R&S®BBA100
Broadband Amplifier
Specifications

ROHDE&SCHWARZ

CONTENTS

Specifications apply under the following conditions: 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.

Rohde & Schwarz equipment is designed for reliable operation up to an altitude of 3000 m above sea level, and for transport up to an altitude of 4600 m above sea level.

All specified parameters are valid for an ambient temperature of +25 °C, input impedance of 50 Ω and output impedance of 50 Ω. Data without tolerance limits is not binding.

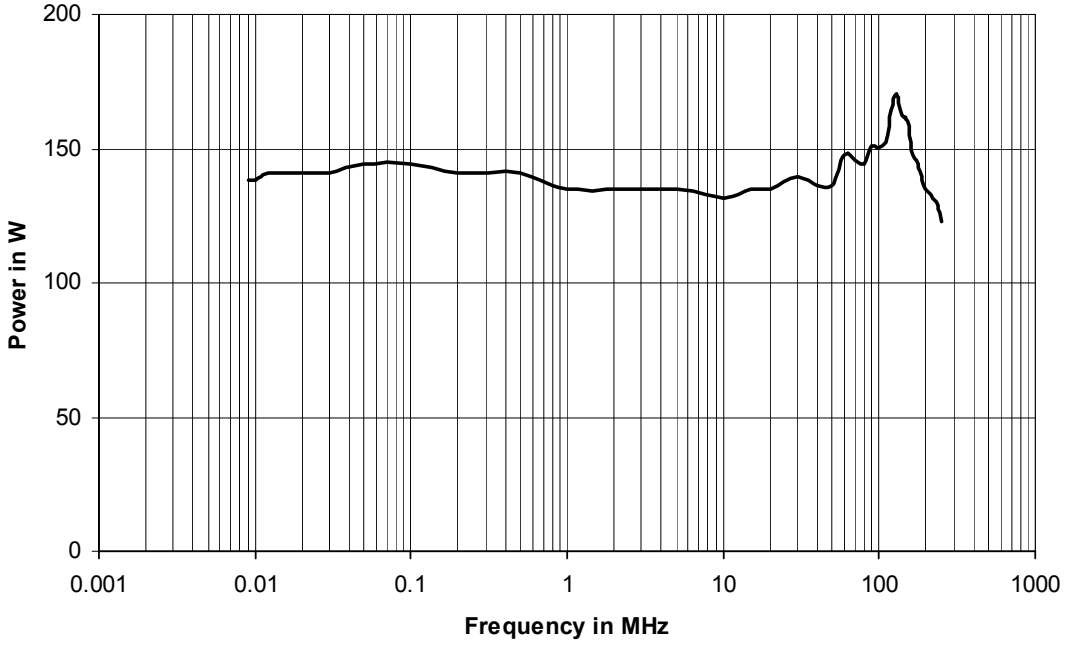
RoHS Europe, Directive 2002/95/EC: Equipment category 9, fulfilled without any exceptions.

WEEE Europe, Directive 2002/96/EC:
No disposing with unsorted municipal waste; no return with collection of waste electrical and electronic equipment from private households. Separate collection necessary. Ask Rohde & Schwarz representatives about recovery.

Frequency band from 9 kHz to 250 MHz

Power class 125 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		9 kHz to 250 MHz instantaneously
Nominal output load		50 Ω
Nominal power		125 W (51.0 dBm)
Power output at power saturation		min. 180 W (52.6 dBm)
Power output at 1 dB compression	< 220 MHz	min. 125 W (51.0 dBm)
	≥ 220 MHz	min. 112 W (50.5 dBm)
Nominal power gain	without RF input switch	54.5 dB
	with RF input switch	51.0 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 50 W	< –19 dBc
	at 125 W	< –17 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 57.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –60 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 13.5 dB
	at maximum gain, with RF input switch	nom. < 17.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 10:1	without foldback
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 60 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 62 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.1 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	W × H × D, incl. fans, handles and stand	430 mm × 250 mm × 710 mm (16.93 in × 9.84 in × 27.95 in)
	for rackmounting	19" 1/1, 5 HU
Weight	base unit	approx. 22 kg (49 lb)
	with typical options	approx. 23 kg (51 lb)

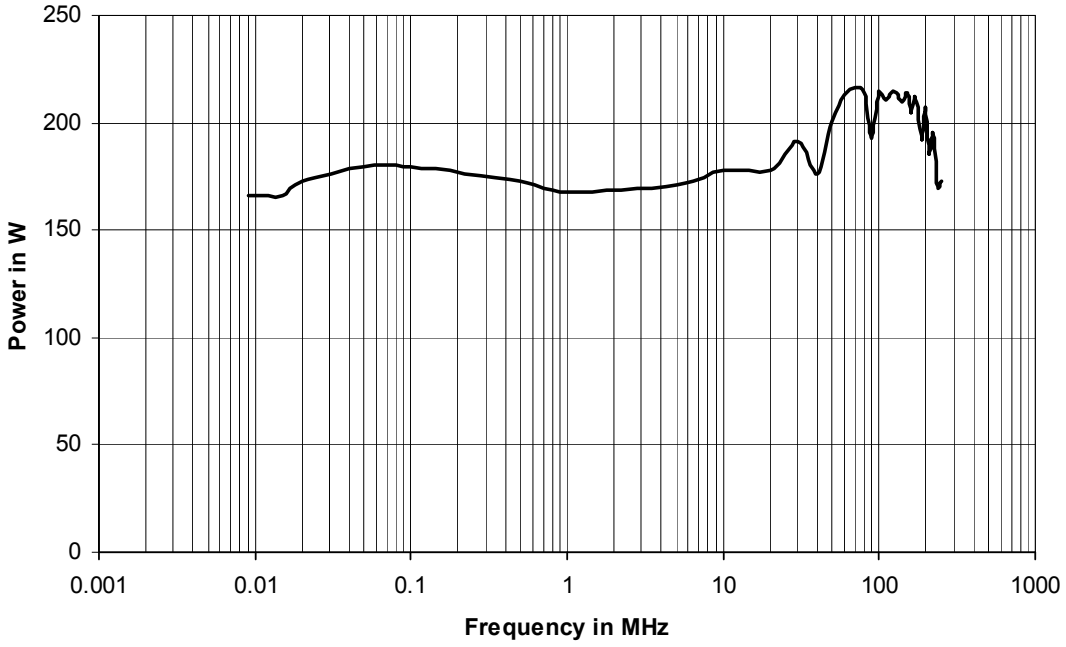
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	either front panel	N female
	or rear panel	N female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		110 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 110 V	< 7.7 A
	at 230 V	< 3.7 A
Typical power consumption		< 840 VA

Power class 160 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		9 kHz to 250 MHz instantaneously
Nominal output load		50 Ω
Nominal power		160 W (52.0 dBm)
Power output at power saturation		min. 180 W (52.6 dBm)
Power output at 1 dB compression		min. 160 W (52.0 dBm)
Nominal power gain	without RF input switch	55.5 dB
	with RF input switch	52.0 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 80 W	< –19 dBc
	at 160 W	< –17 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 58.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –60 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 13.5 dB
	at maximum gain, with RF input switch	nom. < 17.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 10:1	without foldback
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 60 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 62 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.1 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	W × H × D, incl. fans, handles and stand	430 mm × 250 mm × 710 mm (16.93 in × 9.84 in × 27.95 in)
	for rackmounting	19" 1/1, 5 HU
Weight	base unit	approx. 25 kg (55 lb)
	with typical options	approx. 26 kg (57 lb)

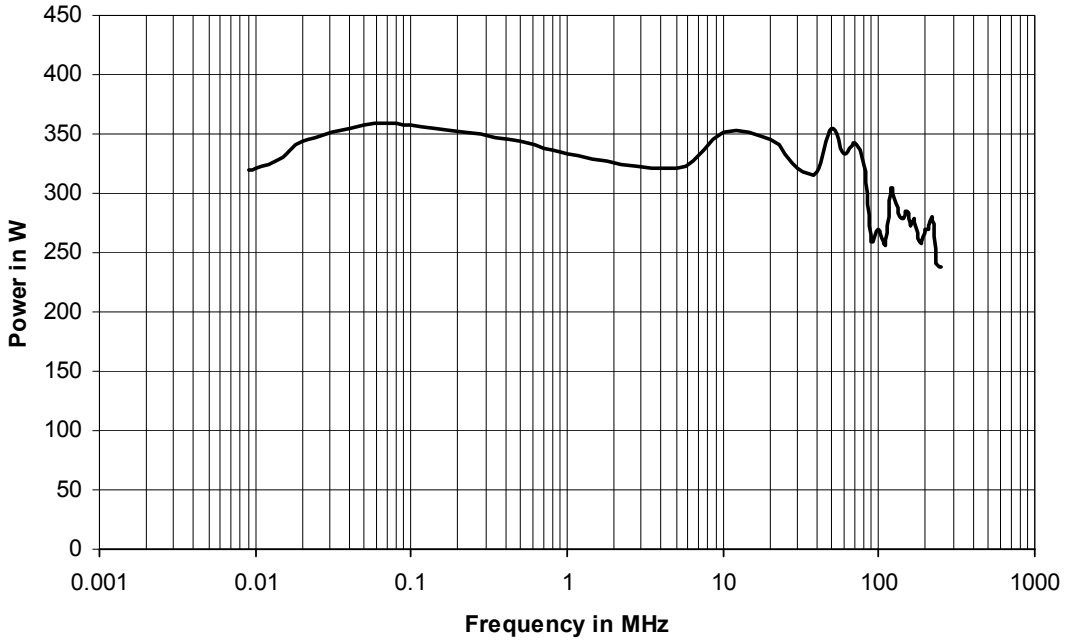
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	either front panel	N female
	or rear panel	N female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		110 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 110 V	< 12.0 A
	at 230 V	< 5.7 A
Typical power consumption		< 1320 VA

Power class 250 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		9 kHz to 250 MHz instantaneously
Nominal output load		50 Ω
Nominal power		250 W (54.0 dBm)
Power output at power saturation		min. 275 W (54.4 dBm)
Power output at 1 dB compression	< 200 MHz	min. 250 W (54.0 dBm)
	≥ 200 MHz	min. 220 W (53.4 dBm)
Nominal power gain	without RF input switch	57.5 dB
	with RF input switch	54.0 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 125 W	< –17 dBc
	at 250 W	< –15 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 60.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –60 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 13.5 dB
	at maximum gain, with RF input switch	nom. < 17.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 10:1	without foldback
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 60 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 62 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.1 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	W × H × D, incl. fans, handles and stand	430 mm × 250 mm × 710 mm (16.93 in × 9.84 in × 27.95 in)
	for rackmounting	19" 1/1, 5 HU
Weight	base unit	approx. 25 kg (55 lb)
	with typical options	approx. 26 kg (57 lb)

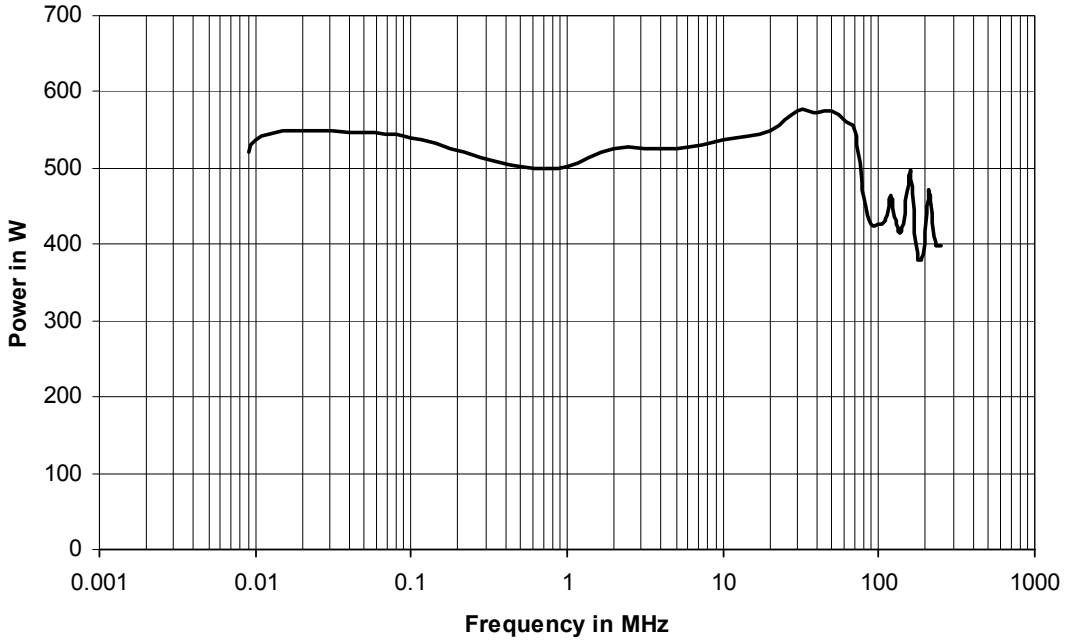
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	either front panel	N female
	or rear panel	N female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		110 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 110 V	< 14.2 A
	at 230 V	< 6.8 A
Typical power consumption		< 1560 VA

Power class 500 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		9 kHz to 250 MHz instantaneously
Nominal output load		50 Ω
Nominal power		500 W (57.0 dBm)
Power output at power saturation		min. 520 W (57.2 dBm)
Power output at 1 dB compression		min. 380 W (55.8 dBm)
Nominal power gain	without RF input switch	60.5 dB
	with RF input switch	57.0 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 250 W	< –18 dBc
	at 500 W	< –15 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 62.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –60 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 13.5 dB
	at maximum gain, with RF input switch	nom. < 17.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 6:1	without foldback
	at VSWR > 6:1	foldback depending on phase and magnitude of mismatch
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 60 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 62 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.1 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	W × H × D, incl. fans, handles and stand	430 mm × 250 mm × 710 mm (16.93 in × 9.84 in × 27.95 in)
	for rackmounting	19" 1/1, 5 HU
Weight	base unit	approx. 37 kg (82 lb)
	with typical options	approx. 38 kg (84 lb)

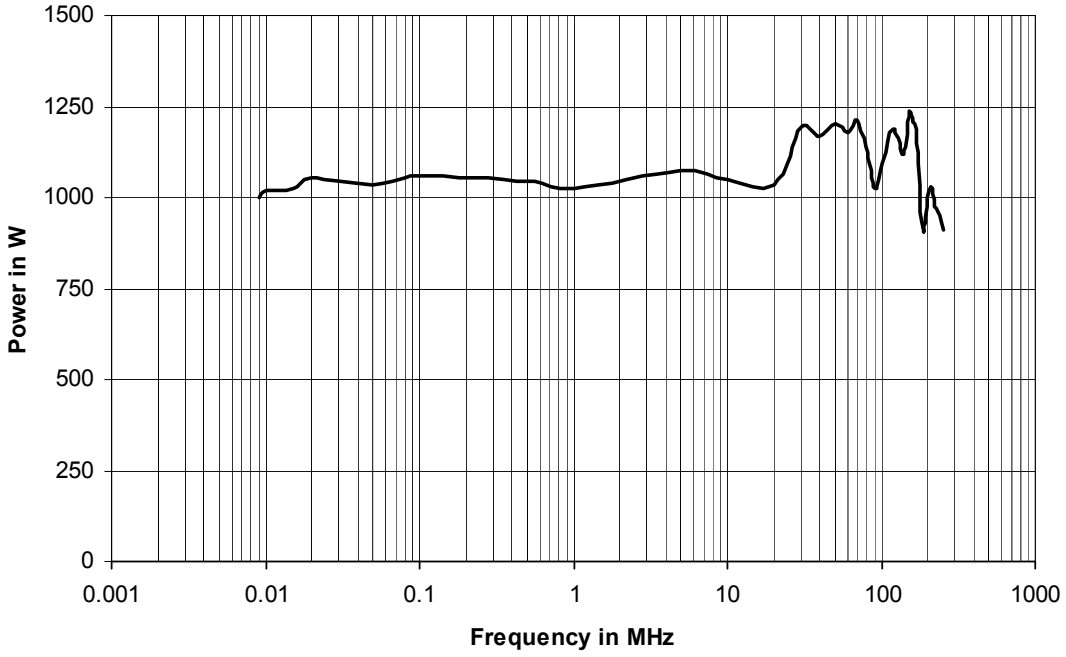
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	either front panel	N female
	or rear panel	7/16 DIN female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		110 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 110 V	< 27.5 A
	at 230 V	< 13.0 A
Typical power consumption		< 3000 VA

Power class 1000 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		9 kHz to 250 MHz instantaneously
Nominal output load		50 Ω
Nominal power		1000 W (60.0 dBm)
Power output at power saturation		min. 1100 W (60.4 dBm)
Power output at 1 dB compression	< 175 MHz	min. 1000 W (60.0 dBm)
	≥ 175 MHz	min. 900 W (59.6 dBm)
Nominal power gain	without RF input switch	63.5 dB
	with RF input switch	60.0 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 500 W	< –18 dBc
	at 1000 W	< –16 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 65.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –60 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 13.5 dB
	at maximum gain, with RF input switch	nom. < 17.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 6:1	without foldback
	at VSWR > 6:1	foldback depending on phase and magnitude of mismatch
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 60 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 62 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.1 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	rack setup	19" rack, 15 HU, depth 800 mm (31.5 in)
Weight	amplifier system incl. rack	approx. 150 kg (330 lb)

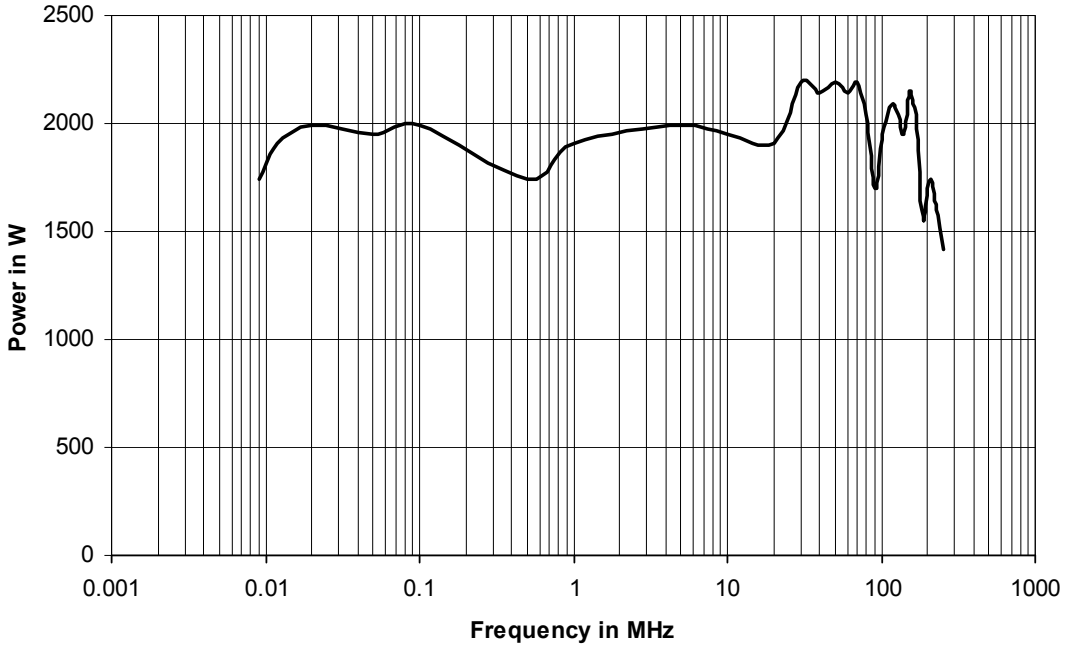
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	either front panel	N female
	or rear panel	7/16 DIN female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		177 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 230 V	< 20.0 A
Typical power consumption		< 4600 VA

Power class 1700 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		9 kHz to 250 MHz instantaneously
Nominal output load		50 Ω
Nominal power		1700 W (62.3 dBm)
Power output at power saturation		min. 1750 W (62.4 dBm)
Power output at 1 dB compression	< 175 MHz	min. 1600 W (62.0 dBm)
	≥ 175 MHz	min. 1400 W (61.5 dBm)
Nominal power gain	without RF input switch	65.8 dB
	with RF input switch	62.3 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 850 W	< –18 dBc
	at 1700 W	< –16 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 67.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –60 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 13.5 dB
	at maximum gain, with RF input switch	nom. < 17.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 6:1	without foldback
	at VSWR > 6:1	foldback depending on phase and magnitude of mismatch
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 60 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 62 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.1 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	rack setup	19" rack, 30 HU, depth 800 mm (31.5 in)
Weight	amplifier system incl. rack	approx. 240 kg (530 lb)

RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	either front panel	N female
	or rear panel	7/16 DIN female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

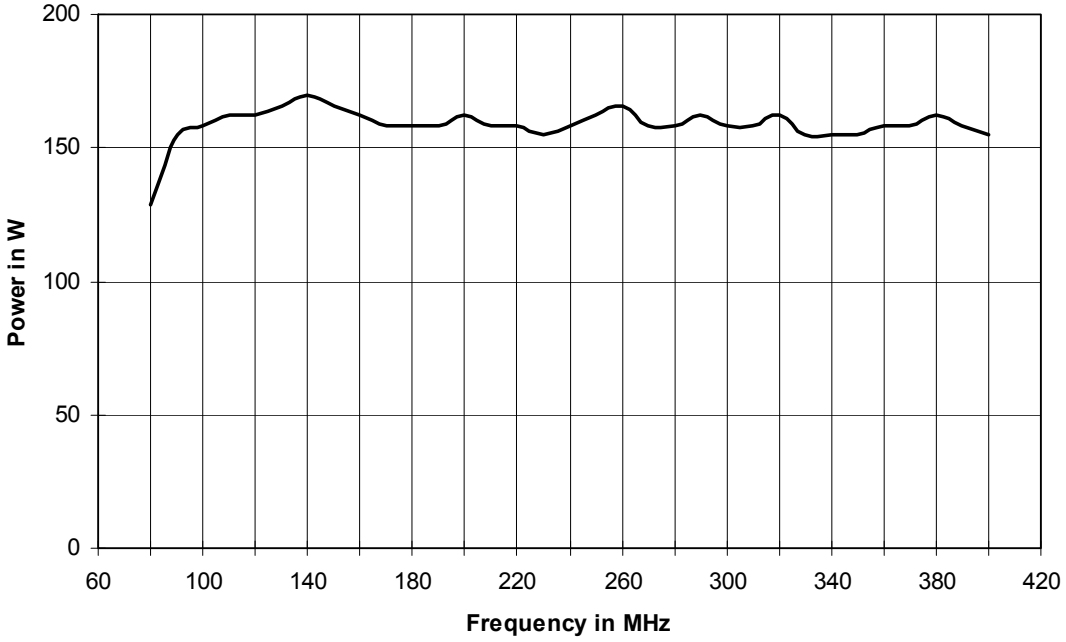
Electrical specifications

AC supply voltage		
Nominal operating voltage range		177 V to 240 V AC ± 10 %, three phase, 50 Hz to 60 Hz ± 6 %
Maximum current	at 230 V, per phase	< 15.0 A
Typical power consumption		< 8000 VA

Frequency band from 80 MHz to 400 MHz

Power class 125 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		80 MHz to 400 MHz instantaneously
Nominal output load		50 Ω
Nominal power		125 W (51.0 dBm)
Power output at power saturation		min. 140 W (51.5 dBm)
Power output at 1 dB compression		min. 125 W (51.0 dBm)
Nominal power gain	without RF input switch	54.5 dB
	with RF input switch	51.0 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 125 W	< –20 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 57.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –70 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 12.5 dB
	at maximum gain, with RF input switch	nom. < 16.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 10:1	without foldback
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 60 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 62 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.4 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	W × H × D, incl. fans, handles and stand	430 mm × 250 mm × 710 mm (16.93 in × 9.84 in × 27.95 in)
	for rackmounting	19" 1/1, 5 HU
Weight	base unit	approx. 22 kg (49 lb)
	with typical options	approx. 23 kg (51 lb)

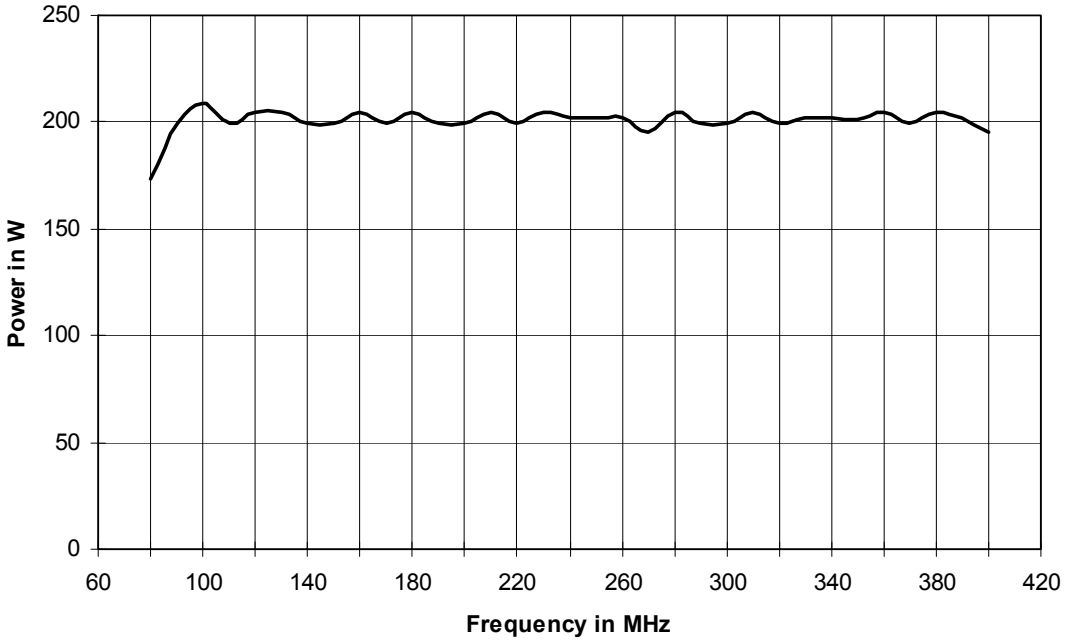
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	either front panel	N female
	or rear panel	N female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		110 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 110 V	< 11.0 A
	at 230 V	< 5.1 A
Typical power consumption		< 1200 VA

Power class 160 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		80 MHz to 400 MHz instantaneously
Nominal output load		50 Ω
Nominal power		160 W (52.0 dBm)
Power output at power saturation		min. 180 W (52.6 dBm)
Power output at 1 dB compression		min. 160 W (52.0 dBm)
Nominal power gain	without RF input switch	55.5 dB
	with RF input switch	52.0 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 160 W	< –20 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 57.5 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –70 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 12.5 dB
	at maximum gain, with RF input switch	nom. < 16.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 6:1	without foldback
	at VSWR > 6:1	foldback depending on phase and magnitude of mismatch
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 60 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 62 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.4 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	W × H × D, incl. fans, handles and stand	430 mm × 250 mm × 710 mm (16.93 in × 9.84 in × 27.95 in)
	for rackmounting	19" 1/1, 5 HU
Weight	base unit	approx. 25 kg (55 lb)
	with typical options	approx. 26 kg (57 lb)

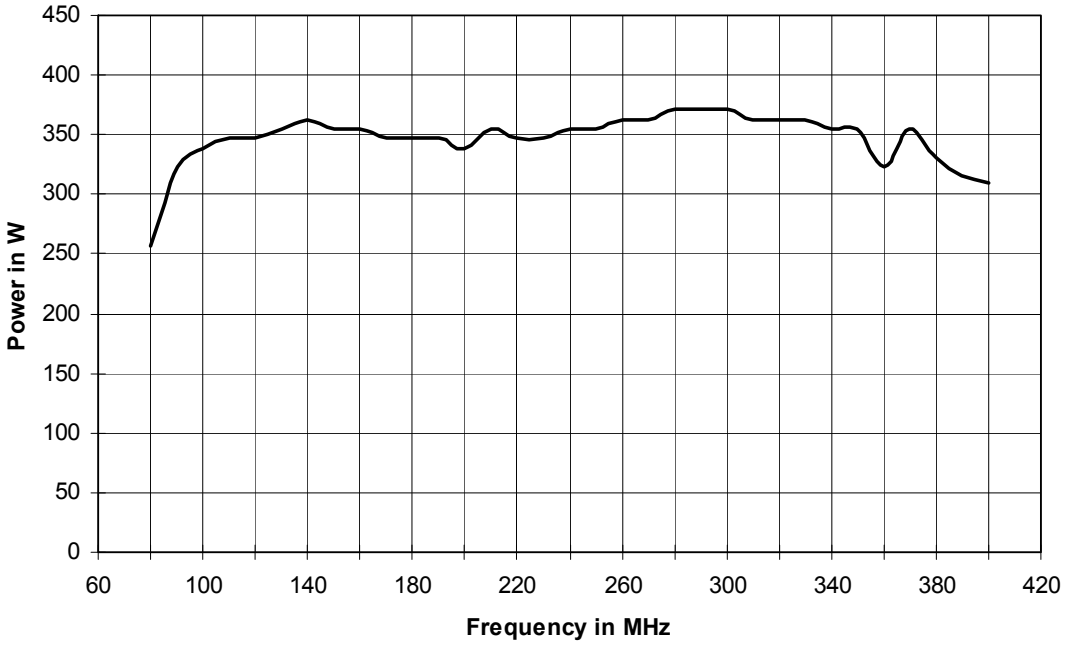
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	either front panel	N female
	or rear panel	N female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		110 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 110 V	< 11.8 A
	at 230 V	< 5.6 A
Typical power consumption		< 1300 VA

Power class 250 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		80 MHz to 400 MHz instantaneously
Nominal output load		50 Ω
Nominal power		250 W (54.0 dBm)
Power output at power saturation		min. 275 W (54.4 dBm)
Power output at 1 dB compression		min. 250 W (54.0 dBm)
Nominal power gain	without RF input switch	57.5 dB
	with RF input switch	54.0 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 250 W	< –20 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 58.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –70 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 12.5 dB
	at maximum gain, with RF input switch	nom. < 16.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 6:1	without foldback
	at VSWR > 6:1	foldback depending on phase and magnitude of mismatch
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 60 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 62 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.4 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	W × H × D, incl. fans, handles and stand	430 mm × 250 mm × 710 mm (16.93 in × 9.84 in × 27.95 in)
	for rackmounting	19" 1/1, 5 HU
Weight	base unit	approx. 25 kg (55 lb)
	with typical options	approx. 26 kg (57 lb)

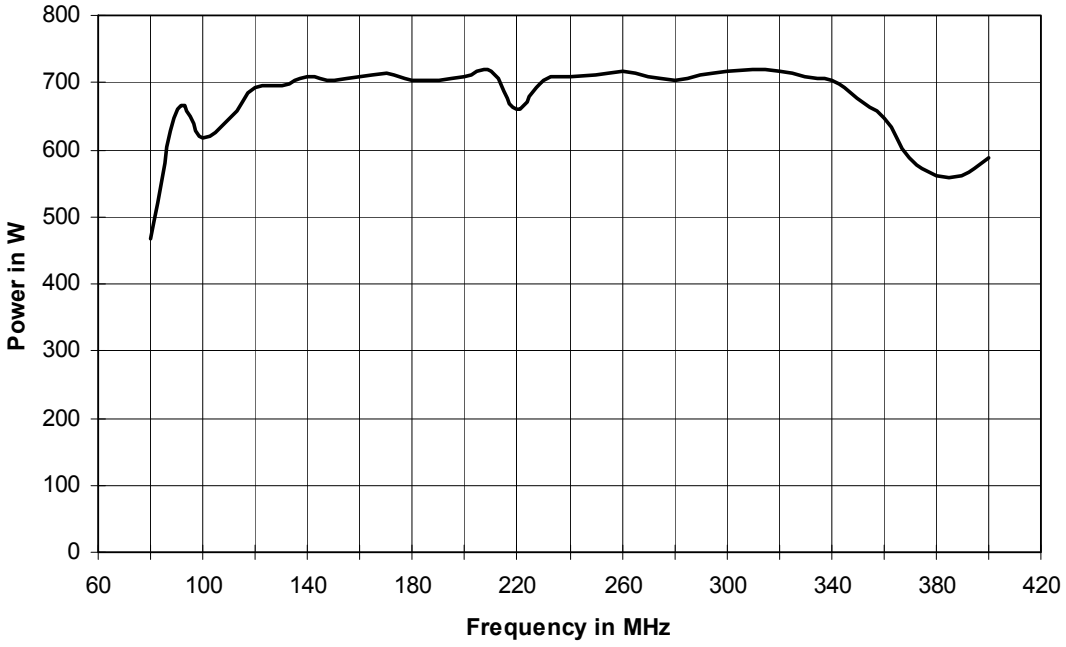
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	either front panel	N female
	or rear panel	N female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		110 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 110 V	< 14.0 A
	at 230 V	< 6.8 A
Typical power consumption		< 1560 VA

Power class 500 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		80 MHz to 400 MHz instantaneously
Nominal output load		50 Ω
Nominal power		500 W (57.0 dBm)
Power output at power saturation		min. 520 W (57.2 dBm)
Power output at 1 dB compression		min. 470 W (56.7 dBm)
Nominal power gain	without RF input switch	60.5 dB
	with RF input switch	57.0 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 500 W	< –18 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 62.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –70 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 12.5 dB
	at maximum gain, with RF input switch	nom. < 16.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 4:1	without foldback
	at VSWR > 4:1	foldback depending on phase and magnitude of mismatch
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 60 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 62 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.4 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	W × H × D, incl. fans, handles and stand	430 mm × 250 mm × 710 mm (16.93 in × 9.84 in × 27.95 in)
	for rackmounting	19" 1/1, 5 HU
Weight	base unit	approx. 37 kg (82 lb)
	with typical options	approx. 38 kg (84 lb)

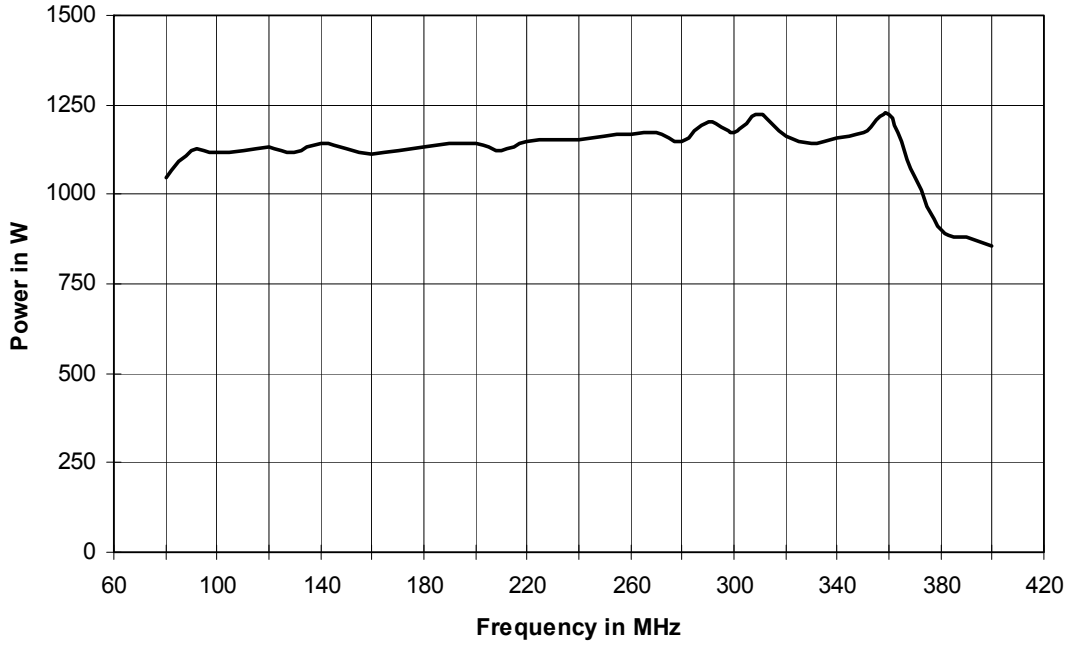
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	either front panel	N female
	or rear panel	7/16 DIN female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		110 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 110 V	< 27.5 A
	at 230 V	< 13.0 A
Typical power consumption		< 3000 VA

Power class 1000 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		80 MHz to 400 MHz instantaneously
Nominal output load		50 Ω
Nominal power		1000 W (60.0 dBm)
Power output at power saturation		min. 1050 W (60.2 dBm)
Power output at 1 dB compression	< 350 MHz	min. 1000 W (60.0 dBm)
	≥ 350 MHz	min. 900 W (59.5 dBm)
Nominal power gain	without RF input switch	63.5 dB
	with RF input switch	60.0 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 1000 W	< –18 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 67.5 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –70 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 12.5 dB
	at maximum gain, with RF input switch	nom. < 16.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 4:1	without foldback
	at VSWR > 4:1	foldback depending on phase and magnitude of mismatch
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 70 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 72 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.4 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	rack setup	19" rack, 15 HU, depth 800 mm (31.5 in)
Weight	amplifier system incl. rack	approx. 160 kg (355 lb)

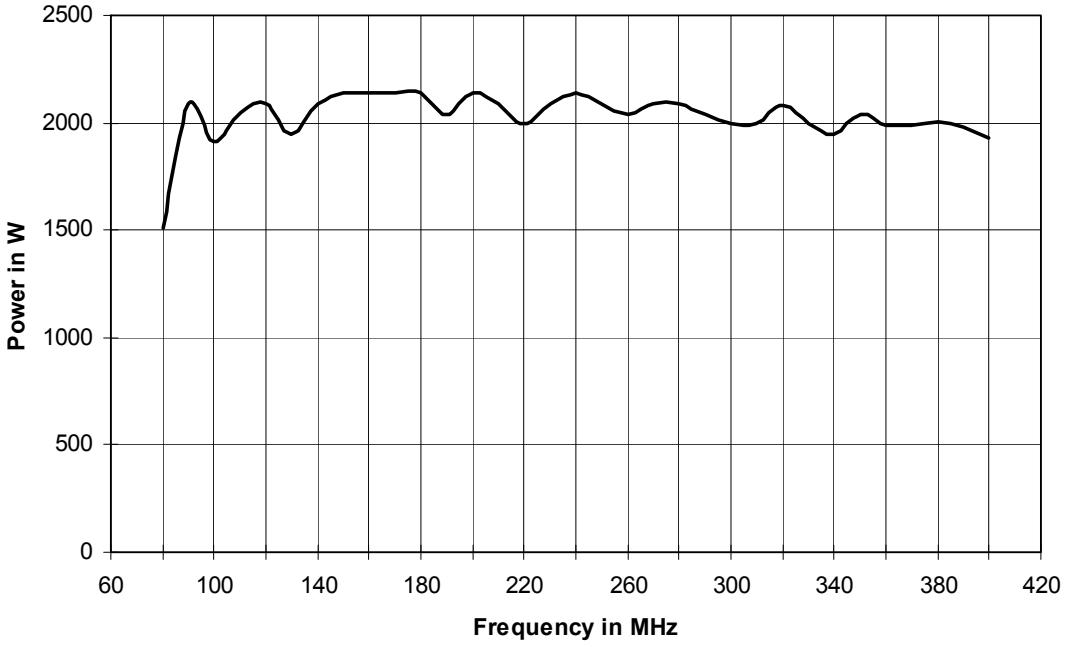
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	rear panel	7/16 DIN female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		177 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 230 V	< 25.0 A
Typical power consumption		< 5700 VA

Power class 1700 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		80 MHz to 400 MHz instantaneously
Nominal output load		50 Ω
Nominal power		1700 W (62.3 dBm)
Power output at power saturation		min. 1800 W (62.5 dBm)
Power output at 1 dB compression	< 100 MHz	min. 1500 W (61.7 dBm)
	≥ 100 MHz	min. 1700 W (62.3 dBm)
Nominal power gain	without RF input switch	65.8 dB
	with RF input switch	62.3 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 1700 W	< –18 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 68.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –70 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 12.5 dB
	at maximum gain, with RF input switch	nom. < 16.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 4:1	without foldback
	at VSWR > 4:1	foldback depending on phase and magnitude of mismatch
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 70 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 72 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.4 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	rack setup	19" rack, 35 HU, depth 1000 mm (39.4 in)
Weight	amplifier system incl. rack	approx. 230 kg (510 lb)

RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	rear panel	7/16 DIN female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

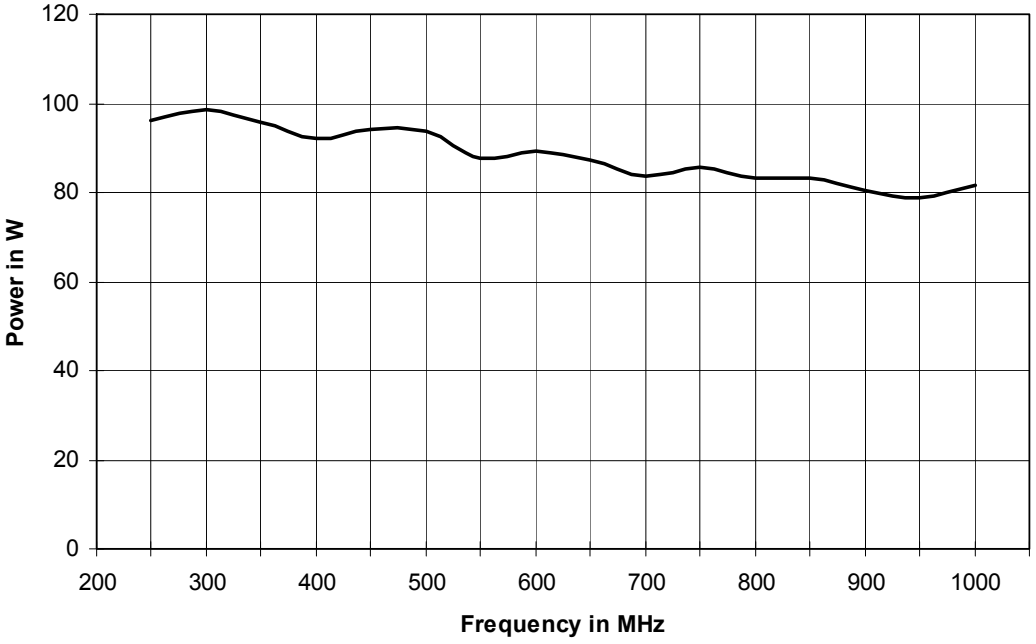
Electrical specifications

AC supply voltage		
Nominal operating voltage range		177 V to 240 V AC ± 10 %, three phase, 50 Hz to 60 Hz ± 6 %
Maximum current	at 230 V, per phase	< 26.5 A
Typical power consumption		< 10500 VA

Frequency band from 250 MHz to 1 GHz

Power class 70 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		250 MHz to 1 GHz instantaneously
Nominal output load		50 Ω
Nominal power		70 W (48.5 dBm)
Power output at power saturation		min. 90 W (49.5 dBm)
Power output at 1 dB compression		min. 70 W (48.5 dBm)
Nominal power gain	without RF input switch	52.0 dB
	with RF input switch	48.5 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 70 W	< –20 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 58.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –70 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 16.0 dB
	at maximum gain, with RF input switch	nom. < 19.5 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 10:1	without foldback
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 60 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 62 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.4 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	W × H × D, incl. fans, handles and stand	430 mm × 250 mm × 710 mm (16.93 in × 9.84 in × 27.95 in)
	for rackmounting	19" 1/1, 5 HU
Weight	base unit	approx. 20 kg (44 lb)
	with typical options	approx. 21 kg (46 lb)

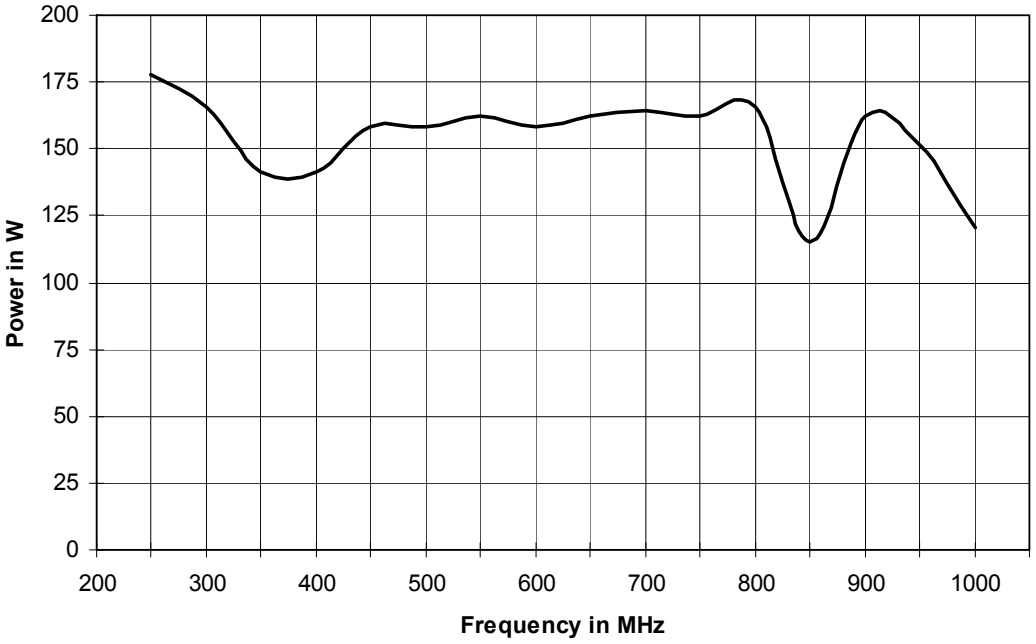
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	either front panel	N female
	or rear panel	N female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		110 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 110 V	< 6.4 A
	at 230 V	< 3.1 A
Typical power consumption		< 700 VA

Power class 125 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		250 MHz to 1 GHz instantaneously
Nominal output load		50 Ω
Nominal power		125 W (51.0 dBm)
Power output at power saturation		min. 140 W (51.5 dBm)
Power output at 1 dB compression	< 800 MHz	min. 125 W (51.0 dBm)
	≥ 800 MHz	min. 110 W (50.4 dBm)
Nominal power gain	without RF input switch	54.5 dB
	with RF input switch	51.0 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 125 W	< –19 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 60.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –70 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 16.0 dB
	at maximum gain, with RF input switch	nom. < 19.5 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 10:1	without foldback
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 60 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 62 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.4 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	W × H × D, incl. fans, handles and stand	430 mm × 250 mm × 710 mm (16.93 in × 9.84 in × 27.95 in)
	for rackmounting	19" 1/1, 5 HU
Weight	base unit	approx. 20 kg (44 lb)
	with typical options	approx. 21 kg (46 lb)

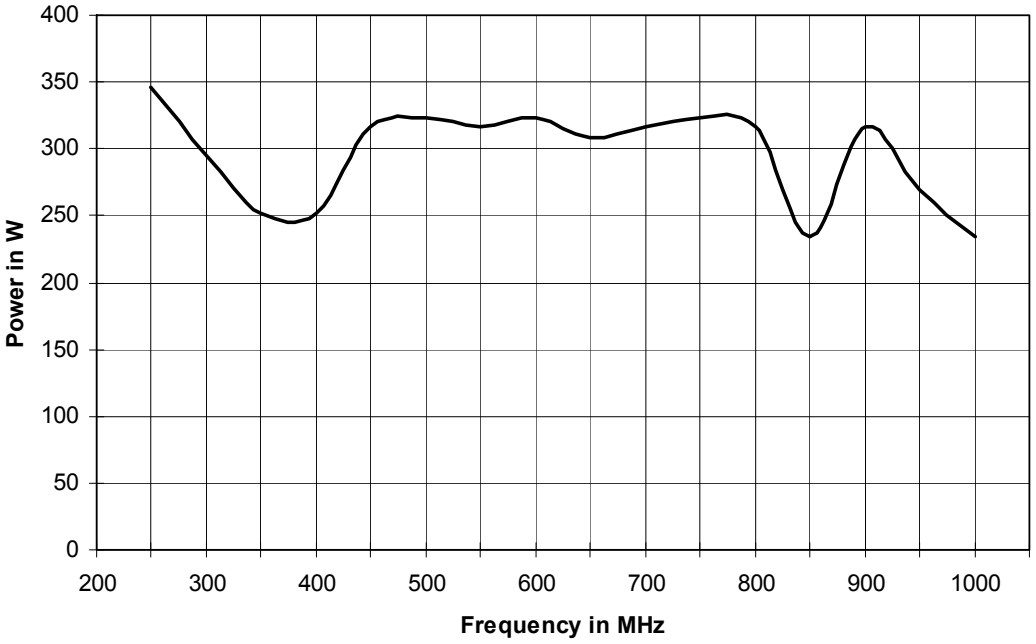
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	either front panel	N female
	or rear panel	N female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		110 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 110 V	< 9.1 A
	at 230 V	< 4.6 A
Typical power consumption		< 1000 VA

Power class 250 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		250 MHz to 1 GHz instantaneously
Nominal output load		50 Ω
Nominal power		250 W (54.0 dBm)
Power output at power saturation		min. 250 W (54.0 dBm)
Power output at 1 dB compression		min. 230 W (53.6 dBm)
Nominal power gain	without RF input switch	57.5 dB
	with RF input switch	54.0 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 250 W	< –19 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 62.5 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –70 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 16.0 dB
	at maximum gain, with RF input switch	nom. < 19.5 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 6:1	without foldback
	at VSWR > 6:1	foldback depending on phase and magnitude of mismatch
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 60 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 62 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.4 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	W × H × D, incl. fans, handles and stand	430 mm × 250 mm × 710 mm (16.93 in × 9.84 in × 27.95 in)
	for rackmounting	19" 1/1, 5 HU
Weight	base unit	approx. 30 kg (66 lb)
	with typical options	approx. 31 kg (68 lb)

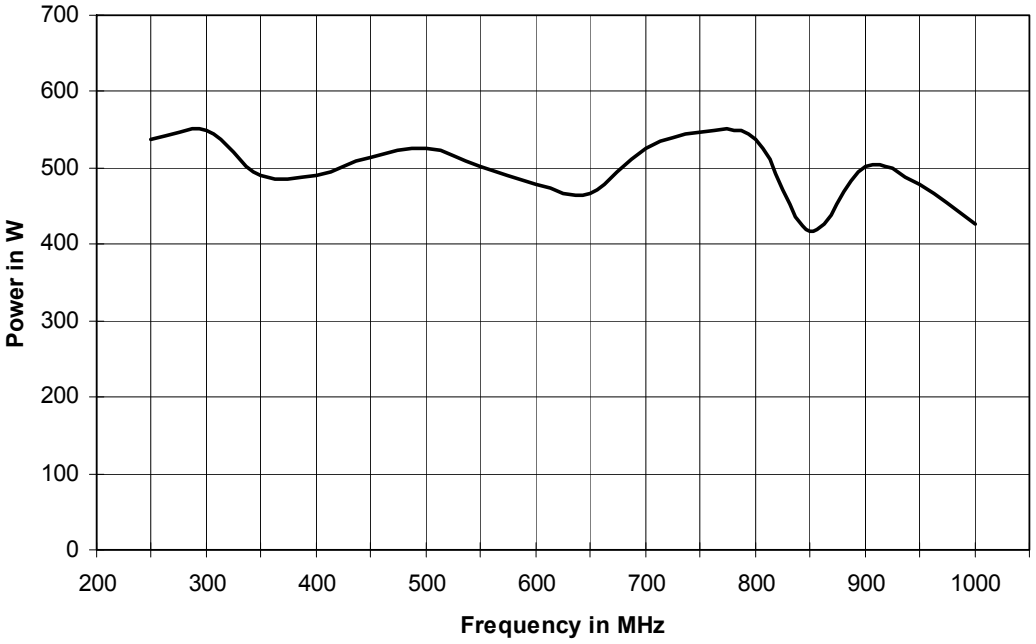
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	either front panel	N female
	or rear panel	7/16 DIN female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		110 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 110 V	< 16.4 A
	at 230 V	< 7.9 A
Typical power consumption		< 1800 VA

Power class 450 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		250 MHz to 1 GHz instantaneously
Nominal output load		50 Ω
Nominal power		450 W (56.5 dBm)
Power output at power saturation		min. 500 W (57.0 dBm)
Power output at 1 dB compression	< 800 MHz	min. 430 W (56.3 dBm)
	≥ 800 MHz	min. 400 W (56.0 dBm)
Nominal power gain	without RF input switch	60.0 dB
	with RF input switch	56.5 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 20 dB
Harmonics	at 450 W	< –19 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 65.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –70 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 16.0 dB
	at maximum gain, with RF input switch	nom. < 19.5 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 4:1	without foldback
	at VSWR > 4:1	foldback depending on phase and magnitude of mismatch
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 60 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 62 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.4 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	W × H × D, incl. fans, handles and stand	430 mm × 250 mm × 710 mm (16.93 in × 9.84 in × 27.95 in)
	for rackmounting	19" 1/1, 5 HU
Weight	base unit	approx. 44 kg (97 lb)
	with typical options	approx. 45 kg (99 lb)

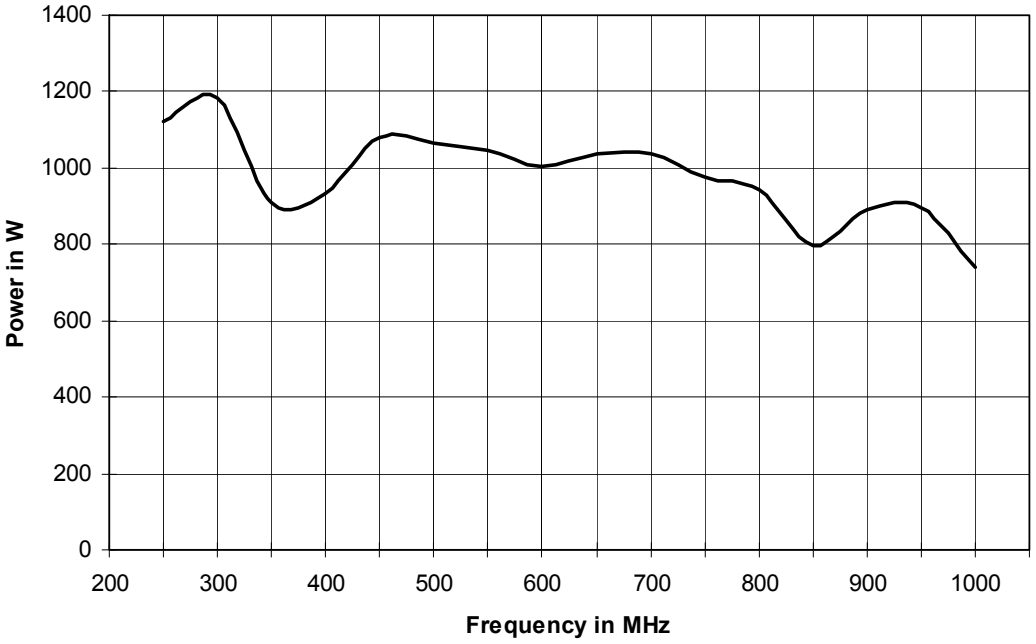
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	rear panel	7/16 DIN female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		110 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 110 V	< 29.1 A
	at 230 V	< 14.0 A
Typical power consumption		< 3200 VA

Power class 800 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		250 MHz to 1 GHz instantaneously
Nominal output load		50 Ω
Nominal power		800 W (59.0 dBm)
Power output at power saturation		min. 900 W (59.5 dBm)
Power output at 1 dB compression	< 800 MHz	min. 800 W (59.0 dBm)
	≥ 800 MHz	min. 700 W (58.5 dBm)
Nominal power gain	without RF input switch	62.5 dB
	with RF input switch	59.0 dB
Gain flatness		±2.5 dB
Gain adjustment range		> 20 dB
Harmonics	at 800 W	< –18 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 67.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –70 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 16.0 dB
	at maximum gain, with RF input switch	nom. < 19.5 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 4:1	without foldback
	at VSWR > 4:1	foldback depending on phase and magnitude of mismatch
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 70 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 72 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.4 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	rack setup	19" rack, 15 HU, depth 800 mm (31.5 in)
Weight	amplifier system incl. rack	approx. 160 kg (355 lb)

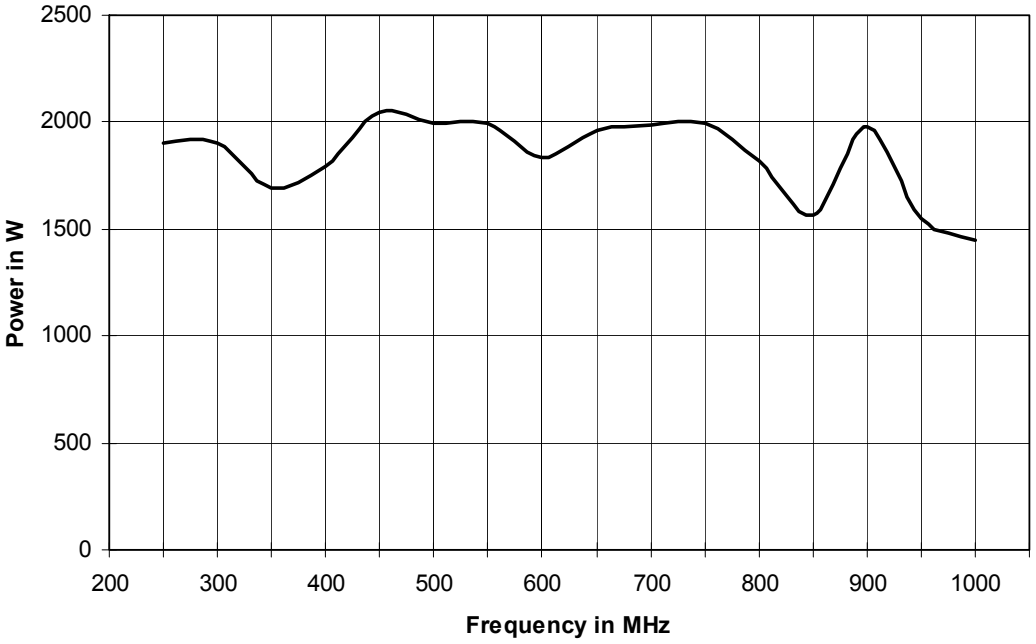
RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	rear panel	7/16 DIN female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		177 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Typical current	at 230 V	< 26.1 A
Typical power consumption		< 6000 VA

Power class 1600 W

Frequency response at 1 dB compression (or better)



RF specifications

Main parameters		
Frequency range		250 MHz to 1 GHz instantaneously
Nominal output load		50 Ω
Nominal power		1600 W (62.0 dBm)
Power output at power saturation		min. 1650 W (62.1 dBm)
Power output at 1 dB compression	< 800 MHz	min. 1600 W (62.0 dBm)
	≥ 800 MHz	min. 1400 W (61.5 dBm)
Nominal power gain	without RF input switch	65.5 dB
	with RF input switch	62.0 dB
Gain flatness		±2.5 dB
Gain adjustment range		> 20 dB
Harmonics	at 1600 W	< –18 dBc
Third-order intercept point (TOI)	test frequencies 100 kHz apart	min. 70.0 dBm
Spurious	carrier offset > 100 kHz	nom. –80 dBc, max. –70 dBc
Noise figure	at maximum gain, without RF input switch	nom. < 16.5 dB
	at maximum gain, with RF input switch	nom. < 20.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power	without RF input switch	–3.5 dBm
	with RF input switch	0 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω
Forward output power	at VSWR < 4:1	without foldback
	at VSWR > 4:1	foldback depending on phase and magnitude of mismatch
Output mismatch protection, VSWR		100 %, without damage

RF sample and detected sample signals		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 70 dB, see test report for details
	RF forward and reflected sample ports via RF sample port switch, optional	approx. 72 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	0.4 V to 3.0 V DC

Mechanical specifications

System size		
Dimensions	rack setup	19" rack, 35 HU, depth 1000 mm (39.4 in)
Weight	amplifier system incl. rack	approx. 250 kg (550 lb)

RF and sample connectors		
RF input port	either front panel	N female
	or rear panel	SMA female
RF output port	rear panel	7/16 DIN female
RF sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female
Detected sample port	forward output power, optional	SMA female
	reflected output power, optional	SMA female

Electrical specifications

AC supply voltage		
Nominal operating voltage range		177 V to 240 V AC ± 10 %, three phase, 50 Hz to 60 Hz ± 6 %
Maximum current	at 230 V, per phase	< 26.6 A
Typical power consumption		< 10600 VA

General data

Modulation specifications

Modulation capability		AM, FM, φM or PM

Electrical specifications

AC supply voltage		
Nominal operating voltage range	power classes up to 500 W RF power	110 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
	power classes above 500 W RF power	177 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
	power classes above 1000 W RF power	177 V to 240 V AC ± 10 %, three phase, 50 Hz to 60 Hz ± 6 %
Power consumption	desktop models, fully equipped	max. 5.5 kVA
	rack models, fully equipped	max. 30.0 kVA

Cooling specifications

Air cooling		forced air, built-in fans, air entry at front, air exit at rear

Control specifications

Remote control		
GPIB/IEEE 488	GPIB, USB or Ethernet free of charge	IEC 60625-2 24-pin connector
USB	GPIB, USB or Ethernet free of charge	B female, full-speed, 12 Mbit/s
Ethernet	GPIB, USB or Ethernet free of charge	RJ-45, 10/100 Mbit/s, auto-negotiation, half/full duplex
Optical Ethernet	optional	FDDI PMD, 100 Mbit/s, duplex SC connector

Local HMI		
Local graphical display		
Display resolution		320 × 240 pixel
Display colors		16.7 million
Manual controls	lever key	mains switch
	operation pushbuttons	• system standby/on • RF standby/operate • local/remote
	menu pushbuttons	• arrow up, down, left, right • ok • menu • back • home • function • status
LED status information	per amplifier system	• system standby/on • system state • RF • interlock • RF standby/operate • local/remote • mute ready
	per amplifier module	• power supply • RF forward • RF reflected • temperature

Web GUI		
Local web GUI	via front Ethernet	RJ-45, 10/100 Mbit/s, auto-negotiation, half/full duplex
Remote web GUI	via rear Ethernet	RJ-45, 10/100 Mbit/s, auto-negotiation, half/full duplex

Environmental specifications

Temperature loading	operating temperature range	0 °C to +45 °C
	storage temperature range	–30 °C to +70 °C
Damp heat		max. +40 °C at 95 % rel. humidity, without condensation
Altitude	operating altitude	up to 3000 m
	storage altitude	up to 4600 m
Mechanical resistance test values	vibration, sinusoidal	5 Hz to 55 Hz, displacement 0.15 mm, > 55 Hz to 150 Hz, acceleration 0.5 g, in line with EN 60068-2-6
	vibration, random	effective acceleration ≤ 1.2 g, 10 Hz to 300 Hz, acceleration density 0.003 g^2/Hz, in line with EN 60068-2-64
	shock	18 sawtooth shocks, each 40 g in 11 ms, in line with EN 60068-2-27, MIL-STD-810E method no. 516.4, procedure I
Calibration interval		no calibration needed
Electromagnetic compatibility	immunity	in line with EN 61326-1, public and industrial area
	electromagnetic fields	≤ 10 V/m in line with IEC 61000-4-3
	spurious response rejection for power classes above 500 W RF power, at 10 V/m	nom. –40 dBc
	surge test: line to ground	≤ 2 kV, in line with IEC 61000-4-5
	surge test: interlock to ground	≤ 2 kV, in line with IEC 61000-4-5
	surge test: Ethernet to ground	≤ 2 kV, in line with IEC 61000-4-5
	surge test: RF output to ground	≤ 2 kV, in line with IEC 61000-4-5
	surge test: line to line	≤ 1 kV, in line with IEC 61000-4-5
	bursts	≤ 2 kV, in line with IEC 61000-4-4
Electromagnetic emissions	overall	in line with EN 55011 (CISPR 11), industrial area, ISM group 1 or group 2
	conducted emissions	in line with EN 55011, class A, rack models may fall in the heavy duty equipment category of group 1 (power consumption ≥ 29 A/line)
	radiated emissions ≤ 1 GHz	equipment for use in shielded areas only, normative limits of class A exceeded up to 40 dB according to EN 55011 group 1 or FCC 047 CFR part 18
	radiated emissions ≥ 1 GHz	equipment for use in shielded areas only, normative limits of class A exceeded up to 40 dB according to EN 55011 group 2 or FCC 047 CFR part 18
Electrical safety	desktop models	in line with EN 61010-1:2001 (second edition), IEC 61010-1:2001 (ed. 2), CAN/CSA-C22.2 No. 61010-1-04, UL 61010-1 2nd edition, July 12, 2004
	rack models	in line with EN 61010-1:2001 (second edition), IEC 61010-1:2001 (ed. 2)

Protection

RF		
Input overdrive	without damage	max. +15 dBm
	input blanking	approx. +4 dB above nominal input level
Load VSWR		10:1
Interlock		1 device interlock, 3 configurable interlocks
Input protection against bias voltage	optional	DC block level ≤ 50 V DC
Thermal limitation		foldback to nominal power + 10 %

Power supply		
Transient voltage compatibility		category II in line with IEC 60364-4-443
Maximum transient surge current	surge waveform 8/50 µs	≤ 6500 A
Short-circuit breaking capacity		automatic all-pole 32 A circuit breaker

Miscellaneous		
Thermal overload		shutdown at +55 °C ambient temperature

RF switching specifications

RF input switch, R&S®BBA-B110 option		
Switch type		solid state, internal
Frequency range		0 Hz to 8 GHz
Insertion loss	0 Hz to 1 GHz	max. 3.5 dB
	1 GHz to 3 GHz	max. 4.0 dB
	3 GHz to 5 GHz	max. 5.0 dB
	5 GHz to 6 GHz	max. 6.0 dB
	6 GHz to 8 GHz	max. 7.0 dB

RF sample port switch, dual port, R&S®BBA-B142 option		
Switch type		solid state, internal
Frequency range		0 Hz to 8 GHz
RF sample signal level		max. 10 dBm

RF output switch 2:1 or 1:2 (N, max. 500 W), R&S®BBA-B120 option		
Switch type		mechanical, externally mounted
Frequency range		0 Hz to 12.4 GHz
Switching time		< 15 ms
Life		1000000 cycles
Average forward RF power	0 Hz to 1 GHz	max. 700 W • 1/√(VSWR)
	1 GHz to 2 GHz	max. 500 W • 1/√(VSWR)
	2 GHz to 3 GHz	max. 400 W • 1/√(VSWR)
	3 GHz to 8 GHz	max. 250 W • 1/√(VSWR)
	8 GHz to 12.4 GHz	max. 200 W • 1/√(VSWR)
Insertion loss per switch	0 Hz to 1 GHz	≤ 0.15 dB, without cable loss
	1 GHz to 2 GHz	≤ 0.20 dB, without cable loss
	2 GHz to 3 GHz	≤ 0.25 dB, without cable loss
	3 GHz to 8 GHz	≤ 0.35 dB, without cable loss
	8 GHz to 12.4 GHz	≤ 0.50 dB, without cable loss
Connectors		N female

RF output switch 2:1 or 1:2 (7/16, max. 2000 W), R&S®BBA-B121 option		
Switch type		mechanical, externally mounted
Frequency range		0 Hz to 5 GHz
Switching time		< 100 ms
Life		500000 cycles
Average forward RF power	0 Hz to 1 GHz	max. 2000 W • 1/√(VSWR)
	1 GHz to 2 GHz	max. 1400 W • 1/√(VSWR)
	2 GHz to 3 GHz	max. 1100 W • 1/√(VSWR)
	3 GHz to 4 GHz	max. 1000 W • 1/√(VSWR)
	4 GHz to 5 GHz	max. 900 W • 1/√(VSWR)
Insertion loss per switch	0 Hz to 1 GHz	≤ 0.05 dB, without cable loss
	1 GHz to 2 GHz	≤ 0.05 dB, without cable loss
	2 GHz to 3 GHz	≤ 0.10 dB, without cable loss
	3 GHz to 4 GHz	≤ 0.10 dB, without cable loss
	4 GHz to 5 GHz	≤ 0.10 dB, without cable loss
Connectors		7/16 DIN female

Rohde & Schwarz assures nominal output power of each frequency band at the amplifier's output. Usage of one or more RF output switches may reduce the achievable output power due to insertion loss and cable loss.

External amplifier integration specifications

External amplifier integration, R&S®BBA-B131 option		
Frequency range		9 kHz to 8 GHz
Maximum output power		2000 W
Maximum input power		< +15 dBm

Fast amplifier mute specifications

Fast amplifier mute, R&S®BBA-B130 option		
External mute signal		TTL
Mute on delay (amplifier switches to mute mode, RF turns off)		< 4 µs
Mute off delay (amplifier leaves mute mode, RF turns on)		< 6 µs
Noise level during mute		–168 dBm (1 Hz)

Ordering information

We recommend that you ask your local Rohde & Schwarz expert to find the solution that is optimally suited to your needs.

R&S®BBA100 single-band power amplifiers

Frequency band from 9 kHz to 250 MHz

Designation	Type	Configuration No.
125 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A125
160 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A160
250 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A250
500 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A500
1000 W, air-cooled, 15 HU rack model	R&S®BBA100	BBA100-A1000
1700 W, air-cooled, 30 HU rack model	R&S®BBA100	BBA100-A1700

Frequency band from 80 MHz to 400 MHz

Designation	Type	Configuration No.
125 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-B125
160 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-B160
250 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-B250
500 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-B500
1000 W, air-cooled, 15 HU rack model	R&S®BBA100	BBA100-B1000
1700 W, air-cooled, 35 HU rack model	R&S®BBA100	BBA100-B1700

Frequency band from 250 MHz to 1 GHz

Designation	Type	Configuration No.
70 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-C70
125 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-C125
250 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-C250
450 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-C450
800 W, air-cooled, 15 HU rack model	R&S®BBA100	BBA100-C800
1600 W, air-cooled, 35 HU rack model	R&S®BBA100	BBA100-C1600

Accessories supplied: power cord, user manual on CD.

R&S®BBA100 dual-band power amplifiers

The example configurations listed below are merely a selection of possible configurations. All frequency ranges and power classes can be combined as desired. Please ask your local Rohde & Schwarz expert about your specific solution.

Frequency bands from 9 kHz to 250 MHz and 80 MHz to 400 MHz

Designation	Type	Configuration No.
125 W/125 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A125B125
125 W/160 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A125B160
160 W/160 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A160B160
250 W/125 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A250B125
250 W/250 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A250B250
500 W/125 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-A500B125
500 W/500 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-A500B500
1000 W/1000 W, air-cooled, 35 HU rack model	R&S®BBA100	BBA100-A1000B1000
1700 W/1700 W, air-cooled, 2 × 35 HU rack model	R&S®BBA100	BBA100-A1700B1700

Frequency bands from 9 kHz to 250 MHz and 250 MHz to 1 GHz

Designation	Type	Configuration No.
125 W/70 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A125C70
125 W/125 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A125C125
125 W/250 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A125C250
160 W/70 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A160C70
160 W/125 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A160C125
250 W/70 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A250C70
250 W/125 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A250C125
250 W/250 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A250C250
500 W/70 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-A500C70
500 W/125 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-A500C125
500 W/250 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-A500C250
500 W/450 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-A500C450
1000 W/250 W, air-cooled, 20 HU rack model	R&S®BBA100	BBA100-A1000C250
1000 W/450 W, air-cooled, 20 HU rack model	R&S®BBA100	BBA100-A1000C450
1000 W/800 W, air-cooled, 35 HU rack model	R&S®BBA100	BBA100-A1000C800
1700 W/250 W, air-cooled, 35 HU rack model	R&S®BBA100	BBA100-A1700C250
1700 W/450 W, air-cooled, 35 HU rack model	R&S®BBA100	BBA100-A1700C450
1700 W/800 W, air-cooled, 46 HU rack model	R&S®BBA100	BBA100-A1700C800
1700 W/1600 W, air-cooled, 2 × 35 HU rack model	R&S®BBA100	BBA100-A1700C1600

Frequency bands from 80 MHz to 400 MHz and 250 MHz to 1 GHz

Designation	Type	Configuration No.
125 W/70 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-B125C70
125 W/125 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-B125C125
160 W/70 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-B160C70
160 W/125 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-B160C125
250 W/70 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-B250C70
250 W/125 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-B250C125
250 W/250 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-B250C250
500 W/70 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-B500C70
500 W/125 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-B500C125
500 W/250 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-B500C250
500 W/450 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-B500C450
1000 W/250 W, air-cooled, 20 HU rack model	R&S®BBA100	BBA100-B1000C250
1000 W/450 W, air-cooled, 20 HU rack model	R&S®BBA100	BBA100-B1000C450
1000 W/800 W, air-cooled, 30 HU rack model	R&S®BBA100	BBA100-B1000C800
1700 W/450 W, air-cooled, 35 HU rack model	R&S®BBA100	BBA100-B1700C450
1700 W/800 W, air-cooled, 42 HU rack model	R&S®BBA100	BBA100-B1700C800
1700 W/1600 W, air-cooled, 2 × 35 HU rack model	R&S®BBA100	BBA100-B1700C1600

Accessories supplied: power cord, user manual on CD.

R&S®BBA100 tri-band power amplifiers

The example configurations listed below are merely a selection of possible configurations. All frequency ranges and power classes can be combined as desired. Please ask your local Rohde & Schwarz expert about your specific solution.

Frequency bands from 9 kHz to 250 MHz, 80 MHz to 400 MHz and 250 MHz to 1 GHz

Designation	Type	Configuration No.
125 W/160 W/70 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A125B160C70
125 W/160 W/125 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A125B160C125
125 W/250 W/70 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A125B250C70
125 W/250 W/125 W, air-cooled, 5 HU desktop model	R&S®BBA100	BBA100-A125B250C125
125 W/500 W/250 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-A125B500C250
160 W/160 W/70 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-A160B160C70
160 W/160 W/125 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-A160B160C125
250 W/250 W/70 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-A250B250C70
250 W/250 W/125 W, air-cooled, 12 HU rack model	R&S®BBA100	BBA100-A250B250C125
500 W/500 W/70 W, air-cooled, 15 HU rack model	R&S®BBA100	BBA100-A500B500C70
500 W/500 W/125 W, air-cooled, 15 HU rack model	R&S®BBA100	BBA100-A500B500C125
500 W/500 W/250 W, air-cooled, 15 HU rack model	R&S®BBA100	BBA100-A500B500C250
1000 W/1000 W/450 W, air-cooled, 42 HU rack model	R&S®BBA100	BBA100-A1000B1000C450
1000 W/1000 W/800 W, air-cooled, 2 × 30 HU rack model	R&S®BBA100	BBA100-A1000B1000C800
1700 W/500 W/250 W, air-cooled, 46 HU rack model	R&S®BBA100	BBA100-A1700B500C250
1700 W/1700 W/450 W, air-cooled, 2 × 42 HU rack model	R&S®BBA100	BBA100-A1700B1700C450
1700 W/1700 W/800 W, air-cooled, 3 × 30 HU rack model	R&S®BBA100	BBA100-A1700B1700C800
1700 W/1700 W/1600 W, air-cooled, 3 × 35 HU rack model	R&S®BBA100	BBA100-A1700B1700C1600

Accessories supplied: power cord, user manual on CD.

Options

Designation	Type	Order No.
GPIB Remote Control	R&S®BBA-K101	5353.8417.00
USB Remote Control	R&S®BBA-K102	5353.8423.00
Ethernet Remote Control	R&S®BBA-K103	5353.8430.00
Optical Ethernet Remote Control	R&S®BBA-B104	5353.8600.00
RF Input Switch	R&S®BBA-B110	5353.9320.02
RF Output Switch 2:1 or 1:2 (N, max. 500 W)	R&S®BBA-B120	5353.9036.11
RF Output Switch 2:1 or 1:2 (7/16, max. 2000 W)	R&S®BBA-B121	5353.9042.02
Fast Amplifier Mute	R&S®BBA-B130	5353.9659.02
External Amplifier Integration	R&S®BBA-B131	5353.9642.02
DC Block Input Protection (SMA rear)	R&S®BBA-B132	5353.9236.02
DC Block Input Protection (N front)	R&S®BBA-B132	5353.9236.03
RF Forward/RF Reflected Sample Ports (SMA front)	R&S®BBA-B140	5353.9213.02
RF Forward/RF Reflected Sample Ports (SMA rear)	R&S®BBA-B140	5353.9213.03
Detected Forward/Detected Reflected Sample Ports (SMA front)	R&S®BBA-B141	5353.9220.02
Detected Forward/Detected Reflected Sample Ports (SMA rear)	R&S®BBA-B141	5353.9220.03
RF Sample Port Switch (dual port, SMA front)	R&S®BBA-B142	5353.9242.02
RF Sample Port Switch (dual port, SMA rear)	R&S®BBA-B142	5353.9242.03

Service

Designation	Type	Order No.
Factory Acceptance Test (FAT), 1 day	R&S®PROJ-D	5354.9100.53
Upgrade Frequency Band/RF Output Power	R&S®BBA-UPGR	on request

Service options		
Extended Warranty, one year	R&S®WE1BBA100	Please contact your local Rohde & Schwarz sales office.
Extended Warranty, two years	R&S®WE2BBA100	
Extended Warranty, three years	R&S®WE3BBA100	
Extended Warranty, four years	R&S®WE4BBA100	

Accessories

Designation	Type	Order No.
Spare Set of Air Filters (2 filters)	R&S®ZR1-AF01	5353.9459.00
Blank Panel Kit, 1 HU	R&S®ZR1-BP01	5353.9559.11
Blank Panel Kit, 2 HU	R&S®ZR1-BP01	5353.9559.12
Blank Panel Kit, 3 HU	R&S®ZR1-BP01	5353.9559.13
Blank Panel Kit, 4 HU	R&S®ZR1-BP01	5353.9559.14
Blank Panel Kit, 5 HU	R&S®ZR1-BP01	5353.9559.15
Rack, 12 HU, depth 800 mm	R&S®KG-A800	5354.0503.12
Rack, 15 HU, depth 800 mm	R&S®KG-A800	5354.0503.15
Rack, 20 HU, depth 800 mm	R&S®KG-A800	5354.0503.20
Rack, 30 HU, depth 800 mm	R&S®KG-A800	5354.0503.30
Rack, 35 HU, depth 800 mm	R&S®KG-A800	5354.0503.35
Rack, 42 HU, depth 800 mm	R&S®KG-A800	5354.0503.42
Rack, 46 HU, depth 800 mm	R&S®KG-A800	5354.0503.46
Rack, 30 HU, depth 1000 mm	R&S®KG-A1000	5354.0510.30
Rack, 35 HU, depth 1000 mm	R&S®KG-A1000	5354.0510.35
Rack, 42 HU, depth 1000 mm	R&S®KG-A1000	5354.0510.42
Rack, 46 HU, depth 1000 mm	R&S®KG-A1000	5354.0510.46
Rackmount Kit (instead of desktop model)	R&S®ZR1-RMU01	5353.9507.00
Rack Wheels (4 wheels)	R&S®ZR1-RW	5353.9707.03
Rackmounting Brackets (pair)	R&S®ZR1-RA01	5353.9571.02
R&S®BBA100 Mounting Rails (pair)	R&S®ZR1-SLR01	5353.9520.00
Standard Mounting Rails (pair)	R&S®ZR1-SLR02	5353.9565.02
AC Power Cord (German plug), PE cable	R&S®ZR1-PSEA	5353.9365.02
AC Power Cord (without plug), PE cable	R&S®ZR1-PSEA	5353.9365.03
AC Power Cord (NEMA L5/30 US plug), PE cable	R&S®ZR1-PSEA	5353.9365.04
Operating Manual, German, printed version	R&S®BBA-MA	5354.9017.11
Operating Manual, English, printed version	R&S®BBA-MA	5354.9017.12

For product brochure, see PD 5214.0753.12 and www.rohde-schwarz.com

Service you can rely on

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

About Rohde&Schwarz

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 more than 75 years ago, Rohde&Schwarz has a global presence and a dedicated service network in over 70 countries. Company headquarters are in Munich, Germany.

Environmental commitment

- Energy-efficient products
- Continuous improvement in environmental sustainability
- ISO 14001-certified environmental management system

Certified Quality System
ISO 9001

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