



INTRACOM
TELECOM

Full-IP MW Transmission


omniBAS

Multi-Gigabit IP/MPLS MW Transmission!





MW Transport Networks Go Multi-Gigabit and IP/MPLS

The ever-increasing demand for broadband services poses significant challenges on MW access and backhaul technologies.

Mobile 4G/4G+/5G networks rapidly evolve to all-IP architectures, requiring multi-Gigabit capacity and advanced functionality.

Along with network transformation, Carrier Ethernet services are rapidly being provisioned. Convergence around IP/MPLS is already happening, while the SDN evolution is under way.

Corporate access, government and utility applications can benefit from quick deployment of Gigabit MW, for carrier grade networks.

Packet Microwave (MW) is the technology of choice for transmission applications, having the lowest cost-per-bit and the fastest deployment cycle among other transmission alternatives.

Packet MW transport solutions, offering multi-Gigabit capacity with market-leading 4096-QAM modulations, channels up to 112 MHz and through an integrated IP/MPLS suite for converged backhaul aggregation, is the smartest investment for the future.

Massive IP/MPLS Gigabit with OmniBAS™

OmniBAS™ is a multi-Gigabit smart packet MW portfolio for operators demanding a cost-effective and technologically-advanced solution for their backhaul network.

OmniBAS™ ideally:

- implements the MW access & aggregation segments of 4G / 4G+ / 5G / heterogeneous networks,
- extends the reach of fixed broadband to rural areas, and
- rapidly deploys IP communication and control links for utility companies and governmental agencies.

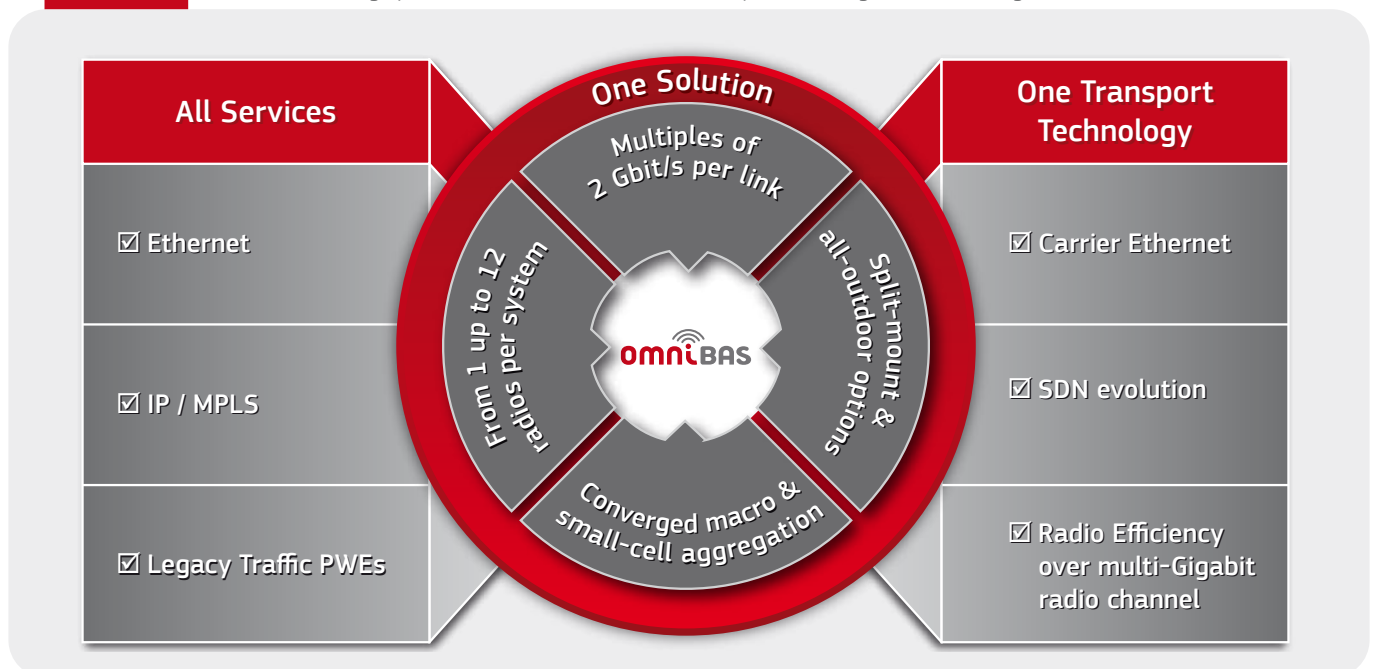
It allows highly-flexible IP link configurations, from all-outdoor and split-mount at tail sites, to high nodal implementations at central sites, all from the same platform.

Facilitating an evolved approach toward smooth IP/MPLS migration, OmniBAS™ enables operators to deliver high-speed IP services utilizing the market-leading modulations of 4096-QAM, channels of 112 MHz and high-density radio modems.

Incorporating highly-efficient packet traffic handling mechanisms and unique radio bandwidth acceleration techniques, OmniBAS™ assures multi-Gigabit carrier-class service delivery with highest availability. The uniform handling of all types of traffic flows over IP and across multiple radios allows the finest of QoS granularity, achieves optimum usage and boost of radio capacity, and enables a true convergence to IP/MPLS.

[Fig. 1]

The OmniBAS™ highly-valued solution: All services and transport technologies over multi-Gigabit MW links



Revolutionize Your Network for 5G Era!

Enable business

- Remove backhaul bottleneck for 5G
- Simplify Mobile Backhaul by converging MW & IP/MPLS
- Enable intelligent Enterprise Connectivity with IP/MPLS
- Keep control of your network with end-to-end OAM

Invest wisely

- Build future-proof backhaul networks with multi-Gigabit on aggregated radio links
- Seamlessly support legacy TDM / SDH services
- Optimize Total Cost of Ownership (TCO) with add-on features

Expand capabilities

- Inject flexibility in last-mile access applications
- Implement nodal sites for up to 12 macro and small cells
- Upgrade with double modems and multi-carrier aggregation
- Activate IP/MPLS into the OmniBAS™ network

Solution Description

OmniBAS™ is a native IP wireless transport platform employing state-of-the-art MW packet technology. It achieves excessive throughput – 2 Gbit/s on a single link and multi-Gigabit on aggregated links – for 4G/5G and other data-demanding backhaul applications.

OmniBAS™ incorporates sophisticated Radio Resource Control (RRC), for best optimization of the available radio capacity, as well as hitless adaptive modulation (4-QAM up to 4096-QAM), which increases throughput and service availability in all weather conditions. Capacity is boosted by combining cutting-edge multi-carrier Radio Link Aggregation (RLA) and/or XPIC techniques with advanced packet optimization like IP headers compression.

Besides capacity maximization, RLA in particular allows for easier network management, as many links at different frequencies can be combined in a single radio link, while it offers increased availability by automatically balancing load over all available air links.

Network configurations are flexible, ranging from all-outdoor single links to nodal implementations for traffic aggregation sites, while utilizing E1, STM-1 and 1-Gigabit & 10-Gigabit Ethernet interfaces.

The OmniBAS™ platform, which is offered in split-mount and all-outdoor configurations, comprises:

- OmniBAS™-2Wcx is a compact 1 RU indoor unit (IDU), environmentally-hardened, configured with one or two modems, supporting 1+0 / 1+1 / 2+0 and XPIC2+0 configurations.
- OmniBAS™-4Wcx is a 1 RU IDU with two built-in modem interfaces and expandable with OmniBAS™-2Wcx modem modules to support configurations of up to 4+0 / 2+2 / 2 x XPIC (2+0).

- OmniBAS™-4W /-8W are modular IDUs of 1 RU / 2 RU height that can be equipped with up to 4 / 8 radio modems respectively. With the new state-of-the-art double modem cards (112 MHz), configurations of up to 4 x XPIC2+0 / 6 x XPIC2+0, and with 8 / 12 ODUs in total, are supported, providing the highest nodal density and radio throughput in MW market.
- Complete family of outdoor units (ODUs), covering a wide range of operating frequencies (6 GHz to 38 GHz) with leading modulations of up to 4096-QAM and with the highest system gains. The newest ODU versions are ultra-slim and support up to 112 MHz channels for the applicable frequencies. New ODU versions, sub-band free (at 13 GHz and 18 GHz) and high-power (33 dBm, at frequencies from 6 GHz to 8 GHz), are also introduced.
- OmniBAS™ all-outdoor radios, comprising the OSDR platform and the new-generation OmniBAS™-BX, enabling 4096-QAM, 112 MHz channels and RLA & XPIC operation.
- OmniBAS™-10P half-rack 1 RU IDU supporting up to four all-outdoor radios through PonE-enabled Gigabit Ethernet interfaces, four additional GbE SFPs and two 10GbE ports.
- Antennas, either integrated or standalone.

OmniBAS™ provides redundancy for ODU / modem / controller / 10-Gigabit Ethernet, also allowing the implementation of the most advanced Ethernet and IP/MPLS protection schemes. The efficient timing capabilities include traditional G.703-based synchronization and Ethernet synchronization based on Synchronous Ethernet and IEEE 1588v2 standards. End-to-end Ethernet service management is ensured through standards-based OAM functions and a powerful NMS system. OmniBAS™ units are further evolved with embedded IP/MPLS.

OMNIBAS™ RADIOS



OmniBAS™ Slim ODU
(ODU-CFs)



OSDR
(all-outdoor)



OmniBAS™-BX
(all-outdoor)



OMNIBAS™ INDOOR UNITS



OmniBAS™-2Wcx



OmniBAS™-4W



OmniBAS™-4P



OmniBAS™-10P



OmniBAS™-4Wcx



OmniBAS™-8W

Smart MW Connectivity

The OmniBAS™ family of products constitutes a single IP/MPLS technology investment for current and future needs, providing superior deployment flexibility – from all-outdoor units to higher nodal compact solutions – for the most demanding backhaul network applications.

The OmniBAS™ all-outdoor and split-mount nodes are fully compatible and can be used according to operator site requirements. Figure 2 illustrates the wide range of deployment scenarios enabled by the OmniBAS™ comprehensive portfolio, making clear its agility advantages in an all-IP backhaul network.

OmniBAS™-BX is intended for zero-footprint last-mile backhaul of 4G/5G networks and high-speed IP connectivity for corporations and utilities applications, offering 2 Gbit/s radio capacity.

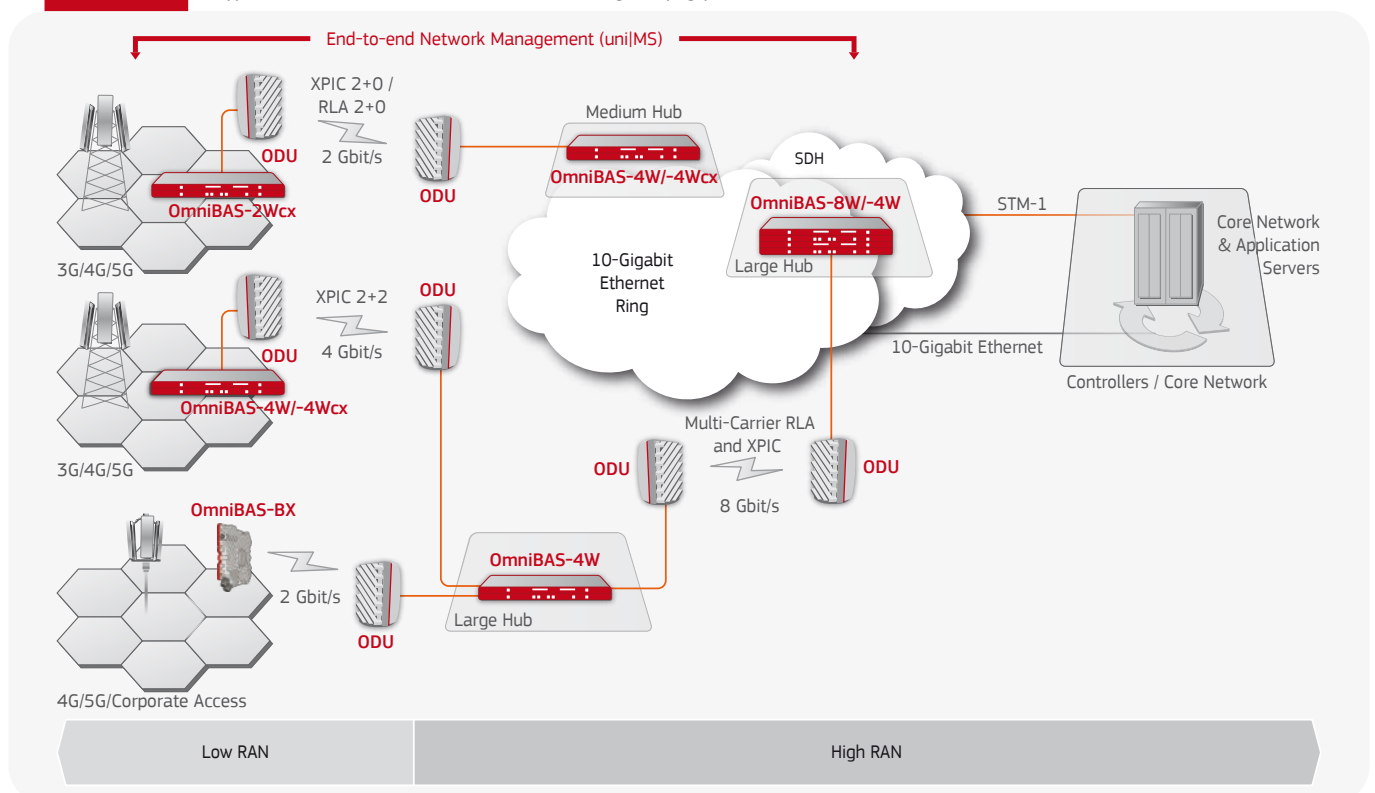
OmniBAS™-2Wcx is a cost-optimized IDU for tail links requiring up to two radios, whereas OmniBAS™-4W /-4Wcx are more appropriate for nodal sites of up to four radios. The OmniBAS™-8W further enhances deployment agility by supporting eight radios in a 2 RU IDU and by providing full hardware redundancy. With the use of the new double modem cards, OmniBAS™-4W /-8W can support up to 8 / 12 radios. Therefore, OmniBAS™-4W /-8W constitute the ideal solution for excessive throughput requirements and long-range multi-Gigabit MW connections.

OmniBAS™-8W /-4W perfectly fits large-hub sites with high-aggregation needs as it offers 10-Gigabit and 1-Gigabit Ethernet interfaces, up to 64 x E1 and four STM-1 VC-12 interfaces. In case of pure higher Ethernet requirements, OmniBAS™-4Wcx is perfectly positioned in medium-hub sites with its 10-Gigabit Ethernet interfaces.

Highlights

- Multi-Gigabit IP PtP radio systems.
- Market-leading hitless adaptive modulation from 4-QAM to 4096-QAM.
- Channels up to 112 MHz.
- IP/MPLS services.
- Robust RF performance, transmit power boost with pre-distortion for increased link range and availability.
- Sub-band free (13/18 GHz) and high-power (33 dBm, at 6-8 GHz) ODUs.
- Nodal solution up to 8 / 12 radios from a single 1RU / 2RU chassis.
- Protected XPIC (2+2) even on a 1 RU chassis.
- Multi-carrier Radio Link Aggregation.
- Ethernet ring protection (ITU-T G.8032v2).
- Comprehensive set of Carrier Ethernet services and H-QoS features.
- Ethernet OAM suite.
- Seamless transport of legacy services with Pseudo-Wires.
- Up to 10-Gigabit Ethernet interfaces.

[Fig. 2] Typical backhaul architecture with OmniBAS™ family of products



Backhaul Convergence with OmniBAS™ CBAN

Converged Backhaul Aggregation Node

The OmniBAS™ product family enables operators to establish a solid foundation in their macro-cell backhaul network, enrich it, in order to unify the aggregation layer for small cells and finally accelerate the 4G / 5G network deployment.

The OmniBAS™-8W /-4W indoor units, besides the modems for connecting ODUs (in split-mount node configurations), can be equipped with Power on Ethernet modems to support a wide variety of all-outdoor MW radios.

Such a Converged Backhaul Aggregation Node (CBAN) application (see Figure 3 below) is a state-of-the-art solution that flexibly leverages best-of-breed MW technologies in order to effectively address today's backhaul challenges.

In addition, OmniBAS™-4P and OmniBAS™-10P provide four Gigabit Ethernet interfaces, PonE enabled, for connection to all-outdoor radios of the Intracom Telecom portfolio.

Technologies & Applications

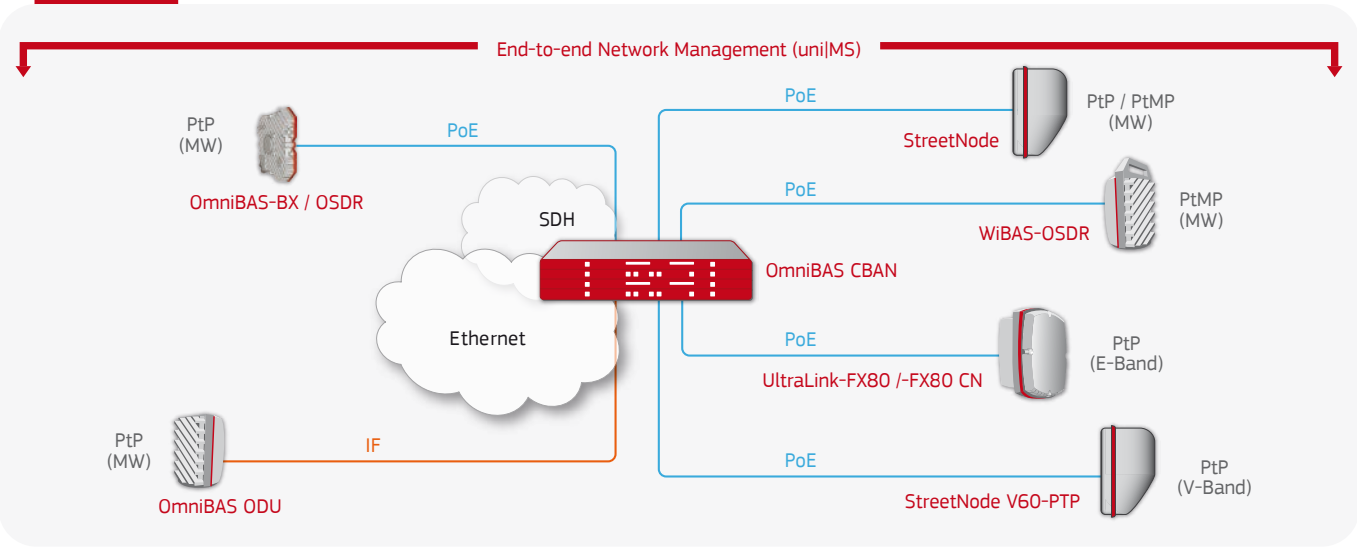
OmniBAS™ CBAN supports any ODUs / all-outdoor MW radios (OmniBAS™-BX and OSDR) / UltraLink™ / StreetNode™ V60-PTP mix, up to eight connected systems in total.

OmniBAS™ CBAN Benefits

- Unified macro and small-cell backhaul
- IP/MPLS convergence
- High scalability
- Optimized backhaul performance end-to-end
- Unified management suite (uniIMS™) for network and services
- Simplified network planning, operation and maintenance
- Enabler for network sharing & managed backhaul models

CBAN Connected With	Topology	Application
OmniBAS™ ODUs	PtP links (split-mount)	Macro and/or small-cell backhaul over the licensed MW spectrum.
OmniBAS™-BX	PtP links (all-outdoor)	
OSDR (Outdoor Software-Defined Radio) platform	PtMP aggregation hubs (WiBAS™-OSDR) and PtP links (all-outdoor)	Small-cell backhaul using StreetNode™ PtMP terminals over licensed, area-wide bands (26 / 28 / 32 / 42 GHz).
StreetNode™	PtP / PtMP (all-outdoor)	Small-cell backhaul, microwave.
UltraLink™	PtP links (all-outdoor)	Macro-cell / Small-cell backhaul over E band.
StreetNode™ V60-PTP	PtP links (all-outdoor)	Small-cell backhaul over V band.

[Fig. 3] Connection capabilities of a CBAN node (example)



Why Intracom Telecom

ONE-STOP SHOP

- Comprehensive portfolio of end-to-end radio access & backhaul solutions
- Proven integration & interoperability
- State-of-the-art end-to-end management suite

ESTABLISHED WIRELESS VENDOR

- Growing and continuous presence for a variety of access and transmission solutions
- Growing brand name recognition for PtP and PtMP solutions

RECOGNIZED FOR SERVICE EXCELLENCE

- Extensive implementation track record
- Specialized & highly experienced personnel
- Consulting, design, implementation & support
- Commitment to adding customer value

CONTINUOUS INNOVATION

- Innovating in the wireless access and transmission field for over one and a half decade
- Successful development and deployment of PtP and PtMP systems with numerous operators in Europe, the Middle East, the CIS, Asia and Africa
- Investing heavily on the continuous evolution of its wireless product lines
- Adopting latest standards and most advanced technologies to deliver wireless solutions that best fit customer current and future needs



About Intracom Telecom

Intracom Telecom is a global telecommunication systems and solutions vendor operating for over 40 years in the market. The company has become the benchmark in fixed wireless access and it successfully innovates in the 5G/4G wireless fronthaul, backhaul and small-cell SON backhaul international arena. Intracom Telecom offers a comprehensive revenue-generating software solutions portfolio and a complete range of ICT services, focusing on IoT, SDN/NFV, Big Data analytics & data-driven intelligence, and Smart City solutions. The company also addresses the Energy & Utilities industry, emphasizing on smart metering & end-to-end IT solutions. Intracom Telecom is also active in the defence systems sector providing security integrated systems for critical infrastructure protection and border surveillance. The company has extensive know-how and a proven track record serving more than 100 renowned customers in over 70 countries. Intracom Telecom maintains own R&D and production facilities, and operates subsidiaries worldwide.

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