R&S®LCM
NETWORK PERFORMANCE MONITORING PROBE

Ensure reliable network performance 24/7

Product Brochure
Version 01.00

ROHDE&SCHWARZ
Make ideas real

AT A GLANCE

The R&S®LCM network performance monitoring probe generation 1 combines a powerful Linux computer with a high-performance 4G/5G IoT/eMBB data module in a compact and robust design. R&S®QualiProbe software is the QualiPoc Android version embedded in the module and compiles valuable RF chip set and IP trace data for comprehensive performance data tests over mobile networks. Local control of a single R&S®LCM with QualiPoc controller or remote control of multiple R&S®LCM units via SmartMonitor server – both control methods deliver a unified view of mobile network performance.

The R&S®LCM network performance monitoring probe is a computing module built around a powerful and reliable Linux-based computing platform, a solid foundation for the 4G/5G data module and R&S®QualiProbe software.

The Intel Celeron processor enables seamless operation of the 4G/5G IoT/eMBB module, balancing performance and low power consumption. The R&S®LCM has flexible connectivity options, including a 2.5 Gbit/s LAN interface and IEEE 802.11ax dual band 2x2 Wi-Fi.

The R&S®LCM also has three USB 3.2 type A ports, one USB-C port with power delivery and DisplayPort, and one HDMI port. The mechanical quick-lock fixture at the bottom allows it to be easily attached to the R&S®LCM mounting plate.

The integrated 4G/5G data module supports global use and is compatible with nearly all mainstream carriers worldwide. The modular design of the R&S®LCM is flexible and future-proof and supports modules with a standard M.2 dimensions, allowing other M.2 data modules to be easily integrated and adapt to changing requirements and new technologies as they emerge.

R&S®QualiProbe software is the intelligent core of the R&S®LCM, built on over a decade of RF expertise and knowledge with the successful QualiPoc Android software, a global standard in smartphone-based benchmarking and optimization. The expertise is now available in the R&S®LCM as R&S®QualiProbe, the embedded version of QualiPoc Android for unparalleled insight into service quality measurements.

R&S®LCM network performance monitoring probe, with antennas in upright position

KEY FACTS

- Modular design with M.2 data module support
- Supports up to four external antennas for optimized data module performance
- Compact, space-saving design for easy deployment
- Advanced RF chip set and IP trace capabilities for recording and decoding
- R&S®QualiProbe software for comprehensive performance testing
- Convenient connectivity via Ethernet or Wi-Fi

BENEFITS

Monitor service quality
▶ page 4

Ensure business continuity
▶ page 4

Easy configuration and operation
▶ page 5

Versatile user application support
▶ page 6

R&S®LCM, front view

R&S®LCM, rear view

MONITOR SERVICE QUALITY

In business-critical environments, service quality is crucial. During network deployment, key performance indicators (KPI) such as throughput and latency are typically verified during network acceptance testing. The network, device, traffic patterns, and radio environment can all change, creating a dynamic performance landscape that may shift over time. The R&S®LCM is an ideal comprehensive service quality monitoring solution for critical mobile networks.

The built-in R&S®LCM 5G data module seamlessly integrates with other communication components. The R&S®LCM also integrates seamlessly into the Rohde & Schwarz mobile network testing (MNT) ecosystem, with easy configuration, control and monitoring of multiple R&S®LCM units via the intuitive SmartMonitor. The R&S®LCM collects valuable data with R&S®QualiProbe and stores it in the Rohde & Schwarz mf file format. This allows for in-depth analysis and reporting with SmartAnalytics. The R&S®LCM provides a comprehensive view of service quality to help optimize network performance as needed.

ENSURE BUSINESS CONTINUITY

Network downtime is unacceptable in today's digital age. In business-critical environments, brief outages can have severe consequences, including financial losses and reputational damage. A comprehensive service quality monitoring solution is essential to mitigating these risks. The R&S®LCM solution provides real-time, end-to-end network performance visibility that helps identify and resolve issues before they impact business. With the SmartMonitor service quality trend indicator and the advanced insights of SmartAnalytics always-available, optimal-performing critical services are ensured.

The entire R&S®LCM design and setup is intended to be very close to productive access devices in the network for reliable and realistic results. The design and set up take advantage of the flexible R&S®LCM, which can also be easily controlled via tablet with the QualiPoc controller. The same device can be used for both quality monitoring and troubleshooting and is ideal for efficient issue resolution.

EASY CONFIGURATION AND OPERATION

With SmartMonitor, you can easily:

- **Configure** the R&S®LCM to meet your specific needs
- **Schedule** active testing to measure service quality and monitor real-time KPIs for a clear picture of network performance
- **Set up custom alerts** based on RF parameters or test KPIs and receive immediate notifications when triggered for instant alerts of service drops, allowing swift action to minimize downtime and ensure optimum performance
- **Simplify operations** with the R&S®LCM and SmartMonitor and focus on delivering excellent service quality

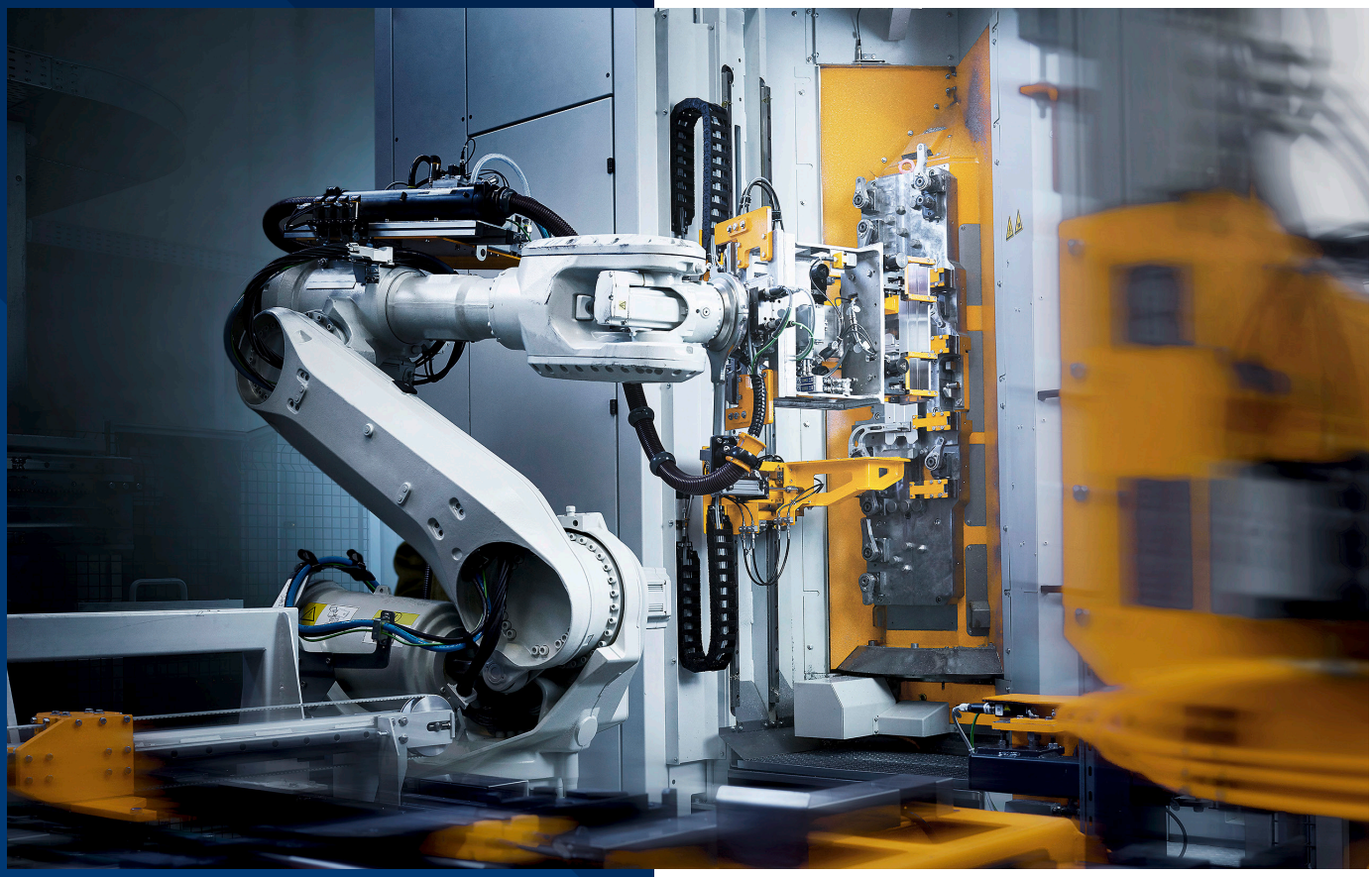
SmartMonitor can configure the R&S®LCM and simplify operations

VERSATILE USER APPLICATION SUPPORT

The R&S®LCM is a powerful solution for monitoring service quality in business-critical mobile networks and more.

The R&S®LCM M.2 interface support is future proof and can accommodate a wide range of modules for various use cases such as reduced capability (RedCap) modules. RedCap technology expands the 5G ecosystem with devices tailored to the internet of things (IoT), smart cities and industrial automation, where reliable network coverage is essential but data rate and latency requirements are lower than regular 5G NR devices.

The R&S®LCM is designed to allow for the future introduction of new variants with different data modules.



SPECIFICATIONS IN BRIEF

Specifications in brief		
Power rating		
Supply voltage		15 V DC (± 5 %)
Power consumption during operation		17 W (typ.), max 24 W
Input	R&S®LCM-OPS office power supply	100 V to 240 V AC, 50/60Hz, 1 A
Output	R&S®LCM-OPS office power supply	15 V DC at 2 A, max. 30 W
Product conformity		
Electromagnetic compatibility	in line with Radio Equipment Directive 2014/53/EU	applied harmonized standards: EN 55032, EN 55035, EN 301489-1, EN 301489-17, EN 301489-3, EN 301489-52
Electrical safety	in line with Radio Equipment Directive 2014/53/EU	applied harmonized standard: EN 61010-1
	international	in line with CB/IEC 61010-1
Health	in line with Radio Equipment Directive 2014/53/EU	applied harmonized standard: EN 62311
Radio	in line with Radio Equipment Directive 2014/53/EU	applied harmonized standards: EN 300328, EN 301893, EN 300440, EN 301908-1, EN 301908-2, EN 301908-13, Draft EN 301908-25
Restriction of the use of hazardous substances	in line with 2011/65/EU (RoHS), including 2015/863/EU (RoHS 3)	applied harmonized standard: EN IEC 63000
Restriction of the use of hazardous substances		
Temperature	operating temperature range	0 °C to + 35 °C
	storage temperature range	–10 °C to +55 °C
Humidity		< 95 % relative humidity, non-condensing
Altitude		0 m to 2000 m (0 ft to 6500 ft)
Environment	operation	indoor, pollution degree: 2
	storage	indoor
General data		
Dimensions (W × H × D)	R&S®LCM, without antennas	85 mm × 35 mm × 149 mm (3.3 in × 1.4 in × 5.9 in)
	R&S®LCM, with antennas upright	85 mm × 183 mm × 246 mm (3.3 in × 7.2 in × 9.7 in)
	R&S®LCM-OPS office power supply	45 mm × 29 mm × 105 mm (1.8 in × 1.4 in × 4.1 in)
	R&S®LCM-MP mounting plate	80 mm × 3 mm × 130 mm (3.1 in × 0.1 in × in)
Weight	R&S®LCM, without antennas	472 g (1.04 lb)
	R&S®LCM, with antennas	605 g (1.33 lb)
	R&S®LCM-OPS office power supply	175 g (0.39 lb)
	R&S®LCM-MP mounting plate	95 g (0.21 lb)

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 90 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.

www.rohde-schwarz.com/mnt

Rohde&Schwarz training

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Rohde&Schwarz customer support

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R&S®LCM Network Performance Monitoring Probe
Data without tolerance limits is not binding | Subject to change