

# 5G Device Testing Equipment Market - Strategic Insights and Forecasts (2026-2031)

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## Abstracts

The global 5G Device Testing Equipment market is forecast to grow at a CAGR of 12.7%, reaching USD 2.0 billion in 2031 from USD 1.1 billion in 2026.

The global 5G device testing equipment market is gaining strategic importance as 5G network deployments accelerate across both developed and emerging economies. Testing equipment forms a critical layer of quality assurance, ensuring that 5G-enabled devices, base stations, and infrastructure components meet performance, interoperability, and compliance standards. With the expansion of 5G into industries such as automotive, healthcare, industrial IoT, and smart cities, demand for specialized testing solutions is broadening well beyond traditional telecom applications. This widening use case landscape, combined with rapid infrastructure scaling, positions the market for sustained double-digit growth through 2031.

### Market Drivers

The primary growth driver is the global expansion of 5G infrastructure. As telecom operators and equipment manufacturers deploy 5G networks at scale, testing becomes a mandatory step in the deployment lifecycle. Devices and base stations must be validated for signal integrity, bandwidth performance, protocol compliance, and interoperability before commercial rollout. The adoption of 3GPP Release-17 standards, which includes 5G Reduced Capability specifications, has introduced new testing requirements, as demonstrated by Keysight Technologies and MediaTek completing joint interoperability testing in November 2023.

The proliferation of IoT and connected devices further amplifies market demand. As 5G serves as the backbone for machine-to-machine communication and smart

infrastructure, the volume and complexity of devices requiring conformance testing increases substantially. Additionally, organizations are increasingly opting for equipment rental over outright purchase, reducing upfront capital exposure and enabling access to the latest testing tools. This rental model is expanding the addressable market to a broader range of enterprise clients and smaller operators.

### Market Restraints

High capital investment requirements for advanced testing infrastructure remain a significant barrier, particularly for smaller telecom operators and device manufacturers. The complexity of 5G device testing, which spans sub-6 GHz and mmWave frequency ranges, requires a broader portfolio of specialized instruments compared to previous generations. This technical complexity translates into higher procurement costs and a steeper learning curve for testing teams. In developing markets, limited availability of skilled testing personnel and slower 5G rollout timelines may temper near-term demand growth.

### Technology and Segment Insights

The market is segmented by equipment type into spectrum analyzers, signal generators, oscilloscopes, network analyzers, and RF channel emulators, among others. Spectrum analyzers hold a significant revenue share, valued for their ability to measure signal amplitude and frequency-range performance quickly and accurately. Network analyzers are projected to register among the highest CAGRs, driven by the increasing need to assess signal integrity, interference, and overall network health in complex 5G environments. RF channel emulators are also emerging as a fast-growing subsegment, enabling simulation of real-world fading and MIMO conditions to replace costly drive-testing.

By end user, telecom equipment manufacturers account for the dominant share, as gNodeBs, remote radio units, and consumer premises equipment all require exhaustive pre-deployment validation. Telecom service providers represent the fastest-growing end-user segment, as operators invest in performance monitoring and network optimization tools to maintain service quality at scale. Geographically, North America leads in revenue contribution, driven by mature 5G deployments and significant R&D activity. Asia Pacific is forecast to register the highest CAGR, propelled by large-scale government-backed 5G initiatives in China, South Korea, and Japan, and the region's dense concentration of device manufacturers and original equipment manufacturers.

## Competitive and Strategic Outlook

The competitive landscape is led by companies including Anritsu, Keysight Technologies, Rohde & Schwarz GmbH & Co. KG, and Teradyne. These players are investing in product development aligned with evolving 5G standards, including Open RAN compatibility and Non-Terrestrial Network validation. In February 2024, Artiza Networks launched its FH MONITOR platform, a high-performance fronthaul packet capture and analysis tool designed to simplify debugging of Open Radio Unit systems. Such targeted product launches indicate that vendors are moving toward application-specific testing solutions rather than general-purpose instruments. Strategic partnerships between chipset manufacturers and testing equipment providers are also intensifying, reflecting the growing technical interdependence between device development and validation workflows.

## Key Takeaways

The 5G device testing equipment market is on a strong growth trajectory underpinned by expanding 5G deployments, evolving standards, and the growing complexity of connected device ecosystems. As 5G penetrates new verticals and mmWave adoption accelerates, testing requirements will grow in both volume and sophistication. Stakeholders that invest early in advanced, standards-compliant testing capabilities will be well positioned to capture value across the full 5G device commercialization lifecycle.

## Key Benefits of this Report

**Insightful Analysis:** Gain detailed market insights across regions, customer segments, policies, socio-economic factors, consumer preferences, and industry verticals.

**Competitive Landscape:** Understand strategic moves by key players to identify optimal market entry approaches.

**Market Drivers and Future Trends:** Assess major growth forces and emerging developments shaping the market.

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Growth opportunities, challenges, supply chain outlook, regulatory framework, and trend analysis

Competitive positioning, strategies, and market share evaluation

Revenue growth and forecast assessment across segments and regions

Company profiling including strategies, products, financials, and key developments

## Contents

### **1. INTRODUCTION**

- 1.1. Market Overview
- 1.2. Market Definition
- 1.3. Market Segmentation

### **2. RESEARCH METHODOLOGY**

- 2.1. Research Data
- 2.2. Assumptions

### **3. EXECUTIVE SUMMARY**

- 3.1. Research Highlights

### **4. MARKET DYNAMICS**

- 4.1. Market Drivers
- 4.2. Market Restraints
- 4.3. Bandwidth Availability
- 4.4. Number of Users

### **5. GOVERNMENT REGULATIONS/POLICIES**

### **6. 5G DEVICE TESTING EQUIPMENT MARKET, BY EQUIPMENT TYPE**

- 6.1. Introduction
- 6.2. Oscilloscopes
- 6.3. Signal & Spectrum Analysers
- 6.4. Signal Generators
- 6.5. Network Analysers
- 6.6. Others

### **7. 5G DEVICE TESTING EQUIPMENT MARKET, BY END-USER**

- 7.1. Introduction
- 7.2. Telecom Equipment Manufacturers

### 7.3. ODMs/OEMs

## **8. 5G DEVICE TESTING EQUIPMENT MARKET, BY GEOGRAPHY**

### 8.1. Introduction

### 8.2. Americas

#### 8.2.1. United States

#### 8.2.2. Others

### 8.3. Europe, Middle East and Africa

#### 8.3.1. Germany

#### 8.3.2. UK

#### 8.3.3. Others

### 8.4. Asia Pacific

#### 8.4.1. China

#### 8.4.2. Japan

#### 8.4.3. South Korea

#### 8.4.4. Others

## **9. RECENT DEVELOPMENT AND INVESTMENTS**

## **10. COMPETITIVE ENVIRONMENT AND ANALYSIS**

### 10.1. Major Players and Strategy Analysis

### 10.2. Market Share Analysis

## **11. COMPANY PROFILES**

### 11.1. Anritsu

### 11.2. Keysight Technologies

### 11.3. Rohde & Schwarz GmbH & Co. KG

### 11.4. Intertek Group plc

### 11.5. HARMAN International

### 11.6. Spirent Communications

### 11.7. Teradyne, Inc.

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