

# WiBAS OSDR



OSDR

## Overview

WiBAS™-OSDR is an all-outdoor hub radio operating at area-licensed bands (10.5 / 26 / 28 / 32 GHz) offering the highest capacity and the most dense PtMP deployment available in the market. This radio delivers state-of-the-art IP connectivity for Fixed Wireless Access (FWA) networks and perfectly suits the operator needs for zero-footprint installations at homes and business subscriber locations. It is based on a software defined radio platform, which provides future-proof deployments and feature enhancements through software licensing. WiBAS™-OSDR combines sophisticated QoS features and robust performance with a highly-efficient operation. The electronics – baseband unit / modem / controller and radio circuitry – are all securely accommodated in a lightweight, environmentally-hardened housing that is directly coupled to the antenna. Service area can extend more than 10 km from the hub location (clear sky conditions).

## System Specifications

	WiBAS™-OSDR
Radio Capacity (aggregate)	1 Gbit/s
Modulation (adaptive)	up to 1024-QAM
Power Supply	Power over Ethernet (PoE), through outdoor injector
Max. Power Consumption, W	43 (10.5 / 26 / 28 GHz) 39 (32 GHz)
Dimensions (H x W x D), mm	290 x 238 x 96
Weight, kg	4.5
Water Tightness	Class IP67 / IEC 60529
Temperature	
<i>Operating (Normal / Extended)</i>	-33 °C to +55 °C / -50 °C to +55 °C
<i>Transportation / Storage</i>	-40 °C to +70 °C / -33 °C to +55 °C
Interface / Ports	
1x GbE (RJ-45)	Traffic / inband NMS / PoE input
1x GbE (SFP)	Traffic / inband NMS
1x GbE (RJ-45)	OSDR protection
1x FE (RJ-45)	Outband NMS / PoE input
1x GbE (RJ-45)	Reserved

# Operating Frequencies, Radio Performance & Antennas

	WiBAS™-OSDR			
	10.5 GHz	26 GHz	28 GHz	32 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	31,822.0 to 32,564.0 32,634.0 to 33,376.0
RF Channel Arrangement	CEPT/ERC/Rec. 12-05E	CEPT ERC Rec.T/R 13-02E	CEPT ERC Rec.T/R 13-02E	CEPT ERC/REC/(01)02E
Sub-bands	1	2	2	2
Channel Size, MHz	7 / 14 / 28 / 56	14 / 28 / 56	14 / 28 / 56	14 / 28 / 56
Duplex Spacing, MHz	350	1,008	1,008	812
Tx Power, max., dBm	21.0	17.0	19.0	18.5
Sensitivity (4-QAM 1/2 DL), dBm	-86.8 (56 MHz) -89.8 (28 MHz) -92.8 (14 MHz) -95.8 (7 MHz)	-85.3 (56 MHz) -88.3 (28 MHz) -91.3 (14 MHz)	-85.3 (56 MHz) -88.3 (28 MHz) -91.3 (14 MHz)	-84.8 (56 MHz) -87.8 (28 MHz) -90.8 (14 MHz)
<b>Antennas</b>				
<i>OSDR-HUB Antenna options (Type / Gain)</i>	Sectoral 90° / 16 dBi Sectoral 60° / 17 dBi	Sectoral 90° / 19 dBi Sectoral 90° / 15.5 dBi	Sectoral 90° / 19 dBi Sectoral 90° / 15 dBi Sectoral 180° / 12 dBi	Sectoral 90° / 19 dBi Sectoral 90° / 15 dBi
<i>OSDR-TS Antenna options (Type &amp; Dimensions / Gain)</i>	Panel 26.8x26.8 cm / 25.0 dBi Parabolic 60 cm / 34.5 dBi Parabolic 80 cm / 36.9 dBi Parabolic 120 cm / 40.0 dBi Parabolic 180 cm / 43.4 dBi	Parabolic 30 cm / 36.8 dBi Parabolic 60 cm / 42.3 dBi Parabolic 80 cm / 43.6 dBi Parabolic 120 cm / 47.3 dBi	Parabolic 30 cm / 38.0 dBi Parabolic 60 cm / 43.0 dBi Parabolic 80 cm / 44.7 dBi Parabolic 120 cm / 48.1 dBi	Parabolic 30 cm / 39.1 dBi Parabolic 60 cm / 43.9 dBi Parabolic 80 cm / 45.6 dBi

## Features & Networking Specifications

### 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

### Ethernet

- IEEE 802.3-2008 (10 / 100 / 1000Base-T)
- IEEE 802.3-2008 (Optical Gigabit Ethernet through 1000Base-SX / LX)

### Scalability

- Up to 30 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) EPL & EVPL, E-LAN & EV-LAN, EP-Tree & EVP-Tree
- MTU size: 9600 Bytes

### Ethernet QoS

- Packet Classification per Interface / VLAN ID / P-Bits / DSCP / IPv6 TC / MPLS EXP or combinations
- Data Policing: 2 Rate 3 Color per interface / VLAN / Ethernet CoS

### Scheduling

- PtP Operation
  - 8-queue Packet scheduling
- PtMP Operation
  - 2-stage hierarchical scheduling of Service Flows established between HUB and Terminals
- 8-queue packet Scheduling (Strict Priority)
- Air scheduling of CoS-enabled service flows with traffic shaping
- Eight priority queues for main service classes:
  - Unsolicited Grant Service (UGS)
  - Real-Time Variable Rate (rtVR)
  - Non-Real Time Variable Rate (nrtVR)
  - Best-Effort (BE) Service without guaranteed rate

### Bridge Security

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

### Security

- Proprietary "closed" system architecture

### Synchronization

- ITU-T G.8362 (Synchronous Ethernet)
- IEEE 1588V2 TC

### OAM

- IEEE 802.1ag (Service OAM (CFM))
- ITU-T Y.1731 (Performance Monitoring)

### Management

- Through uni|MS™ / Web interface / CLI:
  - SNMPv2c
  - RMON (RFC 2819)
  - SSH, HTTPs, SFTP

### EMC / EMI

- ETSI EN 301 489-4 V1.4.1:2009
- EN 55022:2006+A1:2007
- EN 61000-3-2:2006+A1:2009+A2:2009
- EN 61000-3-3:2008

### Electrical Safety

- EN 60950-1:2006 + A11:2009 + A1:2010
- EN 50385:2002

### Environmental

- ETSI EN 300 019-2-4 V2.2.2, Class 4.1 (Operation)
- ETSI EN 300 019-2-2 V2.1.2, Class 2.3 (Transportation)
- ETSI EN 300 019-2-1 V2.1.2, Class 1.2 (Storage)

### Reliability

- MTBF > 50 years