

Cellular Modem Market by Type (Embedded Cellular Modem, and Box Portable Cellular Modem), Technology (2G,3G,4G,5G, NB-IoT, and LTE-M), Vertical (Agriculture, Automotive & Transportation, Smart Cities, and Healthcare), Region - Global Forecast to 2028

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Abstracts

The cellular modem market is valued at USD 4.8 billion in 2023 and is anticipated to be USD 12.4 billion by 2028, growing at a CAGR of 20.6% from 2023 to 2028. Factors such as Strong preference for e-learning and online education, and Rapid evolution and adoption of advanced wireless technologies are likely to drive market growth during the forecast period. Cellular modems enhance the interactivity of online education. They enable real-time engagement between students and teachers through virtual classrooms, facilitating live discussions, collaborative projects, and interactive learning sessions.

High demand for smart home devices

The surge in smart home device adoption marks a significant shift in how people interact with their living spaces. Smart thermostats, security cameras, and voice assistants have become integral parts of modern homes, offering convenience, security, and energy efficiency. However, the effectiveness of these devices heavily relies on seamless connectivity. Cellular modems play a pivotal role in this context by ensuring constant and reliable internet access for smart home gadgets. Unlike traditional wired connections, cellular modems allow homeowners to control and monitor their smart devices remotely, regardless of their location. This level of accessibility empowers users to adjust their home environment, monitor security cameras, and manage energy



usage, all through intuitive smartphone apps. As more consumers recognize the benefits of smart home technology, the demand for cellular modems tailored to these applications continues to rise, ensuring that the connected living experience remains uninterrupted and effortless.

Furthermore, smart home devices' efficiency and ease of use have created a snowball effect, driving further adoption. With the rise of remote work and the growing emphasis on energy conservation, consumers increasingly seek interconnected solutions that enhance their quality of life. Smart thermostats, for instance, allow precise control over heating and cooling systems, optimizing energy usage and reducing utility bills. Security cameras equipped with cellular connectivity offer real-time monitoring, enhancing home security and providing peace of mind to homeowners. Voice assistants, powered by robust internet connections, facilitate seamless integration with other smart devices, enabling voice-controlled automation and making everyday tasks more convenient. As these devices become indispensable in modern households, the demand for reliable and efficient cellular modems grows, ensuring that smart homes function seamlessly, delivering on the promise of a connected, intelligent living environment.

Indispensable need for edge computing in IoT

The emergence of edge computing signifies a paradigm shift in how data is processed and analyzed. Unlike traditional cloud-based processing, where data is sent to centralized servers for analysis, edge computing processes data closer to the source, often right where it is generated. This approach reduces latency significantly, as data does not have to travel back and forth to distant data centers. Instead, it is processed locally, enabling real-time decision-making. This real-time capability is crucial in various industries. For instance, edge computing powered by cellular modems allows machines on the factory floor to analyze data instantaneously in manufacturing. This means manufacturing equipment can identify and rectify issues on the spot, enhancing production efficiency and minimizing downtime. Similarly, wearable devices and medical equipment in healthcare can process patient data at the edge, ensuring timely and accurate responses. By leveraging cellular modems, these devices can transmit this critical information swiftly and reliably, allowing healthcare professionals to make informed decisions promptly.

Moreover, the adoption of edge computing reshapes how businesses handle massive volumes of data generated by IoT devices. These devices, ranging from smart building sensors to industrial plant machinery, generate continuous data streams. By utilizing cellular modems to connect these devices in an edge computing setup, businesses can



analyze this data locally, extract actionable insights, and transmit only relevant information to central databases. This not only conserves bandwidth but also optimizes data processing resources. The efficiency gained by processing data at the edge, coupled with the reliable connectivity provided by cellular modems, empowers industries to harness the full potential of IoT applications, ensuring enhanced operational efficiency and improved decision-making capabilities.

"Asia Pacific is the fastest-growing region in the cellular modem market."

The Asia Pacific cellular modem market is expected to witness highest CAGR during the forecast The Asia Pacific region is a dynamic and rapidly growing market for cellular modems. Several factors drive this growth, including the increasing adoption of connected devices and applications, the expansion of mobile networks, and the growing demand for reliable and secure connectivity in various industries. China is the leader in IoT connection, with over 70% of global mobile IoT connections. The country has established NB-IoT, 4G, and 5G networks and continues to improve network coverage capabilities. By the end of September 2022, China had 1.75 billion mobile IoT connections, supported by a robust network infrastructure of 755,000 NB-IoT base stations, 5.937 million 4G base stations, and more than 2.3 million 5G base stations. The increasing adoption NB-IoT, 4G, and 5G networks drives the growth of the cellular modem market.

The breakup of primaries conducted during the study is depicted below:

By Company Type: Tier 1 - 40 %, Tier 2 - 35%, and Tier 3 - 25%

By Designation: C-Level Executives – 40%, Directors – 35%, and Others – 25%

By Region: North America – 30%, Europe – 20%, Asia Pacific – 45%, Rest of world – 5%

Research Coverage

The report segments the cellular modem market and forecasts its size, by value and volume, based on region (North America, Europe, Asia Pacific, and RoW), Type (Embedded Cellular Modem and Box Portable Cellular Modem), Technology (2G, 3G, 4G, LTE-M, NB-IoT, and 5G), and Vertical (Agriculture, automotive & transportation, building automation, consumer electronics, energy & utility, healthcare,



industrial/manufacturing, retail, smart cities, and others). The report also comprehensively reviews market drivers, restraints, opportunities, and challenges in the cellular modem market. The report also covers qualitative aspects in addition to the quantitative aspects of these markets.

Reason to Buy Report

The report will help the market leaders/new entrants with information on the closest approximations of the revenue numbers for the overall cellular modem market and the subsegments. This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies. The report also helps stakeholders understand the market pulse and provides information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers:

Analysis of key drivers (Strong preference for e-learning and online education, and Increased need for advanced connectivity solutions in Industry 4.0 era), restraints (Interoperability issues within cellular networks, and Security and privacy concerns in data-driven environment), opportunities (Growing trend of digital payments in FinTech sector, and Increasing adoption of telemedicine and remote healthcare services), and challenges (Hampered performance in adverse weather conditions, and Limited coverage of cellular networks in remote or rural areas)

Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the cellular modern market.

Market Development: Comprehensive information about lucrative markets – the report analyses the cellular modem market across varied regions.

Market Diversification: Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the cellular modem market

Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players Digi International Inc. (US), Sierra Wireless (Canada), Qualcomm Technologies, Inc. (US), and D-Link



Corporation. (Taiwan); and Huawei Device Co., Ltd. (China), among others in the cellular modem market



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