GWS-5000

GWS-5002 (E, PTP-M & PMP-S)

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. 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

- L2-transparent network wireless bridge
- Operation from single to quad-channel, enabling optimum usage of available RF channels.
- Capable of up to 95Mbps Layer 3 (UDP) traffic
- Less than 5ms RTD under ideal radio propagation
- Up to 36dBm of transmit power subject to regulation.
- Operates in backhaul mode and access mode.
    - 2x2 MIMO Bidirectional as backhaul.
    - 2x2 MIMO, to Rx diversity as access
- Rapid Sector Re-selection
- Smart Queue Management (SQM) & Active Queue-length Management (AQM) provides per-flow traffic shaping, ensuring QoS.
- Remote management via HTTP and SNMP
- AES CCMP, 128bit
- IP-67 Rating

Applications

- Rural connectivity:
    - Backhaul
    - Access
- Industrial connectivity (O&G, Mining, Forestry, Utilities, Precision Agriculture)
    - Backhaul
    - Access
- IOT connectivity:
    - Lora
- Unmanned connectivity
- Gov.: MOT, DOD/MOD, MOE
- Onshore and Offshore operations
- Video surveillance & security backhaul.
- Isolated remote 4G & 5G-SA backhaul.
- Public safety communications

Radio Specifications

Frequencies	• 470MHz – 698MHz (US & Canada) • 470MHZ – 702MHZ (UK, EU, Africa)
Channel Bandwidth	2,4,6,8,12,16,18,24MHz
Transmit Power	Up to 33dBm Single Stream CPE *(regulatory limited by region)* Up to 36dBm combined (2+2 watts) *(regulatory limited by region)*
Receive Sensitivity	-98dBm typical @ 5MHz
Modulation / Coding	Automatic & Dynamic MCS selection from QPSK1/2 to 64QAM5/6
Throughput	Up to 95Mbps UDP, 72Mbps TCP
Wireless Security	AES CCMP 128 Included & Optional AES 256 PSK

Network Specifications

Connectivity	10/100 Ethernet
IP	IPv4
Management	Management via web-based GUI (HTTP/HTTPS) TLS1.2 or SNMP (v2)

Electrical Specifications

Input Power	50-56V Passive POE++ 1/2, 4/5 (+); 3/6, 7/8 (-)
Power Consumption	• BTS: 45w peak, 30w average • CPE: 35w peak, 25w average
Power Protection	• Ethernet surge suppression recommended for both BTS and CPE • Lightning surge suppression is recommended for both BTS and CPE between radio and antenna

Mechanical and Environmental Specifications

Dimensions	• BTS: 31cm x 34cm x 7cm (new lid is thinner and has a handle) • CPE: 24cm x 24cm x 11cm
Weight	• BTS: 4.5kg • CPE: 2.9kg
Connectors	• 2x N-type female RF • 1x RJ45 10/100 Ethernet on CPE • 2x RJ-45 10/100 Ethernet on Sector Controller • 1x SMA - GPS
Operating Temperature	• -40°C to +50°C ambient
Operating Humidity	• 5 – 100% non-condensing

Standards and Regulatory Compliance

Canada	• RS-222 Issue 2; RSS-GEN; RSS-102
Europe	• EN 301 598 V1.1.1, EN 301 598 V2.1.1(partial) • EN 301.489-1
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
IETF (TVWS database)	• RFC 7545 (PAWS) • RFC 8290 (SQM)