omniBAS

Data Sheet

Overview

OmniBAS™ is a next generation Ethernet microwave backhaul solution enabling an evolved approach toward smooth all-IP migration. Traditional circuit-based services are seamlessly emulated with Pseudo-Wire (PW) technology, while highly-efficient mechanisms assure carrier-class service delivery. OmniBAS™ is a split system, mainly composed of a highly compact 1RU indoor unit and the ODU-CF outdoor radio unit with integrated antenna (0.3 / 0.6 / 1.2 / 1.8 m).

System Specifications

	Indoor Units		
	OmniBAS™-4W/-2W (Native IP, w/ PtP / XPIC modems, TDM transported in MEF8 Pseudowire)	**OmniWAY™-12G** (Switch aggregation unit, modular, with redundant service blades)	**OmniWAY™-2G** (Compact aggregation unit)
Max. Bitrate (gross), Mbit/s	• 1,600 (OmniBAS-4W) • 800 (OmniBAS-2W)	-	-
Channel Size, MHz	7 / 14 / 28 / 56	-	-
Link Modes	• 1+0 / 2+0 • 1+1 (HSB / SD / FD) • 3+0 / 4+0 (OmniBAS-4W only) • 2+2 (HSB / SD / FD) (OmniBAS-4W only)	-	-
Modulation (adaptive)	4 / 8 / 16 / 32 / 64 / 128 / 256QAM	-	-
Operating Voltage, V	-40 to -60 (-48 typ.)		
Max. Power Consumption, W	• 87 (4+0)[1] (OmniBAS-4W) • 46 (2+0) (OmniBAS-2W)	300	80
Dimensions (H x W x D), mm	• 45 (1U) x 437 x 284.7 (OmniBAS-4W) • 45 (1U) x 407 x 240 (OmniBAS-2W)	133.5 (3U) x 437 x 265	45 (1U) x 437 x 245
Weight, kg (approx., fully equipped)	• 8.4 (OmniBAS-4W) • 8.0 (OmniBAS-2W)	13.5	6.5
Operating Temperature	-5 °C to +45 °C		
Relative Humidity	10 % to 95 %, non-condensing		
Interfaces	• 2 x GbE (OmniBAS-4W) / 1 x GbE (OmniBAS-2W), optical or electrical • 16 x E1 (OmniBAS-4W) / 8 x E1 (OmniBAS-2W) • 4 x FE (OmniBAS-2W only) • 2 x FE (outband management) • Sync IN / OUT • Serial RS-232 (external alarms) • Engineering Order Wire (EOW)	• 12 x GbE, electrical (traffic aggregation) • 8 x GbE (four electrical & four optical) • 4 x STM-1 / VC-12 (optical, 2+0 / 2+2)[2] • 2 x STM-1 / VC-4 (optical, 2+0 / 1+1)[2] • 1 x FE (outband management) • External I/O • 12 x Sync OUT / 1 x Sync IN	• 4 x GbE, optical or electrical (traffic aggregation) • 4 x STM-1 / VC-12 (optical, 2+0 / 2+2) • 2 x STM-1 / VC-4 (optical, 2+0 / 1+1) • 1 x FE (outband management) • Serial RS-232 • External I/O • Sync IN / OUT

[1] *Without XPIC.*
[2] *Interfaces also protected at card-level.*

	Outdoor Units (ODU-CF)								
	6L-CF & 6U-CF (6 GHz)	7L-CF (7 GHz)	8L-CF (8 GHz)	11-CF (11 GHz)	13-CF (13 GHz)	15-CF (15 GHz)	18-CF (18 GHz)	23-CF (23 GHz)	38-CF (38 GHz)
Operating Frequency Band, GHz	5.9 - 7.1	7.1 - 7.9	7.7 - 8.5	10.7 - 11.7	12.75 - 13.25	14.5 - 15.35	17.7 - 19.7	21.2 - 23.6	37.0 - 39.5
RF Channel Arrangement	ITU-R F.383 / 384	ITU-R F.385-8	ITU-R F.386-6	ITU-R F.387-7	ITU-R F.497-6	ITU-R F.636-3	ITU-R F.595-8	ITU-R F.637-3	ITU-R F.749-2
Radio	ETSI EN 302217-2-2								
Tx/Rx Spacing, MHz	252.04 / 240 / 340	154 / 161 / 245	119 / 126 / 266	490 / 530	266	420 / 490 / 728	1010	1008 / 1232	1260
Tx Output Power, dBm (Upper, QPSK)	28	28	27	27	24	24	24	23	22
Output Power Accuracy (-33 °C to +55 °C)	±2 dB (max.)								
Max. Rx Level (No Damage)	+10 dBm								
RSSI (RSL) Accuracy (+25 °C)	±2 dB (typ.)								
Frequency Stability	±7 ppm (max.)								
Frequency Resolution, kHz	250								
System Gain (dB) @ BER=10^{-6} (values refer to indicative operational modes)									
256QAM (56 MHz)	89.8	88.8	87.8	87.8	84.8	84.8	83.8	82.8	79.3
256QAM (28 MHz)	92.8	91.8	90.8	90.8	87.8	87.8	86.8	85.8	82.3
128QAM (56 MHz)	94.1	93.1	92.1	92.1	89.1	89.1	88.1	87.1	83.6
128QAM (28 MHz)	97.1	96.1	95.1	95.1	92.1	92.1	91.1	90.1	86.6
64QAM (56 MHz)	97.8	96.8	95.8	95.8	92.8	92.8	91.8	90.8	87.3
64QAM (28 MHz)	100.8	99.8	98.8	98.8	95.8	95.8	94.8	93.8	90.3
32QAM (56 MHz)	102.2	101.2	100.2	100.2	97.2	97.2	96.2	95.2	91.7
32QAM (28 MHz)	105.2	104.2	103.2	103.2	100.2	100.2	99.2	98.2	94.7
16QAM (28 MHz)	109.7	108.7	107.7	107.7	104.7	104.7	103.7	102.7	99.2
16QAM (14 MHz)	112.7	111.7	110.7	110.7	107.7	107.7	106.7	105.7	102.2
16QAM (7 MHz)	115.7	114.7	113.7	113.7	110.7	110.7	109.7	108.7	105.2
4QAM Low FEC (28 MHz)	117.3	116.3	115.5	115.3	112.3	112.3	111.3	110.3	106.8
4QAM Low FEC (7 MHz)	123.3	122.3	121.3	121.3	118.3	118.3	117.3	116.3	112.8
4QAM High FEC (28 MHz)	119.6	118.6	117.6	117.6	114.6	114.6	113.6	112.6	109.1
4QAM High FEC (7 MHz)	125.6	124.6	123.6	123.6	120.6	120.6	119.6	118.6	115.1
DC Operating Voltage, V	-40 to -60 (-48 typ.)								
Power Consumption, W (typ.)	34			26		23			
Dimensions (W x H x D), mm	250 x 247 x 106			237 x 247 x 89					
Weight, kg	< 6			< 4					
Operating Temperature	-33 °C to +55 °C (ETSI EN 300019-2-4 v2.1.2 Class 4.1) / Operational at -50 °C								
Transportation & Storage Temperature	-40 °C to +70 °C (ETSI EN 300019-2-2 v2.1.2 Class 2.3)								
Waveguide Flange	UBR70	UBR84	UBR84	UBR120	UBR120	UBR140	UBR220	UBR220	UBR320

Networking

- **TDM**
  - ITU-T G.703 / G.736 / G.775 / G.823
  - ITU-T G.783
- **Ethernet**
  - IEEE 802.3u (100 Mbit/s electrical)
  - IEEE 802.3z (1000 Mbit/s optical)
  - IEEE 802.3ab (1000 Mbit/s electrical)
  - IEEE 802.1q (Virtual LAN)
  - IEEE 802.1p (QoS)
  - IEEE 802.1ad (Provider bridging)
  - IEEE 802.1w (RSTP)
  - IEEE 802.3ad (Link Aggregation)
- **Ethernet Synchronization**
  - Synchronous Ethernet
- **Ethernet Ring Protection**
  - ITU-T G.8032
- **STM-1 (VC-12/4)**
  - ITU-T G.707 / G.781 / G.783
- **L2 Bridging Modes & QoS**
  - C-VLAN
  - S-VLAN transparent
  - S-VLAN provider
  - QoS per ETH port / VLAN / p-bit
  - DSCP

Standards

- **EMC / EMI**
  - ETSI EN 301 489-1 v1.6.1 (2002-09)
  - ETSI EN 301 489-4 v1.3.1 (2002-08)
- **Electrical Safety**
  - EN 60950-1:2001
- **Environmental**
  - ETSI EN 300 019-2-3 v2.1.2:2003, Class 3.2 (Operation)
  - ETSI EN 300 019-2-2 v2.1.2:1999, Class 2.3 (Transportation)
  - ETSI EN 300 019-2-1 v2.1.2:2000, Class 1.1 (Storage)

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