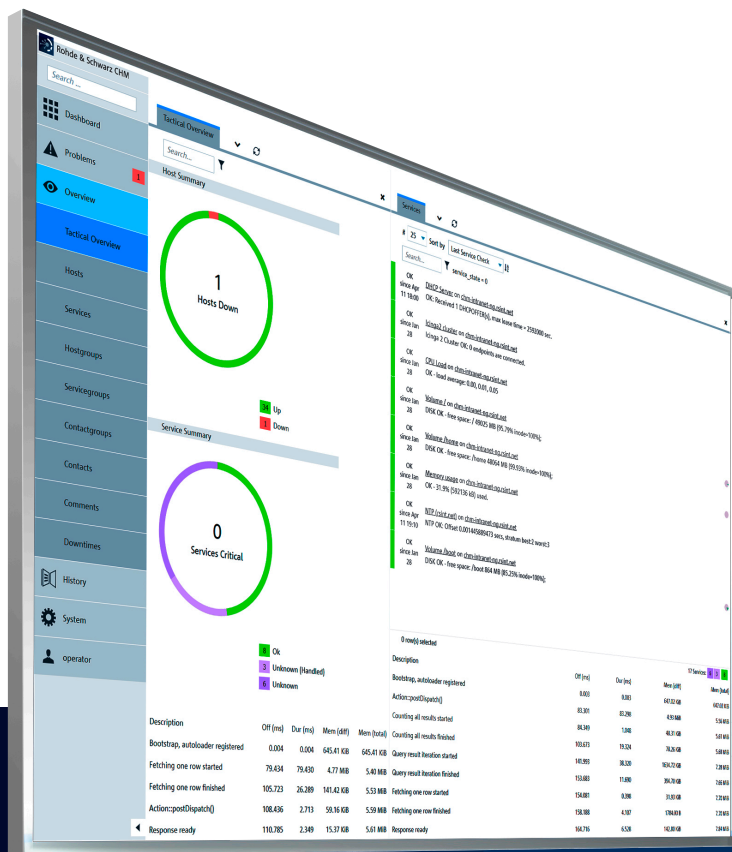


R&S[®]CHM SYSTEM STATUS MONITORING SOFTWARE

For maximum system availability



Product Brochure
Version 05.01

ROHDE & SCHWARZ

Make ideas real



AT A GLANCE

The R&S®CHM system status monitoring software is an integrated, system-specific solution for continuous monitoring of key system parameters in systems from Rohde & Schwarz. The software monitors devices and system components fully automatically, triggers warnings and alarms for operators if system components approach or reach critical operating states and assists maintenance personnel with fault diagnosis.

Complex monitoring systems include a large number of components such as sensors, system devices, PCs/servers, software applications, databases, infrastructure and network components. Monitoring the operating status of the main device and system parameters is essential to ensure smooth and uninterrupted system operation. This task is handled by the R&S®CHM system status monitoring software.

Typical applications for R&S®CHM include complex systems with a large number of components that may be distributed over multiple locations. R&S®CHM is also suitable for monitoring unattended small systems or remote sensors. The R&S®CHM can be customized – by Rohde & Schwarz or the customer – to a specific system, which can also include third-party, SNMP based devices.

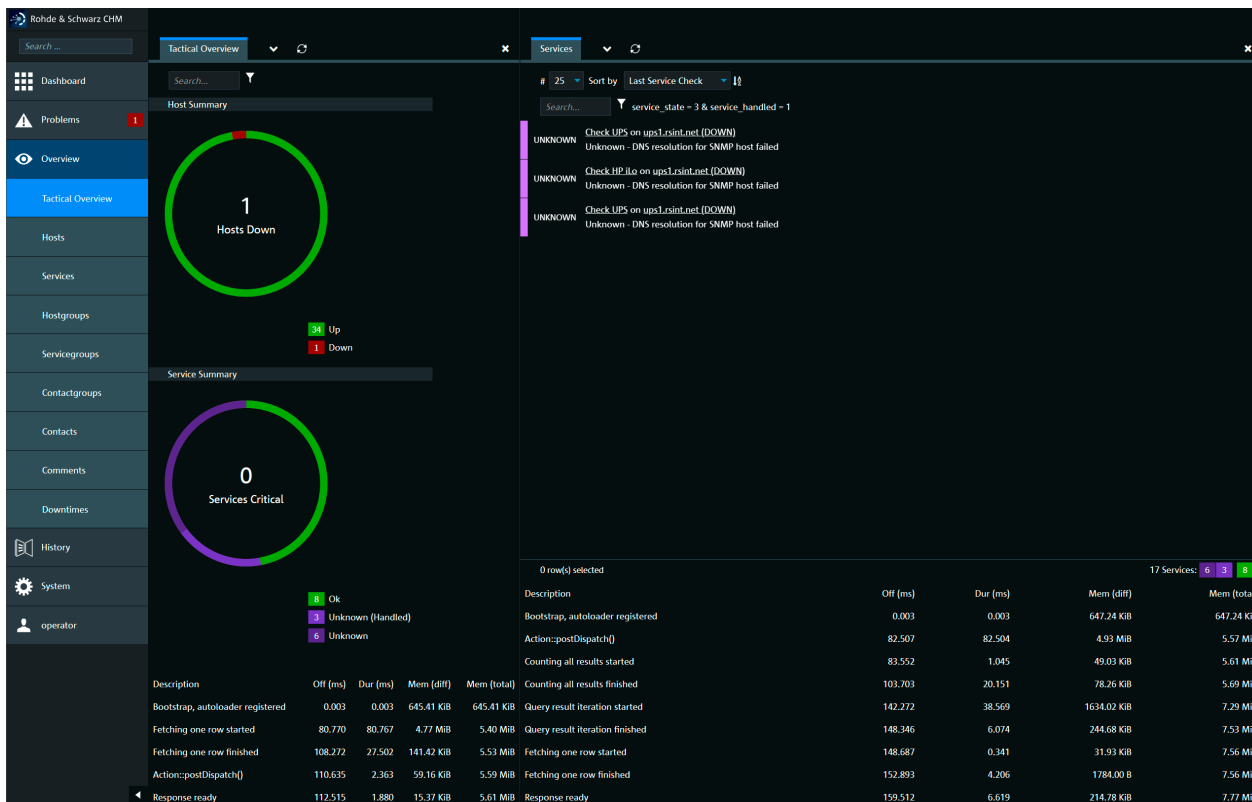
R&S®CHM monitors and measures system parameters and compares them against predefined thresholds. If a measured value exceeds or falls below the defined threshold, R&S®CHM generates an acoustic and optical warning or alarm at the operator's workstation.

A warning will be triggered, for example, if a defined temperature is exceeded in an unattended station or if a server's hard disk attains a defined fullness level. An alarm will be generated upon failure of a device, a data link or a door contact in an unattended station.

An extensive set of analysis tools, such as the visualization of measured values in time-sequence charts, helps system administrators carry out maintenance work and identify errors.

Key facts

- ▶ System-specific integrated remote monitoring of all relevant system parameters of complex monitoring or communications systems with a state-of-the-art graphical user interface
- ▶ Security hardened operating system
- ▶ Hierarchical organization of multiple subsystems
- ▶ Monitored emergency shutdown in case of temperature violation or power failure
- ▶ Support of Rohde&Schwarz equipment as well as of third-party, SNMP based devices



BENEFITS AND KEY FEATURES

Continuous monitoring of Rohde & Schwarz monitoring and communications systems

- ▶ Central management of system parameters of complex monitoring systems
- ▶ System-specific integrated appliance for monitoring relevant system components
- ▶ Display of measured values versus time
- ▶ Quick overview of current system status
- ▶ [page 4](#)

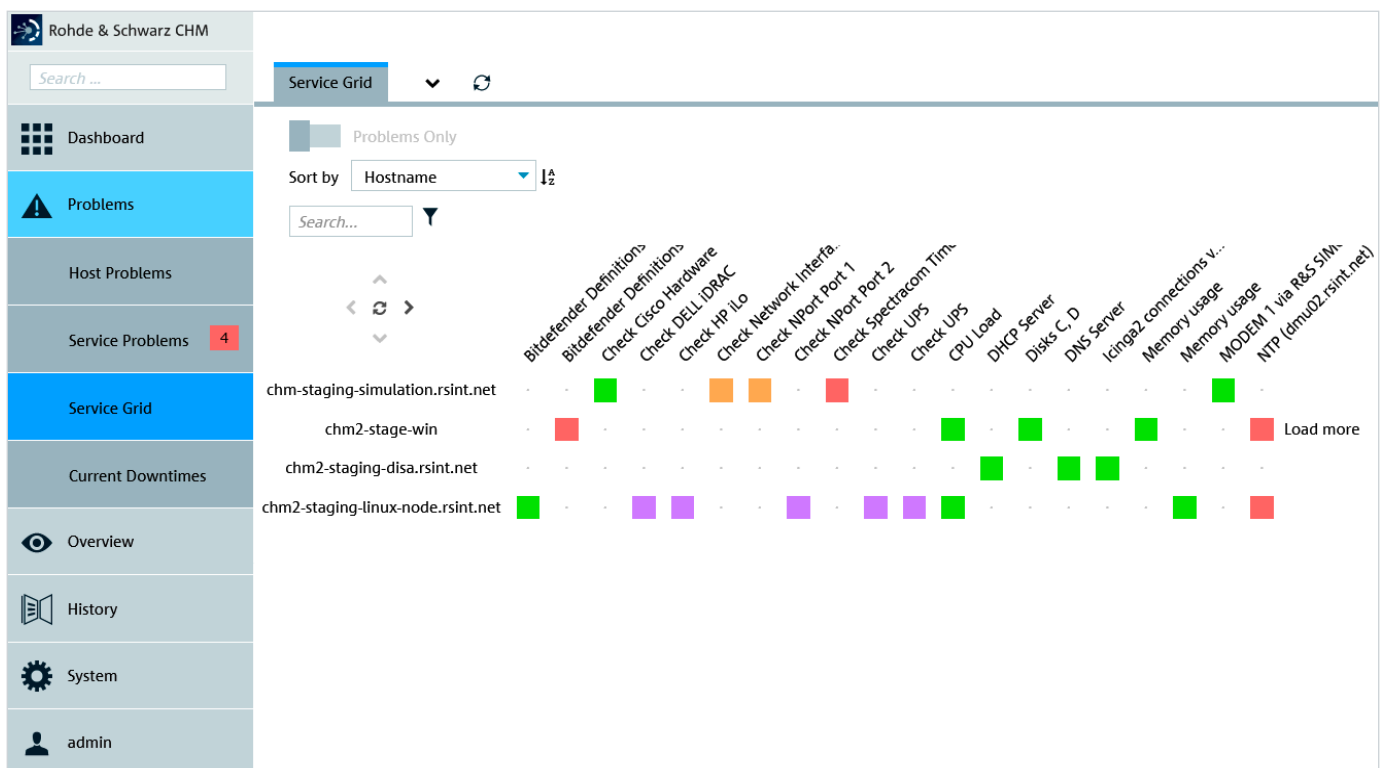
Simple and flexible

- ▶ Easy system setup
- ▶ Extensive hardware support
- ▶ User-friendly, straightforward user interface
- ▶ [page 6](#)

Integration into Rohde & Schwarz monitoring and communications systems

- ▶ Basic system management
- ▶ [page 7](#)

R&S®CHM service grid overview



CONTINUOUS MONITORING OF ROHDE & SCHWARZ MONITORING AND COMMUNICATIONS SYSTEMS

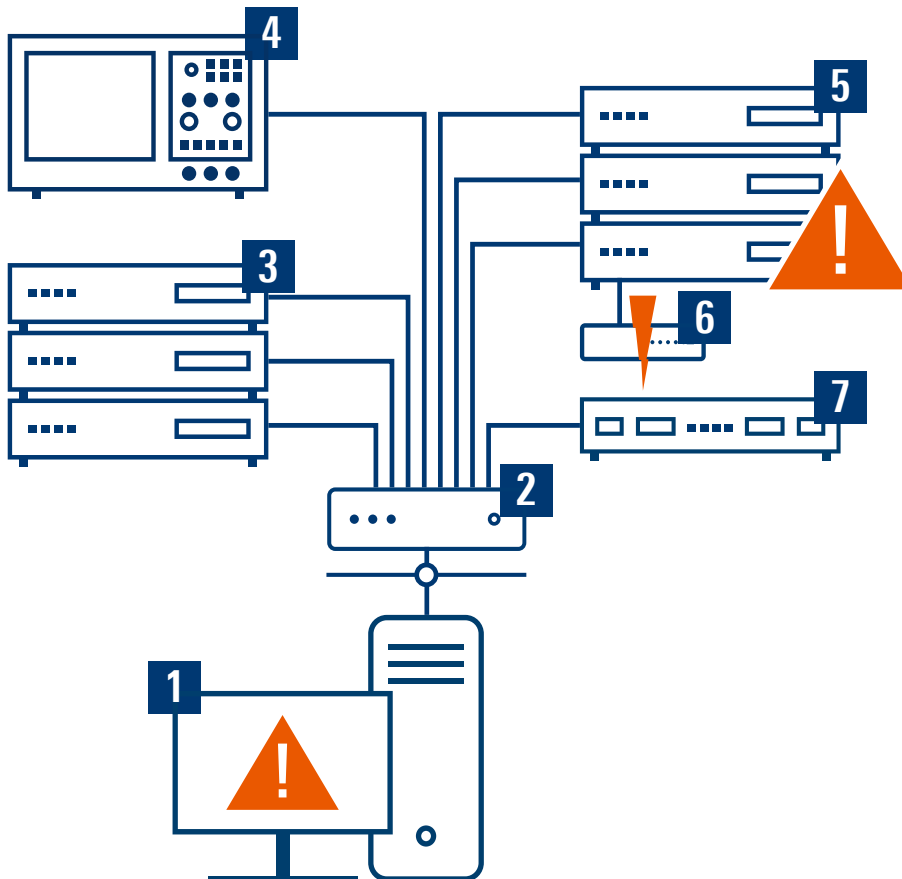
Central management of system parameters of complex monitoring systems

Monitoring and communications systems include a large number of components that interact and mutually influence each other:

- ▶ Operating states, e.g. door contacts, temperature, humidity, smoke detectors, air pressure, fuel gauges, power supplies, servers, workstations
- ▶ Storage media and databases, e.g. data volume of external and internal storage media, virtual memory capacity, database status information
- ▶ Processor load, e.g. utilization of control computers, system servers, database servers
- ▶ Network, e.g. accessibility of system components/ IP addresses, load of network links

R&S®CHM health monitoring concept

- 1: Computer with web based user interface
- 2: Network component (router, switch)
- 3: Server hardware
- 4: Rohde & Schwarz device
- 5: Server hardware with error condition
- 6: Uninterruptible power supply with error condition
- 7: Host that runs R&S®CHM



- ▶ Status information about Rohde&Schwarz equipment, e.g. operating status of receivers, direction finders, demodulators or analyzers, BITE
- ▶ Status information about system software, e.g. operating status of drivers and processes

R&S®CHM collects these parameters and stores them uniformly.

System-specific integrated monitoring appliance for monitoring relevant system components

A central server application – which can also be virtualized – manages all data from devices and subsystems that are accessible via LAN. Service personnel access Rohde&Schwarz devices via the appropriate device drivers. Third-party devices can be accessed using standardized SNMP interfaces.

R&S®CHM compares the incoming data against predefined thresholds. If a measured value exceeds or falls below this threshold, the user receives a notification in the GUI or the Windows system tray.

Display of measured values versus time

R&S®CHM offers detailed views for hardware components such as PCs. Selecting a component displays a detailed view.

Measured values such as temperature profiles or used memory/hard drive space are displayed in a constellation diagram.

Quick overview of current system status

The console application available on every workstation shows all relevant information in a clear graphical and text format.

In case of an error message, the operator is immediately transferred to the dedicated device/management interface, enabling quick and in-depth error analysis and troubleshooting.

R&S®CHM incidents dashboard

Service Problems		Recently Recovered Services	
UNKNOWN	Check HP ilo on mgm-mu-ramon-build.rsint.net Mar 9 Unknown - No response from device for oid .1.3.6.1.4.1.232.2.2.4.2.0	▲	OK NTP (rsint.net) on chm-intranet-ng.rsint.net Apr 11 19:10 NTP OK: Offset 0.001079678535 secs, stratum best:2 worst:3
UNKNOWN	Check HP ilo on mgm-mu-ramon-bld1.rsint.net Mar 9 Unknown - No response from device for oid .1.3.6.1.4.1.232.2.2.4.2.0	▲	OK DHCP Server on chm-intranet-ng.rsint.net Apr 11 18:00 OK: Received 1 DHCP OFFER(s), max lease time = 2592000 sec.
UNKNOWN	Check HP ilo on mgm-mu-ramon-bld2.rsint.net Mar 9 Unknown - No response from device for oid .1.3.6.1.4.1.232.2.2.4.2.0	▲	OK CPU Load on chm-intranet-ng.rsint.net Jan 28 OK - load average: 0.01, 0.04, 0.05
UNKNOWN	Check HP ilo on mgm-mu-ramon-bld4.rsint.net Mar 9 Unknown - No response from device for oid .1.3.6.1.4.1.232.2.2.4.2.0	▲	OK Memory usage on chm-intranet-ng.rsint.net Jan 28 OK - 32.4% (602140 kB) used.
UNKNOWN	Check HP ilo on mgm-mu-ramon-bld5.rsint.net Mar 9 Unknown - No response from device for oid .1.3.6.1.4.1.232.2.2.4.2.0	▲	OK Volume / on chm-intranet-ng.rsint.net Jan 28 DISK OK - free space: / 49025 MB (95.80% inode=100%);
UNKNOWN	Check HP ilo on mgm-mu-ramon-bld3.rsint.net Mar 9 Unknown - No response from device for oid .1.3.6.1.4.1.232.2.2.4.2.0	▲	OK Volume /home on chm-intranet-ng.rsint.net Jan 28 DISK OK - free space: /home 48064 MB (99.93% inode=100%);
UNKNOWN	Check UPS on ups1.rsint.net (DOWN) Unknown - DNS resolution for SNMP host failed	▲	OK Volume /boot on chm-intranet-ng.rsint.net Jan 28 DISK OK - free space: /boot 864 MB (85.25% inode=100%);
UNKNOWN	Check HP ilo on ups1.rsint.net (DOWN) Unknown - DNS resolution for SNMP host failed	▲	OK Icinga2 cluster on chm-intranet-ng.rsint.net Jan 28 Icinga 2 Cluster OK: 0 endpoints are connected.
UNKNOWN	Check UPS on ups1.rsint.net (DOWN) Unknown - DNS resolution for SNMP host failed	▲	
Host Problems			
DOWN	ups1.rsint.net check_ping: Invalid hostname/address - ups1.rsint.net	▲	

SIMPLE AND FLEXIBLE

Easy system setup

Depending on the overall system setup and requirements, R&S®CHM can be installed as a virtual server or as a separate hardware server. The dedicated hardware installation is significantly more robust and offers independent system shutdown and restart.

Configuration is equally simple and flexible for both models. During system integration, the information required for R&S®CHM is extracted from the system configuration tool and saved as a file. This system configuration file is read into the R&S®CHM server via the management GUI. System software updates are performed in the same way.

The software also supports hierarchical system configurations, so that distributed systems with unattended remote stations, for example, can be monitored effectively. If errors occur, the configuration can simply be reloaded from the original configuration file. This significantly reduces downtime.

Extensive hardware support

Radiomonitoring systems from Rohde&Schwarz typically consist of a number of different devices, some of which may also be supplied by third-party providers. In addition to Rohde&Schwarz devices, R&S®CHM supports many third-party system devices, including:

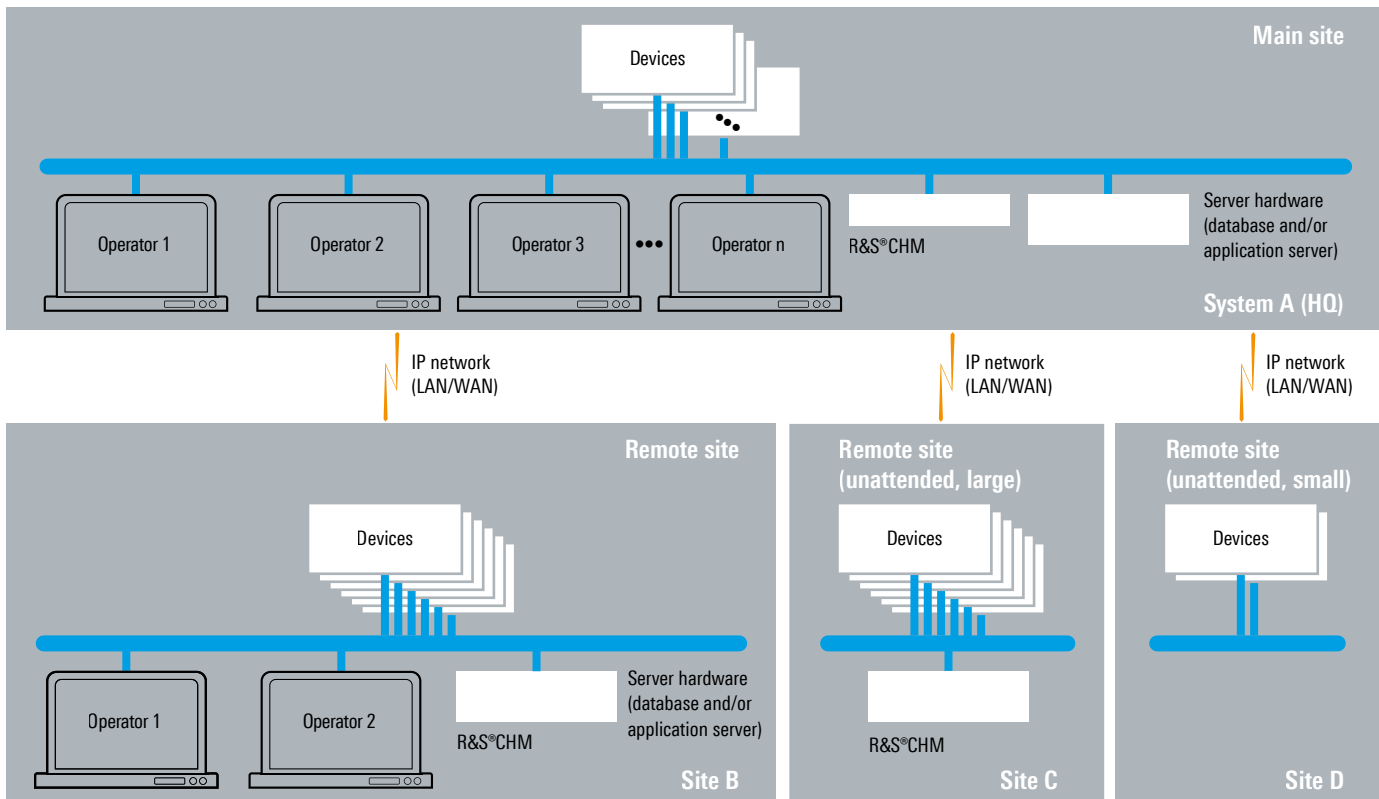
- ▶ Uninterruptible power supplies (UPS)
- ▶ Power distribution units (PDU)
- ▶ A wide variety of IT hardware (servers and workstations)
- ▶ Network devices, including routers, switches and time servers
- ▶ Devices with a standardized SNMP interface

User-friendly, straightforward user interface

R&S®CHM can display results in various ways. An icon in the Windows system tray provides an initial basic indication of the system status. The main window of the console application offers a more detailed overview. The operator has a complete overview of the individual subsystems and their components. This is particularly useful for distributed systems with unattended, remotely controlled stations.

The data can be called up in a web browser with restricted functionality. This makes it possible to check the system status away from the operator workstation.

Block diagram of a hierarchical, distributed system



INTEGRATION INTO ROHDE & SCHWARZ MONITORING AND COMMUNICATIONS SYSTEMS

Basic system control and emergency management

R&S®CHM enables centralized startup and shutdown of radiomonitoring systems. This covers two principal scenarios: regular and irregular. Regular system startup and shutdown are initiated by the operator via a central menu item on the R&S®CHM operator console. The irregular scenario occurs if the failure of a single system component affects or even stops the functioning of a subsystem or of the entire system. This is seen in particular with system-critical parameter changes, for example if critical hardware or ambient temperatures are reached after the failure of air conditioners that cool system components. In such cases, R&S®CHM can perform an emergency shutdown. The shutdown disconnects all critical components – such as the database server – from the network to prevent damage.

User rights management

A central user management software makes it possible to configure and monitor access to the R&S®CHM GUI and server. Users can create restricted-access areas that can be viewed only by operators with the appropriate levels of authorization. A limited subsystem status display is also available, e.g. for operators of remote stations.

ORDERING INFORMATION

Designation	Type	Order No.
System status monitoring software for continuous monitoring of key system parameters in Rohde & Schwarz system solutions	R&S®CHM	3067.6545.02

Your local Rohde & Schwarz expert will help you determine the optimum solution for your requirements. To find your nearest Rohde & Schwarz representative, visit www.sales.rohde-schwarz.com.

Service that adds value

- ▶ 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 and measurement, technology systems, and networks and 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.

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- ▶ Energy efficiency and low emissions
- ▶ Longevity and optimized total cost of ownership

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ISO 9001

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