NextWave WIRELESS

CUSTOMER PROFILE

Cheetah Wireless Technologies, Inc.
Las Vegas, Nevada

Cheetah Wireless Beats the Odds—Deploys Profitable Municipal Wi-Fi Network on the Las Vegas Strip

NextWave Wireless xRF™ technology crucial in deploying profitable, indoor/outdoor broadband Wi-Fi service on the Las Vegas Strip.

It's hard to imagine a more challenging environment for municipal Wi-Fi than Las Vegas – a city known for its imaginative architecture, dazzling sun, and mile after mile of reflective glass. Cheetah Wireless Technologies, Inc. took on the challenge, but technical solutions from two other vendors failed to supply the scalable, high-performance Wi-Fi solution they required. Only NextWave Wireless proved capable of delivering a powerful and profitable network infrastructure that could handle the challenging environment of the Las Vegas Strip.

NextWave Wi-Fi solutions deliver a superior combination of in-building penetration, support for multiple branded-content virtual networks, and rapid deployment. In fact, the very real advantages of the NextWave approach convinced Cheetah Wireless to begin the replacement of its existing Wi-Fi network. The determining factor in their decision was the patent-pending xRF™ smart antenna technology developed by NextWave. The powerful in-building penetration solution enables NextWave MBW 2000 micro cell base stations to double, and in some cases triple, the number of supported customers on a per-unit basis.

Three primary drivers were responsible for Cheetah Wireless' decision to choose NextWave as its partner in deploying the wireless network:

- High-performance outdoor Wi-Fi product line, powered by superior xRF technology
- Comprehensive WiMAX technology roadmap
- Complete professional services, including Back Office Support Systems (BOSS) and network design services

Bringing the Freedom of Mobile Internet

Customer Facts	Cheetah Wireless Technologies, Inc.
Headquarters:	Las Vegas, Nevada
President:	Mitch Gonzales
Founded:	2002

Networks and Services: Delivers profitable high-speed outdoor Wi-Fi to the Las Vegas Strip, with support for nomadic business users and tourists in hotels, convention centers, and other public locations.

The Challenge

Overcoming interference and site limitations to deliver fast, affordable broadband Wi-Fi to highly mobile business travelers.

Las Vegas is awash in a sea of interference. Reflections from high-rise structures, intermodulation, cellular towers, wireless point-to-point networks, and distorted waveforms all combine to complicate the deployment of a viable municipal Wi-Fi network. In addition, the placement options for Wi-Fi base stations are extremely limited, making it essential to use the most powerful equipment available.

Visited by as many as 47 million business travelers and tourists each year, Las Vegas represents an unparalleled business opportunity. However, providing fast, stable Wi-Fi service in one of the world's most congested urban environments posed a formidable challenge.

The Solution

Powerful, profitable outdoor Wi-Fi network uses patented in-building penetration solution to deliver high-speed connectivity.

The key to achieving a successful deployment in the challenging Las Vegas environment was the unique adaptive beamforming smart antenna technology offered by NextWave Wireless. This powerful, patented solution was instrumental in conquering8 the two primary obstacles faced by Cheetah: interference, and in-building penetration. By delivering tightly-focused signal transmissions, the xRF base stations enable Cheetah Wireless' network, the cheetahnetwork™®, to overcome both RF and physical interference. Signal strength and receive sensitivity are both enhanced by moving away from the omnidirectional broadcast patterns used by conventional access points, dramatically increasing the number of users that can be supported by each base station.

Mitchell Gonzalez, President of Cheetah Wireless Technologies, Inc., laid it on the line. "In Las Vegas it's tough to find sites to put up a panel — you need the best access technology you can get. You only get one shot to reach your customers, and for that purpose, NextWave has the best product on the market today, without a doubt."

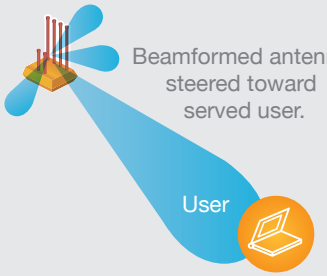
The MBW 2000 sector panel achieves its breakthrough access performance through the powerful synergy between its focused, 120˚ antenna pattern, superior in-building penetration powered by patented xRF technology, and unique dual access radio design. This next-generation approach delivers industry-leading performance on both transmit and receive signal transmission, and improves sensitivity through use of directional, focused beamforming to increase signal strength and reduce interference. In addition, it is equipped with a third radio operating at 5 GHz that is used to wirelessly mesh the NextWave MBW base stations. By providing a fast (1-2 Mbps), stable, high-quality user experience — and reaching more potential customers — Cheetah Wireless has developed a successful business model where others have failed.

Another key component in the Cheetah Wireless solution was solving the challenge of bringing 24-hour-a-day power to the NextWave base stations. As in many municipal Wi-Fi installations, most of the units are mounted on gang-charged light poles that are powered up at night and switched off during the day. Tearing up the Las Vegas Strip to install round-the-clock metered power was simply not an option, leading Cheetah Wireless to develop a patented solution, the QwikCat Power Pak™. This innovative, battery-based unit is designed to power Wi-Fi base stations and backhaul devices during the day, and recharge itself at night. A simple, practical, and elegant solution, the QwikCat Power Pak is expected to be deployed in municipal Wi-Fi networks in Phoenix AZ, Pomona CA, and Venice, Italy in the near future.

NextWave MBW
Wi-Fi Product Line

xRF™ Adaptive Beamforming Smart Antenna Technology

Designed to solve the interference, range, and capacity issues that typically plague outdoor Wi-Fi deployments in the unlicensed spectrum, NextWave Wireless's xRF adaptive beamforming is a revolutionary technology designed to maximize network performance and service quality. A patented, purpose-built solution, xRF technology combines a unique smart antenna array with powerful Digital Signal Processing (DSP).



Benefits:

- Improves range of reception by up to 150%
- Increases number of concurrently supported users by up to 400%
- Provides coverage improvement up to 180%
- Enhances transmit/receive sensitivity by reducing multipath interference
- Certified compliant with IEEE 802.11b/g standards

For further information, please download the xRF Adaptive Beamforming Smart Antenna Technology white paper at www.nextwave.com.

Unlocking the Power of Branded Content Networking

Deploying a robust Wi-Fi infrastructure was a challenge, but even more impressive has been Cheetah Wireless's ability to achieve profitability on a node-by-node basis — without spending a cent on marketing. In fact, if a specific node is unable to attract enough customers to justify its cost, it is quickly scheduled for redeployment.

When potential customers open their laptops, they immediately see a list of wireless networks (SSIDs) — including the cheetah network — which offers 30 minutes of free connectivity at speeds from 1 to 2 Mbps. Over 50,000 users are finding the network each month, without any promotion – and over 15% of these users opt to continue using the network on a paid basis.

In addition, Cheetah Wireless is creating multiple virtual networks to enhance profitability. For example, a branded content service that enables travelers to purchase discounted tickets uses the same underlying equipment, but appears as a separate entry on the user's list of available networks. This simple, yet innovative concept can be used to increase profitability without incurring additional costs, and is ideal for promoting special events, trade show booths, Web sites, or gathering data on user demographics. And because the NextWave MBW 2000 platform is configured with two xRF-powered access radios, it delivers better performance across more virtual networks than competing solutions.

Network Architecture

Cheetah Wireless has selected the NextWave MBW 2000 Series Micro Cellular-Mesh Wi-Fi Base Station as the workhorse of the cheetahnetwork. To enhance network performance, the MBW 1000 Series Pico Cellular-Mesh Wi-Fi Base Station has also been deployed to reinforce the mesh infrastructure and provide backhaul connectivity to the network. Currently the network provides coverage to four and a half square miles of downtown Las Vegas and the Las Vegas Strip. Future plans include coverage expansion in the downtown area, and possible integration of WiMAX into the network architecture.

Maximizing Network Potential

Comprehensive technology roadmap and professional services.

To create a winning business model, Cheetah Wireless Technologies, Inc., turned to NextWave and its superior xRF access technology to overcome the unique challenges posed by the Las Vegas Strip. And as Cheetah Wireless evolves its network in scope and capability, and moves into new markets with their branded content networking model, xRF will be at the foundation. The company will also benefit from NextWave's comprehensive technology roadmap, including integration of WiMAX technologies, to ensure maximum service capability and system longevity.

To streamline network deployments and service roll-outs, Cheetah Wireless is leveraging NextWave's comprehensive professional services, including Back Office Support Systems (BOSS) and network design. The unique NextWave combination of innovative technology, a comprehensive technology roadmap, and extensive professional services will continue to enable Cheetah Wireless to realize its maximum potential — today, and in the future.

For information on how your business can benefit from the innovative approaches being developed by NextWave, please contact us via email at npinfo@nextwave.com

About NextWave Wireless

NextWave Wireless provides software, systems, and silicon solutions that enable cutting-edge wireless broadband and mobile multimedia services. Our products and technologies include high-performance digital baseband WiMAX SOCs, multi-band RFICs, UMTS and Wi-Fi based network systems, device-embedded mobile multimedia software, and end-to-end UMTS and WiMAX mobile multicast and broadcast solutions. Our customers include many of the largest mobile handset manufacturers and wireless service providers in the world.

Our carrier-grade Wi-Fi systems are designed for wide-area deployment by commercial and municipal operators and combine our proprietary xRF™ smart antenna technology with a cellular-mesh Wi-Fi architecture to deliver cost-effective solutions capable of supporting bandwidth-intensive mobile broadband services such as video streaming, real-time gaming, video telephony, and other types of multimedia applications.

NextWave Wireless is headquartered in San Diego, CA, and operates sales and technology development centers around the world, including Las Vegas, NV; Charlotte, NC; Chicago, IL; Boston, MA; Calgary, Canada; Basel, Switzerland; Berlin, Germany; Nice, France; Tampere, Finland; Punjab, India; Seoul, South Korea; Sao Paulo, Brazil; Tel Aviv, Israel; and Tokyo, Japan.

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