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Japan Local 5G Market: 2026 – 2030

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Abstracts

Japan is home to several small, medium and large-scale private cellular network installations deployed using 3GPP equipment operating in frequencies extending from sub-1 GHz and mid-band spectrum to the mmWave (Millimeter Wave) range. Of particular note are private 5G networks operating in the country's designated locally licensed frequency bands – domestically referred to as local 5G (????5G) networks – which are progressively being implemented across a diverse range of use cases, including AGV (Automated Guided Vehicle) and AMR (Autonomous Mobile Robot) communications, machine vision-based quality inspection, predictive maintenance using digital twins, remote control of heavy construction machinery, telepresence and service robots, live broadcast production, self-driving buses, drones for aerial surveillance, image analytics for Wagyu beef farming, AI-enabled bear warning systems and multi-modal disaster preparedness, a national priority.

Following an unrelenting succession of so-called demonstration experiments since the early 2020s, the local 5G market is finally entering an accelerated growth phase with operational deployments of both Band n79 (4.6-4.9 GHz) and Band n257 (28.2-29.1 GHz) networks expected to increase significantly as end user organizations recognize the technology’s readiness for practical purposes. For instance, Port of Osaka’s Yumeshima Container Terminal has replaced manual pen-and-paper processing using local 5G-connected terminals, visual inspection cameras and an AI-based identification system; Hiroshima Gas is introducing unmanned robots over local 5G to detect leakage and temperature abnormalities at its gas production plants; NEC Corporation is using local 5G networks to provide reliable wireless connectivity for autonomous transport systems within its manufacturing facilities; and Ricoh is leveraging a local 5G network at its Tohoku Plant to enable remote tours of the factory floor using real-time 4K video footage from 360-degree cameras, worker safety and behavior monitoring, VR education using a digital twin of the entire workspace and physical AI model training for hand movements, in anticipation of future collaborative assembly operations alongside

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humanoid robots.

Examples of other prominent end user organizations that are adopting local 5G networks include but are not limited to AGC, Denka, Fujitsu, Hanshin Electric Railway, Hazama Ando, Hibiki Seiki, Hitachi, Hokkaido Electric Power, Honda, J.League (Japan Professional Football League), JFE Steel, JRP (Japan Race Promotion), JSDF (Japan Self-Defense Forces), Kansai Electric Power, Kawasaki Heavy Industries, Kumagai Gumi, Kyodo Television, Kyushu Electric Power, League H (Japan Handball League), Mitsubishi Electric, Mitsui Fudosan, Mori Building Company, Narita International Airport, Nihonkaisui, Nippon Steel, Nishimatsu Construction, Nissan, Nisshinbo Brake, Obayashi Corporation, OKI Electric, Osaka Gas, Phoxter, Saga TV, Shimizu Port Authority, Subaru, Summit Steel, Takenaka Corporation, Tokyo Metropolitan University, Toyota, U-Next and WOWOW. Alongside new local 5G network deployments, vendors and domestic startups are pioneering new applications – telepresence avatar robots, physical AI processing in complex environments, Level 4 autonomous driving and multi-vendor robot orchestration in factories and warehouses – while tackling technical challenges such as 5G-TSN (Time-Sensitive Networking) integration and mmWave coverage expansion through AI-optimized glass substrate repeaters.

SNS Telecom & IT estimates that annual spending on local 5G networks in Japan will grow at a CAGR of approximately 55% between 2026 and 2030, cumulatively accounting for close to $1.1 billion by the end of 2030. Supported by an expanding ecosystem of domestic and foreign 5G equipment suppliers, system integrators and application technology partners, the market will encompass an increasingly diverse range of commercial deployments, from temporary systems for broadcasting, construction and disaster relief operations to industrial-grade networks supporting physical AI and digital transformation in factories, warehouses and ports.

The 'Japan Local 5G Market: 2026 – 2030' research package provides detailed market analysis and forecasts for private 5G networks on a global, regional and national basis, with particular emphasis on the Japanese local 5G market. The package includes the full edition of SNS Telecom & IT's global 'Private 5G Market: 2026 – 2030 – Opportunities, Challenges, Strategies & Forecasts' report and a datasheet with country-level local 5G market size forecasts for Japan.

Topics Covered & Forecast Segmentation

Report 1: Private 5G Market: 2026 – 2030 – Opportunities, Challenges, Strategies & Forecasts

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This report covers the following topics:

Introduction to private 5G networks

Value chain and ecosystem structure

Market drivers and challenges

System architecture and key elements of private 5G networks

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

Physical AI, industrial automation, critical communications broadband evolution and other themes shaping the adoption of private 5G networks

Enabling technologies and concepts, including 3GPP-defined URLLC, TSC, DetNet, MCX, SNPN and PNI-NPN, NR-U, RedCap/eRedCap, cellular IoT, high-precision positioning, ISAC, NTN access, IAB, network slicing, edge computing and network automation capabilities

Key trends such as the emergence of new classes of specialized private network operators, shared and local area spectrum licensing, private NaaS (Network-as-a-Service) offerings, IT/OT convergence, unified neutral host-private 5G solutions, Open RAN, vRAN and AI-RAN, agentic AI-driven network operations, rapidly deployable 5G systems for temporary coverage, satellite backhaul integration, direct-to-device connectivity, 5G-Advanced feature adoption and the incorporation of private 5G networks into the building plans of greenfield facilities

Analysis of vertical industries and application scenarios such as autonomous transport systems, collaborative mobile robots, reconfigurable wireless production lines, untethered AR/VR/MR, high-definition video transmission, machine vision, digital twins, predictive maintenance and mission-critical communications between personnel, drones, vehicles and operational systems

Future roadmap of private 5G networks

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Review of private 5G network installations worldwide, including 150 case studies spanning 16 verticals

Private cellular engagement database tracking more than 4,600 private 5G installations in over 90 countries

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

Spectrum tracking database covering more than 400 spectrum access routes for private 5G networks on a per-country basis

Standardization, regulatory and collaborative initiatives

Profiles and strategies of more than 1,900 ecosystem players

Strategic recommendations for 5G equipment and enabling technology suppliers, system integrators, private network specialists, mobile operators and end user organizations

Market analysis and forecasts from 2026 to 2030, with historical data from 2023 to 2025

Datasheet 2: Local 5G Networks in Japan: 2026 – 2030 – Country-Level Market Size Forecasts

This datasheet provides local 5G market size forecasts for each of the following submarkets and their subcategories:

Infrastructure Submarkets

RAN (5G NR Radio Access Network)

Base Station RUs (Radio Units)

DUs/CUs (Distributed & Centralized Baseband Units)

Mobile Core (EPC & 5GC)

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- User Plane Functions
- Control Plane Functions
- Transport Network
  - Fiber & Wireline
  - Microwave
  - Satellite Communications

Cell Sizes

- Indoor
- Outdoor

Spectrum

- Sub-6 GHz
- mmWave (Millimeter Wave)

Vertical Industries

- Agriculture
- Aviation
- Broadcasting
- Construction
- Education

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Forestry

Healthcare

Manufacturing

Military

Mining

Oil & Gas

Ports & Maritime Transport

Public Safety

Railways

Utilities

Warehousing & Others

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