

Japan's 6G Market Booming: \$2.26B by 2032, Key Drivers Include Terahertz, AI, IoT & XR Growth | DataM Intelligence

Japan's 6G market is booming with a projected \$2.26B value by 2032 at 28.76% CAGR, driven by THz tech, AI networks, immersive XR.

SETAGAYA, TOKYO, JAPAN, July 28, 2025 /EINPresswire.com/ -- [Japan 6G Market](#) is expected to reach US\$ 2.26 billion by 2032, growing with a CAGR of 28.76% during the forecast period 2025-2032. Advancements in terahertz communications and AI-driven networks are driving Japan's rapid 6G market development.



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Key Drivers:



Japan's 6G market will reach \$2.26B by 2032, growing at a 28.76% CAGR, driven by breakthroughs in terahertz comms, AI networks, and major investments from government and industry partners."

DataM Intelligence

Government and industry investments

Demand for ultra-fast, reliable connectivity

Expansion of IoT and smart devices

Growth of immersive tech such as XR and AR/VR

Recent News and Developments

1. Pioneering Field Trials: SoftBank & Nokia

Outdoor 6G Trials Begin: In June and July 2025, SoftBank, partnering with Nokia, became the first

telecom operator in Japan to launch outdoor field trials for 6G using the 7GHz band in central Tokyo's Ginza district. This marks a significant step toward practical 6G deployment.

Technical Details:

Frequency: 7,180–7,280MHz (part of the “FR3” band), identified as a strong candidate for global 6G standardization.

Setup: Three pre-commercial base stations deployed, with Massive MIMO technology to maximize urban coverage.

Goal: Compare the coverage, speed, and radio characteristics of the 7GHz band to existing 5G Sub-6 infrastructure and validate both indoor and outdoor communication performance in dense city areas.

Industry Impact: Success of these trials could establish Japan's 7GHz band as a core international 6G frequency and significantly improve urban connectivity.

2. Global Collaborations & Standards Leadership

North America–Japan 6G Ecosystem Partnership: In June 2025, the Next G Alliance (NGA, US/Canada) and Japan's XG Mobile Promotion Forum (XGMF) signed an MoU to accelerate joint initiatives in 6G research, industrial applications, and standard harmonization. The partnership seeks to bring 6G innovations to market more rapidly while aligning global technical standards.

Focus: Strategic alignment on research, use case exploration (especially industrial communications), and sharing insights to push the international 6G roadmap.

3. Technology Milestones

Record Internet Speed: In July 2025, Japanese researchers set a new world record for internet speed, transmitting over 125,000GB per second via advanced fiber optics. This technology showcases the ultra-high-speed backbone that will underpin future 6G infrastructure and demonstrates Japan's capability in next-generation communications hardware.

Advanced Microchip Research: Japan continues to focus on developing microchips for high-frequency (THz and cmWave) transmissions, critical for future 6G devices and network efficiency.

4. International R&D Partnerships

Japan-India 6G Tests: Japanese firm SSIC, in collaboration with IIT Hyderabad and WiSig Networks, successfully tested new software-defined radio (SDR) chips supporting 5G and 6G wireless technologies. The trials validated interoperability and performance, setting the stage for applications like autonomous vehicles, mission-critical communications, and smart metering by 2026.

Purpose: Advance flexible hardware and accelerate real-world deployment scenarios for 6G.

5. Government and Industry Events

EU-Japan Digital Week (March 2025): Brought together stakeholders to focus on 6G as a strategic area for shared R&D and digital policy priorities.

Ongoing Investment: Japanese government and private sector remain highly committed to 6G, with funding aimed at maintaining a global leadership role.

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Technological Advancements

Core Technologies

Terahertz (THz) Communication: Japan is pioneering use of THz bands (0.1–10THz) which allow ultra-fast wireless data transmission, necessary for bandwidth-intensive applications like holographic communication.

Advanced Semiconductors & Antennas: Fujitsu and NEC, in collaboration with NTT and DOCOMO, have developed semiconductors and multi-element phased-array antennas to enable efficient communication in high-frequency bands, supporting up to 100Gbps per 100m.

AI and Edge Computing Integration: AI-driven self-improving networks will optimize connectivity, automate management, and support intelligent applications. Edge computing is being developed alongside 6G's fiber-optic backbone.

Reconfigurable Intelligent Surfaces (RIS) and Quantum Communication: 6G R&D explores programmable surfaces to enhance signal quality and experiments with quantum key distribution for security.

Integrated Sensing and Communication: 6G networks embed sensing with communication to enable real-time environmental awareness for autonomous systems and public safety.

Japan 6G Market Key players are:

NTT DoCoMo

Nokia

Ericsson

Huawei

Samsung

LG

Qualcomm
AT&T
Orange
Apple Inc.

Segment Covered in the Japan 6G Market:

By Devices: Mobile Devices, IoT and Edge Computing Devices, Others

By Communication Infrastructure: Fixed, Wireless, Application, Telecommunications, Liquid, Healthcare, Manufacturing, Automotive, Energy, Defense and Aerospace, Retail, Entertainment, Agriculture, Education, Others

By End-User: Consumer, Enterprises (Small, Medium and Large), Government, Industrial

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Network and Application Landscape

Ultra-Low Latency: 6G aims for 0.1ms latency vital for mission-critical applications like autonomous vehicles, telemedicine, and remote control operations.

Connection Density: Up to 10 million connected devices per square kilometer, critical for Internet of Everything (IoE) and smart city scenarios.

Data Speeds: Aspiring for 100x the speed of 5G, with future infrastructure demonstrating lab speeds of over 1 million Gbps via new optical fiber and multi-core technologies. Recent tests sustained petabit-level speed over 51.7km.

Security: 6G is being designed with quantum-safe encryption and resilient architecture to defend against a new class of cyberthreats.

Commercialization Roadmap

Research & Testing: System prototyping and field trials are ongoing. Field experiments verify usability of sub-THz bands and beamforming, critical for Japan's dense urban environments.

Pilot Deployments: By late 2020s, early use cases in smart manufacturing, mobility, and urban tech will be piloted.

Full-scale Rollout: 6G commercial services are targeted for 2030–2032, aligning with global standardization cycles and Japan's ambition to lead international 6G adoption.

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DataM Intelligence 4Market Research

+1 877-441-4866

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