



CASE STUDY

# BRINGING LIGHTNING FAST CONNECTIVITY TO VIETNAM'S REMOTE ISLANDS



ISPs



APAC

Using advanced wireless technology and cutting-edge configurations, Ceragon and Viettel delivered reliable high-speed internet access to even the most challenging locations.

Vietnam's stunning islands are quickly becoming a top travel destination, attracting tourists while sustaining a thriving local community. However, as these remote paradises grow in popularity, the need for reliable, high-capacity connectivity has never been greater.

Traditional infrastructure, such as submarine cables, is often impractical in this region. That's where Ceragon, in partnership with Viettel Group, stepped in. Together, they've deployed state-of-the-art wireless backhaul solutions, making seamless connectivity possible, even in the most remote and isolated corners of the region.

## THE CHALLENGES

Long Link Distances | Need for High Capacity | Harsh, Over-Water Environments | Cost Considerations

Viettel, Vietnam's state-owned telecommunications giant, aimed to extend high-capacity connectivity to the country's remote islands, especially Phu Quy and Con Dao. These goals were driven by the nation's economic boom, thriving tourism sector, and the need for secure government and defense communications.

However, several challenges stood in the way:

- **Extreme Geographical Distances:** Spanning over 90 kilometers of open sea to connect some islands posed immense technical and logistical challenges.
- **Scalability Requirements:** The solution needed to support growing data demands and future 5G upgrades.
- **Harsh Environmental Conditions:** The network had to endure extreme weather and overwater conditions while operating reliably.
- **Cost Considerations:** Installing submarine cables was too costly and disruptive, necessitating an alternative approach.

## THE SOLUTION

Innovative, High-Power Microwave | Custom Long-Haul Link Design & Configuration | Seamless Collaboration | Network Management & Support

Leveraging years of collaboration with Viettel, Ceragon helped design and deploy a state-of-the-art wireless backhaul solution featuring the IP-20N.

The **IP-20N** is a versatile aggregation node designed to provide multi-Gbps radio capacity at scale. It features multicore technology and supports various radio units. In this project, **RFU-D-HP** was used: a high-capacity, high-power, multi-core radio. The system operates with 40 MHz wide channels and utilizes 1024 QAM modulation for efficient performance.

Key solution features include:

- **Innovative Microwave Technologies** enabling high-speed data transfer with minimal latency across distances as far as 97 kilometers.
- **Custom Long-Haul Configurations** tailored to each island's specific needs, such as 16+0 and 18+0 configurations, delivering unmatched capacity.
- **Robust Design for Adverse Conditions** ensuring the system's durability in humid, storm prone environments.
- **Seamless Collaboration** with Viettel's engineering and planning teams to optimize network performance and secure valuable frequency bands.

Notably, the transformation ultimately provided **14 Gbps capacity to Phu Quy**, an island serving 30,000 residents, and **18.6 Gbps to Con Dao**, a vibrant tourist hub over 97 kilometers from the mainland.

"Ceragon's innovative solution has been a game-changer for us.

Their technology and expertise have enabled us to overcome challenging connectivity barriers, and we're thrilled with the results of this partnership. This breakthrough not only meets our current needs, but also sets the stage for a future-ready network, while really saving us significant CAPEX and OPEX thanks to technologies that allow for high throughput while maintaining reasonable antenna sizes, reducing tower loads, etc."

Mr. Nguyen Quoc Dzung, Viettel's Head of Wireless Transmission.

"Ceragon's hands-on approach, particularly in network managed services optimization, troubleshooting, and their unmatched local responsiveness, has been pivotal in maintaining our network's reliability and performance. Their support team truly stands out."

Mr. Nguyen Viet Dzung, Viettel's Wireless Transmission NOC Manager

## THE RESULT

Ultra-High Capacities to Remote Islands | Reliable Connectivity | Cost-Efficiency | Enhanced Local Economy Growth

The impact of Ceragon's solution extended far beyond the anticipated connectivity improvements, driving tangible benefits across multiple fronts:

- **Unprecedented Capacity Performance:** The deployment achieved over 10 Gbps speeds, setting a new benchmark for high-capacity wireless networks over water.
- **Cost Efficiency:** Ceragon's wireless solutions reduced infrastructure and operational costs by eliminating reliance on underwater cabling.
- **Enhanced Connectivity Access:** Reliable, high-speed internet now powers government services, defense operations, local businesses, and growing tourism needs.
- **Future-Readiness:** The scalable architecture lays a strong foundation for 5G expansion and long-term economic growth.

Ceragon's collaboration with Viettel stands as a testament to the possibilities of innovation in telecommunications. By overcoming geographical, logistical, and technical barriers, Ceragon not only delivered world-class connectivity but also unlocked new avenues for growth in Vietnam's remote and developing regions.

