



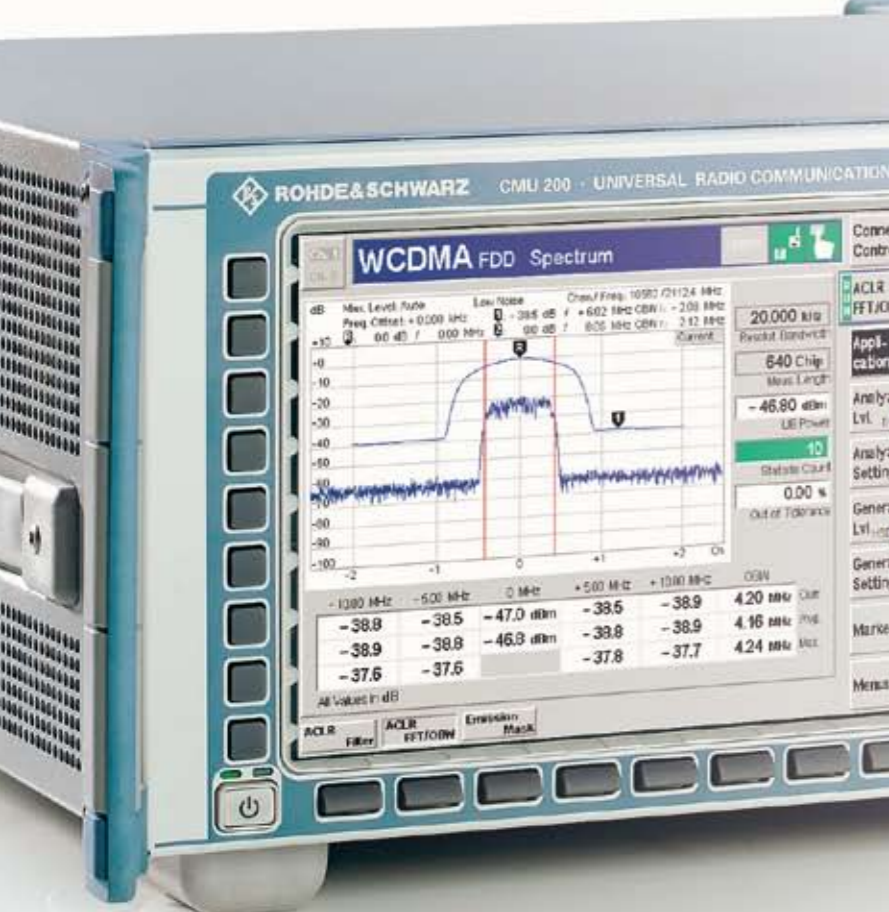
Test & measurement solutions for 3GPP WCDMA/HSPA

- ◆ Choose from our complete T&M portfolio
- ◆ Benefit from our first-rate technological know-how
- ◆ Reduce your costs and shorten the time to market



ROHDE & SCHWARZ

Test & measurement solutions for 3GPP WCDMA/HSPA



■ = Specific use
□ = General use

Development of RF and baseband

Development of protocol stack

Verification and conformance tests

Manufacturing and service

Network deployment and optimization

Product family					Product
Signal generators	■		■	■	R&S®SMU200A vector signal generator
	■			■	R&S®SMATE200A vector signal generator
	■			■	R&S®SMJ100A vector signal generator
	□			□	R&S®SMA100A signal generator
	□			□	R&S®SMB100A signal generator
	□			□	R&S®SMV03 vector signal generator
			■	□	R&S®SMF microwave signal generator
			■	■	R&S®AFQ100A I/Q modulation generator
Signal/spectrum analysis				■	R&S®FSH handheld spectrum analyzer
	■			■	R&S®FSL spectrum analyzer
	■				R&S®FSMR measuring receiver
	■				R&S®FSUP signal source analyzer
	■		■	■	R&S®FSQ signal analyzer
	■		■	■	R&S®FSG spectrum analyzer
	■		■	■	R&S®FSU spectrum analyzer
	■			■	R&S®FSP spectrum analyzer
Network analysis				■	R&S®FMU36 baseband signal analyzer
	□			□	R&S®ZVA vector network analyzer
	□			□	R&S®ZVB vector network analyzer
	□			□	R&S®ZVT vector network analyzer
Radiocommunications test				■	R&S®ZVL vector network analyzer
	■			■	R&S®CMU200 universal radio communication tester
	■			■	R&S®CMU300 universal radio communication tester
				■	R&S®CMU200V10 universal radio communication tester
Protocol test				■	R&S®CMU200V30 universal radio communication tester
			■	■	R&S®CRTU-W protocol tester
			■	■	R&S®CRTU-M protocol tester
			■	■	R&S®CRTU-RRM radio resource management test solution
Conformance test	■			■	R&S®TS8950GW test system
	■			■	R&S®TS8952GW test system
	■			■	R&S®TS8955GW test system
				■	R&S®TS8991 OTA test system
				■	R&S®TS8996 RSE test system
Power supplies	□			□	R&S®NGMO power supply
Production test				■	R&S®TS7180 test system
	■			■	R&S®TS712x shielded RF test chambers
Audio test				□	R&S®CompactTSVP test platform
	■		■	■	R&S®UPV audio analyzer
Coverage measurement				■	R&S®UPV audio analyzer
				■	R&S®ROMES coverage measurement software
				■	R&S®TSM radio network analyzer
				■	R&S®TSMQ radio network analyzer
			■	R&S®TSMU radio network analyzer	

Technology overview

UMTS (Universal Mobile Telecommunication System) networks based on WCDMA (wideband code division multiple access) have been deployed worldwide as 3rd generation mobile communications systems. UMTS provides a clear evolution path to high speed packet access (HSPA). HSPA refers to the combination of high speed downlink packet access (HSDPA) and high speed uplink packet access (HSUPA). HSDPA allows data rates up to 14 Mbit/s in the downlink.

HSUPA makes uplink data rates of 5.76 Mbit/s possible. HSPA also boosts capacity in UMTS networks and provides significant latency reductions. To exploit the full potential of WCDMA 5 MHz operation, the performance of HSPA-based radio networks will be further enhanced in terms of spectrum efficiency, peak data rate, and latency. Thus, further enhancements to HSPA are provided in the context of HSPA+. This includes downlink MIMO operation, protocol improvements, and higher order modulation.

Application notes

Description	Number	Description	Number
WCDMA/CDMA2000® Intermodulation Calibration for Zero IF Chipsets	1CM54	High Speed Downlink Packet Access (HSDPA) Test and Measurement Requirements	1MA82
Synchronous Node B Testing with R&S®CMU300	1CM58	HSDPA – Challenges for UE Power Amplifier Design	1MA84
Optimization of HSDPA networks with the R&S®CMU300 Radio Communication Tester and R&S®ROMES Coverage Measurement System	1CM60	Testing HSDPA UE RX Diversity	1MA87
How to do Measurements with the R&S®CMU200 in Accordance with TS 34.121 in the Presence of the HS-DPCCH	1CM62	T&M Requirements for Terminals with Receive Diversity and Advanced Receivers	1MA88
Tests on 3GPP WCDMA FDD Node Bs in Accordance with Standard TS 25.141	1MA67	High Speed Uplink Packet Access (HSUPA) White Paper	1MA94
Measurements on 3GPP WCDMA User Equipment in Accordance with Standard TS 34.121	1MA68	Introduction to MIMO Systems	1MA102
		UMTS Long Term Evolution (LTE) Technology Introduction	1MA111
		HSPA+ Technology Introduction	1MA121

About Rohde & Schwarz

Rohde & Schwarz is a leading supplier of solutions in the fields of test and measurement, broadcasting, radio-monitoring and radiolocation, as well as secure radio-communications. Established more than 70 years ago, Rohde & Schwarz has a global presence and a dedicated service network in over 70 countries. It has approx. 7200 employees and achieved a net revenue of € 1.4 billion in the past fiscal year. Company headquarters are in Munich, Germany.

Our worldwide organization is ready to back you up

Our reliable and highly efficient organization provides optimal support for our products wherever it is needed. You profit from our experience and skill in all phases of application: We provide advice concerning a purchase, offer support to ensure optimal use of the product features, and enhance an instrument with additional options and flexible service packages. Modular and innovative instrument concepts make our products a future-proof investment. Due to our close-knit network of representatives in more than 70 countries, our customers throughout the world receive outstanding support for our products.

Regional contacts

Asia/Pacific	+65 65 130 488
Europe	+49 1805 124242
Americas	+1-888-837 8772
E-mail:	customersupport@rohde-schwarz.com



ROHDE & SCHWARZ

www.rohde-schwarz.com

Europe: +49 1805 12 4242, customersupport@rohde-schwarz.com
Americas: +1-888-837-8772, customer.support@rsa.rohde-schwarz.com
Asia: +65 65 130488, customersupport.asia@rohde-schwarz.com