

Press Release

For immediate Release

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# Vubiq Networks Awarded Articulated Antenna Patent for Millimeter Wave Communications

**New AI-enabled technology accurately aligns and maintains antenna position**

**IRVINE, CA, March 12, 2024** – Vubiq Networks, Inc., the innovation leader in millimeter wave wireless broadband technology and solutions, today announced that it has been awarded a new millimeter wave technology patent by the U.S. Patent and Trademark Office. Patent number 11,689,298 is entitled ***Methods of Aligning an Articulated Antenna Device***.

Over the past eight years, Vubiq Networks has been awarded an evolutionary series of six US and European patents for its modular millimeter waveguide technology. This innovative technology separates the digital modulation components from the analog radio frequency components, allowing for rapid development of new products without the expense of complete circuit board redesigns.

This latest patent addresses the most critical challenges for narrow beam millimeter wave point-to-point communications: automatic antenna alignment at installation, and importantly, maintaining that precise alignment over long distances despite the effects of pole sway and thermal effects. Today, maintaining millimeter wave antenna alignment requires substantial time and precise mounting to align small to large antennas over hundreds of meters to kilometers of link distance. If alignment accuracy is not initially obtained, and not dynamically maintained during operation, the loss in data carrying ability can be substantial.

“This is why our new patent is so significant,” said Mike Pettus, founder and CTO of Vubiq Networks. “Rather than having to move the whole radio system for alignment as is necessary today, our innovative approach controls the movement of only the high-gain antenna element. Using machine learning algorithms and sensor fusion technologies, the alignment and compensation control system leverages modern AI techniques in response to physical changes in the millimeter wave radio support structure. With  $\pm 20^\circ$  antenna yaw and pitch alignment range, installation time and required skills are significantly reduced. Beam alignment is maintained to fractional-degree precision in milliseconds.”

The antenna adjustments are controlled through the use of inertial sensors and position indicators to compensate for the sway of the pole, thermal changes in the antenna mounting system, or other physical fluctuations that can cause misalignment. Since only the antenna element is being moved within the antenna system, the movements are much more precise, the cost of the system much less expensive, and the response time for maintaining alignment much faster.

“Our new technology will allow millimeter wave radios to be used more efficiently and effectively on street furniture – that is, light poles, utility poles, etc.– as well as monopole towers for greater bandwidth availability to meet today’s wireless telecom network requirements at a significantly lower cost with greater options for mounting structures,” said Vubiq Networks CEO John Dilworth. “We believe this differentiating innovation will be a market disruptor and will finally answer the market’s calling for a reliable millimeter wave point-to-point connection.”

Read the patent award [here](#).

## About Vubiq Networks

Vubiq Networks, Inc. is a privately held millimeter wave innovation company headquartered in Irvine, California. With over 16 years of experience in telecommunications and extremely high frequency (EHF) applications, the company continues to expand its global reach into cutting-edge markets such as 5G point-to-point connectivity, wireless fabric architecture, chipless RFID data tag hyperimaging, IoT smart sensors, EHF medical applications, and more. For further information, visit [www.vubiqnetworks.com](http://www.vubiqnetworks.com).

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