Mobile Network Testing

SMARTBENCHMARKER

Benchmarking tests
made easier

Product Brochure
Version 06.00

ROHDE & SCHWARZ

Make ideas real

AT A GLANCE

Benchmarking tests made easier

In the fast-paced and highly competitive world of mobile network operators and service providers, performing regular benchmarking tests is an indispensable investment in the future. To make smart decisions about future expansions and deployments, it is essential to have reliable and reproducible network performance data – for your own network as well as your competitors' networks.

With SmartBenchmarker, mobile network operators and service providers can perform accurate and advanced benchmarking tests that are in line with the latest standards and methodologies while also reducing CAPEX and OPEX.

SmartBenchmarker is a software platform from Rohde&Schwarz mobile network testing (MNT) for benchmarking tests. It allows seamless configuration, execution and monitoring of benchmarking test campaigns. SmartBenchmarker is built on state-of-the-art technology; users can control benchmarking tests either locally or remotely from the office.

Optionally, any SmartBenchmarker system can be remotely monitored or even controlled by SmartMonitor. This approach boosts flexibility for operators and service providers when conducting drive tests. SmartBenchmarker's advanced monitoring and alert functions also reduce the risk of expensive redrives.

SmartBenchmarker is perfectly adaptable to user needs. Users only pay for what they need when they need it.

KEY FACTS

► Flexible and customizable web interface that facilitates configuration, execution and monitoring of benchmarking test campaigns

► Supports Benchmarke 3 including modules, the vehicle roof box (VRB) and test device containment module (TCM)

► Supports R&S®Freerider 4, the portable benchmarking system for walk tests

► Any SmartBenchmarker system can be remotely monitored and configured with SmartMonitor

► Modular concept for all benchmarking data collection use cases

► Supports all flavors of 5G NR, such as 5G non-standalone (NSA), 5G standalone (SA), FR1, FR2

► Integrated Network Performance score (NPS) campaign configurator

ONE FOR ALL

SmartBenchmarker

Drive test benchmarking

Benchmarker 3 (NCM4 + BM3-UPN) + VRB + TCM

Benchmarker 3 SMWL

Indoor/walk test benchmarking

R&S®Freerider 4

KEY USE CASES

Drive and walk test campaigns

SmartBenchmarker is designed to easily manage both large multichannel drive test setups and ad-hoc benchmarking campaigns. All tests are executed on the connected Android smartphones running the QualiPoc application. This approach delivers reliable and accurate results that reflect the real end-user QoE and the flexibility of measuring with equipment that supports state-of-the-art technology, including 5G NR.

SmartBenchmarker also fully supports walk tests for indoor measurement campaigns together with the R&S®Freerider 4. The flexible SmartBenchmarker concept means QualiPoc probes and scanners can be reused for walk test setups.

Drive and walk test campaigns on a Freerider 4 controlled by SmartBenchmarker

Remote controlled benchmarking drive test with advanced alerts and superior control functions

The flexible and adaptable SmartBenchmarker interface helps configure customized benchmarking dashboards to monitor ongoing tests at a glance.

Advanced alert and notification functions save time for SmartBenchmarker users since they can customize the collecting and processing of events and notifications and only need to actively monitor tests when prompted. As part of the Smart platform, SmartBenchmarker allows SmartMonitor users to remotely control one or multiple benchmarking systems.

For example, a system could have the Benchmarker 3 installed in a vehicle and a number of TCMs hosted inside the VRB on the vehicle roof. Test supervisors can have secure and encrypted connection for the remote monitoring of the system while managing the vehicle and monitoring multiple devices (smartphones and scanners).

Remote management of Benchmarking systems via SmartMonitor

KEY PRODUCT FEATURES

Advanced fleet management and remote control

SmartMonitor can be used to remotely control each SmartBenchmarker system or remotely monitor them via a secure connection. Smart alerts can also be sent to the remote SmartMonitor application. Users can customize collection and processing of events and choose how to inform test supervisors: SMS, email or SNMP traps. SmartMonitor also offers centralized campaign configuration and live monitoring – potentially for every smartphone in the field.
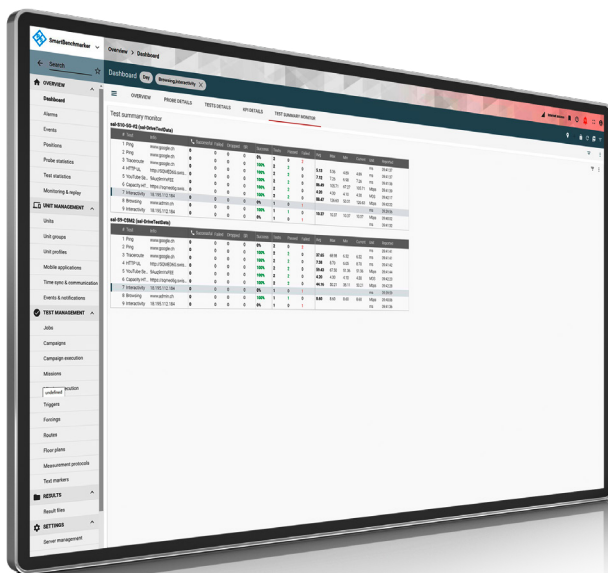
Fully integrated network performance score (NPS)

SmartBenchmarker supports a wide range of service tests for measuring voice and data quality. It also comes with a built-in configurator for network performance score (NPS) campaigns. This ETSI-approved scoring method efficiently calculates an overall score that reflects the perceived technical performance of a network or a subset, such as a

region, a period of time or a technology. With the built-in configurator, SmartBenchmarker allows users to create an NPS campaign from scratch in just a few clicks.

Supporting 5G NR

SmartBenchmarker supports 5G NR for both active and passive testing. 5G-capable QualiPoc probes offer a wide range of active tests, including the new interactivity test that has been especially designed for measuring new URLLC networks. The R&S®TSME6 ultracompact drive test scanners support passive measurements in FR1. And in combination with an R&S®TSMExxDC, measurements in FR2 are also possible.

Powerful overview about test success rate and KPI details

The KPI dashboard offers detailed insights to performed tests
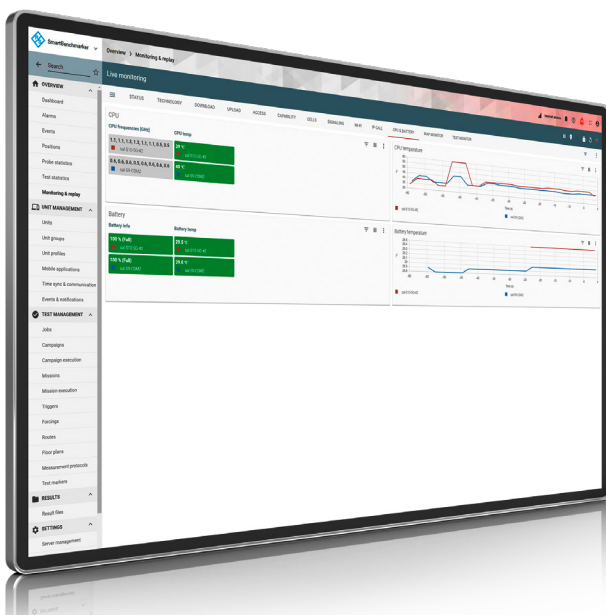
More value from test results

SmartBenchmarker tests are executed directly on smartphones and use the native software on the devices. The test results reflect true end-user behavior since SmartBenchmarker probes are based on commercially available device firmware and standard Android apps. SmartBenchmarker also supports and integrates high-end hardware modules such as the VRB and TCM. Combined, they comprise the leading solution for end-to-end assessment.

Indoor support

SmartBenchmarker is also ideal for walk tests when combined with the R&S®Freerider 4. SmartBenchmarker integrates iBwave project files for floor plans as well as pictures from the tablet camera. In indoor measurements, the position can be set with the tap of a finger.

Powerful and intuitive user interface

The SmartBenchmarker software allows users to seamlessly configure one or more systems to complete various advanced testing scenarios, such as establishing a voice call test between two independent systems located in two different vehicles and connected via a secure and encrypted connection. The intuitive and modern SmartBenchmarker graphical user interface makes for quick and efficient configuration of such complex tasks. A robust and automated pretest check boosts efficiency by preventing user and configuration errors and saving the time and effort of staff training.

The Live Monitoring overview offers in-depth information
(down to the bit level) for advanced users

KEY BENEFITS

Using SmartBenchmarker will reward you with long-term benefits.
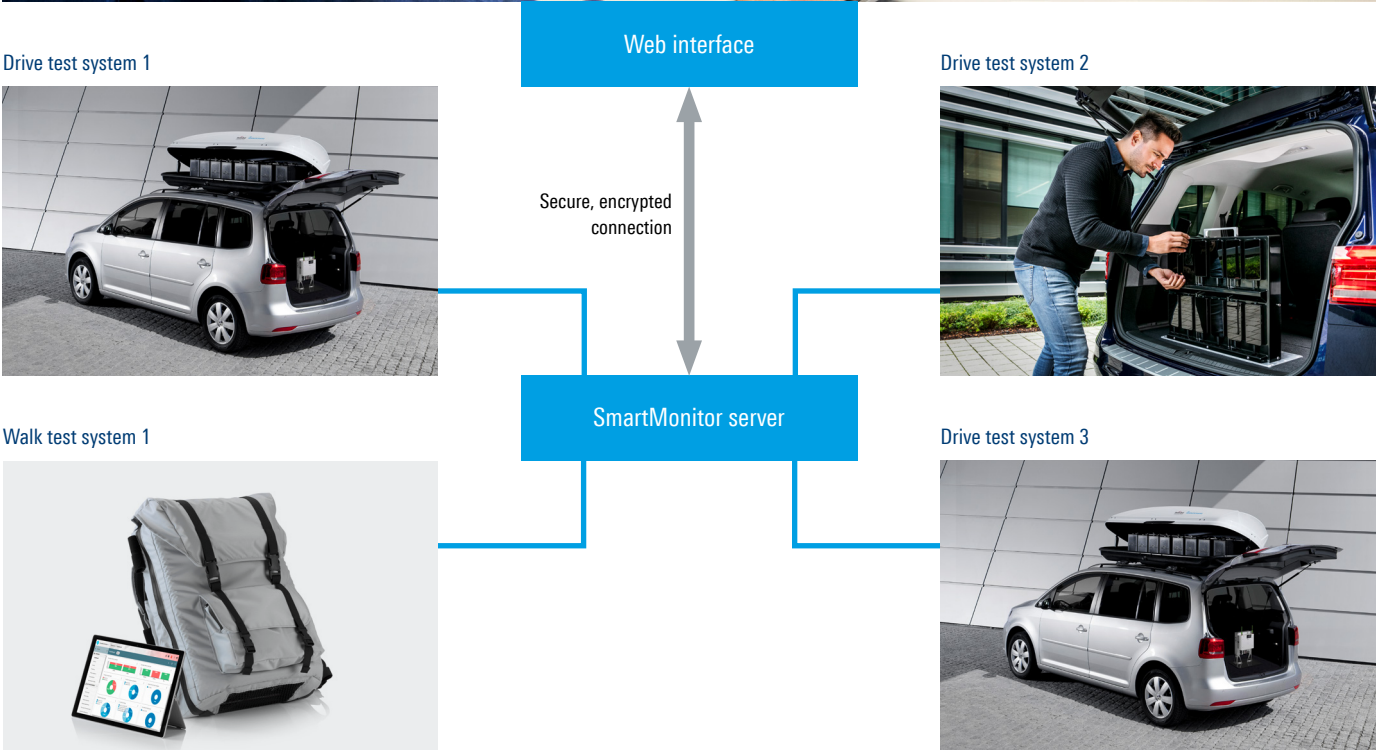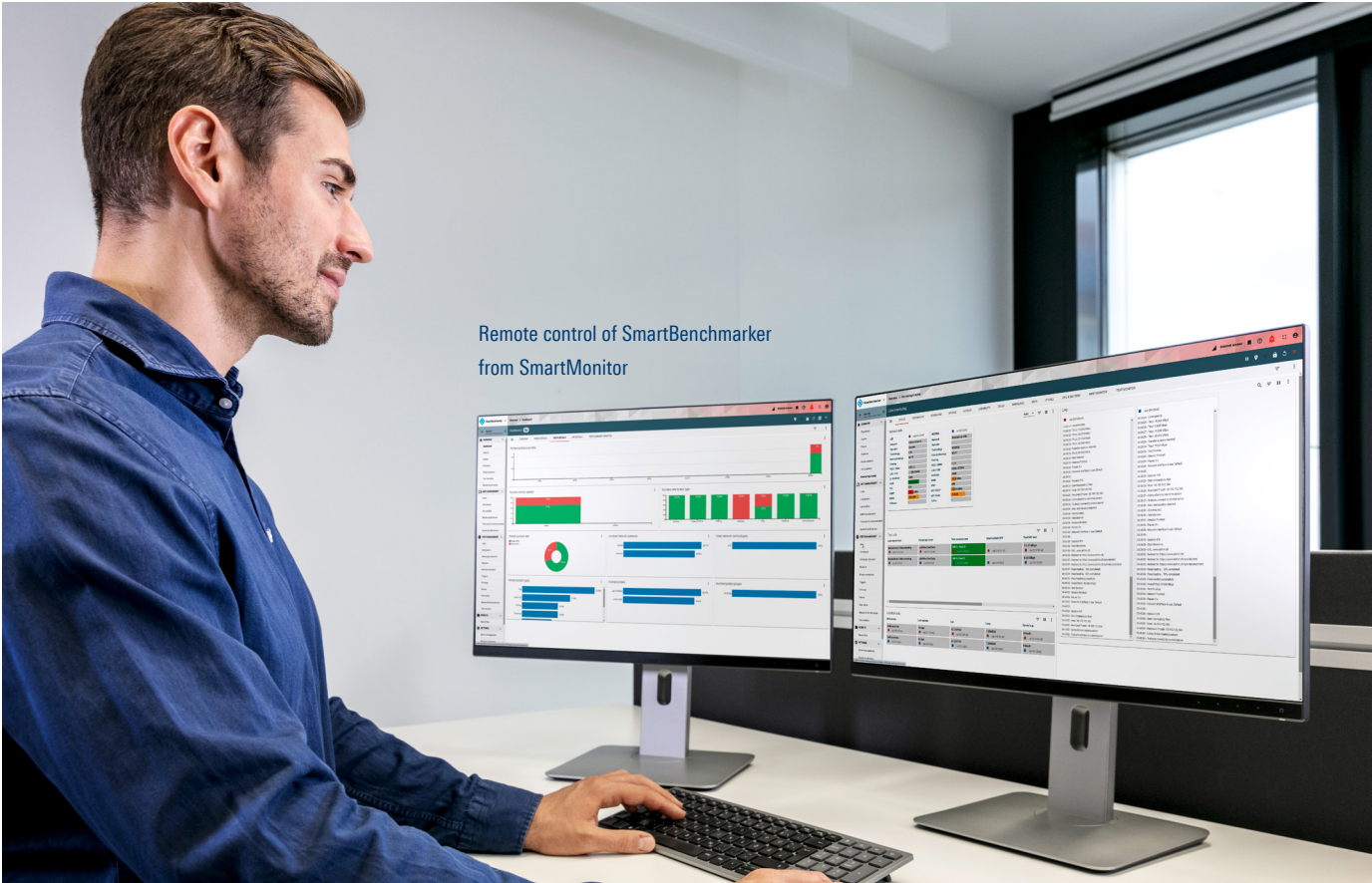
- ▶ Lower operational costs thanks to customized and advanced remote control functions
- ▶ High system stability, reducing need for redrives
- ▶ Lower training costs thanks to ease of use
- ▶ Flexible interface for efficient configuration of multiple testing scenarios
- ▶ Lower capital expenditure costs with configuration flexibility and modularity
- ▶ Mobile devices and scanners can be reconfigured for other testing purposes
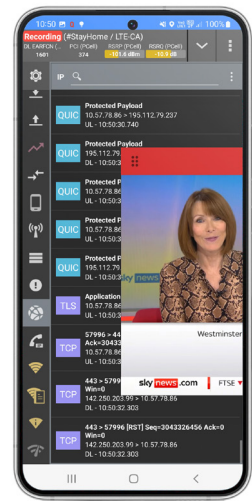
SmartBenchmarker – easy and intuitive

SYSTEM OVERVIEW

The software platform allows separte secure remote connections to each system. The SmartMonitor application has centralized campaign configuration and live monitoring – potentially for every smartphone in the field.

Remote control of SmartBenchmarker from SmartMonitor

Drive test system 1

Walk test system 1

Web interface

Secure, encrypted connection

SmartMonitor server

Drive test system 2

Drive test system 3

OVERVIEW OF SUPPORTED HARDWARE

Benchmarker 3 (BM3-SMWL)

QualiPoc Android

TCM

Vehicle roof box (VRB) hosting test device containment modules (TCM)

R&S®Freerider 4

R&S®TSME or R&S®TSME6 scanners and Rohde & Schwarz downconverters from the R&S®TSMx network scanner family

R&S®TSME30DC downconverter

TECHNICAL SPECIFICATIONS

Software specifications	
Configuration data storage	SmartBenchmarker stores all configuration data and high-level test results in a secure communications database.
Technology	Secure communications technology, including SSH and HTTPS protocols, are used for interaction with the systems.
User interface	The modern user interface was developed using angular material design and is easy to operate and fully compatible with any display size. No matter where it is displayed – on a large desktop monitor or a smaller tablet screen – SmartBenchmarker adapts the layout automatically.
Dashboard	All test result KPIs are presented in powerful dashboards. At all times, the manager has an accurate overview of the network's current service quality and receives detailed status information from all measuring devices.
Campaign management	Intuitive and easy-to-operate campaign and test management offers fast and efficient test configuration in a modular way – also for large numbers of measuring devices.
User management	Multiple roles with different access levels (admin, manager, test manager, viewer) are part of the built-in user management and allow system administrators to manage users and assign tailored roles.

Functionalities
SmartBenchmarker supports up to 12 measuring devices per system. Benchmarker 3 systems can be interconnected among each other to provide up to 36 measurement channels. When registering with SmartBenchmarker, phone configuration and subscriber number are included, which allows fast and efficient system setups.

Compatibility	
Network probes	SmartBenchmarker supports QualiPoc Android probes that are available on a wide range of the latest Android flagship smartphones (Qualcomm and Samsung Exynos Shannon chip sets) from multiple vendors such as Samsung, Xiaomi, OnePlus, Sony and others. Furthermore, SmartBenchmarker supports Rohde & Schwarz scanners, including R&S®TSME6 as well as R&S®TSMExxDC downconverters to measure 5G NR in FR2.
Hardware	The SmartBenchmarker software platform is compatible with the TCM, the Benchmarker 3 SmartMounting Wall and the NCM version 4 on R&S®Freerider 4.

Service at Rohde & Schwarz
You're in great hands

▶ Worldwide
▶ Local and personalized
▶ Customized and flexible
▶ Uncompromising quality
▶ Long-term dependability

Rohde & Schwarz

The Rohde & Schwarz technology group is among the trailblazers when it comes to paving the way for a safer and connected world with its leading solutions in test & measurement, technology systems and networks & cybersecurity. Founded more than 85 years ago, the group is a reliable partner for industry and government customers around the globe. The independent company is headquartered in Munich, Germany and has an extensive sales and service network with locations in more than 70 countries.

www.rohde-schwarz.com

Mobile network testing

The company's broad and diverse product portfolio for mobile network testing addresses every test scenario in the network lifecycle – from base station installation to network acceptance and network benchmarking, from optimization and troubleshooting to interference hunting and spectrum analysis, from IP application awareness to QoS and QoE of voice, data, video and app based services.

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