

Ensuring Reliability in Wide-Area Radio Communications

From Field RF Testing to Cloud Network Evaluation — Complete Communication Test Support

Target Application Examples

Autonomous driving/remote operation, drone operations, public safety communications, railway communications, infrastructure monitoring, industrial IoT

Target Products

Handheld Spectrum Analyzer MS2090A, Radio Quality Evaluation Smartphone App viSer Neo+, IP Tester MT1000A, Cloud-Based IP Tester MX109030PC/31PC

1. Era of Reliable Radio Communications

[Connectivity determines safety assurance and business continuity]

In recent years, radio communications have expanded beyond smartphone services into areas where connectivity directly affects safety and business continuity. For this reason, being able to connect reliably when needed is essential.

- Remote monitoring of autonomous vehicles
- Beyond-visual-line-of-sight drone flight
- Police, fire and emergency communications
- Railway and infrastructure monitoring

2. Risks From Insufficient Evaluation and Testing

[Connectivity problems found after deployment]

The following types of problems can occur in high-reliability connections:

- Variable connectivity by area
- Connection interruption during handover
- Performance degradation at congestion
- Unexpected failures during system integration

These problems can lead to impacts such as:

- Autonomous driving service outage
- Drone operation interruption
- Business system shutdown
- Service quality degradation
- Loss of trust and risk of liability

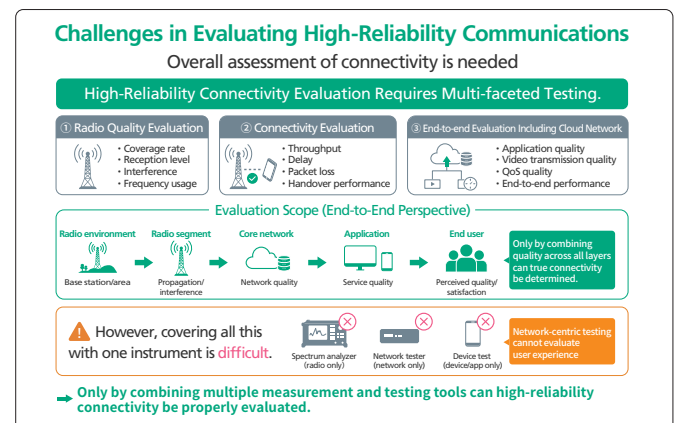
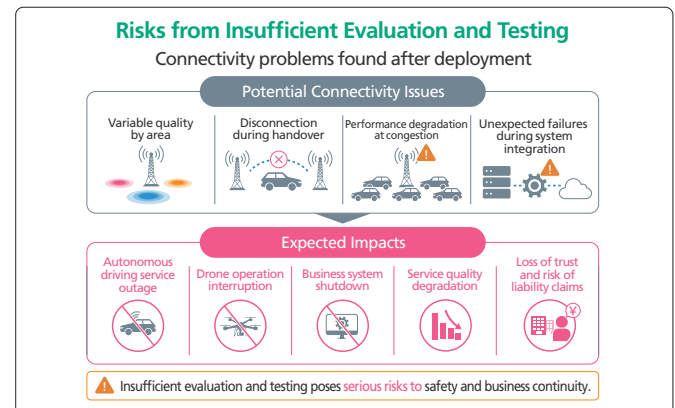
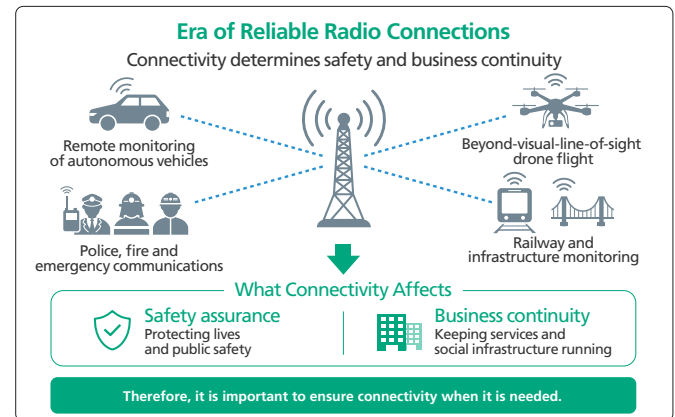
3. Challenges in Evaluating High-Reliability Connections

[Need for a comprehensive evaluation of connectivity]

High-reliability connection evaluation requires multi-layered verification.

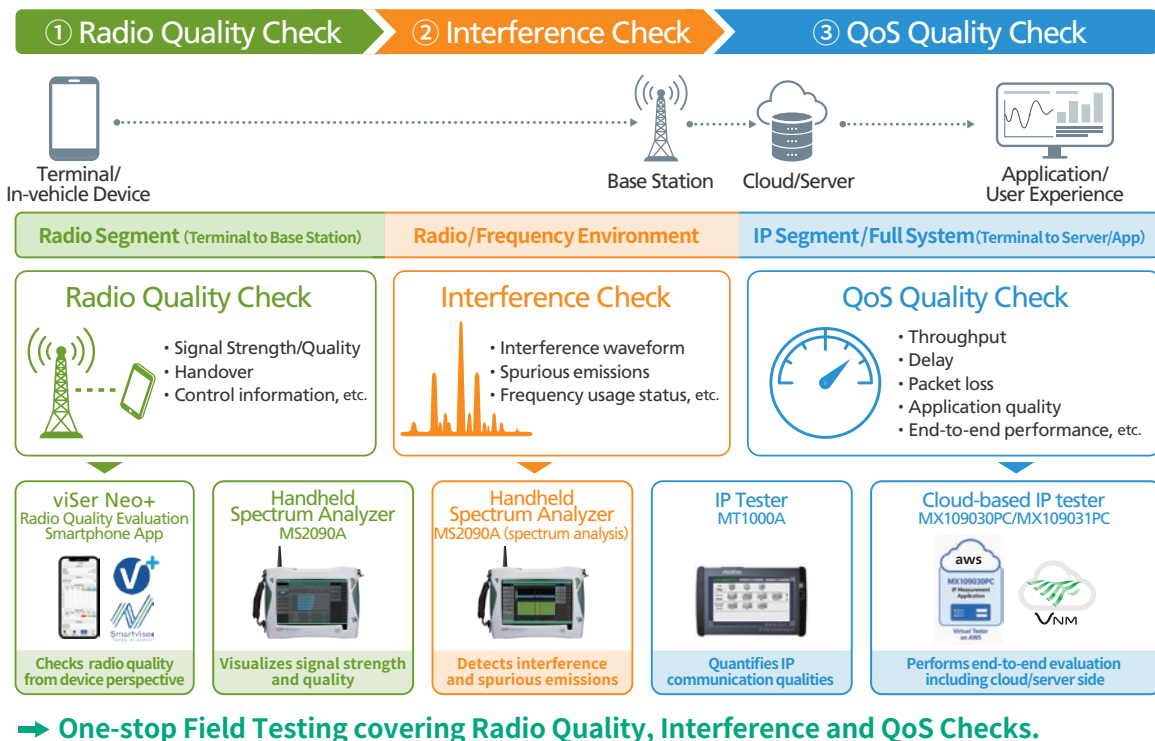
- Radio quality evaluation
 - > Coverage rate
 - > Reception level
 - > Interference
 - > Frequency usage
- Connectivity evaluation
 - > Throughput
 - > Delay
 - > Packet loss
 - > Handover performance
- End-to-end evaluation including cloud network
 - > Application quality
 - > Video transmission quality
 - > QoS quality
 - > End-to-end performance

However, covering all this with one instrument is difficult.



4. The Role of Each Measurement Instrument

Three Key Checks in Field Testing



5. Evaluation and Testing System Setup

