STAYING AHEAD
OF THE FAST CONECTIVITY
& TCO CHALLENGE CURVE

IP-50C/CX ALL OUTDOOR SOLUTIONS

Meeting ever-growing capacity requirements, whether it's supporting 5G for Tier 1 Communications Service Providers (CSPs) or coping with digital modernization for Private Networks, presents a significant challenge. The demand for technology that can support these requirements, in both Tier 1 and private networks, is rising.

This demand puts pressure on network providers to find effective solutions that don't compromise on performance. Additionally, businesses actively seek ways to minimize expenses, while still delivering a high level of service. The solutions must be cost-effective, with a low total cost of ownership (TCO), while still delivering high performance.

Ceragon, a leader in wireless backhaul solutions with the market's largest installed base, understands these challenges and offers innovative and efficient solutions to help both Tier 1 and private networks meet their capacity needs while reducing TCO.

THE **PRODUCTS**

MEET THE **ALL OUTDOOR FAMILY**
Where small size meets high capacity
—

Ceragon is pleased to introduce the IP-50C and IP-50CX platforms, the ideal solutions to address your backhaul challenges. These platforms provide the highest capacity universal radio, combined with L1 carrier aggregation, that optimizes radio performance and multiband ability.

The flexibility to work as a standalone all-outdoor or with the IP-50FX IDU

The flexibility to work as an all-outdoor radio or with an IDU (IP-50FX), makes it a perfect fit for your network, achieving the optimal balance between capacity, performance, and cost-effectiveness.

The Ceragon All-Outdoor family leads the market with its support for a channel bandwidth of 224MHz within a single channel. This unique feature facilitates the delivery of the highest radio capacity achievable, reaching speeds of up to 4Gbps in a single unit.

This exceptional capability positions it as the optimal choice for both mobile and private networks that require high-capacity solutions.

USE **CASES**

—

Outdoor MW radios support a broad range of use cases, catering to the needs of mobile operators deploying a green field network, expanding existing networks, and also addressing high-capacity requirements of private networks. These radios can serve as backhaul solutions for ISPs, utilities, and public safety agencies, for example.

Explore the use case implementations of our IP-50C and IP-50CX product families through the following detailed diagrams and product specifications.

All-outdoor quad-carrier – 8Gbps
Layer-1 bonding
—
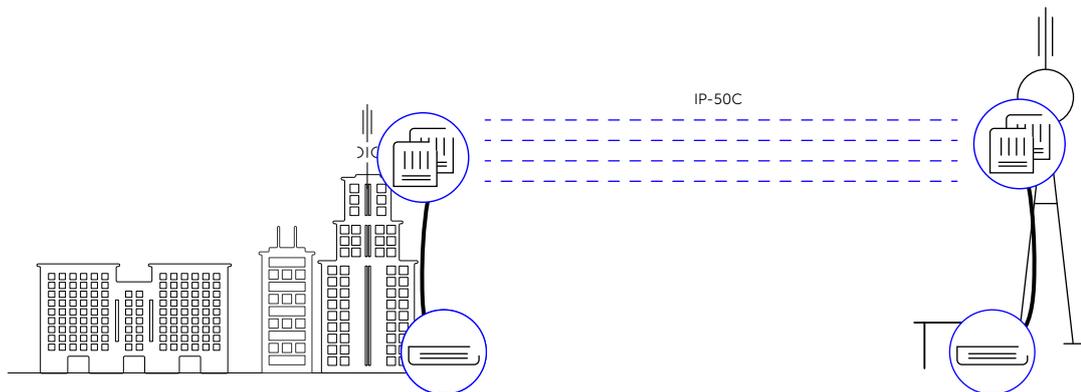
IP-50C

Dual-carrier wide channel - 4Gbps
All-outdoor 2+0 @224MHz
—
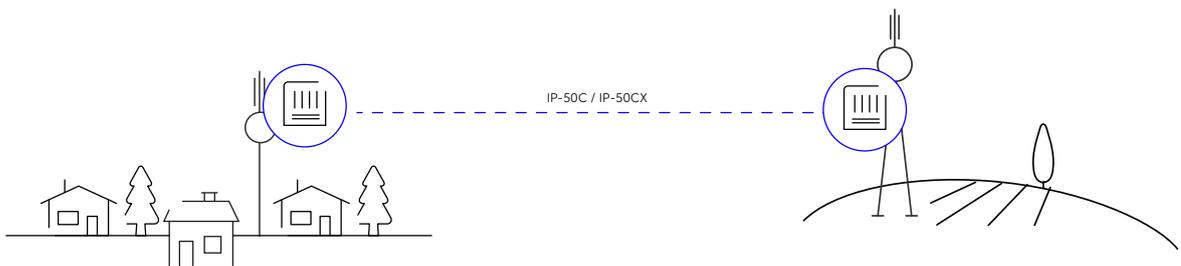
IP-50C / IP-50CX

Multi-carrier w/ IP-50FX 16Gbps 8+0
Layer-1 bonding

IP-50C / IP-50CX

IP-50FX / IP-20N

IP-50FX / IP-20N
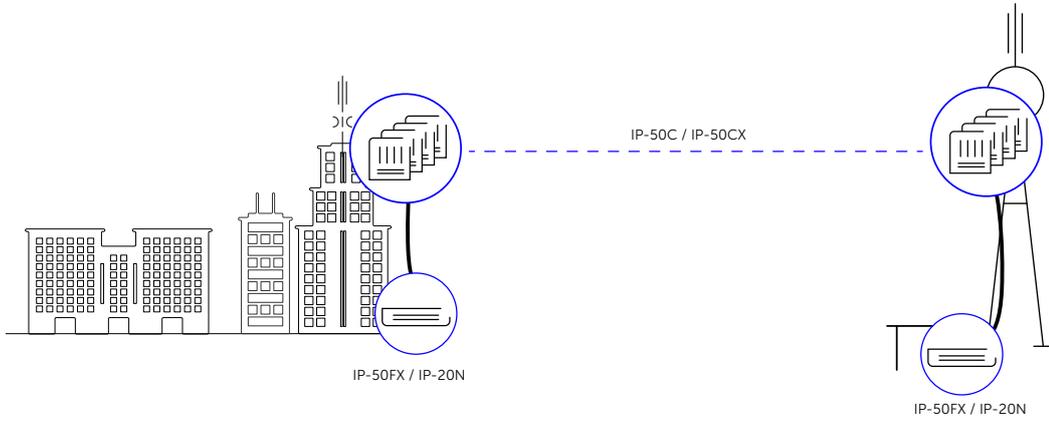
Up to 14 Gbps
MultiBand

IP-50C+IP-50E
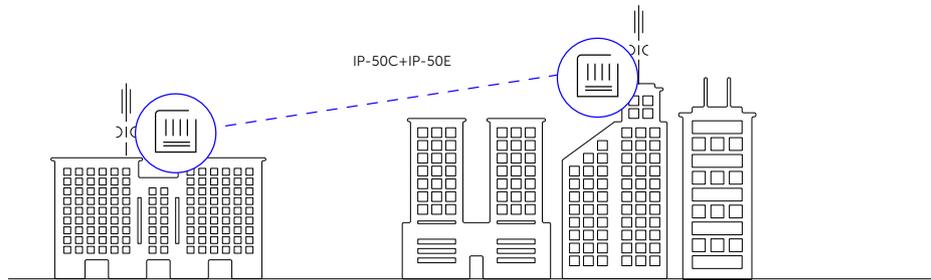
1+0 MW Link
Upgrade Ready to 2+0

IP-50CX

IP-50CX

IP-50CX

IP-50CX

PoP
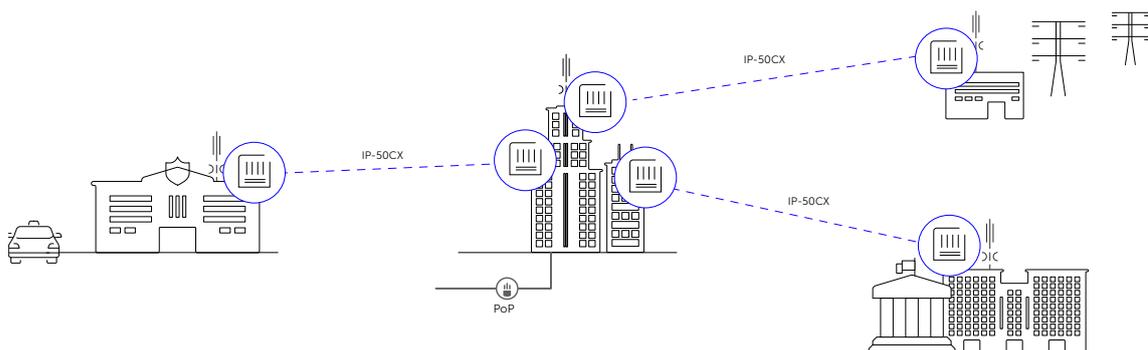
THE **PRODUCTS**

IP-50CX
THE SMALLEST UNIVERSAL MICROWAVE RADIO
—

The IP-50CX, the most compact universal microwave radio in the industry, represents a significant advancement from its predecessor, the globally renowned IP-20C. This single radio, with its unparalleled versatility, has the capability to form your entire network, from small cells to large-scale aggregation sites. The key benefits include simplifying network architecture, reducing costs, and accelerating time to revenue.

4Gbps in One Box

As a standalone all-outdoor radio, the IP-50CX is a scalable aggregation node. When coupled with our indoor IP-50FX unit, it can also function as a cell site router. This multicore unit brings a new level of flexibility to deployment.

What sets the IP-50CX apart is its support for the market's highest channel Bandwidth (BW), reaching up to 224MHz, enabling the highest capacity in the market. Additionally, it comes equipped with ports for 1GbE, 10GbE, and 25GbE, offering various options for network connectivity.

In an all-outdoor 2+0 configuration, the IP-50CX can deliver up to 4Gbps in one box. It also supports 4+0 node configurations using Layer-1 carrier aggregation, eliminating the need for an additional indoor unit. These features greatly enhance the transmission capacity of your network.

Furthermore, the IP-50CX provides an easy upgrade path for your existing all-outdoor installed base. You can convert Ceragon IP-20C 2+0 or any third-party all-outdoor configurations into 4+0 using Layer-1 carrier aggregation. This upgrade not only reduces time to market (TTM) but also lowers both capital expenditure (CAPEX) and operational expenditure (OPEX). Moreover, it simplifies site acquisition tasks by enabling upgrades from 1Gbps capacity into 2Gbps, via a remote click, without sending anyone to the site, making it an ideal choice for networks that will require expansion.

THE **PRODUCTS**

IP-50CX | Products Specifications

RADIO

- Frequency bands: 6-42GHz
- Channel spacing: 14-224MHz
- ACM steps: 12, BPSK-4096QAM
- Remote 2nd carrier activation

NETWORKING

- Networking capacity: 193Gbps
- Layer-1 carrier bonding: Up to 4+0 in an all-outdoor configuration using a single cable
- Integrated Carrier Ethernet switching capabilities.
- MEF Carrier Ethernet 2.0 compliant
- Carrier-grade service resiliency (G.8032, MSTP)
- SyncE and 1588 synchronization
- ITU-T Y.1731 Fault and performance management (MEF 35) |
- SDN | Layer-3 (using IP-50FX)

INTERFACES

- 1 (electric)
- 1/10/25GbE (SFP28)
- 1/2.5/10GbE (SFP+)

SECURITY

- AES-256 radio encryption
- Secured protocols and management interfaces (HTTPS, TLS, SSH, SNMPv3)
- Secured architecture and software design
- Advanced authentication and identification management

THE **PRODUCTS**

IP-50C
THE ULTIMATE MULTIBAND SOLUTION
—

The IP-50C, is a cutting-edge microwave radio that sets a new standard in capacity and performance. With two deployment options, as a standalone all-outdoor radio or combined with the indoor IP-50FX unit, you can create a scalable aggregation node and cell site router. With the IP-50C you can unlock the full potential of Ceragon's advanced multicore technology to achieve the highest capacity in the market.

One standout feature of the IP-50C is its unique all-outdoor 4+0 node configuration, utilizing Layer-1 carrier aggregation. This breakthrough allows you to achieve speeds of up to 8Gbps, eliminating the need for an additional indoor unit. Elevate your existing all-outdoor installed base, whether it's the Ceragon IP-20C 2+0 or any third-party all-outdoor radio, to 4+0 using Layer-1 carrier bonding. Alternatively, leverage the IP-50C in a multiband setup to unlock a remarkable capacity of up to 14Gbps, ensuring high availability and peace of mind. Enhance your network performance effortlessly, resulting in accelerated time to market, reduced CAPEX and OPEX, and, because of the ability to upgrade remotely via a click, you reduce the need for site acquisition.

The Highest MW Capacity with L1 Carrier Aggregation

Experience Ceragon's expertise and innovation firsthand with the IP-50C, featuring next-generation microwave radio technology.

THE **PRODUCTS**

IP-50C | Products Specifications

RADIO

- Frequency bands: 6-42GHz

- Channel spacing: 14-224MHz

- ACM steps: 12, BPSK-4096QAM

- Remote 2nd carrier activation

NETWORKING

- Networking capacity: 32Gbps

- Layer-1 carrier bonding: Up to 4+0 in an all-outdoor configuration using a single cable.

- Integrated Carrier Ethernet switching capabilities.

- MEF Carrier Ethernet 2.0 compliant

- Carrier-grade service resiliency (G.8032, MSTP)

- SyncE and 1588 synchronization

- ITU-T Y.1731 fault and performance management (MEF 35) |

- SDN | Layer-3 (using IP-50FX)

INTERFACES

- 1/2.5GbE /10GbE (electric)

- 2x1/10GbE (SFP+)

- 1/2.5GbE (SFP)

SECURITY

- AES-256 radio encryption

- Secured protocols and management interfaces (HTTPS, TLS, SSH, SNMPv3)

- Secured architecture and software design

- Advanced authentication and identification management

SUMMARY

The IP-50C/CX family introduces cutting-edge technological innovations, including the most compact radio and the highest bandwidth support. These advanced solutions are meticulously designed to overcome daily TCO challenges by delivering easy upgrades, optimized performance, and high capacity. Embrace these solutions to maintain a competitive edge in the era of digital modernization.

3 MAIN VALUES

+ 4Gbps IN 1 BOX Widest channel BW 224MHz	**+ LOWEST TCO** The smallest radio	**+ SUPER-EFFICIENT MULTI-BOX USAGE** Unique L1 aggregation

ABOUT CERAGON NETWORKS

Ceragon Networks Ltd. (NASDAQ: CRNT) is the global innovator and leading solutions provider of end-to-end wireless connectivity, specializing in transport, access, and AI-powered managed & professional services. Through our commitment to excellence, we empower customers to elevate operational efficiency and enrich the quality of experience for their end users.

Our customers include service providers, utilities, public safety organizations, government agencies, energy companies, and more, who rely on our wireless expertise and cutting-edge solutions for 5G & 4G broadband wireless connectivity, mission-critical services, and an array of applications that harness our ultra-high reliability and speed. Ceragon solutions are deployed by more than 600 service providers, as well as more than 1,600 private network owners, in more than 130 countries.

Through our innovative, end-to-end solutions, covering hardware, software, and managed & professional services, we enable our customers to embrace the future of wireless technology with confidence, shaping the next generation of connectivity and service delivery. Ceragon delivers extremely reliable, fast to deploy, high-capacity wireless solutions for a wide range of communication network use cases, optimized to lower TCO through minimal use of spectrum, power, real estate, and labor resources - driving simple, quick, and cost-effective network modernization and positioning Ceragon as a leading solutions provider for the "connectivity everywhere" era.

For more information please visit: www.ceragon.com