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5G and Connectivity in Automated Manufacturing Market Forecasts to 2032 – Global Analysis By Component (Hardware, Software and Services), Deployment Type, Enterprise Size, Connectivity Type, Technology Integration, End User and By Geography

https://marketpublishers.com/r/5E952E24D71BEN.html
Date: September 2025
Pages: 200
Price: US$ 4,150.00 (Single User License)
ID: 5E952E24D71BEN

Abstracts

According to Stratistics MRC, the Global 5G and Connectivity in Automated Manufacturing Market is accounted for $10.03 billion in 2025 and is expected to reach $16.53 billion by 2032 growing at a CAGR of 7.4% during the forecast period. 5G is revolutionizing automated manufacturing by offering high-speed, stable, and ultra-low latency communication within industrial environments. It supports large-scale device connectivity, enabling seamless interaction between machines, robots, and IoT sensors for real-time insights and predictive analytics. This helps manufacturers boost efficiency, minimize downtime, and streamline supply chain processes. With faster data transmission, technologies such as AI, digital twins, and automation systems become more practical and effective. Additionally, 5G empowers remote control, flexible production layouts, and smart factory operations. Acting as a backbone of Industry 4.0, it ensures greater productivity, adaptability, and robust connectivity for modern manufacturing ecosystems.

According to 5G Technology World, real-world measurements in public 5G networks showed One-way latency (OWL) as low as 7 milliseconds in downlink for 100 kb/sec data rate.

Market Dynamics:

Driver:

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Rising demand for smart factories

The expansion of smart factories strongly accelerates the need for 5G and connectivity in automated manufacturing. These advanced facilities depend on IoT-driven devices, intelligent robotics, and continuous data flows, which require reliable, high-speed communication networks. 5G offers the infrastructure necessary to integrate advanced monitoring systems, automation tools, and real-time analytics. Companies are increasingly modernizing operations to enhance productivity, reduce operational risks, and adopt flexible, scalable manufacturing lines. By delivering consistent connectivity and adaptability, 5G enables industries to respond faster to customer demands and shifting market dynamics. This strong demand for smarter, interconnected manufacturing processes drives growth in the connectivity market.

Restraint:

High implementation costs

The substantial expenses linked to installing 5G infrastructure act as a major obstacle in automated manufacturing. Rolling out 5G requires heavy investments in advanced network hardware, compatible software, and system upgrades, which pose difficulties for smaller organizations with limited budgets. Additionally, the challenge of integrating new 5G technologies with traditional legacy equipment drives costs even higher. Manufacturers often delay or restrict adoption when financial returns are uncertain. Building private networks and maintaining operational continuity add further expenditure. This high financial demand limits large-scale integration, making implementation costs one of the primary barriers preventing faster adoption of 5G in industrial operations.

Opportunity:

Growth of smart factories and industry 4.0

The acceleration of Industry 4.0 initiatives and the rise of smart factories open strong opportunities for 5G adoption in automated manufacturing. These modern production environments depend on interconnected systems, intelligent robotics, and sensor-driven data for enhanced flexibility and output. 5G’s ultra-reliable connectivity, large device capacity, and rapid data transfer make it an ideal enabler of these systems. By supporting real-time analytics, AI applications, and virtual simulations, 5G helps manufacturers improve operational agility and productivity. As companies worldwide

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shift toward digital manufacturing strategies, the move toward Industry 4.0 ensures vast opportunities for deploying advanced 5G solutions within industrial production frameworks.

Threat:

Rapid technological obsolescence

One critical threat to 5G adoption in automated manufacturing is the risk of technologies becoming obsolete too quickly. With the speed of innovation, systems and equipment may lose relevance before companies recover their investment costs. This creates hesitancy among manufacturers who fear frequent upgrades, integration hurdles, and escalating expenditures. Continuous advancements make it difficult to ensure long-term stability in industrial operations. Organizations unable to adapt to new standards may face operational inefficiencies and declining competitiveness. The pressure to remain updated, while costly and complex, poses a significant threat to companies investing in 5G connectivity for future manufacturing strategies.

Covid-19 Impact:

Covid-19 had a notable effect on the growth of 5G and connectivity within automated manufacturing. Global lockdowns, supply chain breakdowns, and labor shortages emphasized the urgency for automation and remote capabilities. Companies increasingly recognized the role of ultra-fast, secure connectivity in maintaining operational continuity. Though financial challenges initially slowed technology investments, the crisis accelerated the shift toward digitalization and Industry 4.0. Adoption of 5G-powered IoT, robotics, and analytics gained momentum as manufacturers sought resilience and adaptability. Ultimately, the pandemic served as a turning point, underscoring the value of 5G in supporting flexible, efficient, and future-ready manufacturing processes worldwide.

The hardware segment is expected to be the largest during the forecast period

The hardware segment is expected to account for the largest market share during the forecast period because it provides the core infrastructure enabling smooth operations. Essential components like base stations, antennas, routers, and industrial sensors are fundamental to supporting ultra-fast, low-latency communication within production facilities. These elements allow machines, robots, and IoT systems to interact seamlessly, driving efficiency and precision. With the rising focus on automation and

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Industry 4.0, demand for robust hardware solutions continues to increase. By acting as the foundation for integrating smart technologies, the hardware segment plays a dominant role in advancing next-generation connected manufacturing ecosystems.

The AI/ML integration segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the AI/ML integration segment is predicted to witness the highest growth rate. Leveraging 5G's high bandwidth and ultra-low latency, AI and machine learning can rapidly analyze continuous streams of industrial data, delivering actionable insights. This supports predictive analytics, efficient quality control, and agile decision-making across production systems. By reducing downtime and improving accuracy, AI/ML significantly boosts productivity and flexibility in smart factories. Its applications extend to optimizing supply chains, managing energy use, and automating complex processes. The powerful combination of 5G connectivity with AI/ML ensures this segment experiences the strongest future expansion.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, driven by its strong digital infrastructure and early adoption of advanced technologies. The region has been at the forefront of 5G rollout, enabling industries to adopt smart factory practices quickly. Companies in sectors like automotive, aerospace, and electronics utilize 5G-powered systems for automation, real-time monitoring, and efficiency improvements. Significant investments, combined with favorable policies promoting industrial modernization, further boost growth. Additionally, partnerships between tech providers and manufacturers accelerate large-scale deployments. With a well-established innovation ecosystem, North America secures the largest market share in connected manufacturing solutions globally.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR. Strong industrial expansion, coupled with accelerated adoption of smart technologies, is driving this momentum. Nations such as China, Japan, South Korea, and India are prioritizing investments in 5G networks and automation initiatives. Government-backed programs to promote Industry 4.0, along with the presence of leading automotive and electronics manufacturing bases, enhance growth prospects. Additionally, affordable labor, rapid technological development, and large-scale

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industrial modernization support adoption. As a result, Asia-Pacific represents the region with the highest growth rate, reshaping future manufacturing through 5G-enabled solutions.

Key players in the market

Some of the key players in 5G and Connectivity in Automated Manufacturing Market include Siemens, Nokia, Beijer Electronics, Korenix, Qualcomm, Bosch Rexroth, Samsung, NEC, Wipro, Schneider Electric, Capgemini, Celona, Phoenix Contact, SANY Renewable Energy and Weidm?ller.

Key Developments:

In September 2025, Nokia and Kongsberg Defence & Aerospace announced the signing of a memorandum of understanding (MoU) to collaborate on enhancing tactical communications solutions for the defense sector. The agreement brings together KONGSBERG's expertise in military tactical communications and Nokia's leadership in commercial 4G, 5G, and private wireless technologies to deliver secure, resilient, and high-performance networks for defense organizations and allied nations.

In June 2025, Siemens Mobility and Swiss BLS Netz AG have agreed on a joint, long-term framework agreement worth €110 million. The contract includes modernization of the existing control and safety technology to meet the latest European Train Control System standard. Siemens Mobility will supply state-of-the-art safety systems for cab signaling as well as train control technology.

In May 2025, Qualcomm Technologies, Inc. and Xiaomi Corporation are celebrating 15 years of collaboration and have executed a multi-year agreement. The relationship between Qualcomm Technologies and Xiaomi has been pivotal in driving innovation across the technology industry and the companies are committed to delivering industry-leading products and solutions across various device categories globally.

Components Covered:

- Hardware
- Software
- Services

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Deployment Types Covered:

- Public 5G Networks
- Private 5G Networks
- Hybrid Networks

Enterprise Sizes Covered:

- Large Enterprises
- Small & Medium Enterprises (SMEs)

Connectivity Types Covered:

- Massive IoT
- Critical IoT
- Industrial Automation IoT
- Broadcast IoT

Technology Integrations Covered:

- Edge Computing
- AI/ML Integration
- AR/VR Applications
- Digital Twin Systems

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End Users Covered:

- Automotive
- Electronics
- Pharmaceuticals
- Food & Beverage
- Heavy Machinery
- Textiles & Apparel
- Logistics & Warehousing

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain

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- Rest of Europe
- Asia Pacific
  - Japan
  - China
  - India
  - Australia
  - New Zealand
  - South Korea
  - Rest of Asia Pacific
- South America
  - Argentina
  - Brazil
  - Chile
  - Rest of South America
- Middle East & Africa
  - Saudi Arabia
  - UAE
  - Qatar
  - South Africa
  - Rest of Middle East & Africa

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What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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