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Test & Measurement

- sales
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- calibration
- repair
- disposal

Complimentary Reference Material

This PDF has been made available as a complimentary service for you to assist in evaluating this model for your testing requirements.

TMG offers a wide range of test equipment solutions, from renting short to long term, buying refurbished and purchasing new. Financing options, such as Financial Rental, and Leasing are also available on application.

TMG will assist if you are unsure whether this model will suit your requirements.

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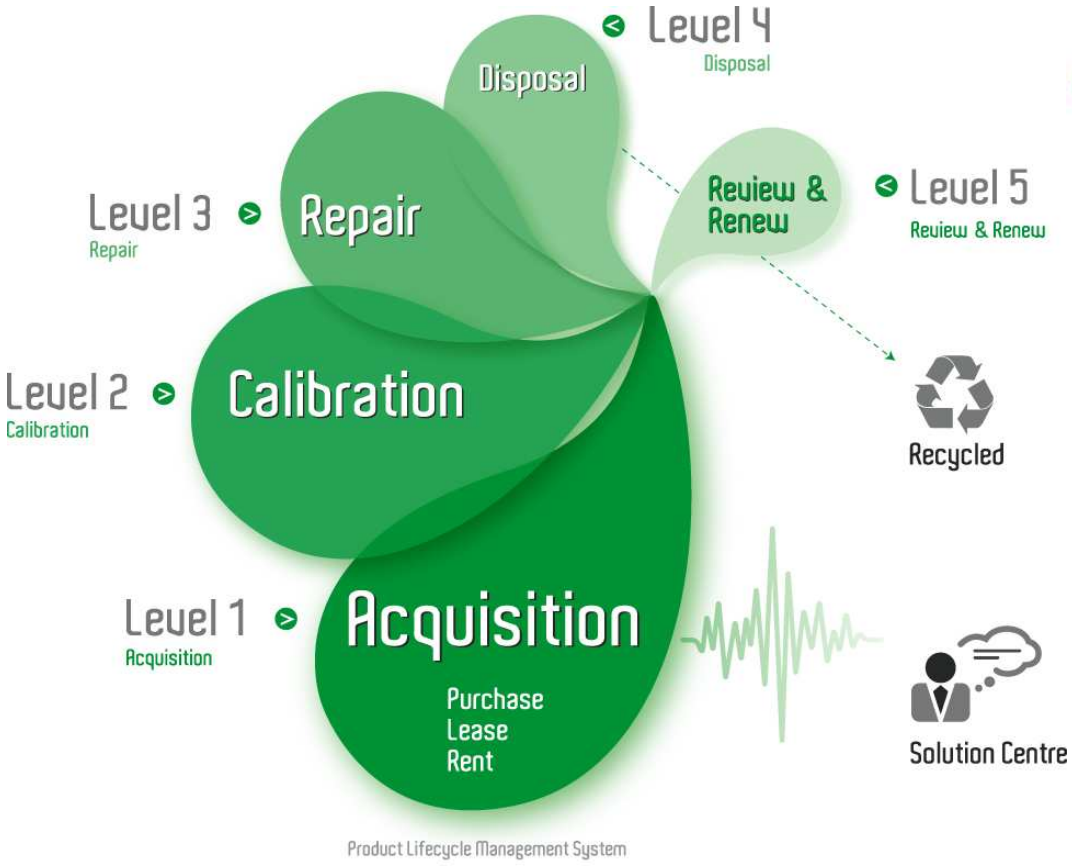
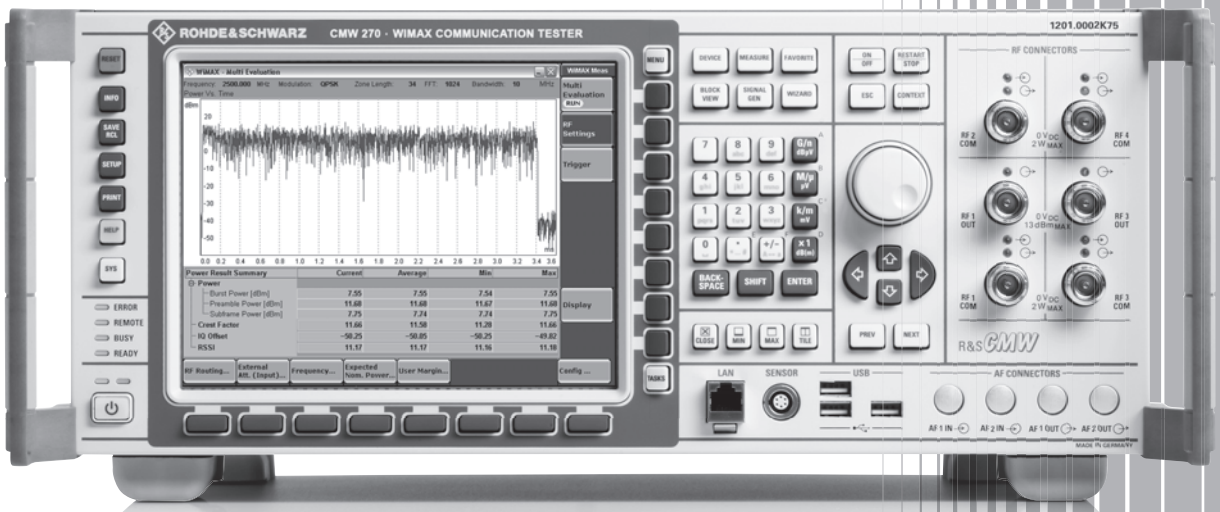


R&S®CMW270
WiMAX Communication Tester
Specifications



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CONTENTS

Specifications apply under the following conditions:
Data without tolerance limits is not binding. Based on a 24-month calibration interval unless otherwise stated.

15 minutes warm-up time at ambient temperature, specified environmental conditions met, calibration cycle adhered to, and all internal automatic adjustments performed. "Typical values" are designated with the abbreviation "typ.". These values are verified during the final test but are not assured by Rohde & Schwarz. "Nominal values" are design parameters that are not assured by Rohde & Schwarz. These values are verified during product development but are not specifically tested during production.

During the production process, each instrument is calibrated in line with defined procedures. All measurement results, including measurement uncertainties of the calibration system, have to be within the published specification limits to release the individual instrument. The expanded measurement uncertainties of the calibration system used in the production process are determined with a coverage factor of $k = 2$ (normally approx. 95 % probability).

General technical specifications

RF generator

Frequency range		70 MHz to 6000 MHz
Frequency resolution		0.1 Hz
Frequency uncertainty		same as timebase + frequency resolution

Output level range		
RF1 COM, RF2 COM	70 MHz to 100 MHz	
	continuous wave (CW)	–130 dBm to –15 dBm
	peak envelope power (PEP)	up to –15 dBm
	overranging (PEP)	up to –10 dBm
	100 MHz to 3300 MHz	
	continuous wave (CW)	–130 dBm to –5 dBm
	peak envelope power (PEP)	up to –5 dBm
	overranging (PEP)	up to 0 dBm
	3300 MHz to 6000 MHz	
	continuous wave (CW)	–120 dBm to –15 dBm
	peak envelope power (PEP)	up to –15 dBm
	overranging (PEP)	up to –10 dBm
	maximum input DC level	0 V DC
RF1 OUT	70 MHz to 100 MHz	
	continuous wave (CW)	–120 dBm to –2 dBm
	peak envelope power (PEP)	up to –2 dBm
	overranging (PEP)	up to +3 dBm
	100 MHz to 3300 MHz	
	continuous wave (CW)	–120 dBm to +8 dBm
	peak envelope power (PEP)	up to +8 dBm
	overranging (PEP)	up to +13 dBm
	3300 MHz to 6000 MHz	
	continuous wave (CW)	–110 dBm to –2 dBm
	peak envelope power (PEP)	up to –2 dBm
	overranging (PEP)	up to +3 dBm
	maximum input DC level	0 V DC

Output level uncertainty	in temperature range +20 °C to +35 °C, no overranging	
RF1 COM, RF2 COM	output level >–120 dBm	
	70 MHz to 100 MHz	<1.2 dB [1]
	100 MHz to 3300 MHz	<0.6 dB [1]
	3300 MHz to 6000 MHz	<1.2 dB [1]
RF1 OUT	output level >–110 dBm	
	70 MHz to 100 MHz	<1.6 dB [1]
	100 MHz to 3300 MHz	<0.8 dB [1]
	3300 MHz to 6000 MHz	<1.6 dB [1]

Output level uncertainty	in temperature range +5 °C to +45 °C, no overranging	
RF1 COM, RF2 COM	output level >–120 dBm	
	70 MHz to 100 MHz	<2.0 dB [1]
	100 MHz to 3300 MHz	<1.0 dB [1]
	3300 MHz to 6000 MHz	<2.0 dB [1]
RF1 OUT	output level >–110 dBm	
	70 MHz to 100 MHz	<2.0 dB [1]
	100 MHz to 3300 MHz	<1.0 dB [1]
	3300 MHz to 6000 MHz	<2.0 dB [1]

[1] Valid for a 12-month calibration interval.

Output level linearity with fixed RF output attenuator setting	in temperature range +20 °C to +35 °C, GPRF generator list mode, level range 0 dB to –30 dB	
RF1 COM, RF2 COM	no overranging	<0.2 dB, typ. <0.1 dB

Output level resolution		0.01 dB
Output level repeatability	typical values after 1 h warm-up time, always returning to same level and frequency, no temperature change, insignificant time change	
	output level ≥–80 dBm	<0.01 dB
	output level <–80 dBm	<0.05 dB

VSWR		
RF1 COM, RF2 COM	70 MHz to 3300 MHz	<1.2
	3300 MHz to 5000 MHz	<1.5
	5000 MHz to 6000 MHz	<1.6
RF1 OUT	70 MHz to 3300 MHz	<1.5
	3300 MHz to 5000 MHz	<1.5
	5000 MHz to 6000 MHz	<1.6

Attenuation of 2nd harmonic		
RF1 COM, RF2 COM	70 MHz to 6000 MHz, P < –10 dBm	>30 dB
RF1 OUT	70 MHz to 6000 MHz, P < 0 dBm	>30 dB

Attenuation of 3rd harmonic		
RF1 COM, RF2 COM	70 MHz to 6000 MHz, P < –10 dBm	>40 dB
RF1 OUT	70 MHz to 6000 MHz, P < 0 dBm	>40 dB

Attenuation of nonharmonics	>5 kHz offset from carrier, for output level >–40 dBm, for full-scale CW signal	
	400 MHz to 3300 MHz, except $f_{nonharmonic}$ = 3900 MHz – $f_{carrier}$, except $f_{nonharmonic}$ = 3900 MHz	>60 dB
	3300 MHz to 3600 MHz	>25 dB
	3600 MHz to 6000 MHz, except $f_{nonharmonic}$ = 2 × $f_{carrier}$ – 6400 MHz	>40 dB

Phase noise	single sideband, 70 MHz to 3300 MHz	
Carrier offset	≥1 MHz	<–120 dBc (1 Hz)

Phase noise	single sideband, 3300 MHz to 6000 MHz	
Carrier offset	≥1 MHz	<–117 dBc (1 Hz)

Signal-to-noise ratio	70 MHz to 3300 MHz	
RF1 COM, RF2 COM	5 MHz offset from carrier, for output level >–30 dBm	>95 dB, typ. >101 dB, 1 kHz (>125 dB, typ. >131 dB, 1 Hz)

Signal-to-noise ratio	3300 MHz to 6000 MHz	
RF1 COM, RF2 COM	5 MHz offset from carrier, for output level >–30 dBm	>92 dB, 1 kHz

Modulation source: arbitrary waveform generator (ARB) (R&S®CMW-B110A option)

Memory size		1.024 Gbyte
Word length	I	16 bit
	Q	16 bit
	marker	4 bit to 16 bit
Sample length	with 4-bit marker	up to 227.55 Msample
Sample rate	minimum	400 Hz
	maximum	100 MHz

RF analyzer

VSWR		
RF1 COM, RF2 COM	70 MHz to 3300 MHz	<1.2
	3300 MHz to 5000 MHz	<1.5
	5000 MHz to 6000 MHz	<1.6

Inherent spurious response	without input signal	
	70 MHz to 6000 MHz, except 4000 MHz, 4800 MHz, 5600 MHz, 6000 MHz	<–100 dBm

Spurious response	for full-scale single-tone input signal	
	70 MHz to 3300 MHz	<–55 dB
	3300 MHz to 3700 MHz, except f_{in} = 6400 MHz – $f_{selected}$, except f_{in} = 6400 MHz – 0.5 × $f_{selected}$	<–40 dB
	3700 MHz to 6000 MHz, except f_{in} = 6400 MHz – 0.5 × $f_{selected}$	<–40 dB

Harmonic response	2nd harmonic	
RF1 COM, RF2 COM	f_{in} = 70 MHz to 1650 MHz, $f_{selected}$ = 140 MHz to 3300 MHz	<–30 dB
	f_{in} = 1650 MHz to 3000 MHz, $f_{selected}$ = 3300 MHz to 6000 MHz	<–30 dB

Harmonic response	3rd harmonic	
RF1 COM, RF2 COM	f_{in} = 70 MHz to 1100 MHz, $f_{selected}$ = 210 MHz to 3300 MHz	<–50 dB
	f_{in} = 1100 MHz to 2000 MHz, $f_{selected}$ = 3300 MHz to 6000 MHz	<–50 dB

Phase noise	single sideband, 70 MHz to 3300 MHz	
Carrier offset	≥1 MHz	<–120 dBc (1 Hz)

Phase noise	single sideband, 3300 MHz to 6000 MHz	
Carrier offset	≥1 MHz	<–117 dBc (1 Hz)

Trigger		
Trigger sources		BASE: external TRIG A, BASE: external TRIG B, GPRF: free run, GPRF: IF power, GPRF: BB generator

Power meter

Frequency range		70 MHz to 6000 MHz
Frequency resolution		0.1 Hz
Resolution bandwidths		Gaussian, 1 kHz to 10 MHz, in 1/3/5 steps, bandpass, 1 kHz to 30 MHz, in 1/3/5 steps, RRC, α = 0.1
Expected nominal power setting range	for ADC full scale	
RF1 COM, RF2 COM	70 MHz to 100 MHz	–37 dBm to +42 dBm [2]
	100 MHz to 3300 MHz	–47 dBm to +42 dBm [2]
	3300 MHz to 6000 MHz	–37 dBm to +42 dBm [2]

Level range		
RF1 COM, RF2 COM	70 MHz to 100 MHz	
	continuous power (CW)	–74 dBm [3] to +34 dBm
	peak envelope power (PEP)	up to +42 dBm [2]
	100 MHz to 3300 MHz	
	continuous power (CW)	–84 dBm [3] to +34 dBm
	peak envelope power (PEP)	up to +42 dBm [2]
	3300 MHz to 6000 MHz	
	continuous power (CW)	–74 dBm [3] to +34 dBm
	peak envelope power (PEP)	up to +42 dBm [2]
	maximum input DC level	0 V DC

Level uncertainty	in temperature range +20 °C to +35 °C	
RF1 COM, RF2 COM	70 MHz to 100 MHz	<1.0 dB [4]
	100 MHz to 3300 MHz	<0.5 dB [4]
	3300 MHz to 6000 MHz	<1.0 dB [4]

Level uncertainty	in temperature range +5 °C to +45 °C	
RF1 COM, RF2 COM	70 MHz to 100 MHz	<1.2 dB [4]
	100 MHz to 3300 MHz	<0.7 dB [4]
	3300 MHz to 6000 MHz	<1.2 dB [4]

Level linearity with fixed expected nominal power setting	in temperature range +20 °C to +35 °C, level range 0 dB to –40 dB	
RF1 COM, RF2 COM		<0.3 dB

Level resolution		0.01 dB

Level repeatability	typical values after 1 h warm-up time, always returning to same level and frequency, no temperature change, insignificant time change	
	input level ≥–40 dBm	<0.01 dB
	input level <–40 dBm	<0.03 dB

Dynamic range	70 MHz to 3300 MHz, *RBW →1 kHz*, with fixed expected nominal power setting	>100 dB
Expected nominal power setting for full dynamic range		
RF1 COM, RF2 COM		–8 dBm to +42 dBm [2]

[2] The maximum permissible continuous power is +34 dBm due to thermal limits.

[3] *RBW → 1 kHz.*

[4] Valid for a 12-month calibration interval.

Dynamic range	3300 MHz to 6000 MHz, *RBW → 1 kHz*, with fixed expected nominal power setting	>97 dB
Expected nominal power setting for full dynamic range		
RF1 COM, RF2 COM		+2 dBm to +42 dBm [2]

Timebase

Timebase TCXO

Max. frequency drift	in temperature range +5 °C to +45 °C	$\pm 1 \times 10^{-6}$
Max. aging	at +25 °C, after 14 days of continuous operation	$\pm 1 \times 10^{-6}$/year

Timebase basic OCXO (R&S®CMW-B690A option)

Max. frequency drift	in temperature range +5 °C to +45 °C	$\pm 5 \times 10^{-8}$
Retrace	at +25 °C, after 24 hours power ON / 2 hours power OFF / 1 hour power ON	$\pm 2 \times 10^{-8}$
Max. aging	at +25 °C	$\pm 1 \times 10^{-7}$/year
	after 10 days of continuous operation	$\pm 1 \times 10^{-9}$/day
Warm-up time	at +25 °C, the frequency is in the range that is 10 times the frequency drift ($\pm 5 \times 10^{-7}$)	approx. 10 min

Timebase highly stable OCXO (R&S®CMW-B690B option)

Max. frequency drift	in temperature range +5 °C to +45 °C, referenced to +25 °C	$\pm 5 \times 10^{-9}$
	with instrument orientation	$\pm 1 \times 10^{-9}$
Retrace	at +25 °C, after 24 hours power ON / 2 hours power OFF / 1 hour power ON	$\pm 5 \times 10^{-9}$
Max. aging	at +25 °C	$\pm 3 \times 10^{-8}$/year
	after 10 days of continuous operation	$\pm 5 \times 10^{-10}$/day
Warm-up time	at +25 °C, the frequency is in the range that is 10 times the frequency drift ($\pm 5 \times 10^{-8}$)	approx. 10 min

Reference frequency inputs/outputs

Synchronization input		BNC connector REF IN, rear panel
Frequency	sinewave	10 MHz to 80 MHz, step: 1 Hz
	squarewave (TTL level)	1 MHz to 80 MHz, step: 1 Hz
Max. frequency variation		$\pm 10 \times 10^{-6}$
Input voltage range		0.5 V to 2 V, rms
Impedance		50 Ω

Synchronization output 1		BNC connector REF OUT 1, rear panel
Frequency		10 MHz from internal reference or frequency at synchronization input
Output voltage		>1.4 V, peak-to-peak
Impedance		50 Ω

WiMAX specifications

Standard		IEEE 802.16e-2005, OFDMA

WiMAX RF generator (prerequisite: R&S®CMW-B110A option)

Frequency range	WiMAX band 1	2300 MHz to 2800 MHz
	WiMAX band 2	3300 MHz to 3800 MHz
	WiMAX band 3	5100 MHz to 5850 MHz

WiMAX R&S®WINIQSIM2 (R&S®CMW-KW700 option)

Arbitrary waveform file	in line with IEEE 802.16e-2005, OFDMA average power	WIMAX_DL_3-BURST_46_5MS.WV (PAR = 11.11 dB)

Output level range	depending on PAR	see general technical specifications
Output level uncertainty	waveform file used: WIMAX_DL_3-BURST_46_5MS.WV	add 0.15 dB to RF generator level uncertainty (see general technical specifications)
Output level resolution		see general technical specifications

Signal quality		
Error vector magnitude (EVM)	ID_Cell = 0, permbase = 0, prbs_id = 0, cp = 1/8, BW = 10 MHz, bursts: FCH, DL-MAP, data PN15, modulation type and coding rate QPSK 1/2; waveform file used: WIMAX_DL_3BURST_46_5MS.WV	<–40 dB, rms

WiMAX RF analyzer (R&S®CMW-KM700 option)

FFT size		512, 1024
Bandwidth		3.5 MHz, 5 MHz, 7 MHz, 8.75 MHz, 10 MHz
Link direction		uplink, downlink
Subcarrier allocation		DL PUSC, UL PUSC

Frequency range	WiMAX band 1	2300 MHz to 2800 MHz
	WiMAX band 2	3300 MHz to 3800 MHz
	WiMAX band 3	5100 MHz to 5580 MHz and 5620 MHz to 5850 MHz
Level setting		manual mode
Level range	RF1 COM, RF2 COM	–40 dBm to +27 dBm, rms

Statistics		
Statistical count		1 to 1000
Values		current, average, minimum, maximum

Trigger		
Trigger source		BASE: external TRIG A, BASE: external TRIG B, WiMAX: IF power

Measured parameters	numeric results	rms power (subframe, burst, preamble), RSSI, CINR, crest factor, error vector magnitude (all carriers, pilot carriers, data carriers), unmodulated EVM, frequency error, I/Q DC offset, I/Q imbalance gain, I/Q imbalance quadrature, spectrum flatness, spectrum flatness neighbor, occupied bandwidth, spectrum emission mask, adjacent channel leakage ratio

Power measurement

Subframe rms power		
Level uncertainty	RF1 COM, RF2 COM, WiMAX bands 1, 2 and 3	add 0.15 dB to RF analyzer level uncertainty (see general technical specifications) [5]

Modulation analysis

Error vector magnitude		
Measurement range		from inherent EVM up to –12 dB
Inherent EVM	WiMAX band 1 UL	
	–15 dBm ≤ input level ≤ +27 dBm	<–40 dB, rms [5]
	–40 dBm ≤ input level < –15 dBm	<–36 dB, rms [5]
	WiMAX band 2 UL	
	–15 dBm ≤ input level ≤ +27 dBm	<–38 dB, rms [5]
	–35 dBm ≤ input level < –15 dBm	<–35 dB, rms [5]
	WiMAX band 3 UL	
	–15 dBm ≤ input level ≤ +27 dBm	<–38 dB, rms [5]
	–35 dBm ≤ input level < –15 dBm	<–35 dB, rms [5]
	WiMAX band 1 DL	
	–15 dBm ≤ input level ≤ +27 dBm	<–38 dB, rms [5]
	WiMAX band 2 DL	
	–15 dBm ≤ input level ≤ +27 dBm	<–36 dB, rms [5]
	WiMAX band 3 DL	
	–15 dBm ≤ input level ≤ +27 dBm	<–36 dB, rms [5]
Measurement length		1 frame, multiframe
Resolution		0.01 dB

Frequency error		
Measurement range	FFT size 512, BW = 3.5 MHz	–3.9063 kHz to +3.9063 kHz
	FFT size 512, BW = 5 MHz	–5.468 kHz to +5.468 kHz
	FFT size 1024, BW = 7 MHz	–3.9063 kHz to +3.9063 kHz
	FFT size 1024, BW = 8.75 MHz	–4.8828 kHz to +4.8828 kHz
	FFT size 1024, BW = 10 MHz	–5.468 kHz to +5.468 kHz
Frequency measurement uncertainty		<10 Hz + drift of timebase, see general technical specifications [5]
Resolution		0.01 Hz

[5] Averaging across 100 bursts, UL signal definition: BW = 10 MHz, NFFT = 1024, all subchannels used, zone length: 34 DL, 18 UL.

I/Q imbalance		
Inherent I/Q gain imbalance		<0.1 dB [5]
I/Q gain imbalance resolution		0.01 dB
Inherent I/Q quadrature imbalance		<0.1° rms [5]
I/Q quadrature imbalance resolution		0.01°

Spectrum measurements

Spectrum flatness, relative		
Level uncertainty	inner carriers: spectral lines from $-N_{used}/4$ to –1 and spectral lines from 1 to $N_{used}/4$	<0.6 dB [6]
	outer carriers: spectral lines from $-N_{used}/2$ to $-N_{used}/4$ and spectral lines from $N_{used}/4$ to $N_{used}/2$	<1.1 dB [6]
	neighbor subcarrier deviation	<0.2 dB [6]
Resolution		0.01 dB

Adjacent channel leakage ratio	rms detector	
Filter		rectangle 5 MHz, 10 MHz
Dynamic range	first adjacent channel	>45 dB
Expected nominal power setting for full dynamic range	RF1 COM, RF2 COM	>–3 dBm

Spectrum emission mask	rms detector	
Frequency span		40 MHz
Supported masks		IEEE
Dynamic range		>50 dB
Expected nominal power setting for full dynamic range	RF1 COM, RF2 COM	>–3 dBm

WiMAX signaling (base station emulator; with R&S®CMW-KS700, R&S®CMW-B200A, R&S®CMW-B270A options)

Standard		IEEE 802.16e
Physical layer mode		OFDMA

Frequency range	WiMAX band 1	2300 MHz to 2800 MHz
	WiMAX band 2	3300 MHz to 3800 MHz
	WiMAX band 3	5100 MHz to 5580 MHz and 5620 MHz to 5850 MHz

Level setting		manual mode
Level reference	downlink	single data subcarrier power

Output level range		
RF1 COM, RF2 COM, RF1 OUT		see general technical specifications
	offset relative to peak envelope power (PEP)	
	preamble power single data subcarrier power	–17.7 dB [7] –51.2 dB [7]

Output level uncertainty		see general technical specifications
Output level resolution		see general technical specifications

[6] Averaging across 100 bursts, UL signal definition: BW = 10 MHz, NFFT = 1024, all subchannels used, zone length: 34 DL, 18 UL.

[7] BW = 10 MHz, all subchannels used.

Signaling parameters (physical and MAC layers)

FFT size		512, 1024
Bandwidth		3.5 MHz, 5 MHz, 7 MHz, 8.75 MHz, 10 MHz
Duplexing		TDD
Frame duration		5 ms
Cyclic prefix		1/8
Subcarrier allocation		DL-PUSC, UL-PUSC
Number of OFDMA symbols	downlink	26 to 35
Channel coding	FEC type	CC, CTC
Modulation	FEC code type: downlink	QPSK 1/2, QPSK 3/4, 16QAM 1/2, 16QAM 3/4, 64QAM 1/2, 64QAM 2/3, 64QAM 3/4
	FEC code type: uplink	QPSK 1/2, QPSK 3/4, 16QAM 1/2, 16QAM 3/4
Burst types		FCH, DL-MAP, UL-MAP, DCD, UCD, data region

PER measurement

Measurement range		0 % to 100 %
Data	downlink	all 0 all 1 bit pattern: 0101 bit pattern: 1010 pseudo random PN9 to PN23
Acknowledge type		ARQ, HARQ, PING
Payload mode		automatic or user-defined

Channel measurement

CINR, RSSI, MS TX power	provided by mobile station	

MS power control

Mode		open-loop power control closed-loop power control

Digital IQ 1 TO 4 (R&S®CMW-B510A option)

The R&S®CMW-B510A makes the digital I/Q interface and AUX interface available on the rear of the instrument.

Digital I/Q interface

The digital I/Q interface can be used for connecting the R&S®CMW270 to the digital I/Q interface of other Rohde & Schwarz instruments (e.g. R&S®AMU200A, R&S®EX-IQ-BOX).

DIG I/Q IN/OUT 1/3	input and output, bidirectional, half-duplex	26-pin MDR connector
Level		LVDS
Clock rate in		100 MHz
Clock rate out		100 MHz

DIG I/Q OUT 2/4	output	26-pin MDR connector
Level		LVDS
Clock rate		100 MHz

Control signals	general-purpose control, for future use	
	6 signals	100 MHz

I/Q data		
Resolution	for clock rate up to 100 MHz	16 bit for I and 16 bit for Q

I/Q sample rate		
Source		internal, digital input, digital output, AUX interface
Range		1.92 MHz to 100 MHz
Predefined values [8]	standard-independent	100 MHz

I/Q enable/request rate		
Digital input	I/Q mode 1	75 MHz, 100 MHz
	I/Q mode 2	0 Hz to 100 MHz
Digital output	I/Q mode 1	75 MHz, 100 MHz
	I/Q mode 2	0 Hz to 100 MHz
	I/Q mode 4	75 MHz

AUX interface

The AUX interface can be used for connecting the R&S®CMW270 to other instruments, e.g. to trigger, clock and enable signals.

AUX A/B	bidirectional, half-duplex	two BNC connectors
Level		3.3 V TTL
Clock rate		0 Hz to 100 MHz

Included extras

Digital I/Q cable (two sets)	same cable as included in R&S®SMU-Z6	26-pin MDR connector

[8] Further values in range from 400 Hz to 100 MHz can be provided on demand.

General data

RF connectors (front panel)		Snap-N female, 50 Ω, compatible with N female connectors
RF1 COM, RF2 COM		combined RF input and RF output
RF1 OUT		RF output

Remote control interfaces (front panel)		
LAN		Ethernet RJ-45 connector, 100 Mbit/s

Remote control interfaces (rear panel)		
IEEE 488	R&S®CMW-B612A IEEE bus interface option	IEC 60625-2 (IEEE 488.2), 24-pin Amphenol connector
LAN REMOTE		Ethernet RJ-45 connector, 1000 Mbit/s
USB REMOTE		USB 2.0 type B connector

Further interfaces (front panel)		
USB	for keyboard, mouse, USB stick	3 × USB 2.0 type A connector
SENSOR		for R&S®NRP-Zxx power sensors
DIGITAL MONITOR	for external monitor, only included in R&S®CMW-S600C configuration (front panel without display or keypad)	DVI-D connector

Further interfaces (rear panel)		
USB	for keyboard, mouse, USB stick	1 × USB 2.0 type A connector, 1 × USB 1.1 type A connector
DVI	for external monitor, R&S®CMW-B620A DVI interface option	DVI-D connector
TRIG A, TRIG B	trigger input/output	2 × BNC connector
	output trigger sources	GPRF: BB generator

Operating temperature range		+5 °C to +45 °C, in line with EN 60068-2-1 and -2
Storage temperature range		–25 °C to +60 °C, in line with EN 60068-2-1 and -2
Humidity	+40 °C, non-condensing	80 % relative humidity, in line with EN 60068-2-3
Electromagnetic compatibility	The instrument complies with the emission requirements stipulated by EN 55011 class A. This means that the instrument is suitable for use in industrial environments.	in line with EMC Directive 2004/108/EC, applied standard: EN 61326 (immunity: for industrial environment; emissions: class A)
Electrical safety		in line with IEC 61010-1: 2001 (ed. 2), EN 61010-1: 2001 (ed. 2), UL61010-1 (ed. 2), CAN C22.2 No. 61010-1-04

Mechanical resistance	non-operating mode	
Vibration	sinusoidal	in line with EN 60068-2-6, MIL-PRF-28800F classes 3 and 4, 5 Hz to 150 Hz, max. 2 g at 55 Hz, 55 Hz to 150 Hz, 0.5 g const.
	random	in line with EN 60068-2-64, 10 Hz to 300 Hz, acceleration 1.2 g rms
Shock		in line with MIL-STD-810F 40 g shock spectrum

Power supply		power factor correction, in line with EN 61000-3-2
Input		100 V to 240 V ± 10 % (AC), max. 850 VA, 50 Hz to 60 Hz ± 5 %
Power consumption	base unit, non-signaling	approx. 200 W
Display	selected with R&S®CMW-S600D configuration (front panel with display and keypad)	21 cm TFT color display (8.4")
Resolution		800 × 600 pixels (SVGA resolution)
Pixel failure rate		$<1.1 \times 10^{-5}$

Dimensions	W × H × D, overall	465.1 mm × 197.3 mm × 517.0 mm 18.31 in × 7.77 in × 20.35 in
	for rackmounting	19" 1/1, 4 HU, 450
Weight	base unit	approx. 14 kg approx. 31 lb
	with typical options	approx. 18 kg approx. 40 lb
Calibration interval	12 months	recommended for maximum accuracy, see specified RF generator and RF analyzer level uncertainty
	24 months	add 0.2 dB to specified RF generator and RF analyzer level uncertainty

Ordering information

Base unit

Designation	Type	Order No.
WiMAX Communication Tester The base unit comes with the following accessories: power cord, operating manual (quick start guide), comprehensive documentation on CD-ROM	R&S®CMW270	1201.0002K75
For more ordering information about available options, please see the product brochure (PD 5213.8880.12) or ask your local Rohde & Schwarz expert to find the solution that is optimally suited to your needs.		

Recommended extras for manual operation

Designation	Type	Order No.
For R&S®CMW-S600D configuration (front panel with display and keypad)		
Mouse with USB Interface, optical	R&S®PSL-Z10	1157.7060.04
For R&S®CMW-S600C configuration (front panel without display or keypad)		
Mouse with USB Interface, optical	R&S®PSL-Z10	1157.7060.04
Keyboard with USB Interface (US assignment)	R&S®PSL-Z2	1157.6870.04
17" TFT Monitor	R&S®PMC3	1082.6004.12
Important information: We recommend using only the above-mentioned original PC components from Rohde & Schwarz in connection with the R&S®CMW270. The interaction of all components is continuously tested. Insufficiently shielded PC components may cause EMC problems that may disturb RF measurements results.		

Recommended extras

Designation	Type	Order No.
19" Rack Adapter	R&S®ZZA-411	1096.3283.00
Digital Signal Interface Module	R&S®EX-IQ-BOX	1409.5505.02
Cable TVR 290, 26-pin MDR connector; additional cable for R&S®CMW-B510A used with e.g. R&S®AMU200A, R&S®EX-IQ-BOX	R&S®SMU-Z6	1415.0201.02

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Rohde&Schwarz is an independent group of companies specializing in electronics. It is a leading supplier of solutions in the fields of test and measurement, broadcasting, radiomonitoring and radiolocation, as well as secure communications. Established 75 years ago, Rohde&Schwarz has a global presence and a dedicated service network in over 70 countries. Company headquarters are in Munich, Germany.

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For product brochure,
see PD 5213.8880.12
and www.rohde-schwarz.com

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Subject to change

*0.14 €/min within German wireline network; rates may vary in other networks (wireline and mobile) and countries.