



OSBRIDGE 5G

High Performance Outdoor Wireless Access Point



PRODUCT HIGHLIGHTS AND ADVANTAGES

- Licence Exempt ETSI and FCC 5GHz Frequency – eliminates regulatory delays.
- 11 (ETSI), 4 (United Kingdom), 5 (USA) and 236 (Unregulated Countries) non-overlapping channels allows many units to be deployed in the same area.
- User Selectable channel width – 5 MHz, 10 MHz, 20 MHz or 40 MHz for scalable deployment and interference resiliency.
- Next day deployment enables rapid service activation and payback.
- Up to 70 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.
- 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 outdoor architecture: ensures unprecedented range and reliability, minimizes RF cable loss connecting to antenna thus providing outstanding performance and communication distance.
- Superior Atheros XR™ AR5006XS powered OFDM 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 compliant devices.

The OSBRIDGE 5G, a member of OSBRIDGE 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.



Each OSBRIDGE 5G 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 immunity techniques, the OSBRIDGE 5G 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 (5XLI, 5GXI) the OSBRIDGE 5G device can be configured to utilize proprietary polling protocol that overrides shortages of the standard 802.11a mode. OSBRIDGE proprietary WPM (Wireless Polling MAC) is a full featured TDMA/TDD protocol implementation on top of Atheros® AR5006XS 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 5G based on superior Intel XScale IXP425 processor clocked at 533MHz easily outperforms other devices based on alternative chipsets. Intel® IXP425 network processor is a highly integrated, versatile single-chip processor that is used in a variety of products that require network connectivity and high performance to run their unique software applications. Each processor combines a high-performance Intel XScale® core with additional Network Processor Engines (NPEs) to achieve unmatched packet processing performance.

All OSBRIDGE 5G 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.

The OSBRIDGE 5G is capable of supporting up to 108 Mbps over each of its two air interfaces, equivalent to 70 Mbps Net Throughput⁽²⁾. The OSBRIDGE 5G leverages both robust outdoor technologies and Orthogonal Frequency Division Multiplexing (OFDM) modulation in the same product - with features such as Forward Error Correction coding, used to combat multi-path and noisy environments, the product operates seamlessly and efficiently in challenging environments with stable throughput. The system also features advanced algorithms for automatic selection of modulation schemes to maximize the data rate and improve spectral efficiency using latest technology based on Atheros® AR5006XS Radio Modules. These inherent advantages of the OSBRIDGE 5G enable service providers to provide an effective PtMP solution to a significantly higher subscriber base that would otherwise be inaccessible.

Datasheet

OSBRIDGE 5G



Wired Interface

Ethernet Interface	100 base-T Ethernet (RJ-45) with PoE
Wired LAN Protocol	IEEE 802.3 (CSMA/CD)
Wireless Interface	Two N Female Connectors for external Antennas, 50 Ω
Wireless LAN Protocol	User Configurable - IEEE 802.11a or WPM (Wireless Polling MAC)

Radio - Two Wireless Interfaces

Supported Frequencies		Europe (ETSI): 5500 - 5700 MHz (11 channels) with DFS (Dynamic Frequency Selection)							
(Depending on User configurable Regulatory Domain)		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, 5 MHz step)							
Modulation Technique		BPSK, QPSK, 16QAM, 64QAM							
Channel Width		User Selectable – 802.11a: 20 MHz, 10 MHz, 5 MHz or 40 MHz (802.11a Turbo)							
Bit Error Rate (BER)		Better than 10^{-5}							
Output Power		OSBRIDGE 5G + 19 dBm				OSBRIDGE 5G-HP +25 dBm			
Bit Data Rate (Mbps)	20 MHz Channel	54	48	36	24	18	12	9	6
	10 MHz Channel	27	24	18	12	9	6	4.5	3
	5 MHz Channel	13.5	12	9	6	4.5	3	2.25	1.5
Receive Threshold (dBm)		-73	-76	-81	-84	-88	-89	-90	-92

System

Processor	Intel XScale IXP425 533MHz Network Processor
Memory	64MB RAM, 4MB Flash
RF Modules	Two Independent Atheros AR5006X Radio Interfaces

Software

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

Physical

Dimensions	280 mm X 180 mm X 60 mm
Operating / Storage Temperature	-40°C - +70°C / -40°C - +85°C
Enclosure	Aluminium, IP65 Rated, UV Protected, Outdoor Mountable, Weather Protected
Power Adapter	48V/0.4A DC, 802.3af Active Ethernet (Power over Ethernet injector included)
LEDs	2 – Power, Ethernet LAN
Mounting	Flexible Pole Mounting

Dedicated Antennas

S5-14	Sector Antenna, Vertical Polarization, 14dBi, 90°/6° H/V
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Operational Distance

Bit Data Rate	54 Mbps	48 Mbps	36 Mbps	24 Mbps	18 Mbps	12 Mbps	9 Mbps	6 Mbps
OSBRIDGE 5G (distance in meters)	5100	5700	6500	7100	7600	8500	9600	11500
OSBRIDGE 5G-HP (distance in meters)	10200	11400	13000	14200	15200	17000	19200	23000

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 throughput may vary depending on several factors including signal strength, interference, obstacles and fresnel zone clearance.