

LTE & 5G NR in Unlicensed Spectrum Market Key Players, Value Chain, Opportunities, Challenges, Strategies, Forecast 2030

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/EINPresswire.com/ -- The [LTE & 5G NR in Unlicensed Spectrum Market](#) refers to the use of unlicensed radio frequency bands for the deployment of LTE and 5G mobile networks. This market is characterized by the use of unlicensed spectrum, which is typically less expensive and more readily available compared to licensed spectrum.



The LTE & 5G NR in Unlicensed Spectrum market is growing as operators look for alternative ways to increase network capacity and improve coverage in urban and rural areas. The use of unlicensed spectrum in LTE and 5G networks can help reduce the cost of network deployment, increase the availability of spectrum resources, and improve the reliability of mobile networks.

Some of the key players in the LTE & 5G NR in Unlicensed Spectrum market include Qualcomm, Ericsson, Huawei, Nokia, and ZTE. These companies are developing technologies and solutions that enable the deployment of LTE and 5G networks using unlicensed spectrum.

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The LTE & 5G NR in Unlicensed Spectrum market is expected to continue to grow in the coming years as more operators adopt this technology. However, there are some challenges associated with the use of unlicensed spectrum, including interference from other devices using the same frequency band and the need for coordination between multiple operators using the same spectrum resources. Nevertheless, the benefits of using unlicensed spectrum in LTE and 5G networks are expected to outweigh these challenges, making it an attractive option for operators looking to expand their network coverage and capacity.

The report comes with an associated Excel datasheet suite covering quantitative data from all numeric forecasts presented in the report.

Topics Covered

The report covers the following topics:

Introduction to LTE and 5G NR in unlicensed spectrum

Value chain and ecosystem structure

Market drivers and challenges

Enabling technologies and concepts including LTE-U, LAA/eLAA/FeLAA, 5G NR-U, MulteFire, CBRS and sXGP

Key trends such as mobile network densification, neutral host small cells, private cellular networks for enterprises and vertical industries, and the availability of new unlicensed bands

Future roadmap of LTE and 5G NR in unlicensed spectrum

Business models, use cases and application scenarios

Spectrum availability, allocation and usage across the global, regional and national domains

Standardization, regulatory and collaborative initiatives

Case studies of LTE and 5G NR-ready deployments in unlicensed spectrum

Profiles and strategies of more than 280 ecosystem players

Strategic recommendations for LTE and 5G NR equipment suppliers, system integrators, service providers, enterprises and vertical industries

Market analysis and forecasts from 2020 till 2030

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Forecast Segmentation

Market forecasts for LTE and 5G NR-based RAN equipment operating in unlicensed spectrum are provided for each of the following submarkets and their subcategories:

Air Interface Technologies

Unlicensed LTE

5G NR-U

Modes of Operation

Standalone Operation

LAA (Licensed Assisted Access)

Cell Types

Indoor Small Cells

Outdoor Small Cells

Frequency Bands

Sub-1 GHz
1.9 GHz sXGP
2.4 GHz
3.5 GHz CBRS GAA
5 GHz
6 GHz
Higher Frequencies
Use Cases

Mobile Network Densification
FWA (Fixed Wireless Access)
Cable Operators & New Entrants
Neutral Hosts
Private Cellular Networks
Offices, Buildings & Corporate Campuses
Vertical Industries
Regional Markets

North America
Asia Pacific
Europe
Middle East & Africa
Latin & Central America
Key Questions Answered

The report provides answers to the following key questions:

How big is the opportunity for LTE and 5G NR in unlicensed spectrum?
What trends, drivers and challenges are influencing its growth?
What will the market size be in 2023, and at what rate will it grow?
Which submarkets and regions will see the highest percentage of growth?
What are the existing and candidate unlicensed spectrum bands for the operation of LTE and 5G NR, and what is the status of their adoption worldwide?
What is the outlook for the recently opened 6 GHz greenfield spectrum and license-exempt bands in higher frequencies?
What are the business models, use cases and application scenarios for LTE and 5G NR networks operating in unlicensed spectrum?
How does the integration of unlicensed spectrum relieve capacity constraints faced by traditional mobile operators?
What opportunities exist for cable operators, neutral hosts, niche service providers and other new entrants?
How will unlicensed spectrum accelerate the uptake of private cellular networks for enterprises

and vertical industries?

How does standardization impact the deployment of LTE and 5G NR in unlicensed spectrum?
What are the functional capabilities of 5G NR-U based on the 3GPP's Release 16 specifications, and which NR-U feature enhancements are likely to be supported in Release 17?

Do Wi-Fi and other non-3GPP technologies operating in unlicensed spectrum pose a threat to LTE and 5G NR?

Who are the key ecosystem players, and what are their strategies?

What strategies should LTE and 5G NR equipment suppliers, system integrators, service providers and other stakeholders adopt to remain competitive?

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Key Findings

The report has the following key findings:

Despite the economic slowdown due to the COVID-19 pandemic, competition from non-3GPP wireless technologies and other challenges, SNS Telecom & IT estimates that global investments in LTE and 5G NR-ready RAN infrastructure operating in unlicensed spectrum will reach nearly \$500 Million by the end of 2020. The market is further expected to grow at a CAGR of approximately 40% between 2020 and 2023, eventually accounting for \$1.3 Billion by 2023. As part of their network densification efforts, mobile operators across the globe are increasingly employing the use of LAA technology to aggregate licensed spectrum assets with unlicensed frequencies – primarily the globally harmonized 5 GHz band – in order to deliver higher data rates and alleviate capacity constraints across the most congested parts of their networks.

With the possibility to leverage the 3.5 GHz CBRS band on a GAA (General Authorized Access) basis in the United States and the availability of Japan's license-exempt 1.9 GHz sXGP band, independent cellular networks that can operate solely in unlicensed spectrum – without requiring an anchor carrier in licensed spectrum – are beginning to emerge as well. In addition, it is worth noting that a limited number of custom-built, standalone LTE networks operating in the unlicensed 2.4 GHz and 5 GHz bands are operational in certain national markets, predominantly for industrial IoT applications.

In the coming years, with the commercial maturity of 5G NR-U technology, we also anticipate to see 5G NR deployments in unlicensed spectrum for both licensed assisted and standalone modes of operation – using the 3.5 GHz CBRS, 5 GHz, 6 GHz and higher frequency bands up to 71 GHz.

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List of Companies Mentioned:

3GPP (Third Generation Partnership Project), 5G-ACIA (5G Alliance for Connected Industries and Automation), 6Harmonics/6WiLink, 7Layers, Aaeon Technology, ABiT Corporation, Accelleran, Accuver, ACMA (Australian Communications and Media Authority), ADRF (Advanced RF Technologies), Affirmed Networks, Airgain, Airspan Networks, Airtower Networks, Airwavz Solutions, Akoustis Technologies, Alef Edge, Allen Vanguard Wireless, Alliance of Industrial Internet, Alpha Wireless, Alphabet, AltioStar Networks, Altran, Amazon, Amdocs, American Tower Corporation, Amit Wireless, ANACOM (National Communications Authority, Portugal), Anritsu Corporation, ANS (Advanced Network Services), Antenna Company, Anterix, Apple, ARCEP (Autorité de Régulation des Communications Électroniques), ARIB (Association of Radio Industries and Businesses, Japan), Artemis Networks, Askey Computer Corporation, ASOCS, ASTRI (Hong Kong Applied Science and Technology Research Institute), ASUS (ASUSTeK Computer), AT&T, Athonet, ATIS (Alliance for Telecommunications Industry Solutions), ATN International, AttoCore, Axell Wireless, Azcom Technology, BAI Communications, Baicells Technologies, Ballast Networks, BBB (BB Backbone Corporation), BBK Electronics Corporation, BearCom, BEC Technologies, Benetel, Billion Electric, Black Box Corporation, Blackned, BLiNQ Networks, Blue Arcus Technologies, Blue Danube Systems, BNetzA (Federal Network Agency, Germany), Boingo Wireless, Branch Communications, BTI Wireless, Bureau Veritas, BVSystems (Berkeley Varitronics Systems), BYD, CableFree (Wireless Excellence), CableLabs, Calтта, Cambium Networks, Cambridge Consultants, Carlson Wireless Technologies, Casa Systems, CBRS Alliance, CCI (Communication Components Inc.), CCN (Cirrus Core Networks), CCSA (China Communications Standards Association), CellAntenna Corporation, cellXica, Celona, Centerline Communications, CEPT (European Conference of Postal and Telecommunications Administrations), China Mobile, Chunghwa Telecom, CICT (China Information and Communication Technology Group)/China Xinke Group, Cisco Systems, CITC (Communications and Information Technology Commission, Saudi Arabia), CITRA (Communication and Information Technology Regulatory Authority, Kuwait), ClearSky Technologies, Codium Networks, Comba Telecom, CommAgility, CommScope, Compal, COMSovereign, Connectivity Wireless Solutions, Contela, Contour Networks, Corning, Council Rock and Many Others.

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