

Private LTE & 5G Network Ecosystem Market Key Profiles, Strategies, Trends, Value Chain, Size and Forecasts 2023 - 2030

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/EINPresswire.com/ -- Global spending on private LTE and 5G network infrastructure for vertical industries will grow at a CAGR of approximately 18% between 2023 and 2026, eventually accounting for more than \$6.4 Billion by the end of 2026. As much as 40% of these investments – nearly \$2.8 Billion –

will be directed towards the build-out of standalone private 5G networks that 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.



The “[Private LTE & 5G Network Ecosystem Market: 2023 – 2030 – Opportunities, Challenges, Strategies, Industry Verticals & Forecasts](#)” report presents an in-depth assessment of the private LTE and 5G network ecosystem, 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 also presents global and regional market size forecasts from 2023 till 2030. The forecasts cover three infrastructure submarkets, two technology generations, four spectrum licensing models, 15 vertical industries and five regional markets.

Get a FREE Sample Copy of the Global Private LTE & 5G Network Ecosystem Market Research Report at <https://www.reportsnreports.com/contacts/requestsample.aspx?name=7321761>

The report comes with an associated Excel datasheet suite covering quantitative data from all numeric forecasts presented in the report, as well as a database of over 6,000 global private LTE/5G engagements – as of Q2'2023.

Topics Covered:

The report covers the following topics:

Introduction to private LTE and 5G networks

Value chain and ecosystem structure

Market drivers and challenges

System architecture and key elements of private LTE and 5G networks

Operational and business models, network size, geographic reach and other practical aspects of private LTE and 5G networks

Critical communications broadband evolution, Industry 4.0, enterprise transformation and other themes shaping the adoption of private LTE and 5G networks

Enabling technologies and concepts, including 3GPP-defined MCX, URLLC, TSC, NR-U, SNPN and PNI-NPN, cellular IoT, high-precision positioning, network slicing, edge computing and network automation capabilities

Key trends such as the emergence of new classes of specialized network operators, shared and local area spectrum licensing, private NaaS (Network-as-a-Service) offerings, IT/OT convergence, Open RAN, vRAN (Virtualized RAN) and rapidly deployable LTE/5G systems

Analysis of vertical industries and application scenarios, extending from mission-critical group communications and real-time video transmission to reconfigurable wireless production lines, collaborative mobile robots, AGVs (Automated Guided Vehicles) and untethered AR/VR/MR (Augmented, Virtual & Mixed Reality)

Future roadmap of private LTE and 5G networks

Review of private LTE and 5G network installations worldwide, including 100 case studies spanning 15 verticals

Database tracking more than 6,000 private LTE and 5G engagements in over 120 countries across the globe

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

Standardization, regulatory and collaborative initiatives

Profiles and strategies of more than 1,800 ecosystem players

Strategic recommendations for LTE/5G equipment and chipset suppliers, system integrators, private network specialists, mobile operators and end user organizations

Market analysis and forecasts from 2023 till 2030

Forecast Segmentation:

Market forecasts are provided for each of the following submarkets and their subcategories:

Infrastructure Submarkets:

RAN (LTE & 5G NR Radio Access Network)

Base Station RUs (Radio Units)

DUs/CUs (Distributed & Centralized Baseband Units)

Mobile Core (EPC & 5GC)

User Plane Functions
Control Plane Functions
Transport Network (Fronthaul, Midhaul & Backhaul)
Fiber & Wireline
Microwave
Satellite Communications

Technology Generations:

LTE
5G

Cell Sizes:

Small Cells
Indoor
Outdoor
Macrocells

Spectrum Licensing Models:

Mobile Operator-Owned Spectrum
Wide Area Licensed Spectrum
Shared & Local Area Licensed Spectrum
Unlicensed Spectrum

Frequency Ranges:

Low-Band (Sub-1 GHz)
Mid-Band (1-6 GHz)
High-Band mmWave (Millimeter Wave)

End User Markets:

Vertical Industries
Agriculture
Aviation
Broadcasting
Construction
Education
Forestry
Healthcare
Manufacturing
Military
Mining
Oil & Gas
Ports & Maritime Transport
Public Safety

Railways
Utilities
Others
Offices, Buildings & Corporate Campuses

Regional Markets:

North America
Asia Pacific
Europe
Middle East & Africa
Latin & Central America

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Key Questions Answered:

The report provides answers to the following key questions:

How big is the private LTE and 5G network opportunity?

What trends, drivers and challenges are influencing its growth?

What will the market size be in 2026, and at what rate will it grow?

Which submarkets, verticals and regions will see the highest percentage of growth?

What is the status of private LTE and 5G network adoption in each country, and what are the primary application scenarios of these networks?

How is private cellular connectivity facilitating the digital transformation of manufacturing, mining, oil and gas, ports and other vertical industries?

What are the practical and quantifiable benefits of private LTE and 5G networks in terms of productivity improvement, cost reduction and worker safety?

How can satellite backhaul and direct-to-device NTN (Non-Terrestrial Network) access expand the reach of private networks in remote environments?

How are MCPTT (Mission-Critical PTT) capabilities enabling the transition from narrowband LMR systems to 3GPP-based private broadband networks?

What are the key characteristics of standalone private 5G connectivity, and when will URLLC, TSC and other 3GPP-defined IIoT (Industrial IoT) features be widely employed?

How can private edge computing accommodate latency-sensitive applications while enhancing data sovereignty and security?

Where does network slicing for differentiated service requirements fit in the private cellular networking landscape?

What are the existing and candidate frequency bands for the operation of private LTE and 5G networks?

How are CBRS and other coordinated shared/local spectrum licensing frameworks accelerating the uptake of private networks?

When will sub-1 GHz critical communications LTE networks begin their transition to 5G technology?

What are the prospects of private 5G networks operating in mmWave spectrum?

What is the impact of post-pandemic changes on private LTE and 5G network deployments?

What opportunities exist for hyperscalers, managed services providers and other new entrants?

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

What strategies should LTE/5G equipment suppliers, system integrators, private network specialists and mobile operators adopt to remain competitive?

Key Findings:

The report has the following key findings:

SNS Telecom & IT estimates that global spending on private LTE and 5G network infrastructure for vertical industries will grow at a CAGR of approximately 18% between 2023 and 2026, eventually accounting for more than \$6.4 Billion by the end of 2026.

As much as 40% of these investments – nearly \$2.8 Billion – will be directed towards the build-out of standalone private 5G networks that 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 in the coming years 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.

Existing private cellular network deployments range from localized wireless systems in industrial and enterprise settings to sub-1 GHz private wireless broadband networks for utilities, FRMCS-ready networks for train-to-ground communications, and hybrid government-commercial public safety broadband networks, as well as rapidly deployable LTE/5G systems that deliver temporary or on-demand cellular connectivity.

As for the practical and quantifiable benefits of private LTE and 5G networks, end user organizations across manufacturing, mining, oil and gas, ports and other vertical industries have credited private cellular network installations with productivity and efficiency gains in the range of 30 to 70%, cost savings of more than 20%, and an uplift of up to 80% in worker safety and accident reduction.

Spectrum liberalization initiatives – particularly shared and local spectrum licensing frameworks – are playing a pivotal role in accelerating the adoption of private LTE and 5G networks.

Telecommunications regulators in multiple national markets – including the United States, Canada, United Kingdom, Germany, France, Netherlands, Finland, Sweden, Norway, Poland, Bahrain, Japan, South Korea, Taiwan, China, Hong Kong, Australia, India and Brazil – have released or are in the process of granting access to shared and local area licensed spectrum.

By capitalizing on their extensive licensed spectrum holdings, infrastructure assets and cellular networking expertise, national mobile operators have continued to retain a strong foothold in the private LTE and 5G network market. With an expanded focus on vertical B2B (Business-to-Business) opportunities in the 5G era, mobile operators are actively involved in diverse projects

extending from localized 5G networks for secure and reliable wireless connectivity in industrial and enterprise environments to nationwide public safety broadband networks.

New classes of private network operators have also found success in the market. Notable examples include but are not limited to Celona, Betacom, Kajeet, BearCom, Ambra Solutions, iNET (Infrastructure Networks), Tampnet, Smart Mobile Labs, MUGLER, Telent, Logicalis, Citymesh, Netmore, RADTONICS, Combitech, Grape One (Japan), NS Solutions, OPTAGE, Wave-In Communication and the private 4G/5G business units of neutral host infrastructure providers such as Boingo Wireless, Crown Castle, Cellnex Telecom, BAI Communications/Boldyn Networks, Freshwave and Digita.

NTT, Kyndryl and other global system integrators have been quick to seize the private cellular opportunity with strategic technology alliances and early commercial wins. Meanwhile, hyperscalers – most notably AWS (Amazon Web Services), Google and Microsoft – are offering managed private 5G services by leveraging their cloud and edge platforms.

Although greater vendor diversity is beginning to be reflected in infrastructure sales, larger players are continuing to invest in strategic acquisitions as highlighted by HPE's (Hewlett Packard Enterprise) recent acquisition of Italian mobile core technology provider Athonet.

The service provider segment is not immune to consolidation either. For example, in Australia, mobile operator Telstra – through its Telstra Purple division – has acquired industrial private wireless specialist Aqura Technologies. More recently, specialist fiber and network solutions provider Vocus has acquired Challenge Networks – another Australian pioneer in private LTE and 5G networks.

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List of Companies Mentioned:

10T Tech

1NCE

1oT

29Metals

3D-P

3GPP (Third Generation Partnership Project)

450 MHz Alliance

450connect

4K Solutions

4RF

5G Campus Network Alliance

5G Forum (South Korea)

5G Health Association

5G Media Initiative

5G OI Lab (5G Open Innovation Lab)

5GAA (5G Automotive Association)

5G-ACIA (5G Alliance for Connected Industries and Automation)
5GAIA (5G Applications Industry Array)
5GCT (5G Catalyst Technologies)
5GDNA (5G Deterministic Networking Alliance)
5GFF (5G Future Forum)
5G-MAG (5G Media Action Group)
5GMF (Fifth Generation Mobile Communication Promotion Forum, Japan)
5GSA (5G Slicing Association)
6G Finland
6GEM Consortium
6G-IA (6G Smart Networks and Services Industry Association)
6G-RIC (Research and Innovation Cluster)
6Harmonics/6WiLInk
6WIND
7Layers
7P (Seven Principles)
A Beep/Diga-Talk+
A*STAR (Agency for Science, Technology and Research, Singapore)
A1 Hrvatska
A1 Telekom Austria Group
A10 Networks
A5G Networks
AAEON Technology
Aalborg University
Aalto University
AAR (Association of American Railroads)
Aarna Networks
ABB
ABB Robotics
ABDI (Brazilian Agency for Industrial Development)
ABEL Mobilfunk
ABiT Corporation
ABP (Associated British Ports)
ABS
Abside Networks
Abu Dhabi Police
Accedian
AccelerComm
Accelink Technologies
Accelleran
Accenture
ACCESS CO.
Access Spectrum

Accesso
AccessParks
ACCF (Australasian Critical Communications Forum)
Accton Technology Corporation
Accuver
ACE Technologies
AceAxis
AceTel (Ace Solutions)
Achronix Semiconductor Corporation
ACMA (Australian Communications and Media Authority)
ACOME
ACPS (Albemarle County Public Schools)
ACS (Applied Computer Solutions)
Actelis Networks
Actemium (VINCI Energies)
Action Technologies (Shenzhen Action Technologies)
Actiontec Electronics
Active911
Actus Networks
AD Plastik
Adani Data Networks
Adani Group
Adax
Adcor Magnet Systems
Addis Ababa Light Rail
Adecoagro
Adelaide Airport
Adeunis
ADF (Australian Defence Force)
ADI (Analog Devices, Inc.)
Adif (Spanish Railway Infrastructure Administrator)
Adif AV (Alta Velocidad)
ADLINK Technology
ADMIE/IPTO (Independent Power Transmission Operator, Greece)
ADNOC (Abu Dhabi National Oil Company)
ADRF (Advanced RF Technologies)
ADT
Adtran
ADVA
Advanced Energy Industries
AdvanceTec Industries
Advantech
Advantech Wireless Technologies

AE Aerospace
AECC (Aero Engine Corporation of China)
AECC Commercial Aircraft Engine Company
AEG
Aegex Technologies
Aerial Applications
Aeris
Aero Wireless Group
AeroFarms
AeroMobile Communications
Aerostar International
Aethertek
Aetna Group
AFC (Asian Football Confederation)
Affarii Technologies
Affirmed Networks
AFL Global
AFRY
AGC
AGCO Corporation
AGCOM (Communications Regulatory Authority, Italy) and More....

Ganesh Pardeshi
ReportsnReports
+1 347-333-3771
ganesh.pardeshi@reportsandreports.com

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