An e-Newsletter from Anatech Electronics

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January 2025

# What's News...

ANATECH ELECTRONICS INC

# Researchers Set New Milestone for Wireless EV Charging

In collaboration with Volkswagen Group, researchers at Oak Ridge National Laboratory (ORNL) have demonstrated a 270-kW wireless EV charging system. Researchers created a system using about 19 inches in diameter polyphase electromagnetic coupling coils to deliver high power density. The coil design uses rotating magnetic fields for efficient power delivery, and when integrated into the vehicle's undercarriage, the system achieved over 95% efficiency, providing a 50% charge in just 10 minutes with a 4.75-inch gap between the coil and the ground.



Source: ORNL

# United Airlines To Use Starlink for Wi-Fi

United Airlines is accelerating its rollout of Starlink Wi-Fi. It aims to meet the growing demand for fast, reliable in-flight

# Space Force Readies Space Jammer

The U.S. Space Force will deploy a new ground-based system to jam enemy satellite communications. This system, known as the Remote Modular Terminal (RMT), will disrupt adversary surveillance and targeting capabilities, particularly in the Indo-Pacific region. Developed by the Space Rapid Capabilities Office, these small and modular jammers can be easily deployed and operated remotely. They specifically aim to counter the growing threat of Chinese surveillance satellites, which provide continuous coverage of the region and can track even small objects. The RMT jammers will effectively disrupt these satellites' ability to communicate and coordinate attacks, enhancing the protection of U.S. and allied forces.



Source: US Space Force

# A Word from Sam Benzacar



Wi-Fi 8 Is Coming, and It's All About Reliability

Wi-Fi, with Starlink promising speeds that support streaming and gaming. The company plans to offer this service free to MileagePlus members. It has also expanded its implementation timeline, aiming to equip its entire two-cabin regional fleet with Starlink by the end of 2025. The company aims to outfit its fleet of nearly 1,000 planes with Starlink Wi-Fi.



Source: Starlink

# China Finds "Plasma Bubbles" With New Radar

Chinese scientists have demonstrated a Low-Latitude, Long-Range Ionospheric (LAIRD) radar that can detect plasma bubbles forming over vast distances, including areas like the Egyptian pyramids and Midway Islands. These disturbances in the Earth's upper atmosphere can disrupt GPS and satellite communications. This unprecedented detection highlights China's advancements in over-thehorizon radar technology, with implications for scientific understanding and strategic applications. While LARID itself is not designed for military surveillance, its underlying technology has been adapted for military radars capable of detecting even stealth aircraft, showcasing the potential of this technology in a broader context.



The next evolution of wireless networking technology, Wi-Fi 8, represents a significant shift from pure speed to enhanced reliability. While Wi-Fi 7 continues to establish itself in the market, with Windows 11 recently adding support, industry experts are already looking ahead to the future of wireless connectivity. The Wi-Fi Alliance projects wireless device adoption to grow dramatically from 233 million devices in 2024 to 2.1 billion by 2028.

Emerging from the Ultra High-Reliability study group in 2022, Wi-Fi 8 (technically known as 802.11bn) remains in its conceptual stage. As technical specifications continue to evolve, industry analysts' access points won't reach the market until late 2028. This development acknowledges a crucial reality: despite theoretical Wi-Fi speeds increasing fortyfold since Wi-Fi 4, users often struggle to achieve advertised speeds due to interference and physical obstacles.

Building upon Wi-Fi 7's advances, including doubled channel bandwidth, 4K QAM encoding, and multi-link operation across multiple frequency bands, Wi-Fi 8 introduces several innovative features. Coordinated Spatial Reuse helps multiple access points adjust their signal strengths to minimize interference in mesh networks, while Coordinated Beamforming directs signals more precisely to intended receivers.

Dynamic Sub-channel Operation allows access points to assign devices to specific sub-channels, potentially increasing throughput by 20 to 80 percent in heavy traffic conditions.

Industry experts view Wi-Fi 8's reliability improvements as valuable for industrial

Source: China News Agency

and IoT applications where consistent connectivity is crucial. However, users must upgrade access points and devices to benefit from these advances. The timeline for widespread adoption remains uncertain, with mainstream implementation likely occurring in the late 2020s, coinciding with early 6G developments. In the interim, enterpriseclass Wi-Fi 7 access point adoption is expected to accelerate in 2025, with most mainstream device vendors already supporting the standard.







Anatech Electronics, Inc. focuses on the design and manufacturing of RF and microwave filters and related products.

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