Product
Portfolio

FibeAir® IP-20C

Compact All-Outdoor Multi-Core Node

FibeAir IP-20C sets a new standard in microwave transmission combining multi-core radio technology and LoS 4X4 MIMO for ultra-high capacity along with a rich set of Carrier Ethernet advanced services. Compact, all-outdoor design allows deployment anywhere while remote upgradability protects investment.

FibeAir IP-20C breaks capacity barriers offering a virtual fiber solution in licensed 6-42 GHz frequencies - 1Gbps in a box. Its versatility makes it ideal for a wide variety of cost-effective deployment scenarios including macrocell backhaul, small-cell aggregation and multi-carrier trunks. As a software-defined radio, it can be remotely configured to quadruple capacity, double link distance and reduce power consumption ensuring long-term, cost-efficient operation as needs change. It is easily and quickly deployable compared with fiber, allowing operators to achieve much faster time to new revenue streams, lower total cost of ownership and long-term peace of mind.

FibeAir IP-20C is future-proof, ready for upgrade from 1+0 to 2+0, doubling the capacity, from day one. Activating the second transceiver is accomplished remotely without a site visit. A complete solution, it offers a rich set of Carrier Ethernet advanced services, providing a wide range of new capabilities that address the diverse needs of mobile operators, ISPs, utilities, large enterprises and private networks.

FibeAir IP-20C's unique multi-core architecture is based on an advanced parallel radio processing engine built around Ceragon's in-house baseband modem and RFIC chipsets. The result is superior radio performance with reduced power consumption and form-factor. It can be deployed either as an all-outdoor node or as a multi-core radio unit in a split-mount configuration with another IP-20 platform indoor node.

Compact All-Outdoor Multi-Core Node

- Multi-core radio solution delivering multi-Gbps anywhere
  - Remote activation of the 2nd TRX - future upgrades without additional site visits
- Multi-gigabits radio capacity with high spectral efficiency
  - Virtual fiber in licensed frequencies – 1Gbps in a box
  - LoS 4X4 MIMO and up to 2048 QAM modulation
- High service granularity enables rollout of new business models
  - Intelligent service-centric management utilizing Hierarchical QoS and advanced OAM capabilities
  - Integrated Ethernet switch, MEF Carrier Ethernet 2.0-compliant and MPLS-TP-ready
- Common OS & software-defined engine simplify network modernization
  - Unified CeraOS across entire IP-20 platform
  - Powered by programmable network processor

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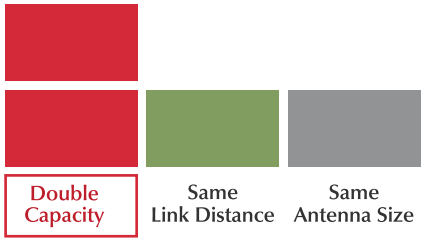
Ceragon FibeAir IP-20C: Software-Defined Radio

FibeAir IP-20C is the most versatile radio available in the market today. Thanks to its innovative multi-core technology, it can be configured for optimized performance in any deployment scenario. Flexibility is the key.

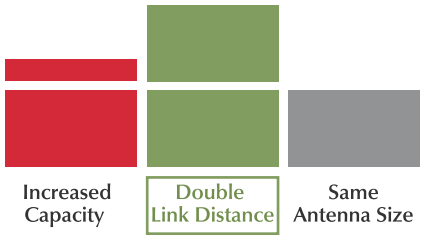
Doubling the capacity

FibeAir IP-20C's multi-core technology allows it to start with a single core and provides the capability to turn on the second core remotely, instantaneously doubling link capacity with single or dual polarization.



Doubling the link distance

The second radio core can be utilized to double the link distance. FibeAir IP-20C splits the bitstream between its two cores using Multi-carrier Adaptive Bandwidth Control, thus lowering the modulation scheme and significantly increasing system gain (both Tx power and Rx sensitivity). This results in longer link spans – up to double the distance.

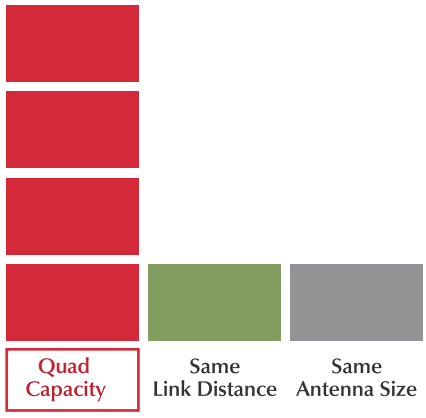


Halving the antenna size

FibeAir IP-20C's superior system gain can be leveraged to reduce antenna size lowering installation costs significantly. Antenna-size reductions of 50% can be achieved.

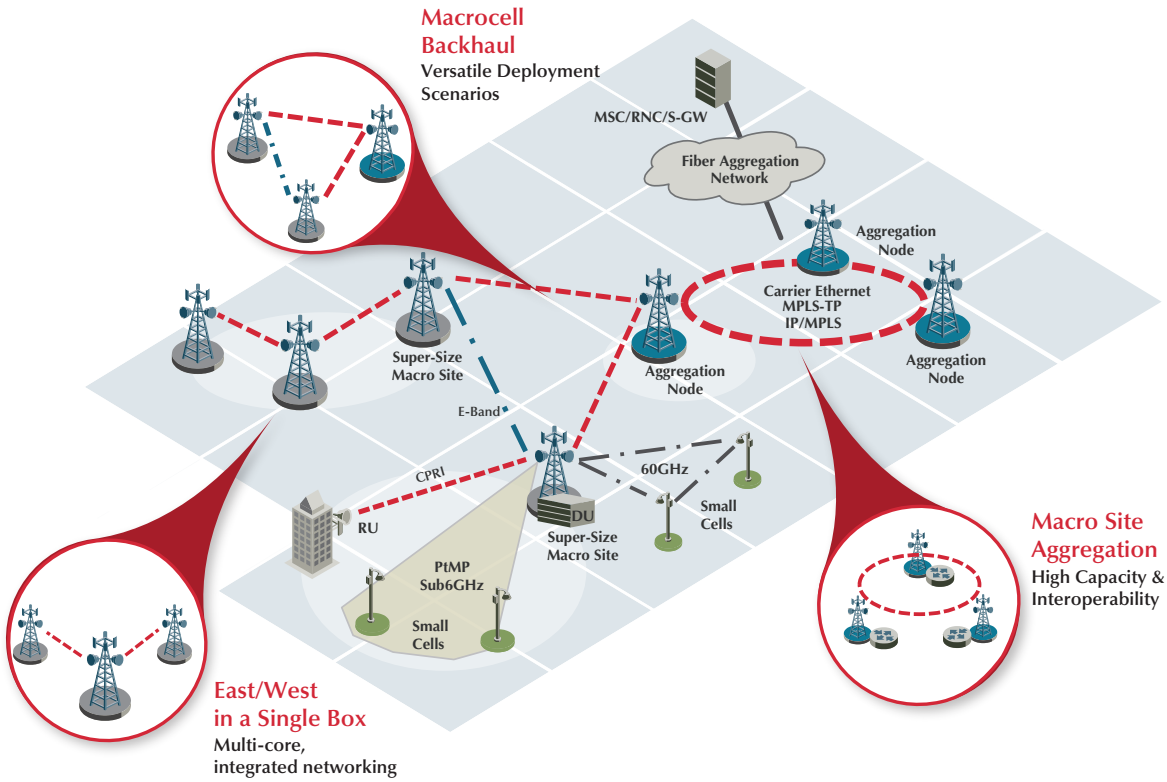
Quadrupling the capacity

In the 4X4 LoS MIMO configuration, quadrupling of capacity is achievable using the same channel bandwidth. A new record in microwave spectral efficiency!



Future-Proofing Mobile Networks with FibeAir IP-20C

The software-defined IP-20 platform contains a a rich product line for wireless backhaul and fronthaul applications serving network expansions including 4G/LTE-A. Breaking the barriers of network planning paradigms requiring fiber infrastructure to serve multi-Gbps sites, FibeAir IP-20C's superior radio throughput, low latency, flexible operating modes and integrated networking capabilities make it the solution of choice for a wide variety of hauling scenarios previously deemed impossible to implement with microwave.



FibeAir IP-20C's diverse deployment scenarios in a future 4G/LTE-A network

Macrocell Backhaul

Today's tail sites in the macrocell layer are quickly becoming aggregation hubs for the small cells that are deployed to handle additional capacity and coverage below the macrocell layer. FibeAir IP-20C's versatility and flexible operating modes make it suitable for the different demanding scenarios of macrocell backhaul by future-proofing backhaul capacity and supporting service-awareness to assure quality of experience.

East/West Node in a Single Box

East/West nodes may incur high capital and operational expenses, including a switch, multiple radio units, multiple cables running up and down the tower and the associated footprint costs. FibeAir IP-20C provides a complete east/west solution, including two radio directions and an integrated Carrier Ethernet switch, in a single all-outdoor box, saving operators considerable complexity, capital investment and operating expenses.

Macro-Site Aggregation

Macro sites, future networks' aggregation layer and usually based on advanced packet transport protocols such as Carrier Ethernet 2.0, MPLS-TP and IP/MPLS, are best served by FibeAir IP-20C's interoperability with any packet transport technology. It can transport higher capacities over longer distances than alternative wireless solutions. Its scalable capacity to multi-Gbps ensures long-term peace of mind especially in areas where fiber is not a viable solution.

Key Features

Multi-core radio solution delivers multi-Gbps anywhere

- Flexible radio architecture enables doubling of capacity/link distance and reduction in power consumption
- In-house developed chipset: baseband modem and RFIC
- Parallel radio processing engine
- Remote upgrade from 1+0 to 2+0 with no truck-rolls

Multi-gigabits radio capacity with high spectral efficiency

- QPSK–2048QAM with full range of hitless and errorless Adaptive Coding & Modulation (ACM)
- Up to 1Gbps radio throughput in a single box
- Up to 30% additional capacity using innovative Header De-duplication

Multi-purpose platform for versatile deployment scenarios

- All-outdoor or split-mount multi-carrier configurations
- Access, small cells, aggregation and multi-carrier trunk deployments
- East/west configurations in a single box

High service granularity enables rollout of new business models

- Service assurance for strict SLAs utilizing Hierarchical QoS (H-QoS)
- Carrier-grade service resiliency (G.8032, MSTP)
- ITU-T Y.1731 performance management - MEF 35
- High resiliency to bursty LTE/-LTE-A traffic using ultra-deep buffers

Common OS & software - defined engine simplify network modernization

- Powered by programmable networking processor future-proofing CAPEX investment
- Unified operating system (CeraOS) across the entire IP-20 platform
- Integrated synchronization solutions: Native/SyncE/ IEEE1588
- Integrated Carrier Ethernet switching, MEF Carrier Ethernet 2.0-compliant
- MPLS-TP and SDN-ready

Ceragon Comprehensive Network Offering:

Product **Portfolio** | Network **Management** | Professional **Services** | Strategic **Partnerships**

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ref: **FibeAir IP-20C_ETSI**, Rev 1.0