DATASHEET

rocket™ ac

Powerful airMAX® ac BaseStation

Model: R5AC-Lite

airMAX ac Technology for up to 450+ Mbps Throughput

Superior Processing by airMAX Engine with Custom IC

Plug and Play Integration with RocketDish Antennas

UBIQUITI® NETWORKS

Overview

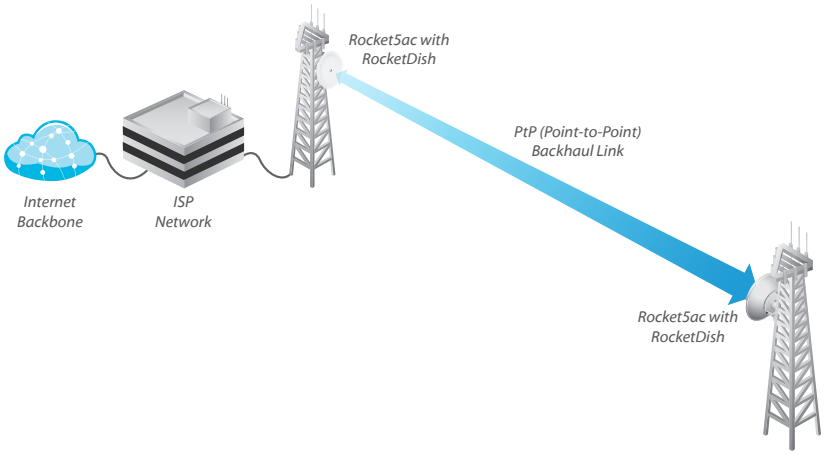
Ubiquiti Networks® has designed the first airMAX® ac radio with high quality, high performance, and ease of installation in mind.

The Rocket™5ac Lite is ideal for deployment in Point-to-Point (PtP) applications requiring maximum performance. Point-to-MultiPoint (PtMP) functionality will be added via a future firmware upgrade.

You have the freedom to locate, deploy, and operate the Rocket5ac Lite anywhere in the world. It allows for a high degree of flexibility in configuring channel bandwidths: 20, 40, 50, 60, and/or 80 MHz, depending on local country regulations.

The Rocket5ac Lite radio can be paired with a RocketDish™ antenna to create the endpoint of a high-performance, Point-to-Point (PtP) backhaul.

Point-to-Point (PtP) Bridging Example

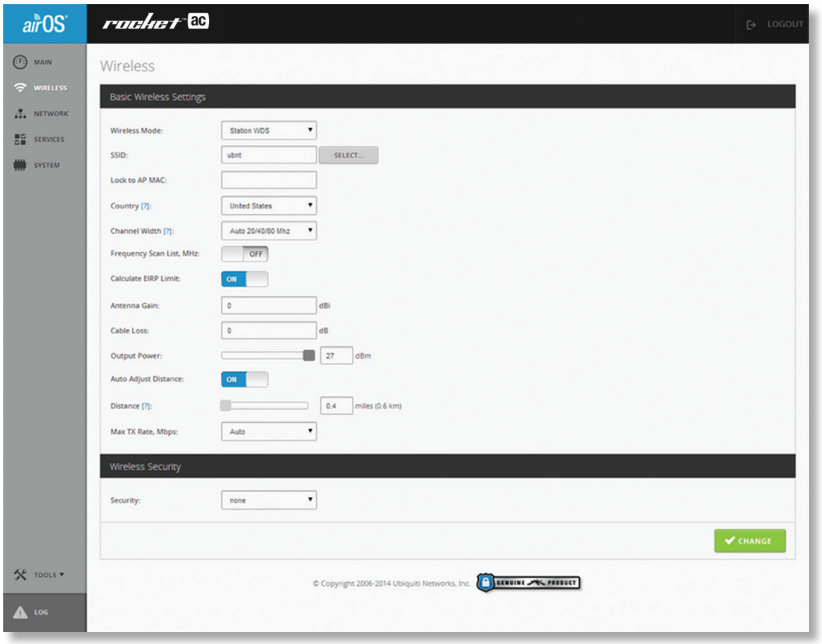


The Rocket R5AC-Lite radios paired with the RocketDish RD-5G31-AC antennas create a powerful PtP backhaul link.

Software

airOS®

Sporting an all-new design for improved usability, airOS® v7 is the revolutionary operating system for Ubiquiti airMAX ac products.



Powerful Wireless Features

- airMAX ac Protocol Support
- Long-Range Point-to-Point (PtP) Link Mode
- Selectable Channel Width: 20/40/50/60/80 MHz*
- Automatic Channel Selection
- Transmit Power Control: Automatic/Manual
- Automatic Distance Selection (ACK Timing)
- Strongest WPA2 Security

* Channel selection varies by product model.

Usability Enhancements

- Dynamic Configuration Changes
- Instant Input Validation
- HTML5 Technology
- Optimization for Mobile Devices
- Detailed Device Statistics
- Comprehensive Array of Diagnostic Tools, including Ethernet Cabling Test, RF Diagnostics, and airView® Spectrum Analyzer

airMAX Technology Included

Unlike standard Wi-Fi protocol, Ubiquiti's Time Division Multiple Access (TDMA) airMAX protocol allows each client to send and receive data using pre-designated time slots scheduled by an intelligent AP controller.

This time slot method eliminates hidden node collisions and maximizes airtime efficiency, so airMAX technology provides performance improvements in latency, noise immunity, scalability, and throughput compared to other outdoor systems in its class.

Intelligent QoS Priority assigned to voice/video for seamless streaming.

Scalability High capacity and scalability.

Long Distance Capable of high-speed, carrier-class links.

Superior Performance

The next-generation airMAX ac technology boosts the advantages of our proprietary TDMA protocol.

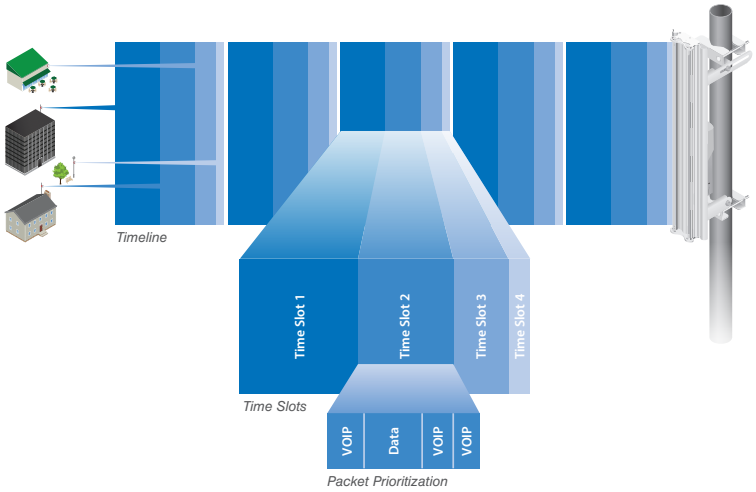
Ubiquiti's airMAX engine with custom IC dramatically improves TDMA latency and network scalability. The custom silicon provides hardware acceleration capabilities to the airMAX scheduler, to support the high data rates and dense modulation used in airMAX ac technology.

Throughput Breakthrough

airMAX ac supports high data rates, which require dense modulation: 256QAM – a significant increase from 64QAM, which is used in airMAX.

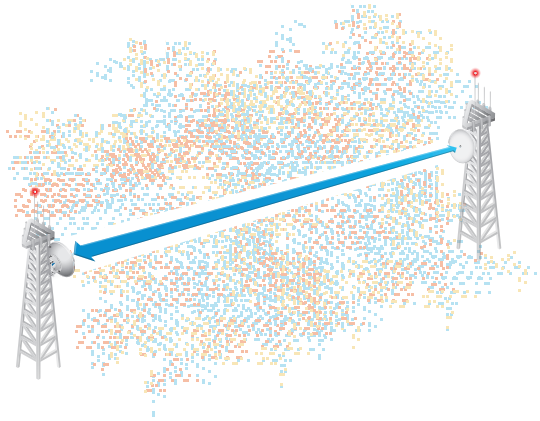
With their use of proprietary airMAX ac technology, airMAX ac products supports up to 450+ Mbps real TCP/IP throughput – up to triple the throughput of standard airMAX products.

airMAX TDMA Technology



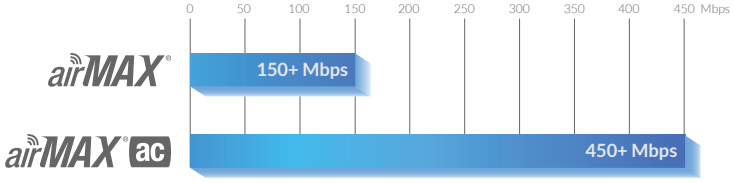
Up to 100 airMAX stations can be connected to an airMAX Sector; four airMAX stations are shown to illustrate the general concept.

Improved Latency and Noise Immunity



airMAX Network Scalability

Superior Throughput Performance



Specifications

R5AC-Lite Physical / Electrical / Environmental Information	
Dimensions	162 x 84 x 37 mm (6.38 x 3.31 x 1.46")
Weight	250 g (8.81 oz)
Enclosure Characteristics	Outdoor UV Stabilized Plastic
Processor	MIPS 74Kc
Memory	128 MB DDR2 SDRAM, 16 MB NOR FLASH
Networking Interface	(1) 10/100/1000 Mbps
RF Connections	(2) RP-SMA (Waterproof)
LEDs	Power, Ethernet, (4) Signal Strength
Max. Power Consumption	8.5W
Power Supply	24V, 0.5A Gigabit PoE Adapter
Power Method	Passive PoE (Pairs 4, 5+; 7, 8 Return)
ESD/EMP Protection	± 24KV Air / Contact
Operating Temperature	-40 to 80° C (-40 to 176° F)
Operating Humidity	5 to 95% Noncondensing
Shock and Vibration	ETSI300-019-1.4

R5AC-Lite Software Information	
Modes	Access Point, Station
Services	Web Server, SNMP, SSH Server, Telnet , Ping Watchdog, DHCP, NAT, Bridging, Routing
Utilities	Antenna Alignment Tool, Discovery Utility, Site Survey, Ping, Traceroute, Speed Test
Distance Adjustment	Dynamic Ack and Ackless Mode
Power Adjustment	Software Adjustable UI or CLI
Security	WPA2 AES Only
QoS	Supports Packet Level Classification WMM and User Customer Level: High/Medium/Low
Statistical Reporting	Up Time, Packet Errors, Data Rates, Wireless Distance, Ethernet Link Rate
Other	Remote Reset Support, Software Enabled/Disabled, VLAN Support, 256QAM, 20/40/50/60/80 MHz Channel Width Support
Ubiquiti Specific Features	50 MHz Channels, airMAX Mode, Traffic Shaping with Burst Support, Discovery Protocol, Frequency Band Offset, Ackless Mode

R5AC-Lite Compliance	
Wireless Approvals	FCC, IC, CE
RoHS Compliance	Yes

R5AC-Lite Operating Frequency	
Operating Frequency	Worldwide: 5150 - 5875 MHz USA: 5725 - 5850 MHz
Output Power	27 dBm

TX Power Specifications				RX Power Specifications			
Modulation	Data Rate	Avg. TX	Tolerance	Modulation	Data Rate	Sensitivity	Tolerance
airMAX ac	1x BPSK (½)	27 dBm	± 2 dB	airMAX ac	1x BPSK (½)	-96 dBm	± 2 dB
	2x QPSK (½)	27 dBm	± 2 dB		2x QPSK (½)	-95 dBm	± 2 dB
	2x QPSK (¾)	27 dBm	± 2 dB		2x QPSK (¾)	-92 dBm	± 2 dB
	4x 16QAM (½)	27 dBm	± 2 dB		4x 16QAM (½)	-90 dBm	± 2 dB
	4x 16QAM (¾)	27 dBm	± 2 dB		4x 16QAM (¾)	-86 dBm	± 2 dB
	6x 64QAM (⅔)	27 dBm	± 2 dB		6x 64QAM (⅔)	-83 dBm	± 2 dB
	6x 64QAM (¾)	26 dBm	± 2 dB		6x 64QAM (¾)	-77 dBm	± 2 dB
	6x 64QAM (⅚)	25 dBm	± 2 dB		6x 64QAM (⅚)	-74 dBm	± 2 dB
	8x 256QAM (¾)	23 dBm	± 2 dB		8x 256QAM (¾)	-69 dBm	± 2 dB
	8x 256QAM (⅚)	22 dBm	± 2 dB		8x 256QAM (⅚)	-65 dBm	± 2 dB

Plug and Play Integration

Rocket radios and airMAX antennas have been designed to seamlessly work together. Every RocketDish™ antenna has a built-in Rocket mount, so installation requires no special tools.

The Rocket5ac Lite is compatible with the following RocketDish antennas:

- RD-5G31-AC
- RD-5G30
- RD-5G34

Specifications are subject to change. Ubiquiti products are sold with a limited warranty described at: www.ubnt.com/support/warranty
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