Ruckus Wireless is a pioneer in the wireless infrastructure market, enabling carriers and enterprises to stay ahead of the exploding demand for high-bandwidth applications and services. The Ruckus Smart Wi-Fi technology redefines what’s possible in wireless network performance applying peerless flexibility and bullet-proof reliability to extract unmatched capacity and reliability from 802.11 standards.

The proliferation of mobile devices within homes of all types is creating new performance and management challenges for home owners. Not only are users now armed with multiple Wi-Fi-enabled devices that are much more mobile in nature compared to traditional laptops, but network infrastructure services and devices, such as printers, projectors, digital media receivers and file servers, are becoming mobile with the integration of Wi-Fi.

New mobile devices such as Apple iPhones, iPads and Apple TV operating on Wi-Fi networks can generate large volumes of traffic as these multicast protocols constantly advertise the availability of the devices. This broadcast traffic is transmitted at lower speeds and spills across the entire wireless local area network (WLAN), slowing down the performance and capacity of WLANs.

Beyond controlling new mobile traffic on Wi-Fi networks, the use of mobile devices such as tablets and smartphones present new performance and connectivity problems as the orientation of these devices constantly change. With Ruckus technology these problems have been solved, demonstrating why you need good Wi-Fi.

**Why Ruckus?**

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**It is not about cover but throughput!**

Throughput, also known as transfer rate, in data transmission is the amount of data moved successfully from one place to another in a given time period. For data networks, throughput is usually measured in number of bits per second (bps) that are transmitted, also quoted as Kilobits per second (Kbps) or Megabits per second (Mbps). There are many wireless standards in use today, and newer technologies can bond multiple channels / frequencies together to achieve higher throughput.

Ruckus measures wireless innovation to provide you with superior coverage and performance with the use of BeamFlex technology. BeamFlex is a custom antenna array that adaptively selects the best antenna pattern(s) for each packet, for each user. The use of BeamFlex provides users with several key features:

- Increased range and signal quality
- Higher data throughput
- Reduces interference from neighbour Aps
- Fewer Aps are required to support a network
- Works with all clients (802.11 AC & Backwards Compatible)
- Patented and unique to Ruckus

The bigger the system, the more clients using it therefore the throughput/performance drops dramatically. As discussed above Ruckus uses BeamFlex technology which works on increasing the range (up to 2x) by focusing the signal towards the client, instead of “Broadcasting” it anywhere. We can see from the images above that Ruckus performs not only in coverage, but also performance. Ruckus provides the customer with increased range, along with, in turn, faster data speed.
The above highlights the importance of good Wi-Fi as we can see the number of errors per AP when used on 6-10 iPads, and 16-20 iPads has a big impact on performance. Ruckus Access Point has less errors in comparison to other brand competitors, coming up top when used on more devices. Think of how many devices in your home uses Wi-Fi; iPads, mobiles, laptops, smart TVs etc., all of these take up bandwidth, reducing your throughput and making you wait longer. With Ruckus these problems go away with less errors, better connection, and higher throughput.

Adaptive Network

Low cost solutions will always drop to a lower Wi-Fi network if they don’t have the right feature sets, however with Ruckus tele patterns it allows for “mix and match” (both low standard and high standard performance), allowing the best suited connection for that device without downgrading the system.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Maximum Speed</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>802.11g</td>
<td>54 Mbps</td>
<td>2.4 GHz</td>
</tr>
<tr>
<td>802.11n</td>
<td>150 Mbps</td>
<td>2.4 &amp; 5 GHz</td>
</tr>
<tr>
<td>802.11ac</td>
<td>800 Mbps</td>
<td>5 GHz</td>
</tr>
</tbody>
</table>

With AC devices, such as Ruckus, you gain the higher speeds and more throughput.

802.11N/G devices experience slower connection.

Take a Kia Car Vs Ferrari, on paper both have the same features, for example Anti-lock Braking System, but in reality the Ferrari is better than the Kia due to its performance under pressure still being better, and can cover more areas faster than the Kia.
**BeamFlex+**

BeamFlex+ adaptive antennas feature a mix of two distinct polarisations (vertical and horizontal) across antenna elements. The signals received in these antennas, across the two distinct polarisations of BeamFlex+, are combined by the AP in such a way as to maximise the received signal-to-noise ratio, allowing best possible performance. The adaptive nature of BeamFlex+ means that the antennas adapt to client device orientation in real-time.

Standard networking products use 3 antenna patterns (3 exterior aerials) to broadcast wireless signal. The Antennas inside Ruckus products produce a minimum of 128 antenna patterns, dynamically matching antenna polarity of the client to improve download and upload performance and reliability, regardless of the devices orientation.

**ChannelFly**

ChannelFly technology improves performance by choosing an optimal radio channel via active capacity measurements. Normally systems only use the “3, 6 & 11” Channels, which means you can only set on one of 3 channels and will need to move around to find lack of interference. Ruckus however uses all 11 channels, making changes every second to optimise performance and make it less ‘congested’.

Take a motorway for example, you have 3 lanes being your 3 channels. Devices will move around to find the lane with less interference, however later on making the lanes congested and reducing the speed/throughput.

With Ruckus you have an 11 lane motorway/channel that allows you to continuously move the clients through all 11 lanes/channels away from the ‘busier’ channels, to create a clear path for sending data across. This therefore gives you quicker speed and throughput.

**Ruckus Facts:**
- Publicly traded as RKUS (NYSE)
- Formed: June 2004
- Customers: 21,000+
- Solution partners: 5,000+
- Fastest growing of the world’s top 5 WLAN suppliers (IDC, Gartner)
- Over 2,900 new customers in the Q4 2012

With Ruckus you get better reception (PD-MRC) for weak and hard to “hear” devices, and better transmission to devices constantly changing their orientation.

Antenna patterns from Ruckus transmit all antenna power to be able to ‘focus’ to a client, giving a longer range and faster data. Standard network products with only 3 antenna patterns only broadcast signal out.
Why Buy Ruckus?

- Our solution is optimised for small/medium businesses and enterprises
- We have expertise delivering a great end-user experience and responsive support to over 21K customers
- Our APS consistently demonstrate best-in-class range, capacity, and throughput
- Our solution provides exceptional value with fewer APS and low TCO
- Our system can reliably handle today’s devices and applications with plenty of room to grow in the future

SmartWay

Ruckus SmartWay is a new Smart Wi-Fi software technology that not only simplifies the administration and optimisation of service discovery traffic, such as Apple Bonjour and UPnP protocols over Smart Wi-Fi networks, it also supports advanced facilities to restrict or “fence” these services to a given access point, group of access points or a particular geographic area. SmartWay helps organisations enable users with Apple devices to exploit other resources on their networks. For example, SmartWay makes Apple Bonjour services such as AirPrint, AirPlay, and the Apple Filing Protocol (AFP) used in wireless printers and multimedia devices usable and controllable across subnets.

Wi-Fi deployments supporting multicast traffic such as Bonjour or UPnP can quickly get out of control if not scaled properly. Rather than flooding the network with traffic from all devices and subnets, Ruckus SmartWay selectively bridges this traffic to the subnets of choice, allowing service discovery traffic to be selectively bridged across subnets to enable large-scale deployments without overloading the network.

SmartRoam+

As client devices move within a Wi-Fi network, efficient roaming across access points becomes paramount for an exceptional user experience. Without effective roaming technology, Wi-Fi client applications such as streaming video or voice over wireless LAN (VoWLAN) will experience service interruptions as the end user moves from place to place within the WLAN.