



**RUCKUS**<sup>™</sup>  
WIRELESS

SMARTER, **SIMPLY SUPERIOR WI-FI** FOR EDUCATION



RUCKUS

# SMARTER WI-FI FOSTERS THE LEARNING EXPERIENCE; IT'S A REQUIRED COURSE OF ACTION FOR EDUCATION.

FASTER, MORE DEPENDABLE WI-FI CONNECTIVITY THAT'S AFFORDABLE IS FUNDAMENTAL. IT MUST COVER LARGE CAMPUSES, YET REACH EVERY SMALL NOOK AND CRANNY OF A CLASSROOM, BE SECURE FOR STAFF, AND ROBUST FOR MULTIMEDIA APPLICATIONS. WITH LIMITED BUDGETS AND IT STAFF, EDUCATIONAL INSTITUTES NEED A NEW APPROACH. RUCKUS MAKES THE GRADE.

## DEPENDABLE WI-FI CONNECTIVITY

With the majority of students are carrying laptops and smart phones, Wi-Fi had moved from a nice-to-have to a must-have with reliability, ease of use and seamless mobility topping the list of requirements. With Ruckus dual-band 802.11n indoor and outdoor access points, schools have a robust Wi-Fi infrastructure to support Internet access, roaming VoIP phone calls, and IP-based video on demand and live streaming across their campuses.



*Optimized for multimedia applications, Ruckus Smart Wi-Fi enables uninterrupted voice communications.*

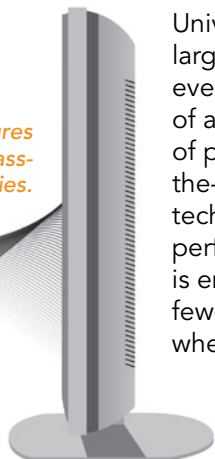


*Combining dynamic beamforming, band steering and airtime fairness makes Ruckus Smart Wi-Fi ideal for high-density classroom environments giving students reliable high-speed Wi-Fi access.*

## CAMPUS COVERAGE: HERE, THERE, EVERYWHERE

Universities, colleges, primary, and secondary schools often encompass large properties with many buildings. Getting good Wi-Fi coverage to every nook and cranny of each facility without deploying a huge number of access points has been a real challenge. The Ruckus ZoneFlex family of products delivers the best possible Wi-Fi coverage using state-of-the-art, high gain directional antenna arrays. Our patented BeamFlex™ technology directs signals toward associated clients, picking the best performing path and constantly routing signals around interference as it is encountered. ZoneFlex delivers two to four times the coverage using fewer APs and far fewer dollars. Schools can now take Wi-Fi to places where it's never been before — simply and easily.

*Ruckus Smart Wi-Fi ensures flicker-free video for classrooms and dormitories.*





*Ruckus Smart Mesh Networking eliminates the need for Ethernet cabling in buildings where Cat5 drops aren't everywhere*

*"We didn't find anyone really paying attention to the physical layer and felt that this is where most of the problems needed to be solved. The ZoneFlex system gave us all the requisite central management but with a lot more value. The system requires fewer APs, provides a more consistent and adaptive signals without external antennas and is ridiculously simple to install and manage. It's hard not to like that."*

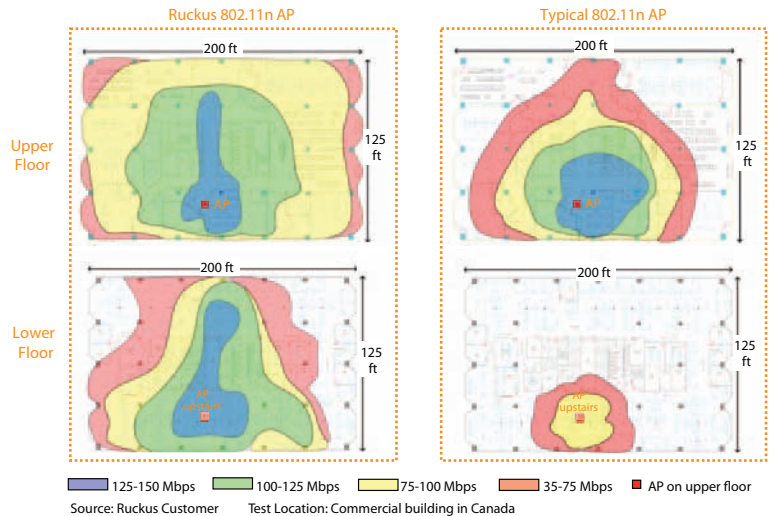
**CHRISTOPHER STAVE**  
Computing and Network  
Services Manager  
Drew University

## STRONG WI-FI SECURITY, SIMPLE TO ADMINISTER

Educational organizations want strong security to separate staff and students. Now they have it. In addition to supporting standard 802.1X security, the patented Dynamic Pre-Shared Key technology automates the process of configuring wireless settings and encryption keys on every laptop. A new user simply connects to the Ethernet LAN and authenticates against any standard authentication (AAA) server via a captive portal hosted on the Ruckus ZoneDirector. Upon successful authentication, the user receive a unique 63-byte encryption key and WLAN settings.

## RUCKUS SMART WI-FI DELIVERS MORE CONSISTENT PERFORMANCE AT LONGER DISTANCES

Ruckus Smart Wi-Fi versus the alternative



## NO ETHERNET? NO PROBLEM

For many educational institutions, Ethernet is not ubiquitous. What about portables, cafeterias, auditoriums, and assembly halls? Unlike other WLAN solutions, the Ruckus ZoneFlex system employs smart meshing networking, allowing schools to easily add Wi-Fi by simply plugging them in to a power outlet. This eliminates Ethernet cabling and expense. An advanced smart antenna array ensures unprecedented reliability for the mesh backbone, minimizing packet loss, steering signals over the fastest paths and increasing range between mesh nodes.

*Patented smart antenna arrays in every access point provide longer range and more reliable Wi-Fi connections, requiring fewer APs than competitive alternatives.*



*"If I don't have reliable wireless, you might as well cancel school. The Ruckus ZoneFlex system was less than half the cost per node of competitive, enterprise-class systems and provided capabilities, like smart meshing and adaptive RF routing, not supported by other 'industry-leading' solutions."*

TIM KAMPS, Director of Technology



## NO CUMBERSOME CONFIGURATION OR DEPLOYMENT

Configuring and deploying new Wi-Fi equipment in a school can be highly disruptive. IT staff can't be expected to understand how building materials, landscaping, obstacles and other hostile RF sources will affect the performance of their network, and dictate where APs must be deployed. There's no need to continually perform costly and cumbersome site surveys when adaptive beam steering automatically avoids sources of interference.



*The Ruckus ZoneFlex WLAN system configures in minutes so you're on time and under budget.*

IT staff can easily configure the entire WLAN by clicking through a few screens, including one-button smart meshing configuration. From a single management point, IT administrators can easily add SSIDs across the entire system to support specific traffic types (e.g., voice, video, etc.) or user groups. Wireless LAN deployment in hours, not days. The result is a single, robust WLAN acting as a ubiquitous utility for everyone.

# TOP 10

## RUCKUS DELIVERS TOP 10 WI-FI MUSTS FOR EDUCATION

- 1. Wi-Fi coverage everywhere**  
2x to 4x coverage improvement through integrated long-range, high-gain antenna array
- 2. Reliable client connectivity**  
Adaptive beamsteering automatically avoids interference and steers signals over best performing path
- 3. Consistent Wi-Fi performance at range**  
Massive antenna diversity and client feedback ensure highest data rates to end stations,
- 4. Indoor and outdoor managed as one**  
Unified configuration, administration and management of all APs through single interface
- 5. Multimedia support**  
Automatic interference mitigation ensures flicker-free streaming of voice and video
- 6. High density environments**  
Beamforming, airtime fairness and bandsteering enables large number of concurrent users
- 7. No new cabling**  
Highly adaptive and reliable Wi-Fi meshing eliminates the need to cable every AP
- 8. Flexible deployment options**  
Deploy APs with or without controller, install controllers onsite or remotely
- 9. Robust but simplified security options**  
Automatic generation and installation of unique per user encryption keys (Dynamic PSK)
- 10. Easy to configure and deploy**  
Graphical user interface with easy to understand point and clicks commands

**SMART EDUCATORS ARE CHOOSING  
RUCKUS SMART WI-FI SOLUTIONS TO SOLVE  
CHALLENGES AND RAISE THE CURVE**

PROBLEM	RUCKUS SMART WI-FI SOLUTION
SPOTTY COVERAGE	High-gain smart antenna system extends Wi-Fi signals two to four times farther, requiring fewer APs per school
UNSTABLE WI-FI CONNECTIVITY	Patented beamforming and smart antenna array technology within every Ruckus smart Wi-Fi access point ensures stable client connectivity and mitigates packet loss to ensure the highest performance possible
DISPARATE WLAN SYSTEMS	Indoor and outdoor access points mesh together and managed centrally by the ZoneDirector
TOO MANY APs TO MANAGE	Requires one-third to one-half the number of APs over conventional omni-directional Wi-Fi products
NO MULTIMEDIA SUPPORT	Provides up to 32 discrete WLAN networks that can be used to concurrently support IP-based video, voice, and administrative applications
CONTROLLERS IN EACH SCHOOL	Distributed forwarding architecture enables a single centrally located network operation center to manage the entire Wi-Fi infrastructure without sitting in the datapath
GUEST MANAGEMENT	Intuitive, browser-based facility lets staff generate a unique and timed Wi-Fi guest pass in less than 60 seconds
COMPLEX INSTALLATION AND MANAGEMENT	Entire WLAN configures in minutes; APs self-configure by automatically discovering the controller. Ruckus Smart Wi-Fi systems can be remotely configured and managed

**WE'RE FEELING THE LOVE FROM  
A MARQUEE LIST OF WORLD RENOWNED CUSTOMERS**



**RUCKUS BENDS WI-FI SIGNALS  
AT LYONS TOWNSHIP  
HIGH SCHOOL**

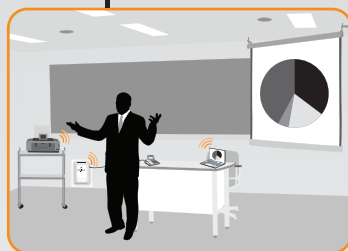
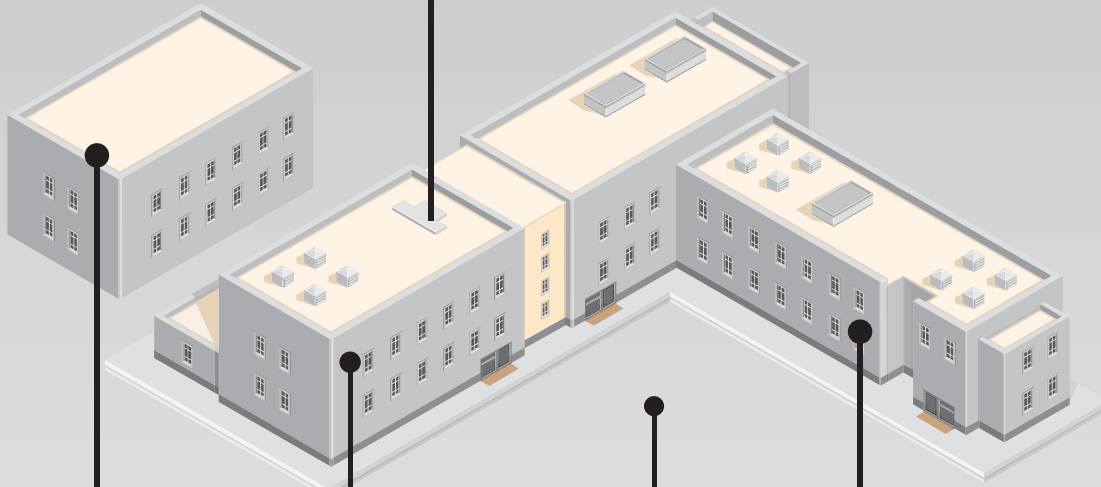
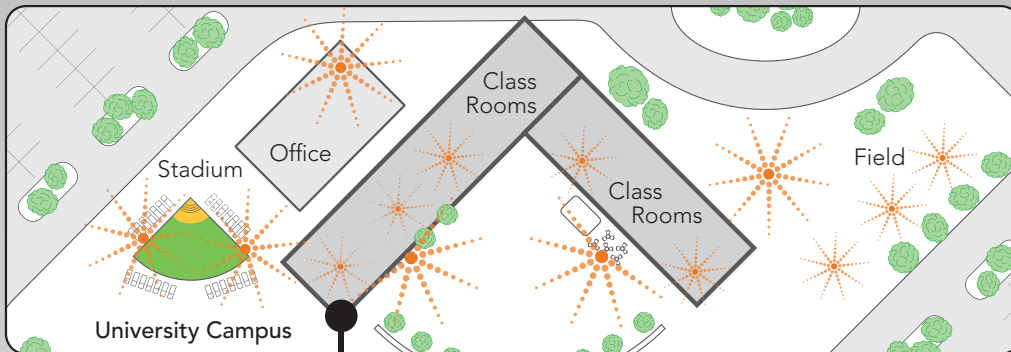
Founded in 1888, Lyons Township High School (LTHS) is a four-year comprehensive high school located in the western suburbs of Chicago. LTHS services all or parts of 11 different communities with nearly 4,000 students and approximately 500 faculty and staff in two campuses that include more than 200 classrooms and administrative office space sprawling across three city blocks and 1.3 million square feet.

With some buildings originally constructed in the late 1800s, over the years multiple expansions to its campuses created an “unfriendly environment for Wi-Fi.” Concrete floors, wire mesh in the glass above metal lockers and walls ranging from a few inches to several feet thick caused detrimental attenuation for Wi-Fi signals. For LTHS, reliable wireless connectivity is essential for curricular instruction within the classroom to connect to the school’s computers, video projectors, printers, laptops and tablet PCs. IP-based video streaming was another important application that LTHS needed to support over Wi-Fi.

The new high-speed 802.11n wireless network, which includes 250 ZoneFlex dual-band 802.11n Smart Wi-Fi access points (APs) and redundant ZoneDirector 3250 Smart wireless LAN (WLAN) controllers, replaces the previous 802.11g infrastructure at a ratio of 3 or 4-to-1 — to deliver a four-fold increase in Wi-Fi range and performance due to the Smart Wi-Fi AP’s extended range and coverage.

# RUCKUS SMART WI-FI DELIVERS EDUCATION'S MOST FLEXIBLE DEPLOYMENT OPTIONS

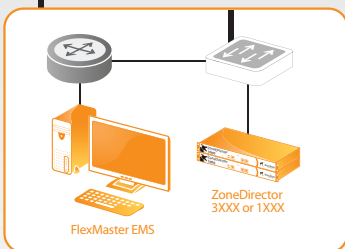
Internet Access • Multimedia Services • VoIP • IP VOD • IPTV Streaming  
Guest Networking • Staff Administration • Outdoor Events



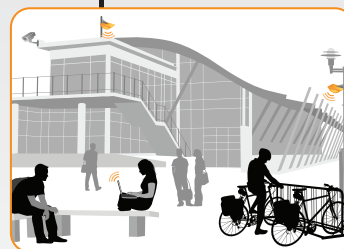
Many AP options, deployed with or without controller



Dynamic beamforming, airtime fairness and bandsteering for high density areas



Controllers out of the datapath, deployed onsite or offsite



Reliable outdoor smart meshing minimizes Ethernet cabling

Unified end-end management of entire indoor/outdoor system

COMPLETE PORTFOLIO FOR

# EDUCATION

## RUCKUS (REALLY) SMART WI-FI PRODUCTS



### ZoneFlex 7962

Indoor dual-band, two-port 802.11n AP with integrated smart antenna array and PoE (802.3af) support



### ZoneFlex 7300

Indoor single- and dual-band, three-port 802.11n AP with integrated smart antenna array and PoE (802.3af) support



### ZoneFlex 2942

Indoor single-band, two-port 802.11b/g AP with integrated smart antenna array and PoE (802.3af) support



### ZoneFlex 7025

Indoor 802.11n wall jack with five ports of Ethernet



### ZoneFlex 7762

Outdoor dual-band, two-port 802.11n AP with integrated smart antenna array and PoE (802.3at/af) support



### ZoneFlex 2741

Outdoor single-band, one-port 802.11b/g AP with integrated smart antenna array on PoE (802.3af) support



### ZoneFlex 7731

Outdoor long-range, point-to-point 802.11n 5GHz bridge



### FlexMaster

Linux-based remote Wi-Fi system management software



### ZoneDirector Controllers

Central wireless LAN controllers supporting from 6 to 500 Ruckus APs



### ZoneSwitch 4000

Fully Managed 12/24 port Layer 2 Gigabit Smart Switches with 802.3af/at PoE



## SMART **MOBILE** NETWORKING



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