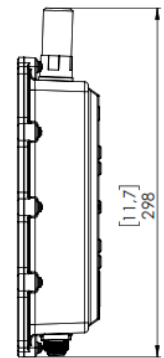
Ordering Information

GWS-5500-PTP	
GWS-PTP-EXT-5500-ETSI-01	GWS-5500 PTP Master or Client Unit 8-16-24MHz 470-694MHz 2xN-F 2xRJ45 1xSMA-F Outdoor RED ETSI
GWS-PTP-EXT-5500-FCC-01	GWS-5500 PTP Master or Client Unit 6-12-18-24MHz 470-698MHz 2xN-F 2xRJ45 1xSMA-F Outdoor RED FCC
GWS-PTP-EXT-5500-ISED-01	GWS-5500 PTP Master or Client Unit 6-12-18-24MHz 512-608MHz 2xN-F 2xRJ45 1xSMA-F Outdoor RED ISED
GWS-5500-SCU	
GWS-SCU-EXT-5500-ETSI-01	GWS-5500 Sector Controller Unit 8-16-24MHz 470-694MHz 2xN-F 2xRJ45 1xSMA-F Outdoor RED ETSI
GWS-SCU-EXT-5500-FCC-01	GWS-5500 Sector Controller Unit 6-12-18-24MHz 470-698MHz 2xN-F 2xRJ45 1xSMA-F Outdoor RED FCC
GWS-SCU-EXT-5500-ISED-01	GWS-5500 Sector Controller Unit 6-12-18-24MHz 512-608MHz 2xN-F 2xRJ45 1xSMA-F Outdoor RED ISED
GWS-5500-SSU	
GWS-SSU-EXT-5500-ETSI-01	GWS-5500 Subscriber Station Unit 8-16-24MHz 470-694MHz 2xN-F 2xRJ45 1xSMA-F Outdoor RED ETSI
GWS-SSU-EXT-5500-FCC-01	GWS-5500 Subscriber Station Unit 6-12-18-24MHz 470-698MHz 2xN-F 2xRJ45 1xSMA-F Outdoor RED FCC
GWS-SSU-EXT-5500-ISED-01	GWS-5500 Subscriber Station Unit 6-12-18-24MHz 512-608MHz 2xN-F 2xRJ45 1xSMA-F Outdoor RED ISED

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