

WiBAS G5[®] evo-BS



WiBAS™ G5 evo-BS radio unit



WiBAS™ G5 evo-BS with
180° sectoral antenna

Overview

Intracom Telecom being committed to the goal of fulfilling any requirement for broadband FWA of the highest quality in sub-urban and rural residential areas, further expanded its MW portfolio with a new generation of Point-to-Multipoint hub / Point-to-Point Node. WiBAS™ G5 evo-BS is a compact base station that offers the highest capacity, convenience, performance and power-saving features in the market, while blending discreetly with the surrounding environment. WiBAS™ G5 evo-BS offers advanced networking features, extended coverage and leading PtMP/PtP radio technology in the 24.25-29.50 GHz area-licensed bands. It enables state-of-the-art IP connectivity in zero-footprint installations at hard-to-reach home and business subscriber locations. Zero-touch provisioning capabilities make the deployment of the network effortless and the improved modem technology enables advanced and dense PtMP networks – up to 60 terminal stations per sector. With a variety of sectoral antennas from 90 to 360 degree coverage, WiBAS™ G5 evo-BS offers great deployment flexibility with large area footprint. Due to its small size the WiBAS™ G5 evo-BS is not demanding heavy telecom infrastructures leading to simpler deployment practices for the network operators. The flexible air frame structure and variable TDD DL/UL split of the system allows WiBAS™ G5 evo-BS to co-exist with 3GPP based 5G deployments without interference. WiBAS™ G5 evo-BS can be deployed in 2+0 configuration offering sector redundancy, ensuring delivery of uninterrupted Service Level Agreements.

System Specifications

WiBAS™ G5 evo-BS	
Sector Capacity (100 MHz Channel) (Downlink / Uplink)	700 / 100 ⁽¹⁾ (100 MHz)
Modulation (adaptive)	Up to 1024-QAM
Subscriber Density (Terminals / Sector)	60
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 (PoE) injector with input: <ul style="list-style-type: none"> • DC (-48 V), or • AC (100 V to 240 V, 50 Hz to 60 Hz)
Power Consumption (typ.), W	43
Dimensions (H x W x D), mm	200 x 200 x 40
Weight, kg	2.0 (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 / NMS / PoE input
1 x GbE (SFP)	Traffic / NMS
1 x Sync	GNSS Synchronization

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

⁽²⁾ Roadmap feature.

Performance / System Throughput

Split Ratio 4:1 (Downlink)						
DL Phymode	L1 throughput (Mbit/s) per frame size (Bytes) ⁽³⁾					
	128	256	512	1024	1518	1900
1024-QAM 5/6	701	648	623	610	605	606
1024-QAM 19/24	681	635	612	601	597	596
512-QAM 19/24	607	566	545	535	532	530
256-QAM 19/24	532	496	478	469	466	465
128-QAM 19/24	458	427	411	404	401	400
64-QAM 19/24	383	357	344	338	336	335
16-QAM 5/6	246	230	221	217	216	215
16-QAM 3/4	221	206	199	195	194	194
4-QAM 5/6	123	115	111	109	108	108
4-QAM 1/3	111	103	99	98	97	97
4-QAM 1/2	73	68	66	65	64	64

Split Ratio 4:1 (Uplink)						
UL Phymode	L1 throughput (Mbit/s) per frame size (Bytes) ⁽³⁾					
	128	256	512	1024	1518	1900
256-QAM 19/24	100	96	93	91	90	90
128-QAM 19/24	89	83	80	79	78	78
64-QAM 19/24	76	71	68	67	66	66
16-QAM 5/6	47	44	43	42	42	41
16-QAM 3/4	43	40	38	38	37	37
4-QAM 5/6	24	22	21	21	21	21
4-QAM 1/3	21	20	19	19	19	19
4-QAM 1/2	14	13	13	13	12	12

Operating Frequencies, Radio Performance & Antennas

		WiBAS™ G5 evo-BS
Operating Frequencies, GHz (Rx / Tx)		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 Size, MHz		40 / 50 / 75 / 100 / 112
Tx Power, max., dBm		19 (1024-QAM)
Sensitivity (4-QAM 1/2 DL), dBm		
50 / 56 MHz channel		-86.4 / -85.9
100 / 112 MHz channel		-83.4 / -82.9
Antenna Type / Gain		Sectoral 90° / 19 dBi Sectoral 90° / 15.5 dBi Sectoral 180° / 13.5 dBi Omnidirectional 360° / 10 dBi Parabolic 1.4° / 42.8 dBi

Features / Networking

• Radio

- ETSI EN 302 326-1 V1.2.2 Annex E
- ETSI EN 302 326-2 V1.2.2
- ETSI EN 302 326-3 V1.3.1
- Based on ETSI TS 102 123
- FCC Part 30

• TDD Synchronization

- External GNSS module
- 5G NR compliant air frame (3GPP TS 38.213)

• Ethernet

- IEEE 802.3-2008 (100 / 1000Base-T)
- IEEE 802.3 (Optical Gigabit Ethernet 1000Base-SX/LX)

• Scalability

- Up to 60 terminal stations per sector

• Ethernet Standards & Functionality

- IEEE 802.1Q (VLAN-aware bridging)
- Ethernet CoS (PCP)
- VLAN point-to-point services
- IEEE 802.1ad (Provider Bridges), Q-in-Q
- Configurable EtherType
- 1:1 VLAN translation / bundling on UNI trunk ports
- L2CP processing
- MEF CE 2.0 port-based (EPL/EP-LAN) and VLAN-based (EVPL/EVP-LAN) services
- MTU size: up to 9600 bytes

• Ethernet QoS

- Ingress packet classification per Interface, 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

➢ Advanced scheduling with WFQ or PFS

• 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 uniIMS™ / Web interface / CLI:
 - NTP, SNMPv2c, SNMPv3, SYSLOG, TACACS+, RMON (RFC 2819)
 - Telnet / SSH, HTTP / HTTPS, FTP / SFTP
 - Historical statistics

• EMI / EMI

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

• Health and Safety

- EN 60950-1, EN 60950-22, EN 50385, EN 60215
- 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