Ricetronics

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Patent Granted for Ad Hoc RF Network Technology

Patented physical layer structure addresses basic challenges of wide-band RF networks, including 6G deployment. Novel technology includes integration of unique circuits and methods, including in-memory computing circuits and pulse waveforms. Target applications include mobile ad hoc networks (MANETs). Advantages may include low-latency, and multi-domain separation of Users in high density networks.

St. Louis MO – August 5, 2025 – Ricetronics (Rice) announces the issuance of US Patent No. 12363640 B1 by the United States Patent and Trademark Office. The Patent, entitled "Ad Hoc RF Network Structures and Methods" issued to Gregory M. Rice, targets a novel 6G RF Network foundation. The patented Network technology merges in-memory computing with a diversity of pulse waveform methods to achieve critical network capabilities. These include low-latency access, extremely agile RF beamforming, and high levels of electronic integration. Pulses may contain both data and User ID codes.

Although in-memory computing has been researched for use in neural networks, its application in the patented technology is novel, enabling precision processing and beamforming of wide-bandwidth 6G signals. The scope of the patent spans multiple integrated subsystems and structures, with some incorporating "memristor circuitry". Despite intense research for neuromorphic computing, general use of memristors has been limited by issues of lifetime and accuracy. However many of these issues are addressed in the Network patent by support structures and methods of operation.

The Network's pulse waveforms facilitate separation of RF signals among numerous ad-hoc, mobile Users. The capability might be analogous to that achieved by swarms of bats in the natural world, where acoustic signals may be separated by time, space and code features. The Network technology may similarly serve to enable mobile ad hoc RF networks (MANETs), where Users of such networks might be either human or machine.

The technology might be applied in airborne drones, driverless vehicles, robotics and fixed platforms. An example of the latter might be "data centers" where ad hoc wide-bandwidth wireless links might replace cumbersome and expensive cabling equipment.

Further information regarding ricetronics and other 6G developments available at;

ricetronics.com

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