

OSBRIDGE 5Si-MX

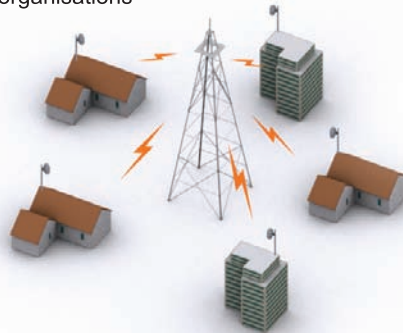
High Power Outdoor Wireless Access Point / Bridge



PRODUCT HIGHLIGHTS AND ADVANTAGES

- Licence Exempt ETSI and FCC 5GHz Frequency – eliminates regulatory delays.
- High Power radio - up to **40 dBm** EIRP Output Power for long range LOS and NLOS operation.
- 11 (ETSI), 4 (United Kingdom), 5 (USA), 236 (Unregulated Countries) non-overlapping channels allows many units to be deployed in the same area.
- User selectable channel width – **5, 10, 20** or **40 MHz** for **scalable deployment and interference resiliency**.
- **±40kV TruEthernet ESD LAN Port Protection**.
- Over **40 Mbps TCP/IP** speed and over **8000 packets per second**.
- Next day deployment enables rapid service activation and payback.
- Cost effective alternative to leased lines.
- Outstanding software features: **Polling TDMA protocol**, Bridging, Routing, NAT Routing, Access Point, CPE and PtP Bridge modes, SNMP, web management, **Advanced QOS**, DHCP client/server, firewall, **VLAN Tagging, Filtering and Management**, PPPoE client and high grade encryption.
- Backward compatible with other vendors 802.11a compliant devices.
- Built in Dual Polarized antenna allowing user selectable V or H polarization, or Single Polarized antenna for extra **Long Range** operations.
- RP-SMA Connector for external High Gain Antenna.
- 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 powered OFDM radio – enables NLOS (near line of sight) operation in dense urban environments.
- Non-compromising security - over the air 128 bit key AES encryption.
- Compact integrated solution – easy to install

The **OSBRIDGE 5Si-MX**, a member of OSBRIDGE 5G products family, is a **high performance 5 GHz outdoor wireless bridge** designed to provide secure and reliable point to multipoint operation for Carriers, Internet Service Providers, Business Enterprises and Government organisations



The **OSBRIDGE 5Si-MX** is capable of operating as wireless router or multi-mac bridge to OSBRIDGE 5G and other standard 802.11a Access Points, supporting over **40 Mbps Net TCP/IP Throughput** over its air interface. The OSBRIDGE 5Si-MX 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® Radio Technology. These inherent advantages of the **OSBRIDGE 5Si-MX** enable service providers to provide an effective PtMP solution to a significantly higher subscriber base that would otherwise be inaccessible.

Using Features such as **Packet Aggregation** two **OSBRIDGE 5Si-MX** devices operating as PtP bridges can handle over **8000 packets per second**. Combining high frequency reuse, selectable channel width with advanced **interference management and immunity techniques**, the **OSBRIDGE 5Si-MX** bridges conserve valuable spectrum by allowing service provider to cover an extensive geographical area with a minimum number of channels.

While operating with **OSBRIDGE 5G** base station the **OSBRIDGE 5Si-MX** CPE 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® hardware**, using **Packet Aggregation, Adaptive Polling Algorithm** and disabling of the **CSMA Backoff Mechanism**. **WPM** provides link adaptation technology and improves bandwidth, robustness, and overall performance for each subscriber

Software features such as **bridging, routing, NAT routing, Access Point, Access Point Client and PtP Bridge modes, SNMP, WEB management, advanced QOS, DHCP client/server, firewall, PPPoE client, high grade encryption, VLAN Tagging and Management, port forwarding, remote syslog** and built in troubleshooting utilities make the **OSBRIDGE 5Si-MX** one of the most flexible and cost effective broadband wireless CPE platform available today.

All **OSBRIDGE 5Si-MX** products are robust outdoor units, that are built to perform in difficult climatic environments and withstand even the harshest weather conditions. Built in passive Power over Ethernet system allows only one ethernet cable to be used for both data and power transmission for up to 100 feet (30 meters).

Datasheet

OSBRIDGE 5Si-MX



Interface

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

Radio

Supported Frequencies (User Configurable)	Europe (ETSI):	5500-5700 MHz (11 channels) with DFS (Dynamic Frequency Selection)						
	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 or 5 MHz, 802.11a Turbo: 40 MHz							
Output Power (User Selectable)	OSBRIDGE 5Si-MX				OSBRIDGE 5Si-MX-V/H			
	Europe	FCC, Africa: ≤40 dBm EIRP	Europe: ≤30 dBm EIRP		FCC, Africa: ≤44 dBm EIRP	Europe: ≤30 dBm EIRP		
Bit Data Rate	54 Mbps	48 Mbps	36 Mbps	24 Mbps	18 Mbps	12 Mbps	9 Mbps	6 Mbps
Receive Threshold (including built-in 19dBi antenna)	-94 dBm	-97 dBm	-102 dBm	-105 dBm	-109 dBm	-110 dBm	-111 dBm	-113 dBm

System

Processor	Atheros AR2313, 180 MHz MIPS 4Kc Processor with Embedded Cache
Memory	4MB FLASH, 16MB RAM
RF Module	Atheros AR2313+AR5112

Software

Operational Modes	Access Point, Access Point Client, Infrastructure Client, PtP Bridge, Polling Client, WDS Client
Security	Association Protocol – ESSID/BSSID, WEP 40/128, WPA, WPA2, AES
Features	Bridge, Router, NAT Router, VLAN Filtering/Tagging, PPPoE, Port Forwarding, Firewall, QOS, Spectrum Analyzer
Management	WEB Interface, SNMPv2

Physical

Dimensions	187 mm X 190 mm X 70 mm
Operating Temperature	-40°C - +85°C
Enclosure	Weather and UV Protected, Outdoor Mountable
Power Adapter	15V/1.2A DC, Passive Ethernet (Power over Ethernet injector included, pairs 4,5+; 7,8 return)
LEDs	Power, Ethernet LAN Activity, Wireless Activity, Wireless Link Quality (3 levels)
Mounting	Outdoor Pole Mounting

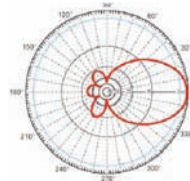
Antenna

OSBRIDGE 5Si-MX

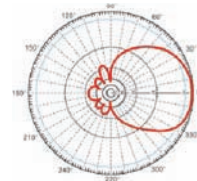
Built-in 15 dBi Dual Polarized Antenna

(User selectable V/H Polarization)

RP-SMA connector for External Antenna



V/H Polarization



H/V Polarization

OSBRIDGE 5Si-MX-V (Vertical)

OSBRIDGE 5Si-MX-H (Horizontal)

Built-in 19.5 dBi Single Polarized Antenna

RP-SMA connector for External Antenna

Operational Distance

Bit Data Rate	54 Mbps	48 Mbps	36 Mbps	24 Mbps	18 Mbps	12 Mbps	9 Mbps	6 Mbps
Distance (using built in 19 dBi antenna)	8700 m.	9600 m.	10500 m.	11800 m.	12900 m.	14200 m.	16100 m.	18900 m.

Regulatory Compliance

CE mark, ETSI EN 301 893 Compliant, FCC Part 15 Compliant

Warranty

12 Months, Limited

Contact Information:

OSBRIDGE