Optical Zonu Introduces Smallest RF-over-Fiber Transmitter for High Density Ku-band Defense Communications

Module enables fiber transport of high-frequency RF signals from phased array antennas, SATCOM systems, and other spatially challenged military use cases

Optical Zonu Corporation

VAN NUYS, CA, UNITED STATES, July 28, 2026 /EINPresswire.com/ -- Optical Zonu Corporation (OZC), a top provider of optical networking and RF-over-fiber (RFoF) solutions, today announced the availability of its new Miniature Ku-Band RFoF Transmitter, a compact OEM module designed to simplify the transport of high-frequency RF signals in the most space-constrained defense and aerospace environments. Measuring approximately 2.25 x 1.0 inches, the transmitter is engineered for direct integration into phased array antennas, SATCOM terminals, radar systems, and other high-density RF platforms where coaxial cabling is impractical.

As military communication continues to evolve toward higher frequencies and increasingly dense antenna architectures, transporting Ku-band signals from the antenna to processing equipment has become a growing challenge. The new transmitter addresses this problem by enabling RFoF conversion directly at the antenna, reducing signal loss, simplifying system integration, and allowing designers to place fiber where traditional RF cabling would be difficult or impossible.

"Modern defense platforms are looking to pack more RF capability into less space than ever before," said Brian Somers, head of aerospace and defense at Optical Zonu. "By creating the industry's smallest transmitter for the Ku-band, we've made it possible for system integrators to place optical conversion directly inside antennas, masts, and other highly constrained environments while maintaining the RF performance these applications demand."

The transmitter is well-suited for numerous current defense applications including phased array radar, Common Data Link (CDL) systems, shipboard communications, submarine periscopes,

SATCOM terminals, electronic warfare systems, and large unmanned aerial vehicles (UAVs).

The new OEM module transports RF frequencies up to 18 GHz with high spur-free dynamic range (SFDR), support for both 1310 nm and 1550 nm optical wavelengths, as well as DWDM configurations for long-distance transport and complex RF distribution architectures.

Key features of the Ku-band transmitter include:

- Ultra-miniature form factor for installation inside antennas and other space-limited assemblies

- RF transport up to 18 GHz with high SFDR and low-noise optical transmission

- Fiber-pigtailed construction for flexible installation

- Rugged operation from -20°C to +65°C (with fixed gain), with extended temperature options available

- Support DWDM multiplexing to transport multi-RF streams over single fiber

- Support for microwave antenna distribution, multi-band SATCOM, electronic warfare, shipboard RF distribution, and frequency distribution systems

The transmitter is designed to operate with all industry-standard RFoF receivers but should be paired with an Optical Zonu receiver to achieve optimum end-to-end system performance and maximize dynamic range.

The Miniature Ku-Band RFoF Transmitter is available now and can be customized for defense and aerospace applications requiring specialized optical wavelengths, environmental specifications, or system configurations. For more information, visit www.opticalzonu.com.

About Optical Zonu Corporation

Optical Zonu Corporation (OZC) is a leading provider of radio frequency over fiber (RFoF) transport solutions for the wireless, defense, and aerospace industries. OZC is the only company fully committed to custom solutions for every deployment and offers easy centralized management and patented fiber fault detection. The company provides a wide range of turnkey, modular, and OEM solutions that support satellite antenna remoting, GPS distribution, ground station redundancy, and radar calibration. OZC maintains strategic global relationships across the industries it serves, cooperating with major vendors and suppliers to enable rapid production of cutting-edge solutions. For more information, follow them on LinkedIn, or visit https://www.opticalzonu.com/.

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