

ROHDE & SCHWARZ

CMW500

The Rohde & Schwarz CMW500 is the industry-standard Wideband Radio Communication Tester designed for fast, precise, and comprehensive testing of current and future wireless devices. Supporting a vast array of cellular and non-cellular technologies, from legacy 2G/3G to LTE, 5G NR, WLAN, and Bluetooth, it provides a flexible all-in-one architecture. The CMW500 serves as both a high-speed production tester (non-signaling) and a fully capable protocol tester (signaling/call box mode). Its dual-path configuration allows for parallel multi-technology testing, maximizing throughput and simplifying setup complexity in development, verification, and manufacturing environments.

SPECIFICATIONS

General

Interfaces	2x LAN (1000Base-T, LXi Class C), 1x GPIB (IEEE-488.2), 6x USB 2.0, Digital IQ Interface (optional)
Display	8.4 in TFT color touchscreen (SVGA, 800 x 600 pixels)
Warm-Up Time	30 min
Internal Storage Drive Type	SSD (Solid State Drive)

Physical

Operating Temperature	5 °C to 45 °C °C
Dimensions (W×H×D)	465 mm × 193 mm × 517 mm mm

RF Generator Specifications

Frequency Range	70 MHz to 2.7 GHz (extendable to 6 GHz via options)
Frequency Resolution	0.1 Hz
Output Power Range (RF1 COM)	-130 dBm to -10 dBm
Output Power Range (RF3 OUT)	-120 dBm to +8 dBm
Level Resolution	0.1 dB
Absolute Level Accuracy	typ. < 0.5 dB (< 2.7 GHz, level > -110 dBm)
VSWR (RF1/RF2 COM)	< 1.2 (for f < 2.7 GHz)
VSWR (RF3/RF4 OUT)	< 1.5 (for f < 2.7 GHz)
Vector Modulation Bandwidth	40 MHz (base), up to 160 MHz (option dependent)
ARB Memory Depth	256 Msample to 1 Gsample (option dependent)

RF Analyzer Specifications

RF Input Power Range (RF1/RF2 COM)	-80 dBm to +34 dBm (average)
Maximum Safe Input Level (RF1/RF2 COM)	+40 dBm (peak)
Level Accuracy	typ. < 0.5 dB (< 2.7 GHz)
Measurement Bandwidth	up to 160 MHz (option dependent)

Supported Wireless Technologies

Cellular Standards (Signaling/Call Box)	GSM/GPRS/EDGE, WCDMA/HSPA/HSPA+, LTE-FDD/LTE-TDD, 5G NR (sub-6 GHz)
Legacy Cellular Standards	CDMA2000 1xRTT / 1xEV-DO, TD-SCDMA
Non-Cellular Connectivity	WLAN (802.11 a/b/g/n/ac/ax), Bluetooth (BR/EDR/LE)
GNSS Support	GPS, GLONASS, Galileo, BeiDou
Protocol Testing Capabilities	LTE eHRPD handover, LTE to WCDMA/GSM handover
MIMO Support	up to 8x2 MIMO / 4x4 MIMO (hardware and software option dependent)

System Architecture & Baseband

Internal Reference Frequency	10 MHz
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System Interfaces & Connectivity

Reference Input Connector	1x BNC female, 10 MHz
Reference Output Connector	1x BNC female, 10 MHz
USB Ports (Front)	4x USB 2.0 Type A
USB Ports (Rear)	2x USB 2.0 Type A
LAN Port	2x RJ-45 (10/100/1000 Base-T)
GPIB Port	1x 24-pin IEEE-488.2
External Monitor Output	1x DVI-D (rear panel)

Software & Measurement Applications

Operating System	Windows XP / Windows 7 Embedded / Windows 10 IoT (hardware revision dependent)
Measurement Modes	Signaling (Call Box) and Non-Signaling (Production)
Remote Control Language	SCPI (Standard Commands for Programmable Instruments)
Remote Desktop Support	Windows Remote Desktop via LAN
Power Sensor Support	Direct connection for R&S NRP-Zxx power sensors

Environmental & Regulatory

Storage Temperature	-40 °C to +70 °C
Permissible Relative Humidity	95% R.H. (non-condensing, up to 40 °C)
Recommended Calibration Interval	1 year (12 months)
LXI Compliance	LXI Class C

Power Requirements

AC Input Voltage	100 V to 240 V AC (nominal, ±10% tolerance)
AC Input Frequency	50 Hz to 60 Hz (nominal, ±5% tolerance) or 400 Hz (nominal, ±5% tolerance at 100 V to 120 V)

Environmental & Reliability

Operating Altitude	Up to 4600 m (in operation) / Up to 12000 m (non-operating, transport)
Vibration Resistance (Random)	10 Hz to 300 Hz, 1.2 g RMS (in compliance with EN 60068-2-64)
Vibration Resistance (Sinusoidal)	5 Hz to 55 Hz, 0.15 mm double amplitude (in compliance with EN 60068-2-6)
Shock Resistance	40 g shock spectrum (in compliance with MIL-STD-810F, Method 516.5, Procedure I)

Compliance & Standards

EMC Standards Compliance	EN 61326-1, EN 61326-2-1, EN 55011 Class A, FCC Part 15 Class A
Electrical Safety Standards Compliance	IEC 61010-1, EN 61010-1, CAN/CSA-C22.2 No. 61010-1, UL 61010-1

Audio Measurements

Audio Measurement Interfaces	Analog (BNC), Digital (SPDIF/Optical) - depends on option CMW-B450B
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Inputs & Outputs

Reference Frequency Input Level Range	-3 dBm to +16 dBm (into 50 Ohm)
Ethernet Connection Speed	10/100/1000 Mbps (Gigabit Ethernet)
Digital IQ Interface Option	Supported (via CMW-B510A / CMW-B520A option)
External Trigger Input Level	TTL compatible (0 V to 5 V)

Performance

Max Number of RF Channels	Up to 2 independent transceivers (configuration dependent)
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Compliance

Overvoltage Category	II (compliant with EN 61010-1)
Pollution Degree	2 (compliant with EN 61010-1)

TECHNOLOGY

RF Wireless Communications

APPLICATIONS

Wireless Device Testing & Calibration

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.