

## CBRS & Private LTE/5G Networks: 2024 – 2030 – Opportunities, Challenges, Strategies & Forecasts

https://marketpublishers.com/r/CE8BAF6E5B7FEN.html

Date: December 2024 Pages: 3321 Price: US\$ 3,500.00 (Single User License) ID: CE8BAF6E5B7FEN

## Abstracts

After many years of regulatory, standardization and technical implementation activities, the United States' dynamic, three-tiered, hierarchical framework for coordinated shared use of 150 MHz of spectrum in the 3.5 GHz CBRS (Citizens Broadband Radio Service) band is experiencing a renewed wave of enthusiasm. This reinvigoration of interest follows a recent relaxation of rules and guidelines – collectively referred to as CBRS 2.0 – which extends uninterrupted commercial operations in the CBRS band from 78% to 97% of the country's total landmass, among other refinements. Although the shared spectrum arrangement is access technology neutral, the 3GPP cellular wireless ecosystem is at the forefront of CBRS adoption, with close to half of the more than 400,000 active CBSDs (Citizens Broadband Radio Service Devices) based on LTE and 5G NR air interface technologies.

LTE-based CBRS deployments encompass hundreds of networks – operating in both GAA (General Authorized Access) and PAL (Priority Access License) spectrum tiers – to support use cases as diverse as mobile network densification, FWA (Fixed Wireless Access) in rural communities, MVNO (Mobile Virtual Network Operator) offload and private cellular networks in support of IIoT (Industrial IoT), distance learning and smart city initiatives. Additionally, there has been a surge in the adoption of CBRS small cells as a cost-effective alternative to DAS (Distributed Antenna Systems) for delivering neutral host public cellular coverage in carpeted enterprise spaces, public venues, hospitals, hotels, higher education campuses and schools. Some examples of LTE-based CBRS networks supporting neutral host connectivity to one or more national mobile operators include Meta's corporate offices, City of Hope Hospital, Stanford Health Care, Sound Hotel, Gale South Beach Hotel, Nobu Hotel, Arizona State University, Cal Poly, University of Virginia, Duke University and Parkside Elementary School.



Also well underway are commercial rollouts of 5G NR network equipment operating in the CBRS band, which are laying the foundation for advanced application scenarios with more demanding performance requirements in terms of throughput, latency, reliability, availability and connection density – for example, Industry 4.0 applications such as connected production machinery, mobile robotics, AGVs (Automated Guided Vehicles) and AR (Augmented Reality)-assisted troubleshooting. 5G NR-based CBRS network installations range from private 5G projects at the manufacturing and logistics facilities of Tesla, Toyota Material Handling, BMW Group, John Deere, LG Electronics and Walmart to Comcast's and Charter's ongoing 5G RAN (Radio Access Network) buildouts based on strand-mounted CBRS radios.

SNS Telecom & IT estimates that annual investments in LTE and 5G NR-based CBRS RAN, mobile core and transport network infrastructure will grow at a CAGR of approximately 15% between 2024 and 2027 to surpass \$1.3 Billion by the end of 2027. Much of this growth will be driven by private cellular, neutral host and fixed wireless broadband network deployments, followed by a slow but steady expansion of investments in 5G buildouts aimed at improving the economics of cable operators' MVNO services. Complemented by an ever expanding selection of 3GPP Band 48/n48-compatible terminal equipment, the market size for end user devices is even bigger, with unit shipments of IIoT and FWA devices projected to account for \$2.4 Billion in annual sales by 2027.

The wider global market for private cellular networks is also continuing its upward trajectory with deployments targeting a multitude of use cases across various industries. These range from localized wireless systems for dedicated connectivity in factories, warehouses, mines, power plants, substations, offshore wind farms, oil and gas facilities, construction sites, maritime ports, airports, hospitals, stadiums, office buildings and university campuses to regional and nationwide sub-1 GHz private wireless broadband networks for utilities, FRMCS (Future Railway Mobile Communication System)-ready networks for train-to-ground communications and hybrid government-commercial public safety LTE networks. Custom-built cellular networks have also been implemented in locations as remote as Antarctica, and there are even plans for installations on the moon's surface and outer space.

The expanding influence of the private LTE and 5G network market is evident from the recent use of rapidly deployable private cellular network-in-a-box systems for professional TV broadcasting, enhanced fan engagement and gameplay operations at major sports events, including Paris 2024 Olympics, 2024 UEFA European Football



Championship, North West 200 Motorcycle Race, 2024 World Rowing Cup III, New York Sail Grand Prix, 2024 PGA Championship, 2024 UFL Championship Game and 2024 NFL International Games, as well as the Republican and Democratic national conventions in the run up to the 2024 United States presidential election.

Other examples of high-impact private LTE/5G engagements include but are not limited to multi-site, multi-national private cellular deployments at the industrial facilities of Airbus, BMW, Chevron, John Deere, LG Electronics, Midea, Tesla, Toyota, Volkswagen, Walmart and several other household brand names; Aramco's (Saudi Arabian Oil Company) 450 MHz 3GPP network project and ADNOCS' (Abu Dhabi National Oil Company) 11,000-square kilometer private 5G network for connecting thousands of remote wells and pipelines; defense sector 5G programs for the adoption of tactical cellular systems and permanent private 5G networks at military bases in the United States, Germany, Spain, Norway, Japan and South Korea; service territory-wide private wireless projects of 450connect, Ameren, CPFL Energia, ESB Networks, Evergy, Neoenergia, PGE (Polish Energy Group), SDG&E (San Diego Gas & Electric), Tampa Electric, Xcel Energy and other utility companies; and the recent implementation of a private 5G network at Belgium's Nobelwind offshore wind farm as part of a broader European effort to secure critical infrastructure in the North Sea.

SNS Telecom & IT estimates that global spending on private LTE and 5G network infrastructure for vertical industries will grow at a CAGR of approximately 20% between 2024 and 2027, eventually accounting for more than \$6 Billion by the end of 2027. Close to 60% of these investments – an estimated \$3.5 Billion – will be directed towards the buildout of standalone private 5G networks, which will become the predominant wireless communications medium to support the ongoing Industry 4.0 revolution for the digitization and automation of manufacturing and process industries. This unprecedented level of growth is likely to transform private LTE and 5G networks into an almost parallel equipment ecosystem to public mobile operator infrastructure in terms of market size by the late 2020s. By 2030, private networks could account for as much as a fifth of all mobile network infrastructure spending.

Spanning over 3,000 pages, the "CBRS & Private LTE/5G Networks: 2024 – 2030 – Opportunities, Challenges, Strategies & Forecasts" report package encompasses two comprehensive reports covering CBRS and private cellular networks:

LTE & 5G NR-Based CBRS Networks: 2024 – 2030 – Opportunities, Challenges, Strategies & Forecasts



Private LTE & 5G Network Ecosystem: 2024 – 2030 – Opportunities, Challenges, Strategies, Industry Verticals & Forecasts

This report package presents an in-depth assessment of both CBRS and private LTE/5G markets, including the value chain, market drivers, barriers to uptake, enabling technologies, operational and business models, vertical industries, application scenarios, key trends, future roadmap, standardization, spectrum availability and allocation, regulatory landscape, case studies, ecosystem player profiles and strategies. The report package also provides forecasts for network infrastructure and terminal equipment from 2024 to 2030.

The report package comes with an associated Excel datasheet suite covering quantitative data from all numeric forecasts presented in both reports, as well as two databases tracking over 1,000 LTE/5G NR-based CBRS network installations and more than 7,300 global private LTE/5G engagements.



## Contents

Report 1: LTE & 5G NR-Based CBRS Networks: 2024 – 2030 – Opportunities, Challenges, Strategies & Forecasts

- 1.1 Chapter 1: Introduction
- 1.2 Chapter 2: An Overview of LTE & 5G NR-Based CBRS Networks
- 1.3 Chapter 3: Technical Aspects of CBRS Networks
- 1.4 Chapter 4: Business Models, Use Cases & Applications
- 1.5 Chapter 5: Standardization, Regulatory & Collaborative Initiatives
- 1.6 Chapter 6: Case Studies of CBRS Network Deployments
- 1.7 Chapter 7: Market Sizing & Forecasts
- 1.8 Chapter 8: Key Ecosystem Players
- 1.9 Chapter 9: Conclusion & Strategic Recommendations

Report 2: Private LTE & 5G Network Ecosystem: 2024 - 2030 - Opportunities,

- Challenges, Strategies, Industry Verticals & Forecasts
- 2.1 Chapter 1: Introduction
- 2.2 Chapter 2: An Overview of Private LTE & 5G Networks
- 2.3 Chapter 3: Private LTE/5G System Architecture & Technologies
- 2.4 Chapter 4: Key Vertical Industries & Applications
- 2.5 Chapter 5: Spectrum Availability, Allocation & Usage
- 2.6 Chapter 6: Standardization, Regulatory & Collaborative Initiatives
- 2.7 Chapter 7: Review of Private LTE/5G Installations Worldwide
- 2.8 Chapter 8: Private LTE/5G Case Studies
- 2.9 Chapter 9: Key Ecosystem Players
- 2.10 Chapter 10: Market Sizing & Forecasts
- 2.11 Chapter 11: Conclusion & Strategic Recommendations
- 2.12 Chapter 12: Expert Opinion Interview Transcripts



## I would like to order

Product name: CBRS & Private LTE/5G Networks: 2024 – 2030 – Opportunities, Challenges, Strategies & Forecasts

Product link: https://marketpublishers.com/r/CE8BAF6E5B7FEN.html

Price: US\$ 3,500.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service: info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <u>https://marketpublishers.com/r/CE8BAF6E5B7FEN.html</u>