

# VENDOR CONTRACT

Between \_\_\_\_\_ and  
(Company Name)

**THE INTERLOCAL PURCHASING SYSTEM (TIPS)**  
**For**  
**NETWORKING EQUIPMENT, SOFTWARE AND SERVICES**  
**#01071615**

## General Information

The vendor contract shall include the contract, the terms and conditions, special terms and conditions, any agreed upon amendments, as well as all of the sections of the solicitation and the awarded vendor's proposal. Once signed, if an awarded vendor's proposal varies or is unclear in any way from the TIPS contract, TIPS, at its sole discretion, will decide which provision will prevail. Other documents to be included are the awarded vendor's proposals, task orders, purchase orders and any adjustments which have been issued.

The following pages will constitute the contract between the successful vendors(s) and TIPS. Bidders shall state, in a separate writing, and include with their proposal response, any required exceptions or deviations from these terms, conditions, and specifications. If agreed to by TIPS, they will be incorporated into the final contract.

The Vendor Contract ("Contract") made and entered into by and between The Interlocal Purchasing System (hereinafter referred to as "TIPS" respectfully) a government cooperative purchasing program authorized by the Region VIII Education Service Center, having its principal place of business at 4845 US Hwy 271 North, Pittsburg, Texas 75686. This contract consists of the provisions set forth below, including provisions of all Attachments referenced herein. In the event of a conflict between the provisions set forth below and those contained in any Attachment, the provisions set forth shall control.

### Definitions

**PURCHASE ORDER** is the TIPS member's approval providing the authority to proceed with the negotiated delivery order under the contract. Special terms and conditions as agreed to between the vendor and TIPS member will be added as addendums to the PO. Items such as certificate of insurance, bonding requirements, small or disadvantaged business goals are some of the addendums possible.

**PREMIUM HOURS** are defined as those hours not included in regular hours or recognized holidays. Premium hours are to be approved by the TIPS member for each delivery order and noted in the delivery order proposal as a line item during negotiations.

**REGULAR HOURS** are defined as those hours between the hours of 7 AM and 6 PM Monday thru Friday.

## Terms and Conditions

### Freight

All deliveries shall be freight prepaid, F.O.B. destination and shall be included in all pricing offered unless otherwise clearly stated in writing.

### Warranty Conditions

All supplies equipment and services shall include manufacturer's minimum standard warranty unless otherwise agreed to in writing. Vendor shall be an authorized dealer, distributor or manufacturer for all products. All equipment proposed shall be new unless clearly stated in writing.

### Customer Support

The Vendor shall provide timely and accurate customer support to TIPS members. Vendors shall respond to such requests within one (1) working day after receipt of the request. Vendor shall provide training regarding products and services supplied by the Vendor unless otherwise clearly stated in writing at the time of purchase. (Unless training is a line item sold or packaged and must be purchased with product.)

### Contracts

**All contracts and agreements** between Vendors and TIPS Members shall strictly adhere to the statutes that are set forth in the Uniform Commercial Code as most recently revised.

**Contracts for purchase** will normally be put into effect by means of a purchase order(s) executed by authorized agents of the participating government entities.

**Davis Bacon Act** requirements will be met when Federal Funds are used for construction and/or repair of buildings.

### Tax exempt status

A taxable item sold, leased, rented to, stored, used, or consumed by any of the following governmental entities is exempted from the taxes imposed by this chapter:(1) the United States; (2) an unincorporated instrumentality of the United States; (3) a corporation that is an agency or instrumentality of the United States and is wholly owned by the United States or by another corporation wholly owned by the United States;(4) the State of Texas; (5) a Texas county, city, special district, or other political subdivision; or (6) a state, or a governmental unit of a state that borders Texas, but only to the extent that the other state or governmental unit

exempts or does not impose a tax on similar sales of items to this state or a political subdivision of this state. Texas Tax Code § 151.309.

### **Assignments of contracts**

No assignment of contract may be made without the prior written approval of TIPS. Payment can only be made to the awarded Vendor or vendor assigned dealer.

### **Disclosures**

1. Vendor affirms that he/she has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor or service to a public servant in connection with this contract.
2. Vendor shall attach, in writing, a complete description of any and all relationships that might be considered a conflict of interest in doing business with participants in the TIPS program.
3. The vendor affirms that, to the best of his/her knowledge, the offer has been arrived at independently, and is submitted without collusion with anyone to obtain information or gain any favoritism that would in any way limit competition or give an unfair advantage over other vendors in the award of this contract.

### **Renewal of Contracts**

The NETWORKING EQUIPMENT, SOFTWARE AND SERVICES contract is for one (1) year with an option for renewal for 2 consecutive years. Total term of contract can be up to 3 years if sales are reported through the contract and both parties agree.

### **Shipments**

The Vendor shall ship ordered products within five (5) working days after the receipt of the order. If a product cannot be shipped within that time, the Vendor shall notify TIPS and the requesting entity as to why the product has not shipped and shall provide an estimated shipping date, if applicable. TIPS or the requesting entity may cancel the order if estimated shipping time is not acceptable.

### **Invoices**

The Vendor or vendor assigned dealer shall submit invoices, to the TIPS participant. Each invoice shall include the TIPS participant's purchase order number. The shipment tracking number or pertinent information for verification of TIPS participant receipt shall be made available upon request. The Vendor or vendor assigned dealer shall not invoice for partial shipments unless agreed to in writing in advance by TIPS and the TIPS participant.

## Payments

The TIPS participant will make payments directly to the Vendor or vendor assigned dealer at net 30 days after receiving invoice.

## Pricing

The Vendor contracts to provide pricing to TIPS and its participating governmental entities that is the lowest pricing available to like cooperative purchasing customers and the pricing shall remain so throughout the duration of the contract.

The Vendor agrees to promptly lower the cost of any product purchased through TIPS following a reduction in the manufacturer or publisher's direct cost to the Vendor. Price increases will be honored. However, the Vendor shall honor previous prices for thirty (30) days after written notification to TIPS of an increase.

All pricing submitted to TIPS shall include the Two Percent (2%) participation fee to be remitted to TIPS by the Vendor. Vendor will not show adding the 2% to the invoice presented to customer.

## Participation Fees

Vendor or vendor assigned dealer contracts to pay 2% of all sales to TIPS on a monthly scheduled report. TIPS will email a Monthly Submission Report to each vendor. The Vendor or vendor assigned dealer is responsible for keeping record of all sales that go through the TIPS contract. Report may be sent to TIPS electronically while check for 2% is mailed. Failure to pay 2% participation fee will result in termination of contract.

## Indemnity

- 1. Indemnity for Personality Contracts.** Vendor agrees to indemnify and hold harmless and defend TIPS, TIPS member(s), officers and employees, from and against all claims and suits for damages, injuries to persons (including death), property damages, losses, and expenses including court costs and attorney's fees, arising out of, or resulting from, Vendor's performance of this contract, including all such causes of action based upon common, constitutional, or statutory law, or based in whole or in part, upon allegations of negligent or intentional acts on the part of the Vendor, its officers, employees, agents, subcontractors, licensees, invitees, whether or not such claims are based in whole or in part upon the negligent acts or omissions of the TIPS, TIPS member(s), officers, employees, or agents.
- 2. Indemnity for Performance Contracts.** The Vendor agrees to indemnify and hold harmless and defend TIPS, TIPS member(s), officers and employees from and against all claims and suits for damages, injuries to persons (including death), property damages, losses, and expenses including court costs and attorney's fees, arising out of, or resulting from, Vendor's work under this contract, including all such causes of action based upon

common, constitutional, or statutory law, or based in whole or in part, upon allegations of negligent or intentional acts on the part of the Vendor, its officers, employees, agents, subcontractors, licensees, or invitees. Vendor further agrees to indemnify and hold harmless and defend TIPS, TIPS member(s), officers and employees, from and against all claims and suits for injuries (including death) to an officer, employee, agent, subcontractor, supplier or equipment lessee of the Vendor, arising out of, or resulting from, Vendor's work under this contract whether or not such claims are based in whole or in part upon the negligent acts or omissions of the TIPS, TIPS member(s), officers, employees, or agents.

**Attorney's Fees--Texas Local Government Code § 271.159 is expressly referenced.**

Pursuant to §271.159, TEXAS LOC. GOV'T CODE, in the event that any one of the Parties is required to obtain the services of an attorney to enforce this Agreement, the prevailing party, in addition to other remedies available, shall be entitled to recover reasonable attorney's fees and costs of court.

**Multiple Vendor Awards**

TIPS reserves the right to award multiple vendor contracts for categories when deemed in the best interest of the TIPS membership. Bidders scoring 80% or above will be considered for an award. Categories are established at the discretion of TIPS.

**State of Texas Franchise Tax**

By signature hereon, the bidder hereby certifies that he/she is not currently delinquent in the payment of any franchise taxes owed the State of Texas under Chapter 171, Tax Code.

**Miscellaneous**

The Vendor acknowledges and agrees that continued participation in TIPS is subject to TIPS sole discretion and that any Vendor may be removed from the participation in the Program at any time with or without cause. Nothing in the contract or in any other communication between TIPS and the Vendor may be construed as a guarantee that TIPS participants will submit any orders at any time. TIPS reserves the right to request additional proposals for items already on contract at any time.

**Purchase Order Pricing/Product Deviation**

If a deviation of pricing/product on a purchase order occurs, TIPS is to be notified within 24 hours of receipt of order.

**Cancellation for non-performance or contract deficiency**

TIPS may terminate any contract if TIPS Members have not used the contract, or if purchase volume is determined to be "low volume" in any 12-month period. TIPS reserves the right to cancel the whole or any part of this contract due to failure by awarded vendor to carry out any

obligation, term or condition of the contract. TIPS may issue a written deficiency notice to awarded vendor for acting or failing to act in any of the following:

- Providing material that does not meet the specifications of the contract;
- Providing work and/or material that was not awarded under the contract;
- Failing to adequately perform the services set forth in the scope of work and specifications;
- Failing to complete required work or furnish required materials within a reasonable amount of time;
- Failing to make progress in performance of the contract and/or giving TIPS reason to believe that awarded vendor will not or cannot perform the requirements of the contract; and/or
- Performing work or providing services under the contract prior to receiving a TIPS reviewed purchase order for such work.

Upon receipt of the written deficiency, awarded vendor shall have ten (10) days to provide a satisfactory response to TIPS. Failure to adequately address all issues of concern may result in contract cancellation. Upon cancellation under this paragraph, all goods, materials, work, documents, data and reports prepared by awarded vendor under this contract shall become the property of the TIPS Member on demand.

### **TIPS Member Purchasing Procedures**

Purchase orders are issued by participating TIPS member to the awarded vendor indicating on the PO "Contract Number 01071615". Purchase Order is emailed to TIPS at [tipspo@tips-usa.com](mailto:tipspo@tips-usa.com).

- Awarded vendor delivers goods/services directly to the participating member.
- Awarded vendor invoices the participating TIPS member directly.
- Awarded vendor receives payment directly from the participating member.
- Awarded vendor reports sales monthly to TIPS (unless prior arrangements have been made with TIPS to report monthly).

### **Form of Contract**

The form of contract for this solicitation shall be the Request for Proposal, the awarded proposal(s) and best and final offer(s), and properly issued and reviewed purchase orders referencing the requirements of the Request for Proposals. If a vendor submitting an offer requires TIPS and/or TIPS Member to sign an additional agreement, a copy of the proposed agreement must be included with the proposal.

Vendor contract documents: TIPS will review proposed vendor contract documents. Vendor's contract document shall not become part of TIPS's contract with vendor unless and until an authorized representative of TIPS reviews and approves it.

## **Licenses**

Awarded vendor shall maintain in current status all federal, state and local licenses, bonds and permits required for the operation of the business conducted by awarded vendor. Awarded vendor shall remain fully informed of and in compliance with all ordinances and regulations pertaining to the lawful provision of services under the contract. TIPS reserves the right to stop work and/or cancel contract of any awarded vendor whose license(s) expire, lapse, are suspended or terminated.

## **Novation**

If awarded vendor sells or transfers all assets or the entire portion of the assets used to perform this contract, a successor in interest must guarantee to perform all obligations under this contract. TIPS reserves the right to accept or reject any new party. A simple change of name agreement will not change the contractual obligations of awarded vendor.

## **Site Requirements (when applicable to service or job)**

**Cleanup:** Awarded vendor shall clean up and remove all debris and rubbish resulting from their work as required or directed by TIPS Member. Upon completion of work, the premises shall be left in good repair and an orderly, neat, clean and unobstructed condition.

**Preparation:** Awarded vendor shall not begin a project for which TIPS Member has not prepared the site, unless awarded vendor does the preparation work at no cost, or until TIPS Member includes the cost of site preparation in a purchase order.

Site preparation includes, but is not limited to: moving furniture, installing wiring for networks or power, and similar pre-installation requirements.

**Registered sex offender restrictions:** For work to be performed at schools, awarded vendor agrees that no employee of a sub-contractor who has been adjudicated to be a registered sex offender will perform work at any time when students are or reasonably expected to be present. Awarded vendor agrees that a violation of this condition shall be considered a material breach and may result in the cancellation of the purchase order at the TIPS Member's discretion.

Awarded vendor must identify any additional costs associated with compliance of this term. If no costs are specified, compliance with this term will be provided at no additional charge.

**Safety measures:** Awarded vendor shall take all reasonable precautions for the safety of employees on the worksite, and shall erect and properly maintain all necessary safeguards for protection of workers and the public. Awarded vendor shall post warning signs against all hazards created by the operation and work in progress. Proper precautions shall be taken pursuant to state law and standard practices to protect workers, general public and existing structures from injury or damage.

## **Smoking**

Persons working under contract shall adhere to local smoking policies. Smoking will only be permitted in posted areas or off premises.

## **Invoices**

The awarded vendor shall submit invoices to the participating entity clearly stating “Per TIPS Contract”. The shipment tracking number or pertinent information for verification shall be made available upon request.

## **Marketing**

Awarded vendor agrees to allow TIPS to use their name and logo within website, marketing materials and advertisement. Any use of TIPS name and logo or any form of publicity, inclusive of press release, regarding this contract by awarded vendor must have prior approval from TIPS.

## **Supplemental agreements**

The entity participating in the TIPS contract and awarded vendor may enter into a separate supplemental agreement to further define the level of service requirements over and above the minimum defined in this contract i.e. invoice requirements, ordering requirements, specialized delivery, etc. Any supplemental agreement developed as a result of this contract is exclusively between the participating entity and awarded vendor. TIPS, its agents, TIPS members and employees shall not be made party to any claim for breach of such agreement.

## **Legal obligations**

It is the responding vendor’s responsibility to be aware of and comply with all local, state and federal laws governing the sale of products/services identified in this RFP and any awarded contract thereof. Applicable laws and regulations must be followed even if not specifically identified herein.

## **Audit rights**

Awarded Vendor shall, at their sole expense, maintain appropriate due diligence of all purchases made by TIPS Member that utilizes this Contract. TIPS and Region 8 ESC each reserve the right to audit the accounting for a period of three (3) years from the time such purchases are made. This audit right shall survive termination of this Agreement for a period of one (1) year from the effective date of termination. TIPS shall have authority to conduct random audits of Awarded Vendor’s pricing that is offered to TIPS Members. Notwithstanding the foregoing, in the event that TIPS is made aware of any pricing being offered to eligible entities that is materially inconsistent with the pricing under this agreement, TIPS shall have the ability to conduct the audit internally or may engage a third-party auditing firm. In the event of an audit, the requested materials shall be provided in the format and at the location designated by Region 8 ESC or TIPS.

## **Force Majeure**

If by reason of Force Majeure, either party hereto shall be rendered unable wholly or in part to carry out its obligations under this Agreement then such party shall give notice and fully particulars of Force Majeure in writing to the other party within a reasonable time after



occurrence of the event or cause relied upon, and the obligation of the party giving such notice, so far as it is affected by such Force Majeure, shall be suspended during the continuance of the inability then claimed, except as hereinafter provided, but for no longer period, and such party shall endeavor to remove or overcome such inability with all reasonable dispatch.

### **Services**

When applicable, performance bonds will be required on construction or labor required jobs over \$100,000 and payment bonds on jobs over \$25,000 or awarded vendor will meet the TIPS member's local and state purchasing requirements. Awarded vendors may need to provide additional capacity as jobs increase. Bonds will not require that a fee be paid to TIPS. The actual cost of the bond will be a pass through to the TIPS member and added to the purchase order.

### **Scope of Services**

The specific scope of work for each job shall be determined in advance and in writing between TIPS Member and Awarded vendor. It is okay if the TIPS member provides a general scope, but the awarded vendor should provide a written scope of work to the TIPS member as part of the proposal. Once the scope of the job is agreed to, the TIPS member will issue a PO with the estimate referenced as an attachment along with bond and any other special provisions agreed to for the TIPS member. If special terms and conditions other than those covered within this solicitation and awarded contracts are required, they will be attached to the PO and shall take precedence over those in the base contract.

### **Project Delivery Order Procedures**

The TIPS member having approved and signed an interlocal agreement, or other TIPS membership document, may make a request of the awarded vendor under this contract when the TIPS member has services that need to be undertaken. Notification may occur via phone, the web, email, fax, or in person.

Upon notification of a pending request, the awarded vendor shall make contact with the TIPS member as soon as possible, but must make contact with the TIPS member within two working days.

### **Scheduling of Projects**

Scheduling of projects (if applicable) will be accomplished when the TIPS member issues a purchase order that will serve as "the notice to proceed". The period for the delivery order will include the mobilization, materials purchase, installation and delivery, design, weather, and site cleanup and inspection. No additional claims may be made for delays as a result of these items. When the tasks have been completed the awarded vendor shall notify the client and have the TIPS member inspect the work for acceptance under the scope and terms in the PO. The TIPS member will issue in writing any corrective actions that are required. Upon completion of these items, the TIPS member will issue a completion notice and final payment will be issued.

**Support Requirements**

If there is a dispute between the awarded vendor and TIPS member, TIPS or its representatives will assist in conflict resolution or third party (mandatory mediation), if requested by either party. TIPS, or its representatives, reserves the right to inspect any project and audit the awarded vendors TIPS project files, documentation and correspondence.

## Special Terms and Conditions

It is the intent of TIPS to contract with a reliable, high performance vendor to supply products and services to government and educational agencies. It is the experience of TIPS that the following procedures provide TIPS, the Vendor, and the participating agency the necessary support to facilitate a mutually beneficial relationship. The specific procedures will be negotiated with the successful vendor.

- **Contracts:** All vendor purchase orders must be emailed to TIPS at tipspo@tips-usa.com. Should an agency send an order direct to vendor, it is the vendor's responsibility to forward the order to TIPS at the email above within 24 business hours and confirm its receipt with TIPS.
  - **Promotion of Contract:** It is agreed that Vendor will encourage all eligible entities to purchase from the TIPS Program. Encouraging entities to purchase directly from the Vendor and not through TIPS contract is not acceptable to the terms and conditions of this contract and will result in removal of Vendor from Program. Vendor is expected to use marketing funds for the marketing and promotion of this contract.
  - **Daily Order Confirmation:** All contract purchase orders will be approved daily by TIPS and sent to vendor. The vendor must confirm receipt of orders to the TIPS member (customer) within 24 business hours.
  - **Vendor custom website for TIPS:** If Vendor is hosting a custom TIPS website, then updated pricing must be posted by 1<sup>st</sup> of each month.
  - **Back Ordered Products:** If product is not expected to ship within 3 business days, customer is to be notified within 24 hours and appropriate action taken based on customer request.
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Check one of the following responses to the General Terms and Special Terms and Conditions:

( ) We take no exceptions/deviations to the general and/or special terms and conditions.

(Note: If none are listed below, it is understood that no exceptions/deviations are taken.)

( ) We take the following exceptions/deviations to the general and/or special terms and conditions. All exceptions/deviations must be clearly explained. Reference the corresponding general or special terms and conditions that you are taking exceptions/deviations to. The proposer must clearly state if you are adding additional terms and conditions to the general or special terms and conditions. Provide details on your exceptions/deviations below:



# The Interlocal Purchasing System (TIPS Cooperative) Supplier Response

Bid Information		Contact Information		Ship to Information
Bid Creator	Mr. David Mabe National Coordinator	Address	Region VIII Education Service Center 4845 US Highway 271 North Pittsburg, TX 75686	Address
Email	david.mabe@tips-usa.com	Contact	Kim Thompson, Coordinator of Office Operations	Contact
Phone	+1 (903) 243-4759	Department		Department
Fax	+1 (866) 749-6674	Building		Building
Bid Number	01071615	Floor/Room		Floor/Room
Title	Networking Equipment, Software and Services	Telephone	+1 (866) 839-8477	Telephone
Bid Type	RFP	Fax	+1 (866) 839-8472	Fax
Issue Date	05/01/2015	Email	bids@tips-usa.com	Email
Close Date	6/12/2015 3:00:00 PM CT			
Need by Date				

## Supplier Information

Company Ruckus Wireless, Inc  
 Address 350 W. Java Drive  
 Sunnyvale, CA 94089  
 Contact  
 Department  
 Building  
 Floor/Room  
 Telephone 1 (323) 8076559  
 Fax 1  
 Email  
 Submitted 6/11/2015 12:14:25 PM CT  
 Total \$0.00

Signature Holly Davis

Email holly.davis@ruckuswireless.com

## Supplier Notes

## Bid Notes

## Bid Activities

## Bid Messages

Date	Subject	Message
05/07/15	Pre-Bid Webinar	<p>1. Click to start and join at the specified time and date:  <a href="https://global.gotowebinar.com/ojoin/6725893313349788930/724887489667689990">https://global.gotowebinar.com/ojoin/6725893313349788930/724887489667689990</a>  Note: This link should not be shared with others; it is unique to you.</p> <p>2. Choose one of the following audio options:</p> <p>TO USE YOUR COMPUTER'S AUDIO:  When the Webinar begins, you will be connected to audio using your computer's microphone and speakers (VoIP). A headset is recommended.</p> <p>-- OR --</p> <p>TO USE YOUR TELEPHONE:  If you prefer to use your phone, you must select "Use Telephone" after joining the webinar and call in using the numbers below.</p> <p>United States  Long Distance: +1 (415) 655-0051  Access Code: 749-762-945  Audio PIN: Shown after joining the webinar</p>
05/07/15	Pre-Bid Webinar	<p>Time and date of the webinar:  Friday, May 8, 2015  2:00 PM CST</p>
05/13/15	Pre-Bid Webinar (Recorded)	<p>If you missed the Pre-Bid Meeting or Webinar last week here is a link to the recorded webinar:  <a href="https://www.tips-usa.com/prebidmeeting.html">https://www.tips-usa.com/prebidmeeting.html</a>  (You must have a video player plugin for your browser to view the recording.)</p>

Please review the following and respond where necessary

#	Name	Note	Response
1	Yes - No	Disadvantaged/Minority/Women Business Enterprise - D/M/WBE (Required by some participating governmental entities) Vendor certifies that their firm is a D/M/WBE? Vendor must upload proof of certification to the "Response Attachments" D/M/WBE CERTIFICATES section.	No
2	Yes - No	Highly Underutilized Business - HUB (Required by some participating governmental entities) Vendor certifies that their firm is a HUB? Vendor must upload proof of certification to the "Response Attachments" HUB CERTIFICATES section.	No
3	Yes - No	Certification of Residency (Required by the State of Texas) Company submitting bid is a Texas resident bidder?	No
4	Company Residence (City)	Vendor's principal place of business is in the city of?	Sunnyvale
5	Company Residence (State)	Vendor's principal place of business is in the state of?	CA
6	Felony Conviction Notice:	(Required by the State of Texas) My firm is, as outlined on PAGE 5 in the Instructions to Bidders document: (Questions 7 - 8)	(No Response Required)
7	Yes - No	A publicly held corporation; therefore, this reporting requirement is not applicable?	Yes
8	Yes - No	Is owned or operated by individual(s) who has/have been convicted of a felony? If answer is YES, a detailed explanation of the name(s) and conviction(s) must be uploaded to the "Response Attachments" FELONY CONVICTION section.	No

9	Pricing Information:	Pricing information section. (Questions 10 - 13)	(No Response Required)
10	Yes - No	In addition to the typical unit pricing furnished herein, the Vendor agrees to furnish all current and future products at prices that are proportionate to Dealer Pricing. If answer is NO, include a statement detailing how pricing for TIPS participants would be calculated in the PRICING document that is uploaded to the "Response Attachments" PRICING section.	Yes
11	Yes - No	Pricing submitted includes the 2% TIPS participation fee?	Yes
12	Yes - No	Vendor agrees to remit to TIPS the required 2% participation fee?	Yes
13	Yes - No	Additional discounts to TIPS members for bulk quantities or scope of work?	Yes
14	Start Time	Average start time after receipt of customer order is ____ working days?	30
15	Years Experience	Company years experience in this category?	15
16	Yes - No	The Vendor can provide services and/or products to all 50 US States?	Yes
17	States Served:	If answer is NO to question #16, please list which states can be served. (Example: AR, OK, TX)	
18	Company and/or Product Description:	This information will appear on the TIPS website in the company profile section, if awarded a TIPS contract. (Limit 750 characters.)	Ruckus Wireless is a pioneer in the wireless infrastructure market, enabling carriers and enterprises to keep up with the exploding demand for high-bandwidth applications and services. Ruckus' proprietary "Smart Wi-Fi" technology redefines what's possible in wireless network performance with flexibility, reliability, and affordability.
19	Resellers:	Does the vendor have resellers that it will name under this contract? (If applicable, vendor should download the Reseller/Dealers spreadsheet from the Attachments section, fill out the form and submit the document in the "Response Attachments" RESELLERS section.	Yes
20	Primary Contact Name	Primary Contact Name	Holly Davis
21	Primary Contact Title	Primary Contact Title	Director
22	Primary Contact Email	Primary Contact Email	holly.davis@ruckuswireless.com
23	Primary Contact Phone	Enter 10 digit phone number. (No dashes or extensions)	3238076559
24	Primary Contact Fax	Enter 10 digit phone number. (No dashes or extensions)	4087382065
25	Primary Contact Mobile	Enter 10 digit phone number. (No dashes or extensions)	3238076559
26	Secondary Contact Name	Secondary Contact Name	Darin Felberg
27	Secondary Contact Title	Secondary Contact Title	Deals Desk Program Manager
28	Secondary Contact Email	Secondary Contact Email	darin.felberg@ruckuswireless.com
29	Secondary Contact Phone	Enter 10 digit phone number. (No dashes or extensions)	4086048523
30	Secondary Contact Fax	Enter 10 digit phone number. (No dashes or extensions)	4087382065

31	Secondary Contact Mobile	Enter 10 digit phone number. (No dashes or extensions)	4086235335
32	2% Contact Name	2% Contact Name	Holly Davis
33	2% Contact Email	2% Contact Email	holly.davis@ruckuswireless.com
34	2% Contact Phone	Enter 10 digit phone number. (No dashes or extensions)	3238076559
35	Purchase Order Contact:	This person is responsible for receiving Purchase Orders from TIPS. (Questions 36 - 38)	(No Response Required)
36	Purchase Order Contact Name	Purchase Order Contact Name	Holly Davis
37	Purchase Order Contact Email	Purchase Order Contact Email	holly.davis@ruckuswireless.com
38	Purchase Order Contact Phone	Enter 10 digit phone number. (No dashes or extensions)	3238076559
39	Company Website	Company Website (Format - www.company.com)	www.ruckuswireless.com
40	Federal ID Number:	Federal ID Number also known as the Employer Identification Number. (Format - 12-3456789)	54-2072041
41	Primary Address	Primary Address	350 W. Java Drive
42	Primary Address City	Primary Address City	Sunnyvale
43	Primary Address State	Primary Address State (2 Digit Abbreviation)	CA
44	Primary Address Zip	Primary Address Zip	94089
45	Search Words:	Please list search words to be posted in the TIPS database about your company that TIPS website users might search. Words may be product names, manufacturers, or other words associated with the category of award. YOU MAY NOT LIST NON-CATEGORY ITEMS. (Limit 500 words) (Format: product, paper, construction, manufacturer name, etc.)	Smart Wi-Fi access points, controllers, WLAN management systems
46	Yes - No	Do you wish to be eligible to participate in a TIPS contract in which a TIPS member utilizes federal funds on contracts exceeding \$100,000? (Non-Construction) (If YES, vendor should download the Federal Funds Over \$100,000 Certification document from the Attachments section, fill out the form and submit the document in the "Response Attachments" FEDERAL FUNDS section.) (Vendor must also download the Suspension or Debarment Certificate document from the Attachments section, fill out the form and submit the document in the "Response Attachments" SUSPENSION OR DEBARMENT section.)	Yes
47	Prices are guaranteed for?	(__ Month(s), __ Year(s), or Term of Contract) (Standard term is "Term of Contract")	Term of Contract



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Line Items

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Response Total: \$0.00

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Resellers - Dealers
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Reseller/Dealer Name	Address	City
Austin Ribbon & Computer Supplies,	9211 Waterford Centre Blvd, Suite 202	Austin
CDW Government	230 North Milwaukee Avenue	Vernon Hills
CMC Network Solutions	2700 Research Drive, Suite 100	Plano
Genesis Telecom, Inc.	1225 N Loop W, Suite 705	Houston
Insource Technology Corporation	Two Chasewood, 20405 SH 249, Suite 300	Houston
Lantana Communications Corp. Teksys, Inc.	1700 Tech Centre Pkwy. Suite 100 1623 Mcdonald	Arlington Houston
The Fulcrum Group, Inc	5600 Egg Farm Rd, Suite 452	Keller
Westron Communications, Inc.	2611 Internet Blvd, Suite 115	Frisco
Windstream Corporation, DBA Wind	1001 West Loop South, Suite# 740	Richmond
Zones, Inc	1102 15th Street SW Suite 254	Auburn

State	Zip	Contact Name	Contact Email
Texas	78758	Susan Hawk	<a href="mailto:susan.hawk@arc-is.com">susan.hawk@arc-is.com</a>
IL	60061	Chris Fuchs	<a href="mailto:chris.fuchs@cdwg.com">chris.fuchs@cdwg.com</a>
TX	75074	Scott Broekemeier	<a href="mailto:scott@cmcns.com">scott@cmcns.com</a>
TX	77008	Deb Schindler Boultingho	<a href="mailto:debra@genesisbcs.com">debra@genesisbcs.com</a>
TX	77070	Julie Black	<a href="mailto:julie.black@insource.com">julie.black@insource.com</a>
TX	76014	Ed Koehler	<a href="mailto:ekoehler@lantanacom.cc">ekoehler@lantanacom.cc</a>
TX	77092	David Madrigal	<a href="mailto:david.madrigal@teksys.cc">david.madrigal@teksys.cc</a>
TX	76248	David Johnson	<a href="mailto:david@fulcrumgroup.net">david@fulcrumgroup.net</a>
TX	75034	Dave Casey	<a href="mailto:Dave.Casey@peakuptime">Dave.Casey@peakuptime</a>
TX	77407	Mike Timperman	<a href="mailto:mike.timperman@windst">mike.timperman@windst</a>
WA	98001	Sammi Nguyen	<a href="mailto:sammi.nguyen@zones.co">sammi.nguyen@zones.co</a>

Contact Phone	Contact Fax	Company Website
512-452-0651	512-452-0691	<a href="http://www.arc-is.com">www.arc-is.com</a>
800-508-2394	847-465-6800	<a href="http://www.cdw.com">www.cdw.com</a>
972-203-3400	972-590-6964	<a href="http://www.cmcns.com">www.cmcns.com</a>
713-865-7634	713-868-6128	<a href="http://www.genesisbcs.com">www.genesisbcs.com</a>
281-774-4100	281-774-4040	<a href="http://www.insource.com">www.insource.com</a>
214-734-6816	817-606-3383	<a href="http://www.lantanacom.com">www.lantanacom.com</a>
678-938-9868	832-408-7560	<a href="http://www.teksys.com">www.teksys.com</a>
817-337-0300	817-898-1277	<a href="http://www.fulcrumgroup.net">www.fulcrumgroup.net</a>
972-546-1450	972-546-1449	<a href="http://www.westron.com">www.westron.com</a>
281-490-9248	501-748-6392	<a href="http://www.windstream.com">www.windstream.com</a>
253-205-3000	800-417-1993	<a href="http://www.zones.com">www.zones.com</a>

\*woman owned

\*Woman owned

**Provisions for purchase with federal funds for contracts exceeding \$100,000**  
**These forms are for non-construction contracts**

Many TIPS members (grantees and sub-grantees) purchase goods and services with federal funds. When a member engages a contract exceeding \$100,000 and paid with federal funds, provisions are triggered by various Code of Federal Regulations requirements. Primarily 34 CFR 80.36 from the Department of Education and 7 CFR 3015 & 3016 from the Department of Agriculture for School Lunch Program. There may be other Federal programs from time to time that are not enumerated above that may fund certain projects using outside vendors. These are not optional for the contracting entity and in order to spend the federal funds certain provision and certifications must be in place to ensure legal compliance.

If you company wishes to be eligible to participate in a TIPS contract in which a member utilizes federal funds on contracts exceeding \$100,000, you must complete the following forms can provide the certifications as required on the subsequent pages.

Do you wish to be eligible to participate in a TIPS contract in which a member utilizes federal funds on contracts exceeding \$100,000?

Check your response?

YES  NO

 6-8-15  
\_\_\_\_\_  
Signature of Authorized Company Official Date

Seamus Hennessy  
\_\_\_\_\_  
Printed Name of Authorized Company Official

Ruckus Wireless, Inc  
\_\_\_\_\_  
Company Name

*Attach to this page a current W-9 form*

*Please complete the forms below*

**Legal Compliance**

It is the proposing company's duty and responsibility to have knowledge of and be responsible for the compliance with all applicable laws, rules and regulations as they apply to this procurement process and any subsequent award. The vendor agrees to comply, in all relevant respects, with all Federal, State, and Local laws, rules and regulations related to the performance of services or supply of goods to TIPS or TIPS members?

Does vendor agree? YES JA Initial of Authorized Company Official

**Non-Collusive Bidding Certificate**

By submitting a proposal in response to a Request for Proposals or other procurement device containing this clause, you certify that you are authorized to certify to the following:

- 1) This bid or proposal has been independently arrived at without collusion with any other Bidder or with any Competitor;
- 2) This bid or proposal has not been knowingly disclosed and will not be knowingly disclosed, prior to the opening of bids, or proposals for this project, to any other Bidder, Competitor or potential competitor;
- 3) No attempt has been or will be made to induce any other person, partnership or corporation to submit or not to submit a bid or proposal;
- 4) The person signing this bid or proposal certifies that he has fully informed himself regarding the accuracy of the statements contained in this certification, and under the penalties being applicable to the Bidder as well as to the person signing in its behalf.

The vendor complied with #1 through 4 above? YES JA Initial of Authorized Company Official

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**SUSPENSION OR DEBARMENT CERTIFICATE**

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Non-Federal entities are prohibited from contracting with or making sub-awards under covered transactions to parties that are suspended or debarred or whose principals are suspended or debarred. Covered transactions include procurement for goods or services equal to or in excess of \$100,000.00. Contractors receiving individual awards for \$25,000.00 or more and all sub-recipients must certify that the organization and its principals are not suspended or debarred.

You certify that no suspension or disbarment is in place, which would preclude receiving a federally funded contract under the Federal OMB, A-102, common rules

The vendor has not been debarred? YES JA Initial of Authorized Company Official



***Certification Regarding Lobbying***

**Applicable to Grants, Subgrants, Cooperative Agreements, and Contracts Exceeding \$100,000 in Federal Funds**

Submission of this certification is a prerequisite for making or entering into this transaction and is imposed by section 1352, Title 31, U.S. Code. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Any person who fails to file the required certification shall be subject to a civil penalty of not less than

\$10,000 and not more than \$100,000 for each such failure.

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with the awarding of a Federal contract, the making of a Federal grant, the making of a Federal loan, the entering into a cooperative agreement, and the extension, continuation, renewal, amendment, or modification of a Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "disclosure Form to Report Lobbing," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all covered subawards exceeding \$100,000 in Federal funds at all appropriate tiers and that all subrecipients shall certify and disclose accordingly.

Ruckus Wireless, Inc.

\_\_\_\_\_  
Name of Organization

350 West Java Drive

\_\_\_\_\_  
Address of Organization

Seamus Hennessy, Chief Financial Officer

\_\_\_\_\_  
Name / Title of Submitting Official

  
\_\_\_\_\_  
Signature of Submitting Official

6-8-15  
\_\_\_\_\_  
Signature Date

**Provisions for purchase with federal funds for contracts exceeding \$100,000**

**Federal Rule (1) Administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as may be appropriate. (Contracts more than the simplified acquisition threshold)**

Notice: Pursuant to Federal Rule (1) above, when federal funds are expended by TIPS Member, TIPS Member reserves all rights and privileges under the applicable laws and regulations with respect to this procurement in the event of breach of contract by either party.

Does vendor agree? YES SA Initial of Authorized Company Official

**Federal Rule (2) Termination for cause and for convenience by the grantee or subgrantee including the manner by which it will be effected and the basis for settlement. (All contracts in excess of \$10,000)**

Pursuant to Federal Rule (2) above, when federal funds are expended by TIPS Member, TIPS Member reserves the right to terminate any agreement in excess of \$10,000 resulting from this procurement process for cause after giving the vendor an appropriate opportunity and up to 30 days, to cure the causal breach of terms and conditions. TIPS Member reserves the right to terminate any agreement in excess of \$10,000 resulting from this procurement process for convenience with 30 days notice in writing to the awarded vendor. Any award under this procurement process is not exclusive and the District reserves the right to purchase goods and services from other vendors when it is in the best interest of the District.

Does vendor agree? YES SA Initial of Authorized Company Official

**Federal Rule (7) Notice of awarding agency requirements and regulations pertaining to reporting.**

Pursuant to Federal Rule (7) above, when federal funds are expended by TIPS Member, TIPS Member requires that the proposer certify that during the term of an award by the TIPS Member resulting from this procurement process the vendor will provide reports and documentation required by all applicable law and state and federal regulations upon request by the TIPS Member or any relevant state of federal agency.

Does vendor agree? YES SA Initial of Authorized Company Official

**Federal Rule (8) Notice of awarding agency requirements and regulations pertaining to patent rights with respect to any discovery or invention which arises or is developed in the course of or under such contract.**



**Provisions for purchase with federal funds for contracts exceeding \$100,000**

Pursuant to Federal Rule (8) above, when federal funds are expended by TIPS Member, TIPS Member shall address any requirements and regulations pertaining to patent rights with respect to any discovery or invention which arises or is developed in the course of or under such contract in the contract document and absent language to the contrary or if the contract silent on the subject, the District retains all rights thereto.

Does vendor agree? YES SA Initial of Authorized Company Official

**Federal Rule (9) Awarding agency requirements and regulations pertaining to copyrights and rights in data.**

Pursuant to Federal Rule (9) above, when federal funds are expended by TIPS Member, TIPS Member requires the proposer certify that during the term of an award by the TIPS Member resulting for this procurement process the vendor will surrender upon request any copyrighted materials owned by the TIPS Member but used in the awarded contract performance unless otherwise agreed in a written document by the parties. TIPS Member reserves the rights to all data created or provided to the vendor for the purpose of contract performance resulting for this procurement process and the vendor will surrender such data upon request unless otherwise agreed in a written document by the parties. If the contract is silent or not dispositive on the subject matter data or copyrights TIPS Member retains all rights in the data developed or gathered during the contract term.

Does vendor agree? YES SA Initial of Authorized Company Official

**Federal Rule (10) Access by the grantee, the subgrantee, the Federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the contractor which are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions.**

Pursuant to Federal Rule (9) above, when federal funds are expended by TIPS Member, TIPS Member requires the proposer certify that during the term and after the awarded term of an award by the TIPS Member resulting for this procurement process the vendor will grant access by the grantee, the subgrantee, the Federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the contractor which are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions.

Does vendor agree? YES SA Initial of Authorized Company Official

**Provisions for purchase with federal funds for contracts exceeding \$100,000**

**Federal Rule (11) Retention of all required records for three years after grantees or subgrantees make final payments and all other pending matters are closed.**

Pursuant to Federal Rule (11) above, when federal funds are expended by TIPS Member, TIPS Member requires the proposer certify that the awarded vendor retain of all required records for three years after grantees or subgrantees make final payments and all other pending matters are closed.

Does vendor agree? YES SA Initial of Authorized Company Official

**Federal Rule (12) Compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15). (Contracts, subcontracts, and subgrants of amounts in excess of \$100,000)**

Pursuant to Federal Rule (12) above, when federal funds are expended by TIPS Member, TIPS Member requires the proposer certify that in performance of the contracts, subcontracts, and subgrants of amounts in excess of \$100,000, the vendor will be in compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15).

Does vendor agree? YES SA Initial of Authorized Company Official

**Federal Rule (13) Mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871).**

Pursuant to Federal Rule (13) above, when federal funds are expended by TIPS Member, TIPS Member requires proposer certify that during the term of an award by the TIPS Member resulting for this procurement process the vendor will be in compliance with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871).

Does vendor agree? YES SA Initial of Authorized Company Official



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**SUSPENSION OR DEBARMENT CERTIFICATE**

---

Non-Federal entities are prohibited from contracting with or making sub-awards under covered transactions to parties that are suspended or debarred or whose principals are suspended or debarred. Covered transactions include procurement for goods or services equal to or in excess of \$100,000.00. Contractors receiving individual awards for \$25,000.00 or more and all sub-recipients must certify that the organization and its principals are not suspended or debarred.

You certify that no suspension or disbarment is in place, which would preclude receiving a federally funded contract under the Federal OMB, A-102, common rules

Information may be found at <https://www.sam.gov/index.html>

Has the vendor been debarred from participation in Federal funds contracts?

NO  Initial of Authorized Company Official

YES  Initial of Authorized Company Official

Company Official: Seamus Hennessy, Chief Financial Officer

Company: Ruckus Wireless, Inc.

## CONTRACT Signature Form

The undersigned hereby proposes and agrees to furnish goods and/or services in compliance with the terms, specifications and conditions at the prices quoted unless noted in writing. The undersigned further certifies that he or she is an authorized agent of the company and has authority to negotiate and contract for the company named below.

Company Name: Ruckus Wireless, Inc.

Mailing Address: 350 W. Java Drive

City: Sunnyvale


State: CA

Zip: 94089

Telephone Number: (323) 807-6559

Fax Number: (408) 738-2065


Email Address: seamus.hennessy@ruckuswireless.com


Authorized Signature: 

Printed Name: Seamus Hennessy

Position: Chief Financial Officer

This contract is for a total TERM of one year with the option of two additional years. Vendors shall honor the participation fee for any sales made based on the TIPS contract. Failure to pay the fee will be grounds for termination of contract and will affect the award of future contracts.

 7-16-15  
TIPS Authorized Signature Date

 7-16-15  
Approved by Region VIII ESC Date

References
------------

**\*\* Must have at least 3 References. References must be School, City, County, University, State Agency or Other Government.**

Organization	City	State	Contact Name	Contact Phone
City of San Jose	San Jose	CA	Vijay Sammeta, Chief Information Officer	408-294-9337
City and County of San Francisco	San Francisco	CA	Michael Valencia, Connectivity Service Man	415-581-4071
Lamar University	Beaumont	TX	Priscilla Parsons, CIO	409-880-2279

## Product Limited Warranty Statement

Ruckus Wireless (Ruckus) provides a "Limited Lifetime Hardware Warranty" for certain Products and a "Limited One-Year Hardware Warranty" for others. To determine which Hardware warranty applies to the Product(s) you purchased, and for additional information relating to your warranty, please visit Ruckus' support website at: [support.ruckuswireless.com/warranty](http://support.ruckuswireless.com/warranty).

### Limited 90-Day Software Warranty

Subject to the provisions herein, Ruckus warrants to the original purchasing Customer, that for a period of ninety (90) days following the date of Ruckus' shipment of the Product, the software components in the Product, when unmodified and used in the manner specified in the then-current Documentation, will perform substantially in accordance with the accompanying Product Documentation. If, during the warranty period, Ruckus receives notice that a Product fails to meet the requirements of the foregoing limited software warranty, Ruckus will use reasonable commercial efforts to, at its option, (a) modify such software in a manner that corrects the defect; or (b) replace the defective software with substantially equivalent software at no additional charge.

### Limited Hardware Warranty

For the Limited Lifetime Hardware Warranty, the warranty period continues so long as the Product remains in the possession of the original purchasing Customer. For the Limited One-Year Hardware Warranty, the warranty period is a period of one (1) year following the date of Ruckus shipment of the Product, so long as the Product remains in the possession of the original purchasing Customer.

Subject to the provisions herein, Ruckus warrants to the original purchasing Customer, that for the applicable warranty period identified above, the Products (excluding the software components) will be free from defects in materials and workmanship and will operate substantially in accordance with the accompanying Product Documentation. As used herein, a "Customer" is defined as the individual end-user who is not a distributor, reseller or retailer, but purchases the Products for his/her own use. If Ruckus receives notice of a defect in any hardware Product covered by the foregoing hardware warranty, Ruckus will, at its option, repair or replace the affected Product with the same or a substantially equivalent product. In the event Ruckus is unable, within a commercially reasonable period of time, to repair, replace or correct the non-conformance to warranted condition, Ruckus will refund the original purchase price upon return of the Product. Replacement products may be new, refurbished or contain refurbished materials. This hardware warranty extends only to the original purchasing Customer of the Product and may not be transferred to any other party.

### Obtaining Warranty Service

To obtain the benefit of the foregoing limited warranties, the original purchasing Customer must follow the process documented in the Ruckus Warranty Guidelines, which include instructions for obtaining a Return Materials Authorization (RMA) number. These Guidelines are available at: [support.ruckuswireless.com/warranty](http://support.ruckuswireless.com/warranty). The RMA process will ensure Ruckus Wireless is prepared to receive the affected Product. Should upgraded warranty options apply, the RMA process will initiate those options.

### Warranty Disclaimers

a. Ruckus does not warrant that the operation of the Products will be error free or uninterrupted, or that the product will meet specifications defined by a party other than Ruckus Wireless.

b. These limited software and hardware warranties do not apply if, in the judgment of Ruckus: (i) the Product failure is attributable to damage from shipment, handling, storage, accident, negligence, abuse or misuse (including, without limitation, use outside the recommended environment); (ii) the Product has been used or maintained in a manner not conforming to Product manual instructions or has been modified or altered in any way; (iii) is repaired or modified by anyone other than Ruckus or a Ruckus authorized company; or (iv) the Serial Number or MAC address on the Product has been removed or defaced.

c. THE LIMITED SOFTWARE AND HARDWARE WARRANTIES AND EXPRESS REMEDIES STATED ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHERS, ORAL OR WRITTEN, EXPRESS, IMPLIED OR STATUTORY. RUCKUS EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT OF THIRD-PARTY RIGHTS, QUIET ENJOYMENT AND ACCURACY. IF THE PRODUCTS DO NOT PERFORM AND OPERATE AS WARRANTED, RUCKUS' SOLE LIABILITY AND YOUR EXCLUSIVE REMEDIES SHALL BE THE ONES SET FORTH HEREIN. This disclaimer applies even if the express warranty fails of its essential purpose. Some jurisdictions do not allow exclusions of certain implied warranties or limitations on how long an implied warranty lasts, so some of the above limitations may not apply to you.

### Limitation of Liability

RUCKUS AND ITS SUPPLIERS SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES, ANY LOSS OF PROFITS, DATA OR REVENUES, OR THE COSTS OF REPLACEMENT OR SUBSTITUTE PRODUCTS, ARISING FROM THE PURCHASE, USE OR INABILITY TO USE THE PRODUCTS, WHETHER IN CONTRACT OR TORT (INCLUDING NEGLIGENCE), EVEN IF RUCKUS HAS BEEN INFORMED IN ADVANCE OF THE POSSIBILITY OF SUCH DAMAGES. RUCKUS' TOTAL AGGREGATE LIABILITY FOR DAMAGES OF ANY NATURE, REGARDLESS OF THE FORM OF ACTION, IS LIMITED TO THE PURCHASE PRICE PAID BY THE CUSTOMER FOR THE PRODUCT UPON WHICH LIABILITY IS BASED. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you.

### Governing Law and Your Rights

The laws of the State of California shall govern these warranties and all disputes that may arise from them. The United Nations Convention on Contracts for the International Sale of Goods does not apply to this warranty and is strictly excluded. You hereby agree to all terms of this warranty in the English language. This warranty gives you specific legal rights, and you may also have other rights which vary from jurisdiction to jurisdiction, some of which are noted.

## Software License Agreement

RUCKUS IS WILLING TO LICENSE THE SOFTWARE AS EMBEDDED IN THE ASSOCIATED HARDWARE (COLLECTIVELY, THE "PRODUCT") TO YOU ONLY ON THE CONDITION THAT YOU ACCEPT ALL OF THE TERMS AND CONDITIONS IN THIS AGREEMENT.

PLEASE READ THE TERMS AND CONDITIONS BELOW CAREFULLY. BY INSTALLING AND/OR USING THE PRODUCT, YOU ACKNOWLEDGE THAT YOU HAVE READ THIS AGREEMENT AND AGREE TO BE BOUND BY ITS TERMS AND CONDITIONS.

If you do not agree to these terms and conditions, Ruckus is unwilling to license the Software to you, and you should not use or install the Product. If this is the case, you should immediately contact Ruckus Wireless, Inc. at [www.ruckuswireless.com](http://www.ruckuswireless.com).

1. **GRANT OF LICENSE.** Subject to the terms and conditions of this Agreement, Ruckus grants you a personal, non-exclusive, restricted right to use the object code version of the Software solely in conjunction with the Product and in accordance with the user manuals.
2. **REVISIONS.** From time to time, Ruckus may offer an upgrade, revision or other modification ("Revision") to the Software. Such Revision is subject to the terms of this Agreement and is specifically limited to use with a single installation of Ruckus Software, unless otherwise stated. Use with a subsequent installation of Ruckus Software violates the terms of this Agreement.
3. **OWNERSHIP.** Ruckus and its suppliers shall retain ownership of all patents, copyrights, trademarks, trade names, trade secrets and other intellectual property rights in the Software. The Software is protected by copyright laws and international copyright treaties, as well as other intellectual property laws and treaties. Except as provided in Section 1, you shall have no right, title or interest in or to the Software. The Software is licensed, not sold, to you for use only under the terms of this Agreement.
4. **RESTRICTIONS.** Ruckus reserves all rights in the Software not expressly granted to you. You may not copy, modify, create derivative works of, distribute, sell, assign, pledge, sublicense, lease, loan, rent, timeshare or otherwise transfer the Software. You agree to comply with all applicable laws relating to the use of the Product, including without limitation, all restrictions relating to copyrights, and shall defend, indemnify and hold Ruckus and its suppliers harmless from any claims arising out of any violation of such laws. You may not derive or attempt to derive the source code of the Software by any means, nor permit any other party to derive or attempt to derive such source code. You may not reverse engineer, decompile, disassemble, or translate the Software or any part thereof. If you are a European Union resident, information necessary to achieve interoperability with other programs is available upon request.
5. **WARRANTY DISCLAIMER.** Except as expressly stated in the Product Limited Warranty Statement provided with the Product, the Software is licensed to you "as is," without warranty of any kind. Ruckus and its suppliers disclaim all warranties, express or implied, either in fact or by operation of law, statutory or otherwise, including without limitation, the warranties of merchantability, fitness for a particular purpose, title and non-infringement of third-party rights.
6. **LIMITATION OF LIABILITY.** Ruckus and its suppliers shall not be liable for any indirect, exemplary, special, punitive, consequential or incidental damages of any kind, or for loss of revenue or profits, loss of business, or any damages that are not direct, even if Ruckus or such supplier has been advised of the possibility of such damages. In no event will Ruckus' aggregate liability in connection with this agreement, regardless of the form of the action giving rise to such liability (whether in contract, tort or otherwise), exceed one hundred U.S. dollars (\$100.00 U.S.). These disclaimers of liability will not be affected if any remedy provided herein fails of its essential purpose. Some jurisdictions do not allow the limitation or exclusion of liability for consequential or incidental damages so the above limitation or exclusion may not apply to you. This limited liability provision is a fundamental part of the basis of Ruckus' bargain hereunder, and Ruckus would not be willing to license the Software to you absent such limitations.
7. **TERMINATION.** This Agreement shall terminate automatically upon your breach of any term of this Agreement. Upon termination, you shall destroy the Software.
8. **GOVERNMENT END USERS.** The Software is a "commercial item" as that term is defined at 48 C.F.R. 2.101, consisting of "commercial computer software" and "commercial computer software documentation" as such terms are used in 48 C.F.R. 12.212. Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4, all U.S. Government End Users acquire the Software with only those rights set forth herein.
9. **EXPORT CONTROL.** The Software is subject to the export control laws of the United States. You may not export or re-export the Software without the appropriate United States and foreign government licenses. You shall otherwise comply with all applicable export control laws and shall defend, indemnify and hold Ruckus and all Licensor suppliers harmless from any claims arising out of your violation of such export control laws.
10. **ASSIGNMENT.** You may assign your rights in this Agreement only if you assign all of your rights in the Product and such assignee agrees to be bound by all terms and conditions of this Agreement. Your license will automatically terminate upon any assignment.
11. **GENERAL.** This Agreement shall for all purposes be governed by and interpreted in accordance with the laws of the State of California, USA, without regard to the conflicts of laws, principles or any other principles that would result in the application of a different body of law. The United Nations Convention on Contracts for the International Sale of Goods is specifically disclaimed. If any provision of this Agreement is held by a court of competent jurisdiction to be unenforceable for any reason, the remaining provisions hereof shall be unaffected and remain in full force and effect. This Agreement is the final, complete and exclusive agreement between the parties relating to the subject matter hereof, and supersedes all prior or contemporaneous understandings and agreements relating to such subject matter, whether oral or written.

BY INSTALLING AND/OR USING THE PRODUCT, YOU ACKNOWLEDGE THAT YOU HAVE READ THIS AGREEMENT, UNDERSTAND IT, AND AGREE TO BE BOUND BY ITS TERMS AND CONDITIONS.

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# About Ruckus Wireless

## The Company

Ruckus Wireless, Inc. (NYSE: RKUS) is a global supplier of carrier-class, Smart Wi-Fi products and technologies. Ruckus competes in the global market for mobile Internet infrastructure and enterprise wireless LAN systems. The company is credited with developing the industry’s first adaptive Wi-Fi technology for carriers.

<b>Formed</b>	June, 2004
<b>Headquarters</b>	Sunnyvale, California
<b>Status</b>	Publicly held (NYSE: RKUS)
<b>Market</b>	Mobile Internet infrastructure Founders
<b>Founders</b>	William Kish and Victor Shtrom
<b>President/CEO</b>	Ms. Selina Lo
<b>2014 revenue</b>	\$327 million
<b>Q4 2014 revenue</b>	\$86 million
<b>Customers</b>	48,000+ mobile carriers, broadband service providers and medium/large enterprises
<b>Product(s)</b>	Smart Wi-Fi access points, controllers, and WLAN management systems
<b>Employees</b>	900+
<b>Notable customer</b>	Angels Stadium of Anaheim, Accor SA, Axtel, Bright House Networks, China Telecom, City/County of San Francisco, City of San José, CA, Global Reach, Indian Wells Tennis Garden, KDDI, Katoen Natie, Kawasaki Motors, Le Pain Quotidien, Mandarin Oriental Hotel Group, Marriott, Marston's, MWEB, O2 Telefónica, Oi, Orange, PCCW, Time Warner Cable, Towerstream, Trump National Doral Miami, San Francisco Unified School District, San José Earthquakes (MLS), Scandic Hotels, Shanghai Railway Bureau, Sprint & Waterstones Book Stores

Formed in June 2004, Ruckus is one of the fastest growing wireless technology companies in the world, experiencing rapid revenue growth. From 2009 to 2014, Ruckus realized a compound annual growth rate of 49% with revenues reaching \$327 million in 2014 and Q4 2014 revenue of approximately \$86 million. Patented technologies integrated into Ruckus Smart Wi-Fi products enable unprecedented reliability, range, speed and scale of Wi-Fi services. These technologies uniquely focus and steer Wi-Fi signals by choosing the best performing paths and channels — adapting to environmental changes and mitigating interference, obstacles and obstructions that degrade Wi-Fi performance.

Ruckus markets and manufactures a complete line of advanced indoor and outdoor wireless systems – ZoneFlex™ and SmartCell™ – for service provider and enterprise customers to support applications such as WLAN access, mobile data offload, public access, and managed wireless LAN services.

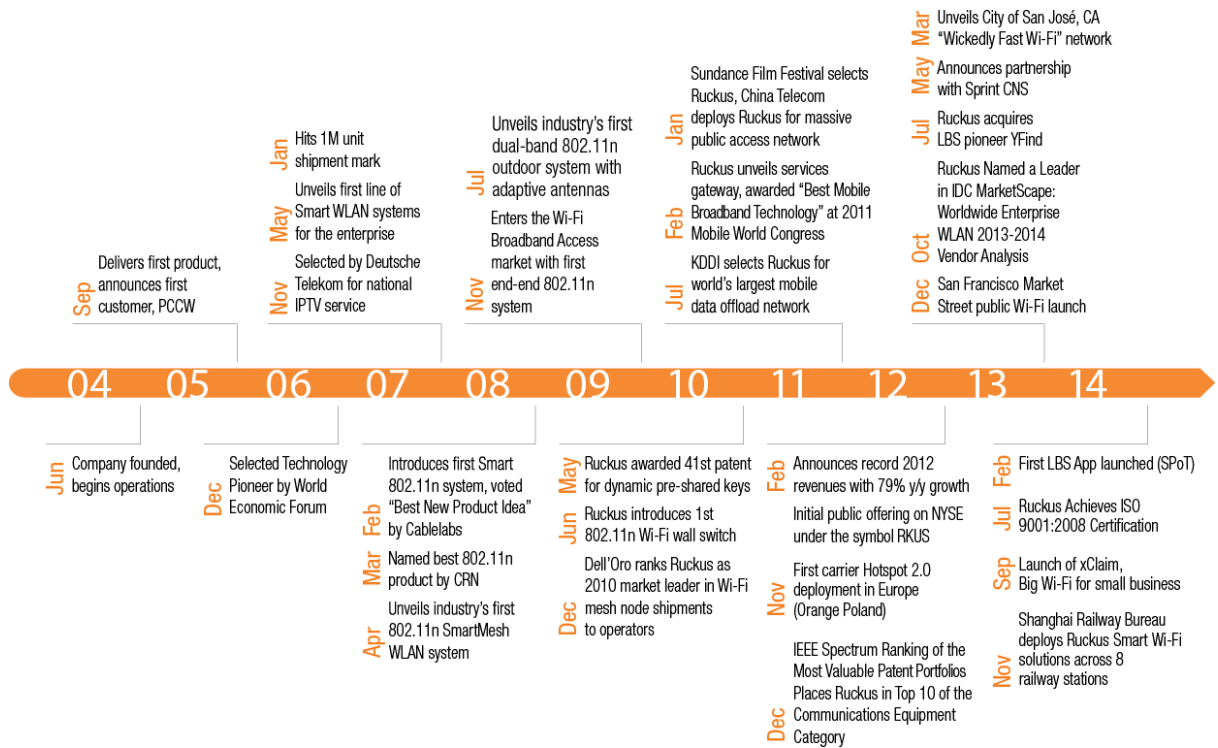
The company sells its products worldwide through both direct and indirect channels. Ruckus Smart Wi-Fi systems are sold through a vast global network of accredited channel partners, systems integrators and distributors to enterprises of all sizes. To date, the company has shipped millions of units to approximately 48,000 customers worldwide.

Carriers and corporations use Ruckus products to solve capacity, reliability and coverage challenges caused by increasing volumes of traffic, devices and of users accessing wireless networks.

### Rapid Revenue Growth



Source: Ruckus Wireless



A highly diversified and global business, Ruckus is critically acclaimed for its excellence in engineering, garnering more than 50 industry awards for industry-leading product performance and company success.

The company is also credited with having the world's largest Wi-Fi deployment in India through Tikona Digital Systems, which has installed more than 40,000 mesh nodes across 25 cities to provide last-mile wireless access to hundreds of thousands of subscribers. And in Japan, KDDI, is using Ruckus to build a mobile data offload network with over 120,000 Wi-Fi locations. Ruckus has a large and diverse base of world-class service provider and enterprise customers including KDDI (Japan), The Cloud, a BSKYB company (UK), O2 Telefónica (UK), Time Warner Cable (US), Oi (Brazil), PCCW (Hong Kong), Cincinnati Bell (US), Airtel Africa, China Telecom, Katoen Natie (Belgium), Vodafone (UK), SingTel (Singapore), Telstra, CenturyLink, Bright House Networks, Marriott, Fairmont Hotels, Marston's PLC, City of San José, CA, Waterstones Book Stores, Le Pain Quotidien, and many more.



## Wireless Networks Standards Compliance Statement



Ruckus Wireless products are 802.11a/b/g/n/ac standards based and are certified by the Wi-Fi Alliance.

## The Technology

At the heart of all Ruckus Wireless products is patented Smart Wi-Fi technology.

Smart Wi-Fi is a collection of unique technologies including:

- BeamFlex
- ChannelFly
- SmartCast
- SmartSec
- SmartMesh

Integrated within Ruckus Smart Wi-Fi systems, these technologies ensure reliable and predictable performance, essential for supporting the most challenging applications.

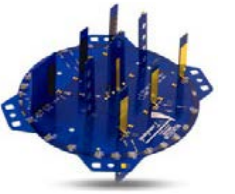
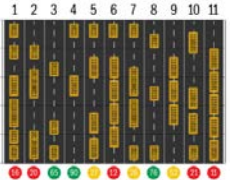


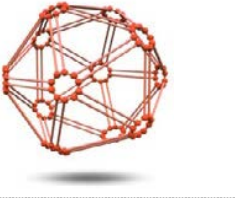
**BeamFlex** is the industry's most advanced Wi-Fi smart antenna implementation. Combining a compact internal antenna array with expert control software, BeamFlex continuously ranks the antenna configurations for each receiving device and reconfigures itself in real-time to optimise throughput mitigating the effect of interference and physical clutter.

**ChannelFly** is a dynamic self-optimising channel selection algorithm that uses live channel activity to measure and rank channel capacity based on measured throughput to client devices. ChannelFly improves throughput to client devices in noisy environments providing up to 60% increased capacity over classic channel selection techniques.

**SmartCast** is an advanced traffic management engine providing myriad unique functions such as content parsing, multicast conversion, application classification, and quality of service controls. Unlike other quality of service implementations, SmartCast provides automatic flow classification, software pre-queuing per station, and per-packet scheduling of traffic over the antenna array.

**SmartSec** a unique collection of advanced security capabilities enables dynamic generation of pre-shared encryption keys, role-based user access, Layer 2/3 client isolation, robust link layer encryption, and wireless intrusion detection and prevention

**SmartMesh** Mesh networking changes the fundamental economics of WLAN deployment. SmartMesh Networking uses Ruckus-patented Smart Wi-Fi and expert RF routing technologies to create long-range, reliable and adaptive Wi-Fi trunk connections between mesh APs, obviating the need for cabling Ethernet to every AP.

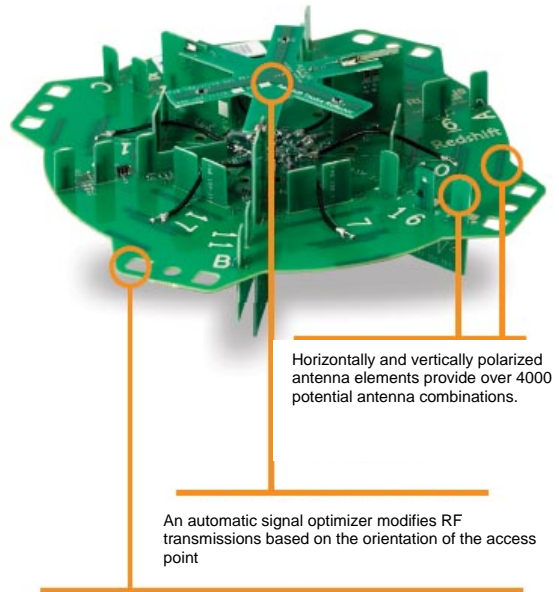
	<p><b>BeamFlex</b> Patented RF smart antenna array and expert control software provides interference rejection, dynamic signal path selection and controls – constantly forming and directing Wi-Fi signals over the best path.</p>
	<p><b>ChannelFly</b> A unique approach to channel selection and optimisation that uses live channel activity to measure the available <i>capacity</i> of Wi-Fi channels.</p>
	<p><b>SmartCast</b> Patented smart traffic management system that automatically processes, classifies, queues and schedules packets for transmission over the smart antenna array providing unmatched QoS in High Density environments.</p>
	<p><b>SmartSec</b> A collection of advanced security mechanisms such as Dynamic Pre-Shared Keys, 802.1X authentication, role and device based policy enforcement, wireless client isolation, client rate limiting, DoS attack prevention and wireless intrusion detection and prevention.</p>
	<p><b>SmartMesh</b> Sophisticated RF routing mechanism that provides backbone connectivity without Ethernet cabling. Uses adaptive antenna system to create a reliable internetwork of Wi-Fi links between access points.</p>



## BeamFlex Dynamic Adaptive Antenna Technology

The primary technology that enables Ruckus Wireless to deliver high performance, reliable Wi-Fi connections in cluttered and interference prone environments is a patented adaptive antenna technology called BeamFlex. Using the patented BeamFlex adaptive antenna technology, the ZoneFlex APs automatically adapt to constant changes in the environment, optimising throughput by focusing Wi-Fi signals in the most effective directions enabling high performance, extended coverage, and unmatched delivery of delay sensitive traffic. BeamFlex is ideal for delivering business-class hot zone services, such as voice over Wi-Fi, IP-based video, or secure enterprise access.

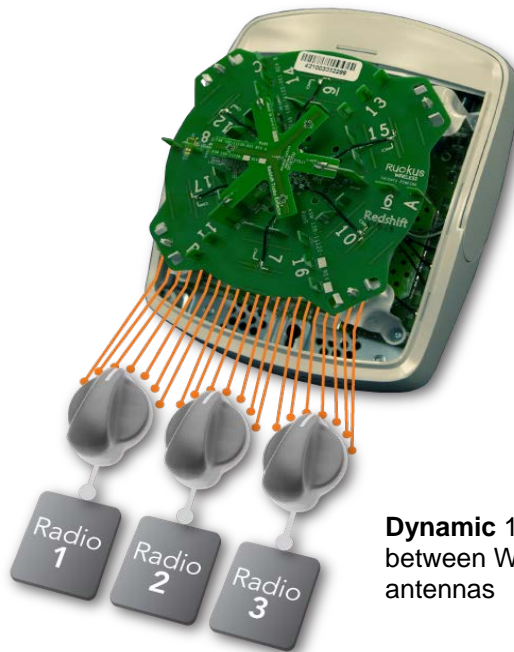
The smart antenna is made up of a number of individual high gain directional antenna elements each controlled by the BeamFlex smart antenna control software operating on each access point. The smart antenna system provides up to 6dB of statistical gain. Each antenna element is controlled to alter the antenna array's direction, gain and null position in real-time on a per packet per client basis. The BeamFlex smart antenna arrays are available in a range of complexity with the most advanced highest performing smart antenna arrays having as many as 72 controlling elements generating several thousand possible antenna pattern combinations for the control software to optimize. The BeamFlex smart antenna system provide an additional degree of freedom in RF signal processing that can only be offered by Ruckus Wireless access points. The access point's ability to dynamically adapt in real time to ever changing RF conditions ensures stable and reliable client connections.



A patented smart antenna array integrates high-gain, directional antenna elements for unprecedented range extension, signal reliability and higher data rates.



**Fixed** 1:1 relationship between Wi-Fi radios and antennas



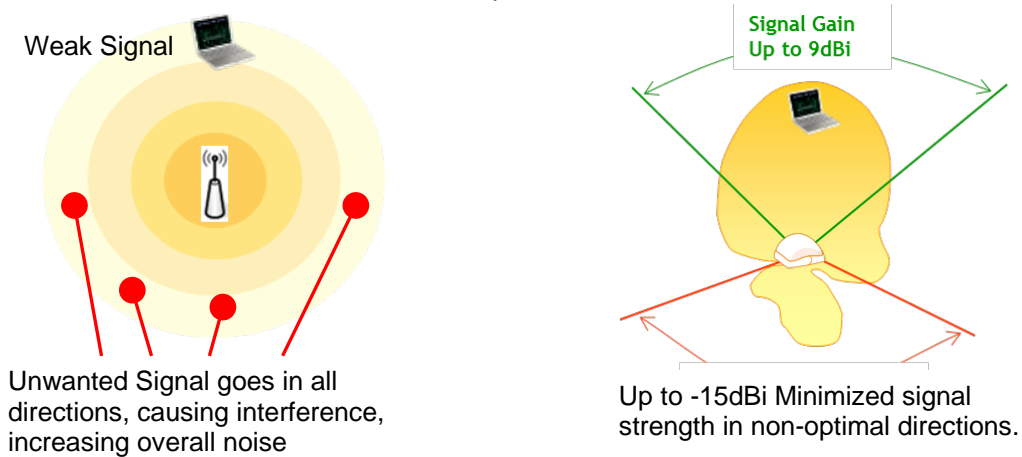
**Dynamic** 1:many relationship between Wi-Fi radios and antennas

By dynamically adapting the RF signals for each MIMO stream on a per client basis, the BeamFlex smart antenna system is able to improve signal strength at the client device, reduce re-transmission, maximize throughput to the end device, maximize the capacity of the RF environment and mitigate interference received at the access point by up to 15dB.

## BeamFlex Advantages

### Improved Client SNR / SINR

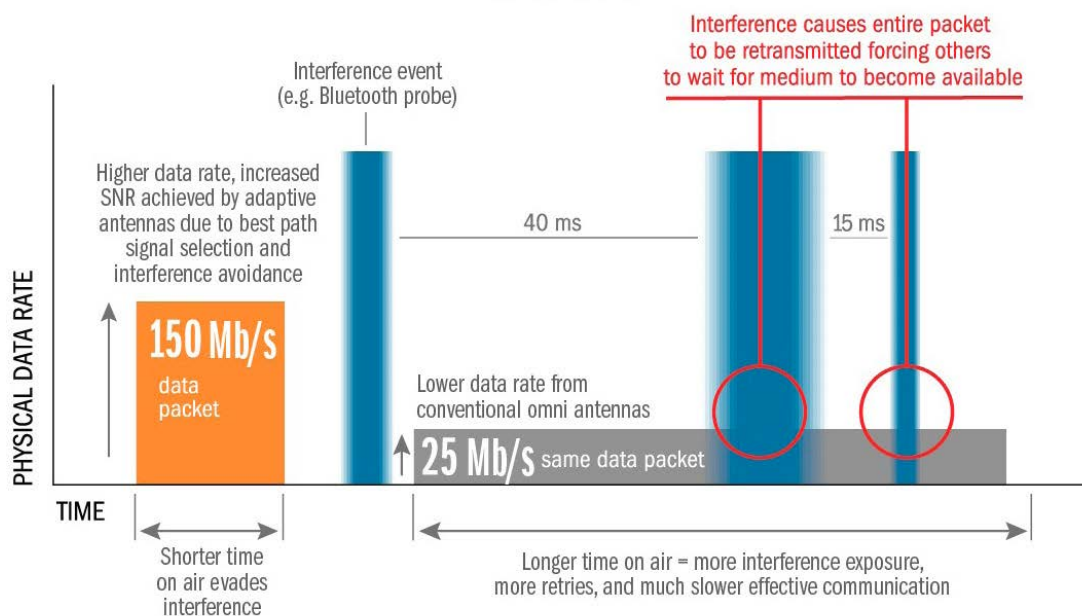
BeamFlex adaptive antenna arrays consist of multiple high gain and reflective antenna elements. The adaptive antenna elements provide up to 6dB of antenna gain, improving the received signal strength at the client and increasing the Signal to Interference Noise Ratio (SINR) improving a clients chances of decoding the information sent to it – even when interference is present.



In addition to improving client received signal strength, BeamFlex adaptive antenna arrays focus signals to client devices only in the direction that they are required. By focusing signals only in specific directions for a given client BeamFlex lowers the signal strength of transmissions in non-optimal directions by up to 15dB reducing the amount of “self interference” generated by a Wi-Fi network containing multiple APs and lowering the overall noise floor.

### Interference Management

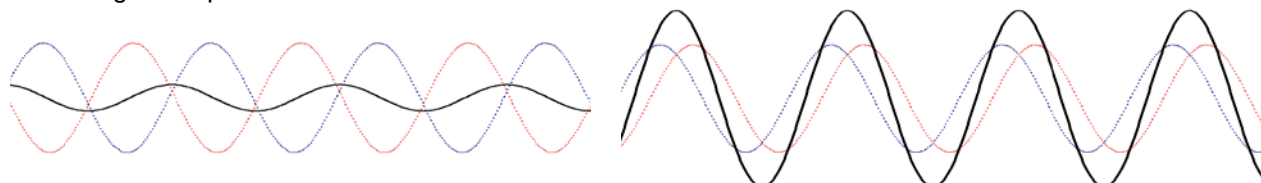
BeamFlex adaptive antenna arrays provide Ruckus Wireless APs with the ability to extract more capacity from a given amount of airtime. At all ranges, adaptive antennas deliver higher SNR/SINR, delivering more efficient modulation and coding schemes and reducing errors/retries. This enables individual transmissions to be more efficient, and it simultaneously has a lower likelihood of corruption by interference, which is inherently sporadic and unpredictable.



## Multipath

When a signal is sent from a wireless access point, the signal travels in many different directions and is reflected, refracted, scattered and diffracted by many different surfaces and obstacles in the physical environment. The signal that the client station receives is actually a composite of the primary waveform that travelled directly from the AP as well as multiple other waveforms that are somehow altered by the physical environment. These waveforms can coincide either in a constructive or a destructive combination at the client device. The occurrence of destructive combinations that weaken the received signal is referred to as "Multipath Fading".

BeamFlex automatically focuses signals in directions that optimise throughput, reducing the negative effects of multipath fading and using the multipath effects inherent to the physical environment to maximise the resultant signal amplitude at the client device.

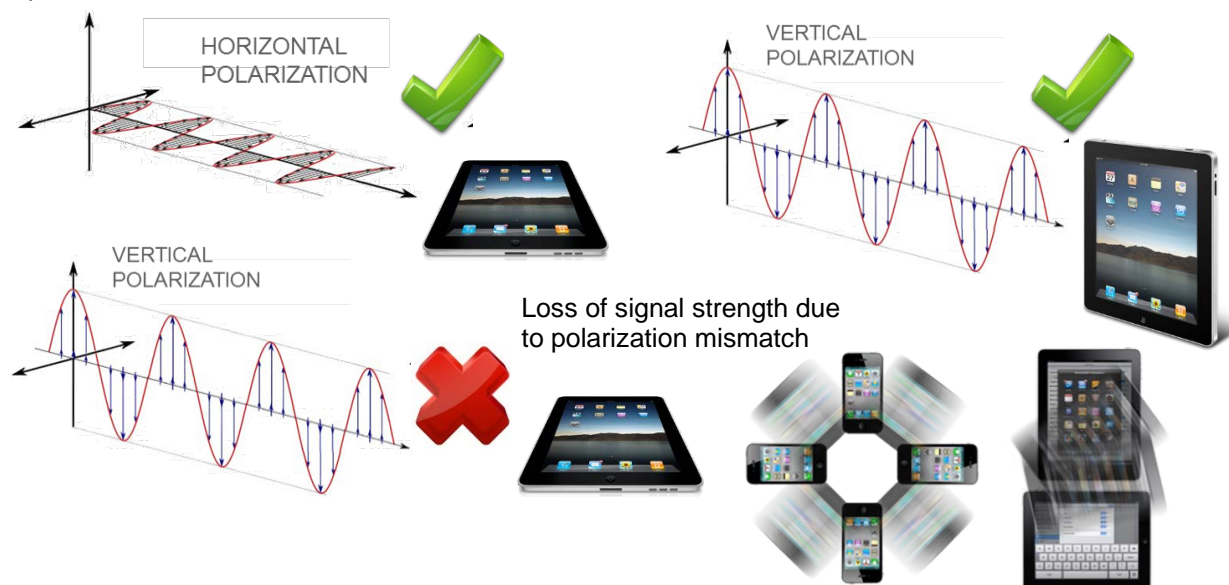


**Destructive Combination:**  
Decreased resultant signal amplitude

**Constructive Combination:**  
Increased resultant signal amplitude

## Polarization Diversity

Single-stream client devices such as Tablets and Smart Phones have space constraints that do not allow for client antenna diversity, yet these devices are extremely mobile, often rapidly changing orientation between portrait and landscape or lying flat on a desk and being tilted at an angle. Using simplistic antennas with a fixed polarization can cause a loss in signal strength result in degraded throughput to mobile devices. Ruckus Wireless BeamFlex+ adaptive antennas feature a mix of two distinct polarizations (vertical and horizontal) across antenna elements. The signals received on these antennas, across the two distinct polarizations of BeamFlex+, are combined by the AP in such a way as to maximize the received signal-to-noise ratio, allowing best possible performance. This has the same effect as if the AP were physically aligning its antennas with the client device. The adaptive nature of BeamFlex+ means that the antennas adapt to client device orientation in real-time.



Polarization diversity does not only improve throughput to client devices on the downlink. Ruckus Wireless patented Polarization Diverse with Maximal Ratio Combining (PD-MRC) allows Ruckus Wireless APs to use polarized antennas to receive mobile client device transmissions effectively improving the AP reception performance by 3 to 5 dB.

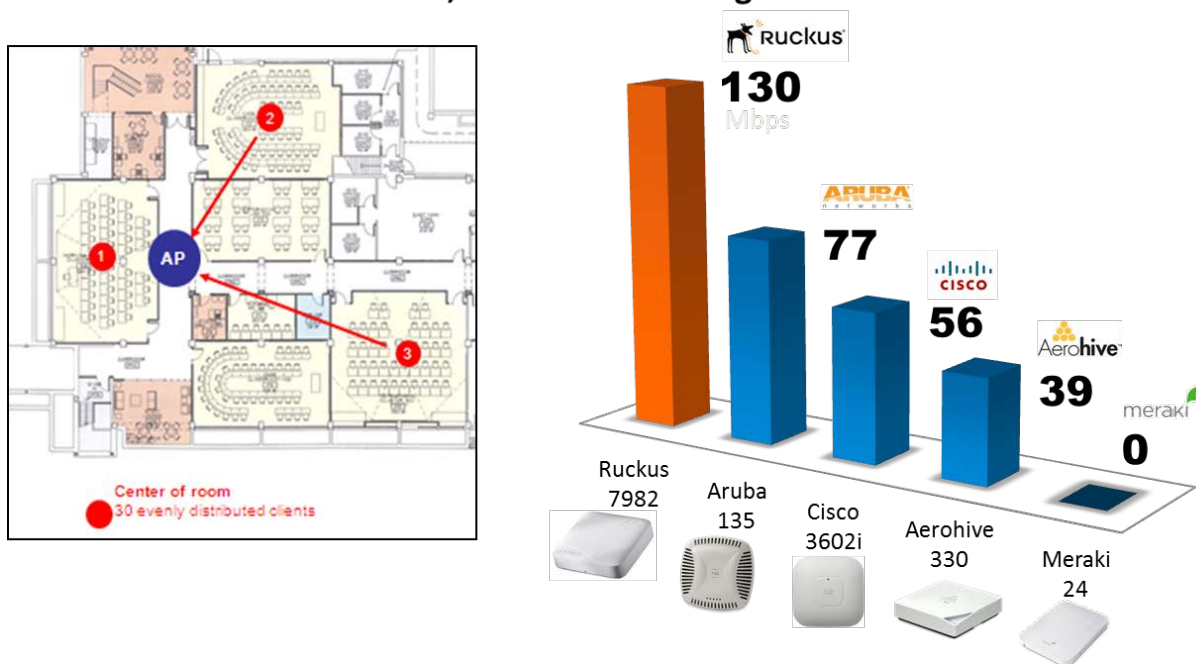


## BeamFlex Performance

Ruckus BeamFlex technology is proven to provide a more stable user experience with greater coverage. Recent independent testing performed by Syracuse University in the USA showed that although Ruckus Wireless did not win all the test cases, it was by far the most consistent performer across all of them. A sample test case result is shown below and the full report can be downloaded from:

[http://dcc.syr.edu/PDF/CCENT\\_3-stream\\_eval.pdf](http://dcc.syr.edu/PDF/CCENT_3-stream_eval.pdf)

### Multi-client, Multi-location single AP test



## BeamFlex Interference Mitigation

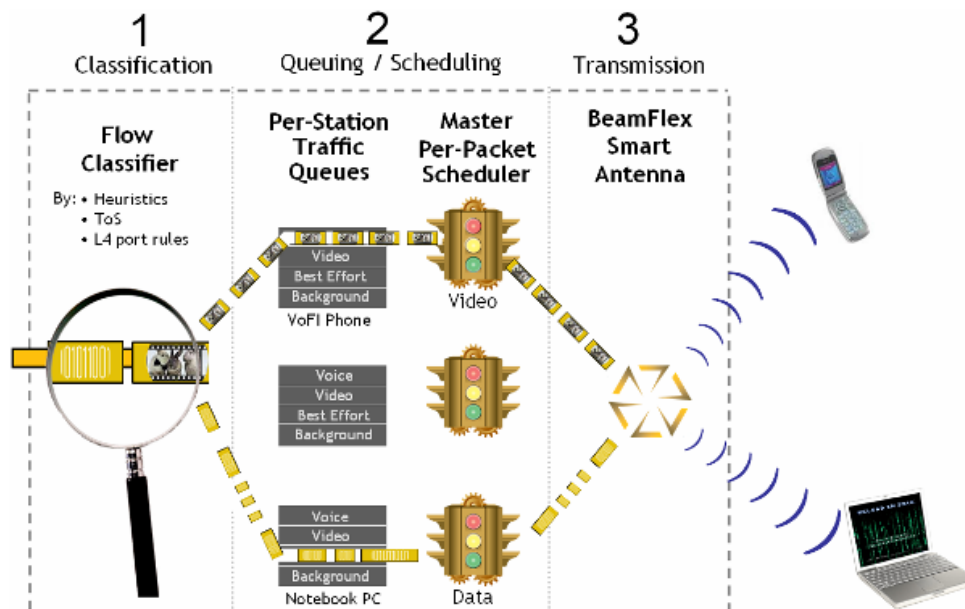
Wi-Fi uses unlicensed RF spectrum. This means that any 3rd party in-band interference occurring within that spectrum must be tolerated. It is not possible to control interference from other devices legally sharing the same radio spectrum. This interference can originate from non-Wi-Fi devices like cordless phones, microwaves and intruder alarm systems. Interference can also originate from adjacent APs and Wi-Fi clients.

BeamFlex will automatically reject a great deal of interference simply by focusing the APs antenna narrowly away from the source of interference. In general, unless the source of interference is so close to a ZoneFlex AP that it drowns out all of its antenna elements, BeamFlex should automatically steer Wi-Fi signals on the best path to maintain a reasonable level of performance in adverse environments.

## SmartCast QoS

Ruckus Wireless SmartCast traffic engineering includes a granular mechanism of software based buffer management. This provides 4 high priority and 4 low priority queues per client device (compared to 802.11e which specifies 4 to 8 queues shared across the entire AP). SmartCast is actually a super-set of 802.11e and is specifically optimized for video, voice and data.

The SmartCast QoS means that a client (for example a laptop) could concurrently receive a video clip, browse the internet, and make a VoFI with all the traffic being automatically prioritized.



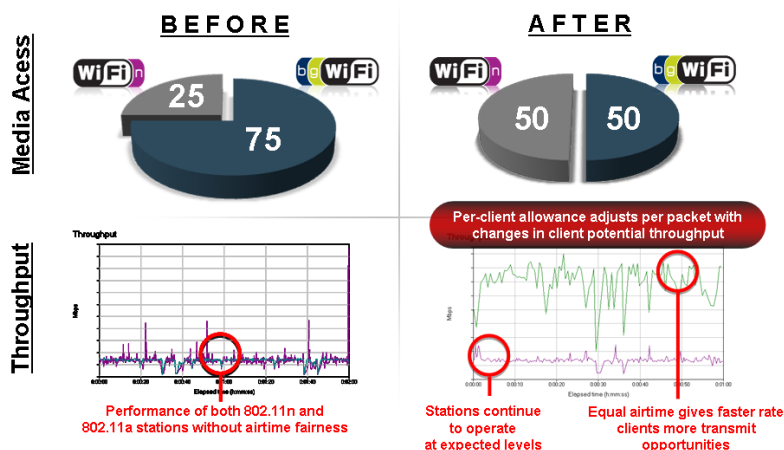
## Airtime Fairness

This technique introduced by Ruckus Wireless to increase performance to the clients that are connected with fast speeds and reduce the impact of slow clients to the overall network throughput.

In the example below: if you have on your WLAN 2 clients connected, client-1 at 54Mbps and Client-2 at 6Mbps, a regular AP will spend more time to send/receive the data from the Client-2 because it is slow than the Client-1, so when the Client-2 is transmitting/receiving data the Client-1 is waiting for its time and then in the overall process the Client-1 get slow speeds.

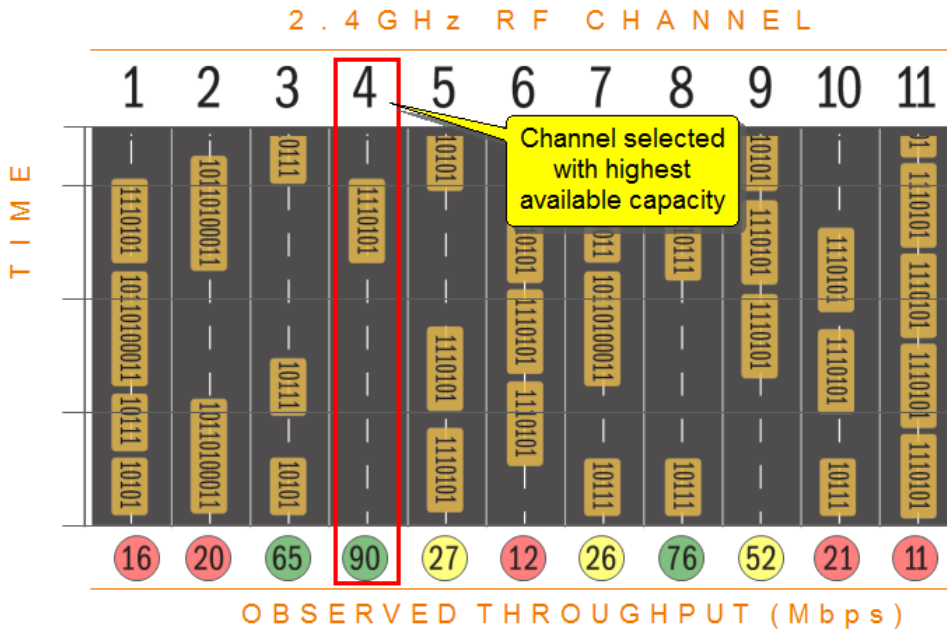
The pictures below illustrate how a slow client can slow down the overall performance of other higher speed clients without airtime fairness.

*Optimizes WLAN by Allocating Fair Use of RF Medium Among Clients*



## ChannelFly

ChannelFly is a new and unique channel selection technology from Ruckus Wireless. Instead of using the traditional methods of channel selection like background scanning or interpretation of the spectrum, ChannelFly measures and records the actual available capacity on each channel and selects the channel with the highest available capacity for each AP radio. ChannelFly is able to take into account both Wi-Fi and non-Wi-Fi use of the spectrum and is able to react very quickly to sudden drops in current channel capacity.

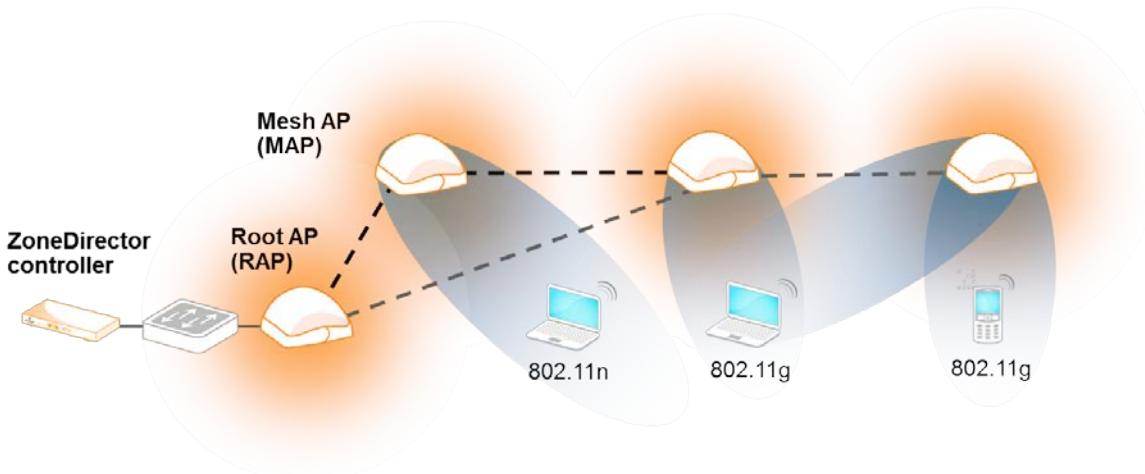


## SmartMesh

SmartMesh allows for APs to be deployed without a wired backhaul, instead utilizing wireless backhaul on the 5Ghz band. This makes for simple deployment where it is not possible to run data cables; facilitates deployment of APs in temporary locations; allows additional capacity to be added to an area when there is an anticipated increase in the number of users for an event.

SmartMesh delivers three key ingredients that have previously hindered the use of wireless meshing:

1. High performance through combining 802.11ac with BeamFlex technology
2. Reliable connectivity between mesh nodes using best path selection and interference avoidance techniques
3. Ultra-simple deployment through the automation of AP and mesh provisioning



## High Availability

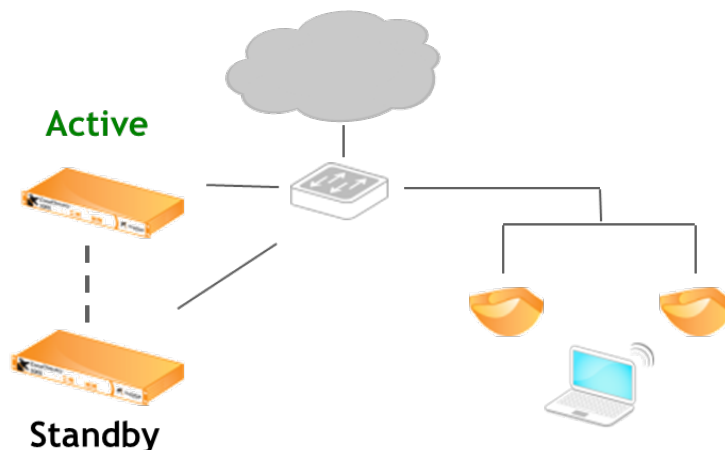
The ZoneDirector controller is primarily a solid-state design with the only moving components being the cooling fans and so it is inherently reliable. However, in a medium sized Enterprise deployment where the wireless services must be available 24 x 7 it is recommend to deploy a HA architecture for added resilience.

SmartRedundancy allows 2 ZoneDirector controllers to operate in a 1+1 cluster for redundancy i.e. and active and a hot-standby controller.

SmartRedundancy provides a “virtual IP” address for administrative access and automatically synchronizes the configuration between the HA pair as well as client session state. In the event of a problem with the primary ZoneDirector, the backup ZoneDirector will automatically take control of the Wireless network.

The HA pair of ZD controllers can be deployed in the same location; however for improved resilience it is recommended they be deployed in separate buildings as long as there is a L2 or L3 data path between them for communications.

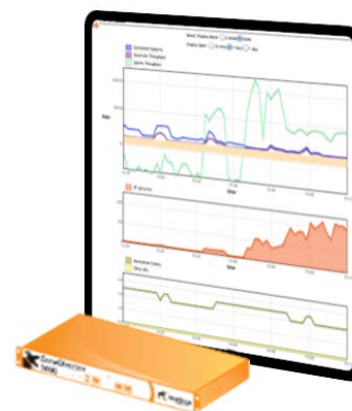
In the event that an AP should fail then BeamFlex can adapt to provide coverage into the failed APs area, subject to sufficient AP deployment density.



## Performance Monitoring

This feature collates several pieces of statistical information into an easy to view set of graphs to aid troubleshooting of wireless performance issues on a per AP radio basis. The information displayed includes:

- Potential Throughput of the AP radio
- Actual Tx and Rx usage on the AP radio
- RF Pollution level
- Client count
- Other AP count



## Technology Partners

In order to provide additional network services Ruckus Wireless has partnered with several leading best-of-bread service vendors. These are broadly broken down into the following categories:

### Enterprise Partnerships

Voice over WiFi					
Location-RTLS					
Management / Security					
Public Access					
Warehouse / Rugged Devices					
Classroom Management					
IP Video Security					
Infrastructure					

### SPoT Ecosystem Partners

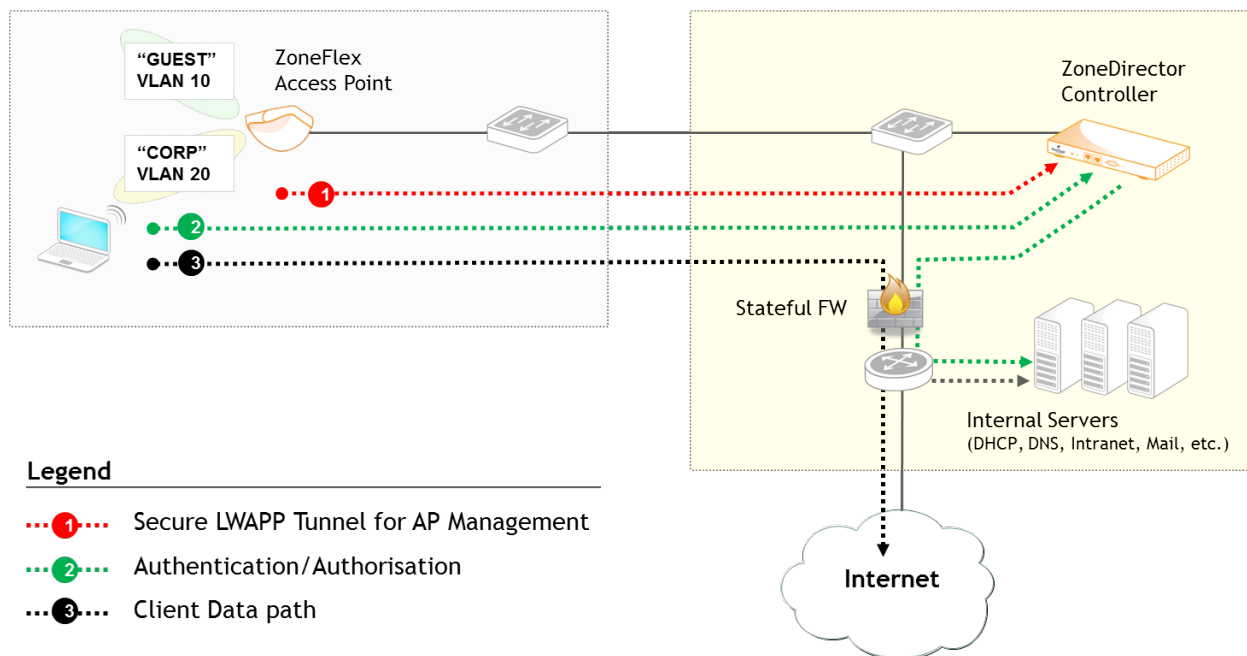
Hospitality					
Retail					
Casinos / Gaming					
Stadiums / large venues					
Enterprise					

## ZoneFlex Architecture

When Ruckus Wireless started to scope the ZoneFlex solution years ago they were able to compare the different architectures available in the WLAN market. Taking what they learned into account they were able to develop the framework for a scalable, adaptable, cost effective and reliable architecture.

One of the key points taken into consideration at that time was that the majority of legacy WLAN vendors tunnel all the client data traffic through their WLAN controller. Although this may have some specific service benefits, it adds a lot of cost, physical requirements and complexity to the controller. More importantly it can lead to the controller becoming a bottleneck as the number of APs/clients increases and as clients move from legacy to 11ac technologies. This can result in poor performance and require fork-lift hardware upgrades to overcome.

As per the diagram below, in the ZoneFlex architecture only client authentication is tunnelled to the controller. All client data traffic is forwarded directly on towards its destination based on the clients default gateway. Hence the ZoneFlex solution only requires 3 models of controller to scale to 1,000 APs and they are relatively inexpensive, simpler to deploy and simple to manage. Also, as they are small (the ZD3000 supporting up to 500 APs is a mere 19" wide by 1U high) they require much less power, less cooling and less rack space than legacy controllers.





## Ruckus Wireless Products

### ZoneFlex Access Points

As shown below, our BeamFlex adaptive antenna technology powers a full range of Wi-Fi access points, from a small wall switch designed specifically for hospitality applications to our general-purpose mid-range and high end indoor products, plus outdoor APs for high density area coverage, more focused sectorized deployments, and point-to-point backhaul.

## Comprehensive Smart Wi-Fi Portfolio



### ZoneFlex Product Portfolio

*Indoors and out, BeamFlex powers a complete family of access points*

---

### Ruckus Wireless Indoor Access Points

#### Ruckus ZoneFlex H500



The ZoneFlex H500 is the industry's first wired and wireless wall switch using Ruckus' patented BeamFlex+ adaptive antenna technology to deliver high-speed 802.11ac Wi-Fi in an ultra-sleek, low-profile design that can be quickly and discretely installed in a standard electrical junction box. Ideal for offering converged services in hotel guest rooms, student residences, and multi-dwelling units, the ZoneFlex H500 provides an easy way to offer multiple connections to a single room without multiple cables.

Equipped with four Ethernet ports for in-room access, the ZoneFlex H500 can be used to connect a range of wired network devices such as IPTV set top boxes, IP telephones, or networked minibars while simultaneously providing dual band 802.11ac wireless LAN coverage. An IEEE 802.3af-compliant Power-over-Ethernet (PoE) port on the H500 allows devices such as IP telephones to be powered directly from the wall switch. The H500 itself may be powered via standard PoE or a DC power adapter.

The ZoneFlex H500 is completely inconspicuous and secure, minimizing the protrusion off the wall to make in-room cabling and furniture arrangement simple. Cable channels on the back of the H500 support legacy cabling which enable new cable pulls to override existing services, streamlining installation options and reducing costs.

#### Features

- Ruckus patented BeamFlex+ adaptive antennas optimized for in-room performance and mobile clients
- Matched Band Coverage ensures similar Wi-Fi coverage for both 2.4 and 5 GHz client devices
- Integrated dual radio 2x2 802.11ac Wi-Fi AP and Ethernet wall switch
- High Performance Wi-Fi and four Ethernet access ports offers HSIA
- Wi-Fi Redundancy, in-room coverage as well as corridor and adjacent room
- Powered by either POE or 48VDC
- Supplies POE power for in-room devices such as VoIP phones
- SmartCast QoS
- Multiple BSSIDs per radio with unique QoS and security policies
- WPA-PSK, WPA-TKIP, WPA2 AES, 802.11i
- 802.1X support for RADIUS and Active Directory\*
- Zero-IT and Dynamic PSK\*
- Captive portal and guess accounts\*
- Mounts into standard US and EU single gang wall jack
- RJ-45 for uplink Ethernet port
- Cable channel for preserving legacy infrastructure (e.g. PBX phones)

\* when used with Ruckus ZoneDirector



### Ruckus ZoneFlex 7055



The Ruckus ZoneFlex 7055 is the industry's first dual band concurrent wired and wireless wall switch that integrates high-speed 802.11n Wi-Fi into an ultra-sleek, low-profile design that can be quickly and discretely installed in a standard wall junction box. Ideal for offering converged services within hotel guest rooms and university dormitories, the ZoneFlex 7055 provides an easy way to offer multiple connections into a single room without multiple cables.

The ZoneFlex 7055 delivers high performance 2.4GHz and 5 GHz 802.11n wireless coverage and four wired Ethernet access connections that can be used to support a range of in-room IP device and user connectivity options. An additional pass-through port allows connectivity for digital phones that requires native access to an in-house PBX system.

An IEEE 802.3af-compliant POE port, up to 6.5 watts, powers devices such as IP telephones directly from the wall switch. The ZoneFlex 7055 requires only a single POE cable drop thereby reducing cabling, switch ports, and power sourcing equipment.

The ZoneFlex Wi-Fi Wall Switch is completely inconspicuous, minimizing the protrusion off the wall to make in-room cabling and furniture arrangement simple. Flexible deployment options allow the ZoneFlex 7055 to be easily installed via two uplink Ethernet options: an RJ-45 Ethernet jack or a 110 punch down block connection.

With the ability to broadcast up to 32 SSIDs per radio, the ZoneFlex 7055 supports port-based VLANs. Authentication options include: 802.1x, MAC-based, captive portal, LDAP, RADIUS, Active Directory and through an internal user database

#### Features

- Integrated 2x2:2 600Mbps Wi-Fi AP and Ethernet wall switch
- Dual band 11n Wi-Fi and four Ethernet access ports offers HSIA with a Gigabit Ethernet uplink
- Powered by either POE or 48VDC - Supplies POE power 7W or 15W
- SmartCast QoS
- WEP, WPA-PSK, WPA-TKIP, WPA2 AES, 802.11i
- 802.1X support for RADIUS and Active Directory\*
- Zero-IT and Dynamic PSK\*
- Captive portal and guess accounts\*
- Mounts into standard US and EU single gang wall jack
- RJ-45 or 110 punch down block options for uplink Ethernet port
- One RJ-45 pass-through connection
- SmartMesh capable
- Torx screws to secure AP and provide security against opportunistic theft or tampering

### Ruckus ZoneFlex 7321



The ZoneFlex 7321 is the industry's most affordable dual-stream entry-level 802.11n access point. The ZoneFlex 7321 is designed primarily for single AP deployments where the demand for mobile Internet services is rising but also where tighter economic constraints dictate a balance toward lower cost over sheer performance.

Weighing only 7 ounces, the Ruckus ZoneFlex 7321 is a two spatial stream (2x2:2), dual-band selectable access point (AP) that delivers the highest performance at the most competitive price point in the market.

Unlike other APs in its class, ZoneFlex 7321 supports transmit beamforming (TxBF) to increase in signal gain of up to 3 dB. In an ultra sleek, unobtrusive and lightweight form factor (7 oz. /198 g.), the ZoneFlex 7321 supports up to 256 concurrent clients and can be deployed as a standalone wireless router in single AP environments such as a small business, remote office, or hotspot locations, or part of a centrally managed Ruckus Smart WLAN. The ZoneFlex 7321 comes with a myriad of advanced features that maximizes Wi-Fi performance and capacity including bandsteering, airtime fairness, and capacity-driven auto channel selection (ChannelFly™).

3G/LTE USB Backhaul option - The ZoneFlex 7321-U is the ideal solution for carrier class Mi-Fi. For service providers who wish to monetize spectrum and for Internet providers, the 7321-U can be quickly and easily deployed in environments where there is limited wired connectivity. Also perfectly suited for transportation deployments, such as trains, busses, boats etc., the 7321-U can leverage LTE/3G mobility to provide seamless Wi-Fi to passengers or employees. The 7321-U is also an ideal solution for retail vendors wishing to back-up their existing PoS systems in cases of WAN failure or downtime as well as many other enterprise vendors with the need for a WAN back-up system.

#### Features

- Transmit beamforming for extended range
- Single radio with selectable 2.4 GHz or 5 GHz option for maximum flexibility
- Band steering and airtime fairness to optimize capacity and performance
- ChannelFly - advanced channel selection and interference mitigation
- L2TP tunneling support
- Standard 802.3 af Power over Ethernet (PoE)
- Router mode with NAT and DHCP services
- Unobtrusive design with integrated mounting
- 32 BSSIDs with unique QoS and security policies
- Advanced QoS packet classification and automatic priority for latency sensitive traffic
- Wall or Ceiling mountable

### Ruckus ZoneFlex 7372



The Ruckus ZoneFlex 7372 is the high performance, 802.11n mid-range Smart Wi-Fi access point with adaptive antenna technology. It delivers high-performance and reliable 802.11n wireless networking at the industry's most affordable price point.

Unlike any other 802.11n wireless solution in its class, the ZoneFlex 7372 combines patented adaptive antenna technology and automatic interference mitigation to deliver consistent, predictable performance at extended ranges with up to an additional 4dB of BeamFlex gain on top of the physical antenna gain and up to 10dB of interference mitigation.

The 7372 is also ideal for client performance with mobile devices that constantly change orientation with dual-polarized antennas that adapt to hand-held device movement.

Each ZoneFlex 7372 integrates Ruckus-patented BeamFlex, a software-controlled, high gain antenna array that continually forms and directs each 802.11n packet over the best performing signal path. The ZoneFlex 7372 automatically selects channels for highest throughput potential using Ruckus ChannelFly dynamic channel management, adapting to environmental changes. Once deployed, enterprises never have to worry about constant site surveys as the environment changes.

A sleek and low-profile design, the ZoneFlex 7372 was purpose-built for cost-minded enterprises requiring reliable high speed client connectivity. It is ideal for a variety of enterprise and hotspot environments including hotels, schools, retail outlets, branch offices and public venues.

#### Features

- Dual-band concurrent (5GHz/2.4GHz) (Also available as a 2.4 GHz only model 7352)
- Adaptive antenna technology and advanced RF management
- Up to 10dB interference mitigation / 4 dB BeamFlex gain
- Standard 802.3af Power over Ethernet (PoE)
- Router mode with NAT and DHCP services
- Up to 32 BSSIDs per radio with unique QoS and security policies
- Advanced QoS packet classification and automatic priority for latency-sensitive traffic
- Dynamic, per-user rate-limiting for hotspot WLANs
- WEP, WPA-PSK (AES), 802.1X support for RADIUS and AD\*
- Ethernet 802.1x port-based authentication (authenticator and supplicant)
- Smart Mesh Networking\*
- Captive portal and guest accounts \*
- Wall, desktop or ceiling mountable

### Ruckus ZoneFlex 7441



Wi-Fi services on coax distributed antenna systems

Wi-Fi has rapidly become the de facto solution for providing indoor wireless data services. Wi-Fi is inexpensive, popular with data users, and available on all data centric devices, whereas distributed antenna systems have long been the preferred solution for providing indoor mobile coverage. Both technologies can provide a neutral host solution where the subscribers of any mobile operator can be easily connected. Typically these are deployed as parallel networks in many venues, but with the ZoneFlex 7441 access point it is now possible to deploy Wi-Fi over an existing DAS network enabling operators of DAS systems to create and market Wi-Fi services for property management, building operations, guest access and even wholesale Wi-Fi HotSpot services across a building.

The 2.4GHz or 5GHz selectable ZoneFlex 7441 is a fully featured, fully integrated platform, purpose built and designed to meet the demanding requirements for today's in-building wireless services. The ZoneFlex 7441 is an 802.11n 1x1 MIMO AP with an external N style coax connector designed to provide high-power RF and expanded link-budgets needed to push WLAN services over passive coaxial DAS segments. In cases where a DAS system has already been deployed, this is an extremely cost effective way to add Wi-Fi coverage. As Wi-Fi demand increases, it is always possible to come back at a later date and add a high-capacity Wi-Fi overlay network based on Ethernet backhaul.

The ZoneFlex 7441 is an excellent way to get started with Wi-Fi in a simple, quick, and cost effective manner.

Note: 7441 is only available with ZoneFlex 9.7 and greater.

#### **Features**

- High power output enable RF signals across a large DAS footprint
- Plug and play with flexible mounting and powering options into an existing DAS infrastructure quickly deploys universal in building Wi-Fi coverage

### Ruckus ZoneFlex R300



The next generation Ruckus ZoneFlex™ R300 is an entry level 802.11n 2x2:2 dual-band 2.4GHz and 5GHz concurrent access point designed for bandwidth hungry and latency sensitive applications such as Voice and Video over Wi-Fi. These APs boast Ruckus patented adaptive antennas deliver BeamFlex. This technology works in conjunction with Ruckus' advanced channel optimization to provide industry-leading wireless performance. Unlike any other 802.11n wireless solution in its class, the ZoneFlex R300 combines patented adaptive antenna technology and automatic interference mitigation to deliver consistent, predictable performance at extended ranges with up to an additional 4dB of BeamFlex gain on top of the physical antenna gain and up to 10dB of interference mitigation.

Each ZoneFlex R300 integrates Ruckus-patented BeamFlex, a software-controlled, high gain antenna array that continually forms and directs each 802.11n packet over the best performing signalpath. The ZoneFlex R300 automatically selects channels for highest throughput potential using Ruckus ChannelFly dynamic channel management, adapting to environmental changes. Once deployed, enterprises never have to worry about constant site surveys as the environment changes.

#### Features

- Dual-band concurrent (5GHz/2.4GHz)
- Adaptive antenna technology and advanced RF management
- Up to an additional 4dB BeamFlex gain / 10dB interference mitigation
- Automatic interference mitigation, optimized for high-density environments
- Integrated smart antenna technology
- Standard 802.3af Power over Ethernet (PoE)
- Router mode with NAT and DHCP services
- IP multicast video streaming support
- Up to 32 BSSIDs per radio with unique QoS and security policies
- Advanced QoS packet classification and automatic priority for latency-sensitive traffic
- Dynamic, per-user rate-limiting for hotspot WLANs
- Ethernet 802.1x port-based authentication (authenticator and supplicant)
- Bandsteering and airtime fairness
- Wall, desktop or ceiling mountable
- Limited lifetime warranty

### Ruckus ZoneFlex R500



The Ruckus ZoneFlex R500 is a mid-range 802.11ac 2x2 dual-band 2.4GHz and 5GHz concurrent access point. The Ruckus ZoneFlex R500 delivers high-performance and reliable 802.11ac wireless networking at a competitive price point.

Unlike any other 802.11ac wireless solution in its class, the ZoneFlex R500 combines patented adaptive antenna technology and automatic interference mitigation to deliver consistent, predictable performance at extended ranges with up to an additional 4dB of BeamFlex gain on top of the physical antenna gain and up to 10dB of interference mitigation.

The R500 is ideal for wireless networks servicing mobile devices with dual-polarized antennas that adapt in real time to hand-held device movement and rotation ensuring consistent performance.

Each ZoneFlex R500 integrates Ruckus-patented BeamFlex, a software-controlled, high gain antenna array that continually forms and directs each Wi-Fi packet over the best performing signal path. The ZoneFlex R500 automatically selects channels for highest throughput potential using Ruckus ChannelFly dynamic channel management, adapting to environmental changes. Once deployed, enterprises never have to worry about constant site surveys as the environment changes.

A sleek and low-profile design, the ZoneFlex R500 was purpose-built for enterprises requiring reliable high speed client connectivity. It is ideal for a variety of medium density enterprise and hotspot environments including SMBs, hotels, schools, retail outlets, and branch offices.

#### Features

- Dual-band concurrent (5GHz/2.4GHz)
- Backward compatible with legacy 802.11 clients
- 80 MHz channelization; 256-QAM modulation support
- Adaptive antenna technology and advanced RF management
- Up to an additional 4dB BeamFlex gain / 10dB interference mitigation / 3 dBi physical antenna gain
- Automatic interference mitigation, optimized for high-density environments
- BeamFlex+ (PD-MRC) improves signal reception of mobile devices
- Standard 802.3af Power over Ethernet (PoE)
- Router mode with NAT and DHCP services
- IP multicast video streaming support
- Advanced QoS packet classification and automatic priority for latency-sensitive traffic
- Dynamic, pre-user rate-limiting for hotspot WLANs
- Ethernet 802.1x port-based authentication (authenticator and supplicant)
- Band steering and airtime fairness support
- Application recognition and control\*
- SmartWay Bonjour gateway\*
- SecureHotspot\*
- SPOT location services\*
- Band balancing\*

\* when used with Ruckus ZoneDirector or SmartZone controller.



### Ruckus ZoneFlex R600



The Ruckus ZoneFlex R600 is a mid-range 802.11ac 3x3 dual-band 2.4GHz and 5GHz concurrent access point. The Ruckus ZoneFlex R600 delivers high-performance and reliable 802.11ac wireless networking at a competitive price point for medium density venues such as in K-12 or education.

The ZoneFlex R600 combines patented adaptive antenna technology and automatic interference mitigation to deliver consistent, predictable performance at extended ranges with up to an additional 6dB of BeamFlex gain on top of the physical antenna gain and up to 15dB of interference mitigation.

The R600 is ideal for wireless networks servicing mobile devices with dual-polarized antennas that adapt in real time to maximize performance for the mobile enterprise.

Performance is further enhanced as the ZoneFlex R600 integrates Ruckus' patented BeamFlex, a software-controlled, high gain adaptive antenna technology. The ZoneFlex R600 automatically selects channels for highest throughput potential using Ruckus ChannelFly dynamic channel management, adapting to environmental changes.

A sleek and low-profile design, the ZoneFlex R600 was purpose-built for enterprises requiring reliable high speed client connectivity. It is ideal for a variety of medium density enterprise and hotspot environments including SMBs, hotels, schools, retail outlets, and branch offices.

#### Features

- Backward compatible with legacy 802.11 clients
- 80 MHz channelization; 256-QAM modulation support
- Adaptive antenna technology and advanced RF management
- Automatic interference mitigation, optimized for high-density environments
- BeamFlex+ (PD-MRC) improves signal reception of mobile devices
- Standard 802.3af Power over Ethernet (PoE)
- Router mode with NAT and DHCP services
- Advanced QoS packet classification and automatic priority for latency-sensitive traffic
- Dynamic, pre-user rate-limiting for hotspot WLANs
- WPA-PSK (AES), 802.1X support for RADIUS and Active Directory\*
- Ethernet 802.1x port-based authentication (authenticator and supplicant)
- BYOD, Zero-IT and Dynamic PSK\*
- Admission control/load balancing\*
- Band steering and airtime fairness support
- Captive portal and guest accounts\*
- Application recognition and control\*
- SmartWay Bonjour gateway\*
- SecureHotspot\*
- SPOT location services\*
- Band balancing\*

\* when used with Ruckus ZoneDirector or SmartZone controller.

### Ruckus ZoneFlex 7982



Ruckus ZoneFlex 7982 is the industry's first dual-band, three-stream 802.11n access point that incorporates Ruckus patented BeamFlex™ adaptive antenna arrays. Coupled with transmit beamforming (TxBF), the ZoneFlex 7982 delivers the highest throughput of any AP in its class.

The ZoneFlex 7982 ensures the most reliable connectivity within challenging and ever-changing RF environments. With BeamFlex, the ZoneFlex 7982 offers a 2-4x increase in performance and range and is capable of delivering up to 6 dB of signal-to-interference-plus-noise (SINR) improvement and up to 15 dB of interference mitigation.

Capable of supporting 500 concurrent clients, the ZoneFlex 7982 simultaneously supports spatial multiplexing and BeamFlex to deliver the best price/performance of any three-stream 802.11n AP.

With a throughput of 450 Mbps per radio, the ZoneFlex 7982 ensures maximum throughput to three-stream capable clients while also improving single and dual-stream client performance. This is achieved through the unique combination of adaptive antenna technology, predictive channel selection and adaptive polarization diversity. Backward compatible with all existing clients, the ZoneFlex 7982 can function either as a standalone AP or as part of centrally-managed Wireless LAN with the Ruckus ZoneDirector Smart WLAN controller. ZoneFlex 7982 is purpose-built for high-capacity, high performance and interference-laden environments such as airports, public venues, hotels, universities and conference centres. The perfect choice for data-intensive streaming multimedia applications, the ZoneFlex 7982 delivers picture perfect HD-quality IP video while supporting VoIP and data applications that have stringent quality of service requirements.

#### Features

- Concurrent dual-band (5 GHz/2.4 GHz) support
- Automatic interference avoidance, optimized for high-density environments
- Space Time Block Coding for increased handset performance
- Improved Maximum Ratio Combining (MRC) for best-in-class receive sensitivity
- Low Density Parity Check (LDPC) for increased data throughput at all ranges
- PD-MRC improves signal reception of mobile devices
- Integrated smart antenna array with a thousand unique patterns for ultra reliability
- Unmatched Rx sensitivity down to -101 dBm
- Standard 802.3af Power over Ethernet (PoE)
- Multicast IP video streaming support
- Four software QoS queues per client station
- Up to 64 BSSIDs with unique QoS and security policies
- Wall or ceiling mountable with unobtrusive design

### Ruckus ZoneFlex R700



The ZoneFlex R700 combines Ruckus-patented RF technologies with the new IEEE 802.11ac standard to provide best-in-class WiFi performance. The R700 brings 802.11ac support to the most demanding environments such as mobile-device-heavy wireless networks in a power-efficient design that eliminates the need to upgrade PoE infrastructure.

Ruckus-patented BeamFlex+ adaptive antennas on the ZoneFlex R700 allow for over 1,000 unique antenna patterns in each of the 2.4 GHz and 5 GHz bands. BeamFlex+ works seamlessly with the 802.11 standards to provide superlative RF coverage and interference mitigation in the most challenging wireless environments. By directing signals optimally for each client device's location, BeamFlex+ allows the R700 to deliver 802.11ac rates at further ranges than APs with non-adaptive antennas. Polarization diversity, built into the BeamFlex+ antenna system, allows the R700 to adapt to each client device's physical orientation. This ensures the best possible performance for client devices of different and changing physical orientations, making the R700 an ideal access point for wireless networks serving mobile & handheld client devices.

Designed with a strong emphasis on power efficiency, the ZoneFlex R700 is compliant with 802.3af PoE under all modes of operation, with no caveats. This means customers can upgrade their networks to support 802.11ac without having to upgrade their PoE infrastructure to PoE+ (802.3at) or sacrifice access point performance.

The R700 is a dual radio, 3 spatial stream access point capable of concurrent dual-band (5 GHz/2.4 GHz) operation. The 5 GHz 802.11a/n/ac radio is capable of physical layer rates of up to 1300 Mbps, and the 2.4 GHz 802.11b/g/n radio offers an additional 450 Mbps of physical layer throughput.

#### Features

- Backward compatible with legacy 802.11 clients
- 80 MHz channelization; 256-QAM modulation support
- Automatic interference avoidance, optimized for high-density environments
- Space Time Block Coding for increased handset performance
- Improved Maximum Ratio Combining (MRC) for best-in-class receive sensitivity
- Low Density Parity Check (LDPC) for increased data throughput at all ranges
- BeamFlex+ (PD-MRC) improves signal reception of mobile devices
- Integrated smart antenna array with >1000 unique patterns for ultra reliability
- Unmatched Rx sensitivity down to -99 dBm
- Either standalone or centrally managed
- Integrated NAT and DHCP support
- Compatible with 802.3af Power over Ethernet (PoE)
- Multicast IP video streaming support
- Four software QoS queues per client station
- Future support for advanced spectrum analysis
- Up to 32 (2.4 GHz) and 8 (5 GHz) BSSIDs with unique QoS and security policies
- Built in mounting options for fast and easy deployment with unobtrusive design
- Band steering and airtime fairness

### Ruckus ZoneFlex R710



The ZoneFlex R710 combines Ruckus patented technologies and best-in-class design with the next generation of 802.11ac features to deliver industry-leading Wi-Fi performance and reliability.

Featuring BeamFlex+ adaptive antenna technology, the ZoneFlex R710 offers up to 2x increase in performance and range by optimizing antenna coverage on a per client, per transmission basis. BeamFlex+ additionally mitigates co-channel interference by directing Wi-Fi signals where they are needed instead of towards neighboring access points. The R710's BeamFlex+ adaptive antenna system is also equipped with dual polarization antennas, allowing the access point to adapt to the physical orientation of client devices and maximize uplink performance.

With throughput capacities of 800 Mbps (2.4GHz) and 1733 Mbps (5GHz), the ZoneFlex R710 supports the highest available throughput for Wi-Fi clients. 802.11ac Multi-User MIMO (MU-MIMO) support allows the R710 to simultaneously transmit to multiple client devices, drastically improving airtime efficiency, overall throughput, and availability.

The ZoneFlex R710 is backward compatible with all existing Wi-Fi clients, and can function either as a standalone AP or as part of centrally-managed Wireless LAN.

ZoneFlex R710 is purpose-built for high-capacity, high performance and interference-laden environments such as schools, universities, public venues, hotels, and conference centers. The perfect choice for data-intensive streaming multimedia applications, the ZoneFlex R710 delivers picture perfect HD-quality IP video while supporting VoIP and data applications that have stringent quality of service requirements.

#### Features

- 802.11ac Multi-User MIMO (MU-MIMO)
- Concurrent dual-band (5 GHz/2.4 GHz) support
- 80 MHz channelization; 256-QAM modulation support; 1733 Mbps PHY rates at 5 GHz
- Ethernet Port Link Aggregation (LACP)
- 802.3af mode of operation
- 802.11ac standard Tx Beamforming
- Space Time Block Coding for increased handset performance
- Improved Maximum Ratio Combining (MRC) for best-in-class receive sensitivity
- Low Density Parity Check (LDPC) for increased data throughput at all ranges
- BeamFlex+ (PD-MRC) improves signal reception of mobile devices
- Unmatched Rx sensitivity down to -104 dBm
- USB port for hosting Internet-of-Things (IoT) devices such as Bluetooth Low Energy (BLE) smart beacons
- Integrated NAT and DHCP support
- Multicast IP video streaming support
- Four software QoS queues per client station
- Up to 16 BSSIDs per radio with unique QoS and security policies
- Wall or ceiling mountable with padlock security
- Built in mounting options for fast and easy deployment

### Ruckus Wireless Outdoor Access Points

#### Ruckus ZoneFlex 7731 PTP/PTMP



The Ruckus Wireless ZoneFlex 7731 is a centrally managed Point to Point (PTP) and Point to Multipoint (PTMP) Bridge designed specifically for carrier class backhaul over short distances.

Designed for harsh outdoor conditions, the Ruckus ZoneFlex 7731 is perfect for service providers looking to easily extend branded broadband services, aggregate video surveillance transmission, backhaul 3G networks, offload data traffic from 3G networks, deploy multimedia hotspots, or offer wireless broadband services where fixed line access is limited.

Auto-pairing of wireless bridges, flexible mounting options, a forgiving antenna pattern and an easy-to-use aiming function and channel optimization wizard allows installers to deploy and optimize a wireless link in a matter of minutes, significantly increasing productivity and reducing deployment costs.

Support for up to 4 multipoint nodes per root-bridge and a range of dual polarised external antennas allows for flexible PTMP deployments including omnidirectional short range PTMP, sectorized medium range PTMP and high gain, long range PTP designs.

All information transmitted between the root bridge and non-root bridge is fully encrypted using WPA2/AES and an automatically generated pre-shared key. Support for 802.1X port authentication on the Ethernet port enables the deployment of highly secure networks.

Ultra simple to use, the lightweight ZoneFlex 7731 provides a 30-degree 3dB beamwidth antenna for easy aiming. The ZoneFlex 7731 can be managed through its own WebGUI or is centrally managed by Ruckus FlexMaster EMS.

#### Features

- Internal, Dual Polarized Antenna
- -3dB BeamWidth (Horizontal / Vertical)
- Max Range 15 km / 10 mi
- Wire-like, long range throughput
  - Up to 190 Mbps at 1.5 km/1 mi
  - Up to 165 Mbps at 3 km/2 mi
  - Up to 100 Mbps at 5 km/3 mi
  - Up to 50 Mbps at 10 km/6 mi
- Sophisticated LED-based aiming software
- Flexible mounting options

### Ruckus ZoneFlex 7782 Family



The ZoneFlex 7782 Series is the industry's highest capacity, highest performing access point with adaptive antenna technology and smart Wi-Fi meshing. It is the first dual-band 802.11n outdoor access point (AP) to integrate adaptive antenna technology coupled with transmit beamforming (TxBF) to enable much longer range signals, and more resilient mesh connections that automatically adapt to interference and changing environmental conditions.

The ZoneFlex 7782 Series implements Ruckus-patented BeamFlex™ smart antenna technology that enables consistent, high-performance, extended coverage and multimedia support in the most challenging RF environments. Ruckus ChannelFly dynamic channel management optimizes client throughput up to 50 percent by selecting the best channel to operate on.

Supporting advanced SmartMesh Networking, the Ruckus ZoneFlex 7782 Series is perfect for service providers looking to quickly and economically expand branded broadband services, offload data traffic from congested 3G networks, deploy multimedia hotspots or offer wireless broadband services where fixed line access is limited.

The ZoneFlex 7782 Series can be centrally managed by the ZoneDirector Smart WLAN controller or the SmartCell Gateway (SCG) 200 as part of a unified indoor/outdoor wireless LAN, deployed as a standalone AP and managed individually, or through the FlexMaster remote Wi-Fi management system.

Ruckus ZoneFlex 7782 Series simply plugs into any Ethernet network and automatically discovers the ZoneDirector or SCG 200. No RF tuning, no client configuration needed. The small, lightweight hardware unit is designed for easy installation and to minimize the visual impact and public awareness challenges of introducing new infrastructure to a public venue.

#### Features

- Concurrent dual-band (5GHz/2.4GHz) support
- Adaptive antenna technology and advanced RF management
- Up to 8 dB antenna gain / 15dB interference mitigation
- Automatic interference avoidance, optimized for high-density environments
- Standard 802.3af/at Power over Ethernet (PoE)
- Polarization Diversity for optimal mobile device performance
- Standard 802.3af output for surveillance cameras
- Integrated AC power
- Integrated GPS for location services and network timing
- 900 Mbps of user throughput (450 Mbps/radio)
- 32 BSSIDs per radio with unique QoS and security policies\*\*
- Spectrum Analysis
- Wall, pole or ceiling mountable



### Ruckus ZoneFlex 7781CM Strand Mount



The Ruckus ZoneFlex 7781CM is a purpose-build strand mounted access point that combines dual-band 802.11n with an integrated cable modem. With patented adaptive antenna technology, the 7781CM delivers unprecedented range and reliability for multiple system cable operators.

The Ruckus 7781CM is lightweight and can be easily installed and integrated with the cable operator's network. It leverages existing cable assets, including mounting, power, backhaul and customer service systems to quickly and easily extend wireless services to cable operators' customers.

The ZoneFlex 7781CM implements Ruckus-patented BeamFlex™ adaptive antenna technology that enables consistent, high-performance, extended coverage and multimedia support. Network operators can create different quality of service for various WLANs to provide tiered services or data offload solutions. With a separate monitoring radio sensor, the 7781CM can avoid radar without any downtime and perform real time spectrum analysis with no packet loss. Further, the GPS capability of the 7781CM can locate the exact location of the device on the network.

The Ruckus ZoneFlex 7781CM is ideal for MSOs expanding branded broadband services through their cable infrastructure to provide hotspot services to neighbourhoods, resorts, train stations, and other public locations. The 7781CM delivers broadband services outdoors to extend managed wireless LANs (WLANs) for strand mounted locations and where Ethernet cabling is not feasible.

#### Features

- Concurrent dual-band (2.4GHz/5GHz) operation
- Automatic interference mitigation, optimized for high density environments
- Up to 9 dB added signal gain / 15 dB interference mitigation
- Polarization diversity for ideal mobile device performance
- Standard 802.3af output for IP surveillance camera or up to 15.4 W for powering small cells
- Extended temperature range for cold climates (-40° C)
- Powered by cable infrastructure
- Integrated GPS for location based services
- Spectrum analysis
- Advanced QoS packet classification and automatic priority for latency sensitive traffic
- WEP, WPA-PSK (AES), 802.1X support
- Flexible tunneling
- Integrated DOCSIS 3.0 8 x 4 cable modem
- Remote reboots between AP and CM

### Ruckus ZoneFlex T300 Family



The ZoneFlex T300, a dual-band 802.11ac outdoor access point (AP), is designed explicitly for high density public venues such as airports, convention centers, plazas & malls, and other dense urban environments.

These environments require support for users that demand high capacity and mobile device ready WLAN services. The T300 is uniquely designed to serve these demanding environments with dual-polarized adaptive antennas that dynamically select the best antenna patterns on a per packet basis to provide reliable client connections and to increase network capacity while implicitly mitigating interference and improving signal-to-interference-plus-noise ratio (SINR).

In addition, the T300 uniquely leverages a predictive model for channel selection (ChannelFly) that uses actual activity to learn what channels will yield the most capacity to provide the highest client speeds and reduced interference.

Designed for easy installation within an ultra lightweight and low profile enclosure, the T300 is ideal for venue owners and enterprises looking to quickly and economically deploy Wi-Fi in high-capacity environments.

With the T300, venue operators can now deliver an enhanced Wi-Fi experience, which directly translates into increased customer loyalty and ultimately increased revenue.

#### Features

- Concurrent dual-band (5GHz/2.4GHz) support
- 1200 Mbps of total WLAN RF capacity
- BeamFlex+ adaptive antenna technology and advanced RF management
- Up to 10dB interference mitigation
- Optimized for high-density environments
- Polarization diversity for optimal mobile device performance
- IP-67 rated, -20°C to +55°C
- Small, lightweight, and sleek form factor
- Standalone or centrally managed by ZoneDirector, SCG 200, or FlexMaster
- Dynamic, per-user rate-limiting for hotspot WLANs
- WPA-PSK (AES), 802.1X support for RADIUS and Active Directory\*
- BYOD, Zero-IT, and Dynamic PSK\*
- Captive portal and guest accounts \*
- Admission control/load balancing\*
- Band balancing\*
- Application recognition and control\*
- Secure HotSpot\*
- SPOT location services\*
- Intelligent Band steering
- Airtime fairness
- SmartMesh
- Smart QoS

\* when used with Ruckus ZoneDirector

### Ruckus SmartCell 8800



The Ruckus SmartCell 8800 Series represents a completely new class of outdoor networking products designed specifically to meet the capacity density and siting operators get well out ahead of exponentially rising demand for bandwidth.

The SmartCell 8800 Series is the first high-performance dual band 802.11n outdoor access point (AP) to provide a slot to integrate a full complement of cellular (future) and mesh backhaul capabilities that enable service providers to create robust high availability networking services on WLAN and licensed spectrum. By integrating this capability into the SC 8800, the mobile operator can provide both a Wi-Fi and LTE (or 3G) underlay to offload heavily congested macro cellular networks in dense urban environments.

The SmartCell 8800 Series provides an option to integrate metro-picocell to enhance macro cellular networks, expanding mobile network capacity using low-power small cells. Operators can leverage the 8800 to create a new category of heterogeneous cellular networks that combine 3G or 4G radios with seamless WLAN radio services for mobile data offload and wireless backhaul SmartMesh networks.

#### Features

- 3x3:3 dual-band Wi-Fi outdoor AP
- Adaptive antenna technology and advanced RF management
- PD-MRC improves signal reception of mobile devices
- Integrated GPS receiver
- Spectrum Analysis
- Size: 380 x 300 x 170 mm
- Weight: 10 kg (fully loaded)
- Peak 1,350 Mbps throughput (Wi-Fi only)
- Advanced features: TxBF, LDPC, GPS, spectrum analysis
- Radios: 2.4 GHz, 27 dBm/chain (32 dBm / 1.6 W)  
5 GHz, 25 dBm/chain (30 dBm / 1 W)  
Optional Slot for additional radio type
- Power: AC, 12VDC, PoE in
- Ports: dual 10/100/1000 w/SFP for fiber
- PoE out: 25W
- Modular: user-serviceable AC power
- Flexible mounting options with unique low-profile any-angle bracket, including pole, ceiling or wall mounting

### Ruckus ZoneDirector WLAN Controller Family

The Ruckus ZoneDirector (ZD) is Wireless LAN (WLAN) controller developed specifically for Enterprises of all types and sizes. It is appliance based, which means the pre-installed OS, is closely matched to the hardware for optimal performance and reliability.

The ZoneDirector enables specific features on APs including

- Dual Stack IPv4 & IPv6 capable.
- Client Load Balancing
- Seamless integration with existing network, security and authentication infrastructure including RADIUS, LDAP and Active Directory for 802.1X and WISPr hotspot support.
- Seamless handover (<50ms) and WLAN tunnelling for L3 mobility support on VoIP applications.
- Support for Encrypted Tunneling in PCI compliant POS applications.
- SmartMesh management and control (ZoneDirector is required to enable SmartMesh technology)
- Secure WebGUI, Tr-069 / SNMP support (v1, v2c & v3), Command Line Interface, Syslog server support
- Configurable SSH, TELNET, HTTP and HTTPS access.
- Configurable separate management interface.
- Easy discovery from PC using UPnP
- Easy-to-use 5 step setup wizard
- Centralized, simple 3-click software upgrades
- Customizable widget based dashboard
- Dynamic RF channel and power management
- Automatic client load balancing between APs
- Integrated captive portal
- Integrated DHCP server.
- Local authentication database
- Guest Access/captive portal
- Dynamic PSK and IT-free configuration
- Rogue AP detection (WiDS) and Intrusion prevention (WIPS)
- Graphical map view
- Event management
- Performance monitoring and statistics
- 1+1 redundancy and limited N+1 redundancy options
- 2 Ethernet ports for full redundancy

## Ruckus Wireless RFP Response

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Small	Medium	Large
		
<b>1200 Series</b>	<b>3000 Series</b>	<b>5000 Series</b>
<ul style="list-style-type: none"><li>○ <b>APs:</b> 5-75</li><li>○ <b>Clients:</b> 2000</li><li>○ <b>Capacity:</b> 200 Mbps</li><li>○ <b>Size:</b> Mini Desktop</li></ul>	<ul style="list-style-type: none"><li>○ <b>APs:</b> 25-500</li><li>○ <b>Clients:</b> 10,000</li><li>○ <b>Capacity:</b> 500 Mbps</li><li>○ <b>Size:</b> 1RU</li></ul>	<ul style="list-style-type: none"><li>○ <b>APs:</b> 100-1,000</li><li>○ <b>Clients:</b> 20,000</li><li>○ <b>Capacity:</b> 1 Gbps</li><li>○ <b>Size:</b> 2RU</li></ul>

### Ruckus ZoneDirector 1200



The ZD1200 series controller capable of managing up to 75 Access Points and 2000 concurrent client connections was developed specifically for the needs of small to medium enterprises and hotzone operators. It is ideal for the delivery of services including Voice over Wi-Fi (Vo-Fi), IP Video, secure enterprise access and tiered Wi-Fi services in venues including hotels, airports, schools and public buildings.

### Ruckus ZoneDirector 3000



The Ruckus Wireless ZoneDirector 3000 series controller, capable of managing up to 500 Access Points, 1024 WLANs and 10,000 concurrent client connections, was developed to target medium to large enterprises. Designed to fit inside a sleek 1u 19" rack mountable case the ZoneDirector 3000 is designed for ease of use, high performance, and low cost of ownership.

### Ruckus ZoneDirector 5000



Capable of managing up to 1000 Access Points, 2048 WLANs and 20,000 concurrently connected clients and with 6x the processing power and twice the capacity and redundancy of previous ZoneDirectors, the ZD5000 is perfect for very large-scale wireless environments such as hotels, entire school districts, hospitals and managed service environments.

### Ruckus SmartZone 100



The SmartZone™ 100 is Ruckus' uniquely affordable, scalable, resilient, and high performing controller designed for simplicity and ease of use. It has been designed to eliminate the complexities in scaling and maintaining conventional WLAN controller systems.

Supporting up to 1,024 APs and 25,000 clients per device, the SmartZone 100 easily serves the largest deployments. SmartZone 100 can cluster up to 4 units (3+1) thereby supporting up to 3,000 APs and 60,000 clients

The SZ 100 integrates the RuckOS operating system platform that delivers advanced features such as smart wireless meshing, high availability, hot spot authentication, guest networking and dynamic Wi-Fi security. RuckOS licensing can be ported to other RuckOS platforms, is granularity scalable per AP, and is cloud based requiring no license installation.

The SZ 100 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 SmartZone 100.

Once up and running the SmartZone 100 automatically manages the ZoneFlex network of APs. With a single view into the cluster, when used as such, the SZ 100 has a per user customized dashboard, integrated Google maps, and simplified menus with a single zone and domain to reduce workflow complexity. Additionally, the SZ 100 has a 30-day reporting archive with data persistence even across reboot, and reports can be exporting to CSV, PNG, JPEG, PDF or SVG formats.

#### **Highly Scalable WLAN Controller**

- Can cluster up to 4 units (3+1)
- Supports up to 1,024 APs and 25,000 clients per device
- Supports up to 3,000 APs and 60,000 clients

#### **Extremely High Performing and Resilient**

- N+1 clustering for resiliency
- Up to 10 GE throughput
- Control/management and data delivered separately through dedicated redundant ports ensuring optimal performance

#### **Granular and Flexible Cloud-Based Licensing**

- Cloud based licensing ensures simple set-up
- Granular, per AP licensing saves money over wasted seats in tiered licensing schemes
- Licensing can be easily transferred to similar models in case of hardware upgrades

#### **Data Persistence Across Reboot for Reporting**

- Stores up to 30 days of network and client data on an integrated drive
- Keeps all data even on reboot



### Ruckus Smart Cell Gateway 200



The SmartCell Gateway (SCG) 200 represents the first in a new category of scalable and versatile WLAN controllers with support for WLAN gateway functionality. It has been designed to eliminate the difficulties operators are experiencing with building and managing large-scale WLAN networks.

Awarded the “Best Mobile Broadband Technology” by the GSMA, the Ruckus SmartCell Gateway 200 is capable of supporting tens of thousands of Ruckus or non-Ruckus Wi-Fi access points, hundreds of thousands of subscribers, and in excess of 20 Gbps of throughput. Ruckus has extended the traditional WLAN controller by adding WLAN gateway functionality, along with support for tunneling of traffic into the evolved packet core.

The SCG 200 serves both SIM and non SIM-based client devices using carrier friendly authentication protocols, such as 802.1X/EAP. When this is combined with policy-based data traffic steering, operators can optimize the forwarding of all user traffic. When backhauling to the evolved packet core, the WLAN gateway function implements the Trusted WLAN Access approach that was standardized by 3GPP in Release 11. This work is based on the SaMOG (S2a Mobility over GTP) program in 3GPP that utilizes 802.1x/EAP for authentication and 802.11i (AES) for airlink encryption, both of which are standard on today’s smartphones.

The SCG 200 platform features a unique NEBS-3/ETSI compliant, dynamically scalable clustering model that maintains carrier-class availability and resiliency through active-active clustering by incorporating a distributed and replicated database optimized for real-time data management.

#### Large Scale Access Point Controller

The SCG-200 offers one of the industry’s most scalable WLAN controller architectures, through a unique, dynamically scalable clustering model that maintains carrier-class availability and resiliency through N+1 redundancy and hot-swappable components. An SCG-200 cluster can support tens of thousands of Ruckus Smart Wi-Fi APs and hundreds of thousands of concurrent Wi-Fi subscribers, with an aggregate throughput of 20Gbps per 2RU’s of rack space. The SCG’s carrier-class element management system (EMS) can be integrated into an operator’s central NMS via standard data exchange interfaces, providing feature-rich management of access points, such as RF management, load balancing, adaptive meshing and backhaul optimization.

#### WLAN Gateway Support

The SCG 200 can provide Trusted WLAN Gateway functionality per 3GPP TS 23.402 (June 2012). Trusted WLAN Gateway functionality allows a Wi-Fi RAN to connect to a P-GW (or GGSN) in the mobile packet core over industry standard interfaces and using standard protocols like GTP and PMIP. This approach utilizes 802.1x/EAP for secure authentication and 802.11i for Wi-Fi airlink encryption. These protocols are supported on all smartphones, as they are required as part of the Wi-Fi Alliance’s WPA2®-certification program. The SCG 200 can also directly interface with mobile packet core AAA or HLR/HSS systems for client authentication and policy setting.

#### Local Breakout

The SCG 200 can also offload traffic directly to the Internet. This would usually be the case when the traffic is not SIM-based, and would not benefit from being backhauled to the mobile packet core. Examples here include tablets and laptops, which in most cases do not have cellular modems. Local breakout requires that selected services be performed at the SCG 200, most of which would normally be provided in the mobile packet core.

#### Carrier-class Element Management System

The SCG-200 provides an integrated carrier-class element management system (EMS) that can be used for rapid deployment and eliminates the need for separate and expensive management systems. The built-in EMS provides user-friendly full-fledged FCAPS support and can be easily integrated with existing OSS/BSS systems via a variety of interfaces ranging from traditional SNMP or CLI based interfaces to web programming friendly secure API based methods (RESTful JSON).

# Ruckus Smart Wireless Services

## Ruckus vSCG



The virtual SmartCell Gateway (vSCG) is a scalable and versatile WLAN Controller designed to run in the cloud. It eliminates the difficulties operators are experiencing with building and managing very large-scale WLAN networks, and it is especially well suited to enabling a managed services offering.

By moving the SCG functionality into the cloud, it becomes possible to offer a platform with enormous scalability. This includes support for tens of thousands of Ruckus access points and hundreds of thousands of subscribers per virtual instance. The vSCG provides all control plane functions, with data plane traffic being routed directly from the APs to a separate WLAN gateway. This approach is consistent with the industry trend toward Software Defined Networks (SDN) that split out the control plane from the data plane.

The vSCG can be deployed as a private cloud to support one specific network deployment, or in a public cloud that can support hundreds or even thousands of managed WLAN networks. The vSCG can run on either an open-source KVM hypervisor or the VMware vSphere hypervisor. The hypervisor function creates the virtual machines (VMs) that the vSCG application can run on. As traffic and load increases, the hypervisor can obtain additional resources from the underlying hardware layer to meet the demand. These resources can later be released as circumstances dictate. The vSCG is especially effective at addressing the enormous opportunity in managed WLAN services for enterprises, small and medium business, and public venues. These organizations see WLAN service as business critical, but often do not have the IT infrastructure to support a truly robust deployment. They are looking to service providers to fill the void here, and the vSCG is a critical tool in enabling a very scalable and cost effective service.

## Carrier Class Capabilities

The vSCG was designed from the beginning for carrier-class deployments. In addition to being scalable, reliable, and manageable, the vSCG can also support value added services such as Ruckus Smart Positioning Technology (SPoT) and SmartCell Insight, provides data plane flexibility, and carrier-class features like Hotspot 2.0 and multi-tenant support. Data plane flexibility comes by splitting out the control plane from the data plane at the AP. Control plane traffic is directed to a vSCG in the data center, while data plane traffic is routed to a point where it can be handed off to the Internet.

## Multi-tenant Support

The vSCG can operate in either a multi-tenant mode where a number of managed services customers share an instance of the vSCG or in a mode where each managed services customer runs on their own vSCG instance.

## ETSI NFV Compliant

Designed for use with Ruckus Smart Wi-Fi ZoneFlex™ access points (APs), the Ruckus vSCG runs as a virtual application within either the KVM (Kernel-based Virtual Machine) or VMware vSphere virtualization environments. The Ruckus vSCG is the first component in a larger Ruckus solution based on the European Telecommunications Standards Institute (ETSI) NFV architecture.

## Ruckus Smart Access Management Service - SAMs



Smart Access Management (SAM) is a hosted public cloud Wi-Fi service. SAM brings together best-in-class Wi-Fi with cloud computing to simplify the provisioning, management and monetization of public Wi-Fi access.

SAMs combines the components required to run public Wi-Fi access such as WLAN management, authentication server, database server, content control, advertising server and migrates them to the cloud. By doing so, Ruckus simplifies the deployment of public Wi-Fi access and drastically reduces the cost without compromising the features or functionality. Furthermore, with a cloud service, Ruckus has reduced the time it takes to deploy a public Wi-Fi solution and lowers the barrier to entry.

### Monetization Made Easy

SAMs provides easy monetization through a customizable customer facing guest portal with the option for social login, a customizable user journey for advertising and specialized messaging as well as powerful analytics. For simplicity, the portal includes a wizard driven administration interface that provides a step-by-step configuration process and does not require any HTML coding.

### Rich Demographics and Analytics

SAMs also includes a powerful analytics dashboard that provides granular detail. The dashboard provides detailed analytics in an easy to read dashboard that provides venue owners with the information required to customize the registration page, advertising, and provide additional services. The SAMs granular analytics reporting provide multiple Historical analytic data includes demographics, visitor duration, and registration method.

### Flexible Deployment

Ruckus offers flexible deployment options for customers with existing Ruckus WLAN infrastructure looking to deploy SAMs, and for completely new Wi-Fi deployments.

Ruckus has simplified WLAN configuration with SAMs cloud hosted Wi-Fi. With an intuitive configuration panel, SAMs can be configured and deployed with basic understanding of WLAN configuration. SAMs provides the basic configuration parameters required to setup the Wi-Fi service.

#### **SAMs Cloud - Hosted**

SAMs fully cloud hosted solution. The SAMs cloud hosted option provides the power and flexibility that comes with cloud services such as high availability, scalability, and pay-as-you-grow model. Existing Ruckus customers have the option to migrate WLAN management entirely to the cloud or continue with their current onsite model.

#### **SAMs Cloud - Onsite**

SAMs Onsite provides the flexibility of traditional, local WLAN infrastructure and management while still taking advantage of this powerful cloud based hotspot solution including all the advertising and monetization tools.

### Effortless Setup

With Ruckus Smart Access Management deploying public Wi-Fi has never been easier. Utilizing the flexibility of the SAMs cloud hosted subscription model, combined with effortless setup, the solution can be deployed within minutes. This greatly reduces the time it takes to deploy public Wi-Fi Access.

## Ruckus Smart Positioning Technology - SPoT



Ruckus Smart Positioning Technology - SPoT™ - combines unique advantages, including options for both public and private cloud-based services, and a choice of location metrics with either SPoT Point (drop-pin) or SPoT Presence (proximity). Enterprise or Managed Service providers can use the SPoT APIs to incorporate location data into their own applications. A robust ecosystem of partners provides additional leverage of SPoT for applications in retail, transportation, entertainment and other vertical markets.

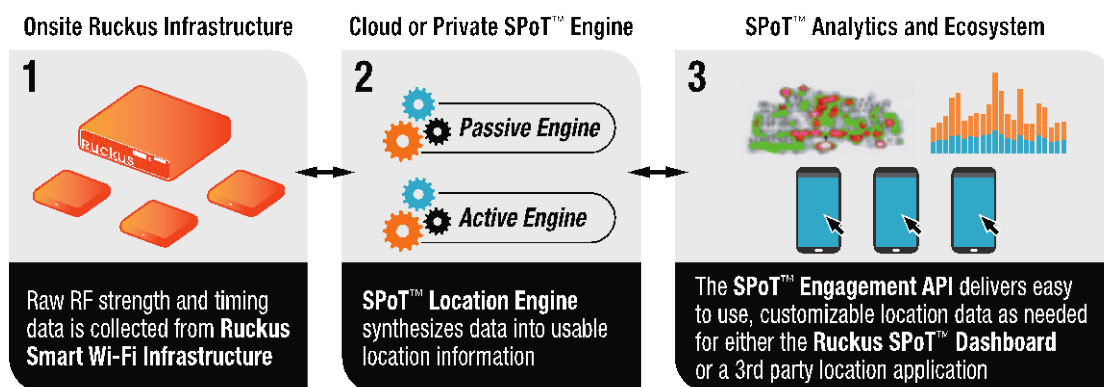
Ruckus SPoT™ can be purchased either as a cloud-based subscription service or as Virtual SPoT [vSPoT], a virtualized instance of the service deployed on-premise. vSPoT works with VMWare to deliver presence or location services from Enterprise or Service Provider data centers.

Both versions of SPoT include Engagement APIs – a set of APIs to power a new generation of mobile apps, giving them “Location Intelligent” features such as the ability to locate users and engage or send them highly targeted messages in any venue enabled with Ruckus Smart Wi-Fi and Ruckus SPoT.

Both versions of SPoT offer two levels of service.

**SPoT Point** can pinpoint client locations in real time with a granularity of 5-8 meters accuracy with a calibrated venue. In addition, SPoT Point has a calibration-free mode which supports ~10 meters accuracy without the requirement of venue calibration.

**SPoT Presence** services provide venues with low access point density with footfall analytics and device positioning at proximity accuracies.



### SPoT Key Advantages

- Virtually unlimited scale for device positioning. True cloud architecture allows a citywide SPoT deployment, the largest train station or busiest airport.
- True real-time positioning. Dynamically selectable update intervals allow up to per-second positioning
- Listens to probes and data packets – higher probability to locate a device
- Multi-venue single dashboard
- Up and running within a day for any venue size. Built-in mapping, mobile app for on-site provisioning/testing, minimal configuration on controller

Ruckus offers the SPoT Location Ecosystem, a program for third party mobile and analytics application developers, including service provider, enterprise, and consumer applications. Ruckus SPoT provides an open API set for the delivery of comprehensive, accurate and up to near-real-time location information to enable services such as Presence or SPoT Point for better customer insights, and enhanced user engagement and experiences on mobile apps. Ruckus SPoT Location Ecosystem partners include location analytic companies such as Euclid and SkyRove, and mobile application development partners including companies such as: Phunware, RaGaPa, FrontPorch, Sanginfo, PurpleWi-Fi, TechStudio, ITC Infotech, AisleLab, Smartac and Entropy.

## Ruckus SmartCell Insight - SCI



Ruckus SmartCell™ Insight (SCI) is the industry's first Big Data Wi-Fi analytics and reporting engine purpose built to help enterprises and service providers make informed business decisions regarding the operation of their Wi-Fi networks. It makes use of Big Data technology and storage innovations found in columnar database repositories, which greatly enhance the scale and performance of a system when used to process historical data.

The Ruckus SCI platform transforms traditional network reporting into a vital business tool, collecting, analyzing, parsing, presenting, and storing unprecedented amounts of user, traffic, session, and location information. Data from the largest networks can be stored and retrieved for 5 to 7 years, or more.

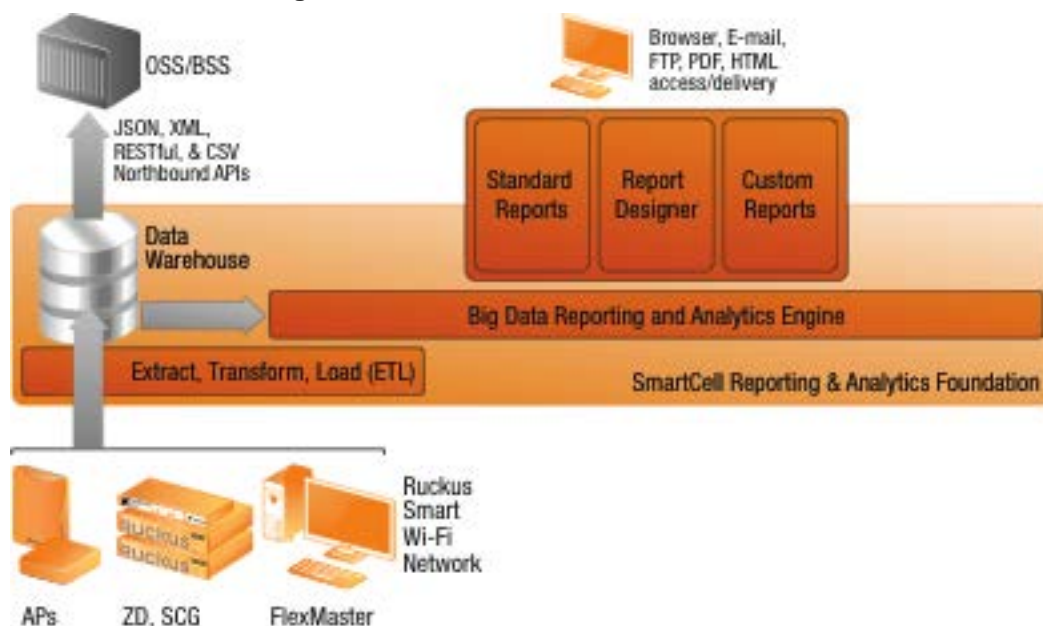
Armed with such a vast repository of data and analytics, service providers can now quickly and easily determine, like never before, who is on their Wi-Fi network, what they are doing, when they are doing it, and from where. This can be extended to provide location-based analytics and application recognition both of which will greatly enhance the value of this kind of technology.

SCI gathers real-time and historic data which is analyzed and graphically displayed in an easy to understand format with a wide variety of views and customized reports. The data gathered by Ruckus SCI details essential network statistics such as traffic usage, client and session measurement, network changes, network latency, and inventory.

### Features

- Single point to collect statistics and aggregate metrics from all Ruckus network equipment
- Search and analyze data quickly from archive
- Standard reports for most common use cases
- Custom reports easily generated from any standard browser for specific use cases
- Satisfy regulatory requirements by archiving massive amounts of data in an enormously scalable database

### Ruckus SmartCell Insight Architecture





## Ruckus Mobile Apps

### Ruckus SWIPE



Ruckus Smart Wireless Installation & Provisioning Engine (SWIPE) is a Mobile Application (MA), to help facilitate the process of registering Access Points (APs) onto the Ruckus SmartCell Gateways (SCGs). SWIPE updates SCG (Rel. 2.5+ or vSCGs) with data about the AP including location specific details (pictures, location) and validate AP connectivity. SWIPE can also search for APs by name as well as by Proximity & Error condition.

### Ruckus SpeedFlex



SpeedFlex is a wireless performance testing tool. Based on the open source performance test tool, SpeedFlex, this comprehensive yet easy to use application from Ruckus gives users a simple way to collect site performance data. It can be used to validate the performance of an existing installation, or assist in planning a new site deployment. Simply connect to a SpeedFlex server – such as a Ruckus ZoneFlex AP or ZoneDirector - and you can instantly test network throughput. Easily capture real time through put, packet loss and site data. Take pictures and send an email with the results packaged in a PDF.

### Ruckus SWAT



Ruckus SpeedFlex Wireless Assessment Tool - S.W.A.T. - is a wireless performance testing and site survey companion. Based on the open source performance test tool, SpeedFlex, this comprehensive yet easy to use application from Ruckus gives users a simple way to collect site performance data. It can be used to validate the performance of an existing installation, or assist in planning a new site deployment. Simply connect to a SpeedFlex server such as a Ruckus ZoneFlex AP or ZoneDirector - and you can instantly test network throughput and coverage.

Easily import floorplans from Dropbox or snap a quick photo using the camera, and you can plot results with a graphical representation of your actual environment.

### Ruckus Zapper



Ruckus Zapper is a real time performance analysis tool. Built on the open source zap wireless library, this app allows you to test the performance of your existing network, selection of APs, or do some competitive testing.

### Ruckus ZD Remote Control



ZoneDirector Remote is a groundbreaking application that monitors and configures Ruckus ZoneDirectors and Access Points. Users of this application will now be able to perform basic configuration on the go, using a Tablet, without having to carry a bulky laptop.



## FlexMaster EMS

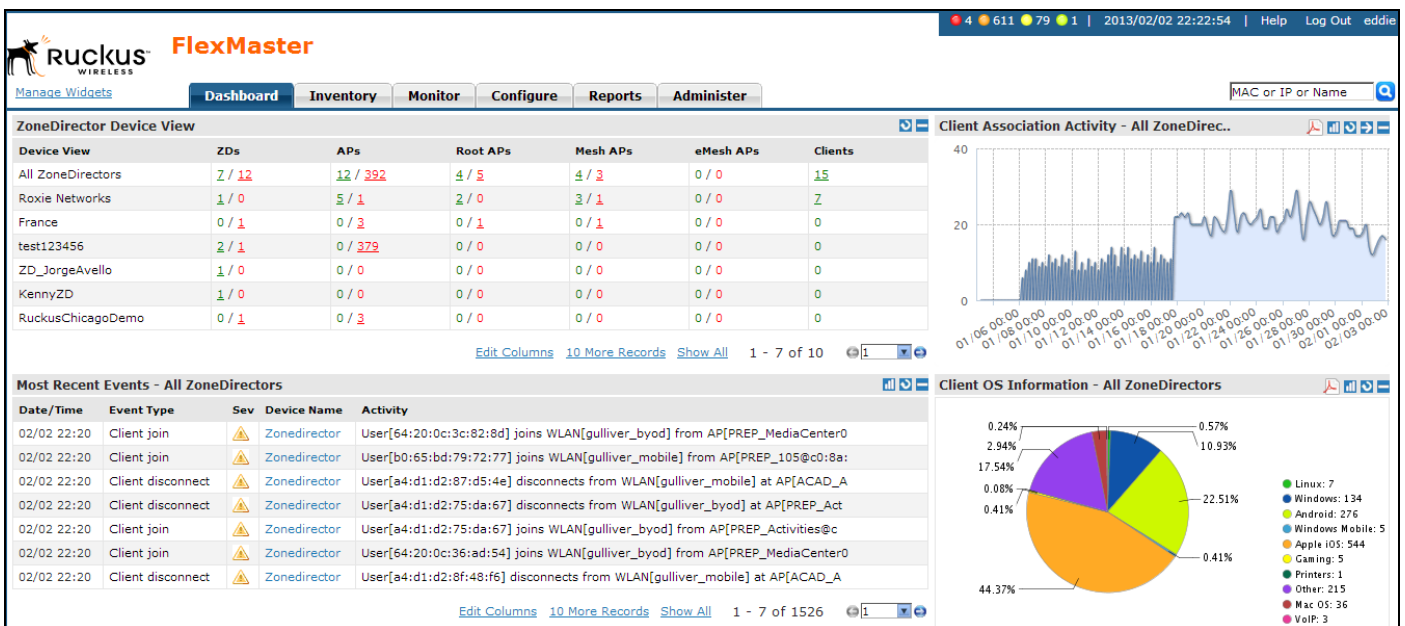


The Ruckus Wireless FlexMaster Element Management System (EMS) is an overlay management platform for providing amongst other things a historical reporting and monitoring capability.

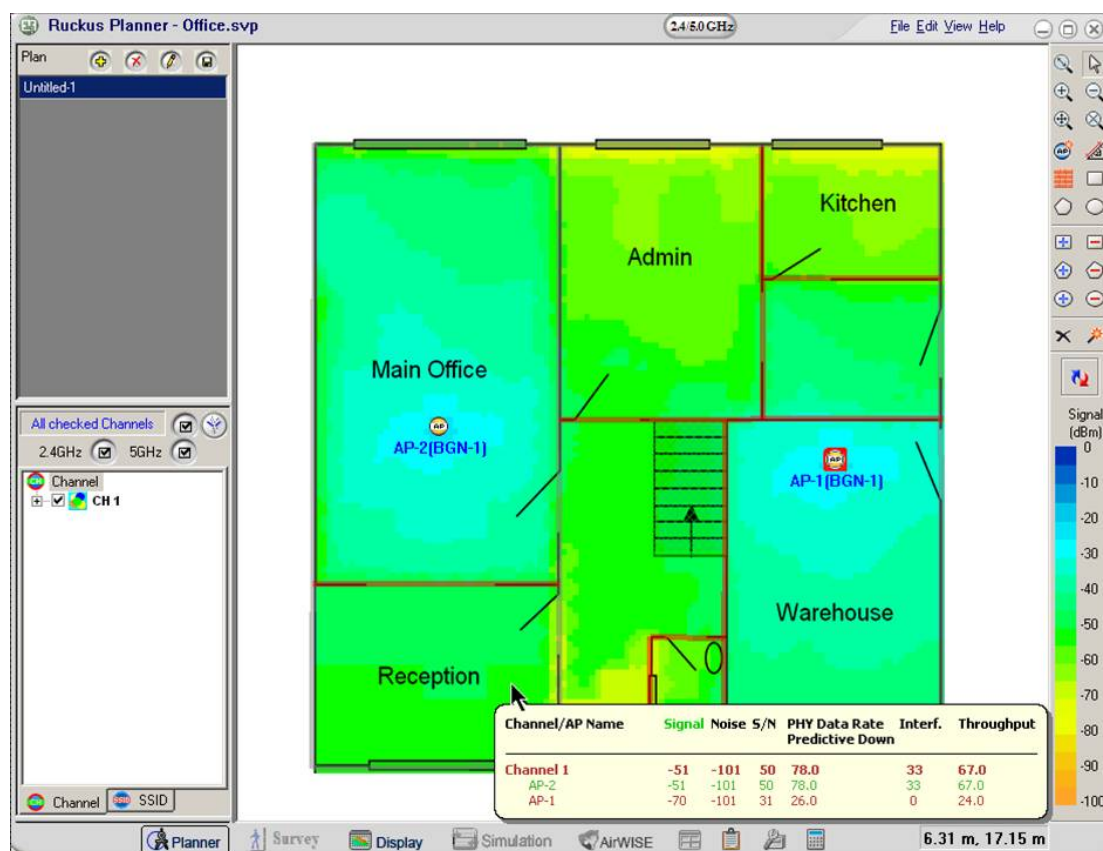
FlexMaster is supplied as shrink wrapped software, or a downloadable ISO image that runs on top of either a dedicated Linux host server, or as a VMWare application (it can be downloaded pre-compiled with CentOS Linux s the OS).

The report and monitoring categories include:

- Client Association report
- Client and AP trend reports
- SSID report
- Events report
- Capacity reports
- SLA reports
- Troubleshooting reports
- Resource monitor
- Alarm management and notification



## ZonePlanner



The Ruckus Wireless ZonePlanner takes the guess-work out of WLAN design and planning making WLANs easier to accurately plan, deploy and manage. It takes into account building materials, attenuation areas, AP configuration and antenna patterns to provide a predictive map of indoor wireless coverage and performance.

Key features of the ZonePlanner are:

- Built on industry leading RF planning technology from AirMagnet (now part of Fluke)
- Provides predictive modelling to determine optimal quantity, placement and configuration of APs
- Support for all Ruckus Wireless 802.11b/g/n-a/n APs
- Manual (recommended) or automated AP placement
- Specify AP placement exclusion areas, coverage inclusion areas and areas of high attenuation
- Model WLAN deployment changes and upgrades
- WLAN throughput (performance) estimation
- Channel interference view
- Automatic report creation

**- End of Document -**