

# FibeAir<sup>®</sup> IP-10 G-Series

## Integrated Wireless Backhaul Solution

FibeAir IP-10 G-Series is a high capacity carrier-grade wireless backhaul product family. Combining advanced Ethernet and TDM networking functionality with best-in-class microwave radio performance, FibeAir IP-10 G-Series facilitates cost effective, risk-free migration to IP/Ethernet and can be integrated in any pure IP/Ethernet, Native<sup>2</sup> (hybrid) or TDM network.

FibeAir IP-10 G-Series features a powerful, integrated Ethernet switch for advanced networking functionality and an optional TDM cross-connect for nodal site applications. With advanced service management and Operation Administration & Maintenance (OA&M) tools, the solution simplifies network design, reduces CAPEX and OPEX and improves overall network availability and reliability to support services with stringent SLA.

The FibeAir IP-10 G-Series covers the entire licensed frequency spectrum and offers a wide capacity range. Taking into account Quality of Experience (QoE), the FibeAir IP-10 G-Series is engineered to deliver up to 2Gbps of IP traffic per channel. The solution can utilize a breakthrough asymmetrical traffic delivery mode to enable higher download capacities in asymmetric scenarios. Additional functionality and capacity are enabled via license keys while using the same hardware.

### Highest Economic Value

- **More capacity**  
Up to 2 Gbps per channel
- **Reduced number of network elements**  
High integration of network and radio functions
- **Improved network uptime**  
Redundancy & resiliency
- **Future proof**  
Software upgradeable, modular and scalable
- **Risk-free solution**  
Smooth migration to All IP

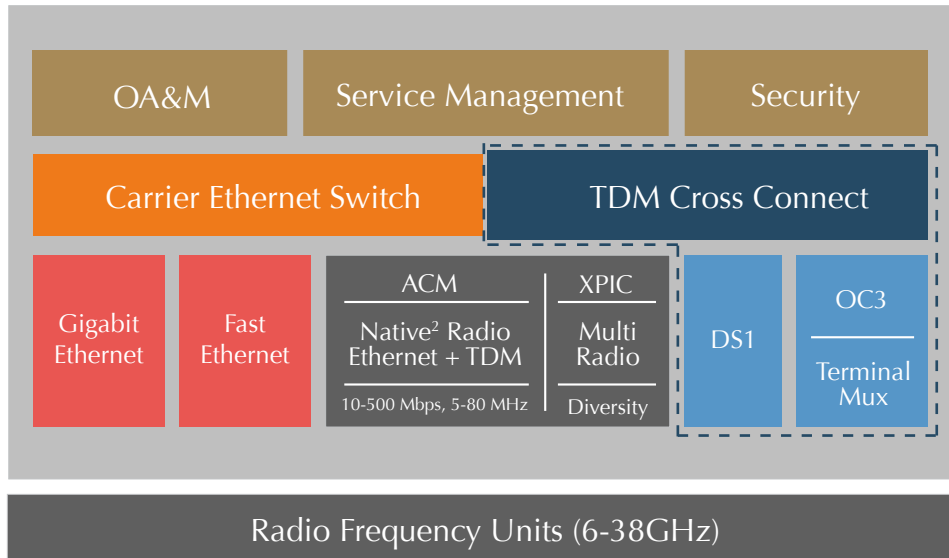




FibeAir IP-10 G-Series is Ceragon's next generation carrier-grade wireless Ethernet backhaul product family. Featuring an advanced architecture, FibeAir IP-10 G-Series uniquely combines the latest radio technology integrated with TDM and Ethernet networking.

FibeAir IP-10 G-Series radio core engine is designed to support both native Ethernet and native TDM over the air interface enhanced with Adaptive Power and Adaptive Coding & Modulation for maximum spectral efficiency in any deployment scenario.

This versatile solution is equipped with an optional integrated Cross Connect and an SNCP TDM protection engine on top of a MEF certified Ethernet switch. The modular design is easily scalable with the addition of units or license keys.



FibeAir IP-10 G-Series family system architecture

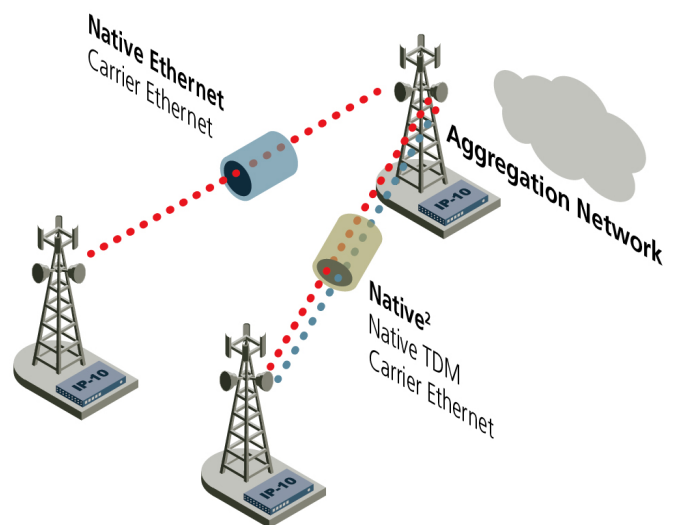
## Risk-Free Migration from TDM to All-Packet Architecture

FibeAir IP-10 G-Series provides seamless migration enabling operators to gradually evolve their network from an all TDM and hybrid concept to all-packet. FibeAir IP-10 G-Series can be easily adapted and configured to any applied network migration concept whether hybrid, pseudowire based or native packet using the same hardware. Operators benefit from highly flexible deployment scenarios options as well as multiple architectures and topologies.

## Adaptive Bandwidth Recovery (ABR)

FibeAir IP-10 G-Series uses Protected ABR to effectively double the capacity of wireless rings. Protected ABR is a unique network level method of dynamic capacity allocation for TDM and Ethernet flows. By using the bidirectional capabilities of the ring, TDM-based information is transmitted in one direction and unused protection capacity is allocated for Ethernet traffic.

FibeAir IP-10 G-Series networking capabilities include support for ring optimized RSTP for all Packet while in the Native² mode it also supports DS1 loop protection and Protected ABR mode for TDM traffic.



# FibeAir IP-10 G-Series Applications

## Mobile Backhaul

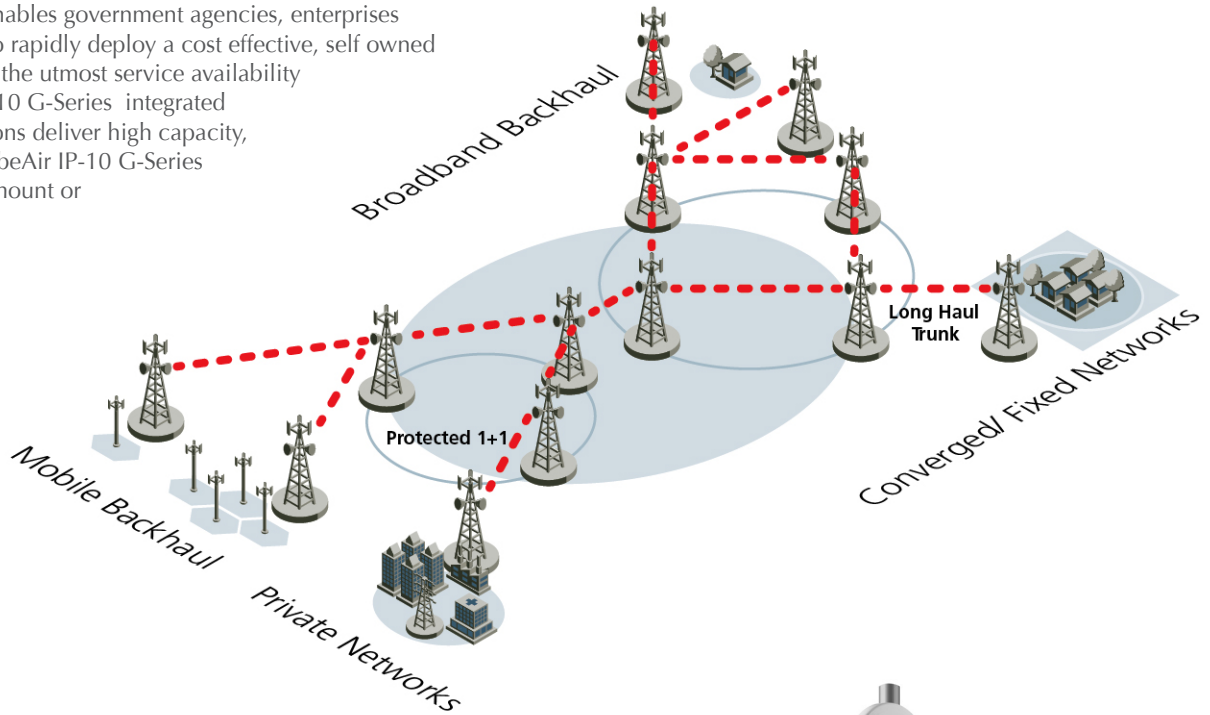
Designing LTE-ready backhaul networks is not just about simple transport capacity upgrade. With FibeAir IP-10 G-Series operators can manage the entire network migration process to 4G, while keeping revenue generating 2G/3G services intact. FibeAir IP-10 G-Series incorporates Ceragon's proven Native<sup>2</sup> concept and synchronization tools to support hybrid network topologies, as well as all-IP and pseudowire based migration architectures.

## Private Networks

FibeAir IP-10 G-Series enables government agencies, enterprises and utilities of all kinds to rapidly deploy a cost effective, self owned private network. Meeting the utmost service availability requirements, FibeAir IP-10 G-Series integrated Ethernet and TDM functions deliver high capacity, wherever it is needed. FibeAir IP-10 G-Series is available in easy split-mount or all-indoor installation.

## Converged/ Fixed Networks

Ceragon's FibeAir IP-10 G-Series delivers integrated high speed data, video and voice traffic in the most optimum and cost-effective manner. Operators can build an ultra high capacity converged network to support multiple types of services utilizing FibeAir IP-10 G-Series scalable capacity.



## Seamless Scalability for Nodal Applications

The FibeAir IP-10 G-Series family features a modular nodal concept which enables carriers to cost-effectively scale their backhaul networks. Multiple FibeAir IP-10 G-Series indoor units (IDUs) can be combined in a modular way to form highly integrated and fully redundant nodal configurations.

## Any Configuration or Installation Scenario

FibeAir IP-10 G-Series is available in any radio configuration including 1+1, 2+2 and N+0/N+N, with exceptionally high system gain or with extra power for long haul applications. FibeAir IP-10 G-Series system and radios are ideal for split, all out door or all indoor installations. FibeAir IP-10 G-Series is offered with a range of advanced radio options such as multi radio or cross polarization.



## Key Features

Highest possible capacity and efficiency at any given channel bandwidth

- Up to 2 Gbps of IP traffic on a single radio channel
- Asymmetrical traffic delivery mode to enable higher download capacities in asymmetric scenarios.
- 5 MHz - 80 MHz (FCC)
- 6 GHz - 38 GHz licensed bands
- Hitless and Errorless Adaptive Coding & Modulation (ACM) QPSK - 256 QAM
- Adaptive power and exceptionally high system gain
- Supports XPIC and diversity configurations
- Native Ethernet or Native<sup>2</sup> technology (native Ethernet and native TDM)

Simplified network design and maintenance – reducing Capex and Opex

- Integrated Carrier Ethernet switching and TDM cross-connect
- Network Management System (NMS) with full FCAPS including End-to-End trails
- Integrated Web based Element Management System (EMS)
- Enhanced user access control for increased security
- Comprehensive Service OA&M tools

Flexible synchronization solution

- Synchronization using native DS1 trails
- ITU-T G.8262 Synchronous Ethernet including optimized regenerator for point-to-point
- Precision-Timing-Protocol (e.g IEEE 1588-2008) Optimized Transport based on low and consistent PDV (Packet delay variation)

Enabling support for services with stringent SLA

- Full hardware / interface redundancy and network level resiliency
- Comprehensive QoS mechanisms enabling differentiated services with SLA assurance.
- Low latency and jitter with packet cut through mechanism
- MEF-9 and MEF-14 certified
- NEBS GR-1089-CORE and GR-63-CORE certified

Optimized for deployment today with higher capacity and future mobile broadband

- Pay-as-you-grow concept to reduce network costs
- Future capacity growth and additional functionality enabled with license keys and innovative stackable nodal solution using the same hardware

Ceragon Comprehensive Network Offering:



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