

5G in Aviation - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

Market Report | 2024-02-17 | 120 pages | Mordor Intelligence

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Report description:

The 5G Market in Aviation Industry is expected to grow from USD 7.80 billion in 2024 to USD 10.67 billion by 2029, at a CAGR of 6.49% during the forecast period (2024-2029).

The growing air passenger traffic, increasing application of connected technologies such as IoT in the aviation sector, and growing need for fast internet connectivity and better flight experience service are some of the factors driving the 5G market in aviation.

Key Highlights

- 5G technology is one of the most invested technologies by many end-user industries in the global market. In the aviation industry, 5G is witnessing significant growth owing to a rise in passenger footfall, leading to a substantial rise in demand for more bandwidth and faster speed from passengers. Airline companies and other airport stakeholders are also seeking fast, seamless, and secure connectivity experiences for their essential technologies to enhance the passenger experience.
- The adoption of IoT is increasingly becoming part of the global digitalization trend in the aviation industry. The IoT network in such facilities requires a high-speed communication network, thus significantly boosting the demand for 5G in the aviation sector. For example, Schiphol in the Netherlands has about 70,000 sensors collecting real-time information on the performance of elevators and walkways. Wearables can also be used in an airport to drive efficiency. The Cincinnati/Northern Kentucky International Airport improved facility management using a solution that combines mobile devices, smart sensors, and a cellular network.
- Various industry associations are also further helping adopt the technology in the industry; one of the primary focuses currently is offering a better in-flight connected experience for customers. The Seamless Air Alliance has been formed by OneWeb (a global communications company), Airtel (an Indian Mobile Network Operator), GoGo (a company that works with airlines on in-flight

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broadband systems), and Sprint (a telecommunications company that delivers wireless services and is an internet service provider (ISP)); whereas the composition of the coalition is completed by Airbus and Delta Airlines.

-5G connected Artificial Intelligence (AI) is expected to solve major pain points at airports, border checking, and other facilities in the industry. For instance, the technology can help match passengers to their bags as AI will be able to recognize unique scuff marks, creases, and material characteristics to distinguish between seemingly identical bags and match them to the correct passenger.

-Automating the airports and various facilities in such premises is increasingly becoming a reality due to higher communication speeds enabled by the 5G technology. Coupled with various advanced technologies such as AI and IoT, the 5G technology has made significant strides in aviation over the past few years. However, challenges such as 5G service could interfere with airplane altimeters, and safety issues in the aviation sector with 5G implementation may hamper the growth of the market.

-The COVID-19 pandemic resulted in a historical shift in the aviation industry while introducing new airport stakeholders' challenges. Public health measures raised amid the pandemic scenario worsened the bottlenecks in ground operations processes, adding up to the challenges that were already present in the pre-COVID era. However, new technologies, such as the deployment of 5G, offer ways to ease these operational constraints. The powerful features provided by a 5G network can also enable greater efficiency.

5G in Aviation Market Trends

Ground-to-Ground Communication type is Expected to Register a Significant Growth

- As 5G Use Cases are becoming increasingly well-articulated by the industry and the ultra-high reliability and low latency of 5G come into the picture, their presence in the aerospace sector will surely increase in the years to come. Moreover, airports worldwide are rapidly implementing 5G technology for effective ground-to-ground communication at airport premises.

- For instance, in September 2022, Delhi Airport launched its 5G infrastructure. The airport becomes the only 5G-enabled airport in India where passengers can use the advanced mobile service inside the terminal. The flyers arriving or departing from the runway can now experience the power of the 5th generation mobile network technology (5G).

- The growth of 5G broadband is expected to complement the existing 4G technology, using similar frequency bands but with higher data rates, greater reliability, and lower latency or lag. Further, carriers and device manufacturers can use frequency bands that have not been used in cellular communications but are commonly used in aerospace and radar applications.

- Also, the rise in passenger traffic is leading to an increase in demand for good internet connectivity in airports and connected aircraft. Hence airports across this region are boosting the growth of the ground-to-ground connectivity segment. For instance, according to the Federal Aviation Administration (FAA) forecast, the total number of air traffic passengers traveling to or from the United States is expected to reach 178 million in 2022.

- Apart from technological innovation in the equipment used in the industry, the ground staff and airports are expected to see a significant change over the coming years due to 5G. With the growing proliferation of technology and smartphones, consumers are increasingly expecting digital engagement and personalized experiences in airports.

North America is Expected to Hold Significant Market Share

- The North American region is expected to hold a substantial market share due to the early adoption of advanced technologies, increasing air traffic coupled with rising investments in connected aircraft and in-flight broadband, and the modernization of the aviation industry. Moreover, the presence of many prominent players in the North American region further augments the market's growth.

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- According to FAA, 5G signals use frequencies closer to the ones used by radio altimeters, which determine the aircraft's height from the ground and are critically important when flying in bad weather. As a result, the FAA found that these 5G signals could potentially cause the altimeters to issue incorrect flight data.
- Further, the agency intends to order passenger and cargo aircraft to install 5G-safe equipment on all airplanes by 2024. As a result, in June 2022, Verizon Communications and AT&T voluntarily agreed to delay some C-Band 5G usage until July 2023 as air carriers work to retrofit airplanes to ensure they will not face interference. This may impact the rollout of the 5G services in the region's aviation sector in the short term.
- However, the upsurge in airline passenger traffic, modernization in the region's aviation industry, and changes in passenger preferences are expected to drive the demand for high band-width, low latency, and densely connected networks for operational efficiency, thus positively impacting the market growth in the region. In addition, the high adoption of IoT in the United States is expected to spur the demand for 5G in Region's aviation sector.

5G in Aviation Industry Overview

The 5G market in aviation is moderately competitive and consists of several major and emerging players. In terms of market share, some of the major players currently dominate the market. However, with the advancement in the frequency band, thereby growing application in the aviation sector, new players are increasing their market presence, expanding their business footprint across emerging economies.

In October 2022, Banyan Air Service announced the beginning of provisioning aircraft in the southeastern United States for Gogo's forthcoming 5G service. These aircraft include a Bombardier Global 5000, Embraer Legacy 600, Gulfstream G550, and numerous other business aircraft. Gogo 5G is expected to deliver around 25 Mbps average speed, with peak speeds up to 80 Mbps.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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