CERAGON

Mission-critical multimedia.
Simple. Secured

FibeAir® IP-20 Assured Platform

RISING TO THE BACKHAUL CHALLENGE

Since we first started providing wireless backhaul solutions over two decades ago, we've helped our customers face countless challenges – and we pride ourselves on being able to rise to them every time.

We have people who understand the technology and the mission. We have products that are advanced, secured and reliable. And as a company, we have a determination to meet every challenge you face with a solution.

This is why we invite our customers to challenge us. Because we know that our solutions will help our customers go further.

Challenge us
to take you further

FIBEAIR IP-20 ASSURED PORTFOLIO

TO ACHIEVE THE HIGHEST VALUE FOR YOU

At the heart of our solutions is the FibeAir IP-20 Assured Platform. We recognized that the best mission critical wireless backhaul solution had to enable three things:

Increase your operational efficiency

It has to be efficient to run. It needs to maximize capacity and performance, while minimizing running costs such as spectrum fees, tower lease fees, shelter and storage rent, and labor and power-related costs.

Ensure your peace of mind

It needs to be reliable and secure, ensuring mission-critical service availability and it needs to answer your wireless backhaul needs – now and in the future. Whether you are modernizing your LMR network into public-safety LTE, enabling multimedia services or deploying a city-wide surveillance camera network, you need to know that you have technology and people who can move there with you – and who are ready to start now.

Keep your first responders connected

We rise to the challenge of keeping first responders connected, by allowing "always-on" command visibility and situational awareness to support the mission.

That means you can respond quickly to on-going situations, mobilize your network to where and when it is needed, and allow you to better protect and serve.
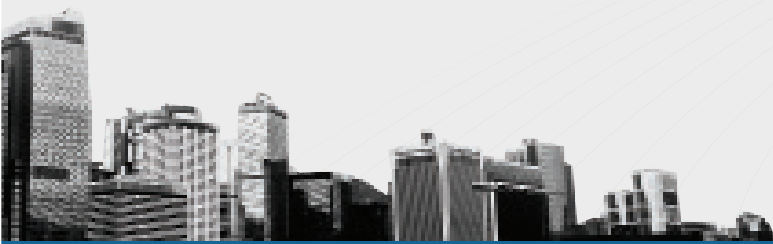
Increase your
operational efficiency

Ensure your
peace of mind

Enhance QoS
for first responders

FibeAir IP-20 Platform
A single platform for mission critical wireless backhaul needs

Utilities, government entities, public safety agencies and mobile operators use different networks for various applications, but they share similar network security and reliability requirements: Whether it's for video surveillance, big-data analysis or multimedia, they all demand high capacity, low latency and utter reliability in their mission-critical applications.

IP-based technologies such as LTE deliver such benefits, encouraging the move to modernize legacy TDM networks. This upgrade, however, presents a challenge to wireless backhaul, which must create a smooth transition while guaranteeing dependability and security.

Ceragon's FibeAir® IP-20 Assured platform provides peace of mind for the network owner, ensuring that mission-critical networks maintain availability and protection requirements for all network scenarios.

With the number 1 wireless backhaul specialist behind your mission-critical network, you can be certain that Ceragon will support any network topology and deployment configuration, now and in the future.

Enhancing your network reliability & security
Keep ahead of threats. Keep your data safe.

- Validated FIPS 140-2 specs for cryptography module
- FIPS 140-2 level 2 physical security
- AES 256 encryption (FIPS 197) over radio links
- Secured communication and protocols for management interface
- Centralized user authentication management via RADIUS
- Advanced identity management and Password policy enforcement
- Security events log
- Secure product architecture and development

Use cases

- **Public safety** - Reliable, secure mission-critical communications
- **Utilities networks** - Mission-critical networking for utilities' real-time applications
- **Mobile backhaul** - Enhanced security for wireless backhaul infrastructure
- **Broadcast, government, municipal & private networks** - Enhanced security

* A Certification Mark of NIST, which does not imply product endorsement by NIST, the U.S. or Canadian goverment

FibeAir IP-20A Assured

High-availability, split-mount, modular aggregation
and long-haul node for all-packet and hybrid networks

Ceragon's FibeAir IP-20A ultra-flexible aggregation node serves a wide range of topologies and network architectures. This scalable solution features the utmost in modularity and enables high density - up to 10 radio carriers - at a small footprint.

High spectral-efficiency technology boosts radio capacity into the multi-gigabit range for licensed and license-exempt frequencies (4-42GHz), improving operational efficiency.

As a hybrid solution, the IP-20A node supports a rich set of Carrier Ethernet advanced switching capabilities as well as multi-service TDM transport, enabling operators to boost performance in today's networks, while providing a cost-effective path to emerging requirements, such as SDN and NFV. Unique, layer 1 carrier bonding (multi-carrier Adaptive Bandwidth Control, MC - ABC), enables multi-carrier aggregation to a single link, carrying TDM and Ethernet traffic - enhancing equipment and spectrum utilization and increasing service availability.

FibeAir IP-20G Assured
Split-mount, compact edge node for all-packet and hybrid networks

Ceragon's FibeAir IP-20G Assured all-packet, hybrid node covers the entire licensed frequency, offering high spectral efficiency across licensed and license-exempt frequency bands (6-42GHz), thereby increasing operational efficiency. It allows full support for IP and TDM services, featuring advanced Carrier Ethernet capabilities, as well as TDM processing and enhanced security features. The IP-20G's fixed configuration simplifies installation, and spare parts management and maintenance. What's more, its passive cooling design suits harsh environments, increases reliability and minimizes ambient noise.

FibeAir IP-20GX Assured
Split-mount, extendable edge node for all-packet and hybrid networks

Ceragon's FibeAir IP-20GX Assured extendable, split-mount edge node covers the entire licensed frequency spectrum, offering high spectral efficiency across licensed and license-exempt frequency bands (6-42GHz), thereby increasing operational efficiency. Flexible, universal slots enable extendibility to up to four carriers in 1RU, and any combination of data interface cards (e.g., STM-1/OC3, E1/T1) at multi-gigabit per-second capacity. It allows operators to support both IP and legacy TDM services, featuring advanced Carrier Ethernet capabilities, as well as TDM processing and enhanced security features.

FibeAir IP-20C Assured

All-outdoor, compact, all-IP multi-carrier node

Ceragon's groundbreaking FibeAir IP-20C multicore wireless node delivers up to 2Gbps at any deployment scenario, from macro-cell and small-cell backhaul, to aggregation and multi-carrier trunk in all-outdoor environments.

Its unparalleled spectral efficiency, accommodates 2Ggbps over a single 60MHz channel (or 1Gbps over a 30MHz channel), increasing operational efficiency and enhancing customers' quality of experience. Designed to accommodate future needs, the node can double capacity when needed with a remote click, via its two wireless carriers integrated into one box. Based on multicore technology, the node uses a common, parallel radio processing engine, built on Ceragon's baseband modem and RFIC chipsets, centralizing resources, multiplying bandwidth and increasing system gain.

Ceragon's in-house developed capabilities, such as 4X4 LOS MIMO, XPIC and advanced frequency reuse translate into true operational efficiency, providing much greater capacity, reduced power consumption, smaller, easier-to-install antennas and simplified management.

The IP-20C node complies with advanced Carrier Ethernet MEF 2.0, enabling a rich variety of Ethernet-based services.
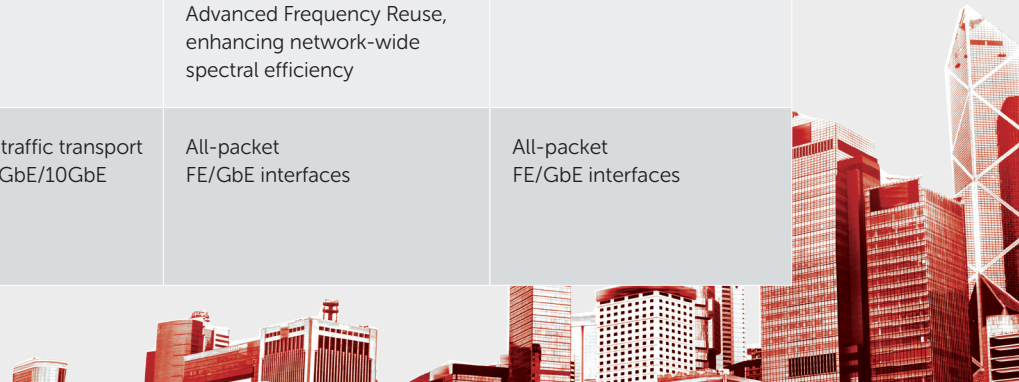
FibeAir IP-20S Assured

All-outdoor, compact, all-IP edge node

Ceragon's FibeAir IP-20S all-packet edge node offers high spectral efficiency across licensed and license exempt frequency bands (6-42GHz), thereby increasing operational efficiency. It fully supports advanced Carrier Ethernet services and enhanced security features. The IP-20S's all-outdoor form factor simplifies installation, eliminates the need for shelters, and reduces power-related expenses.

Specifications

	FibeAir IP-20G Assured	FibeAir IP-20GX Assured	FibeAir IP-20A Assured	FibeAir IP-20C Assured	FibeAir IP-20S Assured
Radio	6GHz to 42 GHz High spectral efficiency Seamless, 10-step hitless Adaptive Coding & Modulation (ACM) QPSK–2048QAM Up to 1Gbps radio throughput Up to 2 radios	6GHz to 42 GHz High spectral efficiency Seamless 10-step hitless Adaptive Coding & Modulation (ACM) QPSK–2048QAM Up to 2Gbps radio throughput Up to 4 radios	4GHz to 42 GHz High spectral efficiency Seamless 10-step hitless Adaptive Coding & Modulation (ACM) QPSK–2048QAM Up to 5Gbps radio throughput Up to 10 radios All-indoor and split-mount configurations supported. Improved link availability with Rx IF-combining	6GHz to 42 GHz High spectral efficiency Multi-core technology In-house developed chipset: baseband modem and RFIC Parallel radio processing engine Seamless 10-step hitless ACM QPSK–2048QAM Over 2 Gbps capacity, using wide channels Up to 8 carriers, in a multi-carrier configuration (4xIP-20C) Integrated single unit XPIC LoS 4X4 MIMO quadrupling capacity, using only 2 radio units Advanced Frequency Reuse, enhancing network-wide spectral efficiency	6GHz to 42 GHz High spectral efficiency Seamless 10-step hitless Adaptive Coding & Modulation (ACM) QPSK–2048QAM Up to 500Mbps radio throughput
Data interfaces	Packet/TDM traffic transport T1/FE/GbE interfaces	Packet/TDM traffic transport T1/OC-3/FE/GbE interfaces	Packet/TDM traffic transport T1/OC-3/FE/GbE/10GbE interfaces	All-packet FE/GbE interfaces	All-packet FE/GbE interfaces

Specifications

	FibeAir IP-20G Assured	FibeAir IP-20GX Assured	FibeAir IP-20A Assured	FibeAir IP-20C Assured	FibeAir IP-20S Assured
Networking	Integrated Carrier Ethernet switching capabilities, MEF Carrier Ethernet 2.0 compliant | MPLS-TP-ready Up to 30% more capacity using Header De-Duplication | Carrier-grade service resiliency (G.8032, MSTP) | Sync-E and 1588 synchronization ITU-T Y.1731 fault and performance management: MEF 35 | High resiliency to bursty LTE/LTE-A traffic using ultra-deep buffers Service Assurance for strict SLAs utilizing Hierarchical Quality of Service (H-QoS) | SDN-ready				
Security	Comprehensive, multi-layer security: FIPS 140-2 validated | AES-256 radio encryption | Secured protocols and management interfaces (HTTPS, TLS, SSH, SNMPv3) Secured architecture and software design | Advanced authentication and identification management.				
Operating system	The FibeAir IP-20 Assured platform features the unified CeraOS operating system, which streamlines wireless backhaul network modernization, operation and management.				
Radio units	RFU-C				
	RFU-HP				
	RFU-A				

FIBEAIR IP-20 ASSURED PORTFOLIO

RFU-C
High-performance, small-footprint, 6-42 GHz RFU

Ceragon's software-configurable FibeAir RFU-C supports a broad range of capacities and modulations, covering the entire range of channel spacing (3.5-60 MHz).

The RFU-C supports multiple indoor units, enabling operators to optimize their entire network deployment to fit their specific application.

RFU-HP
High-power, reduced power consumption 4-11GHz* RFU

The FibeAir RFU-HP offers high-power, reliable, long-term RF performance in wide-channel bandwidth up to 60MHz. This easy-to-install unit features a smart energy mode, which can save 35% in wireless backhaul power expenses.

With tens of thousands of units deployed worldwide, it enables network operators to reach longer distances, using smaller antennas. This high-quality, cost-effective unit includes two receivers and one transmitter in a single transceiver unit, enabling operators to optimize their space diversity installation, increasing link reliability.

* 4-5GHz bands are supported only by the IP-20A

RFU-A
High-power 5.8-11GHz indoor RFU

The FibeAir RFU-A offers high-power, minimal footprint, reliable, long-term RF performance in wide-channel bandwidth up to 60MHz.
This easy-to-install unit enables network operators to reach longer distances, using smaller antennas. This high-quality RFU enables operators to optimize their space diversity installation, increasing link reliability.
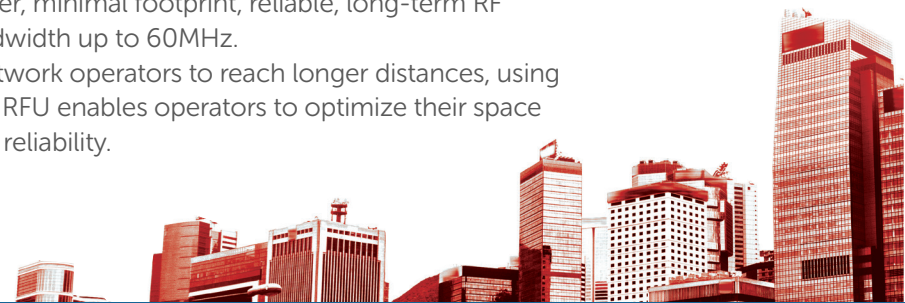
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About Ceragon

Ceragon Networks Ltd. is the world's #1 wireless backhaul specialist. We help operators and other service providers worldwide increase operational efficiency and enhance end customers' quality of experience with innovative wireless backhaul solutions. Our customers include wireless service providers, public safety organizations, government agencies and utility companies, which use our solutions to deliver 4G, mission-critical multimedia services and other applications at high reliability and speed. Ceragon's unique multicore technology provides a highly reliable, high-capacity 4G wireless backhaul with minimal use of spectrum, power and other resources. It enables increased productivity, as well as simple and quick network modernization. We deliver a range of professional services that ensure efficient network rollout and optimization to achieve the highest value for our customers. Our solutions are deployed by more than 460 service providers, as well as hundreds of private network owners, in more than 130 countries.

www.ceragon.com