

# ZoneDirector™ 5000

Scalable Enterprise Class Smart WLAN Controller



## The Most Affordable and Scalable Wireless LAN controller in its class

The Ruckus Wireless ZoneDirector™ 5000 (ZD5000) is the first WLAN controller to uniquely combine power, simplicity and scalability into an affordable system.

Supporting up to 20,000 clients and 2048 WLANs per device, the ZD5000 manages up to 1000 ZoneFlex Smart Wi-Fi access points from a single location.

Unlike conventional wireless LAN systems that are costly, complex and cumbersome to deploy, the ZD5000 is designed for simplicity and ease of use. It's ideal for any large-scale enterprise requiring a high-performance wireless LAN that can be easily deployed and managed.

The ZD5000 integrates the Ruckus Smart/OS application engine that delivers advanced features such as smart wireless meshing, high availability, hot spot authentication, elegant guest networking and dynamic Wi-Fi security.

Deployed and operated by non-wireless experts and installed quickly and easily, with the ZD5000, any organization with limited IT staff and budget can create a robust and secure multimedia WLAN in a matter of minutes.

The ZD5000 easily integrates with network, security and authentication infrastructure already in place and is easily configured through a point-and-click web wizard. Ruckus ZoneFlex APs automatically discover and are configured by the ZoneDirector.

Redundant and secure, the ZD5000 provides WLAN-wide network, security, RF and location management within a single, easy-to-use and affordable WLAN system.

## BENEFITS

### Highly scalability

Supporting up to 1,000 APs and 20,000 clients per device, the ZoneDirector 5000 easily serves the largest campus deployments

### IT lite deployment in 5 minutes, simple to use and manage

Web-based configuration wizard configures an entire WLAN in minutes. ZoneFlex APs auto-discover the ZoneDirector. Centralized management and automatic, real-time optimization of entire WLAN

### Advanced WLAN features and functions

Advanced wireless networking features include rogue AP detection, interference detection, band steering, airtime fairness, role-based user policies, rate-limiting, hotspot and guest networking services

### Smart Meshing streamlines costly and complex deployment

Integrated Ruckus Smart Mesh Networking technology automates deployment, eliminates the need to run Ethernet cable to every Smart Wi-Fi access point. Adaptable architecture with Hybrid Mesh extends the wireless network through Ethernet-connected APs, increasing system performance through better spatial reuse

### Automatic user security

Dynamic PSK eliminates the requirement to configure and update individual PC client devices with unique encryption keys. Dynamic VLAN assignment seamlessly extends existing security policies to the WLAN

### Easy monitoring and troubleshooting

Customizable dashboard provides comprehensive at-a-glance network snapshot and allows drill down to troubleshoot wireless problems

### Distributed forwarding architecture

Maximizes data throughput by sending all data traffic directly from the access points to the wired network

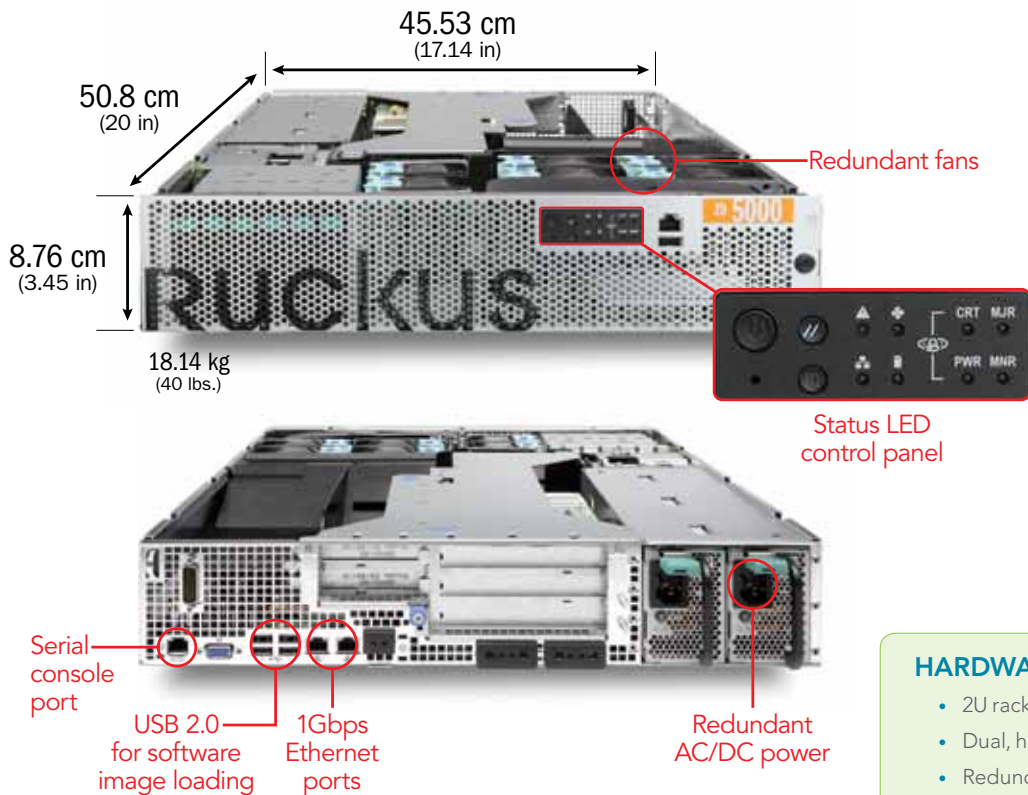
### Flexible deployment options

The ZoneDirector interacts with existing network and security infrastructure and provides dynamic RF management across APs to eliminate AP placement issues

### Complete integration

Combines network management, dynamic RF management, location management and AP control within a low-cost solution





The ZD 5000 has multiple I/O port configuration options, is field upgradable and can be deployed anywhere within a Layer 2/3 network. All ZoneFlex APs are dynamically discovered and automatically provisioned by the ZoneDirector.

### Simple to Deploy

The Ruckus ZD5000 integrates seamlessly with existing switches, firewalls, authentication servers and other network infrastructure. The ZoneDirector can be placed within any Layer 2/3 network. All Ruckus ZoneFlex APs (wired or meshed) then automatically discover the Ruckus ZoneDirector, self configure and become instantly manageable. Ruckus Smart Redundancy ensures high network availability and is easy to use with automatic synchronization of configuration and authorized users between ZoneDirectors.

### Simple to Manage

Once up and running the ZD5000 automatically manages the ZoneFlex network of APs — automatically adjusting transmit power levels and RF channel assignments as needed, to avoid interference, prevent adjacent APs from interfering and enable redundant coverage in the event of an AP failure. Configuration changes can easily be applied to multiple APs, or the entire system, simultaneously. A customizable dashboard provides instant access to a variety of client and network information and events, and a real-time heat map displays AP locations and signal coverage, as well as your Ruckus Smart Meshing topology.

ZoneDirector Smart WLAN systems integrate a unique performance utility from Ruckus called SpeedFlex™. Ruckus SpeedFlex allows administrators to locally or remotely determine client Wi-Fi performance over the wireless LAN. With SpeedFlex, administrators can now better plan, troubleshoot, monitor and measure WLAN performance, eliminating the need to use Internet-based speed tools that often provide inaccurate results of the local Wi-Fi environment.

### HARDWARE FEATURES

- 2U rackmountable chassis footprint
- Dual, hot-swappable PSU
- Redundant, field swappable fans
- Easy discovery from PC using UPnP
- Multiple I/O port configuration options
- Two 1000 Mbps ports for full redundancy
- Lifetime warranty coverage

### SOFTWARE FEATURES

Central control and configuration of up to 1000 ZoneFlex APs

- Support for 2048 WLANs
- Integrated DHCP server
- Easy-to-use setup wizard
- Ultra-intuitive GUI
- 1+1 redundancy with auto synchronization
- Smart Mesh Networking control and monitoring
- Real-time client admission control
- Load-balancing
- Customizable dashboard
- Dynamic RF channel and power management
- Quality of Service with WLAN prioritization, band steering\* and airtime fairness
- Integrated captive portal
- Native ActiveDirectory/RADIUS/LDAP support
- Local authentication database
- Dynamic VLAN assignment
- Guest networking
- Dynamic generation of unique Pre-Shared Keys
- Rogue AP detection and graphical map view
- Aeroscout location services support
- Hot spot authentication using WISPr
- Performance monitoring and statistics
- SNMP



\*for ZoneFlex 7962, 7762 and 7363 dual-band access points

The ZD5000 provides a detail map view that lets administrators quickly see the Wi-Fi network topology for all ZoneFlex Smart Wi-Fi access points.

### Simple to Secure

The ZD5000 provides innovative new techniques that simplify and automate Wi-Fi security. In addition to enterprise-class 802.1X support and dynamic VLAN assignment capabilities, the ZD5000 supports a patented Dynamic Pre-Shared Key (PSK) capability that streamlines WLAN security.

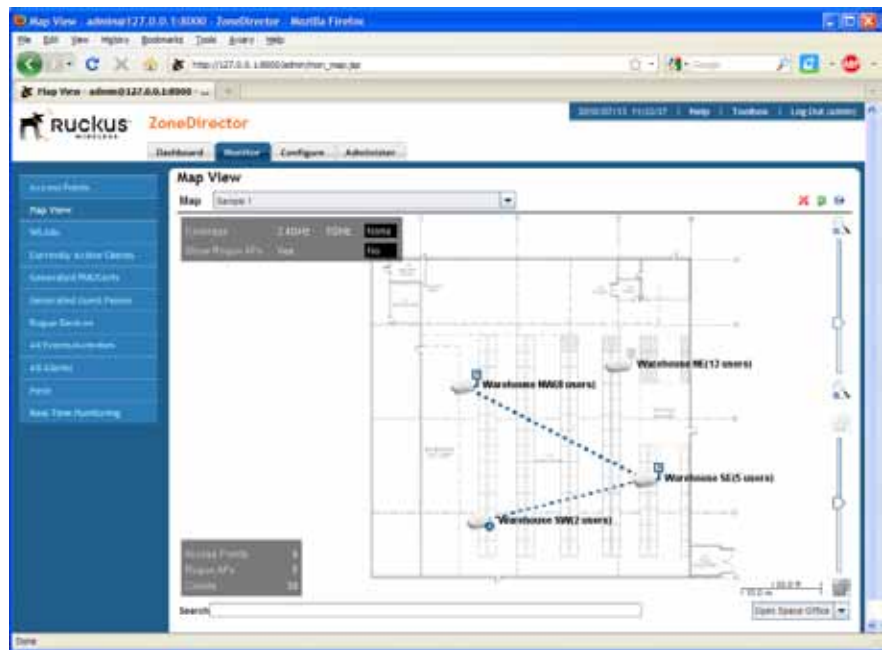
First-time users plug their computers into the LAN and specify a URL that directs them to a captive web portal for a one-time authentication. After successful authentication, the ZoneDirector automatically configures the client system with the designated SSID and a dynamically-generated encryption key. The key is bound to the client, and can be removed upon expiration when the user or the user's device is no longer trusted.

The ZD5000 centralizes authentication and authorization decisions for all APs, providing secure admission control across the WLAN. It works with any backend authentication database such as RADIUS and ActiveDirectory and also comes with an internal authentication database. Additionally, clients can be dynamically assigned to a VLAN based on their RADIUS attributes.

### Avoid Interference, Maximize Performance and Extend Reach with BeamFlex

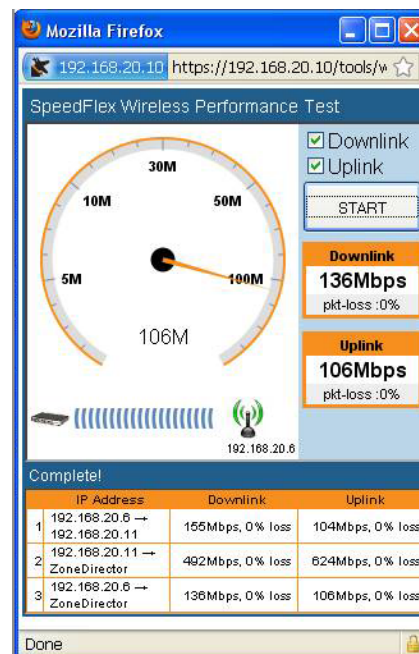
Ruckus BeamFlex™, a patented Wi-Fi beam-steering technology, ensures predictable performance for multimedia traffic applications and extends range to eliminate Wi-Fi deadspots. With ZoneDirector, the value of BeamFlex is extended beyond a single access point to the system-wide WLAN and smart wireless meshing.

The ZoneDirector automatically controls the channel assignments and transmit power of all ZoneFlex Smart Wi-Fi APs. And with BeamFlex, the ZoneFlex system continuously picks the best path for every packet, to both clients outside the network and mesh APs inside the network, automatically avoiding interference, to guarantee the highest quality of service.



### Smart Mesh Networking Increases Flexibility, Reduces Costs

Ruckus Smart Mesh Networking enables self-organizing and self-healing WLAN deployment. It eliminates the need to run Ethernet cables to every AP, allowing administrators to simply plug in ZoneFlex APs to any power source and walk away. All configuration and management is delivered through the ZoneDirector Smart WLAN controller. APs can also be daisy-chained to mesh APs to extend the mesh and take advantage of spatial reuse. Smart meshing uses patented Smart Wi-Fi technology to extend range and control Wi-Fi signals to minimize inter-nodal hops that degrade performance and automatically adapt Wi-Fi connections between nodes to maintain ultra high reliability.



SpeedFlex™ is a unique wireless performance test tool integrated within the ZoneFlex™ family of centralized controllers that measures the Wi-Fi throughput of associated wireless LAN clients.

# Specifications

## PHYSICAL CHARACTERISTICS

<b>POWER</b>	<ul style="list-style-type: none"> <li>AC or DC hot-swappable, redundant power supplies</li> <li>DC input requirements               <ul style="list-style-type: none"> <li>- Voltage: -48 to -60VDC</li> <li>- Current: 20.5A</li> </ul> </li> <li>AC input requirements (auto-range)               <ul style="list-style-type: none"> <li>- 50/60Hz</li> <li>- 100 to 127VAC/maximum current 8.9A</li> <li>- 200 to 240VAC/maximum current 4.5A</li> </ul> </li> </ul>
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<b>PHYSICAL SIZE</b>	• 8.76cm(H), 43.53cm(W), 50.8cm(D)
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<b>WEIGHT</b>	• 40 lbs (18.14 kilograms)
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<b>CONNECTIONS</b>	<ul style="list-style-type: none"> <li>Two 10/100/1000 Mbps RJ45* ports *future support for quad GbE and dual 10GbE cards</li> <li>Serial ports, RJ-45, one front, one rear</li> <li>Four (4) USB 2.0 ports in the rear for image loading</li> </ul>
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<b>LED DISPLAY</b>	• Supported (see user guide)
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<b>ENVIRONMENTAL CONDITIONS</b>	• Operating Temperature: 41°F (5°C) – 104°F (40°C)
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## PERFORMANCE AND SUPPORTED CONFIGURATIONS

<b>MANAGED APs</b>	• Up to 1,000
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<b>CONCURRENT STATIONS</b>	• Up to 20,000
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<b>WLANs</b>	• 2048
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## MANAGEMENT

<b>CONFIGURATION</b>	• Web user interface, CLI, FlexMaster
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<b>STATISTICS</b>	• LAN, wireless and associated stations (available via UI)
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<b>AUTO AP SOFTWARE UPDATES</b>	• Supported
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<b>CAPTIVE PORTAL</b>	• Supported
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<b>GUEST ACCOUNTS</b>	• Supported
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<b>VLAN SUPPORT</b>	• 802.1Q (per BSSID), dynamic VLAN
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<b>DHCP SERVER</b>	• Supported
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<b>AP DISCOVERY &amp; CONTROL</b>	• Layer-2 or Layer-3
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<b>RADIUS ACCOUNTING</b>	• Supported
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<b>ACCESS LISTS (ACLs)</b>	<ul style="list-style-type: none"> <li>Layer-2 (MAC address based ACL)</li> <li>Layer-3 (IP address based ACL)</li> <li>L2 client isolation</li> </ul>
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<b>WIRELESS INTRUSION DETECTION (WIDS)</b>	<ul style="list-style-type: none"> <li>Rogue AP detection</li> <li>DoS attack prevention</li> <li>Password guessing protection</li> <li>Rate limiting</li> </ul>
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## MULTIMEDIA AND QUALITY OF SERVICE

<b>VoIP TUNNELING</b>	• Supported
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<b>802.11e</b>	• Supported
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<b>SOFTWARE QUEUES</b>	• Per traffic type, per client
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<b>AUTO-CLASSIFICATION</b>	• Heuristics
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<b>RATE LIMITING</b>	• Supported
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## SECURITY

<b>WIRELESS SECURITY</b>	• WEP, WPA-TKIP, WPA2-AES, 802.11i
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<b>AUTHENTICATION</b>	<ul style="list-style-type: none"> <li>802.1X, local database</li> <li>External AAA servers: ActiveDirectory, RADIUS, LDAP</li> </ul>
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<b>LOCAL AUTHENTICATION</b>	• 20,000 user entries
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## CERTIFICATIONS

<b>CERTIFICATIONS</b>	• U.S., Canada, EU, China, Japan, Taiwan, Korea
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## RECOMMENDED APs\*

	<b>ZoneFlex 7962</b> — 802.11n indoor dual-band Smart Wi-Fi AP
	<b>ZoneFlex 7300</b> — 802.11n indoor single and dual-band Smart Wi-Fi AP
	<b>ZoneFlex 7762</b> — 802.11n Outdoor dual-band Smart Wi-Fi AP

\* All Ruckus APs are supported by the ZD 5000

## Product Ordering Information

Model	Description
<b>ZoneDirector 5000 Smart WLAN Controllers</b>	
901-5100-WW00	ZoneDirector 5000 supporting 100 APs with DC power supply
901-5100-XX10	ZoneDirector 5000 supporting 100 APs with AC power supplier
<b>ZoneFlex Smart Wi-Fi Access Points</b>	
901-7962-XX01	Smart Wi-Fi 802.11n dual-band (2.4/5GHz) AP with 802.3af PoE
901-7363-XX01	Smart Wi-Fi 802.11n dual-band (2.4/5GHz) AP with 802.3af PoE
901-7762-XX01	Smart Wi-Fi 802.11n outdoor dual-band (2.4/5GHz) AP with 802.3at PoE in and 802.3af PoE out

**PLEASE NOTE:** When ordering you must specify the destination region by indicating -US, -EU, -UK, -UN, -AU, -UU or -IN instead of XX.

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