

# ZoneFlex 2925

Purpose-Built, Triple Play-Ready 802.11g Hotspot Access Point



**The first carrier-class, multimedia 802.11g access point designed for hotspot operators**

The Ruckus ZoneFlex 2925 is the first carrier-class 802.11g access point designed for the fast changing hotspot market. It delivers a collection of features and functionality not available in any low-end consumer product or high end enterprise system.

The ZoneFlex 2925 is based on patent-pending Smart Wi-Fi technology that automatically adapts Wi-Fi signals to the changing environment. It is the ideal solution for operators who want to begin delivering the next step in hotspots services - such as voice over Wi-Fi, IP-based video, secure enterprise access and tiered Wi-Fi services.

The ZoneFlex 2925 uniquely integrates a specialized BeamFlex high-gain smart antenna optimized for delay-sensitive traffic such as voice and video. Triple Play-ready, the ZoneFlex 2925 dramatically extends Wi-Fi coverage thereby requiring fewer APs.

The ZoneFlex 2925 also delivers unsurpassed density - supporting up to 20 concurrent voice calls, a dozen or more IP video streams (depending on end device and compression) and 50 data clients. Unique broadcast, QoS, security and management policies can be assigned to multiple SSIDs supported by the ZoneFlex 2925.

Integrated spectrum monitoring can be performed remotely to gain visibility into each hotspot for easier troubleshooting. And adaptive controls such as continuous channel selection and beam steering provide maximum resilience to the changing RF environment thereby ensuring highly satisfied end users.

## BENEFITS

### **Enables new sources of revenue**

With its multimedia support new Wi-Fi services such as voice, extending enterprise access, IP video and tiered service classes are now possible

### **Breakthrough range, density and capacity**

Advanced antenna array and optimized traffic engineering software delivers 20 Mbps of sustained video support, 20 concurrent VoFi calls or 50 simultaneous data clients

### **Extended coverage means fewer APs**

Directional, high-gain antennas give hotspot operators two to four times the coverage over typical APs

### **Optimized for voice over Wi-Fi**

Specialized antenna hardware and signal path selection software designed for delay-sensitive, high-density Vo-Fi

### **Triple Play ready**

Combines automatic interference avoidance, dynamic signal path selection and enhanced traffic engineering technology to uniquely support IP-based video streaming

### **Completely secure**

Supports the latest link layer encryption, 802.1x authentication, security policies that can be applied per BSSID as well as DoS attack prevention

### **Flexible deployment options**

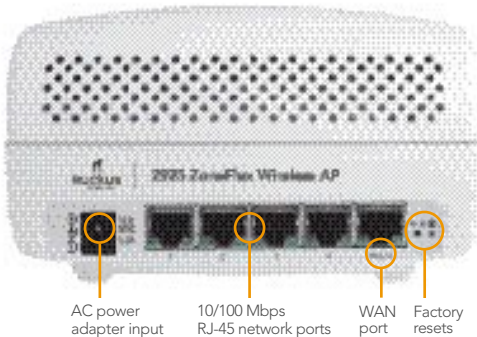
Smart antenna array eliminates placement issues, multiple BSSIDs provide segregation of different services and continuous channel selection ensures optimum operation

### **Enhanced troubleshooting**

Remote spectrum monitoring provides detailed information about channels, frequencies, devices and interference

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Purpose-Built, Triple Play-Ready 802.11g Hotspot AP



## FEATURES

- Integrated smart antenna array designed specifically for hotspots and optimized to deliver up to 20 Vo-Fi calls
- Five 10/100 Mbps Ethernet ports, front diagnostic LEDs
- Automatic interference avoidance for high signal reliability
- Two to four-times extended range/coverage
- 20 Mbps sustainable throughput
- Support for a dozen or more simultaneous IP-based video streams
- HTTPS, SSH and SNMP management
- Remote spectrum monitoring
- DoS attack protection
- Up to four BSSIDs with discrete policy, security, QoS and management parameters
- WEP, WPA-PSK link layer encryption
- 802.1x authentication support
- Wall or ceiling mounting including lock option

## Introducing the Ruckus ZoneFlex 2925

The Ruckus ZoneFlex 2925 was developed to meet the increasing demands of hotspot operators that must now deal with a new mix of end users, a plethora of Wi-Fi-enabled devices and multimedia applications all within a high density, dynamic environment.

Today, broadband operators choose between low-end, consumer-grade products – that don't have the robust features, performance and capabilities needed to support the next stage of hotspot services – and high-end enterprise Wi-Fi systems that are too expensive, cumbersome and overkill for most environments. The ZoneFlex 2925 fills this essential gap adding innovative new capabilities uniquely suited to support the next generation hotspot.

## Triple play ready enables new sources of revenue

The Ruckus ZoneFlex 2925 enables operators to now reliably deliver voice, video and data traffic and to isolate this traffic within separate virtual networks that can be completely controlled. This lets operators more easily charge for premium services, voice or FMC services, IPTV or video services and other emerging multimedia services.

## Multiple service support within a single system

Support for up to four unique BSSIDs lets operators uniquely segment traffic and services. Each BSSID can be assigned unique security, broadcast, QoS and management parameters. Within a single system, operators now have the flexibility to, for instance, offer open access, secure premium access, voice support, and video services.

## High density voice, video and data

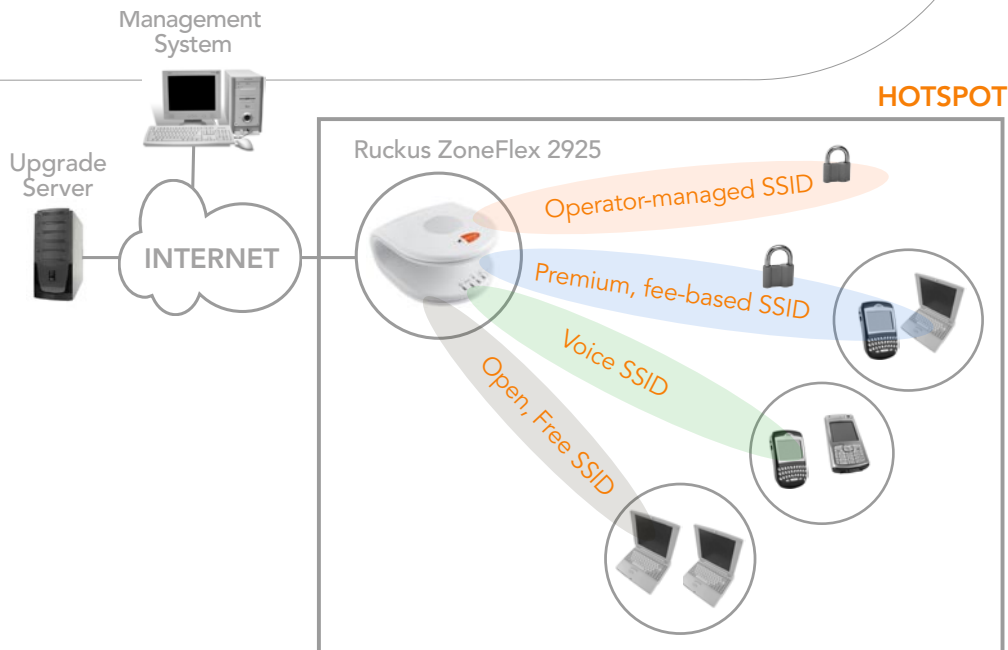
The ZoneFlex 2925 delivers 20 Mbps of sustained throughput that can be used to support up to 20 concurrent voice over Wi-Fi calls, dozens of IP video streams and 50 data clients. A high-gain antenna system also provides two to four-times the extend range or coverage over a typical 802.11g thereby lowering the number of APs needed to be deployed.

## Automatically adapts to changing RF environment

The ZoneFlex 2925 provides maximum resilience to changes in the RF environment through a patent-pending smart antenna array that automatically steers Wi-Fi signals around interference. The use of an adaptive antenna system also makes deployment options more flexible by eliminating the need to place the AP in a particular location. In addition, continuous channel selection delivers the most optimal user performance ensuring the best channel is used.

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## The BeamFlex difference

Most off-the-shelf Wi-Fi products are equipped with one or two antennas, offering little resilience or diversity in the event of a debilitated signal path. The Ruckus ZoneFlex 2925 is equipped with a special BeamFlex, a patent-pending MIMO-G smart antenna system that has been optimized for high density Wi-Fi environments. BeamFlex enables client devices to communicate over longer distances at higher speeds than consumer-grade 802.11 products - delivering unprecedented reliability and diversity.

Each Ruckus ZoneFlex 2925 integrates BeamFlex, a compact, internal antenna array with six high-gain, directional antenna elements capable of forming 64 unique antenna patterns for improved diversity. Expert system control software continuously ranks the antenna patterns for each receiving device, using the inherent feedback mechanism built into the 802.11 MAC layer protocol.

## Ease of deployment, management and security

The Ruckus ZoneFlex 2925 is simple to manage through HTTP/S, SSH or a CLI and supports the industry standard SNMP protocol for easy integration with third-party management systems. Auto firmware updates obviate the need for any manual upgrading by the user or IT staff. Users are assured the highest level of security through support of the most advanced authentication and link layer security options such as 802.1x and WPA pre-shared keys (PSK).

Remote spectrum monitoring gives operators a detailed view over time of the RF environment giving them the power to detect unauthorized or foreign APs, see what devices are consuming what frequencies and channels, determining sources of co-channel interference and gather per channel error rates.



A special smart antenna array ideally suited for high-density hotspot environments delivers up to 20 dB of interference rejection, 64 unique omni and directional antenna patterns and 5 dBi peak gain. An advanced expert control system optimizes signal path selection, throughput and coverage.

## Specifications

### Physical Characteristics

Power	<ul style="list-style-type: none"> <li>External power adapter</li> <li>Input: 110-240V AC</li> <li>Output: 12V DC, 1A</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>200 grams</li> </ul>
Antenna	<ul style="list-style-type: none"> <li>Internal software-configurable antenna array with directional and omni high-gain elements that provide up to 64 unique antenna patterns</li> </ul>
Ethernet ports	<ul style="list-style-type: none"> <li>5 ports, auto MDX, auto-sensing 10/100 Mbps, RJ-45</li> </ul>
LED display	<ul style="list-style-type: none"> <li>Power/status, Ethernet status, wireless status, wireless 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>

### Performance and Supported Configurations

Concurrent stations	<ul style="list-style-type: none"> <li>Up to 50 (for Open, WEB or WPA-AES)</li> <li>Up to 22 (for WPA-TKIP)</li> </ul>
Target UDP throughput	<ul style="list-style-type: none"> <li>15-20 Mbps sustainable throughout a 5000 square foot (460m<sup>2</sup>) public area</li> </ul>
Simultaneous Vo-Fi clients	<ul style="list-style-type: none"> <li>up to 20</li> </ul>

### Traffic Management and Quality of Service

Classes of service	<ul style="list-style-type: none"> <li>Voice, video, best effort and background</li> </ul>
Hardware queues	<ul style="list-style-type: none"> <li>4</li> </ul>
Software queues	<ul style="list-style-type: none"> <li>4 per station</li> </ul>
Automatic traffic classification	<ul style="list-style-type: none"> <li>Automatic type of service tagging for multicast video packets</li> </ul>
Heuristic classification	<ul style="list-style-type: none"> <li>Available</li> </ul>
VLAN support	<ul style="list-style-type: none"> <li>802.1Q</li> </ul>

### Multicast Video (IPTV)

IGMP snooping	<ul style="list-style-type: none"> <li>Up to 32 multicast groups</li> <li>Up to 48 receiving stations</li> </ul>
Multicast optimization	<ul style="list-style-type: none"> <li>Directs multicast IPTV packets to each receiving station within the designated multicast group using the optimum data rate and antenna selection</li> <li>Auto classification into video queues</li> <li>Ensures reliable transmission of multicast video packets</li> </ul>

## Product Ordering Information

Model	Description
ZF2925 (US,EU, UK)	5-port hotspot multimedia AP

### PLEASE NOTE:

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

### Management

Configuration	<ul style="list-style-type: none"> <li>Web user interface, CLI (Telnet), HTTP/S SSH, SNMP statistics interface</li> </ul>
Login	<ul style="list-style-type: none"> <li>Admin</li> </ul>
Auto configuration	<ul style="list-style-type: none"> <li>Supported</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>FTP or TFTP, remote auto available</li> <li>Accessible via Web UI</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>
Auto channel selection	<ul style="list-style-type: none"> <li>Supported</li> </ul>
RF power output	<ul style="list-style-type: none"> <li>23 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 (U.S.), CE (EU), OFTA (Hong Kong)</li> </ul>
BSSID	<ul style="list-style-type: none"> <li>Up to four</li> </ul>

### Security

Link layer encryption	<ul style="list-style-type: none"> <li>WEP, WPA-PSK TKIP, WPA2 - AES</li> </ul>
Authentication	<ul style="list-style-type: none"> <li>802.1x</li> </ul>



Ruckus Wireless, Inc.  
880 W. Maude Avenue, Suite 101  
Sunnyvale, CA 94085 USA  
TEL +1 650-265-4200 FAX +1 408-738-2065