

# WiBAS connect



WiBAS™-Connect radio unit



WiBAS™-Connect with low-profile antenna 30 cm

## Compact PtMP Broadband Connectivity Terminal

### Overview

WiBAS™-Connect, the most compact and lightweight microwave radio in the market, is the latest addition to the range of all-outdoor Terminal Station radios. With high capacity, advanced networking features, low power consumption and leading PtMP radio technology in the 10.5 / 26 / 28 GHz area-licensed bands, WiBAS™-Connect offers extremely-reliable broadband access connectivity to SMEs and premium residential customers. It enables state-of-the-art IP connectivity in zero-footprint installations and at service locations requiring cost-effective and rapidly-implemented broadband access networks. Improved modem technology enables the higher channel bandwidth utilization and denser PtMP networks – **up to 90** WiBAS™-Connect terminals – in the market. WiBAS™-Connect is ideal for low-CapEx radio access deployments.

### System Specifications

<b>Radio Capacity (net) per Terminal</b> <i>Aggregate Downlink</i>	Up to 1 Gbit/s (sector) / 0.50 Gbit/s (terminal) Up to 0.54 Gbit/s (sector) / 0.27 Gbit/s (terminal)
<b>Modulation (adaptive)</b>	Up to 1024-QAM
<b>Power Supply</b>	Power over Ethernet injector, with input: <ul style="list-style-type: none"> <li>• DC (-40.5 V to -57 V), or</li> <li>• AC (100 V to 255 V, 50 Hz to 60 Hz)</li> </ul>
<b>Max. Power Consumption, W</b>	26
<b>Dimensions (H x W x D), mm</b>	200 x 200 x 30
<b>Weight, kg</b>	1.8 (excluding the antenna)
<b>Protection Against Dust &amp; Water</b>	Class IP67 / IEC 60529
<b>Temperature:</b> <i>Operation / Storage Transportation</i>	-33 °C to +55 °C -40 °C to +70 °C
<b>Interfaces / Ports</b> <i>1 x GbE (RJ-45)</i>	Traffic / Inband NMS / PoE input

# Operating Frequencies, Radio Performance & Antennas

	10.5 GHz	26 GHz	28 GHz
Operating Frequencies, MHz (DL or UL)	10,157.5 to 10,290.5 10,507.5 to 10,640.5	24,556.0 to 25,438.0 25,564.0 to 26,446.0	27,555.5 to 28,437.5 28,563.5 to 29,445.5
RF Channel Arrangement	CEPT ERC Rec.T/R 12-05E	CEPT ERC Rec.T/R 13-02E	CEPT ERC Rec.T/R 13-02E
Sub-bands	-	-	-
Channel Size, MHz	7 / 14 / 28 / 56	14 / 28 / 56	14 / 28 / 56
Duplex Spacing, MHz	350	1,008	1,008
Tx Power, max., dBm	18.0	13.5	13.5
Sensitivity (4-QAM 1/2 DL), dBm			
7 MHz channel	-95.3	-	-
14 MHz channel	-92.3	-91.3	-91.3
28 MHz channel	-89.3	-88.3	-88.3
56 MHz channel	-86.3	-85.3	-85.3
Antenna Type / Gain	Parabolic 600 mm / 34.5 dBi Panel 268 mm x 268 mm / 25 dBi	Parabolic 300 mm / 36.3 dBi Parabolic 600 mm / 42.3 dBi	Parabolic 300 mm / 37.5 dBi Parabolic 600 mm / 43.0 dBi

## Features / Networking

### • Radio

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

### • Ethernet

- IEEE 802.3-2008 (10 / 100 / 1000Base-T)

### • Scalability

- Up to 90 terminal stations per sector

### • Ethernet Standards & Functionality

- IEEE 802.1Q (VLAN)
- IEEE 802.1p
- IEEE 802.1ad (Provider Bridging (Q-in-Q))
- MEF Carrier Ethernet (CE) based: EPL & EVPL, E-LAN & EVP-LAN
- MTU size: 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
- Remarking of L2 PCP based on ingress policer's output color

### • Air Interface Scheduling

- Egress classification based on VLAN, PCP, DSCP, MPLS EXP criteria
- 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
  - › Four (4) priority queues (3 available for user traffic)
  - › Two service classes:
    - Real-Time Variable Rate (RTVR) for guaranteed service
    - Best-Effort (BE) for non-guaranteed service

### • Bridge Security

- MAC Security and Port Flooding
- MAC Learning Enable/Disable
- Storm Control and Split Horizon

### • Air Interface Security

- Proprietary "closed" system architecture

### • Management

- Through uniIMS™ / Web interface / CLI:
  - › SNMP
  - › SNMPv2c
  - › 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 55022:2010
- EN 61000-3-2:2006 +A1:2009 +A2:2009
- EN 61000-3-3

### • Health and Safety

- EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011 +A2:2013
- EN 60950-22
- EN 50385
- EN 60215:1989 +A1:1992 +A2:1994

### • RoHS

- EN 50581

### • Environmental

- ETSI EN 300019-2-4, 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 > 30 years