R&S®CMWcards
Smart network emulation for all mobile device tests
Use R&S®CMWcards to prepare the tests you always wanted, but never found the time to set up.

Create wireless signaling and application tests on the R&S®CMW500 wideband radio communication tester just by setting up a hand of cards – no programming required. Revolutionary card wizards and unique game rules guide you through setting up test sequences that fully comply with test specifications.

Thanks to the R&S®CMW500 tester’s unrivaled multitechnology capability, R&S®CMW-KT022 CMWcards can be utilized to rapidly reproduce signaling scenarios for various wireless communications standards.

**Benefits and key features**

- Graphical test script definition tool for the R&S®CMW500 wideband radio communication tester
- Cards simplify the creation of wireless signaling tests
- No programming, no code compilation, just GUI
- Intelligent hopscotch card wizard for creating test sequences
- Intuitive game rules that guide the user through specification-compliant protocol signaling test sequences
- Test creation, parameterization, execution and analysis in a single tool
- Advanced mode option for peer message editing, Layer 3 Message Import or Receive message constraints
- Field-to-Lab logfile import option for automatic network parameter extraction from drive test logs
- LTE, WCDMA, GSM and WLAN multi-cell support for mobility and handover tests
- eMTC and NB-IoT support for testing cellular IoT modules
- Multicell support (more than eight independent cells on R&S®CMWflexx)
- Universal fader card for R&S®CMW500 internal baseband fading
- Conditional testing using customizable loops, timer, delays and verdicts
- Logfile and failure cause analysis with R&S®CMWMars message analyzer
- Full test script and UE automation
- Easy to learn, minimum training required
- More than 300 example test cases included
- Additional test script packages available for extensive testing of IMS, LAA (License Assisted Access), Cat-M1 (eMTC), Cat-NB (NB-IoT)
R&S®CMWcards technology overview and features at a glance

Overview
- All 3GPP security and ciphering algorithms
- Support of unlicensed bands (LTE-U) and LAA
- All 3GPP LTE-Advanced carrier aggregation combinations
- 3GPP LTE-Advanced and LTE-Advanced Pro feature
- Testing scope beyond 1 Gbps support, including verification of data throughput
- WLAN (cMTC, NB-IoT)
- legacy WCDMA
- AGNSS location based services (LBS) verification
- CMAS (WEA) and ETWS public warning system
- Evolved multimedia broadcast multicast service (eMBMS)
- LTE WLAN traffic offload
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane

Cellular Internet of Things (IoT) protocol and application testing with R&S®CMWcards

Objective
- Create functional protocol and application test scenarios for IIoT use cases and scenarios
- Include feature for IIoT use cases and scenarios
- Include feature for IIoT use cases and scenarios
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- Include feature for IIoT use cases and scenarios
- Include feature for IIoT use cases and scenarios

Testing scope
- Network simulation of LTE cells as well as eMTC, NB-IoT, eMBMS and GSM
- LTE and WCDMA
- Roaming scenarios, e.g. attach reject
- Handover, redirection, etc.

Field-to-lab (F2L) and virtual drive testing with R&S®CMWcards

Objective
- Modeling recorded drive test data in a reproduction lab environment for F2L and virtual drive testing
- Reproduce prominent network failures and error conditions using imported real-world traces
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- Reproduce prominent network failures and error conditions using imported real-world traces

Testing scope
- Network failure scenarios from field data
- Error conditions from field data
- Reproduce prominent network failures and error conditions using imported real-world traces
- Reproduce prominent network failures and error conditions using imported real-world traces
- Reproduce prominent network failures and error conditions using imported real-world traces

Mobius impact (SAR, HMD, LMD impact)
- Coaxial measurement solution for lab environments
- Impedance measurement solution for F2L environments
- Impedance measurement solution for F2L environments
- Impedance measurement solution for F2L environments
- Impedance measurement solution for F2L environments
- Impedance measurement solution for F2L environments

Network separation profiles
- Simulate interfered network environments in IIoT scenarios
- Simulate interfered network environments in IIoT scenarios
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- Simulate interfered network environments in IIoT scenarios

3GPP NWpK use cases
- Create typical negative testing failure scenarios
- Create typical negative testing failure scenarios
- Create typical negative testing failure scenarios
- Create typical negative testing failure scenarios
- Create typical negative testing failure scenarios
- Create typical negative testing failure scenarios

LTE WLAN traffic offload
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
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- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
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- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane

WLAN (cMTC, NB-IoT)
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane

WCDMA, GSM
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
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R&S®CMWcards for testing mobility and simulation of network failures

Objective
- Simulate roaming behavior in roaming scenarios
- Networks with significant mobility and handover test scenarios
- Networks with significant mobility and handover test scenarios
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- Networks with significant mobility and handover test scenarios

Testing scope
- R&S®CMWcards for testing connectivity
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R&S®CMWcards for testing mobility and simulation of network failures

Objective
- Network simulation of LTE cells as well as eMTC, NB-IoT, eMBMS and GSM
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane
- IMS and VoLTE calls including CS fallback, Inter-RAT mobility procedures for C-plane and U-plane

Testing scope
- Handover, redirection, etc.
- Handover, redirection, etc.
- Handover, redirection, etc.
- Handover, redirection, etc.
- Handover, redirection, etc.
- Handover, redirection, etc.
About Rohde & Schwarz
The Rohde & Schwarz electronics group offers innovative solutions in the following business fields: test and measurement, broadcast and media, secure communications, cybersecurity, radiomonitoring and radiolocation. Founded more than 80 years ago, this independent company has an extensive sales and service network and is present in more than 70 countries. The electronics group is among the world market leaders in its established business fields. The company is headquartered in Munich, Germany. It also has regional headquarters in Singapore and Columbia, Maryland, USA, to manage its operations in these regions.

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

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Certified Environmental Management
ISO 14001

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