Overview | Private Wireless Solutions

Empowering Tomorrow's Connectivity: MCA's Private Networking Solutions Redefine Seamless Communication for Enterprises and Public Safety

What is Private Wireless?

Private wireless networks provide a dedicated wireless communication infrastructure tailored specifically to the needs of a single organization or entity. These networks operate independently of public networks, offering enhanced security, control, and customization. Unlike traditional Wi-Fi systems, private wireless encompasses advanced cellular technologies, such as 4G LTE and 5G, thanks to the availability of the CBRS spectrum, which can support a wide range of applications from basic internet access to complex industrial automation and real-time data analytics.

This bespoke nature of private wireless allows organizations to configure their network precisely, managing data traffic and prioritizing critical communications without interference from external sources. The shift towards private 4G/5G technologies is driven by their ability to offer reliable coverage, especially in challenging environments where Wi-Fi might falter due to range limitations or physical obstructions. Additionally, the robust nature of cellular-based solutions in private wireless networks ensures consistent and high-speed connectivity that can support mobile and fixed endpoints across extensive and dynamic operational landscapes.

What is CBRS?

The CBRS spectrum, or Citizens Broadband Radio Service, refers to a 150 MHz wide broadcast band of the radio-frequency spectrum from 3550 MHz to 3700 MHz in the United States.

It's managed by the FCC and is designed for shared wireless broadband use. CBRS allows for private 4G/5G networks and other cellular solutions to operate in this band, providing a viable alternative to traditional Wi-Fi, especially for industrial, enterprise, and public safety applications.

This spectrum band is divided into three tiers of users: incumbent users, priority access licensees, and general authorized access users, each with different levels of priority and rights to the spectrum. This arrangement helps manage interference and ensure reliable service for all users.

Private 4G, 5G, and CBRS Networking Solutions from MCA

Creating Safe, Secure, Fast, And Highly Efficient Networks

Extended Network Coverage

Higher Network Capacity

Enhanced Network Reliability

Improved Network Security

Enhanced Quality of Service

Unparalleled Scalability and Flexibility

Increased Operational Efficiency

Coverage | Capacity | Reliability | Security | Service | Scalability | Efficiency

> "Many organizations currently operate with fragmented communication systems, including standard radio systems, public cellular networks, IP-based security devices, and Wi-Fi access points. These could be integrated into a single, secure private 4G/5Gnetwork, streamlining communication across different platforms and enhancing overall operational efficiency."

Why Utilize Private Wireless Over Wi-Fi?

Opting for 4G or 5G private wireless networks over traditional Wi-Fi offers numerous advantages, particularly in terms of coverage, capacity, and security, which are crucial for businesses requiring robust, enterprise-grade connectivity.

Here's why Private LTE/5G is often a superior choice:

- **Extended Coverage:** Private 4G/5G networks have a significantly larger coverage radius per node compared to Wi-Fi, which means fewer access points are needed to cover the same area. This extended range is especially beneficial for sprawling industrial sites, large campuses, or rural areas where deploying numerous Wi-Fi routers would be impractical or too expensive.
- **Higher Capacity:** They are designed to support a higher density of users and devices without degradation in performance. This is essential in environments where many devices need to connect simultaneously, such as in large-scale events, extensive office settings, or when deploying IoT solutions where numerous sensors and machines require reliable connectivity.
- **Enhanced Reliability:** They provide more reliable connections with fewer interruptions. This reliability is critical for applications that require consistent and uninterrupted data flow, such as VoIP (Voice over Internet Protocol), video conferencing, or real-time machinery controls in manufacturing processes.
- **Improve Security:** They offer advanced security features that are not typically available with Wi-Fi, such as support for end-to-end encryption, more secure authentication protocols, and the ability to tightly control network access. This makes it particularly suitable for industries that handle sensitive information, such as healthcare, financial services, or government operations.
- **Quality of Service (QoS)** They allow for precise management of bandwidth and prioritization of traffic, which is vital for ensuring that critical applications receive the bandwidth they need without being affected by less important data traffic. This level of control is beneficial for organizations that require guaranteed service levels for specific applications.
- **Scalability and Flexibility:** They can be easily scaled to accommodate growing numbers of users and devices without the need for extensive physical infrastructure changes. Additionally, they can support a mix of technology standards, including upcoming 5G deployments, ensuring future-proofing and flexibility in network design.
- **Operational Efficiency:** Organizations can streamline their network management and reduce operational costs associated with maintaining large-scale Wi-Fi networks, which often require more frequent upgrades and more complex support structures.

Overall, opting for private 4G/5G networks provides organizations with a robust foundation for building a secure, reliable, and efficient communication ecosystem that supports today's mobile-first world.

Applications for Private Wireless Solutions

Private 4G/5G networks are revolutionizing connectivity across a wide array of industries by providing robust, secure, and reliable communication solutions. These networks offer a significant advancement over traditional communication methods, bringing critical operational improvements to environments where stable and secure connections are paramount.

Private wireless networks are proving vital across various sectors, enhancing reliability, security, and operational efficiency:

- **High Risk Environments:** In industries like mining, utilities, and manufacturing, where conditions can be perilous and the stakes high, private networks facilitate robust, uninterrupted communications essential for safety alerts, real-time monitoring, and controlling remote equipment. These industries benefit from the network's ability to maintain strong, stable connections even in remote or underground locations.
- **Public Agencies:** Government entities at all levels—local, state, and federal—adopt private 4G/5G networking solutions to bolster public safety and improve administrative functions. These networks provide dedicated and secure communication channels for first responders, support smart city initiatives, and enhance coordination during emergencies or large public events.
- **K-12 and Higher Education:** Educational institutions increasingly rely on private 4G/5G networks to support a wide range of campus activities, from day-to-day administrative tasks to comprehensive security systems. These networks facilitate seamless remote learning experiences, enable mass notification systems, and provide reliable connectivity across campuses, which is crucial for modern educational environments.
- **Healthcare:** For healthcare facilities, private 4G/5G networks are crucial in supporting the high demands of medical communication and data management. These networks ensure the secure transmission of sensitive patient data, support telemedicine initiatives, and improve the coordination of care through reliable connectivity, helping to comply with strict privacy regulations like HIPAA.

"More and more industries across the globe are beginning to recognize the benefits of Private 4G/5G networks, and are utilizing them to great effect"

Our Top-Tier Partners

MCA partners with leading manufacturers like Nokia, JMA, and Airspan to provide top-tier private wireless solutions:

Nokia Digital Automation Cloud	**JMA Wireless XRAN and Cellhub**	**Nextivity Cel-Fi Quatra and GO**	**SOLiD Technologies Open RAN**	**Airspan AirVelocity and AirSpeed**
Digi International IX, EX, & TX Series	**Commscope Ruckus Access Points**	**Cradlepoint NetCloud Exchange**	**Druid Software Raemis Platform**	**SemTech AirLink RX and XR Series**

CONTACT MCA

Is your organization ready to enhance its connectivity solutions?

Contact MCA's team today to explore how private 4G/5G networking can meet your dynamic needs, ensuring reliable, secure, and scalable communications across your operations.

About MCA

MCA is one of the largest and most trusted technology integrators in the United States, offering world-class voice, data, and security solutions that enhance the quality, safety, and productivity of customers, operations, and lives.

More than 65,000 customers trust MCA to provide carefully researched solutions for a safe, secure, and more efficient workplace. As your trusted advisor, we reduce the time and effort needed to research, install, and maintain the right solutions to make your workplace better.

Our team of certified professionals across the United States delivers a full suite of reliable technologies with a service-first approach. The MCA advantage is our extensive service portfolio to support the solution life-cycle from start to finish.

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