

OmniBAS-BX



OmniBAS™-BX

Overview

OmniBAS™-BX, the new generation of all-outdoor radios of the OmniBAS™ Point-to-Point MW family, addresses the operator need for advanced, cost-effective, multi-Gigabit IP transmission solutions. It is ideal for both 4G/5G MW backhaul and for a wide range of enterprise wireless connectivity applications. Featuring a new ultra-slim and low-weight mechanical design, OmniBAS™-BX is introduced at 13, 15, 18, 23 and 38 GHz frequencies. OmniBAS™-BX offers market-leading modulations up to 4096-QAM and channels up to 112 MHz, while employing advanced radio and traffic processing functionality to demonstrate exceptional MW radio performance. OmniBAS™-BX is compatible with both OmniBAS™ split-mount and OmniBAS™-OSDR all-outdoor units. A broad range of peripherals and integrated antennas (0.3 / 0.6 / 0.8 / 1.2 / 1.8 m) complements the OmniBAS™-BX offering for complete MW link installations.

System Specifications

	OmniBAS™-BX
Frequencies, GHz	13 / 15 ⁽¹⁾ / 18 / 23 ⁽¹⁾ / 38
Channel Size, MHz	7 / 10 / 14 / 20 / 28 / 30 / 40 / 50 / 56 / 80 / 100 / 112 ⁽²⁾
Modulation (adaptive)	4 / 16 / 32 / 64 / 128 / 256 / 512 / 1024 / 2048 / 4096-QAM
Link Configuration	1+0 / 1+1 HSB / RLA 2+0 / XPIC 2+0
Capacity, Gbit/s	
XPIC 2+0: 100 / 112 MHz	1.93 / 2.18
1+0: 100 / 112 MHz, XPIC 2+0: 50 / 56 MHz	0.98 / 1.11
1+0: 50 / 56 MHz	0.49 / 0.555
Line Rate @ 64-Bytes, 1+0, Gbit/s	
100 / 112 MHz	1.55 / 1.75
50 / 56 MHz	0.78 / 0.88
Dimensions (H x W x D), mm	200 x 200 x 40
Weight, kg	2.0
Typ. Power Consumption, W	39 (1+0 configuration)
Protection Against Dust & Water	Class IP67 / IEC 60529
Power Supply Options	Power on Ethernet, through outdoor and indoor injectors for DC or AC source
Interface / Ports	
1xGbE (RJ-45)	Traffic / inband NMS / PoE input
1xGbE (SFP)	Traffic / inband NMS (2.5 Gbit/s capable)
Interconnection	OmniBAS™-BX interconnection bus for traffic and control for HSB 1+1, XPIC 2+0, RLA 2+0

⁽¹⁾ In roadmap.

⁽²⁾ 80-112 MHz applicable to 18 GHz, 23 GHz and 38 GHz.

Operating Frequencies & Radio Performance

Frequency Bands, GHz	OmniBAS™-BX				
	13	15	18	23	38
Operating Frequencies, GHz	12.75 - 13.25	14.40 - 15.35	17.7 - 19.7	21.2 - 23.6	37.0 - 39.5
RF Channel Arrangement	ITU-R F.497	ITU-R F.636	ITU-R F.595	ITU-R F.637	ITU-R F.749
Tx/Rx Spacing, MHz	266	420 / 490 / 728	1008 / 1010 / 1560	1008 / 1200 / 1232	1260
Tx Power (min / max QAM), dBm	23 / 18	23 / 18	22 / 17	22 / 17	19 / 14
System Gain, dB (@ BER=10 ⁻⁶) ⁽³⁾					
4096-QAM (100 / 112 MHz)	N/A	N/A	65.9	65.9	60.9
4096-QAM (50 / 56 MHz)	70.9	70.9	68.9	68.9	63.9
4096-QAM (28 MHz)	75.9	75.9	73.9	73.9	68.9
4096-QAM (14 MHz)	78.9	78.9	76.9	76.9	71.9
2048-QAM (100 / 112 MHz)	N/A	N/A	70.4	N/A	65.4
2048-QAM (50 / 56 MHz)	75.4	75.4	73.4	73.4	68.4
2048-QAM (28 MHz)	80.4	80.4	78.4	78.4	73.4
2048-QAM (14 MHz)	83.4	83.4	81.4	81.4	76.4
2048-QAM (7 MHz)	86.4	86.4	84.4	84.4	79.4
1024-QAM (100 / 112 MHz)	N/A	N/A	74.6	74.6	69.6
1024-QAM (50 / 56 MHz)	79.6	79.6	77.6	77.6	72.6
1024-QAM (28 MHz)	83.6	83.6	81.6	81.6	76.6
1024-QAM (14 MHz)	86.6	86.6	84.6	84.6	79.6
1024-QAM (7 MHz)	89.6	89.6	87.6	87.6	82.6
512-QAM (100 / 112 MHz)	N/A	N/A	79.0	79.0	74.0
512-QAM (50 / 56 MHz)	84.0	84.0	82.0	82.0	77.0
512-QAM (28 MHz)	88.0	88.0	86.0	86.0	81.0
512-QAM (14 MHz)	91.1	91.1	89.1	89.1	84.1
512-QAM (7 MHz)	94.1	94.1	92.1	92.1	87.1
256-QAM (100 / 112 MHz)	N/A	N/A	82.1	82.1	77.1
256-QAM (50 / 56 MHz)	87.1	87.1	85.1	85.1	80.1
256-QAM (28 MHz)	91.1	91.1	89.1	89.1	84.1
256-QAM (14 MHz)	94.1	94.1	92.1	92.1	87.1
256-QAM (7 MHz)	97.1	97.1	95.1	95.1	90.1
64-QAM (100 / 112 MHz)	N/A	N/A	88.3	88.3	83.3
64-QAM (50 / 56 MHz)	93.3	93.3	91.3	91.3	86.3
64-QAM (28 MHz)	97.3	97.3	95.3	95.3	90.3
64-QAM (14 MHz)	100.3	100.3	98.3	98.3	93.3
64-QAM (7 MHz)	103.4	103.4	101.4	101.4	96.4
32-QAM (100 / 112 MHz)	N/A	N/A	92.3	92.3	87.3
32-QAM (50 / 56 MHz)	97.3	97.3	95.3	95.3	90.3
32-QAM (28 MHz)	100.3	100.3	98.3	98.3	93.3
32-QAM (14 MHz)	103.4	103.4	101.4	101.4	96.4
32-QAM (7 MHz)	106.4	106.4	104.4	104.4	99.4
16-QAM (100 / 112 MHz)	N/A	N/A	96.8	96.8	91.8
16-QAM (50 / 56 MHz)	101.8	101.8	99.8	99.8	94.8
16-QAM (28 MHz)	104.8	104.8	102.8	102.8	97.8
16-QAM (14 MHz)	107.9	107.9	105.9	105.9	100.9
16-QAM (7 MHz)	110.9	110.9	108.9	108.9	103.9
4-QAM (100 / 112 MHz)	N/A	N/A	105.7	105.7	100.7
4-QAM (50 / 56 MHz)	110.7	110.7	108.7	108.7	103.7
4-QAM (28 MHz)	113.7	113.7	111.7	111.7	106.7
4-QAM (14 MHz)	116.8	116.8	114.8	114.8	109.8
4-QAM (7 MHz)	119.8	119.8	117.8	117.8	112.8
ODU Antenna Interface	R-120	R-140	R-220	R-220	R-320

Features & Networking Specifications

• Modem

- Hitless ACM up to 4096-QAM
- Radio Resource Control (RRC) with optimized ACM & ATPC
- XPIC 2+0
- Radio Link Aggregation (RLA) up to 2 radios per group
- Pre-Distortion (PD)
- LDPC and Reed Solomon FEC

• Synchronization

- Synchronous Ethernet (ITU-T G.8261 / G.8262, G.8264 (ESMC))
- IEEE 1588v2 TC

• EMC / EMI / Radio

- ETSI EN 301 489-1, ETSI EN 301 489-4, EN 55032, EN 61000-3-2, EN 61000-3-3
- ETSI EN 300 132-2 (Power Supply)
- ETSI EN 302 217-2 (Use of Spectrum)

• Health & Safety

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

• Environmental

- ETSI EN 300 019-1-4 Class 4.1 (Operation) – tests according to ETSI EN 300 019-2-4, +33 °C to +55 °C (tests extended at -50 °C, cold start at -50 °C)
- ETSI EN 300 019-1-2 Class 2.3 (Transportation) – tests according to ETSI EN 300 019-2-2
- ETSI EN 300 019-1-1 Class 1.2 (Storage) – tests according to ETSI EN 300 019-2-1

• Ethernet

- IEEE 802.3z (1000 Mbit/s optical) (SFP)
- IEEE 802.3ab (1000 Mbit/s electrical)

• Ethernet, QoS & System Features

- IEEE 802.1Q (Virtual LAN) & IEEE 802.1p (QoS)
- IEEE 802.1ad (provider bridging, Q in Q)
- Packet classification per VLAN / P-Bits / DSCP / MPLS exp / IPv6 QoS
- Eight QoS queues; two-rate, three-color policer (2R3CP)
- SP / WRR / WFQ scheduling
- Multilayer Header and Payload compression
- Ethernet OAM (IEEE 802.1ag (CFM), ITU-T Y.1731 (PM)), IEEE 802.3ah (EFM)
- Jumbo Frames: 9,600 bytes
- MEF 9 & MEF 14 compliant for EPL, EVPL and ELAN
- H-QoS⁽⁴⁾
- BNM (G.8013 / Y.1731)⁽⁴⁾
- IP / MPLS⁽⁴⁾
- ITU-T G.8032v2 (Ethernet Ring Protection)
- IEEE 802.1w (RSTP), IEEE 802.1s (MSTP)
- IEEE 802.3ad (Link Aggregation - static), LACP⁽⁴⁾
- RMON and G.826 Statistics
- WRED congestion control
- Egress traffic shaping per port
- SDN: NETCONF / Yang⁽⁴⁾

⁽³⁾ System gain values at 100 MHz and 50 MHz are 0.7 dB higher than the stated ones at 112 MHz and 56 MHz respectively.

⁽⁴⁾ In roadmap.