

WiBAS[™] G5 connect+



WiBAS™ G5 Connect+
radio unit



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

Compact PtMP 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 the new generation of Point-to-MultiPoint Terminal. 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 new WiBAS™ G5 Connect+ has the unique advantage of operating in both TDD and FDD area-licensed microwave spectrum offering great flexibility and a simple hardware choice for the operators. 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) 950 / 670 ⁽²⁾ (FDD @ 112 MHz)
Modulation (adaptive)	Up to 1024-QAM
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)⁽³⁾ • FDD
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:	
Operation / Storage	-33 °C to +55 °C
Transportation	-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⁾ Maximum achieved throughput per direction.
⁽³⁾ 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) • 56 / 112 (FDD)
Tx Power, max., dBm (4-QAM)	18.0 (24.25 - 26.50 GHz) • 18.0 (26.50 - 28.50 GHz) • 18.0 ⁽⁴⁾ (27.50 - 29.50 GHz)
Polarization	Vertical / Horizontal
Polarization Mode	Auto / Manual
Sensitivity (4-QAM 1/2 DL), dBm 50 / 56 MHz channel 100 / 112 MHz channel	-84.9 / -84.4 -81.9 / -81.4
Antenna Type / Gain	Parabolic 300 mm / 36.3 dBi at 25.5 GHz & 37.5 dBi at 28.5 GHz Parabolic 500 mm / 39.0 dBi at 25.5 GHz & 40.0 dBi at 28.5 GHz

⁽⁴⁾ 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