



## GWS6000

The GWS6000 is a versatile and high-performance wireless platform designed to address diverse wireless communication needs. Operating in the TVWS band, capable of functioning as a sector controller, subscriber station, and point-to-point (PTP) node, this platform provides exceptional flexibility and reliability for various applications. It operates as a Layer 2 wireless transparent bridge with robust OAM/P (Operations, Administration, Maintenance, and Provisioning) features, ensuring seamless integration and management in any network environment.

### Key Features

- Operates from 470-698 MHz TVWS (ATSC or DVB-T)
- Up to 200 Mbps per 24 MHz channel
- OFDMA with 2x2 MU-MIMO
- 2 GbE PoE Interfaces IN and OUT
- Topology for PmP and PTP
- Multi-Node Capability: Operates as a sector controller, subscriber station, and PTP node, allowing for versatile deployment scenarios.
- Layer 2 Transparent Bridge: Ensures seamless data transmission with minimal latency, ideal for real-time applications.
- OAM/P Features: Comprehensive Operations, Administration, Maintenance, and Provisioning capabilities for efficient network management and ease of provisioning.
- With the M.2 interface, allows for future expansion such a TPM module for increased security
- Self-backhaul platform also supports a 2x2 5GHz Wi-Fi 6 capability to act as an AP, client or MESH node
- Integrated GNSS for location, date/time and timing
- Regulatory Compliance: Fully compliant with FCC, ISED, and ETSI regulations, ensuring deployment across multiple regions.
- Rugged Environment: Operating from -40°C to +70°C, encased in an IP67/NEMA 3R certified enclosure, this device is built to withstand harsh environmental conditions, making it suitable for outdoor installations.

### Applications

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

## Specification

### Radio

Deployment	Line-of-Sight LOS; NLOS
Topology	PMP Sector Controller + Subscriber Stations (1+512) 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 & Canada) 470MHz – 698MHz (ATSC Countries) 470MHz – 694MHz (UK, EU, Africa, DVB-T Countries)
Channel Bandwidth	6, 12, 18, 24MHz (US, Canada & ATSC Countries) 8, 16, 24MHz (UK, EU, Africa, DVB-T Countries)
Transmit Power	Up to +27dBm per Tx Chain; Total Conducted +30 dBm (regulatory limited by region)
Receive Sensitivity	-104dBm typical @ 6MHz
Modulation / Coding	Automatic MCS (0-11) selection from BPSK to 1024QAM
Transmission	OFDMA, TDD; 2x2 MU-MIMO, DPD, High-rejection Tx/Rx filtering
Throughput	Up to 240 Mbps UDP, 200 Mbps TCP @ 24MHz Channel Size
Wireless Link Security	128-bit AES Encryption WPA2 8-63 Character Passphrase
Location	GNSS - GPS, QZSS, GLONASS

### Network

Connectivity	Dual-port 10/100/1000 BaseT Ethernet
IP Management	IPv4 / IPv6; Multi-user Access; RADIUS; TACACS+
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/v3, HTTP/HTTPS (Web), Management VLAN tagging; NETCONF; RESTCONF
Software Upgrades	Over-the-Air OTA
Provisioning	Channel Scanning; SSID-Password; 6H Cloud Call-home
TVWS WSDB	RFC 7545 PAWS Interface

### Electrical

Input Power Power Consumption	Port 1: PoE ++ 802.3bt IN Port 2: PoE+ 802.3bt OUT
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 10/100/1000 BaseT GNSS: TNC-F
Cables	RF: Coaxial Ethernet: CAT5/6 100m (300ft) Shielded recommended
Operating Temperature	-40°C to +70°C ambient
Storage Temperature	-40°C to +75°C ambient
Operating Humidity	5 – 100% non-condensing
Ingress Protection IP	IP-67 rated ; NEMA 3R

### 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



**GWS6000-SCU**  
Sector Controller Unit

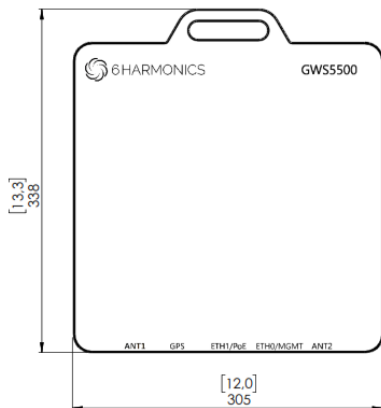


**GWS6000-SSU**  
Subscriber Station Unit

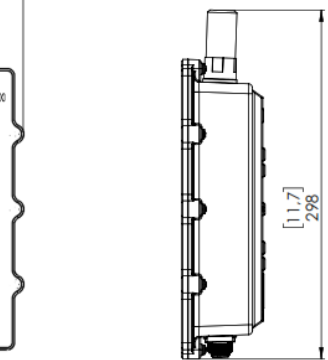
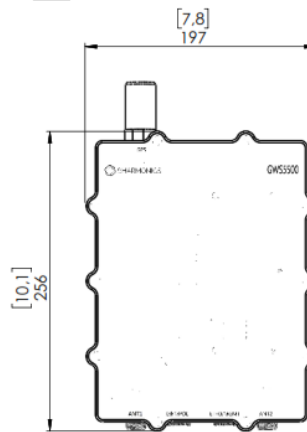
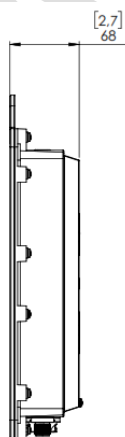


**GWS6000-PTP**  
PTP-Master/Client

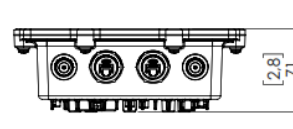
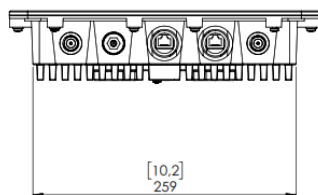
## Dimensions



**GWS6000-SCU/PTP**



**GWS6000-SSU**



## Ordering Information

Sales Order Code	Description
<i>GWS6000-PTP</i>	
GWS-PTP-EXT-6000-ETSI-01	GWS6000 PTP Master or Client 8-16-24MHz 470-694MHz 2xN-F 2xRJ45 GPS-ANT Glands MNT RED ETSI
GWS-PTP-EXT-6000-ETSI-02	GWS6000 PTP Master or Client 8-16-24MHz 470-694MHz 2xN-F 2xRJ45 GPS-ANT Glands MNT CSIR ETSI
GWS-PTP-EXT-6000-FCC-01	GWS6000 PTP Master or Client 6-12-18-24MHz 470-608MHz 2xN-F 2xRJ45 GPS-ANT Glands MNT RED FCC
GWS-PTP-EXT-6000-ISED-01	GWS6000 PTP Master or Client 6-12-18-24MHz 470-608MHz 2xN-F 2xRJ45 GPS-ANT Glands MNT RED ISED
<b><i>GWS6000-SCU</i></b>	
GWS-SCU-EXT-6000-ETSI-01	GWS6000 Sector Controller Unit 8-16-24MHz 470-694MHz 2xN-F 2xRJ45 GPS-ANT Glands MNT RED ETSI
GWS-SCU-EXT-6000-ETSI-02	GWS6000 Sector Controller Unit 8-16-24MHz 470-694MHz 2xN-F 2xRJ45 GPS-ANT Glands MNT CSIR ETSI
GWS-SCU-EXT-6000-FCC-01	GWS6000 Sector Controller Unit 6-12-18-24MHz 470-608MHz 2xN-F 2xRJ45 GPS-ANT Glands MNT RED FCC
GWS-SCU-EXT-6000-ISED-01	GWS6000 Sector Controller Unit 6-12-18-24MHz 470-608MHz 2xN-F 2xRJ45 GPS-ANT Glands MNT RED ISED
<b><i>GWS6000-SSU</i></b>	
GWS-SSU-EXT-6000-ETSI-01	GWS6000 Subscriber Station Unit 8-16-24MHz 470-694MHz 2xN-F 2xRJ45 GPS-ANT Glands MNT RED ETSI
GWS-SSU-EXT-6000-ETSI-02	GWS6000 Subscriber Station Unit 8-16-24MHz 470-694MHz 2xN-F 2xRJ45 GPS-ANT Glands MNT CSIR ETSI
GWS-SSU-EXT-6000-FCC-01	GWS6000 Subscriber Station Unit 6-12-18-24MHz 470-608MHz 2xN-F 2xRJ45 GPS-ANT Glands MNT RED FCC
GWS-SSU-EXT-6000-ISED-01	GWS6000 Subscriber Station Unit 6-12-18-24MHz 470-608MHz 2xN-F 2xRJ45 GPS-ANT Glands MNT RED ISED

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