

DATA SHEET

CELONA PRIVATE LTE SUBSCRIPTIONS

Industry's first integrated private mobile networking solution for enterprises

With the arrival of CBRS spectrum in the United States, 4G LTE cellular wireless technology can be made accessible to enterprise IT organizations and accelerate adoption of critical applications on an express lane of wireless communication.

Celona's private LTE subscription is an end-to-end solution that can integrate with an existing enterprise network and simplify cellular wireless operations. It is purpose built for use by enterprise IT teams and managed service providers who serve them. It removes the complexity of integrating point components from multiple vendors. The solution comprises of indoor/outdoor LTE access points (APs), a cloud-native software with LTE control and data plane named Celona Edge and the cloud-hosted Celona Orchestrator with AI-powered operational tools along with app level visibility to Key Performance Indicators (KPIs).

KEY BENEFITS

Modern software architecture at the edge

- First cloud-native operating system for enterprise wireless to deliver predictable application performance, powered by the unique Celona MicroSlicing™ technology

- On-premises components – Celona SIM cards, APs and Edge – are centrally managed via cloud-hosted Celona Orchestrator with zero-touch install and ongoing remote provisioning
- Policy-based automation of service level requirements for critical applications, elevating operations to service delivery rather than element management

Predictable reliability for enterprise wireless

- Interference-free operation across very large coverage indoor and outdoor areas
- Infrastructure control for client device traffic transmissions and handover events
- QoS enforcement with guaranteed throughput, latency, jitter and error rate metrics

Simplicity at scale across the campus, branch and remote

- Build your own LTE network without the need to integrate point products
- Easily and elastically scale to the largest campuses and highly distributed enterprises
- Deploy as overlay on the existing network without requiring a separate L2/L3 IP backbone

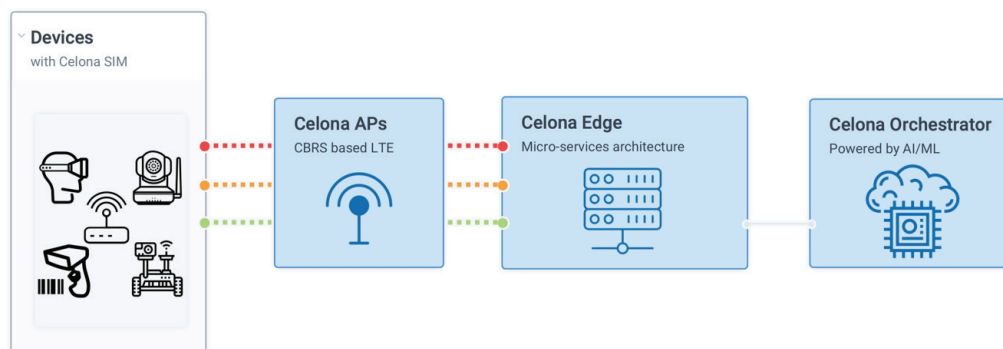


Figure 1: Private mobile network solution components, included as part of the Celona Private LTE subscription



WHAT IS INCLUDED?

CBRS LTE Access Point Hardware

LTE access point hardware is included as part of the indoor and outdoor Private LTE subscriptions. Indoor subscription includes 20 and outdoor subscription include 40 SIM cards for connected devices on the CBRS based LTE network.

Celona Edge Software

Celona Edge helps translate the cellular wireless data and control plane functions to an existing enterprise L2/L3 network infrastructure. It enables direct integration with enterprise network and security services, instead of requiring a separate network backbone. It allows high levels of data privacy and security by utilizing centralized encryption of the client device traffic on CBRS-based LTE.

Enterprise Packet Core

The Celona Edge includes an implementation of the LTE EPC (Evolved Packet Core) designed and built specifically for enterprise deployments. This EPC supports a standards-based S1 interface to the CBRS radio access network made up of Celona access points and delivers MME (Mobility Management Entity), HSS (Home Subscriber Server), and the user plane forwarding (S/P-GW) functions.

High Performance Data Plane

Each node of the Celona Edge delivers multiple gigabits of application throughput on commercial off-the-shelf hardware. In addition, the cloud-native implementation of all network services ensures that resources are allocated dynamically to the data and control plane in real time. As the load on the network grows, Celona Edge dynamically reallocates data and control plane resources to different network functions and critical applications on the network.

Scale Out Network Operating System

As a private LTE network grows in size and sophistication, the Celona Edge scales from one node to many and supports large campus wide deployments via additional Celona Edge nodes. These nodes automatically form clusters to provide increased capacity as well as redundancy, removing complexity of operations during moves, adds and changes.

Policy Enforcement with Celona MicroSlicing™

MicroSlicing is industry's first implementation of "network slicing" within enterprise networks. It allows the enterprise to create virtual overlays on the physical infrastructure on a per application basis. Such MicroSlices are used to offer secure network segmentation for CBRS-based LTE connectivity and to guarantee service levels for throughput, latency, jitter and error rate metrics. Microservices architecture for Celona Edge is also designed to automatically dedicate "micro-instances" of the control and data plane functions for such applications per policy.

Self Organizing Network (SON)

Domain Proxy with Celona Edge consolidates the interaction of all Celona APs with the Spectrum Access Service (SAS) systems for CBRS spectrum allocation on their radios. Via dynamic frequency and power assignments to each AP, Celona Edge optimizes coverage and capacity of a CBRS based LTE network in real-time given channel, power, neighbor list and other relevant parameters from SAS.

Flexible Deployment Options

Celona Edge can be deployed as an individual server node (Celona Edge Express), as a high-performance node (Celona Edge Enterprise), a three-server cluster (Celona Edge Cluster) or as a downloadable virtual machine (VM) that runs on existing server hardware / cluster. When deployed with more than a single server appliance, Celona Edge software is enabled with redundancy by default.

Celona Orchestrator

Enabling centralized network operations for enterprise IT administrators and managed service providers, Celona Orchestrator allows plug-and-play installation of Celona SIMs, APs and Edge. By being tightly integrated into the entire solution from the radio layer to the network core, it offers highest levels of details and correlated insights to network infrastructure, client device and critical application behavior.



Operational insights

Integrated to the Celona Orchestrator, Celona Assistant provides contextual information to IT administrators about the health of their network. It offers helpful tips on recommended actions to take the next steps during an initial installation and shares notes on operational best practices. Celona Assistant is first of its kind to pre-emptively answer questions about the operational state of private LTE networks, further simplifying the deployment of a Celona network at scale. Collected for each MicroSlice and network wide, key performance indicators take the mystery out of complex LTE metrics and instead turns them to actionable insights – delivering greater operational efficiency.

Policy based automation

Coupled with Celona Edge, Celona Orchestrator includes a policy management framework that's capable of translating application level requirements to end to end optimization of all components of a Celona network, in real-time. From access points to control and data plane, from security controls to dynamic spectrum management, Celona's unique MicroSlicing technology provides KPI level visibility within the Orchestrator. Such detailed KPI monitoring helps Orchestrator to automatically update all Celona network elements with the appropriate functional and configuration changes.

Subscriber/SIM management

Celona's Private LTE subscription comes with 20 SIM cards (in two 10-packs) included with each indoor subscription and 40 SIM cards (in four 10-packs) with each outdoor subscription. Administrators can manage the lifecycle for these SIM cards remotely from the Celona Orchestrator, without requiring manual touch to the SIM cards beyond the initial install. This includes remotely activating, de-activating and mapping individual SIM cards to specific devices and device groups.

Support and Warranty

The Celona CBRS LTE subscription includes 24x7 online technical support, phone support from 8am to 5pm Pacific Time, and free access to software updates for Celona Orchestrator, Edge and APs. Celona AP limited hardware warranty is included as part of the private LTE subscription. Celona Edge hardware appliances come with 1-year limited hardware warranty with RMA advanced replacement.

Ordering Information

Private LTE subscription is required for any Celona network installation and comes with 3- and 5-year term options. Each subscription can be activated via Celona Orchestrator and the access point capacity per customer account is shared across multiple sites that are part of the network deployment. Here are the product SKUs and descriptions for the Private LTE subscription in addition to SKUs that allow customers to purchase additional SIM card subscriptions for client devices.



R7C38A	3-year cloud subscription to CBRS LTE service for one indoor AP including management, SIM provisioning, mobile core services via Celona Edge and Celona Orchestrator software. Also includes CBRS LTE category A access point with integrated antennas, Celona express technical support, limited lifetime warranty and 20 private LTE SIM cards.
R7C39A	5-year cloud subscription to CBRS LTE service for one indoor access point including management, SIM provisioning, mobile core services via Celona Edge and Celona Orchestrator software. Also includes CBRS LTE category A access point with integrated antennas, Celona express technical support, limited lifetime warranty and 20 private LTE SIM cards.
R7C40A	3-year cloud subscription to CBRS LTE service for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge and Celona Orchestrator software. Also includes CBRS LTE category B access point, Celona express technical support, limited lifetime warranty and 40 private LTE SIM cards. Separate external antenna purchase required.
R7C41A	5-year cloud subscription to CBRS LTE service for one outdoor access point including management, SIM provisioning, mobile core services via Celona Edge and Celona Orchestrator software. Also includes CBRS LTE category B access point, Celona express technical support, limited lifetime warranty and 40 private LTE SIM cards. Separate external antenna purchase required.
R7C42A	3-year subscription for an additional pack of 10 private LTE SIM cards to be used on a Celona network with an active cloud subscription
R7C43A	5-year subscription for an additional pack of 10 private LTE SIM cards to be used on a Celona network with an active cloud subscription



Celona, the enterprise 5G company, is focused on accelerating the adoption of business-critical apps on enterprise wireless and helping organizations implement new generation of digital business initiatives. Taking advantage of the Citizens Broadband Radio Service (CBRS) in the United States, Celona's solution architecture is designed to automate deployment of cellular wireless technology by enterprise organizations and their technology partners. For more information, please visit [celona.io](https://www.celona.io/) and follow Celona on Twitter [@celonaio](https://twitter.com/celonaio).

<https://www.celona.io/>



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