Press Release ***For Immediate Release***

Contact:
John Dilworth
949.226.7185
info@vubiqnetworks.com

Vubiq Networks Completes Development of Millimeter Wave RFID Hyperimaging System

Breakthrough system increases performance and bit density of radio frequency identification tags while dramatically lowering costs

IRVINE, CA, January 31, 2019 – Vubiq Networks, Inc., the innovation leader in millimeter wave wireless broadband technology, products and solutions, today announced that it has completed development of a hardware/software millimeter wave hyperimaging system. The system incorporates Vubiq Networks' patented high-bit density chipless radio frequency identification (RFID) technology using polarimetric synthetic aperture radar (POLSAR) in combination with proprietary software. For a high-level executive summary of Vubiq Networks' RFID hyperimaging technology, visit www.vubiqnetworks.com/wp-content/uploads/Vubiq-RFID-Patents-Exec-Summary.pdf.

"Our breakthrough hyperimaging system is able to code and decode chipless RFID tags with an order of magnitude higher bit density as compared to existing solutions and competitive approaches," said Mike Pettus, founder and CTO of Vubiq Networks. "Our system greatly improves performance while dramatically lowering costs due to our chipless RFID tags that use low electrical conductivity metals for the antenna elements, avoiding costly silver-based inks. We are able to achieve this breakthrough because we are not relying on spectral signature response, but instead relying on radar cross-section and antenna reradiation mechanisms."

The system addresses the downfalls of traditional RFID solutions, especially today's biggest barrier: the cost of the RFID tag. The company's approach reduces tag costs to less than one cent per tag. With POLSAR as the technique for the RFID reader, tag and reader collisions are no longer an issue. By using the millimeter wave spectrum, reader performance increases and wireless disruption is minimized.

"Utilizing POLSAR hyperimaging as opposed to traditional RFID methods greatly expands the use cases by providing the ability to read multiple tags simultaneously, while also determining their three-dimensional location," said Mr. Pettus.

The increased density and lower RFID tag costs are important developments for the marketplace, especially for emerging Internet of Things (IoT) applications. Vubiq Networks' system achieves very high density chipless tag encoding through the use of innovative geometrical layout of patch antennas as the tiny tag elements. This provides for optimized element spacing, providing very high bit density for chipless RFID.

"As articulated by recent research from IBM*, hyperimaging is an exciting new technology space poised to dramatically change our world in many ways," said Vubiq Networks CEO John Dilworth. "The current $11 billion RFID market is expected to explode to $40 billion by 2025**, so we see a bright future for our hyperimaging solution in RFID, as well as other areas."

Next steps for the company include full product development, leveraging recently introduced single-chip millimeter wave radar solutions that incorporate 60 GHz radar and digital signal processing (DSP) in one device.

"The availability of new single-chip millimeter wave technologies that combine radar and DSP have significantly reduced the development time and costs to produce a high-volume, hyperimaging RFID reader," said Mr. Pettus. "Having a DSP engine collocated with a millimeter wave radar front-end enables our patented artificial intelligence imaging algorithms to leverage our innovation in a single device."

Patented Technology

Vubiq Networks' RFID hyperimaging system is based on several technology patents held by the company:

- US Patent Number 7460014, issued December 2, 2008. RFID System Utilizing Parametric Reflective Technology
- US Patent Number 7498940, issued March 3, 2009. RFID System Utilizing Parametric Reradiated Technology
- US Patent Application 62746829, submitted October 17, 2018. Multimode Millimeter Wave RFID Systems and Methods Thereof
- US Patent Application 62775479, submitted December 5, 2018. System and Method for High-Bit Density Millimeter Wave Chipless RFID

For more on the company's RFID patents, refer the **RFID Hyperimaging Patent Portfolio Executive Summary** at www.vubiqnetworks.com/wp-content/uploads/Vubiq-RFID-Patents-Exec-Summary.pdf.

About Vubiq Networks

Vubiq Networks, Inc. is a privately held millimeter wave innovation company headquartered in Irvine, California. The company designs, manufactures and markets proprietary, high-bandwidth, millimeter wave wireless products, including the HaulPass V10g 10 Gbps V-Band wireless transmission link. Vubiq Networks continues to innovate in the millimeter wave market with solutions in wireless broadband communications, video transport, wireless data center solutions, RFID tag decoding, and synthetic aperture radar applications.

For further information, visit www.vubiqnetworks.com or contact info@vubiqnetworks.com.

**www.research.ibm.com/5-in-5/hyperimaging*

***www.idtechex.com/research/reports/rfid-forecasts-players-and-opportunities-2017-2027-000546.asp*

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