SAN ANTONIO, Dec. 11, 2012 /PRNewswire/ -- Wireless Expressways, Inc., "WE", has developed and field tested a new, efficient, wireless distribution system that blankets indoor sites with highly reliable wireless coverage.

At the center of the system is a low-loss, low-cost, company-developed waveguide backbone. A typical WE system in a warehouse, for example, uses a single span of waveguide placed under the "red iron" roof structure and runs across the ends of rows of product aisles. Predetermined signal levels taken from variable signal couplers installed in ports along the waveguide feed aisle-matched antennas. Changes in stock levels on warehouse shelves have no effect on coverage since all aisles and areas are illuminated with separate high-level signals. Spot beams to special areas are easily provided where needed.

Dropout-causing signal shadows in the vicinity of production machinery in factories are eliminated. The system works with any 2.4GHz transceiver that has antenna connectors, such as high/low-power Wi-Fi, ZigBee, or Bluetooth devices. Battery life of low-power sensors is improved and environmentally powered sensors are made feasible in difficult applications.

A software-based system simulator is used to predict all settings and signals. Typical system efficiencies exceed 80%. They are highly reliable, contain no power consuming devices, require no maintenance, and are constructed with materials acceptable for installation in HVAC plenum spaces.

Data throughput is increased by minimizing co-channel interference from internal and external-t-building on-channel sources. Radiation of signals off premises to "unfriendlies" is greatly reduced.
"Our strategy is to efficiently transport wireless signals to users by going around signal-absorbing warehouse racks, and over signal-scattering clutter to distribute wide-area signals to clients," comments Charles Becker, President of WE. "We view our waveguide systems as ‘short-circuiting’ space to supply equal, high-quality, high-speed signals to all users. The increased coverage is dramatic. Many of our system trials have been in large warehouses, a notoriously difficult WLAN environment. Tests show we can fully cover a typical 40ksqft warehouse containing eight 175ft. aisles and nine fully loaded racks with signals to clients that are 100-1,000 times greater than the power level required for full 11Mbps, 802.11b,g operation. That’s a very high signal safety margin. And only one access point transmitting 100milliwatts is needed for coverage. Delay-causing roaming events are significantly decreased. Up to two more APs on independent channels can be added on a waveguide backbone for AP backup, additional bandwidth, and/or a separate VOIP channel. These features are unique to our waveguide-based systems," he said.

WE’s technology is covered under three patents with several more pending. Limited production of products at 2.4GHz has commenced. Full production of 2.4GHz and 5GHz systems will start during Q1 of 2013.

About Wireless Expressways, Inc.

WE is focused on providing solutions to the increasing problem of unpredictable wireless coverage in indoor locations.

The company was formed in San Antonio, Texas, by two wireless industry veterans, Charles Becker and Michael Fischer.

Becker has several decades of experience in the design and deployment of hundreds of wireless networks for warehouses, distribution centers, offices, industrial sites, schools, ocean-going systems, and metropolitan wireless data networks. He holds seven patents in wireless systems and electronics design.

Fischer wrote major portions of the IEEE 802.11 standards during a decade of very active participation on the 802.11-1997 through 802.11i-2005 committees and was technical editor for task group E. He was the architect of the controller chip used in the first 100 million Wi-Fi devices and holds over 50 patents in wireless and other communications technologies.

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