

WiBAS[™] G5 connect+



WiBAS™ G5 Connect+
radio unit



WiBAS™ G5 Connect+ with
low-profile antenna 30 cm

Compact PtMP/ PtP Broadband Connectivity Terminal

Overview

Intracom Telecom being committed to the goal of fulfilling any requirement for ultra-broadband FWA of the highest quality in sub-urban and rural residential areas, further expanded its microwave portfolio with a new generation of Point-to-Multipoint Terminal / Point-to-Point Node. WiBAS™ G5 Connect+ offers the highest capacity, convenience, performance and power-saving features in the market from a compact terminal station radio. It also offers advanced networking features, extended coverage and leading PtMP radio technology in the 24.25-29.50 GHz area-licensed bands, while enabling state-of-the-art IP connectivity in zero-footprint installations and at service locations requiring cost-effective and rapidly-implemented FWA networks. Zero-touch provisioning capabilities makes the deployment of the network effortless, while the improved modem technology enables higher channel bandwidth utilization and denser PtMP networks. The flexible air frame structure and variable TDD DL/UL split of the system allows WiBAS™ G5 Connect+ to co-exist with 3GPP based 5G deployments without interference. Finally WiBAS™ G5 Connect+ is fully interoperable with all available WiBAS™ Base Station radios providing 100% reuse of the existing network investment.

System Specifications

	WiBAS™ G5 Connect+
L1 Throughput (net) per Terminal (Mbit/s) (Downlink / Uplink)	700 / 100 ⁽¹⁾ (TDD @ 100 MHz)
Modulation (adaptive)	<ul style="list-style-type: none"> • Up to 1024-QAM (Rx) • Up to 256-QAM (Tx)
Operating Modes	<ul style="list-style-type: none"> • TDD (4:1, DL:UL split ratio) • TDD (8:1, 2:1, 1:1, 1:2, DL:UL split ratio)⁽²⁾
Power Supply	Power over Ethernet injector, with input: <ul style="list-style-type: none"> • DC (-40.5 V to -57 V), or • AC (100 V to 255 V, 50 Hz to 60 Hz)
Max. Power Consumption, W	26
Dimensions (H x W x D), mm	180 x 180 x 30
Weight, kg	1.4 (excluding the antenna)
Protection Against Dust & Water	Class IP67 / IEC 60529
Temperature:	
<i>Operation / Storage</i>	-33 °C to +55 °C
<i>Transportation</i>	-40 °C to +70 °C
Interfaces / Ports	
1 x GbE (RJ-45)	Traffic / Inband NMS / PoE input

⁽¹⁾ 4:1 DL/UL TDD Split Ratio (for 0.625 ms frame).

⁽²⁾ Roadmap feature.

Operating Frequencies, Radio Performance & Antennas

	WiBAS™ G5 Connect+
Operating Frequencies, GHz (DL or UL)	24.25 - 26.50 • 26.50 - 28.50 • 27.50 - 29.50
RF Channel Arrangement	CEPT ERC Rec.T/R 13-02E • FCC Part 30
Channel Bandwidth, MHz	40 / 50 / 75 / 100 (TDD)
Tx Power, max., dBm (4-QAM)	18.0 (24.25 - 26.50 GHz) • 18.0 (26.50 - 28.50 GHz) • 18.0 ⁽³⁾ (27.50 - 29.50 GHz)
Polarization	Vertical / Horizontal
Polarization Mode	Auto / Manual
Sensitivity (4-QAM 1/2 DL), dBm	
50 MHz channel	-84.9
100 MHz channel	-81.9
Antenna Type / Gain	Parabolic 300 mm / 36.3 dBi at 25.5 GHz & 37.5 dBi at 28.5 GHz Parabolic 500 mm / 39.5 dBi at 25.5 GHz & 40.5 dBi at 28.5 GHz

⁽³⁾ 14 dBm for standard-power terminals.

Features / Networking

• Radio

- ETSI EN 302 326-1 V1.2.2 Annex E
- ETSI EN 302 326-2 V1.2.2
- FCC Part 30

• TDD Synchronization

- Internally through the WiBAS™ G5 Base Station
- 5G NR compliant air frame (3GPP TS 38.213)

• Ethernet

- IEEE 802.3-2008 (100 / 1000Base-T)

• Ethernet Standards & Functionality

- IEEE 802.1Q (VLAN)
- IEEE 802.1p
- IEEE 802.1ad (Provider Bridges (Q-in-Q))
- All-to-one bundling on tunnel port for MEF EPL and EP-LAN services
- 1:1 VLAN translation and bundling on UNI trunk port for MEF EVPL and EVP-LAN services
- 1:2 VLAN translation on UNI trunk port for FWA wholesale services
- PPPoE Intermediate Agent
- MTU size: up to 1900 Bytes

• Ethernet QoS

- Ingress packet classification per Interface, VLAN ID, inner VLAN ID, L2 PCP, L3 DSCP, MPLS EXP or combinations
- Classification actions supported: police, deny, remark
- Remarking of L2 PCP
- Ingress bandwidth profile (policing): Two-Rate Three-Color per UNI/ EVC/CoS

• Air Interface Scheduling

- Egress classification based on VLAN, inner VLAN CoS, PCP, DSCP, MPLS EXP criteria
- Traffic shaping per TS (DL/UL)
- Two-stage hierarchical scheduling of service flows established between HUB and Terminals
- Second level: Traffic prioritization within a service flow based on class of service
 - › Eight (8) queues, packet scheduling strict-priority (SP)
 - › Configurable queue size to cope with traffic burstiness (e.g. for TCP traffic)
- First level: Scheduling between multiple service flows based on service class and shaping per service flow
 - › Eight (8) priority queues (6 available for user traffic)
 - › Three service classes:
 - Real-Time Variable Rate (RTVR) for guaranteed service
 - Non-Real-Time Variable Rate (NRTVR) for guaranteed service
 - Best-Effort (BE) for non-guaranteed service

• Bridge Security

- MAC Security and Port Flooding
- MAC Learning Enable/Disable (P2P VLAN Cross-Connect)
- Storm Control and Split Horizon

• Air Interface Security

- Proprietary “closed” system architecture

• Ethernet OAM

- IEEE 802.1ag (CFM)
- IEEE 802.1ah (EFM)
- ITU-T Y.1731 (Performance Monitoring)

• Management

- Through uni|MS™ / Web interface / CLI:
 - › SNMP
 - › SNMPv2c, SNMPv3
 - › SYSLOG
 - › TACACS+
 - › RMON (RFC 2819)
 - › Historical statistics
 - › Telnet / SSH, HTTP / HTTPS, FTP / SFTP

• EMC / EMI

- ETSI EN 301 489-1
- ETSI EN 301 489-4
- EN 55032
- EN 61000-3-2 +A1 +A2
- EN 61000-3-3
- FCC Part 15 subpart B

• Health and Safety

- EN 60950-1 +A11 +A1 +A12 +A2
- EN 60950-22
- EN 50385
- EN 60215 +A1 +A2
- OET Bulletin 65

• RoHS

- EN 50581

• Environmental

- ETSI EN 300 019-2-4, Class 4.1 / (Mechanical 4M5) (Operation)
- ETSI EN 300 019-2-2, Class 2.3 (Transportation)
- ETSI EN 300 019-2-1, Class 1.2 (Storage)

• Reliability

- MTBF > 50 years