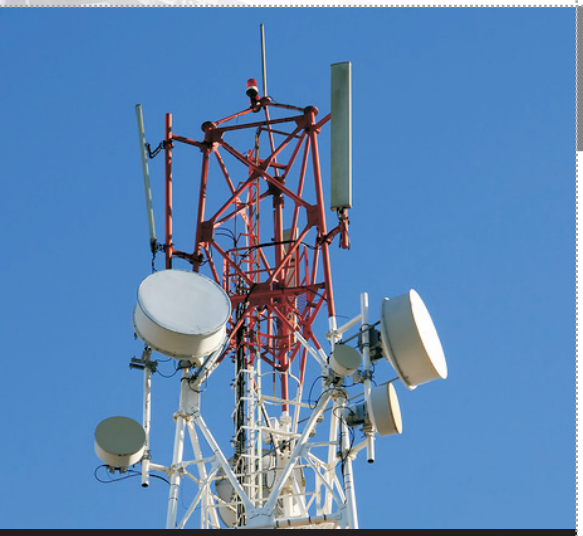
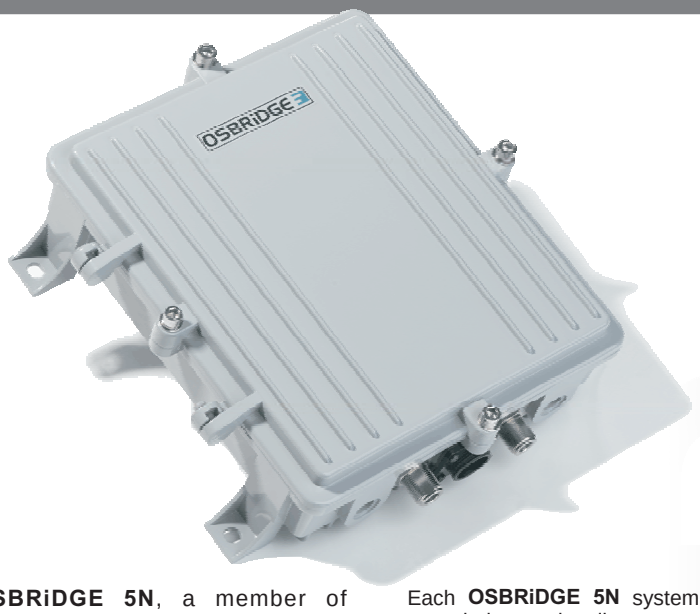
OSBRiDGE



OSBRiDGE 5N

High Performance Outdoor Wireless MiMo Access Point



PRODUCT HIGHLIGTS AND ADVANTAGES

- Licence Exempt ETSI and FCC 5GHz Frequency – eliminates regulatory delays.
- 11 (ETSI), 4 (United Kingdom), 5 (USA) and 236 (Unregulated Countries) non-overlaping channels allows many units to be deployed in the same area.
- User Selectable channel width – 5, 10, 12, 14, 16, 18, 20 or 40 MHz for scalable deployment and interference resiliency.
- **Superior interference immunity** allow efficient operation in even extremely crowded areas.
- Up to **160 Mbps of effective TCP/IP** throughput per sector in 40 MHz channel mode, while proprietary protocol enhancements assure effective and robust transmission ranges of up to 30 miles.
- Next day deployment enables rapid service activation and payback.
- Cost effective alternative to leased lines.
- Optimal cost / performance ratio: highly cost efficient solution.
- Dynamic Frequency Selection (DFS) complies with ETSI EN 301 893 and OFCOM regulations to allow co-existence with Radar systems.
- Robust **all metal enclosure** and outdoor architecture: ensures un-precedented reliability and years of operation.
- Superior **Atheros AR91xx** powered OFDM/MiMo radio – enables NLOS (near line of sight) operation in dense urban environments.
- Non-compromising security - over the air 128bit key AES encryption.
- Compatible with other vendors 802.11a/n compliant devices.

The **OSBRiDGE 5N**, a member of **OSBRiDGE MiMo** products family, is a high performance 5GHz outdoor wireless Access Point designed to provide secure and reliable point to multipoint operation for Carriers, Internet Service Providers, Business Enterprises and Government organisations.

The **OSBRiDGE 5N** is capable of supporting up to **300 Mbps over its 2Tx2Rx MiMo** air interface, equivalent to **160 Mbps Net TCP/IP Throughput**. The **OSBRiDGE 5N** leverages both robust outdoor technologies and Orthogonal Frequency Division Multiplexing (OFDM) modulation with **Atheros 2Tx2Rx XSPAN MiMo Technology** - with features such as Forward Error Correction coding, the product operates seamlessly and efficiently in challenging and high noise environments with stable throughput. The system also features advanced algorithms for automatic selection of modulation schemes and antenna chains to maximize data rate and improve spectral efficiency. These inherent advantages of the **OSBRiDGE 5N** enable service providers to offer an effective PtMP solutions to a significantly higher subscriber base, at very high effective speeds, in high interference areas, that would otherwise be inaccessible.

Each **OSBRiDGE 5N** system can handle many wireless subscribers per cell, whether they're spread out or live in densely populated neighborhoods. Combining **high frequency reuse**, **selectable channel width** with **advanced interference management** and **MiMo immunity techniques**, the **OSBRiDGE 5N** system conserves valuable spectrum by allowing the service provider to cover an extensive geographical area with a minimum number of channels. As bandwidth and subscriber needs increase, network operators can easily add channels or new sectors within the cell. Operators can also economically deploy additional cells to extend the service capacity and coverage footprint.

While operating with **OSBRiDGE CPE** devices family (**5NXi, 5Ni**) the **OSBRiDGE 5N** Access Point can be configured to utilize proprietary polling protocol that overrides shortages of the standard 802.11a/n modes. OSBRiDGE proprietary WPM (**Wireless Polling MAC**) is a **full featured TDMA/TDD protocol** implementation on top of Atheros® hardware, using **Packet Aggregation**, **Adaptive Polling Algorithm** and disabling of the **CSMA Backoff Mechanism**. WPM also provides link adaptation technology and improves bandwidth, robustness, and overall performance for each subscriber.

OSBRiDGE 5N based on **Atheros MiPS 24KC** processor clocked at **680MHz** easily outperforms other devices based on alternative chipsets. **Atheros MiPS 24KC** processor cores are scalable, high performance and cost effective processors, that allow efficient design of solutions addressing triple play services like voice video and data.

All **OSBRiDGE 5N** products are robust, IP65 rated, outdoor units, that are built to perform in difficult climatic environments and withstand even the harshest weather conditions. Built in 802.3af compliant **Power over Ethernet** system allows only one ethernet cable to be used for both data and power transmission for up to **305 feet**.

Datasheet
OSBRiDGE 5N

Interface

Ethernet Interface	100 base-T Ethernet (RJ-45) with 802.3af PoE
Wired LAN Protocol	IEEE 802.3 (CSMA/CD)
Wireless Interface	OFDM, TDD
Wireless LAN Protocol	IEEE 802.11a/n, 802.11a/n Turbo, WPM (Wireless Polling MAC)

Radio

Supported Frequencies	Europe (ETSI):	5500 - 5700 MHz (11 channels) with DFS (Dynamic Frequency Selection)						
(User Configurable)	USA (FCC):	5745 - 5825 MHz (5 channels)						
	UK (OFCOM FWA):	5735 - 5835 MHz (4 channels) with DFS (Dynamic Frequency Selection)						
	Africa&Asia (OTHER):	4920 - 6100 MHz (236 channels, 5MHz step)						
Modulation Technique	BPSK, QPSK, 16QAM, 64QAM, HT20, HT40							
Channel Width	User Selectable – 40, 20, 18, 16, 14, 12, 10 or 5 MHz							
Output Power (at the N connectors)								
ETSI:	≤ 23 dBm							
OFCOM:	≤ 23 dBm							
FCC, Africa:	≤ 23 dBm							
Bit Data Rate (40 MHz channel, 2 Streams, GI=1)	300 Mbps	270 Mbps	240 Mbps	180 Mbps	120 Mbps	90 Mbps	60 Mbps	30 Mbps
Receive Threshold (including built-in antenna)	-78 dBm	-80 dBm	-82 dBm	-86 dBm	-89 dBm	-92 dBm	-94 dBm	-97 dBm

System

Processor	Atheros MiPS 24Kc 680 MHz Processor Core
Memory	8MB FLASH, 32MB SDRAM
RF Module	Atheros AR91xx 2Tx2Rx MiMo

Software

Operational Modes	Access Point, Polling Base, Access Point Client, Point to Point Bridge, Polling Client
Security	Association Protocol – ESSID/BSSID, WEP 40/128, TKIP, AES
Features	Bridge, Router, VLAN Management, Firewall, QOS
Management	WEB Interface, SNMPv2

Physical

Dimensions	250 mm X 210 mm X 90 mm
Operating / Storage Temperature	-40°C - +70°C / -40°C - +85°C
Enclosure	IP65 Rated, Aluminium UV Protected, Outdoor Mountable, Weather Protected
Power	48V / 0.4A DC, 802.3af Power over Ethernet
LEDs	2 – Power, Ethernet LAN Activity
Mounting	Adjustable Pole Mounting

Dedicated Antennas

SD5-14	Sector Antenna, Dual Polarization (V/H), 14dBi, 90°/6° H/V

Operational Distance

Bit Data Rate	300 Mbps	270 Mbps	240 Mbps	180 Mbps	120 Mbps	90 Mbps	60 Mbps	30 Mbps
OSBRiDGE 5N (distance in meters)	6300	7800	7400	8100	8600	9000	9600	10700

Regulatory Compliance

CE Mark, ETSI EN 301 893 Compliant, FCC Part 15 Compliant, RoHS Compliant

Warranty

One Year, Limited

1) Distance may vary depending on several factors including interference, obstacles and fresnel zone clearance.
2) Actual througput may vary depending on several factors including signal strength, interference, obstacles and fresnel zone clearance.

Contact Information:

OSBRiDGE

OSBRiDGE Sp. z o.o.
ul. Jana Pawła II 6C • 89-604 Chojnice • Poland
tel. +48-52-3962500 • fax. +48-52-3962501 • sales e-mail: sales@osbridge.com • technical enquiries: support@osbridge.com • http://www.osbridge.com