R&S®RA-CHM
System Status Monitoring
For maximum
system availability
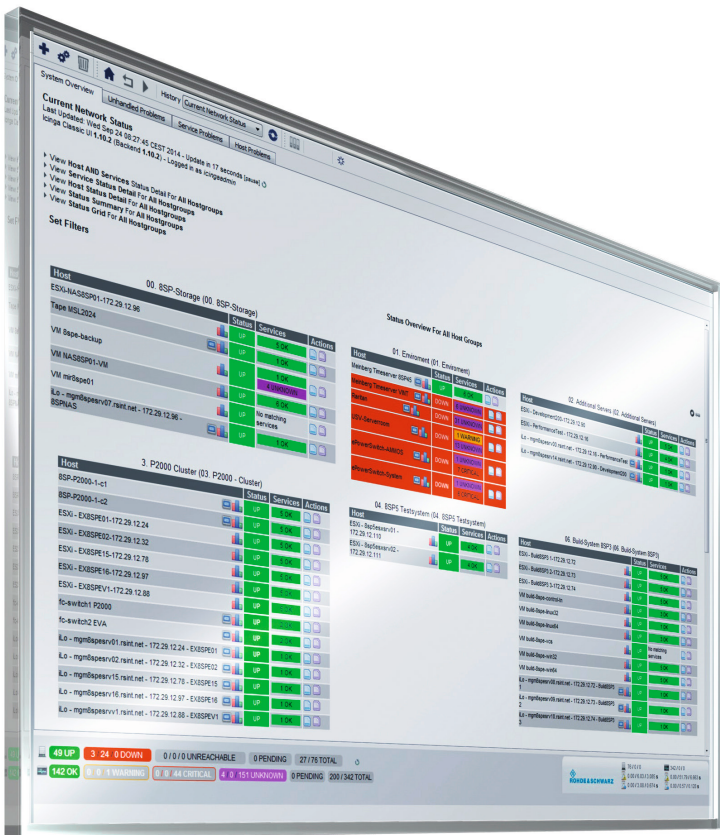
ROHDE & SCHWARZ

R&S®RA-CHM System Status Monitoring

At a glance

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

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

R&S®RA-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®RA-CHM generates a warning or an alarm that is output acoustically and optically at the operator's workstation. A warning will be output, for example, if a defined temperature is exceeded in an unattended station or if a server's hard disk attains a defined filling 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 to carry out maintenance work and identify errors.

Key facts

❙ System-specific integrated remote monitoring of all relevant system parameters of complex monitoring or communication systems
❙ Display of measured values versus time
❙ Hierarchical organization of multiple subsystems
❙ Monitored emergency shutdown in cases of temperature violation or power failure
❙ Support of Rohde & Schwarz equipment as well as of third-party, SNMP-based devices
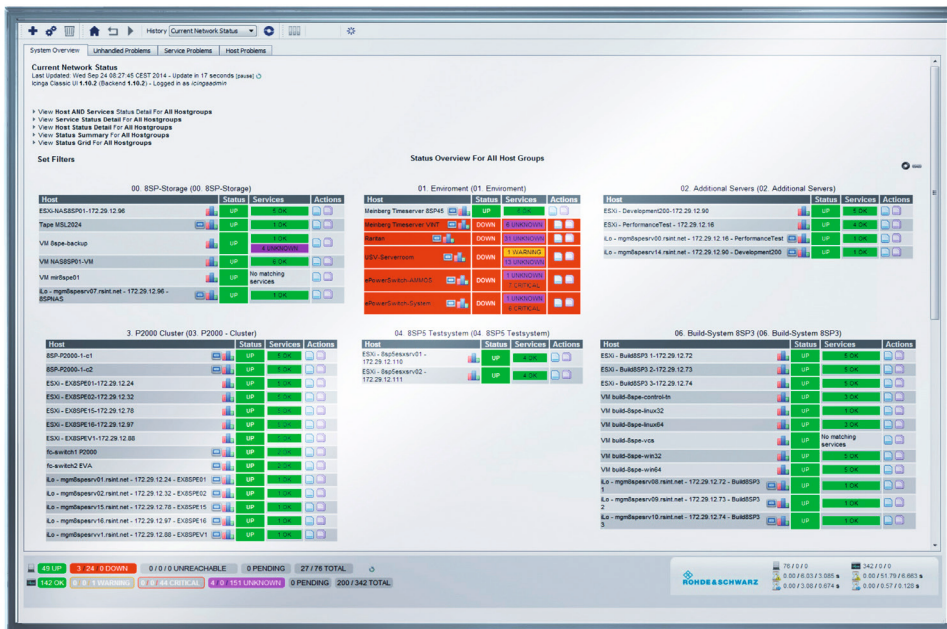
R&S®RA-CHM System Status Monitoring Benefits and key features

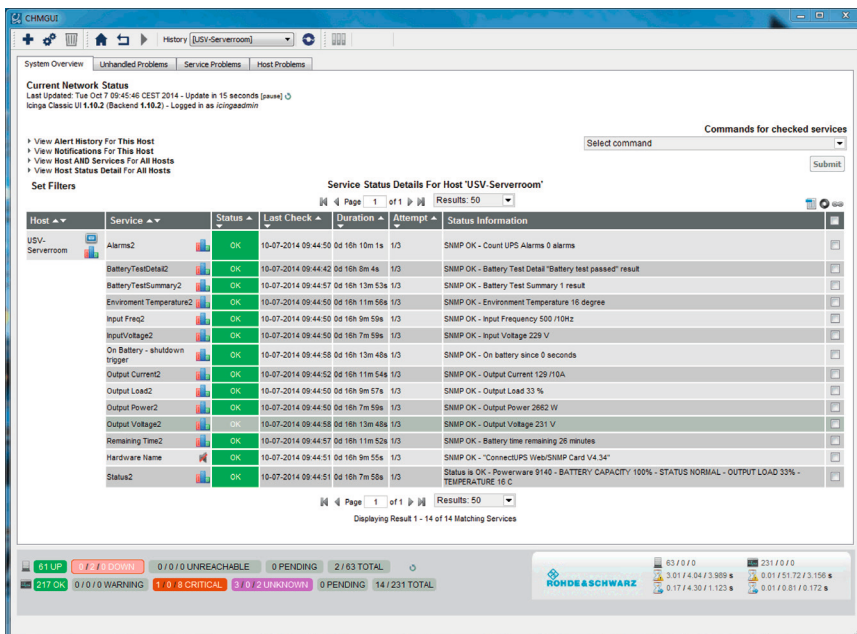## Continuous monitoring of Rohde & Schwarz monitoring and communication systems
- Central management of system parameters of complex monitoring systems
- System-specific integrated monitoring appliance for monitoring relevant system components
- Display of measured values versus time
- Quick overview of current system status

Simple and flexible
- Easy system setup
- Extensive hardware support
- User-friendly, straightforward user interface

Integration into R&S®RAMON and satellite monitoring systems
- Basic system control and emergency management
- System status reporting in R&S®ReportEdit
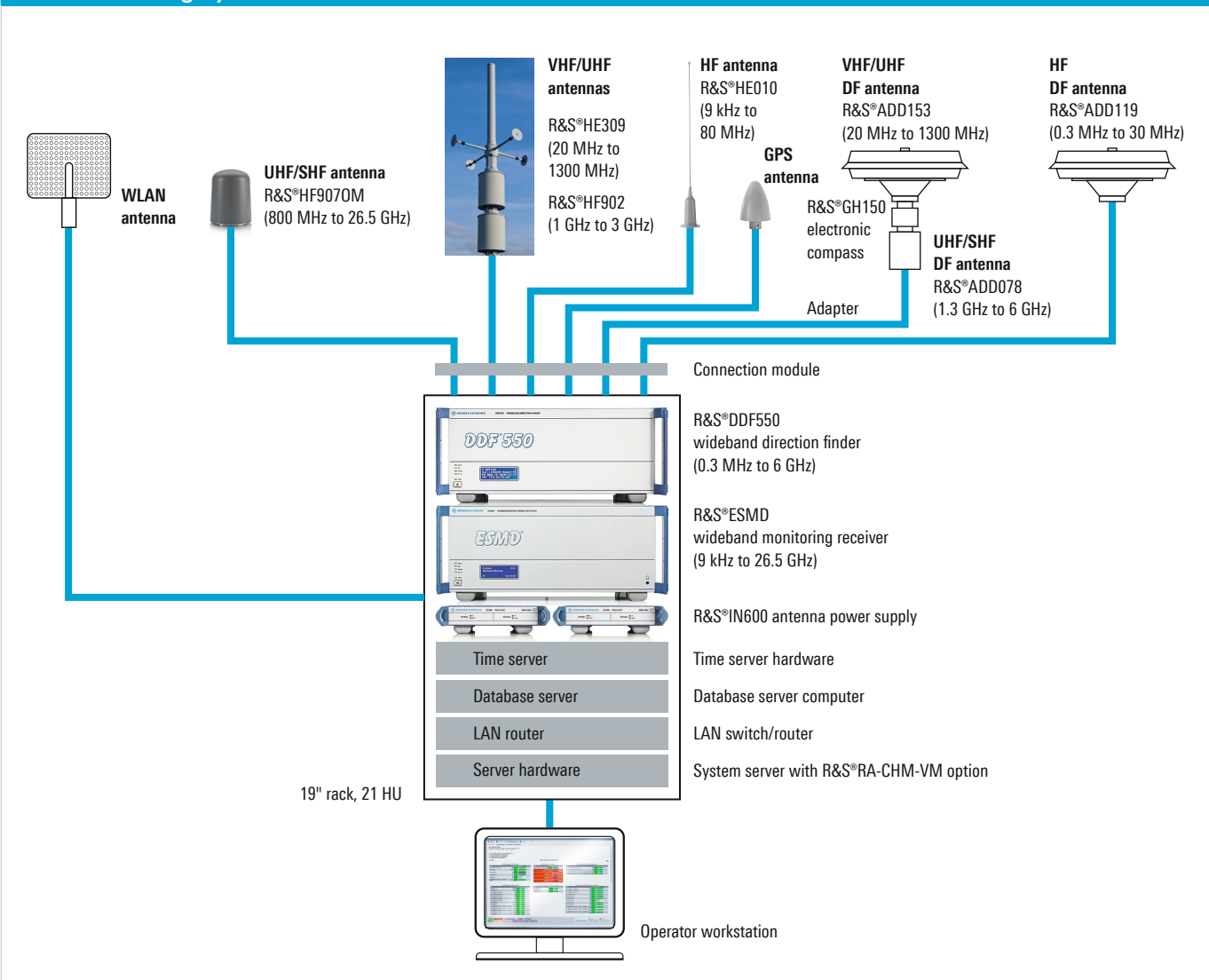- User rights management

Detailed host status view.

Continuous monitoring of Rohde & Schwarz monitoring and communication systems

Central management of system parameters of complex monitoring systems

Monitoring and communication 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)

Radiomonitoring system with R&S®RA-CHM

WLAN antenna

UHF/SHF antenna
R&S®HF9070M
(800 MHz to 26.5 GHz)

VHF/UHF antennas

R&S®HE309
(20 MHz to 1300 MHz)

R&S®HF902
(1 GHz to 3 GHz)

HF antenna
R&S®HE010
(9 kHz to 80 MHz)

GPS antenna

VHF/UHF DF antenna
R&S®ADD153
(20 MHz to 1300 MHz)

R&S®GH150 electronic compass

UHF/SHF DF antenna
R&S®ADD078
(1.3 GHz to 6 GHz)

Adapter

HF DF antenna
R&S®ADD119
(0.3 MHz to 30 MHz)

Connection module

DDF 550

ESMD

R&S®DDF550
wideband direction finder
(0.3 MHz to 6 GHz)

R&S®ESMD
wideband monitoring receiver
(9 kHz to 26.5 GHz)

R&S®IN600 antenna power supply

Time server	Time server hardware
Database server	Database server computer
LAN router	LAN switch/router
Server hardware	System server with R&S®RA-CHM-VM option

19" rack, 21 HU

Operator workstation

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

Display of measured values versus time

R&S®RA-CHM offers detailed views for hardware components such as PCs. When selecting a component, the associated detailed view is shown.

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, permitting quick and in-depth error analysis and troubleshooting.

Graphical system overview in R&S®RA-CHM. A mouseover on a subsystem element delivers detailed information about the individual subsystem.
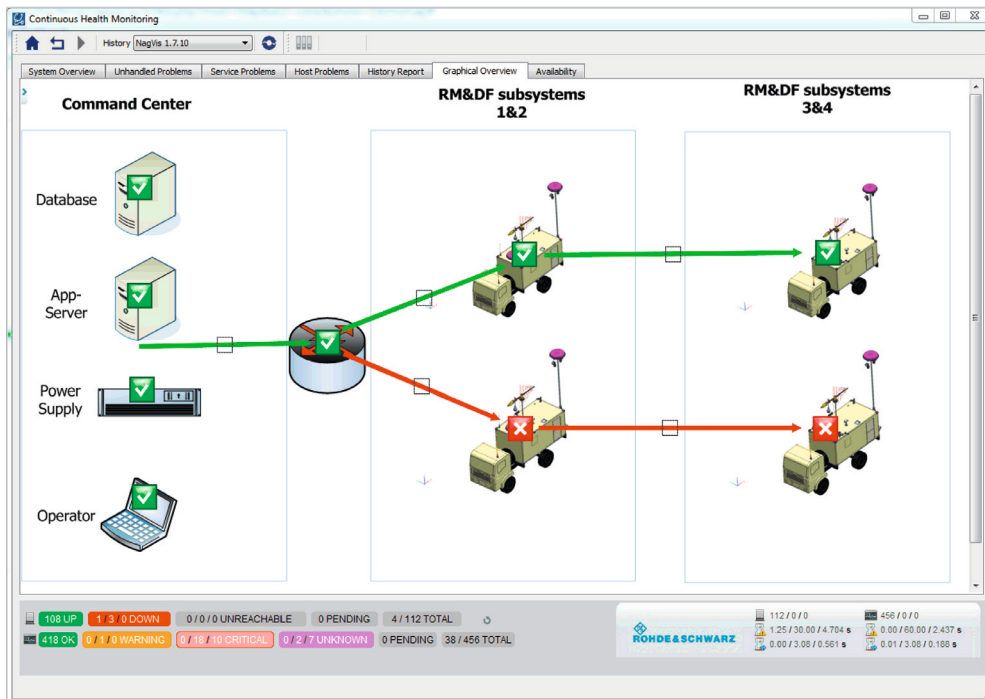
General system status overview display.
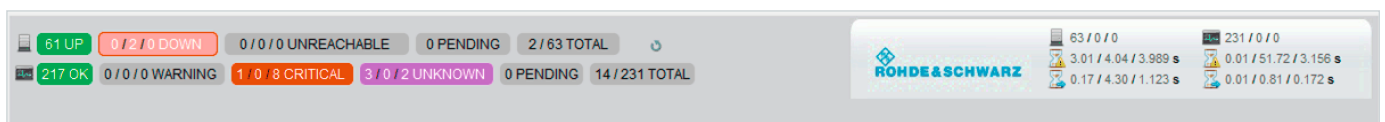
Simple and flexible

Easy system setup

Depending on the overall system setup and requirements, R&S®RA-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 variants. During the system integration, the information required for R&S®RA-CHM is extracted from the system configuration tool and saved as a file. This system configuration file is read into the R&S®RA-CHM server via the management GUI. System software updates are applied 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 downtimes.

## 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®RA-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 standardized SNMP interface

User-friendly, straightforward user interface

R&S®RA-CHM offers different result displays. An icon on 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
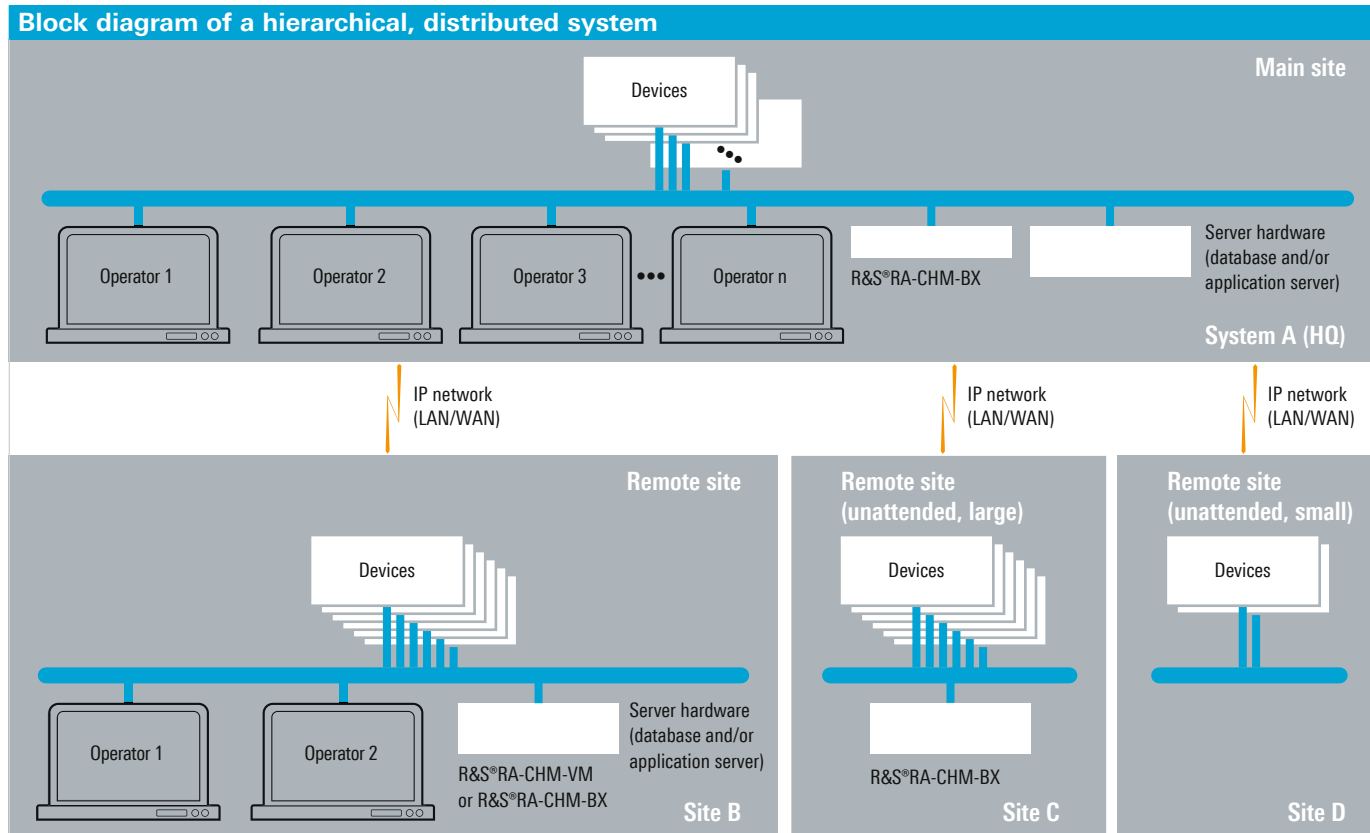
Integration into Rohde & Schwarz monitoring and communication systems

Basic system control and emergency management

R&S®RA-CHM permits 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®RA-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®RA-CHM can perform an emergency shutdown. The shutdown disconnects all critical components – such as the database server – from the network to prevent damage.

System status reporting in R&S®ReportEdit

R&S®RA-CHM offers an interface to the R&S®ReportEdit order and reporting software. A To Report button transfers selected system parameters to R&S®ReportEdit. The operator attaches this data to the system reports in order to report the current system status to the next management level.

User rights management

A central user management software makes it possible to configure and monitor access to the R&S®RA-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, client access license valid for one monitored device	R&S®RA-CHM-CAL	3631.7524.02
System Status Monitoring, server appliance running as a virtual machine on common server hardware for R&S®RAMON systems	R&S®RA-CHM-VM	3028.7421.02
System Status Monitoring, server appliance running on a dedicated, ruggedized server hardware (box) for R&S®RAMON systems; offers enhanced robustness and independent system shutdown and restart	R&S®RA-CHM-BX	3028.7438.02

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

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

Rohde & Schwarz

The Rohde & Schwarz electronics group offers innovative solutions in the following business fields: test and measurement, broadcast and media, secure communications, cybersecurity, monitoring and network testing. Founded more than 80 years ago, the independent company which is headquartered in Munich, Germany, has an extensive sales and service network with locations in more than 70 countries.

Sustainable product design

ı Environmental compatibility and eco-footprint
ı Energy efficiency and low emissions
ı Longevity and optimized total cost of ownership

Certified Quality Management
ISO 9001

Certified Environmental Management
ISO 14001

Rohde & Schwarz GmbH & Co. KG

www.rohde-schwarz.com

Rohde & Schwarz training

www.training.rohde-schwarz.com

Regional contact

ı Europe, Africa, Middle East | +49 89 4129 12345
customersupport@rohde-schwarz.com
ı North America | 1 888 TEST RSA (1 888 837 87 72)
customer.support@rsa.rohde-schwarz.com
ı Latin America | +1 410 910 79 88
customersupport.la@rohde-schwarz.com
ı Asia Pacific | +65 65 13 04 88
customersupport.asia@rohde-schwarz.com
ı China | +86 800 810 82 28 | +86 400 650 58 96
customersupport.china@rohde-schwarz.com

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