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	• 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: • 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 ºC to +55 ºC
Transportation	-40 ºC to +70 ºC
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)	19.0 (24.25 - 26.50 GHz) • 14.0 (26.50 - 28.50 GHz) • 14.0 (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

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:
    › SNTP
    › 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