

GWS-5000

The GWS-5000 is the fifth generation of TV Whitespace radio developed by 6Harmonics. With industry-leading throughput and range to meet the most demanding deployment challenges, the GWS-5000 series is the most advanced and highest power TV Whitespace 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-5000 has the power and features to ensure a rock-solid, high-capacity PTP & PMP connection.

Key Features

- Operable from single up to quad-channel sizes to enable optimum usage of available whitespace channels
- Capable of up to 95Mbps Layer 3 traffic
- Less than 5ms RTD under ideal conditions
- Up to 39dBm of transmit power
- Able to operate in PTP or PMP modes
 - 2x2 MIMO to 2x2 MIMO with PTP
 - 2x2 MIMO to Rx diversity with PMP
- Provides L2-transparent network bridge
- Support for 802.1p and 802.1q VLAN
- Smart Queue Management (SQM) and Active Queue-length Management (AQM) provide per-flow traffic shaping, ensuring QoS
- Remote management via HTTP and SNMP

Applications

- Business and Residential rural broadband
- Maritime networks; ship-to-ship or ship-to-shore
- Video surveillance & security backhaul
- Public safety communications
- Rural IoT & Precision Agriculture
- In-building networks

Radio Specifications

Frequencies	<ul style="list-style-type: none">• 470MHz – 698MHz (US & Canada)• 470MHz – 702MHz (UK, EU, African.)
Channel Bandwidth	2,4,6,8,12,16,18,24MHz
Transmit Power	Up to 39dBm combined (4+4watts) (regulatory limited by region)
Receive Sensitivity	-98dBm typical @ 5MHz
Modulation / Coding	Automatic MCS selection from QPSK1/2 to 64QAM5/6
Throughput	95Mbps UDP, 72Mbps TCP
Wireless Security	Optional Over-the-air encryption via 256-bit AES PSK

Network Specifications

Connectivity	10/100 Ethernet
IP	IPv4
VLAN	802.1p, 802.1q, Q-in-Q
Management	Management via web-based GUI (HTTP/HTTPS) or SNMP (v2)

Electrical Specifications

Input Power	50-56V Passive POE++ 1/2, 4/5 (+); 3/6, 7/8 (-)
Power Consumption	<ul style="list-style-type: none">• BTS: 45w peak, 30w average• CPE: 35w peak, 25w average
Power Protection	<ul style="list-style-type: none">• Ethernet surge suppression: required for both BTS and CPE• Lightning surge suppression: required for both BTS and CPE between radio and antenna

Mechanical and Environmental Specifications

Dimensions	<ul style="list-style-type: none">• BTS: 31cm x 31cm x 8.5cm• CPE: 24cm x 24cm x 11cm
Weight	<ul style="list-style-type: none">• BTS: 4.35kg• CPE: 2.81kg
Connectors	<ul style="list-style-type: none">• 2x IP67 N-type female RF• 1x IP67 RJ45 10/100 Ethernet
Operating Temperature	<ul style="list-style-type: none">• -40°C to +50°C ambient
Operating Humidity	<ul style="list-style-type: none">• 5 – 100% non-condensing
Electrostatic Discharge	<ul style="list-style-type: none">• 15kV air, 10kV contact (power cycle may be required)

Standards and Regulatory Compliance

Canada	<ul style="list-style-type: none">• RS-222 Issue 2; RSS-GEN; RSS-102
Europe	<ul style="list-style-type: none">• EN 301 598 V1.1.1, EN 301 598 V2.1.1(partial)• EN 301.489-1
USA	<ul style="list-style-type: none">• FCC CFR 47 Part 15 Sub-part H
CE Mark	<ul style="list-style-type: none">• 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
IETF	<ul style="list-style-type: none">• RFC 7545 (PAWS)• RFC 8290 (SQM)