

HOSPITAL
Complex

Smart Wi-Fi for

HEALTHCARE



Smarter Wi-Fi Delivers Secure Mobility to Improve Patient Care

IT'S A REQUIRED PRESCRIPTION

Faster, more reliable Wi-Fi connectivity for patient care is critical to effective processes and improved outcomes. To meet expectations, it must penetrate a wide range of construction materials, work with diverse medical devices and clinical applications, be HIPAA secure, and be easy to implement and maintain for IT staff. Ruckus is the cure for the common WLAN.



Ruckus Smart Wi-Fi delivers stronger, focused signal gain for devices such as Vocera voice badges.

Ultra-reliable Wi-Fi Access

Mobility is a key element for today's healthcare organizations, ranging from the tireless wireless robot that delivers pharmaceutical supplies throughout a hospital to the ability to receive actionable clinical information regardless of location, empowering a healthcare giver to react and communicate in real-time. With Ruckus' Smart Wi-Fi infrastructure, clinicians have a high level of confidence in the reliability and integrity of their critical EMR/EHR information, VoIP communications, high-resolution video, and medical image delivery.



Ruckus Smart Wi-Fi is ideal for latency-sensitive EHR/EMR applications that require consistent and dependable connectivity.

Unmatched Application Support

Wireless VoIP, RTLS locationing, patient monitoring/telemetry, infusion devices, medical imaging, bedside video, mobile workstations, and smartphones are raising Wi-Fi performance requirements. The Ruckus ZoneFlex™ WLAN system combines patented BeamFlex™ long-range, directional Wi-Fi beamforming, adaptive antenna technology, and SmartCast™ traffic engineering technology to classify, prioritize, and optimize multimedia traffic delivery per-client, per-traffic-class QoS; so that every client and traffic flow (voice, video, data) is given the right prioritization over standard 802.11 Wi-Fi.



Strong Security, Simple To Administer

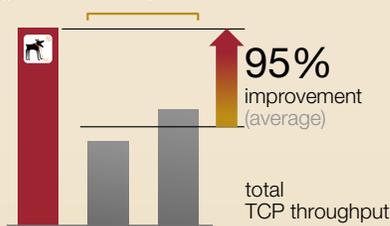
Ruckus has fully integrated features to handle security and access stress points for both administrators and users. First, we integrate with current network segmentation and security architectures, authentication protocols, and directory services to simplify implementation. Second, Ruckus has built easy and intuitive device provisioning and onboarding processes that are foolproof for users and easy for IT staff to design. Third, our device fingerprinting and access control features enable differentiated policies for specific device types and user roles, as well as enhanced monitoring and visibility to improve network operations, troubleshooting, and policy changes over time. Finally, Ruckus provides the RF stability, scalability, and capacity needed to ensure all devices, including medical equipment, wireless carts and personal devices of all types, including BYOD, get wireless performance needed to deliver top quality care.



Ruckus Smart Wi-Fi delivers MORE CONSISTENT PERFORMANCE at longer distances

Source:

High Density: 90 active clients per AP
adaptive antennas + conventional Wi-Fi
learning-based SON implementations



Interference: 6 APs, 120 clients, 1 busy rogue AP



Wi-Fi Coverage Everywhere With Fewer APs

Hospital construction materials such as poured concrete, metal panels, and lead-lined walls severely challenge RF signal penetration. Dropped calls and clinicians re-authenticating their workstations due to inadequate coverage can result in lost productivity, slower response or negative outcomes. With its unique ability to constantly monitor the air and steer Wi-Fi signals around interference in real-time, the Ruckus ZoneFlex WLAN system delivers unmatched wire-like performance suitable for critical EMR information and wireless-enabled voice handsets at a fraction of the cost of competing systems.

The Ruckus system automatically adapts Wi-Fi signals within a harsh and constantly changing RF environment.

"Wireless technology has become an absolute necessity for hospitals and the Ruckus ZoneFlex Wi-Fi system delivers consistent wire-like speed and reliability with ubiquitous coverage to every square foot of our facility."

BARRY RUDD
Director of Information
Technology



TOP 10

RUCKUS DELIVERS TOP 10 WI-FI MUSTS FOR HEALTHCARE

- 1 Better Wi-Fi coverage / No dead spots**
2x to 4x coverage improvement through integrated long-range, high-gain adaptive antenna technology
- 2 Stable mobile client connectivity**
High-gain, directed signals and adaptive beamsteering avoids interference and steers transmissions over best performing path
- 3 Application support**
Automatic interference mitigation ensures glitch-free streaming of IP video and voice for applications such as information displays
- 4 HIPAA security compliance**
Standard 802.1X support, automatic generation and installation of unique per user encryption keys (Dynamic PSK) provide complete HIPAA compliance
- 5 Elegant, simplified BYOD and guest networking**
Separate WLANs provide secure staff, patient and guest access with associated device and role policy enforcement
- 6 Ruckus SPoT**
Smart positioning service to provide operational analytics and enable new patient and guest mobile applications
- 7 No new cabling**
Highly adaptive and reliable smart 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 Real-time locationing tracking**
Checkbox provisioning in the ZoneDirector for passing information to location applications
- 10 Easy to configure and deploy**
Graphical user interface with easy to understand point and click commands

Location Based Services

Ruckus Smart Positioning Technology (SPoT™) service, leverages Ruckus Smart Wi-Fi infrastructure to deliver location information for patients and staff carrying smartphones, tablets and other Wi-Fi-enabled devices. This location data gives administrators unique insight into traffic patterns, and can also be used with mobile applications to deliver highly targeted communications and information to patients and their visitors. SPoT can enhance the value of your Wi-Fi network by helping streamline operations and delivering new patient services.



The Ruckus ZoneFlex WLAN system steers Wi-Fi signals around interference, minimizing packet loss, latency, and delay

Real-Time Location Tracking For Asset Management And Contextual Care

IT staff can easily implement RTLS to track and manage valuable assets, reducing theft and better managing asset utilization, as well as locating the most qualified clinician based on proximity to a patient event. Ruckus works with leading RTLS vendors to seamlessly interface with their location tracking engines to track assets, locate staff and monitor patients over Ruckus WLAN system, invoking this capability by simply checking a box in the Ruckus ZoneDirector during the provisioning process.



we're feeling the love
from a marquee list of
**WORLD-RENOWNED
CUSTOMERS**



“You just can’t understate the value of a reliable, high-speed wireless network for providing efficient patient care. We found that the Ruckus ZoneFlex system with its adaptive antenna array was the only solution that possessed the advanced Wi-Fi technology required to deal with and adapt to the constant RF changes that frequently cause packet loss, delays in performance, and dropped connections.”

Jamie Steck
IT Director, Central Utah Clinics

RUCKUS BENDS Wi-Fi SIGNALS at Satilla Medical Center



Healthy Organizations Are Choosing The Ruckus Smart Wi-Fi System

| PROBLEM | RUCKUS SMART WI-FI SOLUTION |
|--|---|
| Spotty Coverage | High-gain smart antenna system extends Wi-Fi signals 2X to 4X farther, requiring fewer APs per hospital |
| Unstable Wi-Fi Connectivity | Patented smart adaptive antenna array technology dynamically forms its beam on roaming clients ensuring stable connectivity and mitigating packet loss, ensuring the highest performance |
| Poor Application Support | Provides up to 32 discrete WLAN networks that can be used to concurrently support IP-based video, voice, and EMR applications |
| Insufficient Security | Advanced security mechanisms needed to meet HIPAA compliance |
| Guest Networking | Intuitive, browser-based facility lets reception generate a unique and timed Wi-Fi guest pass in less than 60 seconds for waiting room visitors |
| Too Many APs To Manage | Requires one-third to one-half the number of APs over conventional omnidirectional Wi-Fi products |
| Extends Wi-Fi To Areas Without Ethernet | Provides meshing for indoor and outdoor APs that enables Wi-Fi signals to be extended without Ethernet drops and remotely managed centrally by the ZoneDirector |
| Complex Installation And Management | Entire WLAN configures in minutes; APs self-configure by automatically discovering the controller; distributed forwarding architecture enables a single centrally located NOC to manage an entire medical complex Wi-Fi infrastructure without sitting in the data path |

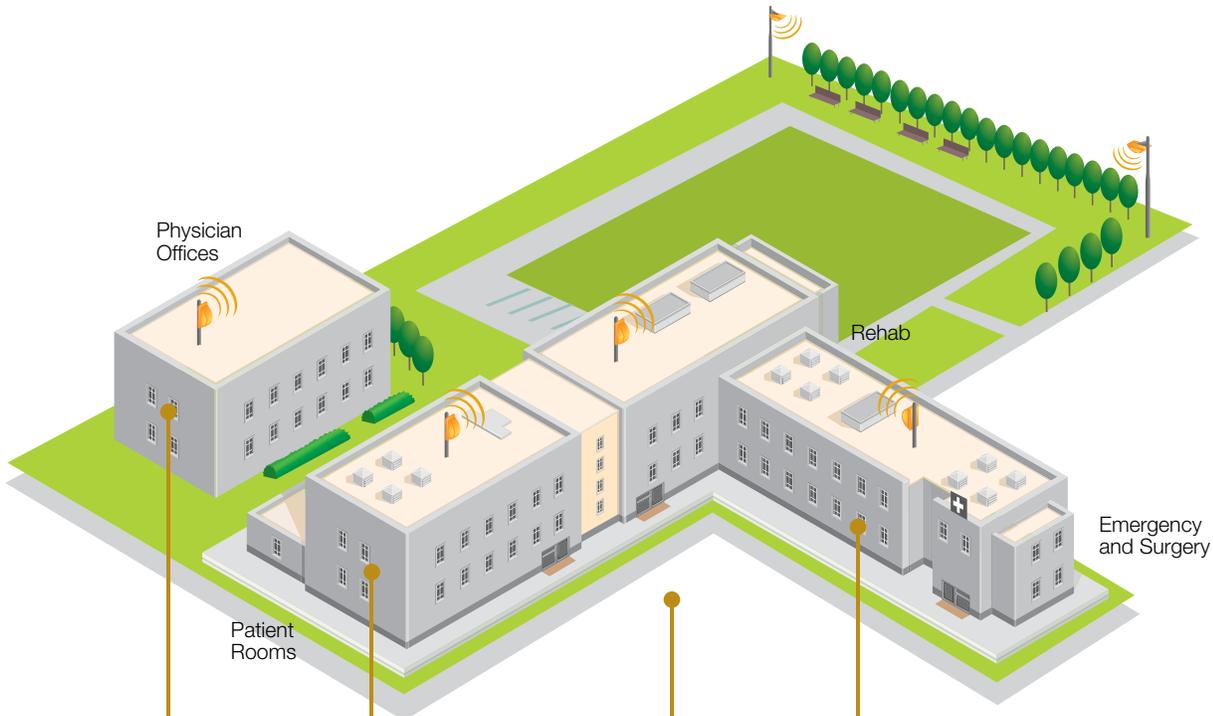
Located in Waycross, GA, Satilla Medical Center is a full service hospital consuming over 370,000 square feet. Satilla Regional Medical Center employs more than 1,300 staff with more than 150 beds. The hospital comprises two conjoined buildings — one that was built in the 1950s and the newer one that was constructed in 2002.

Satilla selected the Ruckus ZoneFlex Smart 802.11n Wi-Fi system at the main hospital, as well as its locally operated nursing home facilities and rehabilitative centers. Satilla considered Cisco and Aruba APs, but once it was determined that their wireless requirements would equal 120 Cisco APs along with three controllers or 200 Aruba APs, they decided to look into other reputable WLAN suppliers, which is when they were introduced to, tested, and selected Ruckus.

Satilla installed 65 ZoneFlex 7962 dual-band indoor 802.11n access points and two ZoneDirector 3100 controllers. The hospital also plans to utilize Ruckus smart wireless meshing technology, which will enable them to deploy additional APs in areas where Ethernet cabling is not available — such as in training rooms and at the other cable-free medical sites. The Ruckus ZoneFlex system provides ubiquitous hospital-wide wireless to support more than 300 Wi-Fi enabled devices and a wide range of current and future applications such as their MEDITECH Healthcare Information System, their robotic pharmaceutical delivery system “TUG”, their mobile phlebotomy system, smart phones, and guest Wi-Fi access.

Ruckus Smart Wi-Fi Delivers Healthcare's Most Flexible Deployment Options

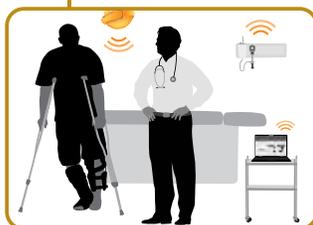
WIRELESS HEALTHCARE APPLICATIONS, MULTIMEDIA SERVICES,
VOIP, MEDICAL IMAGES IPTV STREAMING, GUEST ACCESS,
STAFF ADMINISTRATION, RTLS/RFID, HIPAA COMPLIANCE



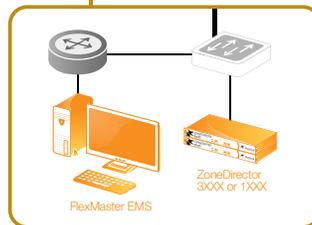
Patented beamforming/beamsteering
minimizes delay for EMR/EHR apps



Reliable and simplified guest WLANs with
no special configuration of client devices



Intelligent antenna arrays automatically
reject interference and penetrate
obstacles other APs can't



Controllers out of the datapath,
deployed onsite or offsite

Unified end-end management
of entire indoor/outdoor system

Complete Portfolio for **HEALTHCARE**

ZoneFlex 7982



Indoor dual-band, 3x3:3 802.11n AP with integrated smart antenna array and PoE (802.3af/at) support

ZoneFlex 7372



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

ZoneFlex 7352



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

ZoneFlex 7762



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

ZoneFlex 7731



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

ZoneFlex R300



Indoor dual band 2x2 802.11n AP with integrated smart antenna array and PoE (802.3af) support

ZoneFlex 7055



Multipurpose dual-band concurrent 802.11n wired/wireless wall switch

ZoneDirector Controllers



Central wireless LAN controllers supporting from 6 to 1,000 Ruckus APs

SPoT



Cloud-based Smart Wi-Fi location-based services (LBS) user positioning technology suite and API

Smart Wi-Fi

Designed and Built for **Pervasive Performance...**
Available from **Ruckus Wireless**

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