

# MediaFlex Adapter

High Performance Multimedia Wi-Fi Receiver



The Ruckus MediaFlex adapter is the first Wi-Fi adapter with integrated smart-MIMO antenna technology developed to reliably receive IP-based multimedia content throughout the home.

One of the most sensitive Wi-Fi receivers on the market, the Ruckus MediaFlex adapter is ideal for providing reliable Wi-Fi connectivity to Ethernet-equipped media devices such as set-top boxes, personal video recorders, media centers and media center extenders. Specifically developed as a high performance receiver for the Ruckus MediaFlex router system, the Ruckus MediaFlex adapter 802.11b/g adapter provides unprecedented range and reliability, effectively eliminating Wi-Fi dead spots and hard-to-reach locations.

When used (but not required) with the Ruckus MediaFlex multimedia AP/router, the Ruckus MediaFlex adapter constantly tunes the signal path to enable the most stable and reliable Wi-Fi connectivity possible. This maximizes range and assures uninterrupted bandwidth for whole-home multimedia transmissions.

Service providers can deploy the Ruckus MediaFlex adapter in subscribers' homes to deliver broadcast quality, IP-based video applications, such as IPTV and IPVoD (Video on Demand), without truck rolls for wiring installations.

**Long-range and reliable Wi-Fi connectivity from every corner of the home.**

**Concurrent voice, video and data without wires**

## HIGHLIGHTS

### **Uninterrupted bandwidth essential for multimedia applications**

Supports reliable transmissions of audio and video streams, including high-definition (HD) video

### **Simple autoprovisioning**

Self-installing plug-and-play auto-configuration eliminates installation hassles, specifically designed to work with Ruckus MediaFlex routers

### **Increased Wi-Fi performance and range**

Smart antenna system with six antennas and 63 unique antenna patterns ensure optimum signal paths and maximum data rates to any corner of the home

### **Flexible deployment options**

Enables wireless distribution of video content anywhere, anytime in the home without wires, single MediaFlex adapter supports multiple client devices via switch or hub

### **Automatic interference avoidance**

Mitigates multipath fading and avoids RF interference by continuously selecting the best TX/RX signal path

### **Ensures the most consistent, reliable Wi-Fi link**

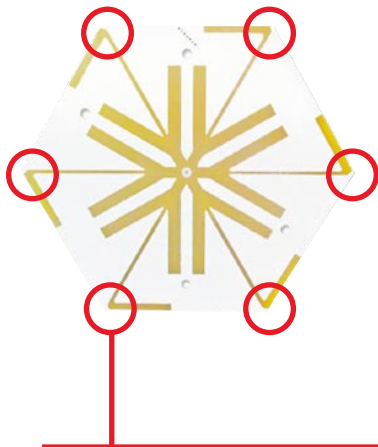
Optimizes signal quality and implements IEEE 802.11e Quality of Service (QoS) so multimedia applications experience no transmission degradation due to RF noise or bandwidth contention

### **Automatic firmware upgrades**

Auto upgrades via TFTP, FTP or HTTP simplify operations with no user intervention

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Six high-gain directional antenna elements controlled by an expert software system that determines the best antenna pair for any packet at any given time

RECEIVE SENSITIVITY	
<b>802.11b</b>	
1 Mbps	-99 dBm
2 Mbps	-96 dBm
5.5 Mbps	-94 dBm
11 Mbps	-92 dBm
<b>802.11g</b>	
6 Mbps	-96 dBm
9 Mbps	-94 dBm
12 Mbps	-93 dBm
18 Mbps	-91 dBm
24 Mbps	-88 dBm
36 Mbps	-84 dBm
48 Mbps	-79 dBm
54 Mbps	-78 dBm

## Introducing the Ruckus MediaFlex adapter

The Ruckus MediaFlex adapter is the first smart-MIMO wireless Ethernet adapter that provides video-grade, 802.11b/g connectivity to any Ethernet-equipped media appliance such as a video server, video receiver, cable set top box, personal video recorder, media center, or a media center extender. Unlike any other Wi-Fi adapter on the market, the Ruckus MediaFlex adapter automatically avoids Wi-Fi interference and mitigates multipath fading by selecting the best signal path to the wireless AP.

One the most sensitive Wi-Fi receivers available, the Ruckus MediaFlex adapter is ideal for use with the Ruckus MediaFlex router to ensure the most consistent and reliable signal quality. Together, they enable broadcast quality, wireless IPTV distribution despite the existence of physical obstructions. Simple to provision, the Ruckus MediaFlex adapter allows IP-capable set-top boxes to be located anywhere in the home without wiring concerns.

Both the Ruckus MediaFlex adapter and MediaFlex router integrate patent-pending BeamFlex smart antenna technology that constantly adapts to the changing RF environment and automatically adjusts the antenna pattern to steer signals to the optimum path. This provides the strongest protection against degrading RF conditions.

## BeamFlex Increases Range/Performance

BeamFlex is the first-of-its kind smart antenna technology that works with off-the-shelf 802.11 silicon to deliver the most cost-effective MIMO benefits to 802.11a/b/g devices today.

Each Ruckus MediaFlex adapter integrates Ruckus BeamFlex technology - a compact, internal antenna array with six high-gain, directional antenna elements capable of combining to form 63 unique antenna patterns for massive diversity. BeamFlex expert system control software continuously ranks the antenna patterns for each destination device using the feedback mechanism built into the 802.11 MAC layer protocol. Cognizant of the real time RF conditions, the direction and

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performance of the communicating devices, network capacity and application types, BeamFlex steers each packet to the optimum signal path, enabling a Wi-Fi device to sustain high transmission speeds while minimizing retransmissions.

Integrated with the 802.11 software driver, the BeamFlex control software provides automatic antenna reconfiguration, data rate and transmission management. It consumes minimal incremental processing cycles and memory footprint.

### Flexible Deployment Options

Deployed with the Ruckus MediaFlex router, the Ruckus MediaFlex adapter enables the highest possible performance and best quality user experience. The MediaFlex adapter can also be deployed without the MediaFlex router on the client-side to mitigate interference and maximize signal quality.

Multiple client devices can be supported by a single MediaFlex adapter. The Ruckus MediaFlex adapter can be attached to a switch or hub, providing reliable and simultaneous connectivity to multiple devices.

### Automatic Interference Avoidance

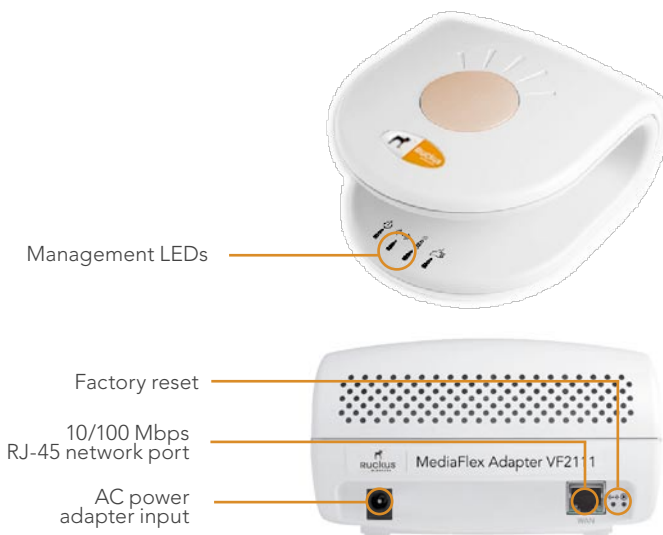
Unlike conventional wireless devices, BeamFlex in the Ruckus MediaFlex adapter automatically mitigates interference caused by multipath fading, neighbor networks and other wireless devices. A sophisticated interference avoidance algorithm enables the Ruckus MediaFlex adapter to detect the direction of interference from, for example, a neighboring network, a microwave oven or a nearby blue tooth device. In response, the Ruckus MediaFlex adapter is able to select antenna patterns that direct energy away from the direction of interference; thereby attenuating noise.

### Ruckus MediaFlex Adapter Features and Benefits

- Compatible with standard 802.11b/g access points with WDS-4 address format bridging enabled
- Six high gain directional antenna for unprecedented diversity
- 200 milliwatt super high output power amplifier for longer range
- Integrated directional beam forming technology (BeamFlex) that intelligently controls signal path selection and monitors link quality
- Automatic interference avoidance and mitigation of multipath fading ensures consistent link quality
- Plug and play configuration for instant service
- Extends 802.11b/g range and coverage by up to 300 percent
- Eliminates Wi-Fi dead spots and problem coverage areas
- Allows set top boxes/TV, media receivers to be placed anywhere in the home
- Active management LEDs for immediate diagnostics

## Specifications

Physical Characteristics	
Power	<ul style="list-style-type: none"> <li>Output: 12V DC, 1A</li> </ul> <i>External power adapter</i> <ul style="list-style-type: none"> <li>Input: 110-240V AC</li> </ul>
Physical size	<ul style="list-style-type: none"> <li>14.2cm (L), 12.2cm (W), 7.5cm (H)</li> </ul>
Weight	<ul style="list-style-type: none"> <li>220 grams</li> </ul>
Antenna	<ul style="list-style-type: none"> <li>Internal software-configurable with six directional, high-gain elements and 63 unique omni antenna patterns</li> </ul>
Ethernet ports	<ul style="list-style-type: none"> <li>1 port, auto MDX, auto-sensing 10/100 Mbps, RJ-45</li> </ul>
LED display	<ul style="list-style-type: none"> <li>Power/status, Ethernet status, Wi-Fi status, Wi-Fi network quality indicator</li> </ul>
Environmental conditions	<ul style="list-style-type: none"> <li>Operating temperature: 32°F (0°C) - 104°F (40°C)</li> <li>Operating humidity: 15% - 95% non-condensing</li> </ul>
RF power output	<ul style="list-style-type: none"> <li>23 dBm for 802.11b/g (200mW)</li> <li>Country-specific power is configurable</li> </ul>



## Product Ordering Information

Model	Description
2211 - (US, UE, UK)	1-port metro Wi-Fi gateway
2825 - (US, UE, UK)	5-port multimedia Wi-Fi router
2111 - (US, UE, UK)	1-port multimedia Wi-Fi adapter

### PLEASE NOTE:

When ordering you must specify the destination region by indicating -US -UE or -UK following the model number.

## Management

Configuration and statistics interface	<ul style="list-style-type: none"> <li>Web user interface</li> <li>CLI</li> </ul>
Statistics	<ul style="list-style-type: none"> <li>LAN, wireless and associated stations</li> <li>Accessible via Web UI</li> </ul>
Software update	<ul style="list-style-type: none"> <li>Manually via FTP or TFTP, or WebUI</li> <li>Automatically via FTP, TFTP or WebUI (preconfigured with address of Ruckus-hosted firmware server)</li> </ul>
Other utilities	<ul style="list-style-type: none"> <li>Configuration dump (admin only)</li> <li>Simple support info transfer to provider</li> </ul>
Wi-Fi	
Standards	<ul style="list-style-type: none"> <li>802.11b/g</li> </ul>
Supported data rates	<ul style="list-style-type: none"> <li>54,48,36,24,18,12,11,5.5,2,1 Mbps</li> </ul>
Channels	<ul style="list-style-type: none"> <li>US/Canada: 1-11</li> <li>Europe (ETSI X30): 1-13</li> <li>Japan X41: 1-13</li> </ul>
Routing	<ul style="list-style-type: none"> <li>Static routing</li> </ul>
NAT	<ul style="list-style-type: none"> <li>Supported</li> </ul>
DHCP	<ul style="list-style-type: none"> <li>Supported</li> </ul>
Bridge mode	<ul style="list-style-type: none"> <li>Supported</li> </ul>
Router mode	<ul style="list-style-type: none"> <li>Supported</li> </ul>
Auto channel selection	<ul style="list-style-type: none"> <li>Supported</li> </ul>
RF power output	<ul style="list-style-type: none"> <li>24 dBm for wireless-B</li> <li>23 dBm for wireless-G</li> <li>Country-specific power settings are configurable</li> </ul>
Transmit power control	<ul style="list-style-type: none"> <li>Supported</li> </ul>
Certifications	<ul style="list-style-type: none"> <li>FCC, IC-03, CE, VCCI, Telec, C-Tick</li> </ul>
Wireless security	<ul style="list-style-type: none"> <li>WEP, WPA – TKIP, WPA2 - AES</li> </ul>
Authentication	<ul style="list-style-type: none"> <li>802.1X (EAP-TTLS)</li> </ul>



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