In The Press

Optical Zonu Continues to Capture Media Attention

We have gathered recent Articles, Press Releases, Website, Blogs, Industry Magazines, and Newsletters where Optical Zonu has been featured or mention. We continue to make strides solutions for our customers no matter the industry. Our analog (RF) and digital fiber optic transport solutions are easy to install and design into your systems. Come see what others are saying about us.

Table of Contents

Microwave Product Digest - October 31, 2024

FEATURE ARTICLE

The Essential Role of N+1 Redundancy in RF Over Fiber Communication Systems

by Meir Bartur, CEO, Optical Zonu

The ability to communicate over long distances has been crucial since the beginning of modern civilization. However, today's communications have never been more sophisticated and critical to innovation and national security. Between 24/7 data centers routinely transmitting exabytes of data to and from the cloud, the growth of high-frequency (and easily disrupted) military communications, as well as public safety radio systems, telecom infrastructure cannot afford even nanoseconds of downtime without placing data and operations at serious risk.

This is why businesses and government organizations can only afford to implement some type of network redundancy in radio frequency over fiber (RFoF) systems. Protection against a single point of failure can be achieved by duplication, but it is expensive, recovery is not necessarily automatic, and operational complexities make it impractical. Where full or even half redundancy may not be economically plausible for most organizations, N+1 redundancy is perhaps the most efficient and reasonable way to protect communication systems.

What is RFoF and Why Do Organizations Avoid Redundancies?

RFoF is typically the answer to a network operator's challenge of providing high-speed, resilient transport of RF signals over long distances in a way that traditional telecom infrastructure cannot support. It is a technology that transmits RF signals over optical fiber cables instead of coaxial cables. This method leverages the advantages of fiber optics, such as low signal loss, high bandwidth, and immunity to electromagnetic interference to transport RF signals over long distances with minimal degradation.

However, these hardware components, which

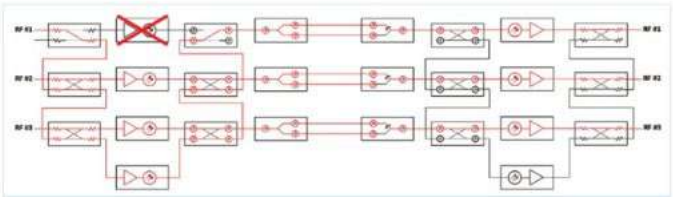

Figure 1: Transceiver 1 is problematic, so the signal is rerouted to the backup transceiver 4

networks. The fibers are routed via different passes (not bundled)—and a cut or disconnect of a single fiber is detected. The 2x2 optical switching re-routes the signals to the spare fiber.

In practice, any combination of the N+1 configurations mentioned above (as opposed to each individually) can be used. For example, a network operator may want to deploy a second fiber and receiver but not the transceiver. However, the fewer redundancies an operator invests in, the more the probability of catastrophic failure increases. Certain premium RFoF hardware with smart optical switches can expertly reroute frequencies to adjust to the complexities of replacing just a singular transceiver, amplifier or switch. This will provide the necessary protection of these systems in the case of a fiber cut or component failure without the need for redundancy at every component.

Summary

As seamless and uninterrupted communication is essential for innovation and national security, N+1 redundancy in RFoF systems offers a pragmatic solution to safeguarding critical telecom infrastructure without incurring prohibitive costs. By providing strategically placed backup components, N+1 redundancy ensures that essential communications remain uninterrupted even in the face of network failures.

This approach balances the high cost of full redundancy and the need for reliable, continuous service, making it an ideal choice for organizations that cannot afford downtime but must also manage resources efficiently. Despite a belief that telecom hardware is a commodity and a race to the bottom line, fiber-based system managers should work with the most skilled integrators and best RFoF products to ensure cost-effective N+1 redundancy.

Reference

1. What is Data Center Redundancy? N, N+1, 2N, 2N+1, CoreSight https://www.coresite.com/blog/data-center-redundancy-n-1-vs-2n-1

• OPTICAL ZONU •

Optical Zonu Enhances Its Network Management System

Optical Zonu has enhanced its CloudView Network Management System (NMS) with fiber fault detection and localization capabilities for its ZONUConnect base transceiver station to distributed antenna system (DAS) fiber optic transport solutions. The updates give telecommunication operators and enterprises greater visibility into RF over Fiber (RFoF) network performance, allowing for quicker and more precise detection of fiber faults. This helps address network issues more effectively and prevent downtime.

The ZONUConnect platform incorporates a proprietary micro-optical time domain reflectometer (uOTDR) within its pluggable modules, which can detect fiber faults within a few meters. However, accessing and utilizing uOTDR data for network issue resolution was not fully realized in the previous NMS. With the latest CloudView NMS upgrades, operators can now view a visual representation of the fiber path on terrain maps, with OTDR data overlaid on the management panel. This allows for pinpointing fiber faults and reflection events with precise map locations.

The NMS now also visualizes preventive fiber events, such as connector or patch-panel imperfections, rather than just fiber breaks. Addressing these issues is crucial for ensuring RFoF network reliability, as even minor imperfections in components can introduce significant loss, equivalent to a kilometer or more of fiber. Identifying and correcting these imperfections helps reduce total fiber loss and enhances BTS to DAS link performance.

For more information, visit Optical Zonu at opticalzonu.com.

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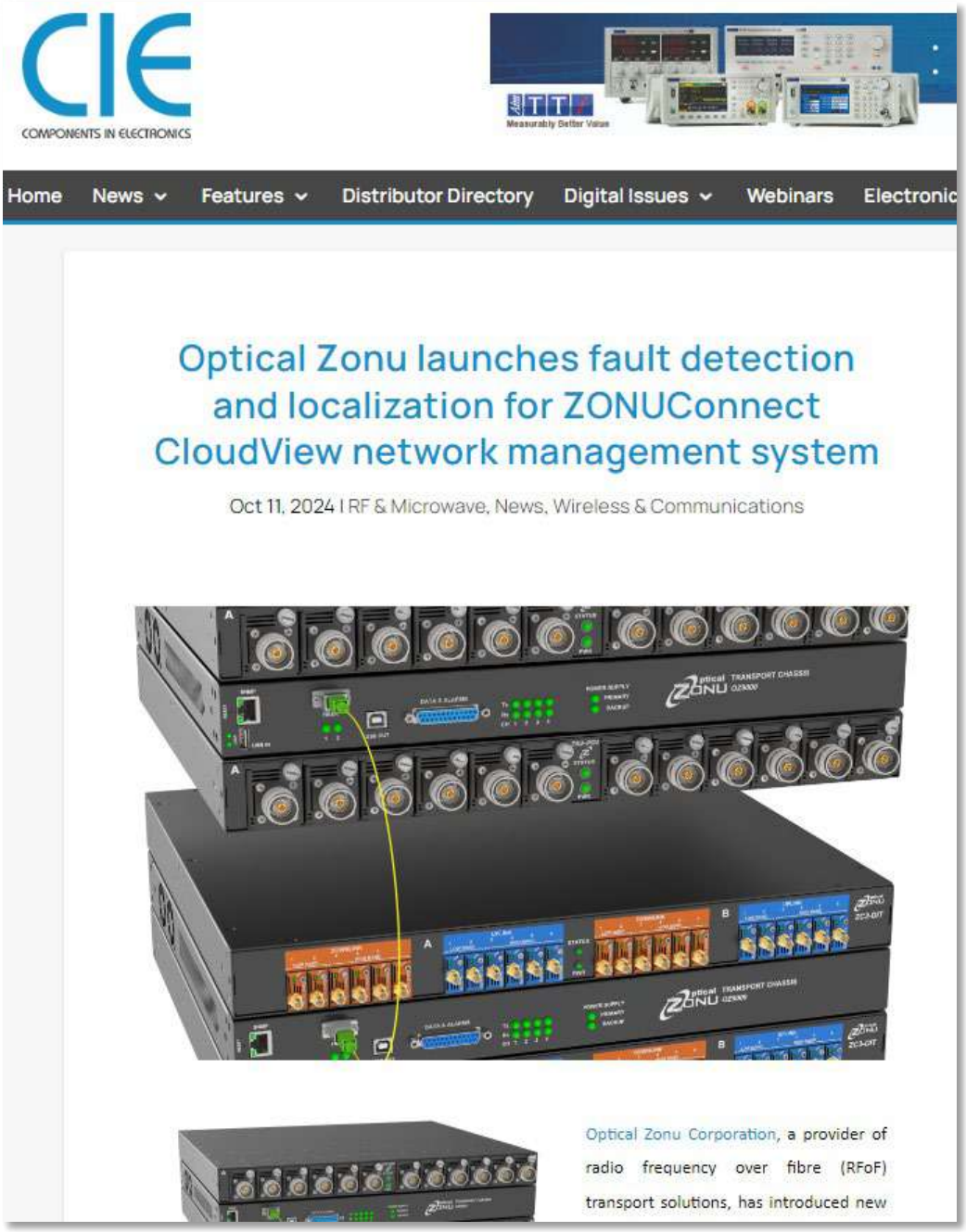
Components in Electronics - October 11, 2024



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Optical Zonu launches fault detection and localization for ZONUConnect CloudView network management system

Oct 11, 2024 | RF & Microwave, News, Wireless & Communications

Optical Zonu Corporation, a provider of radio frequency over fibre (RFoF) transport solutions, has introduced new

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Optical Zonu's Management and Supervision - October 02, 2024

Optical Zonu's market leading Management and Supervision highlighted in Microwave & RF Magazine:

OZC Website blog/news - https://www.opticalzonu.com/2024/10/how-to-supervise-and-monitor-rf-over-fiber-links/

LinkedIn - https://www.linkedin.com/posts/opticalzonu_how-to-supervise-and-monitor-rf-over-fiber-activity-7246941143467237376-clry?utm_source=share&utm_medium=member_desktop

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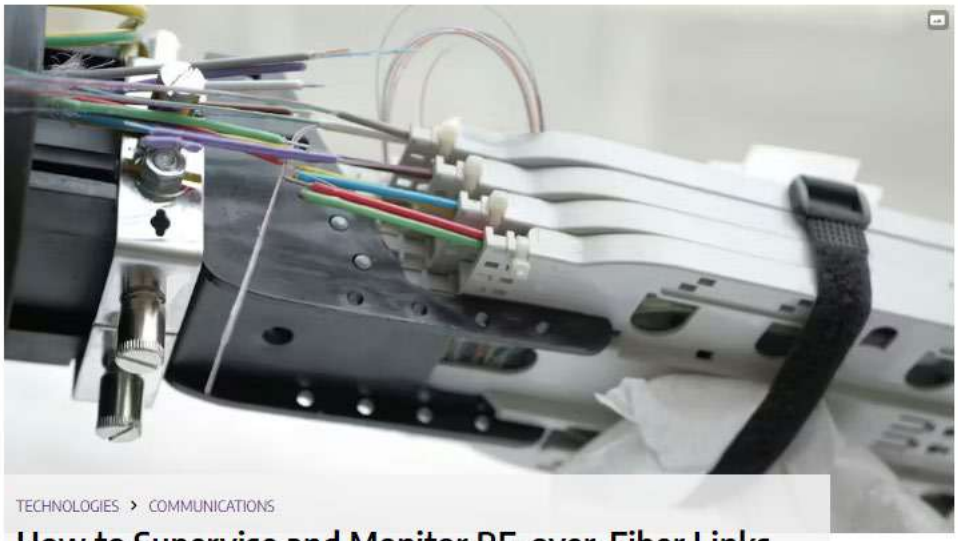
Microwaves & RF – September 26, 2024

Microwaves&RF



TECHNOLOGIES › COMMUNICATIONS

How to Supervise and Monitor RF-over-Fiber Links

Sept. 26, 2024

Even as RF over fiber (RFoF) technology provides secure, resilient, long-distance data transmission, it's a technology that's short on standards. Learn how to get the most out of RFoF links on a network-wide basis through effective supervision and monitoring.

Meir Bartur

Related To: Optical Zonu

What you'll learn:

- Definitions of several levels of RFoF supervision and monitoring.
- The crucial capabilities an organization needs to watch over RFoF links at low cost.
- How to effectively deploy network-wide supervision and monitoring for RFoF.

, enable control, and be centrally accessible

whether plug-in or built-in) are reporting and
lated data from each separate module prevents
ainstakingly tedious.

nsmitter, and switch should be equipped with
ces and control registers. Multiple boxes can be
a management agent. The agent should also have
ternal engine for its specialized graphic user
view of various diagnostics or of physical alarm

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Microwaves & RF – September 23, 2024

Microwaves&RF

Products of the Week: September 23, 2024

Sept. 23, 2024

Here's this week's selection of some of the most interesting new products that have been launched of late.

Alix Paultre

Related To: Microwaves & RF

Network Management System Offers Fault Detection and Localization

Optical Zonu added fiber fault detection and localization capabilities to its CloudView Network Management System for the ZONUConnect base transceiver station to distributed antenna system fiber-optic transport solution. This additional functionality provides significant visibility into RFoF network performance, and more quickly and accurately detects the location of fiber faults. The ZONUConnect platform has a micro optical time-domain reflectometer in its pluggable modules to highlight fiber fault detection data within a few meters.

Additional upgrades to the CloudView NMS enable visual representation of the fiber pass on terrain maps, with OTDR data overlaid on the management panel to show fiber faults and reflection events with precise map locations. The Network Management System's ability to provide visualization of preventive fiber events, and not just fiber breaks, can solve issues that could render a RFoF network non-operational, locating imperfections to reduce total fiber loss and achieve better performance.

Click Here to View the Article

ZONUConnect CloudView NMS – September 23, 2024

Our ZONUConnect CloudView NMS was featured in many outlets, click on each link to see article details:

Optical Zonu Launches Fault Detection and Localization for ZONUConnect CloudView Network Management System

Optical Zonu launches fault detection and localization

Optical Zonu Adds Fault Detection and Localization Capabilities to its DAS Fiber Optic Transport Solution

Products of the Week: September 23, 2024 - Network Management System Offers Fault Detection and Localization

Optical Zonu Releases Fault Detection and Localization for Its Network Management System

Microware Product Digest – August 21, 2024

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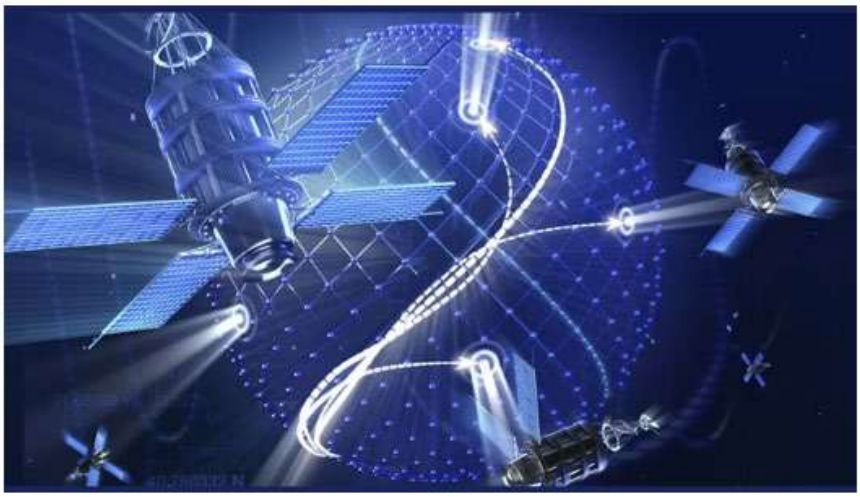
everytingRF – June 13, 2024

everythingRF

Exploring GNSS Timing Applications Using RF-over-Fiber

Aerospace & Defense | Antennas | GNSS | IoT

Meir Bartur, President and CEO of Optical Zonu - Optical Zonu
Jun 13, 2024



Oftentimes people confuse truly remarkable technologies with the mundane simply because "it just works." There is no evidence of this quite like with wireless communication. There are countless mission-critical data transactions happening every moment across industries including telecommunications, finance, power & utilities, navigation and military & defense. The accuracy and stability of those transactions rely on the perfect synchronization of internal clocks that are constantly drifting ever-so-slightly from one another. If there aren't mechanisms put in place to keep these clocks synchronized, there can be significant data corruption at best or even a failure to communicate.

This is becoming especially challenging now that communication is more advanced and complex with each passing day. The growth of the Internet of Things (IoT) introduces new connections requiring synchronization, endpoints are more geographically dispersed, and many industries are taking advantage of higher radio frequencies (RF) for low latency and higher throughput at the expense of resiliency. It is important to understand the role of timing across different applications in relation to these changes and why fiber is playing a crucial role in ensuring communication can still happen as efficiently and effectively as before.

ort transmitter that combines the channels into a
with a transport receiver or base unit. Depending
split between 8 to 32 ways to 32 receivers with
ections. Special circumstances sometimes
and the number of endpoints requiring timing
ant since both channels are routed together.

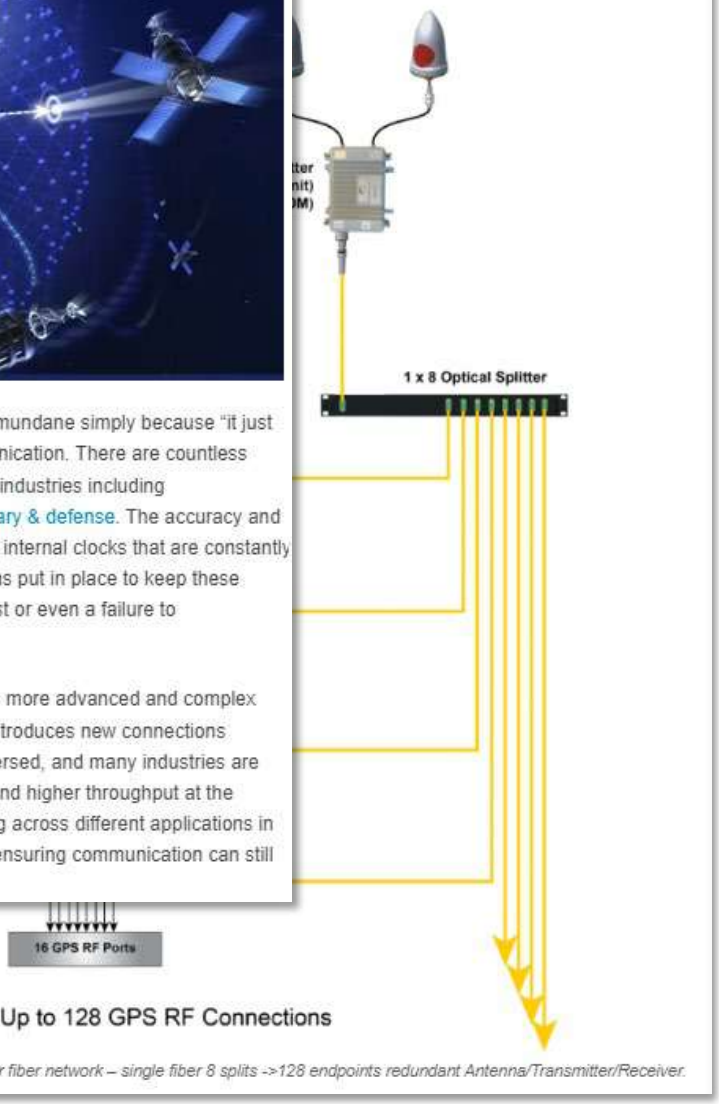


Figure 1: GPS over fiber network – single fiber 8 splits ->128 endpoints redundant Antenna/Transmitter/Receiver.

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everytingRF – April 10, 2024

everythingRF

Exploring Antenna Remoting Using RFoF: Revolutionizing Communication Technology

Antennas | Fiber Optics

Meir Bartur - Optical Zonu
Apr 10, 2024

Across industries, applications and deployment fields, wireless communication is happening more often but the need to transmit radio frequency (RF) signals over extended distances in cables ("wires") with minimal loss is growing at a significant pace.

This is especially challenging now that higher frequency bands are deployed to take advantage of higher capacity and faster data rates at the cost of resiliency. For example, high frequencies used in 5G cellular communication, such as mmWave, can produce significantly more throughput but are also more easily interrupted by any natural or man-made obstacles where line of sight is required. This shift is also happening in military communications, where there is a clear transition from

Figure 3: Duplex Antenna Remoting Example – providing indoor wireless coverage

What are the Key Performance Metrics for Antenna Remoting?

Since the conversion from electrical to optical and back happens for wide frequency ranges and diversified dynamic ranges, the link requirements should be properly defined. To ensure proper deployment and effectiveness of antenna remoting, it is important for signal transport designers to

hese key parameters:

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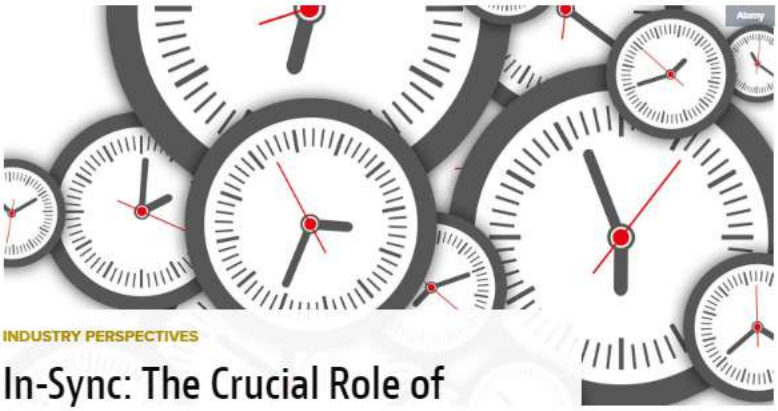

INDUSTRY PERSPECTIVES

In-Sync: The Crucial Role of Timing in Data Centers

Synchronized timing is paramount for data centers. Discover key considerations for operators as data environments evolve.

Meir Bartur, CEO of Optical Zonu | Apr 03, 2024

It is a marvel at how quickly and consistently data centers transmit information to and from locations. Servers in data centers are communicating with each other millions of times per second, processing critical transactions that must be precisely timed

DataCenter Knowledge

computing environments.

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Next For

Meir Bartur, Ph.D, is the President and CEO of the Optical Zonu Corporation. Dr Bartur has more than 30 years of experience in leadership, product development, and technology innovation. As a Senior Member of the IEEE and recognized leader in the development of low-cost fiber-optic solutions for FTTx, he contributed to the IEEE ITU PON standards. Before founding Optical Zonu, he directed Advanced Product Development and Strategic Technology for access transceivers at MRV Communications, as well as business relations with its major clients.

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Home » The Role of RFoF in an Autonomous Military Future

The Role of RFoF in an Autonomous Military Future

January 12, 2024 Meir Bartur, Optical Zonu, Van Nuys, Calif. 0 Comments

THE ROLE OF RFOF IN AN AUTONOMOUS MILITARY FUTURE

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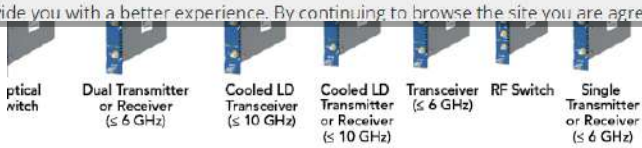

f RFoF subsystems.

is also lighter weight with a smaller form factor. In military communications, size and weight matter, particularly in ne applications like aerostats and drones. The size and weight of fiber cables make them easier to transport and in military operations. They are also well-suited for field deployments where mobility and rapid setup are critical. nd size and weight, fiber is more durable than coaxial cable. It is less susceptible to environmental factors such as ure, temperature fluctuations and corrosion.

NAVY CASE EXAMPLE

using RFoF for autonomous military assets may feel like futuristic, many of these problems are being discovered olved today. A compelling case study of the application of RFoF technology on autonomous vehicles for the military mplified by the U.S. Navy's utilization of unmanned surface vessels (USVs). Ku-Band Common Data Link (CDL) nunications payloads are routinely transported between radomes mounted high above USV decks and equipment s nestled within the ship's hulls via antenna remoting.

ntly, waveguide and coaxial cables are used for such tasks, but they present significant RF losses and logistical ilties. Coaxial cables are inherently inflexible and highly susceptible to mechanical stress like shock or vibration. fragility necessitates meticulous maintenance, a particularly daunting task during prolonged deployments at sea or anic conditions. Service disruptions require extra time and resources to repair and may even create the need for s.

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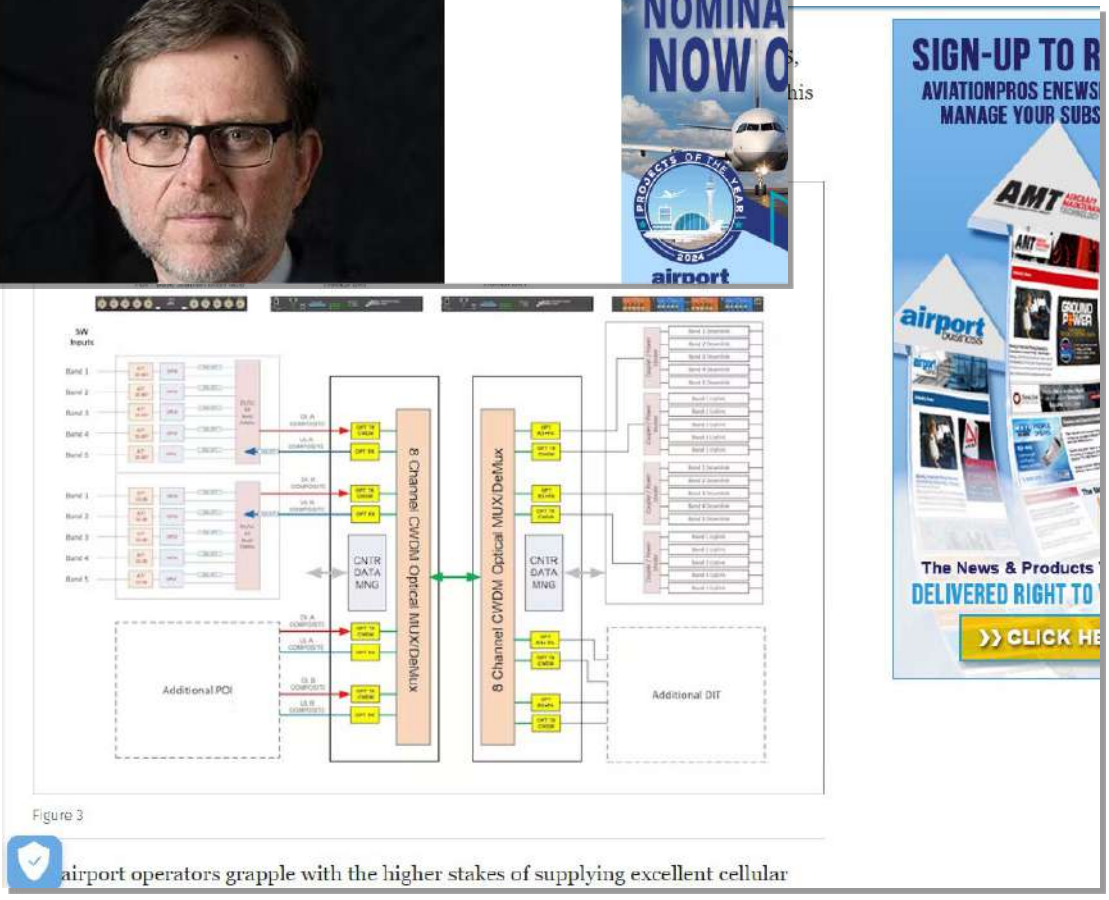

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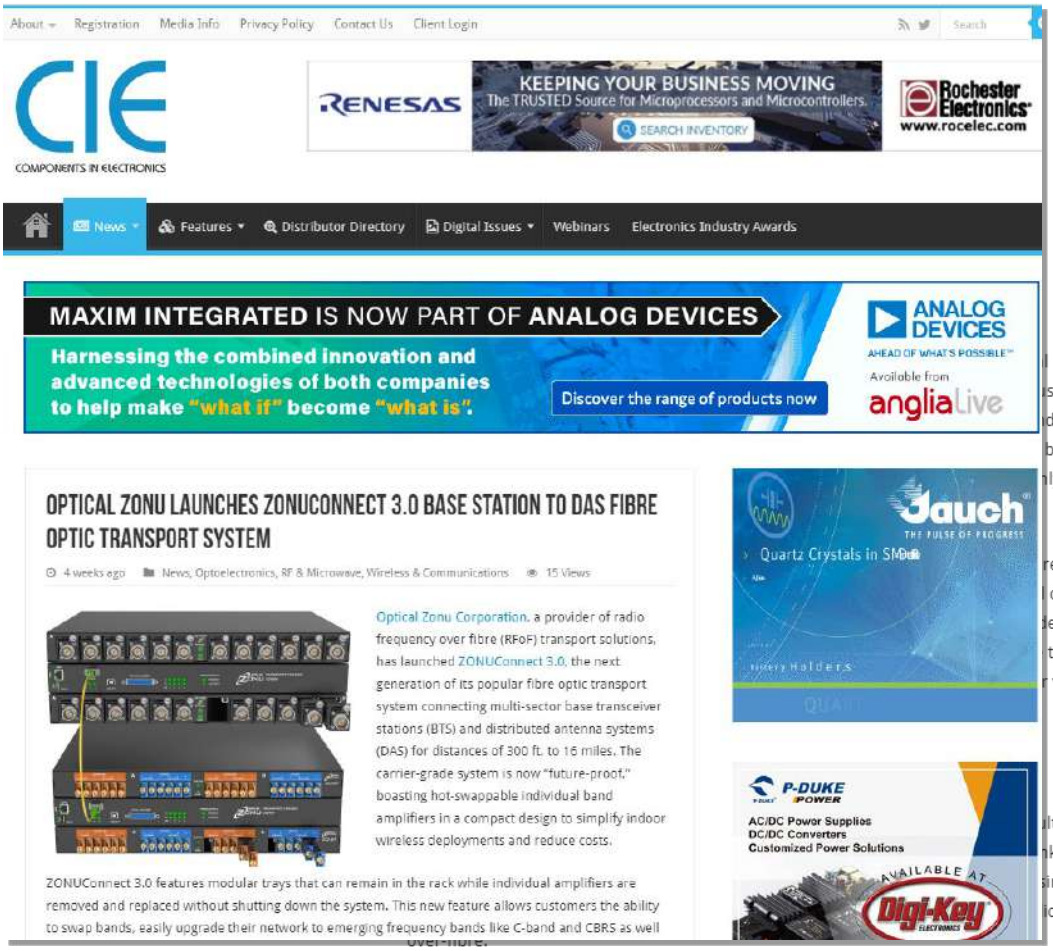

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- **Minimal Rack Footprint:** The fibre transport process consists of two full MIMO sectors in a 3 U chassis that can support up to six bands per MIMO sector. The sizable bandwidth enables the POI (point of interface) at the BTS and the DAS interface tray to pre-combine all the bands onto a single RF path and minimizes the equipment needed at both sites.
- **Optical Compensation as Needed:** For instances where compensation is needed for higher optical loss, ZONUConnect 3.0 provides a stand-alone 1U rack-mounted Extender Tray at the DAS head end location.
- **Minimal Commissioning Time:** The simplicity of ZONUConnect 3.0 means that even the largest systems can be deployed and commissioned in less than a day.
- **Lower Power Consumption:** ZONUConnect 3.0 combines multiple bands with a minimized fibre count for maximum energy efficiency.

For more information on Optical Zonu and ZONUConnect 3.0, visit:
https://www.opticalzonu.com/system-solutions/zonuconnect-universal-base-station-to-das-fiber-transport/

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erts says. "Cognitive EW is driving
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OD) to address deficiencies in the
electronic protection of defense systems. This ensures that electronic warfare will be a significant topic for years to come," says Meir Bartur, co-founder and CEO of Optical Zonu Corp. in Van Nuys, Calif., which specializes in RF over optical fiber technology.

The BAE Systems state-of-the-art Block 4 EW systems for F-35 Lightning II jet fighter-bombers will accelerate the delivery of advanced EW capabilities to warfighters by combining

"It is no secret that our weaponry and defense systems are becoming increasingly autonomous," Bartur continues. "As a result, signal transport to manage these systems

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Electronics Wireless

OPTICAL ZONUConnect 3.0 next generation fiber optic transport system connects multi-sector base transceiver stations (BTS) and distributed antenna systems (DAS) for distances of 300 ft. to 16 miles. The carrier-grade system is now 'future-proof,' boasting hot-swappable individual band amplifiers in a compact design to simplify indoor wireless deployments and reduce costs. Product features modular trays that can remain in the rack while individual amplifiers are removed and replaced without shutting down the system. This new feature allows customers the ability to swap bands, easily upgrade their network to emerging frequency bands like C-band and CBRS as well as provide ease of maintenance in the case of a faulty module. Previously, if a single band amplifier failed to connect the BTS and DAS, the entire solution had to be sent for repair. Now, it's only a simple plugin at the DAS interface tray and the

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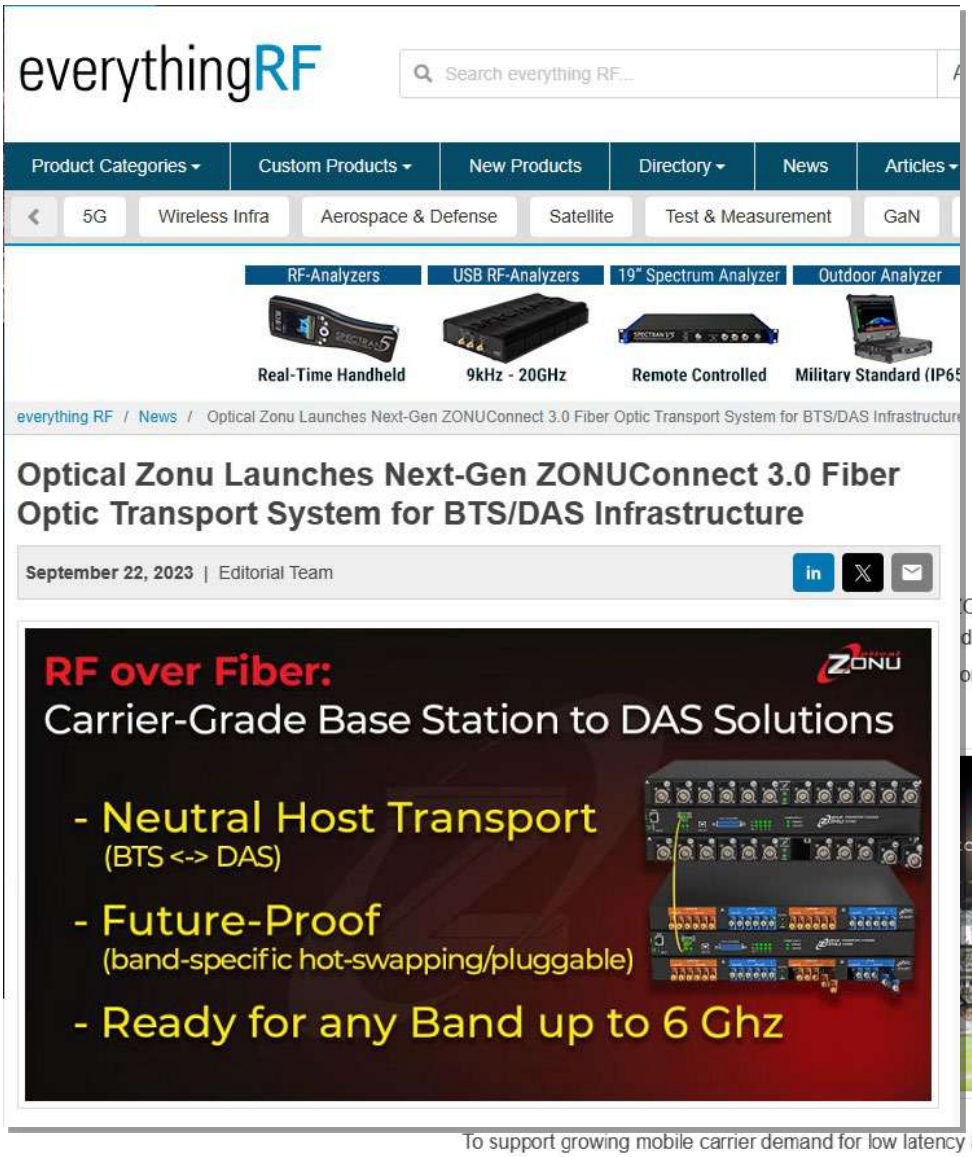

ONUConnect 3.0 means that even the
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To support growing mobile carrier demand for low latency and high bandwidth BTS to DAS connection, Optical Zonu has hired Vinny (Hwoi Yong) Chung as a Wireless Carrier Sales Engineer responsible for building and managing US wireless carrier technical sales along with potential commercial, government and military customers. Vinny has over 25 years of experience specializing in the RF and wireless infrastructure industry in previous executive positions with KMW Communications and Ace Technologies Corp. He has a proven track record of consistently building strategic partnerships with major US wireless carriers that drive significant growth.

"Optical Zonu's reputation for being at the forefront of RFoF technology and their commitment to innovation and excellence makes it an ideal opportunity for furthering my career trajectory," said Chung. "I am honored, excited, and humbled to join Optical Zonu's amazing team of professionals and look forward to being part of the company's success and growth."

Click here to learn more about ZONUConnect 3.0 fiber optic transport system.

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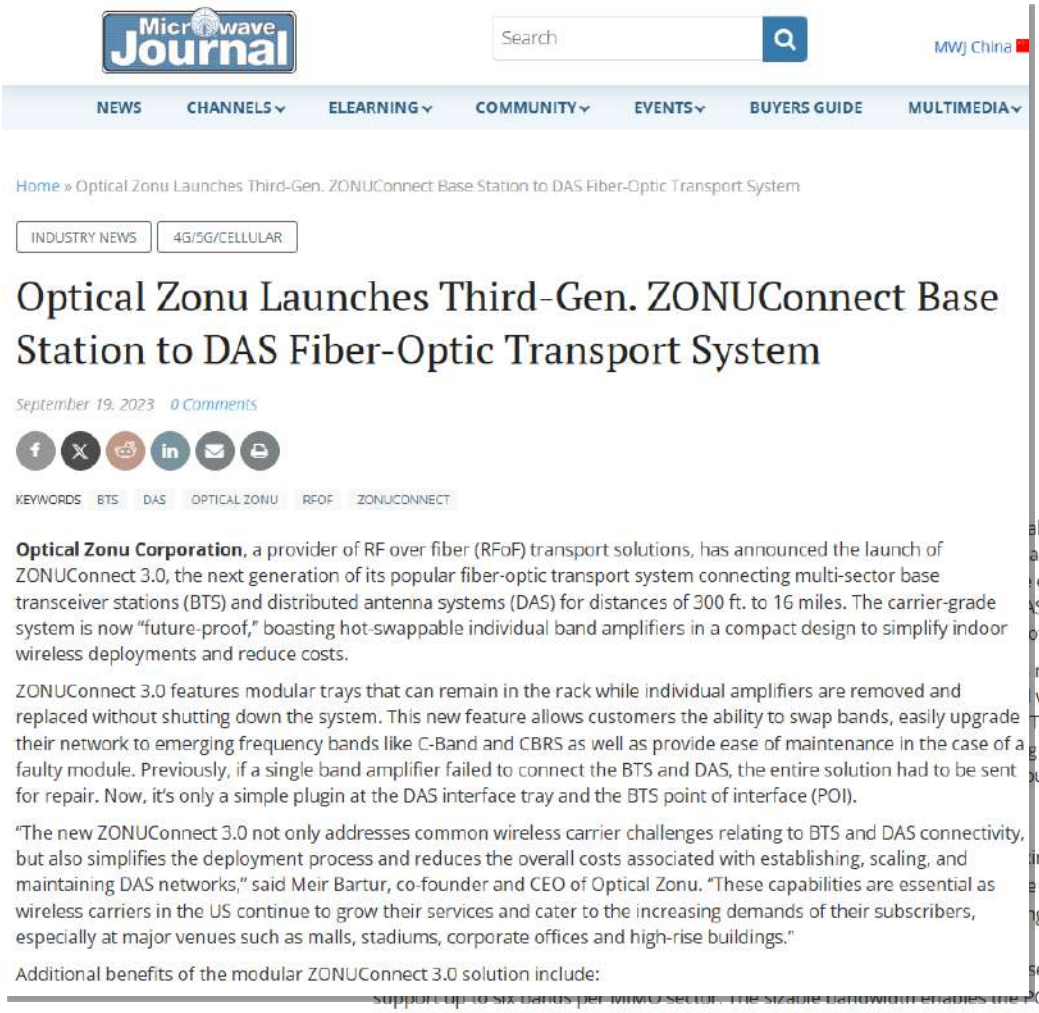
Microwave Journal - September 19, 2023



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INDUSTRY NEWS | 4G/5G/CELLULAR

Optical Zonu Launches Third-Gen. ZONUConnect Base Station to DAS Fiber-Optic Transport System

September 19, 2023 *0 Comments*

KEYWORDS BTS DAS OPTICAL ZONU RFOF ZONUCONNECT

Optical Zonu Corporation, a provider of RF over fiber (RFoF) transport solutions, has announced the launch of ZONUConnect 3.0, the next generation of its popular fiber-optic transport system connecting multi-sector base transceiver stations (BTS) and distributed antenna systems (DAS) for distances of 300 ft. to 16 miles. The carrier-grade system is now "future-proof," boasting hot-swappable individual band amplifiers in a compact design to simplify indoor wireless deployments and reduce costs.

ZONUConnect 3.0 features modular trays that can remain in the rack while individual amplifiers are removed and replaced without shutting down the system. This new feature allows customers the ability to swap bands, easily upgrade their network to emerging frequency bands like C-Band and CBRS as well as provide ease of maintenance in the case of a faulty module. Previously, if a single band amplifier failed to connect the BTS and DAS, the entire solution had to be sent for repair. Now, it's only a simple plugin at the DAS interface tray and the BTS point of interface (POI).

"The new ZONUConnect 3.0 not only addresses common wireless carrier challenges relating to BTS and DAS connectivity, but also simplifies the deployment process and reduces the overall costs associated with establishing, scaling, and maintaining DAS networks," said Meir Bartur, co-founder and CEO of Optical Zonu. "These capabilities are essential as wireless carriers in the US continue to grow their services and cater to the increasing demands of their subscribers, especially at major venues such as malls, stadiums, corporate offices and high-rise buildings."

Additional benefits of the modular ZONUConnect 3.0 solution include:

- Optical Compensation as Needed: For instances where compensation is needed for higher optical loss, ZONUConnect 3.0 provides a stand-alone 1U rack-mounted Extender Tray at the DAS head end location.
- Minimal Commissioning Time: The simplicity of ZONUConnect 3.0 means that even the largest systems can be deployed and commissioned in less than a day.
- Lower Power Consumption: ZONUConnect 3.0 combines multiple bands with a minimized fiber count for maximum energy efficiency.

To support growing mobile carrier demand for low latency and high bandwidth BTS to DAS connection, Optical Zonu has hired Vinny (Hwoi Yong) Chung as a wireless carrier sales engineer responsible for building and managing US wireless carrier technical sales along with potential commercial, government and military customers. Vinny has over 25 years of experience specializing in the RF and wireless infrastructure industry in previous executive positions with KMW Communications and Ace Technologies Corp. He has a proven track record of consistently building strategic partnerships with major US wireless carriers that drive significant growth.

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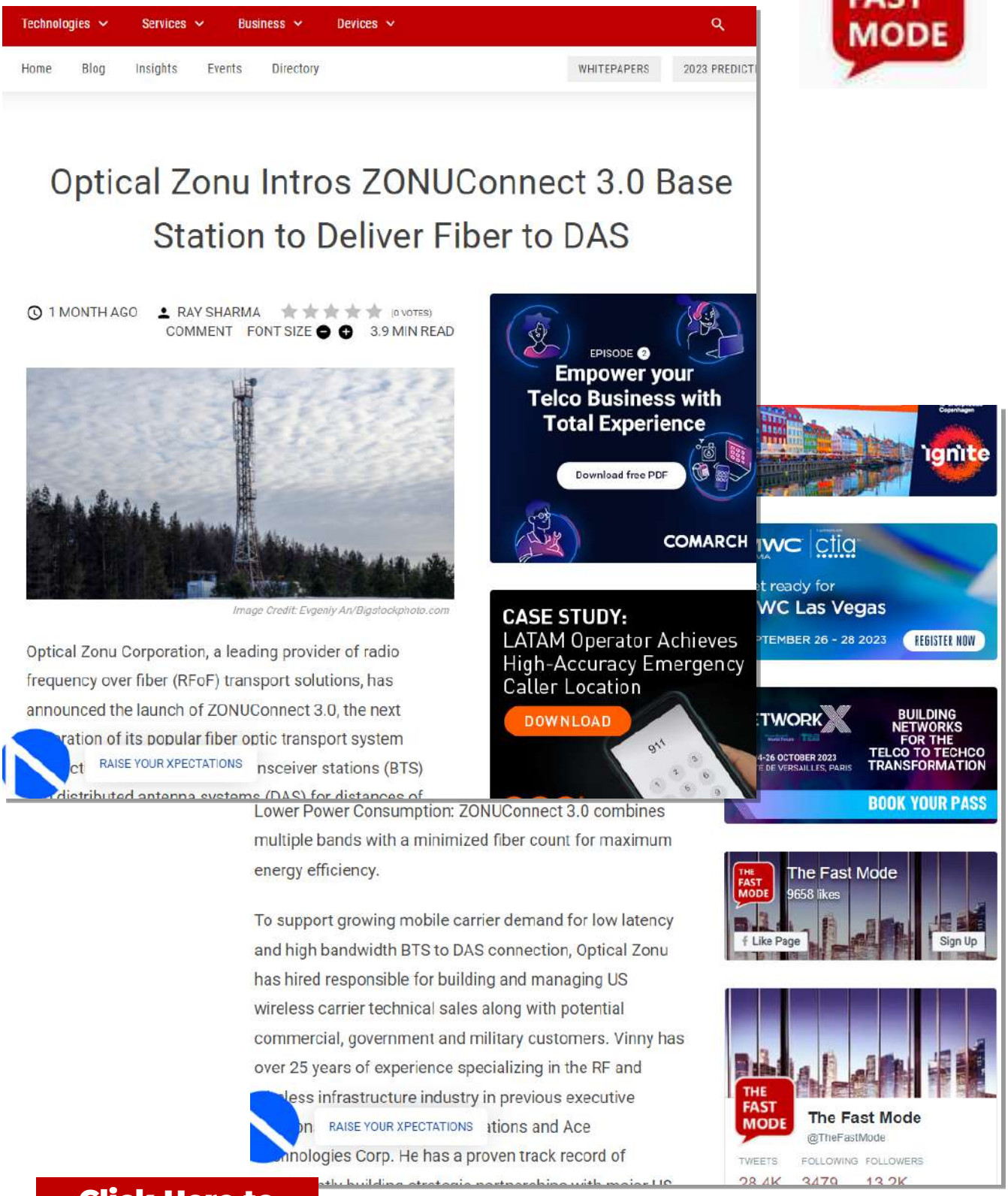
The Fast Mode - September 15, 2023



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Optical Zonu Intros ZONUConnect 3.0 Base Station to Deliver Fiber to DAS

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Image Credit: Evgeniy An/Bigstockphoto.com

Optical Zonu Corporation, a leading provider of radio frequency over fiber (RFoF) transport solutions, has announced the launch of ZONUConnect 3.0, the next ration of its popular fiber optic transport system ct nsceiver stations (BTS) distributed antenna systems (DAS) for distances of

Lower Power Consumption: ZONUConnect 3.0 combines multiple bands with a minimized fiber count for maximum energy efficiency.

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Aerospace & Defense Technology - September 15, 2023

AEROSPACE & DEFENSE™ TECHNOLOGY

Optoelectronic Analog Signal Transmission *Takes Center Stage Amidst* Aerospace and Defense Innovation

It is hard to imagine an industry more reliant on seamless, resilient, and secure communication than aerospace and defense (A&D). Communication and electromagnetic signal processing are at the core of advanced systems, which is why the trend towards higher frequencies (and millimeter waves) makes optoelectronic signal transmission a critical topic in this sector as technology advances at a rapid pace and demands better performance.

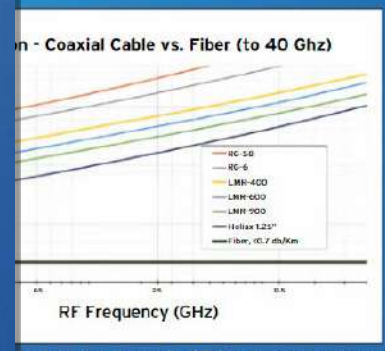
A&D communication networks use a mix of digital and analog transmission, with emphasis on the former, but given the industry's proclivity towards lower latency and higher bandwidth applications, analog transmission will play an even larger role in the future. Passive and active electromagnetic sensing (e.g., radar, radio telescopes, and other listening devices) requires high fidelity signal transport for "remote" processing. It brings transport of radio frequency signals over fiber (RFoF) to the forefront, which is an analog technique of converting radio frequency (RF) into light waves for secure, resilient, long-distance data/signal transmission.

Data Intensive and Autonomous Future for Aerospace and Defense

A&D domains rely increasingly on communications such as control signals for unmanned vessels, surveillance drones, and tactical data from battlefield sensors. In 2021, the Pentagon received $7.5 billion to fund unmanned systems across the U.S. Air Force, Army and Navy. The Department of Defense (DoD) has also recently expressed interest in ramping up its use of AI in defense technologies.

All these applications are data-intensive, always requiring low latency and high bandwidth communication to operate successfully. Most of the signals are transported over-the-air but there is a need for transport between the processing equipment (e.g., at a bunker) and the outside antenna. The challenge with high frequency technologies required to meet current and emerging needs is the high attenuation over cable or waveguide medium, which makes long distance transport impractical. As does its heightened sensitivity to natural and man-made obstructions.

Presently, the Ku-band (12.5-18 GHz) is one of the most common RF bands used by the A&D for satellite communication, remote sensing, military communication (i.e., common data link), radar systems and broadcast services. But the Ka-band (26.5-40 GHz) is emerging as a popular choice in military commu-



...t is ideal to transmit conversion of RF into optical signals traveling long ... as opposed to coaxial cable.

...raditional RF ...ignal degrada... ...n subjected to ...eme tempera... ... or radiation. ...RFoF is inher... ...stand adverse environments, ensuring continued communication even in the most challenging circumstances.

For example, many of the Navy's unmanned surface vessels (USV) use waveguides to transport Ku-Band CDL communications payloads between radome mounted high above deck of a ship and equipment rooms situated within the hulls of ships. However, rough ocean environments and corrosion from saltwater causes significant waveguide interference because they are fragile and must be kept extremely clean and dry. Using optical fiber cables as a replacement to transmit these payloads is more suitable for these conditions. The negative impact of communication downtime on unmanned vessels only becomes greater as the fleet grows in scale.

Beyond physical damage or the environment, conventional RF systems are also susceptible to interference from electromagnetic pulses (EMPs), which can disrupt communication and compromise mission-critical data. RFoF technology's transmission of optical signals through fiber provides inherent immunity to electromagnetic interference, safeguarding vital communication links from electronic warfare threats and enabling uninterrupted information exchange.

RFoF has emerged as a game-changing technology for A&D communication. Its ability to extend communication ranges, immunity to electromagnetic interference, enhanced security, low latency and high bandwidth make it indispensable for modern A&D operations. However, successful implementation of RFoF solutions in this sector will depend on suppliers with a flexible technical platform that can be cost-effectively tailored by a specific mission/application. As technology continues to advance, RFoF is poised to play an even more significant role in ensuring seamless, secure, and reliable communication for the military and aerospace industries.

This article was written by Meir Bartur, President and CEO of Optical Zonu Corporation. For more information, visit www.opticalzonu.com.

RFoF: Ideal to Support Communication in Harsh Environments

RFoF technology exhibits high resilience in the face of physical damage or environmental hazards, which is a standard expectation for the majority of

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Electronic Specifier - September 7, 2023

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WHY RFOF MEANS WIRED COMMUNICATION STILL HAS A PLACE IN MILITARY APPLICATIONS

As technology such as AI, drones, and cyber advances, militaries around the world are racing to implement it into their arsenal. However, it's important not to lose sight of the fundamentals of how a military force operate – through communication. is so ubiquitous today, that it's hard to see how radical this new approach was.

By Kristian McCann, Editor, Electronic Specifier

Communication is the backbone of the military. Yet often the vehicles of communication are subject to incredibly difficult environments that put it at risk. Military communication is often governed by protocol and procedure, like the US Department of Defence's Common Data Link – a secure communications protocol for transporting signals intelligence and imagery – but even in this, the method of transmission is less strictly governed. Therefore, antenna and wireless wave technology are still widely used. Yet large issues exist within these modes, which can drastically affect operational efficiency. But can anything be done to increase the integrity of military communications?

"As electronic warfare becomes a bigger concern in the military, fibre will be used more frequently beyond traditional antenna use cases because of its immunity to electromagnetic interference, low attenuation, and ease of deployment," says Meir Bartur, Co-Founder and CEO of Optical Zonu.

The fibre Bartur is referring to is Radio Frequency over Fibre (RFoF). RFoF is an analog optoelectronic transmission technology where radio frequency is converted into light waves for transport and converted back again to original native radio frequency format at its destination. It is an ideal technology to transport high frequencies, which are becoming necessary for all data-intensive industries that require more bandwidth and low-latency.

This is preferential for the military in circumstances where continuous communication is key as traditional

…structed with protection layers, …g and stretch elimination …es. Fibre is also more resilient to …mental factors than coaxial cables, …instrument of communication …used by the military for things like …stems and command and control …due to their inherent physical and …l properties. They are immune to …d RFI, and the light signals in fibre …ce significantly less attenuation …signal strength), less than 0.5dB per …ch is orders of magnitude better …axial cables. Fibre can also support …gher bandwidth and data rates since …quency is so high that it can carry …formation than electrical signals, …g for greater data capacity.

…pite its promises and improvements, …ll suffers from some problems. "As …ement for cable/waveguide, RFoF …-intensive as it often requires …ources for both the RF and optical …ents, which can in some cases be …natic," says Bartur. "The inherently …se figure of the RFoF physical …ransport, the conversion of RF …light (via direct modulation laser …nal modulator) and back to RF …compensated by mission-specific …ics that condition the signal via …al electronic stages. Additionally, …shooting and maintenance of RFoF systems can be challenging due to the technology's hybrid nature."

Yet despite the drawbacks, the applications show how cabled communication still has a place in the military alongside, and even over, wireless solutions, and Bartur believes its place will grow. "The military is gravitating towards higher frequency ranges for communication, like mmWave, that are characterised by high throughput and low latency but are also easily obstructed by man-made and natural elements. This makes traditional signal transmission, such as coaxial cables and waveguides, increasingly cumbersome and less efficient."

susceptible to any mechanical stress like shock or vibration. The waveguide joints are fragile and must be kept extremely clean and dry. The slightest amount of moisture or the smallest contamination of dirt or salt degrades the transmission of waveforms," explains Bartur. "In order to keep moisture out, waveguides are usually filled with dried air or purified nitrogen, but any corrosion or oxidation of the waveguide inner metal surface will degrade RF performance. However, even with this precaution in place, waveguides are too unreliable for the critical communication requirements of the modern military."

Fibre optics on the other hand is so thin that it's flexible. Fibre cables are

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Uni tackles skills shortage

■ Sheffield University to lead government programme to raise awareness of and promote careers in semiconductor industry

STEVE BUSH

The University of Sheffield is leading a government-funded project to address the semiconductor skills shortage in the UK with Devon-based Bay Photonics and Phlux Technology of Sheffield by improving the knowledge of semiconductors of the general public, and particularly of pre-higher education students.

"The project is called ASISST – addressing shortages in semiconductor skills training – and will see the partners producing accessible, relevant semiconductor training courses to meet the specific requirements of employers in the semiconductor sector in order to increase the flow of talented people into the industry," said Phlux. "Semiconductors have been identified as one of the five technologies of tomorrow by the UK government. They are critical to the UK's economic and national security and to the strategic advantage we will secure on the global stage."


Bay Photonics' automatic wire bonder

Phlux links the shortage of skilled semiconductor professionals to the shortage of students choosing STEM (science, engineering, technology and mathematics) careers, and further to an absence of the dedicated teaching resources and facilities for students to steer them towards the STEM subjects – as well as a lack of awareness of semiconductor technology.

"This project is in complete alignment with the recent UK National Semiconductor Strategy,

IBM's analogue AI chip ac

IBM has revealed an analogue in-memory IC for implementing neural networks.

The device stores weights locally as analogue levels as conductance in phase-change memory, and implements analogue multiply-accumulate calculation.

For analogue AI processing "two key challenges need to be overcome: these memory arrays need to compute with precision on par with existing digital systems, and they need to be able to interface seamlessly with digital compute units, as well as digital communication fabric on the chip", said the organisation.

Fabricated in-house with back-end phase-change memory, the 14nm CMOS IC is composed of 64 analogue in-memory computing tiles, each with a 256x256 crossbar array of synaptic unit cells.

ADCs on each tile interface with the digital side of the IC. "Each tile is also integrated with lightweight

MILITARY COMMS

RFoF reinforces military communications

■ The stakes have never been higher for reliable and efficient communications for military use, says Meir Bartur

In an era where technological advancements such as automation are transforming every aspect of military operations, reliable and efficient communications have become paramount. When the Pentagon received $7.5bn in 2021 to fund unmanned systems across the US Air Force, Army and Navy, it created a higher expectation and standard for quality signal transmission across any and all air waves such as military radar, cellular and satellite communications, GPS and GNSS.

Higher radio frequency (RF) signal transmissions such as mmWave are required to transmit low latency and high bandwidth communications necessary to operate unmanned vessels. Even momentary delays at an inopportune moment could spell disaster. Unfortunately, those higher frequencies also introduce more attenuation and are easily obstructed by natural and man-made obstacles when compared to mid or lower frequency bands. As military vessels and equipment become increasingly automated, the significance of analogue signal transport technologies such as RF-over-fibre (RFoF) becomes critical to ensure seamless, secure and real-time communication within the military landscape.

How does RFoF work?

RFoF technology is an analogue signal transmission technique that converts RF into optical signals and back again to RF at its destination. RFoF is gaining more traction in military applications because of its ability to provide extended range of these higher frequency bands, more bandwidth, and significantly more resilient and secure communication compared to conventional RF systems. With automated military vessels and equipment operating over vast distances, the demand for reliable and high bandwidth communications has never been greater. RFoF offers virtually unlimited bandwidth capabilities and eliminates signal loss over long distances, ensuring seamless data exchange between automated assets and command centres.

Environmental key for unmanned vessels

RFoF is also resilient to electronic warfare. RFoF is immune to EMI, which disrupts communication channels and jeopardises the success of critical operations. This immunity enhances the reliability and security of communications, even in the presence of electronic countermeasures and electronic warfare threats.

Some of the biggest interference challenges are from natural harsh conditions common in everyday military environments where autonomous vessels are expected to operate. One example is the US Navy's unmanned surface vessels. The navy drone boats use waveguides to transport Ku-Band common data link (CDL) communication payloads between radomes mounted high above the decks of ships and equipment rooms situated within the hulls of ships. CDL is a secure communications protocol for transporting signals intelligence and imagery.

The problem with waveguides is they are rigid and RF performance is highly susceptible to any mechanical stress such as shock or vibration. They are also fragile and must be kept extremely clean and dry, a challenging task when deployed at sea or on the ocean for weeks at a time. The slightest moisture or the smallest contamination of dirt or salt degrades the transmission of waveforms and resulting RF performance. In order to keep moisture out, waveguides are usually filled with dried air or purified nitrogen, but any corrosion or oxidation of the waveguide inner metal surface will degrade performance. In one case, water entered the hull and, even with the nitrogen, disrupted the RF signal. In this case, RFoF antenna remoting was used as a replacement for the waveguide. It was resilient to the harsh environmental conditions, but reported as being more flexible and easy to install.

In the age of automation, military communications must keep pace with technological advances to ensure efficient and secure operations. RFoF technology has emerged as an opportunistic technology to provide superior bandwidth, extended range, immunity to EMI and other harsh conditions.

As autonomous vessels and weapons continue to evolve in response to emerging threats and challenges, RFoF can help ensure unmanned military assets are not a serious liability. ❑

About the author

Meir Bartur is co-founder and CEO of Optical Zonu, which designs and manufactures fibre optic components for analogue and digital transmission, business class services and coarse wavelength division multiplexing

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Mobility Engineering - September 1, 2023

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Optoelectronic Analog Signal Transmission Takes Center Stage Amidst Aerospace and Defense Innovation

September 1, 2023

Optoelectronic Analog Signal Transmissi

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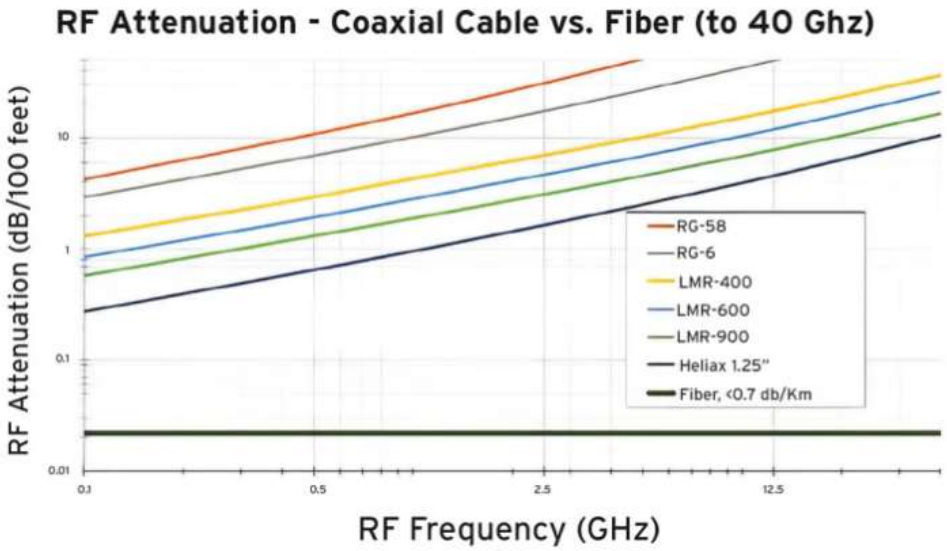

Figure 1. The chart shows why it is ideal to transmit conversion of RF into optical sigals traveling long distances over fiber optic cables as opposed to coaxial cable.

Presently, the Ku-band (12.5-18 GHz) is one of the most common RF bands used by A&D for satellite communication, remote sensing, military communication (i.e., common data link), radar systems and broadcast services. But the Ka-band (26.5-40 GHz) is emerging as a popular choice in military communication systems due to its higher data transfer rates and increased capacity. RFoF technology offers a distinct advantage here by converting RF into optical signals traveling long distances over fiber optic cable, without attenuation and signal degradation. This is preferable to transmitting over coaxial cable, which is illustrated in figure 1.

Furthermore, RFoF systems can support higher bandwidths, accommodating the ever-increasing data demands of modern military operations. With the proliferation of high-resolution sensors, sophisticated radars, and advanced communication equipment, the need for bandwidth scalability has become paramount. RFoF links ability to support higher data rates ensures that the A&D industries can keep up with evolving technological demands. The fiber media is not bandwidth

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EEJournal - August 21, 2023

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August 21, 2023

Optical Zonu Expands RFoF Offering for 5G Direct-to-Cellular Satellite Services

Company Taps Former AST SpaceMobile Gateway Engineer Luis Tellez-Giron to Support Growing Market

Los Angeles, CA – August 15, 2023 – Optical Zonu Corporation, a leading provider of radio frequency over fiber (RFoF) transport solutions, today announced its expanded RFoF offering to improve connectivity for 5G direct-to-cellular satellite services with the hiring of former AST SpaceMobile Gateway Engineer Luis Tellez-Giron as an Aerospace and Defense Sales Engineer.

Luis Tellez-Giron boasts over 30 years of experience in satellite communications sales and engineering roles. With AST SpaceMobile, Tellez-Giron analyzed waveform transport optimization for the Gateway equipment in ST Engineering, which are required for 5G non-terrestrial network (NTN) with higher bandwidth requirements. He was also tasked with analyzing the Digital Intermediate Frequency Interoperability (DIFI) interfaces to meet these higher bandwidth needs. In this capacity, he was introduced to in-production Optical Zonu equipment and observed a full-scale deployment.

"We have seen a surge of interest in our solutions that address this market need for connecting 5G nodes to the RF satellite equipment," said Meir Bartur, co-founder and CEO of Optical Zonu. "Luis' extensive experience on the cutting edge of 5G satellite communications makes him perfectly suited to lead our efforts in helping more LEO satellite operators achieve their goals of accessible direct-to-phone satellite service around the world."

cadence

Recent technological advancements in low earth orbit (LEO) satellite constellations enable operators to establish Internet and direct-to-phone satellite services, which are critical for providing connectivity to remote United States locations and many countries around the globe that lack sufficient wireless infrastructure. However, these innovative networks require Satellite Gateways to beam considerable bandwidth to/from LEO constellations and maintain low-latency high quality connection between the antenna to 5G radio access nodes. RFoF has proven to be a cost-effective and resilient solution to address the need to provide high bandwidth, low-latency and resilient RF signal transport between these points.

"It became clear very quickly that by joining Optical Zonu I would be part of a team offering critical solutions for the satellite communications market, particularly in supporting the emerging direct-to-cellular 4G/5G services," said Tellez-Giron. "As LEO satellite technology continues to mature, it holds great promise for transforming global communication that will require RFoF solutions to support intensive low-latency and high bandwidth requirements."

For more information on Optical Zonu and its RFoF services for satellite communication, visit https://www.opticalzonu.com/system-solutions/l-s-band-satcom-fiber-transport/.

About Optical Zonu Corporation

Optical Zonu Corporation (OZC) is a leading provider of radio frequency over fiber (RFoF) transport solutions for the wireless and 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. We offer a wide range of turnkey, modular, and OEM form factors that address satellite antenna remoting RF signal transport, satellite phone and GPS distribution into buildings, tunnels, etc., N+1 ground station redundancy architectures, and switched delay lines for phased array antennas and radar calibration. OZC maintains important strategic and global relationships across industries it services and cooperates with major vendors and suppliers of optical, communication and electronic devices, to enable rapid production of cutting-edge solutions. For more information, visit www.opticalzonu.com.

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5G MOBILE

Optical Zonu's RFoF solution addresses 5G direct-to-cellular satellite services

The company taps Luis Tellez-Giron to lead new 4G/5G satellite opportunities.

Sean Buckley

Aug. 17, 2023

Optical Zonu, a provider of radio frequency over fiber (RFoF) transport solutions, has enhanced its RFoF offering to improve connectivity for 5G direct-to-cellular satellite services by naming former AST SpaceMobile Gateway Engineer Luis Tellez-Giron as an Aerospace and Defense Sales Engineer.

Tellez-Giron comes to the new role with 30 years of satellite communications sales and engineering experience. During his tenure at AST SpaceMobile, Tellez-Giron analyzed

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According to Optical Zonu, RFoF has become a cost-effective and resilient solution to address the need to provide high bandwidth, low latency and resilient RF signal transport between these points.

"It became clear very quickly that by joining Optical Zonu, I would be part of a team offering critical solutions for the satellite communications market, particularly in supporting the emerging direct-to-cellular 4G/5G services," said Tellez-Giron. "As LEO satellite technology continues to mature, it holds great promise for transforming global communication that will require RFoF solutions to support intensive low-latency and high bandwidth requirements."

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Optical Zonu names a new Aerospace + Defense Sales Engineer

AUGUST 16, 2023

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Optical Zonu Corporation **has expanded the firm's RFoF offering to improve connectivity for 5G direct-to-cellular satellite services with the hiring of former AST SpaceMobile Gateway Engineer *Luis Tellez-Giron* as an Aerospace and Defense Sales Engineer.**

Luis Tellez-Giron possesses more than 30 years of experience in satellite communications sales and engineering roles. With AST SpaceMobile, Tellez-Giron analyzed waveform transport optimization for the Gateway equipment in ST Engineering, which are required for 5G *non-terrestrial network* (**NTN**) with higher bandwidth requirements. He was also tasked

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"*It became clear very quickly that by joining Optical Zonu I would be part of a team offering critical solutions for the satellite communications market, particularly in supporting the emerging direct-to-cellular 4G/5G services. As LEO satellite technology continues to mature, it holds great promise for transforming global communication that will require RFoF solutions to support intensive low-latency and high bandwidth requirements. Aditional capabilities will be developed to a Critical Design Review maturity, setting the stage for a rapid transition to an in-space flight demonstration.*" — **Luis Tellez-Giron**, Optical Zonu

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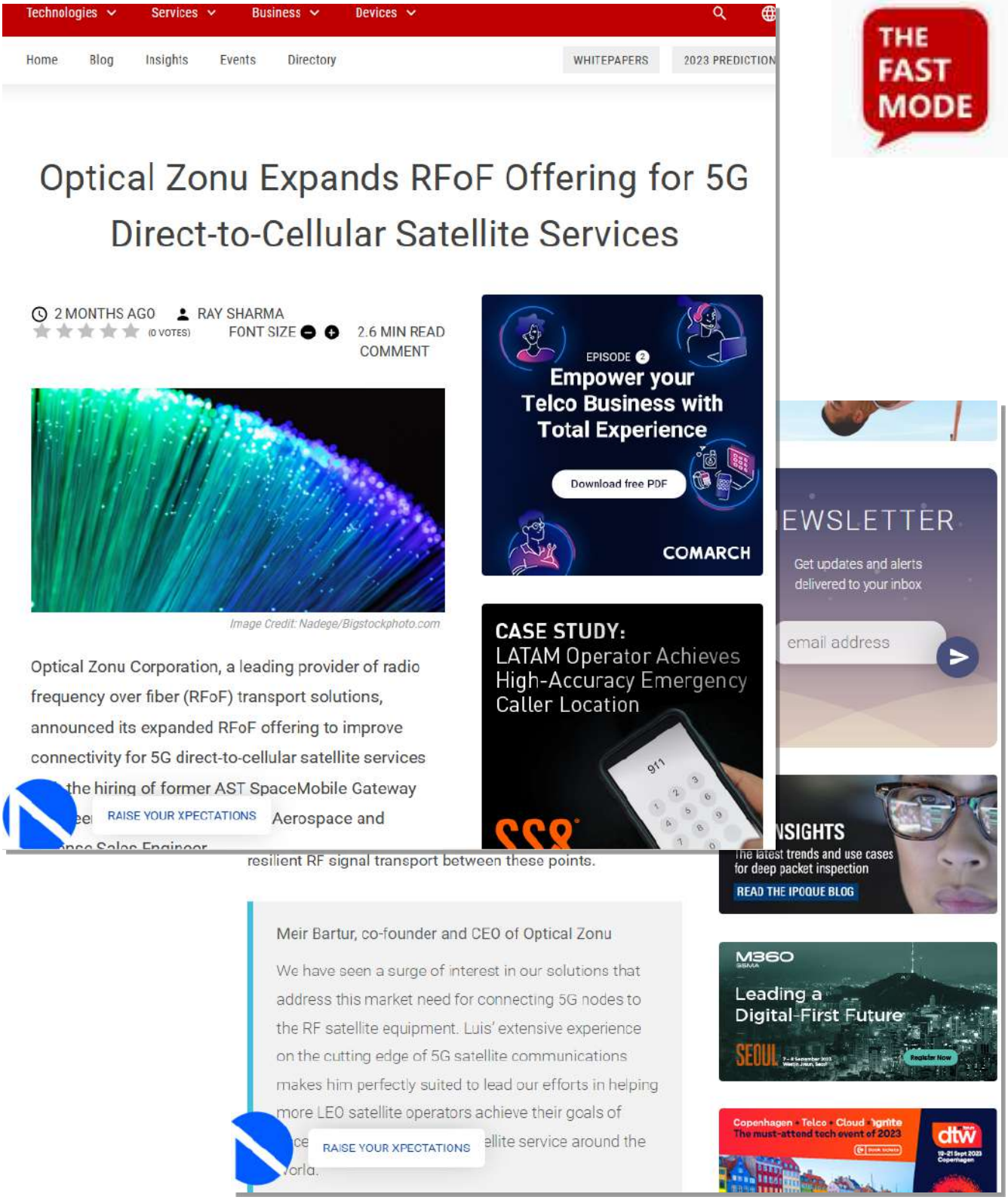

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Optical Zonu Expands RFoF Offering for 5G Direct-to-Cellular Satellite Services

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Image Credit: Nadege/Bigstockphoto.com

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Meir Bartur, co-founder and CEO of Optical Zonu

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Laser Focus World - August 16, 2023

FACES IN PHOTONICS

Meir Bartur, Optical Zonu

SALLY COLE JOHNSON, SENIOR TECHNICAL EDITOR

Meir Bartur, cofounder and CEO of Optical Zonu.

The Faces in Photonics series shines a light on scientists, researchers, educators, and business leaders from all over the world whose work is reshaping the optics and photonics industry.

Here, we feature Meir Bartur, cofounder and CEO of Optical Zonu, a provider of radio-frequency-over-fiber (RFoF) transport solutions.

Laser Focus World: **What inspired your work with RFoF?**

Meir Bartur: My journey into RFoF technology was inspired by a few significant market changes in the telecommunication industry that unfolded in the early 2000s. Originally, our business was in fiber-optic communication on the digital side during the time when IEEE and FSAN standardization had started. But we realized that these standardization efforts were inadvertently hindering the growth of smaller innovative companies, like us, and favored larger industry players by stifling innovation and unique capabilities.

Our frustration was compounded by other challenges like the telecom freeze of 2002 to 2003 and the growing influence of the Chinese market on pricing and technology. We recognized the need to diversify and explore new avenues to stay alive. When we relaunched our company in 2003, we sold our digital communications patents and pivoted to analog RFoF.

Since it was a niche application, we weren't bound by standardization efforts and the market demand was steadily growing—although not at an accelerated pace that would invite competition and bring down pricing. Our motivation to venture into RFoF technology stemmed from the market trends we observed, the need for adaptability within an evolving industry, and a desire to provide innovative solutions to untapped market spaces.

LFW: **Main areas of research/work interest?**

Bartur: I'm fascinated by the practical application of scientific advancements in turning everyday commodities into unique and innovative products. In my work, I leverage principles from physics and engineering to adapt commercial components for high-end purposes. One notable example of this is our micro pluggable optical time-domain reflectometer (OTDR) that can plug into devices and find the fiber fault anywhere on the network within a few meters. This happened because we collaborated as a team to solve an industry problem. Driving positive change is what truly motivates me.

LFW: **Anything exciting going on within the military realm in terms of photonics?**

Bartur: There are several exciting photonic developments that apply to the military. One evolving area is encrypted communication, which is essential for future battlefield operations as weapons and vehicles become more autonomous.

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to us, as this technology becomes more available, because we can provide a higher-end fiber solution to use it.

There is also growing U.S. recognition to reshore domestic fiber-optic component manufacturing to reduce our dependence on other nations.

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Recently, the CHIPS Act was introduced and represents a significant commitment by the U.S. government to support and incentivize domestic high-tech R&D and manufacturing, including within the field of photonics. It seeks to foster innovation, strengthen national capabilities, and ensure we remain competitive. Since Optical Zonu's solutions are manufactured and tested at our California facility, we're well positioned for this momentum.

LFW: **Favorite thing about your job/work?**

Bartur: I enjoy the opportunity to interact with individuals from diverse educational backgrounds and industries. And I truly cherish applying my creativity across various disciplines to resolve critical communications challenges. It's also incredibly fulfilling to witness the growth of applications rooted in the foundation we established years ago, particularly when it comes to digitally managing analog RFoF links in large systems. An understated challenge of building a business around manufacturing is anticipating what will be needed years from now and getting it right.

Tell us what you think about this article. Send an e-mail to LFWfeedback@endeavorb2b.com.

and interference when transmitting mission-critical communications over long distances and within harsh environments where RF signals may struggle to penetrate.

The defense and aerospace sectors rely on RFoF technology for various applications, including antenna-remoting on military vessels such as aircraft and ships, establishing secure satellite phone connections, providing Wi-Fi coverage for

triguing photonic developments right now include advancements in higher-frequency direct-modulation lasers and a shift toward domestic manufacturing in the U.S. The improvement and development of direct-modulation lasers for higher frequencies holds significant importance for critical applications, particularly for military operations and defense, because of cost and compactness advantages. This is particularly exciting

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Optical Zonu Bolsters 5G Direct-to-Cellular Satellite Services with Enhanced RF over Fiber Solutions

August 17, 2023 | Editorial Team

Optical Zonu, a leading provider of radio frequency over fiber (RFoF) transport solutions, has expanded its RFoF offering to improve connectivity for 5G direct-to-cellular satellite services with the hiring of former AST SpaceMobile Gateway Engineer Luis Tellez-Giron as an Aerospace and Defense Sales Engineer.

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Click here to see RF Over Fiber Modules from Optical Zonu.

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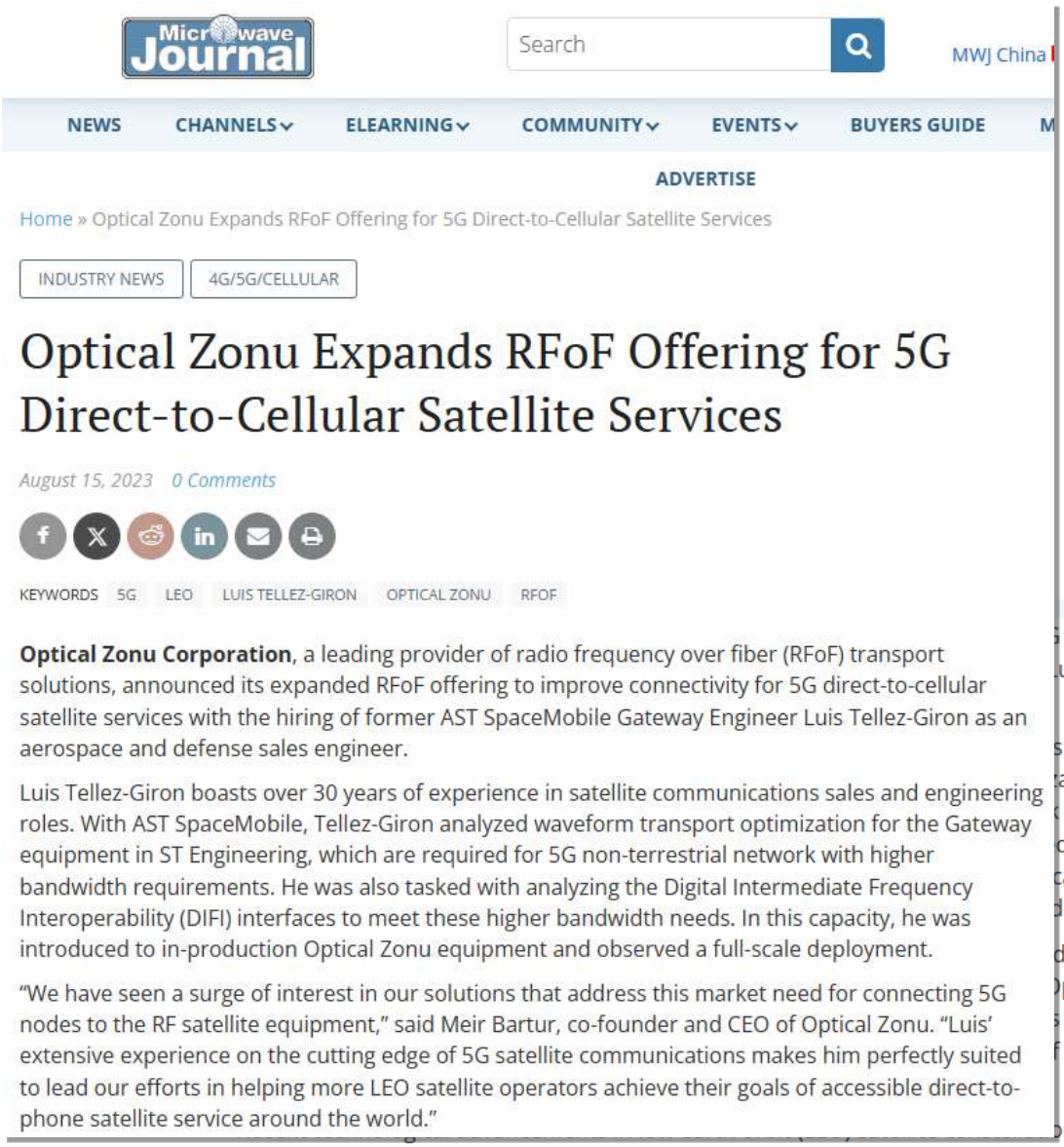
Microwave Journal - August 15, 2023



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INDUSTRY NEWS 4G/5G/CELLULAR

Optical Zonu Expands RFoF Offering for 5G Direct-to-Cellular Satellite Services

August 15, 2023 *0 Comments*

KEYWORDS 5G LEO LUIS TELLEZ-GIRON OPTICAL ZONU RFOF

Optical Zonu Corporation, a leading provider of radio frequency over fiber (RFoF) transport solutions, announced its expanded RFoF offering to improve connectivity for 5G direct-to-cellular satellite services with the hiring of former AST SpaceMobile Gateway Engineer Luis Tellez-Giron as an aerospace and defense sales engineer.

Luis Tellez-Giron boasts over 30 years of experience in satellite communications sales and engineering roles. With AST SpaceMobile, Tellez-Giron analyzed waveform transport optimization for the Gateway equipment in ST Engineering, which are required for 5G non-terrestrial network with higher bandwidth requirements. He was also tasked with analyzing the Digital Intermediate Frequency Interoperability (DIFI) interfaces to meet these higher bandwidth needs. In this capacity, he was introduced to in-production Optical Zonu equipment and observed a full-scale deployment.

"We have seen a surge of interest in our solutions that address this market need for connecting 5G nodes to the RF satellite equipment," said Meir Bartur, co-founder and CEO of Optical Zonu. "Luis' extensive experience on the cutting edge of 5G satellite communications makes him perfectly suited to lead our efforts in helping more LEO satellite operators achieve their goals of accessible direct-to-phone satellite service around the world."

to establish Internet and direct-to-phone satellite services, which are critical for providing connectivity to remote United States locations and many countries around the globe that lack sufficient wireless infrastructure. However, these innovative networks require Satellite Gateways to beam considerable bandwidth to/from LEO constellations and maintain low latency high-quality connection between the antenna to 5G radio access nodes. RFoF has proven to be a cost-effective and resilient solution to address the need to provide high bandwidth, low latency and resilient RF signal transport between these points.

"It became clear very quickly that by joining Optical Zonu I would be part of a team offering critical solutions for the satellite communications market, particularly in supporting the emerging direct-to-cellular 4G/5G services," said Tellez-Giron. "As LEO satellite technology continues to mature, it holds great promise for transforming global communication that will require RFoF solutions to support

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Channel Drive - July 24, 2023

Channel Drive
RESOURCE FOR NEXT GENERATION TECHNOLOGY PARTNERS

Optical Zonu Picks Former EMCORE Resellers to Address Market Gap

BY CHANNELDRIVE BUREAU JULY 24, 2023 11:00 IST

Channel Trends | Distribution | Enterprise | Networking | News | Telecoms

Optical Zonu Corporation, a provider of radio frequency over fiber (RFoF) transport solutions, has partnered with several former EMCORE resellers including UR Group, ProTEQ Solutions, and RF Electronic Sales.

The new distribution and sales partnerships expand Optical Zonu's presence in the Northeastern and Mid-Atlantic United States and in Germany, Japan, and Italy.

provider of advanced communications systems, subsystems and end-to-end solutions utilizing sensor, IP networking, wireless, fiber-optic and satellite technologies. ProTEQ Solutions serves customers throughout New England and the Mid-Atlantic region, and RF Electronic Sales offers a wide range of RF, microwave and lightwave products to the NY metro area and beyond.

"Optical Zonu was the ideal partner for transitioning potential customers from EMCORE products," said Tony Bocchimuzzo, technical sales representative at RF Electronic Sales. "They were able to find comparable products almost immediately and understood the nuances of the product environment to ensure accuracy and minimal downtime. We provide exceptional customer service and we hold our OEM partners to the same standard."

The EMCORE Customer Relief Program is a turnkey offering that provides 24/7 technical service support, onsite technician training, onsite installation and support as needed, and is capable of identifying the comparable and compatible Optical Zonu products in less than two hours.

The replacement equipment from Optical Zonu can be equipped with its patented small pluggable transceiver that can be inserted in any device and is capable of locating fiber faults within a few meters for reduced detection time.

"I had a 20-year relationship with EMCORE optical solutions until their broadband division closure left a void in providing my customers with RF Over Fiber and Optical Delay Line solutions," said Steve Moloy, senior sales engineer at ProTEQ. "We are fortunate to have quickly pivoted to Optical Zonu, which provides another best-in-class manufacturer of these solutions to complement our existing RF/MMW/Digital and ATE system test solutions. Optical Zonu is a great addition to our comprehensive line of tier-1 cutting edge technology solutions."

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Optical Zonu partners with former EMCORE resellers to address market gap

Jul 24, 2023 Network Technology, Channel News, Logistics Comments (0)

Optical Zonu Corporation, the provider of radio frequency over fiber (RFoF) transport solutions, has partnered with several former EMCORE resellers including UR Group, ProTEQ Solutions, and RF Electronic Sales. The new distribution and sales partnerships expand Optical Zonu's presence in the Northeastern and Mid-Atlantic United States and in Germany, Japan, and Italy.

After EMCORE dissolved its optoelectronics business in late April, resellers were faced with an influx of customer inquiries and nowhere to turn. Optical Zonu's EMCORE Customer Relief Program, which offers RFoF infrastructure replacement and ongoing technical support for former EMCORE aerospace and defense customers, provided a natural match for former EMCORE resellers to transition to a new supplier and continue business without any interruption.

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Channel Vision Magazine - July 21, 2023

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CHANNEL VISION magazine

Optical Zonu Partners with Ex-EMCORE Resellers to Address Market Gap

By **Bruce Christian** - July 21, 2023

Optical Zonu Corporation, a provider of radio frequency over fiber (RFoF) transport solutions, has partnered with several former EMCORE resellers including UR Group, ProTEQ Solutions, and RF Electronic Sales. The distribution and sales partnerships expand Optical Zonu's presence in the Northeastern and Mid-Atlantic United States as well as in Germany, Italy and Japan.

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For Optical Zonu's complete EMCORE product replacement guide and more information about the EMCORE Customer Relief Program visit, https://www.opticalzonu.com/2023/06/optical-zonu-launches-emcore-customer-relief-program-for-former-emcore-ad-customers/.

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Optical Zonu Joins Forces with Former EMCORE Resellers to Bridge Market Gap

July 20, 2023 | Editorial Team

Optical Zonu, a leading provider of radio frequency over fiber (RFoF) transport solutions, has announced that it has partnered with several former EMCORE resellers, including UR Group, ProTEQ Solutions, and RF Electronic Sales. The new distribution and sales partnerships expand Optical Zonu's presence in the Northeastern and Mid-Atlantic United States and in Germany, Japan, and Italy.

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Laser Focus World - June 27, 2023

FIBER OPTICS

Faces in Photonics: Meir Bartur, Optical Zonu

Meet Meir Bartur, cofounder and CEO of Optical Zonu, a provider of radio-frequency-over-fiber (RFoF) transport solutions.

Sally Cole Johnson

June 27, 2023

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***LFW*: What are the most disruptive/intriguing things you're seeing emerge in photonics right now?**

Bartur: The most disruptive and intriguing photonic developments right now include advancements in higher-frequency direct-modulation lasers and a shift toward domestic manufacturing in the U.S. The improvement and development of direct-modulation lasers for higher frequencies holds significant importance for critical applications, particularly for military operations and defense, because of cost and compactness advantages. This is particularly exciting to us, as this technology becomes more available, because we can provide a higher-end fiber solution to use it.

There is also growing U.S. recognition to reshore domestic fiber-optic component manufacturing to reduce our dependence on other nations. Recently, the CHIPS Act was introduced and represents a significant commitment by the U.S. government to support and incentivize domestic high-tech R&D and manufacturing, including within the field of photonics. It seeks to foster innovation, strengthen national capabilities, and ensure we remain competitive. Since Optical Zonu's solutions are manufactured and tested at our California facility, we're well positioned for this momentum.

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Lightwave - June 15, 2023

LIGHTWAVE

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NETWORK DESIGN > PACKET TRANSPORT

Optical Zonu targets RF-over-fiber 'relief' program at aerospace and defense markets

EMCORE's decision this past April to shut down its defense optoelectronics product line has provided a market opportunity, Optical Zonu believes.

Stephen Hardy

June 15, 2023

LATEST IN PACKET TRANSPORT

Packet Transport

Nokia's new 7730 router line addresses new edge IP networking opportunities

Optical Zonu Corp. has launched what it calls an "EMCORE

The relief program comprises several facets:

- Identification of suitable replacement products in less than two hours
- Technical support from Optical Zonu team members with more than 10 years of EMCORE equipment training
- Free technician training and certification at Optical Zonu headquarters in Van Nuys, CA.
- Delivery of replacement RFoF transport systems with the company's patented small pluggable transceivers with built-in OTDR capabilities (an longstanding Optical Zonu calling card; see, for example, "Optical Zonu launches SFP transceiver with integrated OTDR").
- Support of frequency ranges from a few kilohertz to 70 GHz and distances greater than 50 km with Ethernet and simple network management protocol (SNMP).
- Available on-site installation and support.

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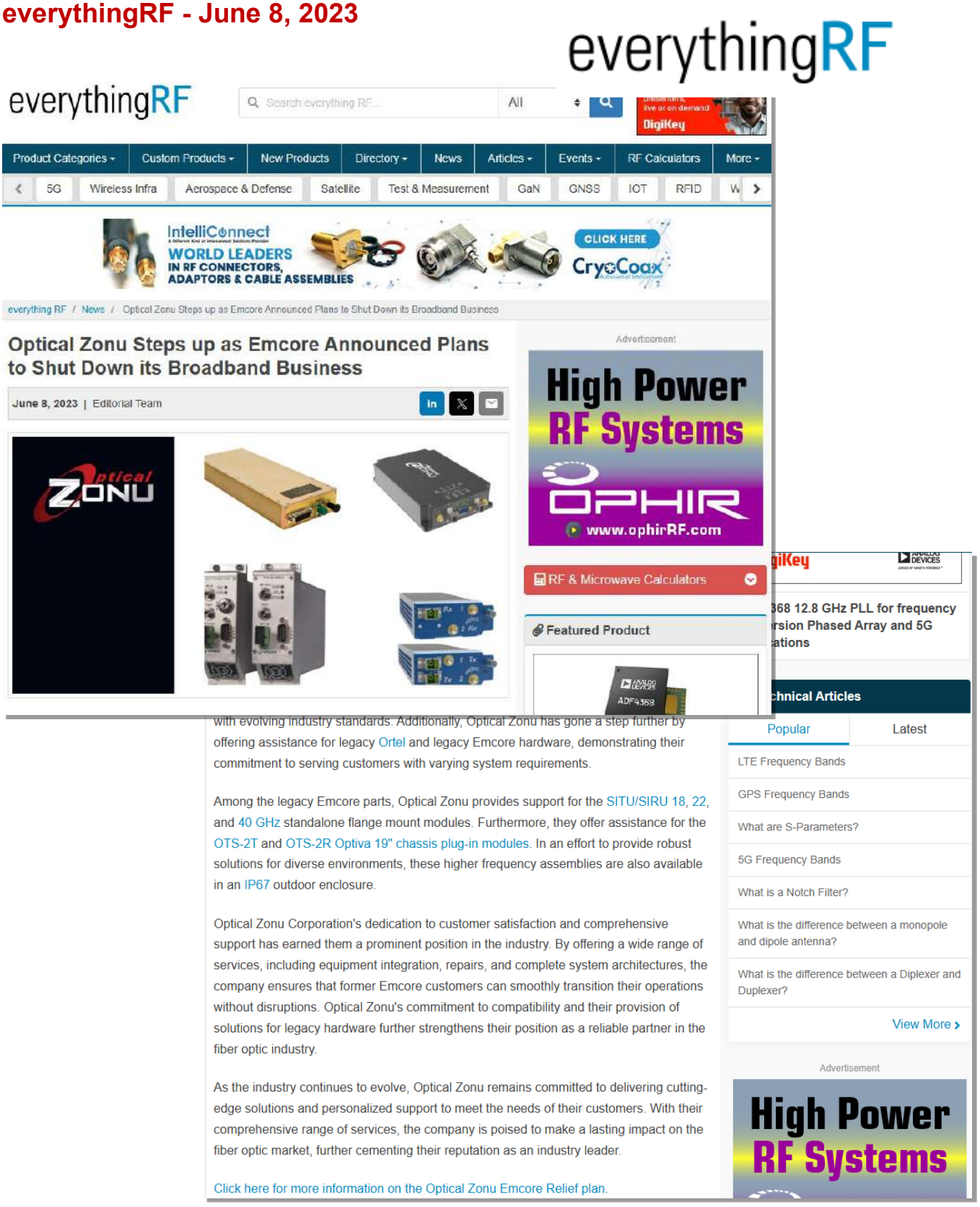

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Optical Zonu Steps up as Emcore Announced Plans to Shut Down its Broadband Business

June 8, 2023 | Editorial Team

with evolving industry standards. Additionally, Optical Zonu has gone a step further by offering assistance for legacy Ortel and legacy Emcore hardware, demonstrating their commitment to serving customers with varying system requirements.

Among the legacy Emcore parts, Optical Zonu provides support for the SITU/SIRU 18, 22, and 40 GHz standalone flange mount modules. Furthermore, they offer assistance for the OTS-2T and OTS-2R Optiva 19" chassis plug-in modules. In an effort to provide robust solutions for diverse environments, these higher frequency assemblies are also available in an IP67 outdoor enclosure.

Optical Zonu Corporation's dedication to customer satisfaction and comprehensive support has earned them a prominent position in the industry. By offering a wide range of services, including equipment integration, repairs, and complete system architectures, the company ensures that former Emcore customers can smoothly transition their operations without disruptions. Optical Zonu's commitment to compatibility and their provision of solutions for legacy hardware further strengthens their position as a reliable partner in the fiber optic industry.

As the industry continues to evolve, Optical Zonu remains committed to delivering cutting-edge solutions and personalized support to meet the needs of their customers. With their comprehensive range of services, the company is poised to make a lasting impact on the fiber optic market, further cementing their reputation as an industry leader.

Click here for more information on the Optical Zonu Emcore Relief plan.

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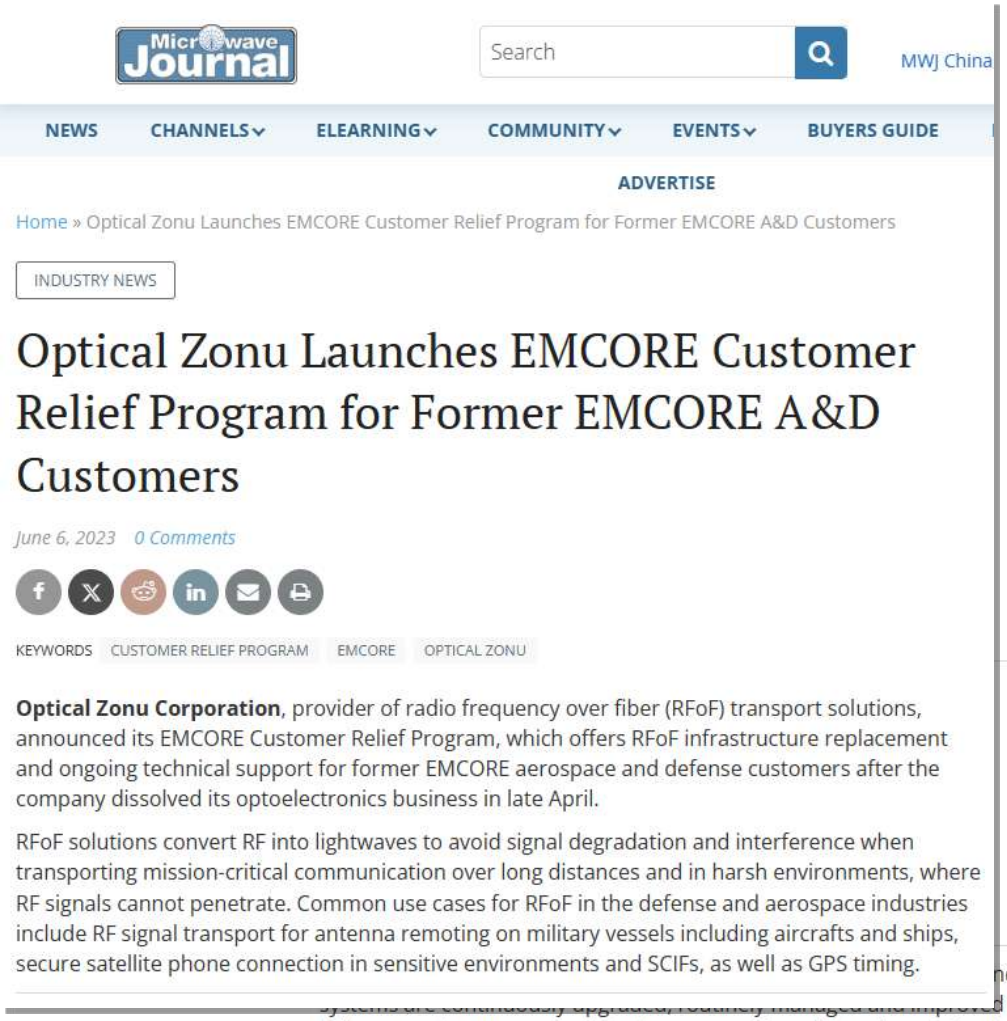
Microwave Journal - June 6, 2023



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INDUSTRY NEWS

Optical Zonu Launches EMCORE Customer Relief Program for Former EMCORE A&D Customers

June 6, 2023 *0 Comments*

KEYWORDS CUSTOMER RELIEF PROGRAM EMCORE OPTICAL ZONU

Optical Zonu Corporation, provider of radio frequency over fiber (RFoF) transport solutions, announced its EMCORE Customer Relief Program, which offers RFoF infrastructure replacement and ongoing technical support for former EMCORE aerospace and defense customers after the company dissolved its optoelectronics business in late April.

RFoF solutions convert RF into lightwaves to avoid signal degradation and interference when transporting mission-critical communication over long distances and in harsh environments, where RF signals cannot penetrate. Common use cases for RFoF in the defense and aerospace industries include RF signal transport for antenna remoting on military vessels including aircrafts and ships, secure satellite phone connection in sensitive environments and SCIFs, as well as GPS timing.

nd these communication

d to meet changing and often arduous environments," says Meir Bartur, co-founder and CEO of Optical Zonu Corporation. "We developed the EMCORE Customer Relief Program to aid organizations facing this issue in the wake of EMCORE sunsetting their broadband business."

The EMCORE Customer Relief Program provides a series of services:

- Identify the comparable and compatible replacement products in less than two hours
- Experienced technical support from team members with over 10 years of EMCORE equipment training
- Free onsite technician training and certification at Optical Zonu headquarters in Van Nuys, Calif., to transition off EMCORE products (located less than 25 miles away)
- Replacement RFoF transport solutions can be equipped with its patented small pluggable transceiver capable of locating the precise location of any fiber faults within a few meters for reduced detection time
- Supports frequency ranges from a few KHz to 70 GHz and distances greater than 50 km with Ethernet and simple network management protocol (SNMP)

te installation and support is available.

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Who We Are

Optical Zonu Corporation is a privately owned high technology company located in Los Angeles, CA, specializing in the design and manufacturing of Fiber Optic Components for Analog Transmission, Digital Transmission, Business Class Services and Coarse Wavelength Division Multiplexing. OZC is the leading supplier of Full Duplex, Single Fiber, Single Wavelength Transceivers and RF over Fiber Optic Links. OZC maintains important strategic and global relationships in the Industry and cooperates with major vendors and suppliers of optical, communication and electronic devices, to enable rapid production of cutting-edge solutions.

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