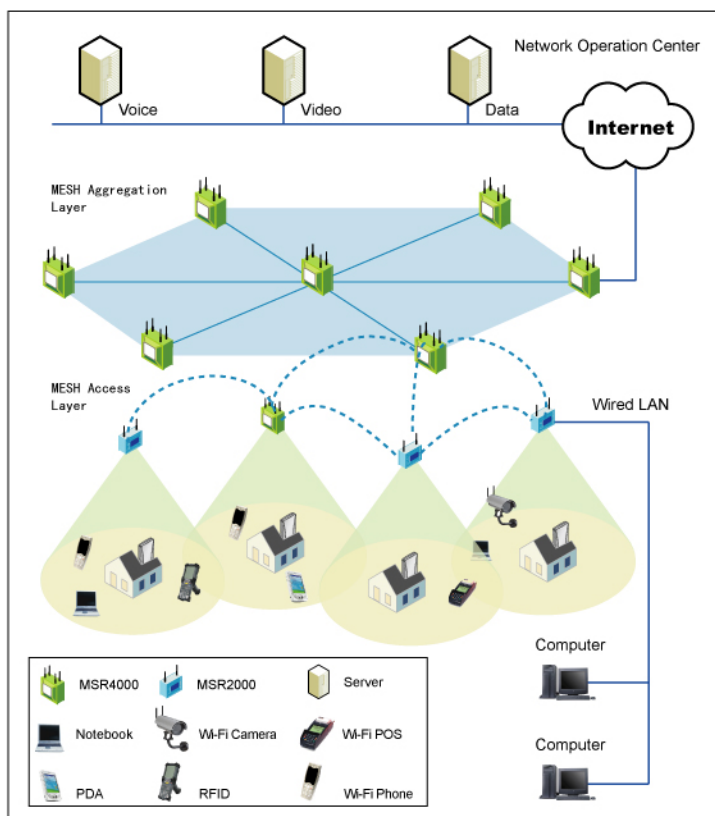# Azalea Networks™ MSR4000 Wireless Mesh Router

Azalea MSR4000 is the world-leading outdoor mesh router. It brings unprecedented bandwidth and scalability that enable large-scale metro mesh networking, and excellent flexibility and extensibility even suitable for medium mesh networks.

Azalea MSR4000 is built on top of many Azalea patented technologies, including AWR wireless routing, Motrix cruss-net roaming, intelligent radio-frequency management (RFM), and fine-grained quality of service (QoS). It significantly advances the state of the art and realizes broadband wireless anywhere anytime.

Highlights of Azalea MSR4000:

- Up to four radios that scale the bandwidth to multiple hops
- Extended outdoor wireless coverage that enables seamless mobile Wi-Fi access
- Multiple sectors that lift the system capacity
- Redundant virtual inter-router connections that improves network reliability and robustness
- Advanced AWR routing protocol that achieves fast, optimal route selection under high network dynamics
- Fully automated neighbor discovery, topology formulation, router configuration, and failure recovery. Significant savings on network maintenance and service.
- World-leading high-speed cross-network roaming that preserves all open network connections
- Fully 802.11e compatible, over the air QoS support for voice and video transport
- Fully 802.11i compatible security, including WEP, WPA/WPA2 and 802.1x
- User-friendly network management
- Automated on-site software upgrades, and many more ...

Example of wireless mesh network with Azalea MSR4000:

Wireless Broadband
Anywhere Anytime

MSR4000 Technical Specifications

Network

- AWR Mesh Routing
- NAT Support
- DHCP Server and Relay
- 802.11a/b/g compatibility
- Multiple BSSID
- Motrix Cross IP subset roaming
- VLAN

Wireless

- IEEE 802.11a/b/g
- High capacity, up to 4 radios
- Frequency band: 2400-2483.5 MHz
             5150-5850 MHz
- TX Power: 100mW (20dBm), 400mW (26dBm)
- Rx Sensitivity:
            -90dBm@6Mbps, -88dBm@12Mbps,
            -83dBm@24Mbps, -80dBm@36Mbps,
            -75dBm@48Mbps, -73dBm@54Mbps
- Media Access Protocol: CSMA/CA with ACK
- Modulation: DSSS, CCK, OFDM
- Multiple country support

Security

- Secure routing
- MAC address filtering
- BSSID suppression
- 128/64 bit WEP
- WPA/WPA-2
- 802.1x
- VPN compatibility

Management

- SNMP v2c/v3
- HTTP based router management system
- Router monitoring and statistics
- Simple mesh-wide image upgrade

Protection Circuits

- Antenna Protection: < 0.5uJ for 6kV/3kA
- Electrical Protection:
  -ANSI/IEEE C62.41, UL 1449-2 ed., 10kA
       @ 8/20 uS Waveform, 36kA per phase
  - EN61000-4-5 Level 4 AC Surge Immunity
  - EN61000-4-4 Level 4 EMC Field Immunity

Hardware Specifications

- Auto sensing 10/100 BaseT Ethernet
- Power input: 110/240 VAC 50/60Hz
- AC power consumption: 10W typical
- Dimension: 325mmX290mmX135mm
   (w/o mounting brackets or antennas)
- Wight: 7kg max, w/o mounting bracket
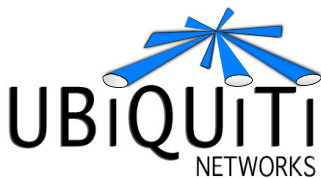
Environmental Specifications

- Operating temperature range: -40°C to 55°C
- Storage temperature range: -40°C to 80°C
- Humidity(non-condensing): 10% to 90%
- Weather rating: IP66 weather tight
- Wind survivability: no less than 165 mph
- Shock & Vibration: ETSI 300-19-2-4 spec T41.E class 4M3
- Transportation: ISTA 2A

Package Contents

- Azalea MSR4000 Mesh Router
- Mounting bracket and Solar Shield
- Hardware Installation Flyer
- Quick Start Guide
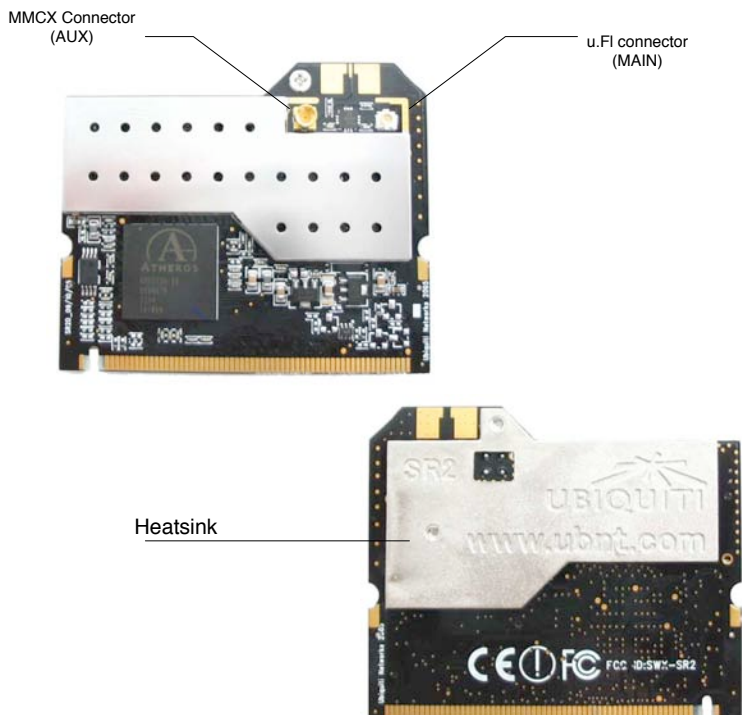- Configuration Guide (CD)

Antennas

- Extended antenna with N male connector
- Impedance 50 ohms

Azalea Networks Co., Ltd

673 S. Milpitas Blvd,   Tel: 408-7198180
Suite105, Milpitas   www.azaleanet.com
CA 95035 USA   sales@azaleanet.com

Room 1002, Peng Huan Guo Ji Plaza, No.1 Shangdi East
Road, Haidian District, Beijing, China   Post：100085
Tel：8610-58851177-800   Fax: 8610-58858479
sales@azaleanet.com.cn   www.azaleanet.com.cn

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SUPER RANGE 2

Expand the Range of WiFi Networking

The Super Range 2 (SR2) 802.11b/g mini-PCI card with patent-pending Super Range radio technology has been designed from the ground up specifically for outdoor wireless. The SR2 solves the problem of increasing 802.11 based outdoor wireless system perfromance without the increased system complexity, legal questions, added spurious emissions, and degraded receiver performance that accompany use of external bi-directional amplifiers.

MMCX Connector (AUX)

u.Fl connector (MAIN)

Heatsink

FEATURES/PERFORMANCE

Chipset
Atheros AR5213 MAC/BB
Atheros AR2112 ROC

Transmit Power

Rate	Power
1-24 Mbps	26 dBm, +/- 1dB
36 Mbps	24 dBm, +/- 1dB
48 Mbps	22 dBm, +/- 1dB
54 Mbps	21 dBm, +/- 1dB

Current Consumption @3.3V

Transmit

1-24 Mbps	1300mA, +/-100mA
36 Mbps	800mA, +/-100mA
48 Mbps	700mA, +/-100mA
54 Mbps	600mA, +/-100mA
Receive	350mA, +/-50mA

Receive Senstivity

Rate	Level
1 Mbps	-97 dBm, +/- 2dB
2 Mbps	-96 dBm, +/- 2dB
5.5 Mbps	-95 dBm, +/- 2dB
6 Mbps	-94 dBm, +/- 2dB
9 Mbps	-93 dBm, +/- 2dB
11 Mbps	-92 dBm, +/- 2dB
12 Mbps	-91 dBm, +/- 2dB
18 Mbps	-90 dBm, +/- 2dB
24 Mbps	-86 dBm, +/- 2dB
36 Mbps	-83 dBm, +/- 2dB
48 Mbps	-77 dBm, +/- 2dB
54 Mbps	-74 dBm, +/- 2dB

Compliance
CE (SR2E, 200mW version)
FCC ID: SWX-SR2

Temperature Rating

Storage	-70 - +85 C
Operation	-40 - +60C

COMPATIBILITY INFORMATION

The SR2 card will work seamlessy with any system and software that currently supports Atheros AR5004 mini-PCI cards. Maximum output power will appear as default irrespective of what the driver reports. Compatibility with many platforms has been verified including: