

# R&S® BBA150 BROADBAND AMPLIFIER

## Specifications

3  
year  
warranty



Data Sheet  
Version 22.00

**ROHDE & SCHWARZ**

Make ideas real



# CONTENTS

<b>European directives.....</b>	<b>4</b>
<b>Definitions .....</b>	<b>5</b>
<b>Frequency band A from 9 kHz to 250 MHz.....</b>	<b>6</b>
R&S®BBA150-A125, 125 W power class .....	8
R&S®BBA150-A160, 160 W power class .....	10
R&S®BBA150-A200, 200 W power class .....	12
R&S®BBA150-A400, 400 W power class .....	14
R&S®BBA150-A700, 700 W power class .....	16
R&S®BBA150-A1300, 1300 W power class .....	18
R&S®BBA150-A2500, 2500 W power class .....	20
<b>Frequency band AB from 4 kHz to 400 MHz .....</b>	<b>22</b>
R&S®BBA150-AB75, 75 W power class.....	22
R&S®BBA150-AB125, 125 W power class.....	24
R&S®BBA150-AB160, 160 W power class.....	26
R&S®BBA150-AB200, 200 W power class.....	28
R&S®BBA150-AB350, 350 W power class.....	30
R&S®BBA150-AB600, 600 W power class.....	32
<b>Frequency band BC from 80 MHz to 1 GHz .....</b>	<b>34</b>
R&S®BBA150-BC70, 70 W power class .....	34
R&S®BBA150-BC125, 125 W power class.....	36
R&S®BBA150-BC160, 160 W power class.....	38
R&S®BBA150-BC250, 250 W power class.....	40
R&S®BBA150-BC500, 500 W power class.....	42
R&S®BBA150-BC1000, 1000 W power class.....	44
R&S®BBA150-BC1250, 1250 W power class.....	46
R&S®BBA150-BC1500, 1500 W power class.....	48
R&S®BBA150-BC2000, 2000 W power class.....	50
R&S®BBA150-BC3000, 3000 W power class.....	52
<b>Frequency band D from 0.69 GHz to 3.2 GHz .....</b>	<b>54</b>
R&S®BBA150-D30, 30 W power class .....	54
R&S®BBA150-D60, 60 W power class .....	56
R&S®BBA150-D110, 110 W power class .....	58
R&S®BBA150-D200, 200 W power class .....	60
R&S®BBA150-D400, 400 W power class .....	62
R&S®BBA150-D800, 800 W power class .....	64

<b>Frequency band E from 2.5 GHz to 6.0 GHz .....</b>	<b>66</b>
R&S®BBA150-E15, 15 W power class .....	66
R&S®BBA150-E30, 30 W power class .....	68
R&S®BBA150-E60, 60 W power class .....	70
R&S®BBA150-E100, 100 W power class .....	72
R&S®BBA150-E200, 200 W power class .....	74
R&S®BBA150-E400, 400 W power class .....	76
<b>General data .....</b>	<b>78</b>
Modulation specifications.....	78
Cooling specifications .....	78
Control specifications .....	78
Environmental specifications .....	78
Protection .....	79
General RF specifications.....	79
RF switching specifications – input and measurement .....	80
RF switching specifications – output .....	81
Fast amplifier mute specifications .....	82
<b>Ordering information .....</b>	<b>83</b>
R&S®BBA150 single-band power amplifiers .....	83
R&S®BBA150 twin-band power amplifiers .....	84
R&S®BBA150 dual-band power amplifiers .....	85
Options.....	86
Service .....	86
Accessories.....	86

## European directives

RoHS Europe, Directive 2011/65/EU:  
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.

# Definitions

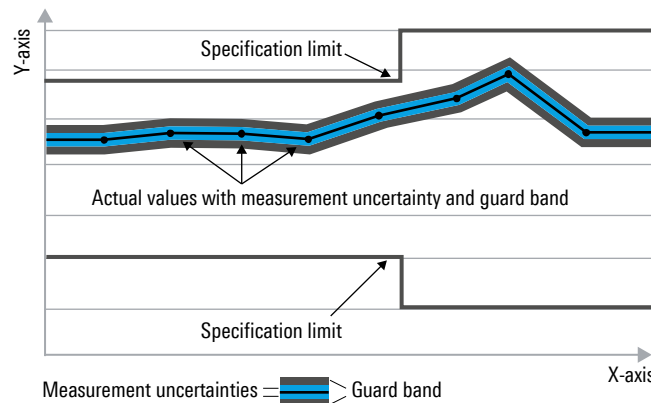
## General

Product data applies under the following conditions:

- 15 minutes warm-up operation
- All specified parameters are valid for an ambient temperature of +25 °C, input impedance of 50 Ω and output impedance of 50 Ω
- Specified environmental conditions met
- Recommended calibration interval adhered to
- All internal automatic adjustments performed, if applicable

## Specifications with limits

Represent warranted product performance by means of a range of values for the specified parameter. These specifications are marked with limiting symbols such as  $<$ ,  $\leq$ ,  $>$ ,  $\geq$ ,  $\pm$ , or descriptions such as maximum, limit of, minimum. Compliance is ensured by testing or is derived from the design. Test limits are narrowed by guard bands to take into account measurement uncertainties, drift and aging, if applicable.



## Non-traceable specifications with limits (n. trc.)

Represent product performance that is specified and tested as described under “Specifications with limits” above. However, product performance in this case cannot be warranted due to the lack of measuring equipment traceable to national metrology standards. In this case, measurements are referenced to standards used in the Rohde & Schwarz laboratories.

## Specifications without limits

Represent warranted product performance for the specified parameter. These specifications are not specially marked and represent values with no or negligible deviations from the given value (e.g. dimensions or resolution of a setting parameter). Compliance is ensured by design.

## Typical data (typ.)

Characterizes product performance by means of representative information for the given parameter. When marked with  $<$ ,  $>$  or as a range, it represents the performance met by approximately 80 % of the instruments at production time. Otherwise, it represents the mean value.

## Nominal values (nom.)

Characterize product performance by means of a representative value for the given parameter (e.g. nominal impedance). In contrast to typical data, a statistical evaluation does not take place and the parameter is not tested during production.

## Measured values (meas.)

Characterize expected product performance by means of measurement results gained from individual samples.

## Uncertainties

Represent limits of measurement uncertainty for a given measurand. Uncertainty is defined with a coverage factor of 2 and has been calculated in line with the rules of the Guide to the Expression of Uncertainty in Measurement (GUM), taking into account environmental conditions, aging, wear and tear.

Device settings and GUI parameters are designated with the format “parameter: value”.

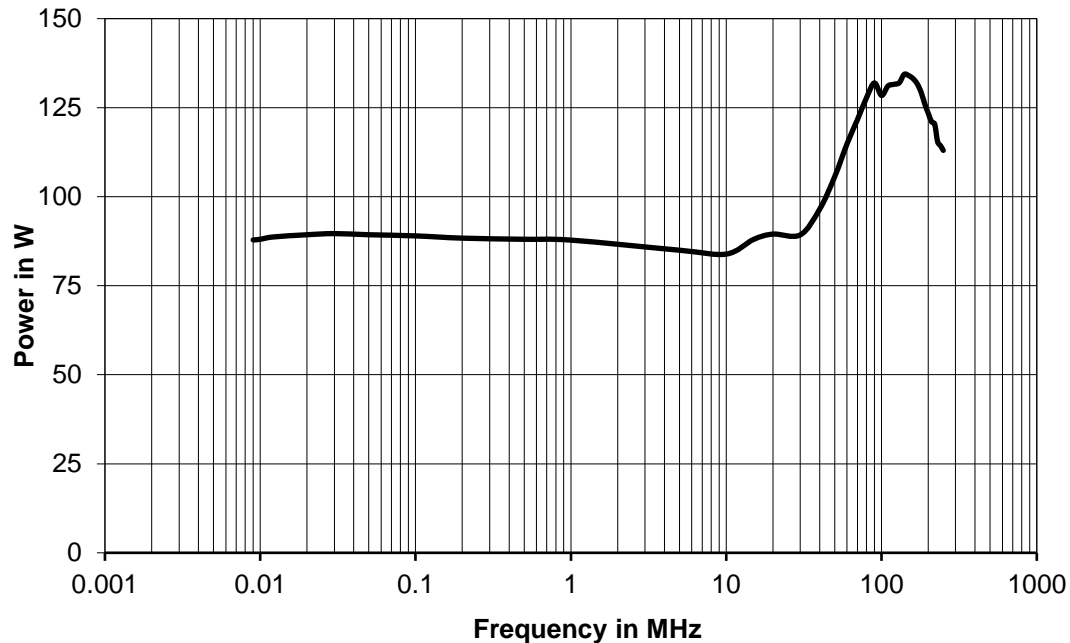
Non-traceable specifications with limits, typical data as well as nominal and measured values are not warranted by Rohde & Schwarz.

In line with the 3GPP/3GPP2 standard, chip rates are specified in million chips per second (Mcps), whereas bit rates and symbol rates are specified in billion bit per second (Gbps), million bit per second (Mbps), thousand bit per second (kbps), million symbols per second (MSPS) or thousand symbols per second (kSPS), and sample rates are specified in million samples per second (Msample/s). Gbps, Mcps, Mbps, MSPS, kbps, kSPS and Msample/s are not SI units.

# Frequency band A from 9 kHz to 250 MHz

## R&S®BBA150-A75, 75 W power class <sup>1</sup>

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		9 kHz to 250 MHz instantaneously
Nominal output load		50 Ω
Nominal output power		75 W (48.8 dBm)
Output power	9 kHz to 50 MHz	min. 75 W (48.8 dBm)
	50 MHz to 225 MHz	min. 90 W (49.6 dBm)
	225 MHz to 250 MHz	min. 75 W (48.8 dBm)
Output power at 1 dB compression		min. 75 W (48.8 dBm)
Nominal power gain	at 1 MHz	nom. 52.2 dB
Gain flatness		±2.5 dB
Gain adjustment range		> 15 dB
Harmonics	at 75 W	< -20 dBc
Spurious	carrier offset > 100 kHz, from 1 MHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain	5 MHz to 50 MHz	nom. < 16.0 dB
	50 MHz to 250 MHz	nom. < 9.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+5 dBm
	DC	0 V

<sup>1</sup> Only as a part of the R&S®BBA150-A75BC70 dual-band amplifier and the R&S®BBA150-A75A75 twin-band amplifier.

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 50 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 16 kg (35 lb)

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

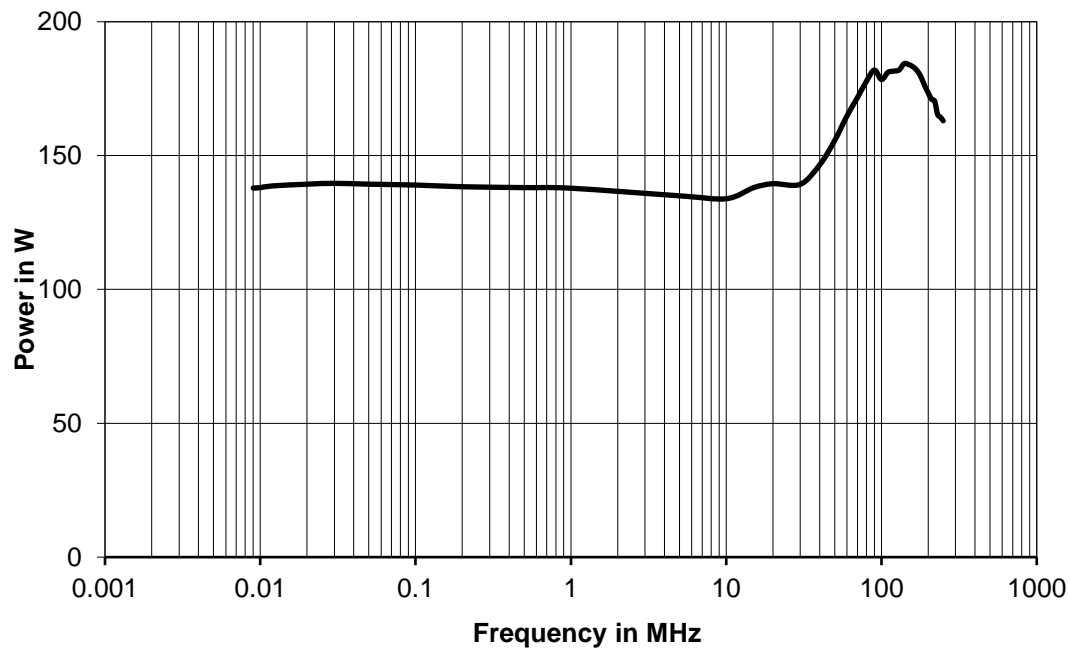
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>2</sup>	at 110 V	9.1 A
	at 230 V	4.4 A
Rated power	RF <sub>cw</sub> = 75 W (RMS), VSWR = 1	1.0 kVA

<sup>2</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-A125, 125 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		9 kHz to 250 MHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		125 W (51.0 dBm)
Output power	9 kHz to 50 MHz	min. 125 W (51.0 dBm)
	50 MHz to 225 MHz	min. 140 W (51.5 dBm)
	225 MHz to 250 MHz	min. 125 W (51.0 dBm)
Output power at 1 dB compression		min. 125 W (51.0 dBm)
Nominal power gain	at 1 MHz	nom. 54.4 dB
Gain flatness		$\pm 2.5$ dB
Gain adjustment range		> 15 dB
Harmonics	at 125 W	< -20 dBc
Spurious	carrier offset > 100 kHz, from 1 MHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain	5 MHz to 50 MHz	nom. < 16.0 dB
	50 MHz to 250 MHz	nom. < 9.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2:1
Maximum input level	RF	+5 dBm
	DC	0 V



<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 50 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 16 kg (35 lb)

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

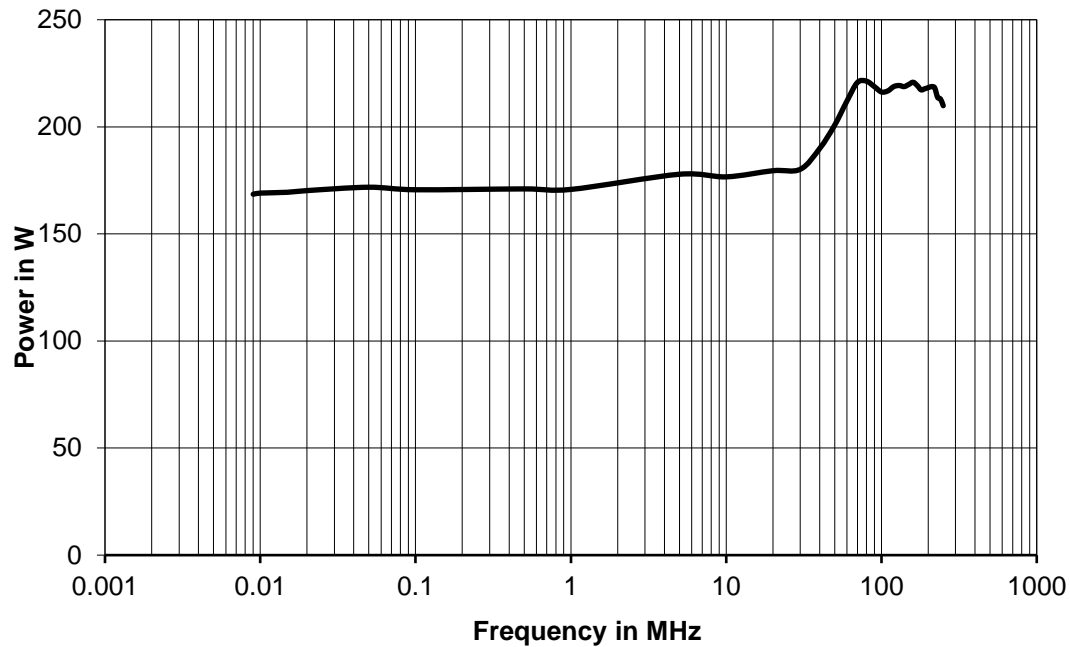
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>3</sup>	at 110 V	9.1 A
	at 230 V	4.4 A
Rated power	RF <sub>cw</sub> = 125 W (RMS), VSWR = 1	1.0 kVA

<sup>3</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-A160, 160 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		9 kHz to 250 MHz instantaneously
Nominal output load		50 Ω
Nominal output power		160 W (52.0 dBm)
Output power	9 kHz to 50 MHz	min. 160 W (52.0 dBm)
	50 MHz to 225 MHz	min. 180 W (52.6 dBm)
	225 MHz to 250 MHz	min. 160 W (52.0 dBm)
Output power at 1 dB compression		min. 160 W (52.0 dBm)
Nominal power gain	at 1 MHz	nom. 55.4 dB
Gain flatness		±2.5 dB
Gain adjustment range		> 15 dB
Harmonics	at 160 W	< -20 dBc
Spurious	carrier offset > 100 kHz, from 1 MHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain	5 MHz to 50 MHz	nom. < 16.0 dB
	50 MHz to 250 MHz	nom. < 9.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+5 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 50 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 16 kg (35 lb)

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

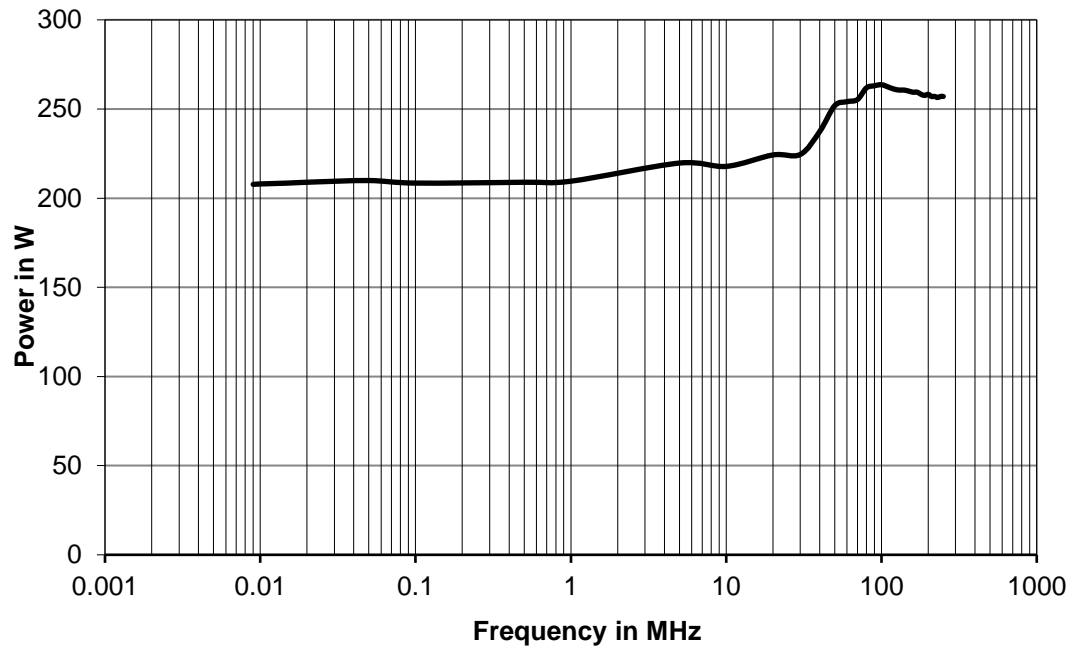
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>4</sup>	at 110 V	9.1 A
	at 230 V	4.4 A
Rated power	RF <sub>cw</sub> = 160 W (RMS), VSWR = 1	1.0 kVA

<sup>4</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-A200, 200 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		9 kHz to 250 MHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		200 W (53.0 dBm)
Output power	9 kHz to 50 MHz	min. 200 W (53.0 dBm)
	50 MHz to 225 MHz	min. 230 W (53.6 dBm)
	225 MHz to 250 MHz	min. 200 W (53.0 dBm)
Output power at 1 dB compression		min. 200 W (53.0 dBm)
Nominal power gain	at 1 MHz	nom. 56.4 dB
Gain flatness		$\pm 2.5$ dB
Gain adjustment range		> 15 dB
Harmonics	at 200 W	< -20 dBc
Spurious	carrier offset > 100 kHz, from 1 MHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain	5 MHz to 50 MHz	nom. < 16.0 dB
	50 MHz to 250 MHz	nom. < 9.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2:1
Maximum input level	RF	+5 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 50 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 16 kg (35 lb)

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

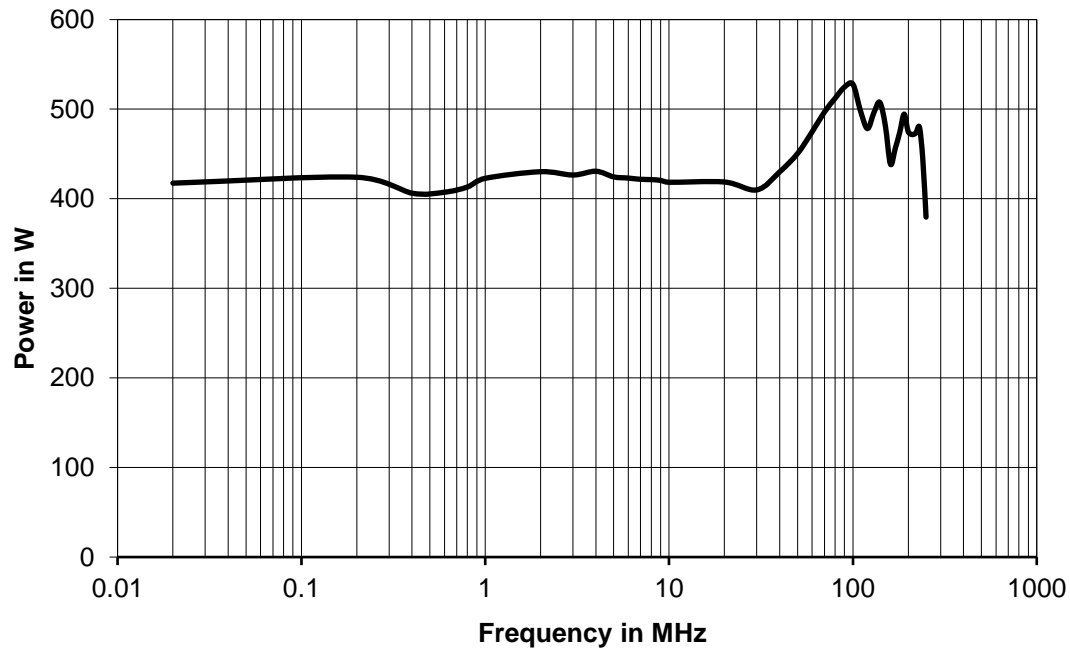
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>5</sup>	at 110 V	9.1 A
	at 230 V	4.4 A
Rated power	RF <sub>cw</sub> = 200 W (RMS), VSWR = 1	1.0 kVA

<sup>5</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-A400, 400 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		9 kHz to 250 MHz instantaneously
Nominal output load		50 Ω
Nominal output power		400 W (56.0 dBm)
Output power	9 kHz to 50 MHz	min. 385 W (55.9 dBm)
	50 MHz to 225 MHz	min. 400 W (56.0 dBm)
	225 MHz to 250 MHz	min. 385 W (55.9 dBm)
Power output at 1 dB compression	9 kHz to 225 MHz	min. 380 W (55.8 dBm)
	225 MHz to 250 MHz	min. 340 W (55.3 dBm)
Nominal power gain	at 1 MHz	nom. 59 dB
Gain flatness		± 2,5 dB
Gain adjustment range		> 15 dB
Harmonics	at 380 W	< -20 dBc
Spurious	carrier offset > 100 kHz, from 1 MHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain	5 MHz to 50 MHz	nom. < 16.0 dB
	50 MHz to 250 MHz	nom. < 9.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+5 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 50 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 24 kg (53 lb)

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

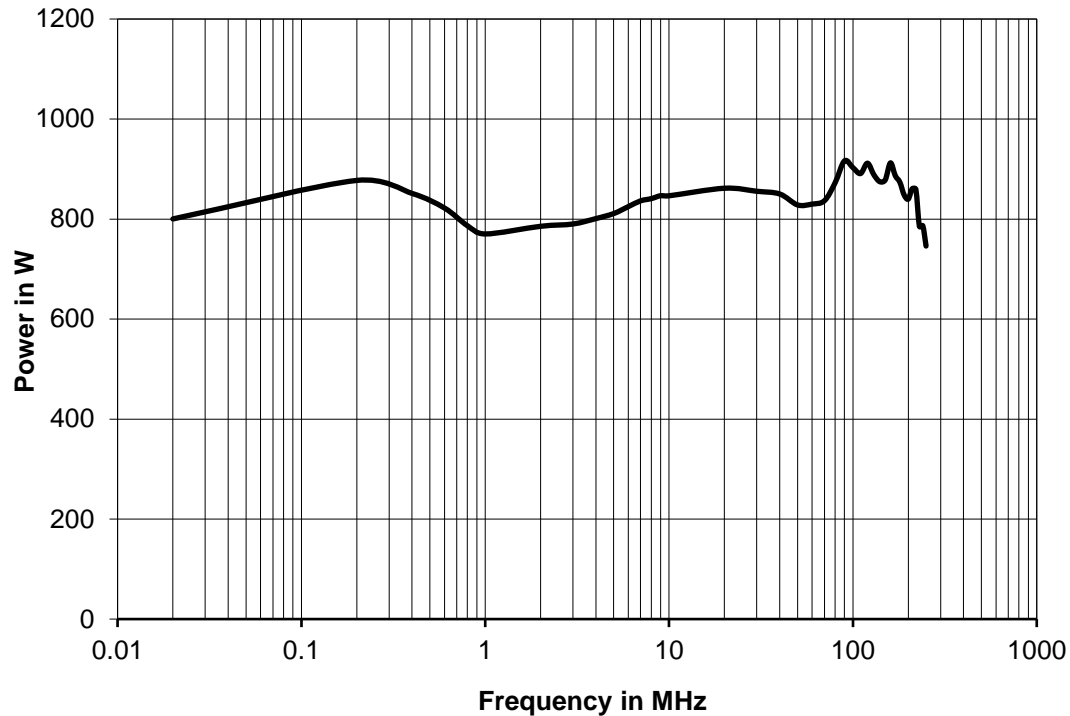
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		200 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
	optional on request, for single-band amplifier only	120 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>6</sup>	at 200 V	10.0 A
	at 230 V	8.7 A
Rated power	RF <sub>cw</sub> = 400 W (RMS), VSWR = 1	2.0 kVA

<sup>6</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-A700, 700 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		9 kHz to 250 MHz instantaneously
Nominal output load		50 Ω
Nominal output power		700 W (58.4 dBm)
Output power	9 kHz to 20 MHz	min. 710 W (58.5 dBm)
	20 MHz to 220 MHz	min. 800 W (59.0 dBm)
	220 MHz to 250 MHz	min. 710 W (58.5 dBm)
Power output at 1 dB compression	9 kHz to 220 MHz	min. 710 W (58.5 dBm)
	220 MHz to 250 MHz	min. 700 W (58.4 dBm)
Nominal power gain	at 1 MHz	nom. 62 dB
Gain flatness		± 2.5 dB
Gain adjustment range		> 15 dB
Harmonics	at 700 W	< -20 dBc
Spurious	carrier offset > 100 kHz, from 1 MHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain	5 MHz to 50 MHz	nom. < 16.0 dB
	50 MHz to 250 MHz	nom. < 9.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+5 dBm
	DC	0 V



<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 64 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D	19" rack, 12 HU, depth: 800 mm (31.5 in)
Weight		approx. 120 kg (265 lb)

<b>RF and sample connectors</b>		
RF input port	either front panel or rear panel	N female
RF output port	rear panel	<sup>7</sup> / <sub>16</sub> DIN female
	front panel, optional on request	<sup>7</sup> / <sub>16</sub> DIN female
RF sample port	forward output power, optional	N female
	reflected output power, optional	N female
Detected sample port	forward output power, optional	N female
	reflected output power, optional	N female

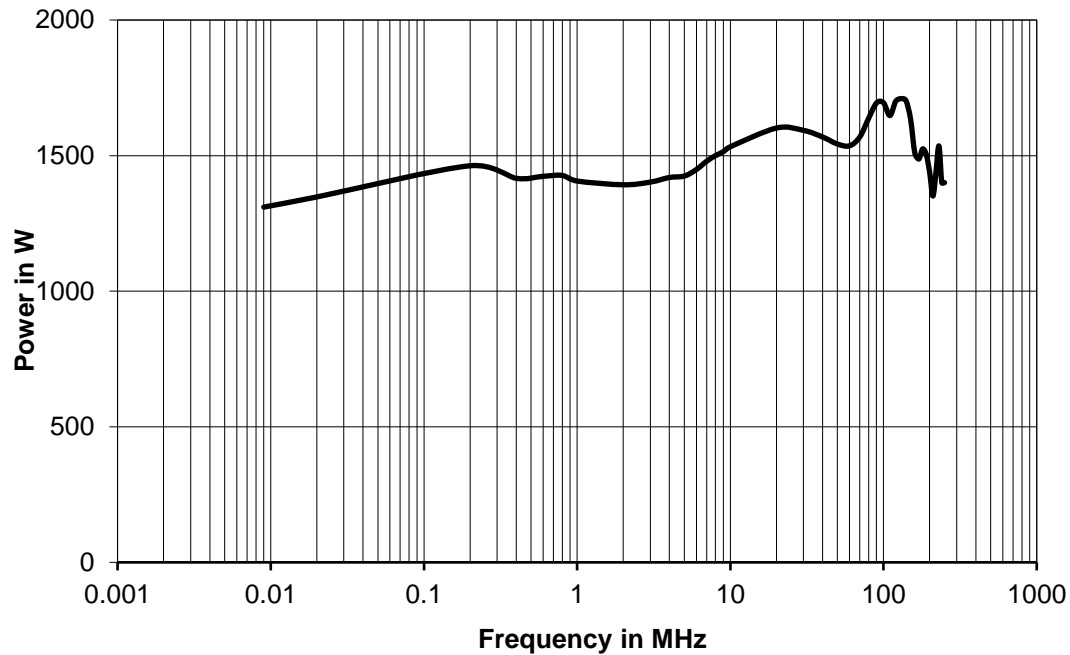
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		208 V to 240 V AC $\pm$ 10 %, single phase 50 Hz to 60 Hz $\pm$ 6 %
		380 V to 415 V AC $\pm$ 10 %, three phase, with N, 50 Hz to 60 Hz $\pm$ 6 %
		208 V to 240 V AC $\pm$ 10 %, three phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>7</sup>		max. 16 A
Rated power	RF <sub>cw</sub> = 700 W (RMS), VSWR = 1	3.6 kVA

<sup>7</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-A1300, 1300 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		9 kHz to 250 MHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		1300 W (61.1 dBm)
Output power	9 kHz to 20 MHz	min. 1300 W (61.1 dBm)
	20 MHz to 220 MHz	min. 1400 W (61.5 dBm)
	220 MHz to 250 MHz	min. 1300 W (61.1 dBm)
Output power at 1 dB compression	9 kHz to 220 MHz	min. 1300 W (61.1 dBm)
	220 MHz to 250 MHz	min. 1200 W (60.8 dBm)
Nominal power gain	at 1 MHz	nom. 64.5 dB
Gain flatness		$\pm 2.5$ dB
Gain adjustment range		> 15 dB
Harmonics	at 1300 W	< -20 dBc
Spurious	carrier offset > 100 kHz, from 1 MHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain	5 MHz to 50 MHz	nom. < 16.0 dB
	50 MHz to 250 MHz	nom. < 9.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2:1
Maximum input level	RF	+5 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 65 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	rack setup	19" rack, 20 HU, depth: 1000 mm (39.4 in)
Weight	amplifier system incl. rack	approx. 200 kg (441 lb)

<b>RF and sample connectors</b>		
RF input port	either front panel or rear panel	N female
RF output port	rear panel	1 $\frac{5}{8}$ " EIA male
RF sample port	forward output power, optional	N female
	reflected output power, optional	N female
Detected sample port	forward output power, optional	N female
	reflected output power, optional	N female

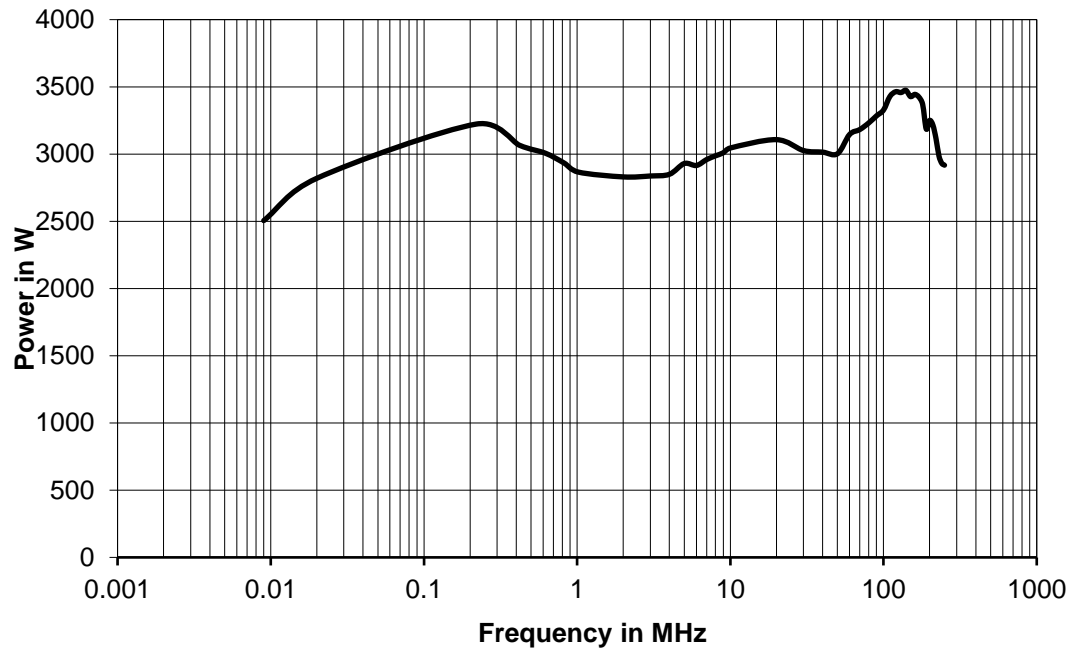
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		380 V to 415 V AC $\pm$ 10 %, three phase, with N, 50 Hz to 60 Hz $\pm$ 6 %
		208 V to 240 V AC $\pm$ 10 %, three phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>8</sup>	at 230 V per phase	15.2/15.2/0.5 A
Rated power	RF <sub>cw</sub> = 1300 W (RMS), VSWR = 1	7 kVA

<sup>8</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-A2500, 2500 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		9 kHz to 250 MHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		2500 W (64.0 dBm)
Output power	9 kHz to 20 kHz	min. 2500 W (64.0 dBm)
	20 kHz to 220 MHz	min. 3000 W (64.8 dBm)
	220 MHz to 250 MHz	min. 2500 W (64.0 dBm)
Output power at 1 dB compression		min. 2500 W (64.0 dBm)
Nominal power gain	at 1 MHz	nom. 67.4 dB
Gain flatness		$\pm 2.8$ dB
Gain adjustment range		> 15 dB
Harmonics	at 2500 W	< -20 dBc
Spurious	carrier offset > 100 kHz, from 1 MHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain	5 MHz to 50 MHz	nom. < 16.0 dB
	50 MHz to 250 MHz	nom. < 9.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2:1
Maximum input level	RF	+5 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 54 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	rack setup	19" rack, 35 HU, depth: 800 mm (31.5 in)
Weight	amplifier system incl. rack	approx. 315 kg (694 lb)

<b>RF and sample connectors</b>		
RF input port	either front panel or rear panel	N female
RF output port	rear panel	1 $\frac{5}{8}$ " EIA male
RF sample port	forward output power, optional	N female
	reflected output power, optional	N female
Detected sample port	forward output power, optional	N female
	reflected output power, optional	N female

## Electrical specifications

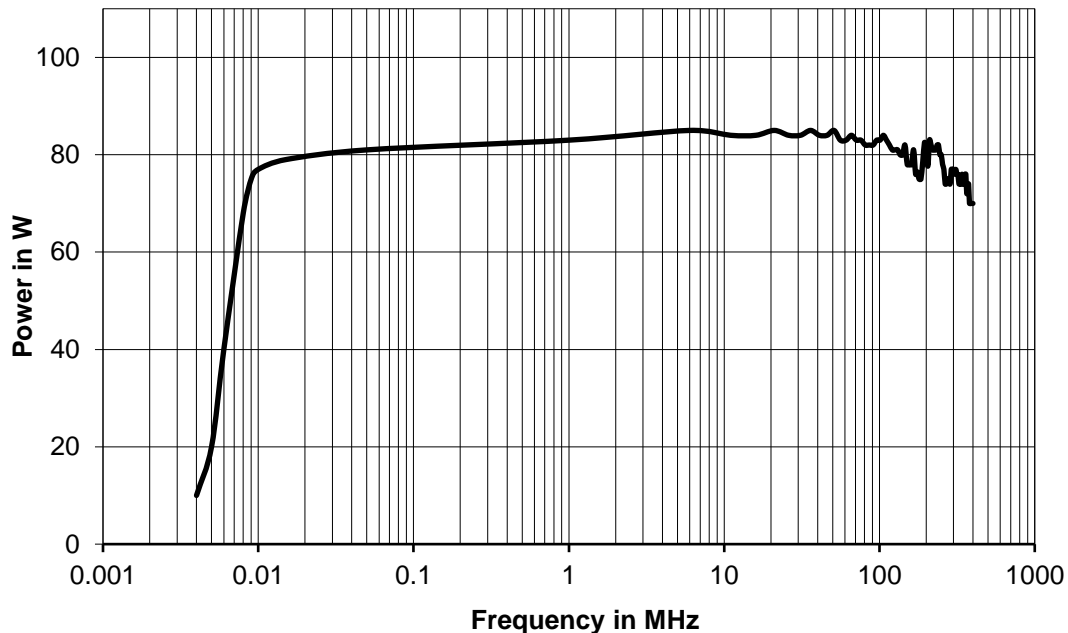
<b>AC supply voltage</b>		
Nominal operating voltage range		380 V to 415 V AC $\pm$ 10 %, three phase, with N, 50 Hz to 60 Hz $\pm$ 6 %
		208 V to 240 V AC $\pm$ 10 %, three phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>9</sup>	at 230 V per phase	28.3 A/14.1 A/14.1 A
Rated power	RF <sub>cw</sub> = 2500 W (RMS), VSWR = 1	13.0 kVA

<sup>9</sup> The appropriate connection has to be provided on site.

# Frequency band AB from 4 kHz to 400 MHz

## R&S®BBA150-AB75, 75 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		4 kHz to 400 MHz instantaneously
Nominal output load		50 Ω
Nominal output power		75 W (48.7 dBm)
Output power	4 kHz to 8 kHz	min. 10 W (40.0 dBm) at 4 kHz rising to 60 W (46.8 dBm) at 8 kHz
	8 kHz to 10 kHz	min. 60 W (47.8 dBm)
	10 kHz to 250 MHz	min. 80 W (49.0 dBm)
	250 MHz to 400 MHz	min. 75 W (48.7 dBm)
Output power at 1 dB compression	4 kHz to 8 kHz	min. 10 W (40.0 dBm) at 4 kHz rising to 60 W (47.8 dBm) at 8 kHz
	8 kHz to 10 kHz	min. 60 W (47.8 dBm)
	10 kHz to 250 MHz	min. 75 W (48.7 dBm)
	250 MHz to 400 MHz	min. 70 W (48.5 dBm)
Nominal power gain	at 150 MHz	nom. 52.1 dB
Gain flatness	8 kHz to 400 MHz	± 3 dB
Gain adjustment range		> 15 dB
Harmonics	at output power	< -20 dBc
Spurious	carrier offset > 100 kHz, from 1MHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain	5 MHz to 400 MHz	nom. < 16.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+5 dBm
	DC	0 V
Output		
Nominal output impedance		50 Ω

Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 45 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W × H × D, incl. fans, handles and stand	430 mm × 196 mm × 580 mm (16.93 in × 7.72 in × 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 16 kg (35 lb)

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

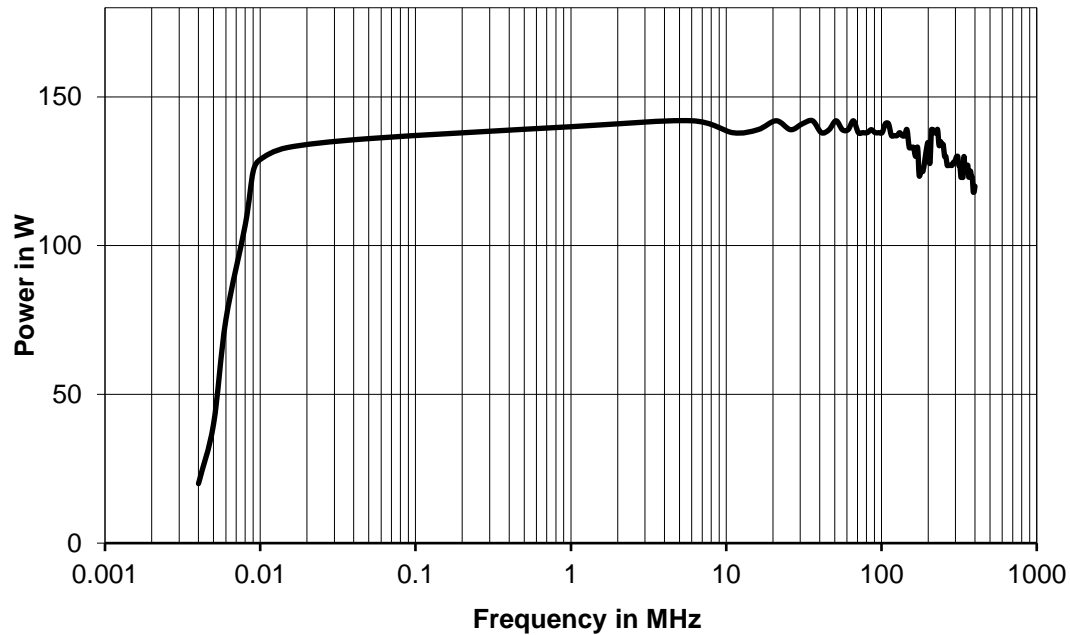
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC ± 10 %, single phase, 50 Hz to 60 Hz ± 6 %
Rated current <sup>10</sup>	at 110 V	10.0 A
	at 230 V	4.8 A
Rated power	RF <sub>cw</sub> = 75 W RMS, VSWR = 1	1.1 kVA

<sup>10</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-AB125, 125 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		4 kHz to 400 MHz instantaneously
Nominal output load		50 Ω
Nominal output power		125 W (51.0 dBm)
Output power	4 kHz to 8 kHz	min. 20 W (43.0 dBm) at 4 kHz rising to 100 W (50.0 dBm) at 8 kHz
	8 kHz to 10 kHz	min. 100 W (50.0 dBm)
	10 kHz to 250 MHz	min. 135 W (51.3 dBm)
	250 MHz to 400 MHz	min. 125 W (51.0 dBm)
Output power at 1 dB compression	4 kHz to 8 kHz	min. 20 W (43.0 dBm) at 4 kHz rising to 100 W (50.0 dBm) at 8 kHz
	8 kHz to 10 kHz	min. 100 W (50.0 dBm)
	10 kHz to 250 MHz	min. 125 W (51.0 dBm)
	250 MHz to 400 MHz	min. 115 W (50.6 dBm)
Nominal power gain	at 150 MHz	nom. 54.4 dB
Gain flatness	8 kHz to 400 MHz	± 3 dB
Gain adjustment range		> 15 dB
Harmonics	at output power	< -20 dBc
Spurious	carrier offset > 100 kHz, from 1MHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain	5 MHz to 400 MHz	nom. < 16.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+5 dBm
	DC	0 V



<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 45 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 16 kg (35 lb)

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

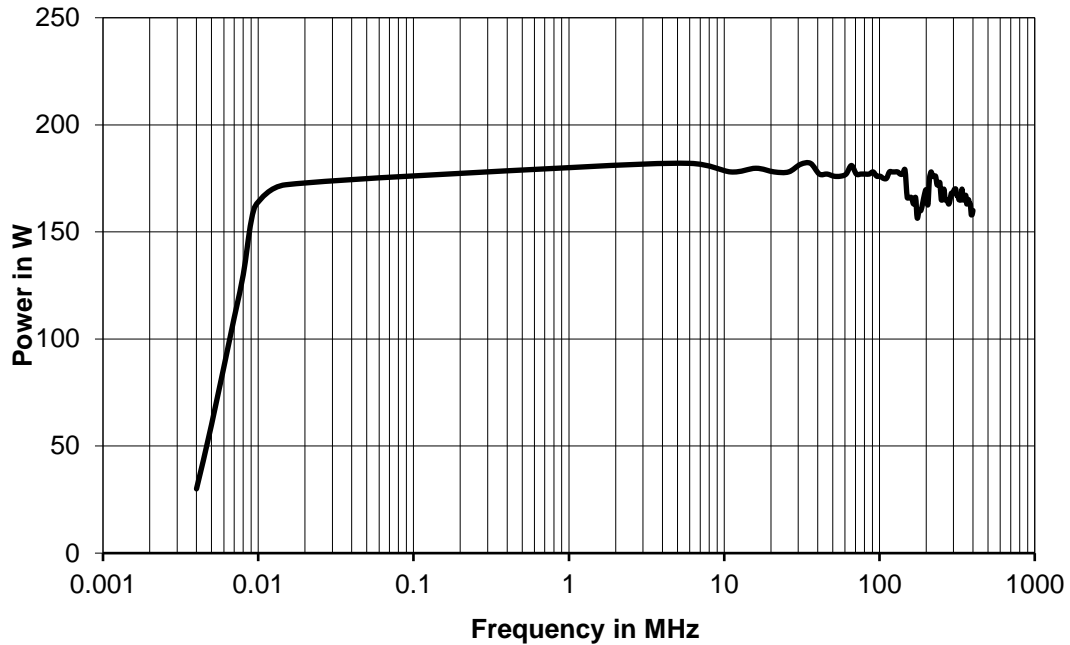
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>11</sup>	at 110 V	10.0 A
	at 230 V	4.8 A
Rated power	RF <sub>cw</sub> = 125 W RMS, VSWR = 1	1.1 kVA

<sup>11</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-AB160, 160 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		4 kHz to 400 MHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		160 W (52.0 dBm)
Output power	4 kHz to 8 kHz	min. 30 W (44.8 dBm) at 4 kHz rising to 120 W (50.8 dBm) at 8 kHz
	8 kHz to 10 kHz	min. 120 W (50.8 dBm)
	10 kHz to 250 MHz	min. 170 W (52.3 dBm)
	250 MHz to 400 MHz	min. 160 W (52.0 dBm)
Output power at 1 dB compression	4 kHz to 8 kHz	min. 30 W (44.8 dBm) at 4 kHz rising to 120 W (50.8 dBm) at 8 kHz
	8 kHz to 10 kHz	min. 120 W (50.8 dBm)
	10 kHz to 250 MHz	min. 160 W (52.0 dBm)
	250 MHz to 400 MHz	min. 150 W (51.8 dBm)
Nominal power gain	at 150 MHz	nom. 55.4 dB
Gain flatness	8 kHz to 400 MHz	$\pm 3$ dB
Gain adjustment range		> 15 dB
Harmonics	at output power	< -20 dBc
Spurious	carrier offset > 100 kHz, from 1MHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain	5 MHz to 400 MHz	nom. < 16.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2:1
Maximum input level	RF	+5 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 45 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 16 kg (35 lb)

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

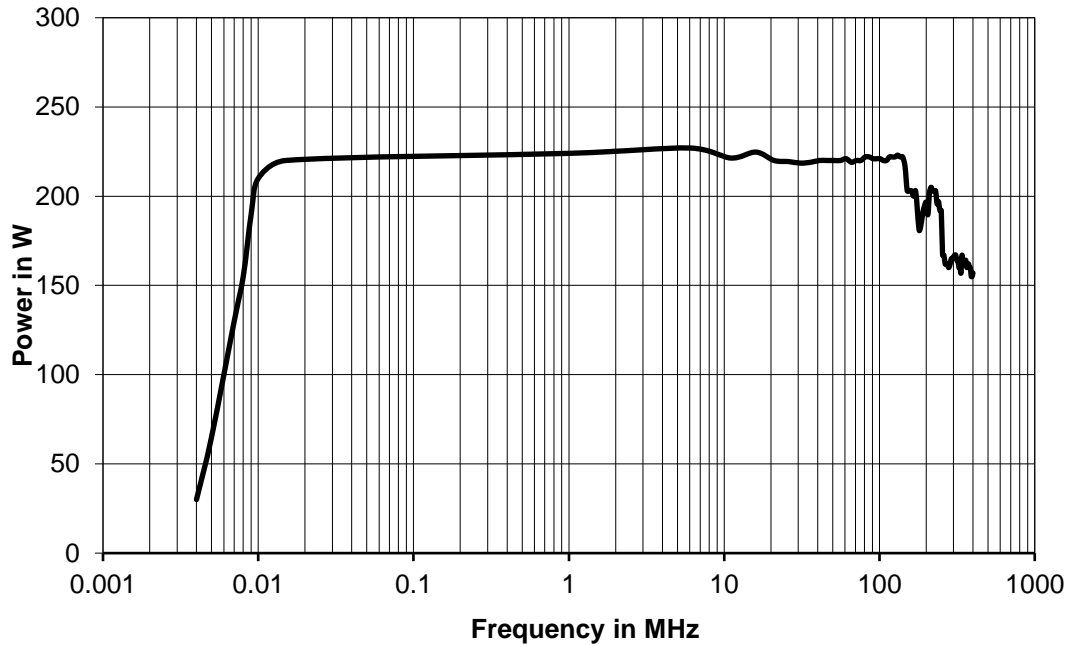
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>12</sup>	at 110 V	10.0 A
	at 230 V	4.8 A
Rated power	RF <sub>cw</sub> = 160 W RMS, VSWR = 1	1.1 kVA

<sup>12</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-AB200, 200 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		4 kHz to 400 MHz instantaneously
Nominal output load		50 Ω
Nominal output power		200 W (53.0 dBm)
Output power	4 kHz to 9 kHz	min. 35 W (45.4 dBm) at 4 kHz rising to 140 W (51.5 dBm) at 9 kHz
	9 kHz to 10 kHz	min. 140 W (51.5 dBm)
	10 kHz to 230 MHz	min. 210 W (53.3 dBm)
	230 MHz to 400 MHz	min. 160 W (52.0 dBm)
Output power at 1 dB compression	4 kHz to 9 kHz	min. 30 W (44.8 dBm) at 4 kHz rising to 140 W (51.5 dBm) at 9 kHz
	9 kHz to 10 kHz	min. 140 W (51.5 dBm)
	10 kHz to 150 MHz	min. 190 W (52.8 dBm)
	150 MHz to 230 MHz	min. 170 W (52.3 dBm)
	230 MHz to 400 MHz	min. 155 W (51.9 dBm)
Nominal power gain	at 150 MHz	nom. 56 dB
Gain flatness	8 kHz to 400 MHz	± 3 dB
Gain adjustment range		> 15 dB
Harmonics	at output power	< -17 dBc
Spurious	carrier offset > 100 kHz, from 1MHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain	5 MHz to 400 MHz	nom. < 16.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+5 dBm
	DC	0 V

Output		
Nominal output impedance		50 Ω

Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 45 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 16 kg (35 lb)

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

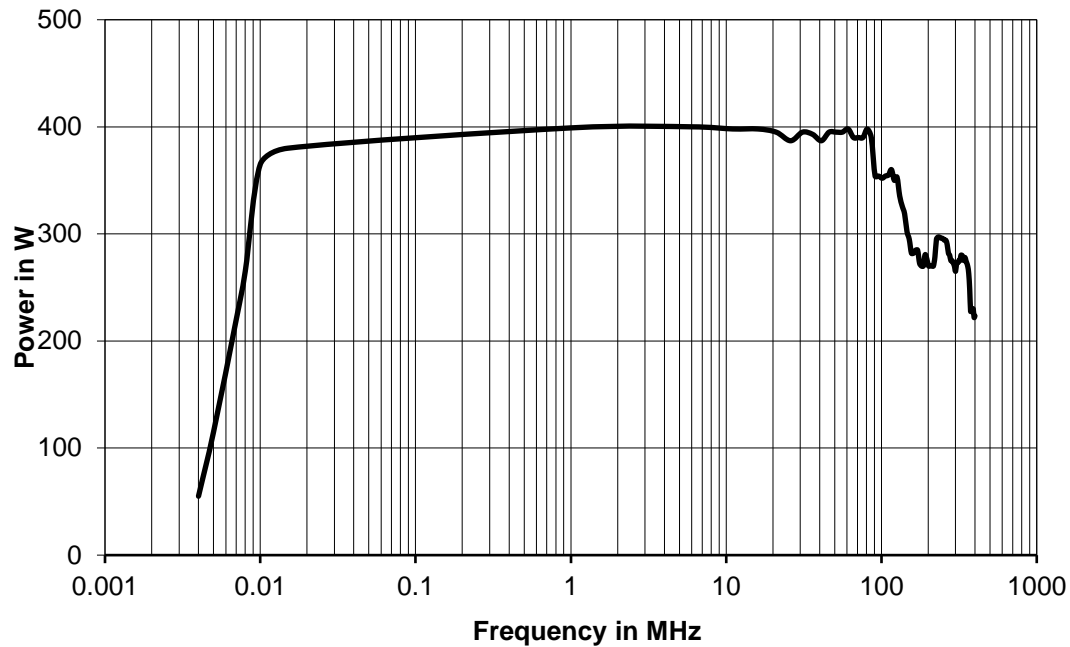
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>13</sup>	at 110 V	10.0 A
	at 230 V	4.8 A
Rated power	RF <sub>cw</sub> = 200 W RMS, VSWR = 1	1.1 kVA

<sup>13</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-AB350, 350 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		4 kHz to 400 MHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		350 W (55.5 dBm)
Output power	4 kHz to 8 kHz	min. 60 W (47.8 dBm) at 4 kHz rising to 250 W (54.0 dBm) at 8 kHz
	8 kHz to 10 kHz	min. 250 W (54.0 dBm)
	10 kHz to 250 MHz	min. 350 W (55.5 dBm)
	250 MHz to 400 MHz	min. 300 W (54.8 dBm)
Power output at 1 dB compression	4 kHz to 8 kHz	min. 55 W (47.4 dBm) at 4 kHz rising to 250 W (54.0 dBm) at 8 kHz
	8 kHz to 10 kHz	min. 250 W (54.0 dBm)
	10 kHz to 130 MHz	min. 350 W (55.5 dBm)
	130 MHz to 250 MHz	min. 270 W (54.3 dBm)
	250 MHz to 400 MHz	min. 220 W (53.4 dBm)
Nominal power gain	at 150 MHz	nom. 58.9 dB
Gain flatness	8 kHz to 400 MHz	$\pm 3$ dB
Gain adjustment range		> 15 dB
Harmonics	at output power	< -17 dBc
Spurious	carrier offset > 100 kHz, from 1MHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain	10 MHz to 400 MHz	nom. < 16.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2:1
Maximum input level	RF	+5 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 48 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 24 kg (53 lb)

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

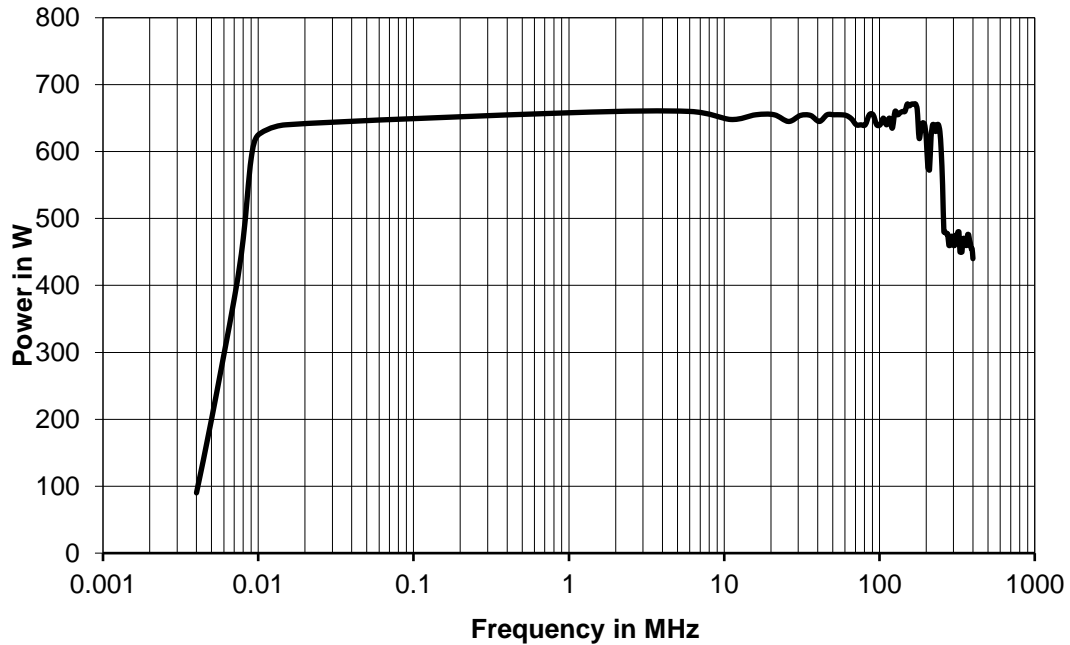
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		200 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
	optional on request	120 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>14</sup>	at 200 V	10.0 A
	at 230 V	8.7 A
Rated power	RF <sub>cw</sub> = 350 W RMS, VSWR = 1	2.0 kVA

<sup>14</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-AB600, 600 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		4 kHz to 400 MHz instantaneously
Nominal output load		50 Ω
Nominal output power		600 W (57.8 dBm)
Output power	4 kHz to 8 kHz	min. 100 W (50 dBm) at 4 kHz rising to 450 W (56.5 dBm) at 8 kHz
	8 kHz to 10 kHz	min. 450 W (56.5 dBm)
	10 kHz to 250 MHz	min. 630 W (58.0 dBm)
	250 MHz to 400 MHz	min. 420 W (56.2 dBm)
Power output at 1 dB compression	4 kHz to 8 kHz	min. 90 W (49.5 dBm) at 4 kHz rising to 450 W (56.5 dBm) at 8 kHz
	8 kHz to 10 kHz	min. 450 W (56.5 dBm)
	10 kHz to 150 MHz	min. 600 W (57.8 dBm)
	150 MHz to 250 MHz	min. 550 W (57.4 dBm)
	250 MHz to 400 MHz	min. 400 W (56.0 dBm)
Nominal power gain	at 150 MHz	nom. 61.2 dB
Gain flatness	8 kHz to 400 MHz	± 3 dB
Gain adjustment range		> 15 dB
Harmonics	at output power	< -17 dBc
Spurious	carrier offset > 100 kHz, from 1MHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain	20 MHz to 400 MHz	nom. < 16.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+5 dBm
	DC	0 V



<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 51 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D	19" rack, 12 HU, depth: 800 mm (31.5 in)
Weight		approx. 120 kg (265 lb)

<b>RF and sample connectors</b>		
RF input port	either front panel or rear panel	N female
RF output port	rear panel	$7/_{16}$ DIN female
	front panel, optional on request	$7/_{16}$ DIN female
RF sample port	forward output power, optional	N female
	reflected output power, optional	N female
Detected sample port	forward output power, optional	N female
	reflected output power, optional	N female

## Electrical specifications

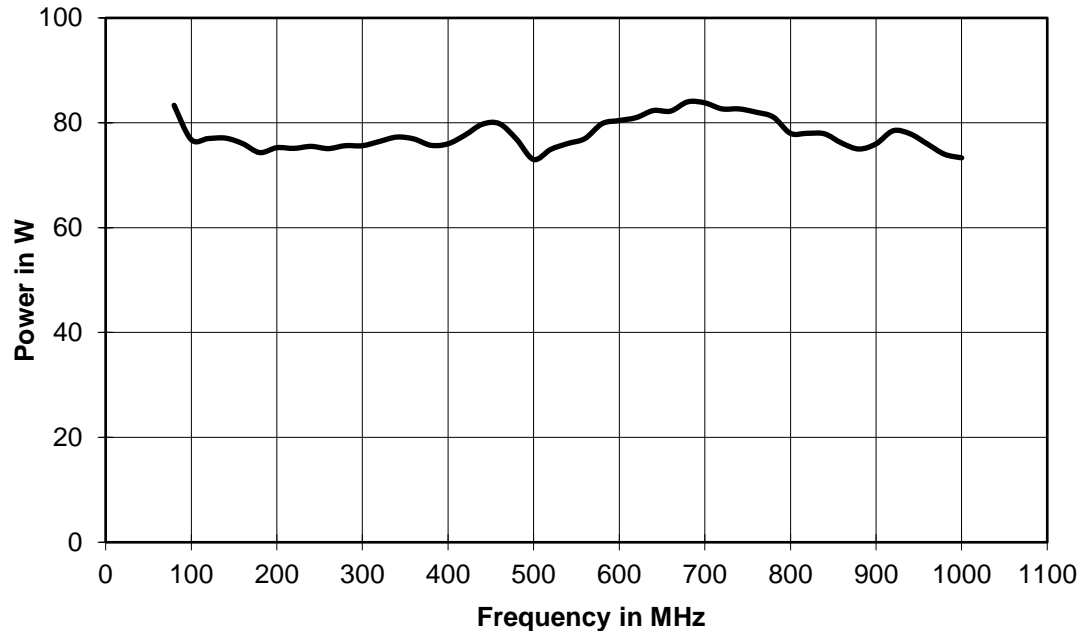
<b>AC supply voltage</b>		
Nominal operating voltage range		208 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
		380 V to 415 V AC $\pm$ 10 %, three phase, with N, 50 Hz to 60 Hz $\pm$ 6 %
		208 V to 240 V AC $\pm$ 10 %, three phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>15</sup>		max. 16 A
Rated power	$RF_{cw} = 600$ W (RMS), VSWR = 1	3.6 kVA

<sup>15</sup> The appropriate connection has to be provided on site.

# Frequency band BC from 80 MHz to 1 GHz

## R&S®BBA150-BC70, 70 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		80 MHz to 1 GHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		70 W (48.5 dBm)
Output power		min. 80 W (49.0 dBm)
Output power at 1 dB compression		min. 70 W (48.5 dBm)
Nominal power gain	at 400 MHz	nom. 51.9 dB
Gain flatness		$\pm 3$ dB
Gain adjustment range		> 15 dB
Harmonics	at 70 W	< -20 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -65 dBc
Noise figure at maximum gain		nom. < 10 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 57 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 16 kg (35 lb)

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

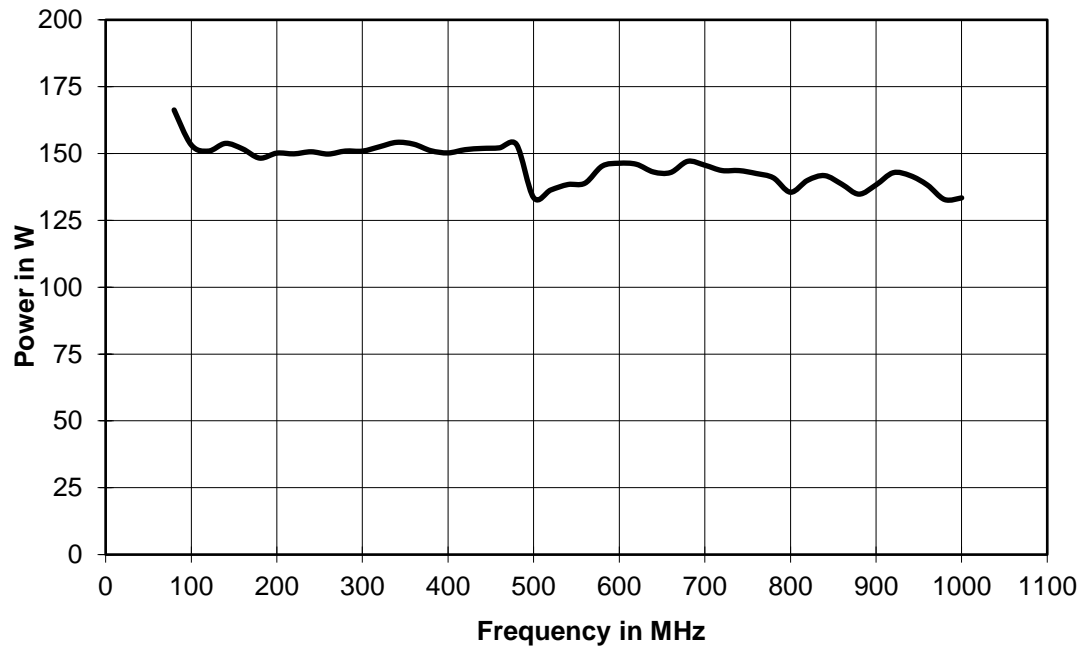
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>16</sup>	at 110 V	7.7 A
	at 230 V	3.7 A
Rated power	RF <sub>cw</sub> = 70 W (RMS), VSWR = 1	850 VA

<sup>16</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-BC125, 125 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		80 MHz to 1 GHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		125 W (51.0 dBm)
Output power	< 400 MHz	min. 150 W (51.8 dBm)
	> 400 MHz	min. 135 W (51.3 dBm)
Output power at 1 dB compression	< 400 MHz	min. 140 W (51.5 dBm)
	> 400 MHz	min. 125 W (51.0 dBm)
Nominal power gain	at 400 MHz	nom. 54.4 dB
Gain flatness		$\pm 3$ dB
Gain adjustment range		> 15 dB
Harmonics	at 125 W, entire band except 320 MHz to 550 MHz	< -20 dBc
	at 125 W, 320 MHz to 550 MHz	< -17 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -65 dBc
Noise figure at maximum gain		nom. < 10 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 57 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 16 kg (35 lb)

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

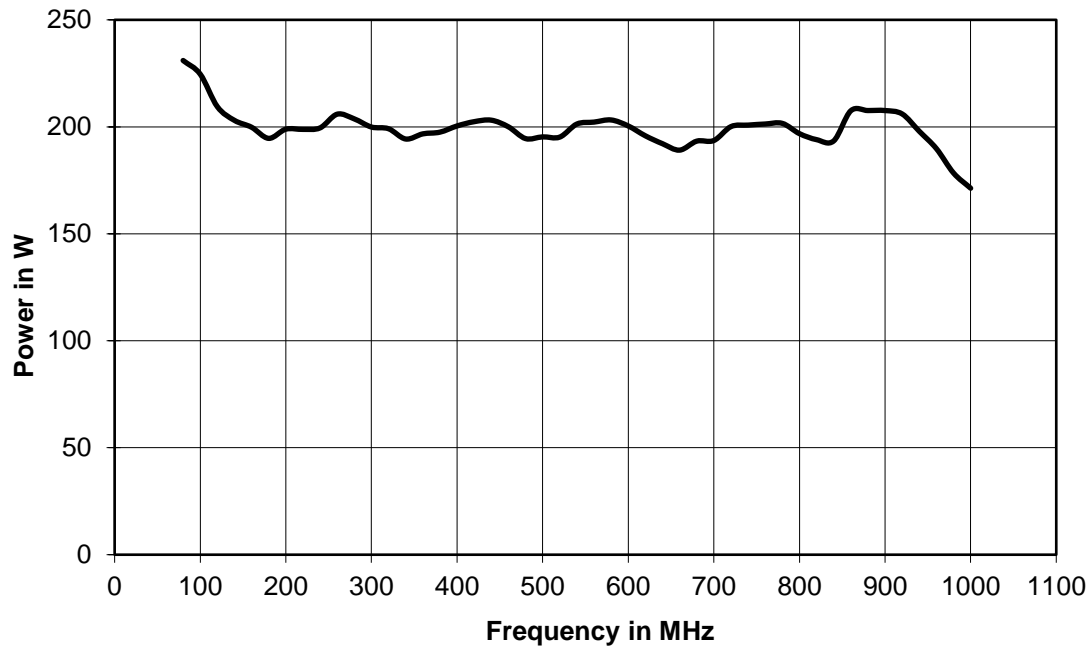
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>17</sup>	at 110 V	7.7 A
	at 230 V	3.7 A
Rated power	RF <sub>cw</sub> = 125 W (RMS), VSWR = 1	850 VA

<sup>17</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-BC160, 160 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		80 MHz to 1 GHz instantaneously
Nominal output load		50 Ω
Nominal output power		160 W (52.0 dBm)
Output power	< 400 MHz	min. 180 W (52.5 dBm)
	> 400 MHz	min. 170 W (52.3 dBm)
Output power at 1 dB compression	< 400 MHz	min. 175 W (52.4 dBm)
	> 400 MHz	min. 160 W (52.0 dBm)
Nominal power gain	at 400 MHz	nom. 55.4 dB
Gain flatness		±3 dB
Gain adjustment range		> 15 dB
Harmonics	at 160 W, entire band except 320 MHz to 550 MHz	< -20 dBc
	at 160 W, 320 MHz to 550 MHz	< -17 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -65 dBc
Noise figure at maximum gain		nom. < 10 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 57 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 21 kg (46 lb)

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

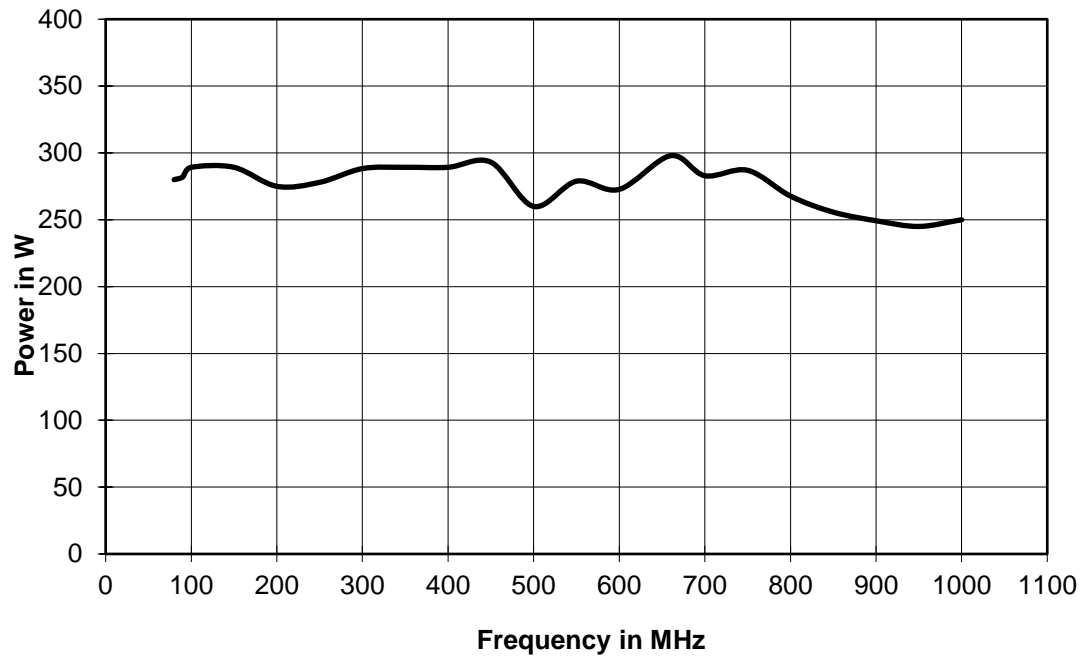
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		200 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
	optional on request, for single-band amplifier only	100 V to 120 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>18</sup>	at 200 V	8.5 A
	at 230 V	7.4 A
Rated power	RF <sub>cw</sub> = 160 W (RMS), VSWR = 1	1.7 kVA

<sup>18</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-BC250, 250 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		80 MHz to 1 GHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		250 W (54.0 dBm)
Output power		min. 280 W (54.5 dBm)
Output power at 1 dB compression	< 400 MHz	min. 275 W (54.4 dBm)
	> 400 MHz	min. 225 W (53.5 dBm)
Nominal power gain	at 400 MHz	nom. 57.4 dB
Gain flatness		$\pm 3$ dB
Gain adjustment range		> 15 dB
Harmonics	at 250 W, entire band except 320 MHz to 550 MHz	< -20 dBc
	at 250 W, 320 MHz to 550 MHz	< -17 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -65 dBc
Noise figure at maximum gain		nom. < 10 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V



<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 58 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 21 kg (46 lb)

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

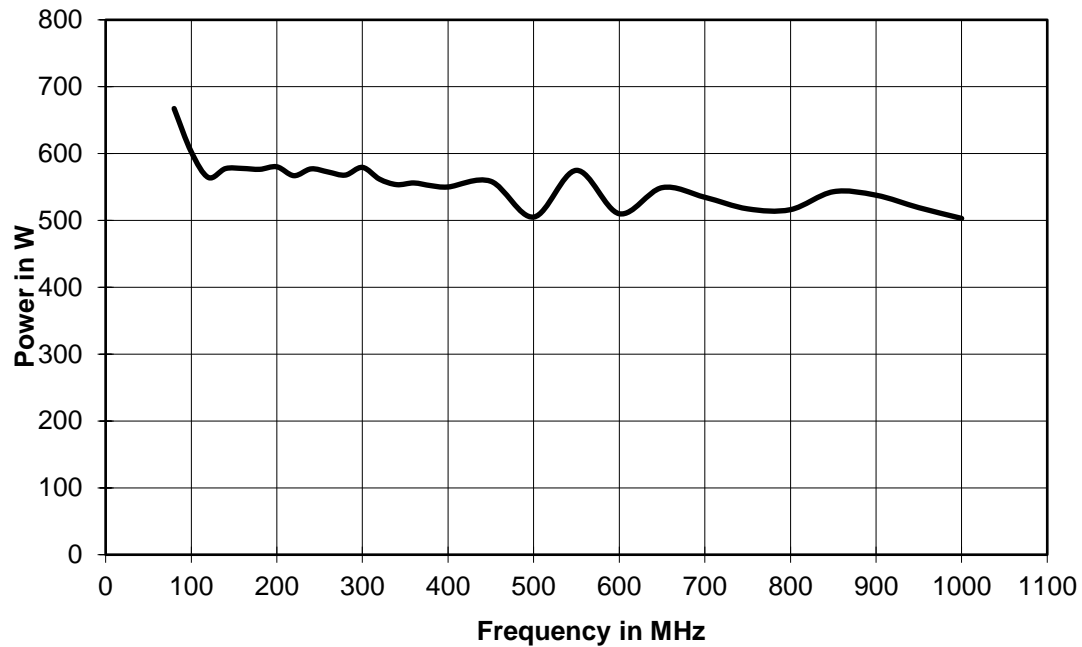
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		200 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
	optional on request, for single-band amplifier only	100 V to 120 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>19</sup>	at 200 V	8.5 A
	at 230 V	7.4 A
Rated power	RF <sub>cw</sub> = 250 W (RMS), VSWR = 1	1.7 kVA

<sup>19</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-BC500, 500 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		80 MHz to 1 GHz instantaneously
Nominal output load		50 Ω
Nominal output power		500 W (57.0 dBm)
Output power	< 400 MHz	min. 580 W (57.6 dBm)
	> 400 MHz	min. 530 W (57.2 dBm)
Output power at 1 dB compression	< 400 MHz	min. 550 W (57.4 dBm)
	> 400 MHz	min. 480 W (56.8 dBm)
Nominal power gain	at 400 MHz	nom. 60.4 dB
Gain flatness		±3 dB
Gain adjustment range		> 15 dB
Harmonics	at 500 W, entire band except 320 MHz to 550 MHz	< -20 dBc
	at 500 W, 320 MHz to 550 MHz	< -17 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain		nom. < 10 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 58 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 33 kg (73 lb)

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

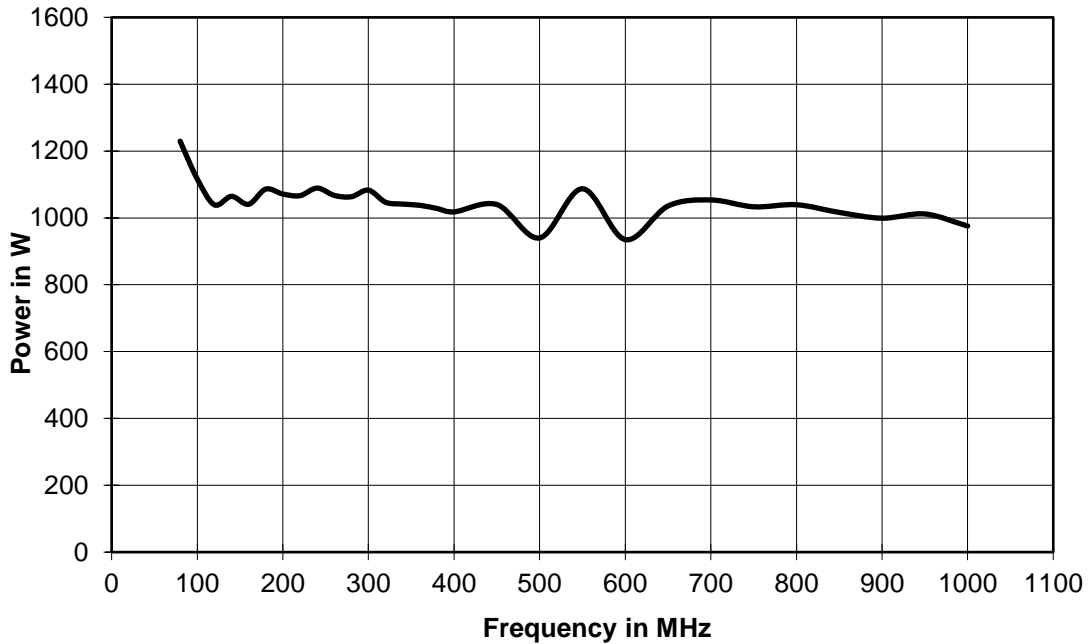
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		200 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
		380 V to 415 V AC $\pm$ 10 %, three phase, with N, 50 Hz to 60 Hz $\pm$ 6 %
		200 V to 240 V AC $\pm$ 10 %, three phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>20</sup>		max. 16 A
Rated power	RF <sub>cw</sub> = 500 W (RMS), VSWR = 1	3.0 kVA

<sup>20</sup> The appropriate connection has to be provided on site.

## R&S® BBA150-BC1000, 1000 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		80 MHz to 1 GHz instantaneously
Nominal output load		50 Ω
Nominal output power		1000 W (60.0 dBm)
Output power	< 400 MHz	min. 1025 W (60.1 dBm)
	> 400 MHz	min. 925 W (59.7 dBm)
Output power at 1 dB compression	< 400 MHz	min. 1000 W (60.0 dBm)
	> 400 MHz	min. 850 W (59.3 dBm)
Nominal power gain	at 400 MHz	nom. 63.4 dB
Gain flatness		±3.5 dB
Gain adjustment range		> 15 dB
Harmonics	at 1000 W, entire band except 320 MHz to 550 MHz	< -20 dBc
	at 1000 W, 320 MHz to 550 MHz	< -17 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain		nom. < 10 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 66 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	rack setup	19" rack, 12 HU, depth: 800 mm (31.5 in)
Weight	amplifier system incl. rack	approx. 120 kg (265 lb)

<b>RF and sample connectors</b>		
RF input port	either front panel or rear panel	N female
RF output port	rear panel	$\frac{7}{16}$ DIN female
	front panel, optional on request	$\frac{7}{16}$ DIN female
RF sample port	forward output power, optional	N female
	reflected output power, optional	N female
Detected sample port	forward output power, optional	N female
	reflected output power, optional	N female

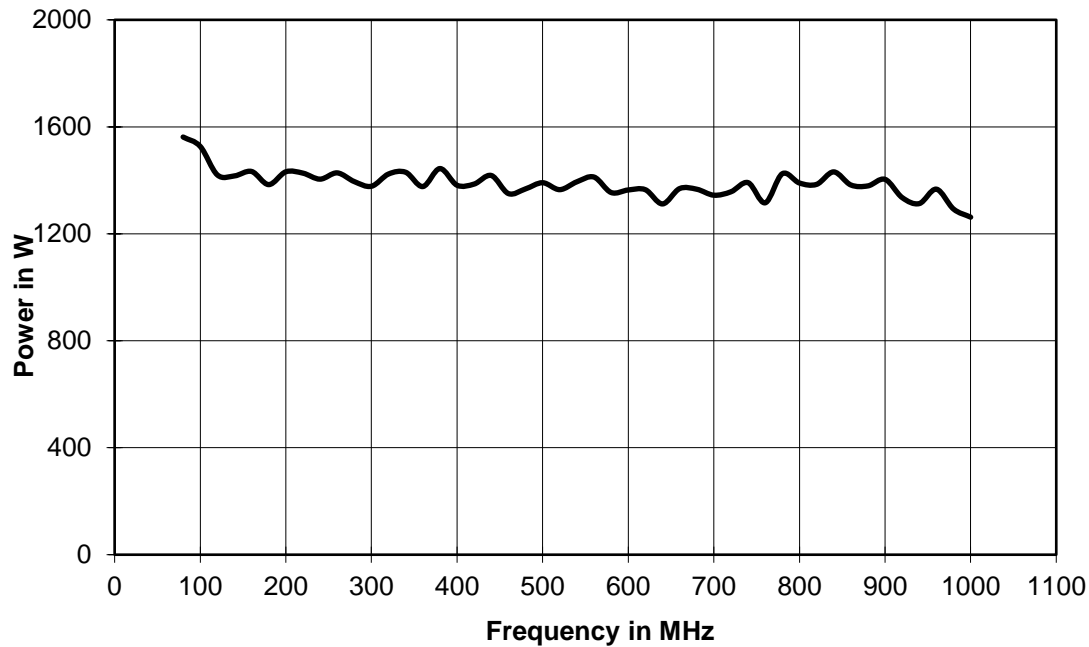
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		200 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
		380 V to 415 V AC $\pm$ 10 %, three phase, with N, 50 Hz to 60 Hz $\pm$ 6 %
		200 V to 240 V AC $\pm$ 10 %, three phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>21</sup>	at 230 V per phase	13.0 A/13.0 A/0.1 A
Rated power	RF <sub>cw</sub> = 1000 W (RMS), VSWR = 1	6.0 kVA

<sup>21</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-BC1250, 1250 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		80 MHz to 1 GHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		1250 W (60.9 dBm)
Output power	80 MHz to 400 MHz	min. 1300 W (61.1 dBm)
	400 MHz to 1 GHz	min. 1250 W (60.9 dBm)
Output power at 1 dB compression		min. 1250 W (60.9 dBm)
Nominal power gain	at 400 MHz	nom. 64.2 dB
Gain flatness		$\pm 4$ dB
Gain adjustment range		> 15 dB
Harmonics	at 1250 W, entire band except 320 MHz to 550 MHz	< -20 dBc
	at 1250 W, 320 MHz to 550 MHz	< -17 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain		nom. < 10 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 66 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	rack setup	19" rack, 20 HU, depth: 1000 mm (39.4 in)
Weight	amplifier system incl. rack	approx. 180 kg (397 lb)

<b>RF and sample connectors</b>		
RF input port	either front panel or rear panel	N female
RF output port	rear panel	1 $\frac{5}{8}$ " EIA female
RF sample port	forward output power, optional	N female
	reflected output power, optional	N female
Detected sample port	forward output power, optional	N female
	reflected output power, optional	N female

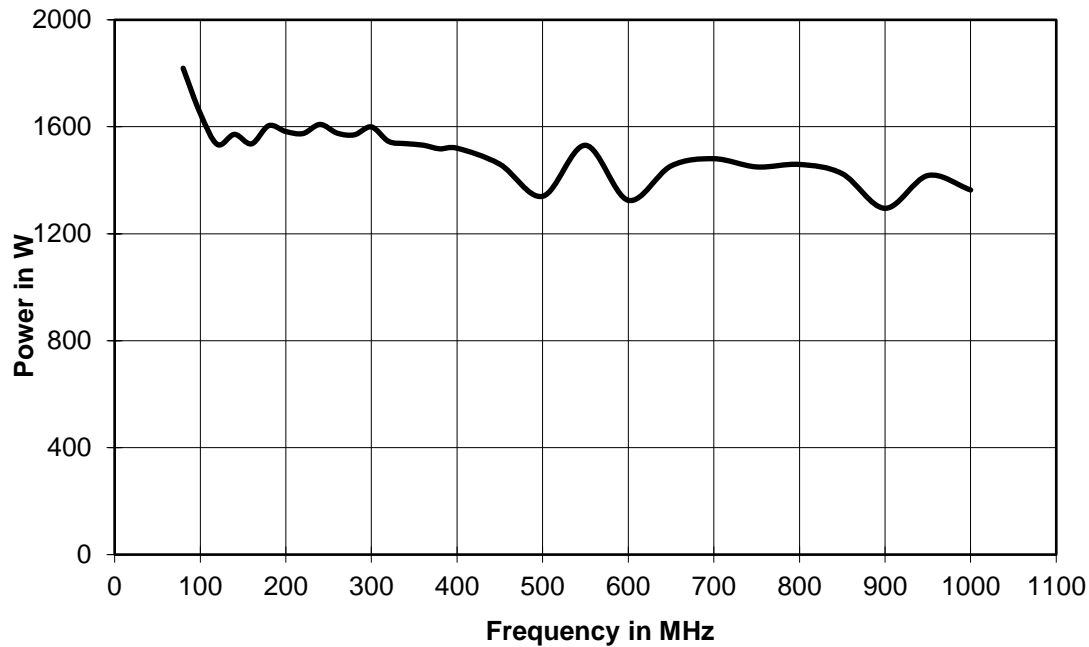
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		380 V to 415 V AC $\pm$ 10 %, three phase, with N, 50 Hz to 60 Hz $\pm$ 6 %
		200 V to 240 V AC $\pm$ 10 %, three phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>22</sup>	at 230 V per phase	11.6 A
Rated power	RF <sub>cw</sub> = 1250 W (RMS), VSWR = 1	8.0 kVA

<sup>22</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-BC1500, 1500 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		80 MHz to 1 GHz instantaneously
Nominal output load		50 Ω
Nominal output power		1500 W (61.8 dBm)
Output power	80 MHz to 400 MHz	min. 1550 W (62.0 dBm)
	400 MHz to 1 GHz	min. 1400 W (61.5 dBm)
Output power at 1 dB compression	80 MHz to 400 MHz	min. 1500 W (61.8 dBm)
	400 MHz to 1 GHz	min. 1300 W (61.2 dBm)
Nominal power gain	at 400 MHz	nom. 65.0 dB
Gain flatness		±4 dB
Gain adjustment range		> 15 dB
Harmonics	at 1500 W, entire band except 320 MHz to 550 MHz	< -20 dBc
	at 1500 W, 320 MHz to 550 MHz	< -17 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain		nom. < 10 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V



<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 66 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	rack setup	19" rack, 20 HU, depth: 1000 mm (39.4 in)
Weight	amplifier system incl. rack	approx. 180 kg (397 lb)

<b>RF and sample connectors</b>		
RF input port	either front panel or rear panel	N female
RF output port	rear panel	1 $\frac{5}{8}$ " EIA female
RF sample port	forward output power, optional	N female
	reflected output power, optional	N female
Detected sample port	forward output power, optional	N female
	reflected output power, optional	N female

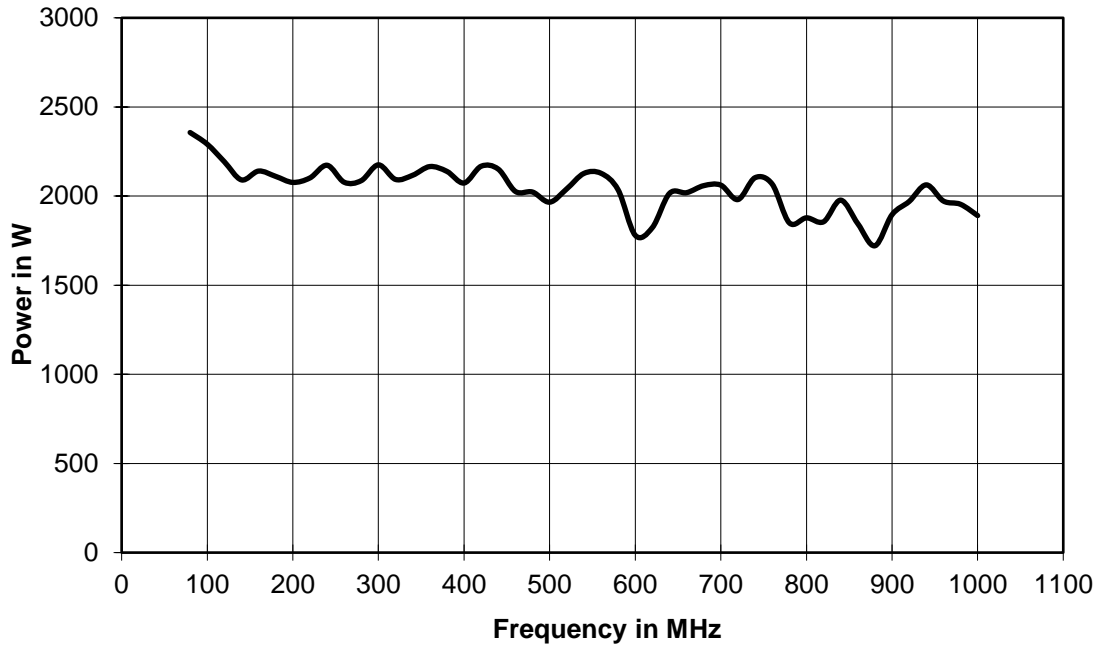
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		380 V to 415 V AC $\pm$ 10 %, three phase, with N, 50 Hz to 60 Hz $\pm$ 6 %
		200 V to 240 V AC $\pm$ 10 %, three phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>23</sup>	at 230 V per phase	11.6 A
Rated power	RF <sub>cw</sub> = 1500 W (RMS), VSWR = 1	8.0 kVA

<sup>23</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-BC2000, 2000 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		80 MHz to 1 GHz instantaneously
Nominal output load		50 Ω
Nominal output power		2000 W (63.0 dBm)
Output power	80 MHz to 400 MHz	min. 2000 W (63.0 dBm)
	400 MHz to 1 GHz	min. 1800 W (62.6 dBm)
Output power at 1 dB compression	80 MHz to 400 MHz	min. 2000 W (63.0 dBm)
	400 MHz to 1 GHz	min. 1600 W (62.0 dBm)
Nominal power gain	at 400 MHz	nom. 66.4 dB
Gain flatness		±4 dB
Gain adjustment range		> 15 dB
Harmonics	at 2000 W, entire band except 320 MHz to 550 MHz	< -20 dBc
	at 2000 W, 320 MHz to 550 MHz	< -17 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain		nom. < 10 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 74 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	rack setup	19" rack, 20 HU, depth: 1000 mm (39.4 in)
Weight	amplifier system incl. rack	approx. 240 kg (551 lb)

<b>RF and sample connectors</b>		
RF input port	either front panel or rear panel	N female
RF output port	rear panel	1 $\frac{5}{8}$ " EIA female
RF sample port	forward output power, optional	N female
	reflected output power, optional	N female
Detected sample port	forward output power, optional	N female
	reflected output power, optional	N female

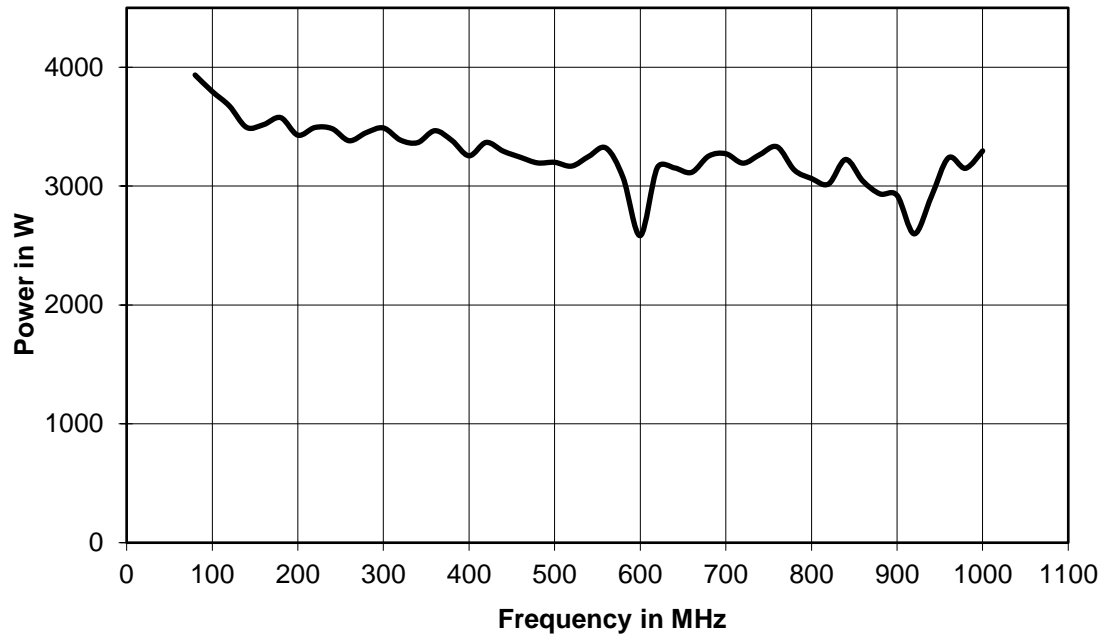
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		380 V to 415 V AC $\pm$ 10 %, three phase, with N, 50 Hz to 60 Hz $\pm$ 6 %
		200 V to 240 V AC $\pm$ 10 %, three phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>24</sup>	at 230 V per phase	23.8 A/11.9 A/11.9 A
Rated power	RF <sub>cw</sub> = 2000 W (RMS), VSWR = 1	11.0 kVA

<sup>24</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-BC3000, 3000 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		80 MHz to 1 GHz instantaneously
Nominal output load		50 Ω
Nominal output power		3000 W (64.8 dBm)
Output power	80 MHz to 400 MHz	min. 3100 W (64.9 dBm)
	400 MHz to 1 GHz	min. 2600 W (64.2 dBm)
Power output at 1 dB compression	80 MHz to 400 MHz	min. 3000 W (64.8 dBm)
	400 MHz to 1 GHz	min. 2400 W (63.8 dBm)
Nominal power gain	at 400 MHz	nom. 68.2 dB
Gain flatness		±4 dB
Gain adjustment range		> 15 dB
Harmonics	at 3000 W, entire band except 320 MHz to 550 MHz	< -20 dBc
	at 3000 W, 320 MHz to 550 MHz	< -17 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain		nom. < 10 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 74 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	rack setup	19" rack, 35 HU, depth: 1000 mm (39.4 in)
Weight	amplifier system incl. rack	approx. 310 kg (551 lb)

<b>RF and sample connectors</b>		
RF input port	either front panel or rear panel	N female
RF output port	rear panel	1 $\frac{5}{8}$ " EIA female
RF sample port	forward output power, optional	N female
	reflected output power, optional	N female
Detected sample port	forward output power, optional	N female
	reflected output power, optional	N female

## Electrical specifications

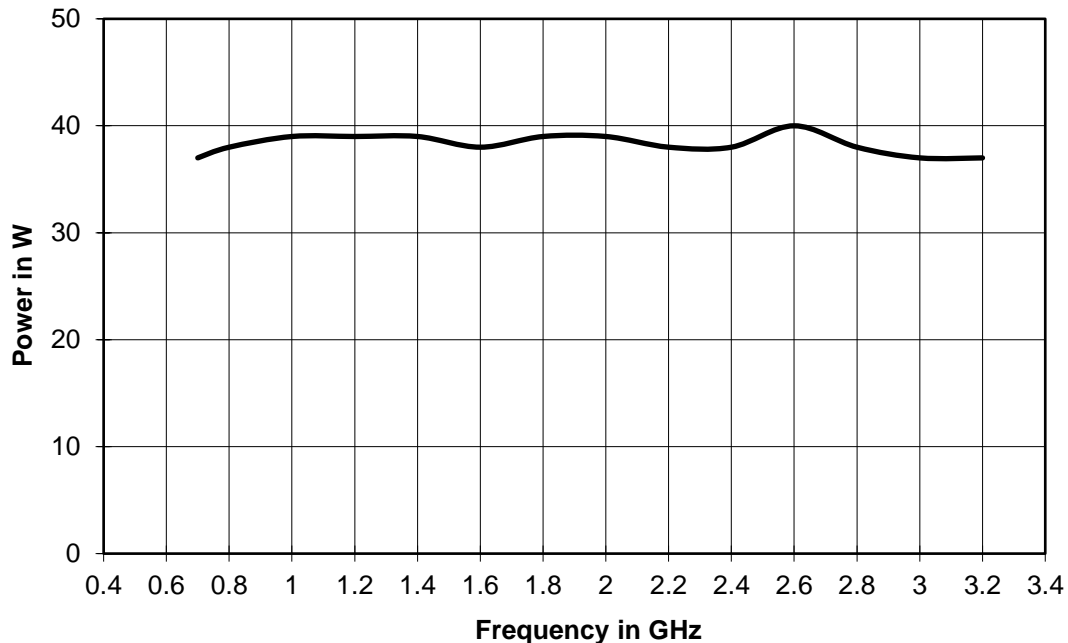
<b>AC supply voltage</b>		
Nominal operating voltage range		380 V to 415 V AC $\pm$ 10 %, three phase, with N, 50 Hz to 60 Hz $\pm$ 6 %
		200 V to 240 V AC $\pm$ 10 %, three phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>25</sup>	at 230 V, per phase	23.8 A/23.8 A/23.8 A
Rated power	RF <sub>cw</sub> = 3000 W (RMS), VSWR = 1	17.0 kVA

<sup>25</sup> The appropriate connection has to be provided on site.

# Frequency band D from 0.69 GHz to 3.2 GHz

## R&S®BBA150-D30, 30 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		0.69 GHz to 3.2 GHz instantaneously
Nominal output load		50 Ω
Nominal output power		30 W (44.8 dBm)
Output power		min. 35 W (45.4 dBm)
Power output at 1 dB compression		min. 30 W (44.8 dBm)
Nominal power gain	at 3000 MHz	nom. 48.2 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 15 dB
Harmonics	at 30 W, < 1.1 GHz	< -18 dBc
	at 30 W, ≥ 1.1 GHz	< -20 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -70 dBc
Noise figure	at maximum gain	nom. < 12.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 46 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 11 kg (24 lb)

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

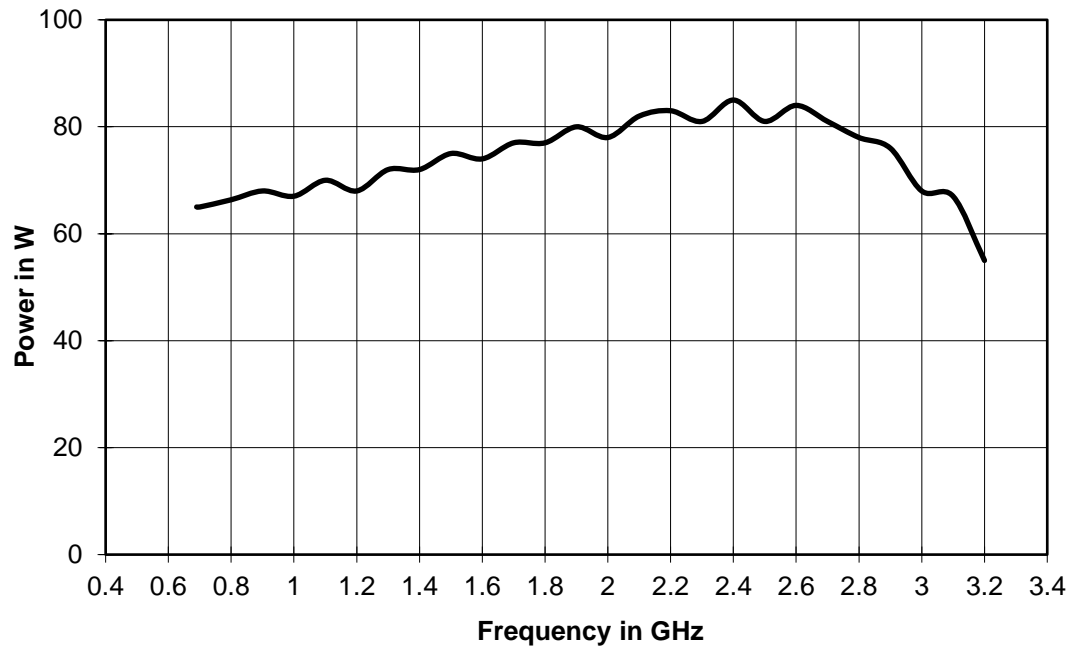
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>26</sup>	at 110 V	3.7 A
	at 230 V	1.8 A
Rated power	RF <sub>cw</sub> = 30 W (RMS), VSWR = 1	410 VA

<sup>26</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-D60, 60 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		0.69 GHz to 3.2 GHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		60 W (47.8 dBm)
Output power		min. 65 W (48.1 dBm)
Power output at 1 dB compression	< 0.8 GHz	min. 53 W (47.2 dBm)
	$\geq 0.8$ GHz < 2.2 GHz	min. 60 W (47.8 dBm)
	$\geq 2.2$ GHz	min. 55 W (47.4 dBm)
Nominal power gain	at 3000 MHz	nom. 51.2 dB
Gain flatness		$\pm 2$ dB
Gain adjustment range		> 15 dB
Harmonics	at 60 W, < 1.8 GHz	< -17 dBc
	at 60 W, $\geq 1.8$ GHz	< -20 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max -70 dBc
Noise figure	at maximum gain	nom. < 12.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V



<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 46 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 13 kg (29 lb)

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

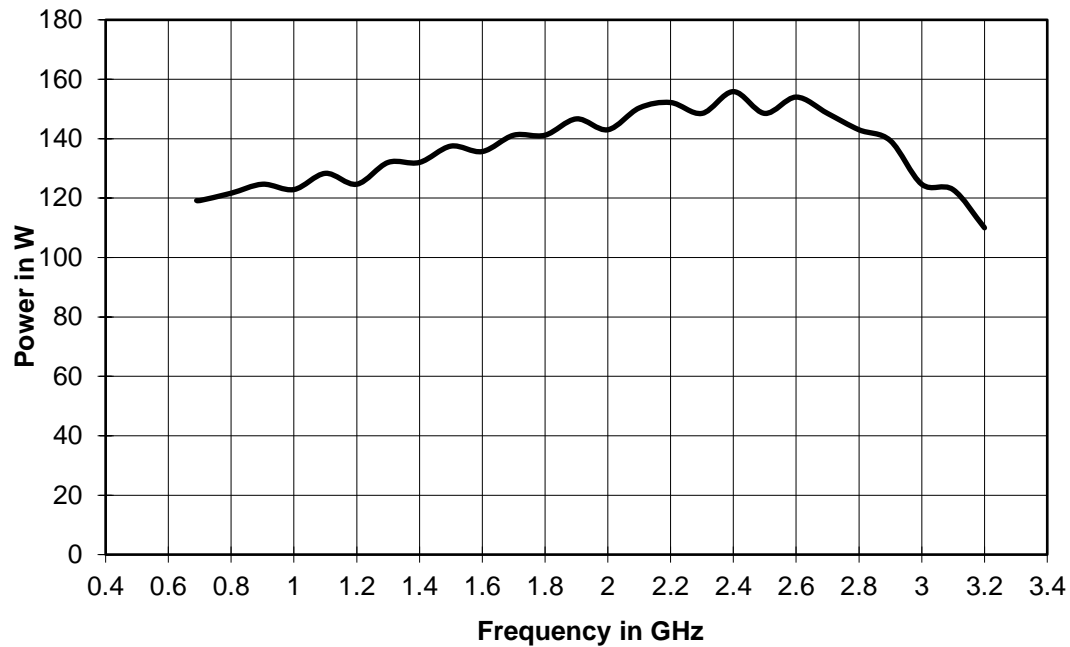
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>27</sup>	at 110 V	5.7 A
	at 230 V	2.7 A
Rated power	RF <sub>cw</sub> = 60 W (RMS), VSWR = 1	630 VA

<sup>27</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-D110, 110 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		0.69 GHz to 3.2 GHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		110 W (50.4 dBm)
Output power		min. 120 W (50.8 dBm)
Power output at 1 dB compression		min. 110 W (50.4 dBm)
Nominal power gain	at 3000 MHz	nom. 53.8 dB
Gain flatness		$\pm 2,7$ dB
Gain adjustment range		> 15 dB
Harmonics	at 110 W, < 1.8 GHz	< -17 dBc
	at 110 W, $\geq$ 1.8 GHz	< -20 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max -70 dBc
Noise figure	at maximum gain	nom. < 12.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 46 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 17 kg (37 lb)

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

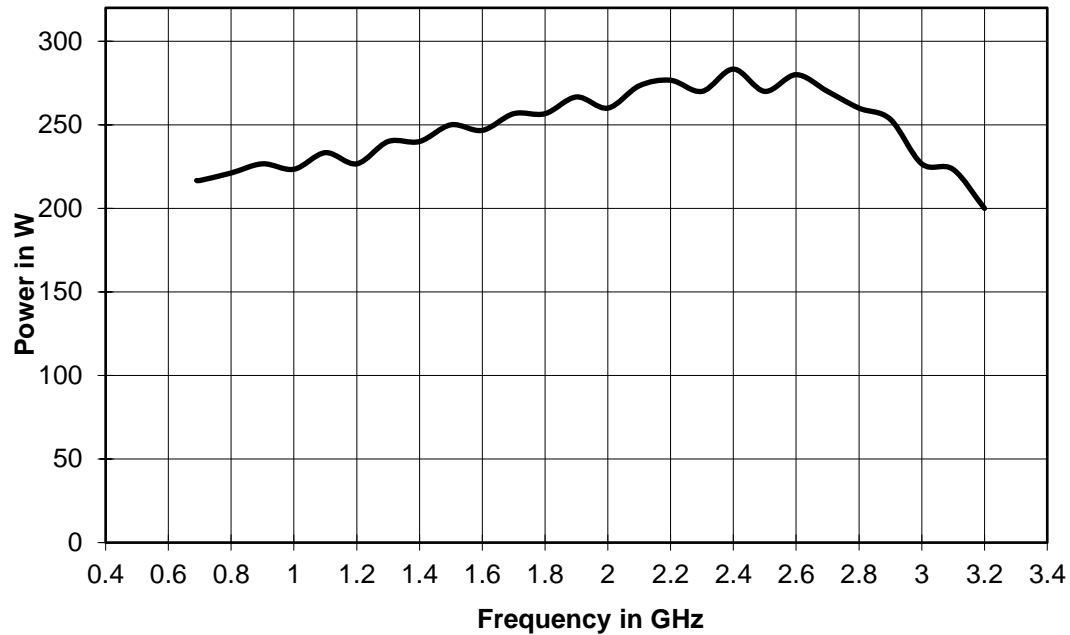
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>28</sup>	at 110 V	11.4 A
	at 230 V	5.4 A
Rated power	RF <sub>cw</sub> = 110 W (RMS), VSWR = 1	1.25 kVA

<sup>28</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-D200, 200 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		0.69 GHz to 3.2 GHz instantaneously
Nominal output load		50 Ω
Nominal output power		200 W (53 dBm)
Output power		min. 220 W (53.4 dBm)
Power output at 1 dB compression		min. 200 W (53 dBm)
Nominal power gain	at 3000 MHz	nom. 56.4 dB
Gain flatness		±2.7 dB
Gain adjustment range		> 15 dB
Harmonics	at 200 W, < 1.8 GHz	< -16 dBc
	at 200 W, ≥ 1.8 GHz	< -20 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max -70 dBc
Noise figure	at maximum gain	nom. < 12.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 46 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight	base unit	approx. 24 kg (53 lb)

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

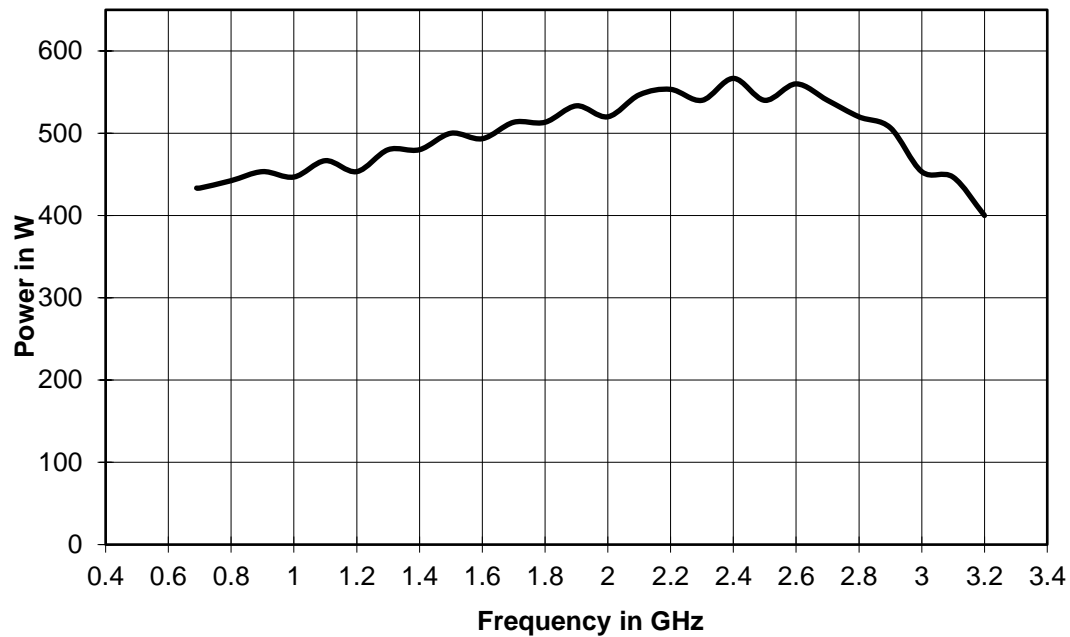
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		200 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
	in regions with UL/CSA certification	120 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>29</sup>	at 120 V	16.7 A
	at 230 V	8.7 A
Rated power	RF <sub>cw</sub> = 200 W (RMS), VSWR = 1	2.0 kVA

<sup>29</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-D400, 400 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		0.69 GHz to 3.2 GHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		400 W (56 dBm)
Output power		min. 420 W (56.2 dBm)
Power output at 1 dB compression		min. 400 W (56 dBm)
Nominal power gain	at 3000 MHz	nom. 59.4 dB
Gain flatness		$\pm 3.2$ dB
Gain adjustment range		> 15 dB
Harmonics	at 400 W, < 1.8 GHz	< -17 dBc
	at 400 W, $\geq$ 1.8 GHz	< -20 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max -70 dBc
Noise figure	at maximum gain	nom. < 12.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 54 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	rack setup	19" rack, 12 HU, depth 800 mm (31.5 in)
Weight		approx. 95 kg (209 lb)

<b>RF and sample connectors</b>		
RF input port	either front panel or rear panel	N female
RF output port	rear panel	$\frac{7}{16}$ DIN female
	front panel, optional on request	$\frac{7}{16}$ DIN female
RF sample port	forward output power, optional	N female
	reflected output power, optional	N female
Detected sample port	forward output power, optional	N female
	reflected output power, optional	N female

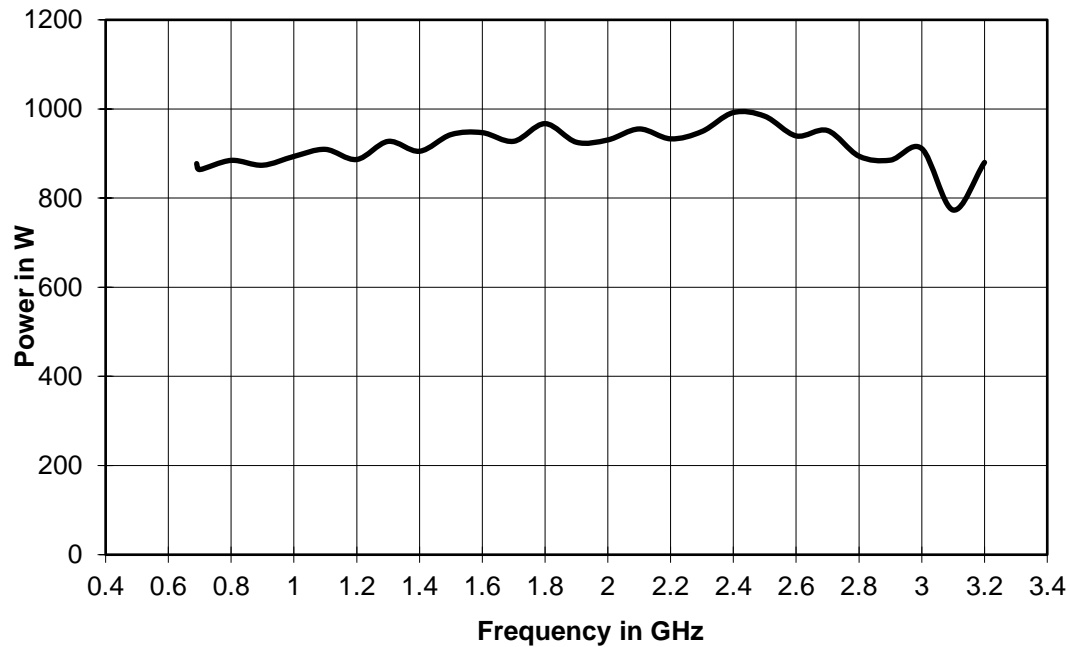
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		200 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
		380 to 415 V AC $\pm$ 10 %, three phase, with N, 50 Hz to 60 Hz $\pm$ 6 %
		200 V to 240 V AC $\pm$ 10 %, three phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>30</sup>	at 230 V per phase	7.8 A/7.8 A/0.1 A
Rated power	RF <sub>cw</sub> = 400 W (RMS), VSWR = 1	3.6 kVA

<sup>30</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-D800, 800 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		0.69 GHz to 3.2 GHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		800 W (59.0 dBm)
Output power		min. 830 W (59.2 dBm)
Power output at 1 dB compression	0.69 GHz to 3.0 GHz	min. 830 W (59.2 dBm)
	3.0 GHz to 3.2 GHz	min. 700 W (58.5 dBm)
Nominal power gain	at 3000 MHz	nom. 62.4 dB
Gain flatness		$\pm 4.3$ dB
Gain adjustment range		> 15 dB
Harmonics	at 800 W, < 1.8 GHz	< -17 dBc
	at 800 W, $\geq$ 1.8 GHz	< -20 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -70 dBc
Noise figure	at maximum gain	nom. < 17.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2:1
Maximum input level	RF	+15 dBm
	DC	0 V



<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 59 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	rack setup	19" rack, 20 HU, depth 800 mm (31.5 in)
Weight		approx. 230 kg (507 lb)

<b>RF and sample connectors</b>		
RF input port	either front panel or rear panel	N female
RF output port	rear panel	1 $\frac{5}{8}$ " EIA female
RF sample port	forward output power, optional	N female
	reflected output power, optional	N female
Detected sample port	forward output power, optional	N female
	reflected output power, optional	N female

## Electrical specifications

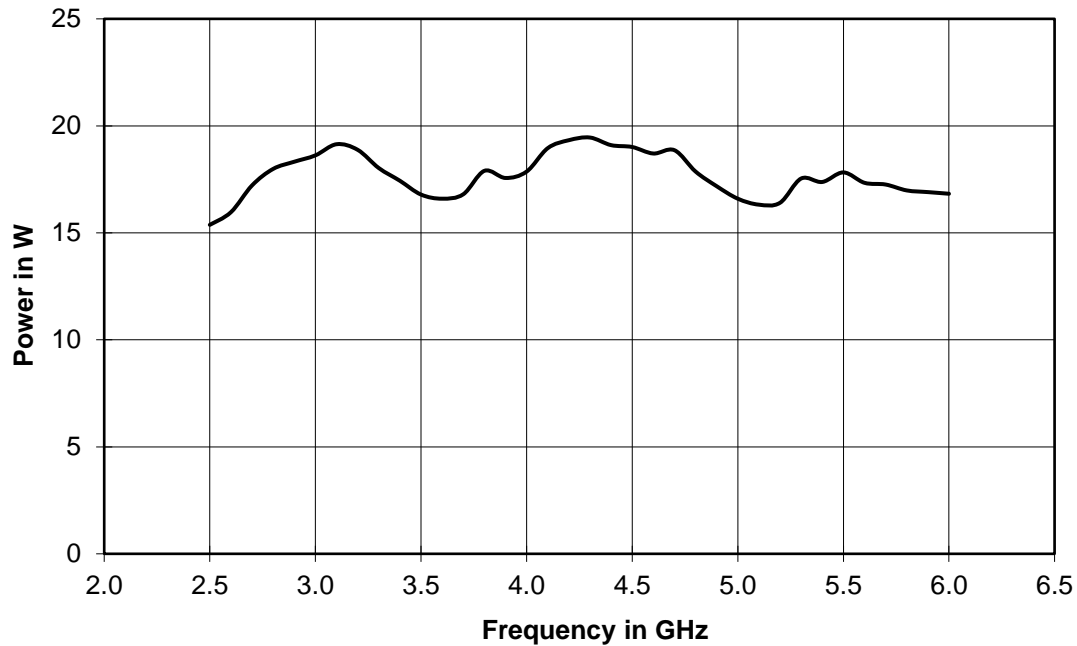
<b>AC supply voltage</b>		
Nominal operating voltage range		380 to 415 V AC $\pm$ 10 %, three phase with N, 50 Hz to 60 Hz $\pm$ 6 %
		200 V to 240 V AC $\pm$ 10 %, three phase 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>31</sup>	at 230 V per phase	15.6 A/7.8 A/7.8 A
Rated power	RF <sub>cw</sub> = 800 W (RMS), VSWR = 1	7.2 kVA

<sup>31</sup> The appropriate connection has to be provided on site.

# Frequency band E from 2.5 GHz to 6.0 GHz

## R&S®BBA150-E15, 15 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		2.5 GHz to 6.0 GHz instantaneously
Nominal output load		50 Ω
Nominal output power		15 W (41.8 dBm)
Output power		min. 18 W (42.6 dBm)
Output power at 1 dB compression		min. 15 W (41.8 dBm)
Nominal power gain	at 3000 MHz	nom. 45.2 dB
Gain flatness		±2.0 dB
Gain adjustment range		> 15 dB
Harmonics	at 15 W	< -23 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain		nom. < 5.0 dB

Input		
Nominal input impedance		50 Ω
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 Ω	max. 2.5:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 51 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 11 kg (24 lb)

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

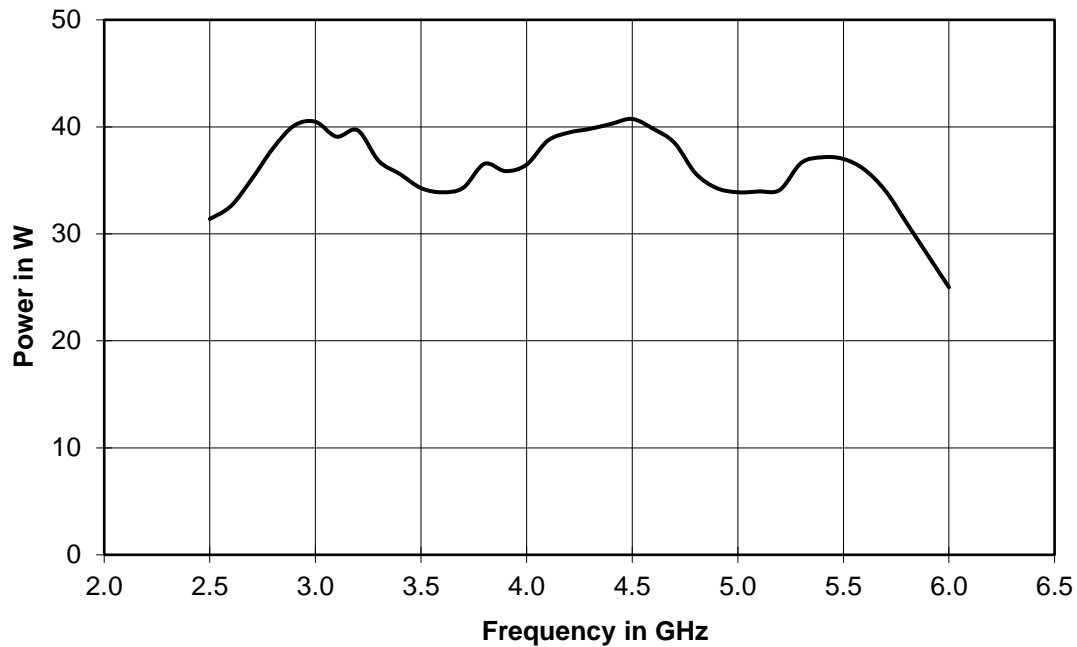
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>32</sup>	at 110 V	4.5 A
	at 230 V	2.2 A
Rated power	RF <sub>cw</sub> = 15 W (RMS), VSWR = 1	500 VA

<sup>32</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-E30, 30 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		2.5 GHz to 6.0 GHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		30 W (44.8 dBm)
Output power	< 5.5 GHz	min. 35 W (45.4 dBm)
	$\geq$ 5.5 GHz	min. 30 W (44.8 dBm)
Output power at 1 dB compression	< 5.5 GHz	min. 30 W (44.8 dBm)
	$\geq$ 5.5 GHz	min. 25 W (44.0 dBm)
Nominal power gain	at 3000 MHz	nom. 48.2 dB
Gain flatness		$\pm$ 2.0 dB
Gain adjustment range		> 15 dB
Harmonics	at 30 W	< -20 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain		nom. < 5.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2.5:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 51 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 11 kg (24 lb)

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

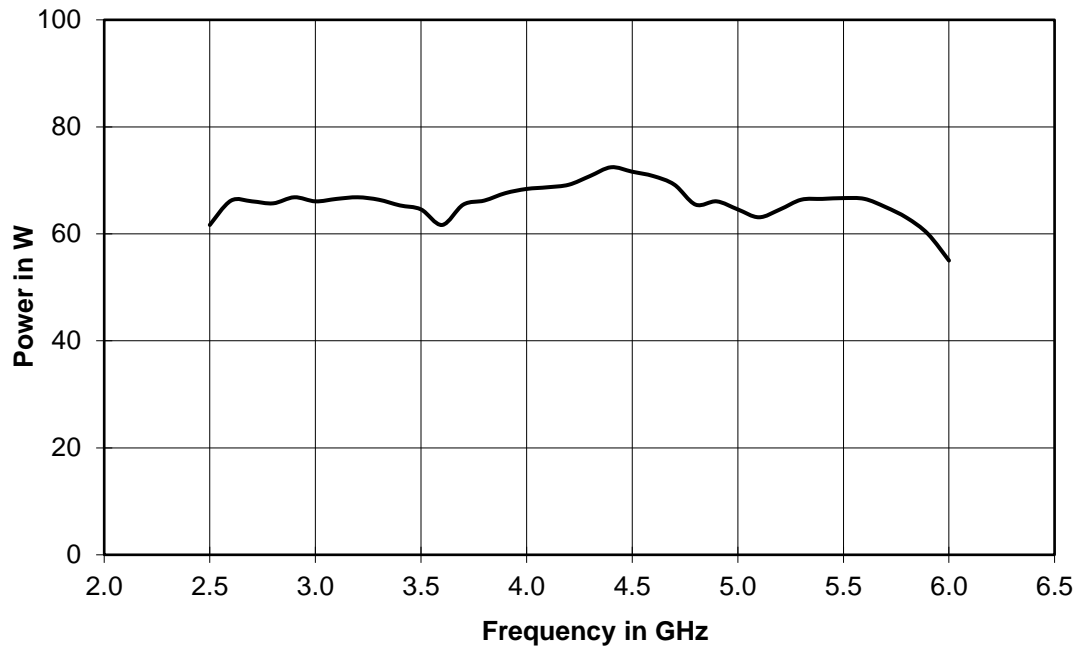
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>33</sup>	at 110 V	4.5 A
	at 230 V	2.2 A
Rated power	RF <sub>cw</sub> = 30 W (RMS), VSWR = 1	500 VA

<sup>33</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-E60, 60 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		2.5 GHz to 6.0 GHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		60 W (47.8 dBm)
Output power	< 4.5 GHz	min. 65 W (48.1 dBm)
	$\geq$ 4.5 GHz	min. 60 W (47.8 dBm)
Output power at 1 dB compression	< 3.2 GHz	min. 60 W (47.8 dBm)
	$\geq$ 3.2 GHz	min. 55 W (47.4 dBm)
Nominal power gain	at 3000 MHz	nom. 51.2 dB
Gain flatness		$\pm$ 3.5 dB
Gain adjustment range		> 15 dB
Harmonics	at 60 W, class A, < 3.3 GHz	< -18 dBc
	at 60 W, class A, $\geq$ 3.3 GHz	< -20 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain		nom. < 5.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2.5:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 51 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 15 kg (33 lb)

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

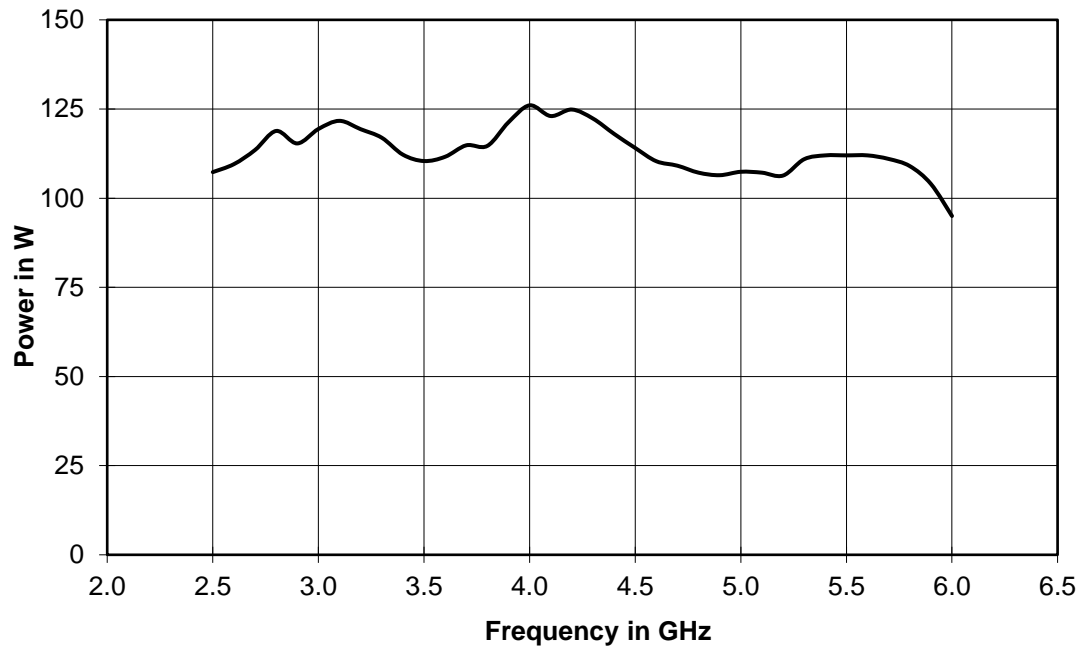
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>34</sup>	at 110 V	7.7 A
	at 230 V	3.7 A
Rated power	RF <sub>cw</sub> = 60 W (RMS), VSWR = 1	850 VA

<sup>34</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-E100, 100 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		2.5 GHz to 6.0 GHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		100 W (50.0 dBm)
Output power	< 4.5 GHz	min. 110 W (50.4 dBm)
	$\geq$ 4.5 GHz	min. 100 W (50.0 dBm)
Output power at 1 dB compression	< 4.5 GHz	min. 100 W (50.0 dBm)
	> 4.5 GHz	min. 90 W (49.6 dBm)
Nominal power gain	at 3000 MHz	nom. 53.4 dB
Gain flatness		$\pm$ 3.6 dB
Gain adjustment range		> 15 dB
Harmonics	at 100 W, class A, < 3.3 GHz	< -18 dBc
	at 100 W, class A, $\geq$ 3.3 GHz	< -20 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain		nom. < 5.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2.5:1
Maximum input level	RF	+15 dBm
	DC	0 V



<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 51 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 17 kg (37 lb)

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

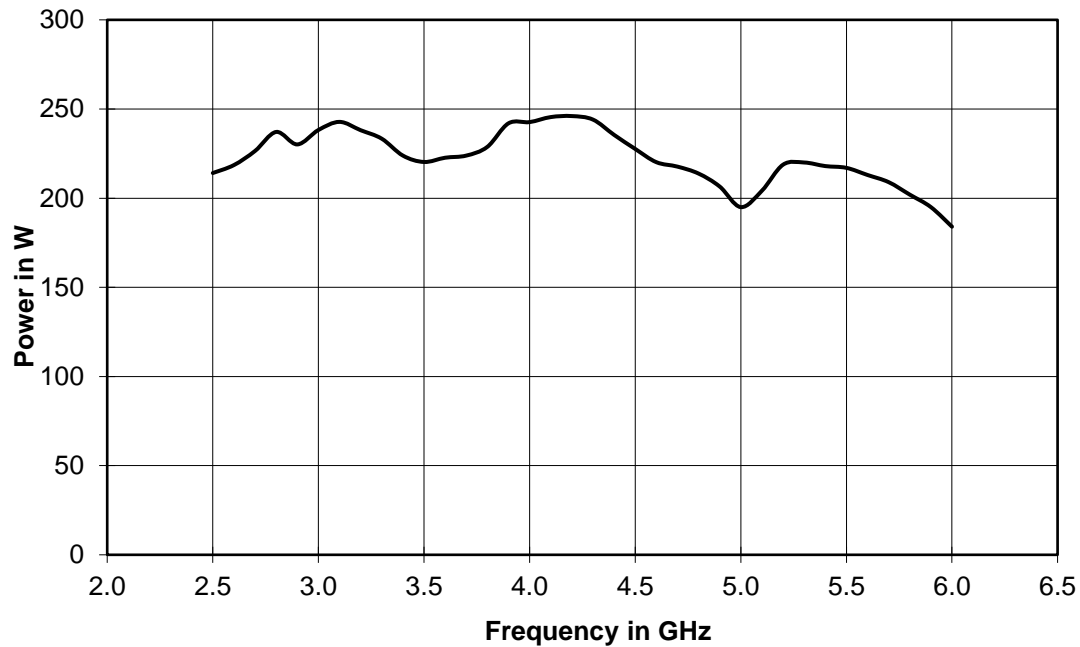
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		100 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>35</sup>	at 110 V	10.6 A
	at 230 V	5.0 A
Rated power	RF <sub>cw</sub> = 100 W (RMS), VSWR = 1	1.16 kVA

<sup>35</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-E200, 200 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		2.5 GHz to 6.0 GHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		200 W (53.0 dBm)
Output power	< 4.5 GHz	min. 200 W (53.0 dBm)
	$\geq$ 4.5 GHz	min. 190 W (52.8 dBm)
Output power at 1 dB compression	< 4.5 GHz	min. 200 W (53.0 dBm)
	$\geq$ 4.5 GHz	min. 180 W (52.6 dBm)
Nominal power gain	at 3000 MHz	nom. 56.4 dB
Gain flatness		$\pm 3.6$ dB
Gain adjustment range		> 15 dB
Harmonics	at 200 W, class A, < 3.3 GHz	< -18 dBc
	at 200 W, class A, $\geq$ 3.3 GHz	< -20 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain		nom. < 5.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2.5:1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 51 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	W x H x D, incl. fans, handles and stand	430 mm x 196 mm x 580 mm (16.93 in x 7.72 in x 22.83 in)
	for rackmounting	19" <sup>1</sup> / <sub>1</sub> , 4 HU
Weight		approx. 24 kg (53 lb)

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

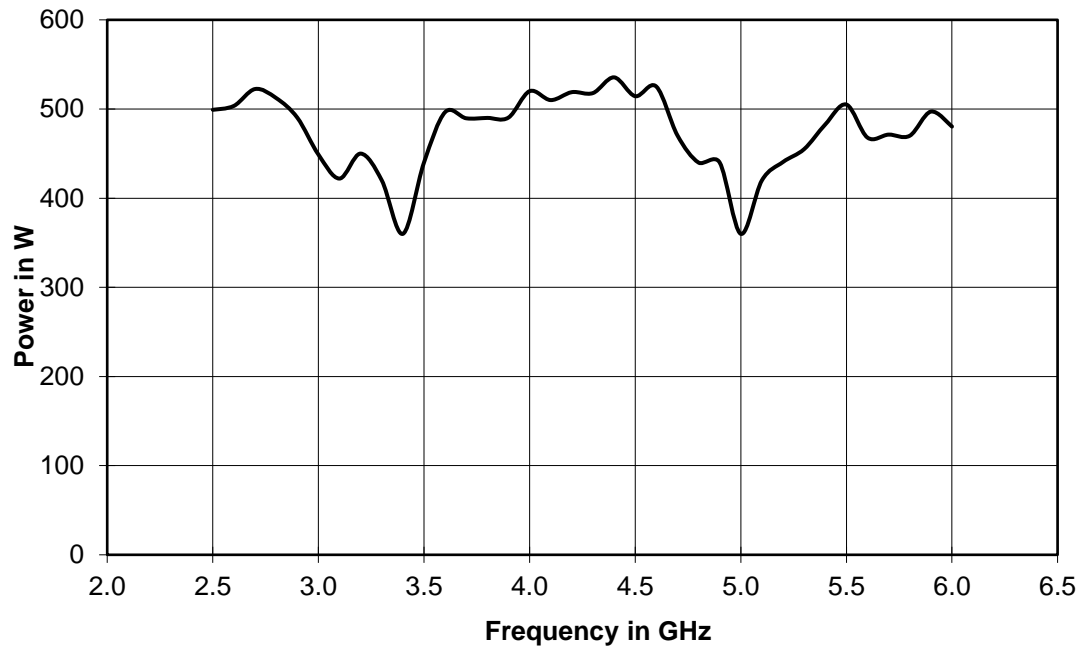
## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		200 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
	in regions with UL/CSA certification	120 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>36</sup>	at 120 V	17.5 A
	at 230 V	9.1 A
Rated power	RF <sub>cw</sub> = 200 W (RMS), VSWR = 1	2.1 kVA

<sup>36</sup> The appropriate connection has to be provided on site.

## R&S®BBA150-E400, 400 W power class

### Frequency response at 1 dB compression



### RF specifications

Main parameters		
Frequency range		2.5 GHz to 6.0 GHz instantaneously
Nominal output load		50 $\Omega$
Nominal output power		400 W (56.0 dBm)
Output power	< 4.5 GHz	min. 400 W (56.0 dBm)
	$\geq$ 4.5 GHz	min. 380 W (55.8 dBm)
Output power at 1 dB compression	< 3 GHz	min. 400 W (56.0 dBm)
	$\geq$ 3 GHz	min. 360 W (55.6 dBm)
Nominal power gain	at 3000 MHz	nom. 59.4 dB
Gain flatness		$\pm$ 4 dB
Gain adjustment range		> 15 dB
Harmonics	at 400 W, class A, < 3.3 GHz	< -18 dBc
	at 400 W, class A, $\geq$ 3.3 GHz	< -20 dBc
Spurious	carrier offset > 100 kHz	nom. -80 dBc, max. -70 dBc
Noise figure at maximum gain		nom. < 5.0 dB

Input		
Nominal input impedance		50 $\Omega$
Input level for nominal output power		-3.4 dBm
Input VSWR	at 50 $\Omega$	max. 2.5 :1
Maximum input level	RF	+15 dBm
	DC	0 V

<b>Output</b>		
Nominal output impedance		50 $\Omega$
Nominal forward output power	at VSWR < 6:1	continuous, without foldback
	at VSWR > 6:1	continuous, with gradual foldback to approx. 50 % of output power, depending on load impedance
Output mismatch protection, VSWR		100 %, without damage

<b>RF sample and detected sample signals</b>		
RF sample signal coupling factor	RF forward and reflected sample ports, optional	approx. 52 dB, see test report for details
Detected sample signal level	detected forward and reflected sample ports, optional	up to 3.0 V DC, see test report for details

## Mechanical specifications

<b>System size</b>		
Dimensions	rack setup	19" rack, 12 HU, depth 800 mm (31.5 in)
Weight		approx. 97 kg (214 lb)

<b>RF and sample connectors</b>		
RF input port	either front panel or rear panel	N female
RF output port	rear panel	$\frac{7}{16}$ DIN female
	front panel, optional on request	$\frac{7}{16}$ DIN female
RF sample port	forward output power, optional	N female
	reflected output power, optional	N female
Detected sample port	forward output power, optional	N female
	reflected output power, optional	N female

## Electrical specifications

<b>AC supply voltage</b>		
Nominal operating voltage range		200 V to 240 V AC $\pm$ 10 %, single phase, 50 Hz to 60 Hz $\pm$ 6 %
		380 to 415 V AC $\pm$ 10 %, three phase, with N, 50 Hz to 60 Hz $\pm$ 6 %
		200 V to 240 V AC $\pm$ 10 %, three phase, 50 Hz to 60 Hz $\pm$ 6 %
Rated current <sup>37</sup>	at 230 V per phase	9.6 A/9.6 A/0.1 A
Rated power	RF <sub>cw</sub> = 400 W (RMS), VSWR = 1	4.4 kVA

<sup>37</sup> The appropriate connection has to be provided on site.

## General data

### Modulation specifications

Modulation capability	AM, FM, $\phi$ M or PM
-----------------------	------------------------

### Cooling specifications

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

### Control specifications

<b>Remote control</b>		
Ethernet		RJ-45, 10/100 Mbit/s, auto-negotiation, half/full duplex

<b>Local HMI</b>		
Local display		200 × 48 pixel, monochrome
Manual controls	resting push button	mains switch
	operation push buttons	<ul style="list-style-type: none"> <li>• system standby/on</li> <li>• RF standby/operate</li> <li>• local/remote</li> </ul>
	menu push buttons	<ul style="list-style-type: none"> <li>• arrow up, down, left, right</li> <li>• ok</li> <li>• back</li> </ul>
LED status information		<ul style="list-style-type: none"> <li>• system standby/on</li> <li>• RF standby/operate</li> <li>• mute ready</li> <li>• interlock</li> <li>• error</li> <li>• local/remote</li> </ul>

<b>Web GUI</b>		
Remote web GUI	via Ethernet	RJ-45, 10/100 Mbit/s, auto-negotiation, half/full duplex

### Environmental specifications

Temperature loading	operating temperature range	0 °C to +40 °C
	storage temperature range	−40 °C to +70 °C
Damp heat		max. +40 °C at 95 % rel. humidity, without condensation
Altitude	operating altitude	up to 2000 m
	storage altitude	up to 4600 m
Mechanical resistance test values of desktop models	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 <sup>2</sup> /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, table 2, industrial environment

Electromagnetic emissions	overall	in line with EN 55011 (CISPR 11), industrial area, ISM group 1 class A and FCC 47 CFR part 18 §18.305
	conducted emissions radiated emissions from 30 MHz to 18 GHz	in line with EN 55011, group 1 class A equipment for use in shielded areas only, normative limits of EN 55011 group 1 class A and FCC 47 CFR part 18 §18.305 exceeded: <ul style="list-style-type: none"> <li>up to 40 dB: for up to R&amp;S®BBA150-A400, R&amp;S®BBA150-AB350, R&amp;S®BBA150-D200 and R&amp;S®BBA150-E100</li> <li>up to 50 dB: for R&amp;S®BBA150-A700, from R&amp;S®BBA150-AB600, up to R&amp;S®BBA150-BC250, from R&amp;S®BBA150-D400 and R&amp;S®BBA150-E200</li> <li>up to 60 dB: from R&amp;S®BBA150-AB1300 and R&amp;S®BBA150-BC500</li> </ul>
Exposure to electromagnetic fields	all-around the enclosure	in line with the limits of 2014/35, 26. BImSchV, DGUV15 exposure limit 2 (protection of health and safety of workers, consumers and the general public)
Electrical safety		in line with EN 61010-1:2010, IEC 61010-1:2011 + Corr. 2011 (3rd ed.), CAN/CSA-C22.2 no. 61010-1-12, UL 61010-1 3rd edition, May 11, 2012

## Protection

<b>RF</b>		
Load VSWR		unlimited
Interlock		1 device interlock, 1 configurable interlock
Input protection against bias voltage	optional	DC block level ≤ 50 V DC
<b>Power supply</b>		
Transient voltage compatibility		category II, in line with IEC 60364-4-443
Short-circuit breaking capacity		automatic all-pole 20 A circuit breaker
<b>Miscellaneous</b>		
Thermal overload		shutdown at thermal overload

## General RF specifications

Amplifier type		class A amplifier
----------------	--	-------------------

The specified nominal output power is valid for all amplifiers in a 4 HU chassis with RF output at rear and for single band rack models at the RF connection panel.

For single and dual-band amplifiers in a 4 HU chassis with RF output at front cable insertion loss reduces the output power:

Cable insertion loss for single-band and dual-band power amplifiers in 4 HU chassis with RF output at front	0 Hz to 1 GHz	≤ 0.20 dB
	1 GHz to 2 GHz	≤ 0.30 dB
	2 GHz to 3 GHz	≤ 0.40 dB
	3 GHz to 6 GHz	≤ 0.50 dB
	6 GHz to 8 GHz	≤ 0.60 dB

In case of rack integration, the loss due to cables and RF switches needs to be taken into account. The insertion loss of RF switches is specified under "Switching specifications" in this data sheet.

## RF switching specifications – input and measurement

<b>RF input switch, R&amp;S®BBA-B110 option</b>		
Switch type		1:2 or 2:1, mechanical
RF input port	at desktop model or rack connection panel switch	N female SMA female
Frequency range		0 Hz to 26.5 GHz
Switching time		< 10 ms
Life		10 000 000 cycles
Insertion loss	0 Hz to 3 GHz	≤ 0.20 dB, without cable loss
	3 GHz to 8 GHz	≤ 0.30 dB, without cable loss
	8 GHz to 12.4 GHz	≤ 0.40 dB, without cable loss
	12.4 GHz to 18 GHz	≤ 0.50 dB, without cable loss
	18 GHz to 26.5 GHz	≤ 0.70 dB, without cable loss
<b>RF input switch, R&amp;S®BBA-B116 option</b>		
Switch type		1:6, mechanical
RF input port	at rack connection panel switch	N female SMA female
Frequency range		0 Hz to 18 GHz
Switching time		< 15 ms
Life		5 000 000 cycles
Insertion loss	0 Hz to 3 GHz	≤ 0.20 dB, without cable loss
	3 GHz to 8 GHz	≤ 0.30 dB, without cable loss
	8 GHz to 12.4 GHz	≤ 0.40 dB, without cable loss
	12.4 GHz to 18 GHz	≤ 0.50 dB, without cable loss
		≤ 0.50 dB, without cable loss

<b>RF sample port switch, dual port, R&amp;S®BBA-B142 option</b>		
Switch type		2 × 2:1, mechanical
RF or detected sample ports	at desktop model or rack connection panel switches	N female SMA female
Frequency range		0 Hz to 26.5 GHz
Switching time		< 10 ms
Life		10 000 000 cycles
RF sample signal level		max. 10 dBm
Insertion loss	0 Hz to 3 GHz	≤ 0.20 dB, without cable loss
	3 GHz to 8 GHz	≤ 0.30 dB, without cable loss
	8 GHz to 12.4 GHz	≤ 0.40 dB, without cable loss
	12.4 GHz to 18 GHz	≤ 0.50 dB, without cable loss
	18 GHz to 26.5 GHz	≤ 0.70 dB, without cable loss

<b>RF sample port switch, dual port, R&amp;S®BBA-B146 option</b>		
Switch type		2 × 6:1, mechanical
RF or detected sample ports	at rack connection panel switches	N female SMA female
Frequency range		0 Hz to 18 GHz
Switching time		< 10 ms
Life		5 000 000 cycles
RF sample signal level		max. 10 dBm
Insertion loss	0 Hz to 3 GHz	≤ 0.20 dB, without cable loss
	3 GHz to 8 GHz	≤ 0.30 dB, without cable loss
	8 GHz to 12.4 GHz	≤ 0.40 dB, without cable loss
	12.4 GHz to 18 GHz	≤ 0.50 dB, without cable loss
		≤ 0.50 dB, without cable loss



## RF switching specifications – output

RF output switch, R&S®BBA-B120 option		
Switch type		2:1 or 1:2, mechanical
RF output port		N female
Frequency range		0 Hz to 12.4 GHz
Switching time		< 15 ms
Life		1 000 000 cycles
Average forward RF power	0 Hz to 1 GHz	max. $700 \text{ W} \times 1/\sqrt{VSWR}$
	1 GHz to 2 GHz	max. $500 \text{ W} \times 1/\sqrt{VSWR}$
	2 GHz to 3 GHz	max. $400 \text{ W} \times 1/\sqrt{VSWR}$
	3 GHz to 8 GHz	max. $250 \text{ W} \times 1/\sqrt{VSWR}$
	8 GHz to 12.4 GHz	max. $200 \text{ W} \times 1/\sqrt{VSWR}$
Insertion loss	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

RF output switch, R&S®BBA-B121 option		
Switch type		2:2, mechanical
RF output port		$7/_{16}$ female
Frequency range		0 Hz to 6 GHz
Switching time		< 100 ms
Life		≥ 500 000
Average forward RF power	0 Hz to 1 GHz	max. $2.0 \text{ kW} \times 1/\sqrt{VSWR}$
	1 GHz to 2 GHz	max. $1.4 \text{ kW} \times 1/\sqrt{VSWR}$
	2 GHz to 3 GHz	max. $1.1 \text{ kW} \times 1/\sqrt{VSWR}$
	3 GHz to 4 GHz	max. $1.0 \text{ kW} \times 1/\sqrt{VSWR}$
	4 GHz to 5 GHz	max. $0.9 \text{ kW} \times 1/\sqrt{VSWR}$
	5 GHz to 6 GHz	max. $0.8 \text{ kW} \times 1/\sqrt{VSWR}$
Insertion loss	0 Hz to 2 GHz	≤ 0.05 dB, without cable loss
	2 GHz to 5 GHz	≤ 0.10 dB, without cable loss
	5 GHz to 6 GHz	≤ 0.15 dB, without cable loss

RF output switch, R&S®BBA-B122 option		
Switch type		2:2, mechanical
RF output port		$7/_{8}$ " EIA
Frequency range		0 Hz to 3.5 GHz
Switching time		< 120 ms
Life		≥ 250 000
Average forward RF power	0 Hz to 0.1 GHz	max. $8 \text{ kW} \times 1/\sqrt{VSWR}$
	0.1 GHz to 0.23 GHz	max. $5 \text{ kW} \times 1/\sqrt{VSWR}$
	0.23 GHz to 0.86 GHz	max. $2.5 \text{ kW} \times 1/\sqrt{VSWR}$
	0.86 GHz to 2 GHz	max. $1.8 \text{ kW} \times 1/\sqrt{VSWR}$
	2 GHz to 3 GHz	max. $1.4 \text{ kW} \times 1/\sqrt{VSWR}$
	3 GHz to 3.5 GHz	max. $1.3 \text{ kW} \times 1/\sqrt{VSWR}$
Insertion loss	0 Hz to 1 GHz	≤ 0.03 dB, without cable loss
	1 GHz to 2 GHz	≤ 0.05 dB, without cable loss
	2 GHz to 3.5 GHz	≤ 0.20 dB, without cable loss

<b>RF output switch, R&amp;S®BBA-B123 option</b>		
Switch type		2:2, mechanical
RF output port		1 5/8" EIA
Frequency range		0 Hz to 2 GHz
Switching time		< 120 ms
Life		≥ 250 000
Average forward RF power	0 Hz to 0.1 GHz	max. 19 kW × 1/√VSWR
	0.1 GHz to 0.23 GHz	max. 12.7 kW × 1/√VSWR
	0.23 GHz to 0.86 GHz	max. 6.6 kW × 1/√VSWR
	0.86 GHz to 1.6 GHz	max. 4.8 kW × 1/√VSWR
	1.6 GHz to 2 GHz	max. 4.3 kW × 1/√VSWR
Insertion loss	0 Hz to 0.86 GHz	≤ 0.05 dB, without cable loss
	0.86 GHz to 2 GHz	≤ 0.10 dB, without cable loss

<b>RF output switch, R&amp;S®BBA-B126 option</b>		
Switch type		6:1, mechanical
RF output port		N female
Frequency range		0 Hz to 12.4 GHz
Switching time		< 15 ms
Life		≥ 2 000 000 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	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	≤ 0.5 dB, without cable loss

## Fast amplifier mute specifications

<b>Fast amplifier mute, R&amp;S®BBA-B130 option, for R&amp;S®BBA150-Ax only above 3 MHz</b>		
External mute signal		TTL
Mute on delay (amplifier switches to mute mode, RF turns off)		nom. < 8 μs
Mute off delay (amplifier leaves mute mode, RF turns on)	models with frequency band	
	from 9 kHz to 250 MHz	nom. < 2.5 ms
	from 4 kHz to 400 MHz	nom. < 2.5 ms
	from 0.69 GHz to 3.2 GHz	nom. < 4 μs
	from 2.5 GHz to 6.0 GHz	nom. < 4 μs
	from 80 MHz to 1.0 GHz	nom. < 15 μs

# Ordering information

## R&S®BBA150 single-band power amplifiers

### Frequency band from 9 kHz to 250 MHz

Designation	Type	Configuration No.
125 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A125
160 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A160
200 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A200
400 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A400
700 W, air-cooled, 12 HU rack model	R&S®BBA150	BBA150-A700
1300 W, air-cooled, 20 HU rack model	R&S®BBA150	BBA150-A1300
2500 W, air-cooled, 35 HU rack model	R&S®BBA150	BBA150-A2500

### Frequency band from 4 kHz to 400 MHz

Designation	Type	Configuration No.
75 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-AB75
125 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-AB125
160 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-AB160
200 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-AB200
350 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-AB350
600 W, air-cooled, 12 HU rack model	R&S®BBA150	BBA150-AB600

### Frequency band from 80 MHz to 1.0 GHz

Designation	Type	Configuration No.
70 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-BC70
125 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-BC125
160 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-BC160
250 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-BC250
500 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-BC500
1000 W, air-cooled, 12 HU rack model	R&S®BBA150	BBA150-BC1000
1250 W, air-cooled, 20 HU rack model	R&S®BBA150	BBA150-BC1250
1500 W, air-cooled, 20 HU rack model	R&S®BBA150	BBA150-BC1500
2000 W, air-cooled, 20 HU rack model	R&S®BBA150	BBA150-BC2000
3000 W, air-cooled, 35 HU rack model	R&S®BBA150	BBA150-BC3000

### Frequency band from 0.69 GHz to 3.2 GHz

Designation	Type	Configuration No.
30 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D30
60 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D60
110 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D110
200 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D200
400 W, air-cooled, 12 HU rack model	R&S®BBA150	BBA150-D400
800 W, air-cooled, 20 HU rack model	R&S®BBA150	BBA150-D800

### Frequency band from 2.5 GHz to 6.0 GHz

Designation	Type	Configuration No.
15 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-E15
30 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-E30
60 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-E60
100 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-E100
200 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-E200
400 W, air-cooled, 12 HU rack model	R&S®BBA150	BBA150-E400

Accessories supplied: power cord, user manual on CD.

## R&S®BBA150 twin-band power amplifiers

### Frequency bands 2 × from 9 kHz to 250 MHz

Designation	Type	Configuration No.
75 W/75 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A75A75
125 W/125 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A125A125
200 W/200 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A200A200

### Frequency bands 2 × from 80 MHz to 1 GHz

Designation	Type	Configuration No.
160 W/160 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-BC160BC160
250 W/250 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-BC250BC250

### Frequency bands 2 × from 0.69 GHz to 3.2 GHz

Designation	Type	Configuration No.
30 W/30 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D30D30
60 W/60 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D60D60
110 W/110 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D110D110

### Frequency bands 2 × from 2.5 GHz to 6 GHz

Designation	Type	Configuration No.
30 W/30 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-E30E30
60 W/60 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-E60E60
100 W/100 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-E100E100

Accessories supplied: power cord, user manual on CD.

## R&S®BBA150 dual-band power amplifiers

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

Designation	Type	Configuration No.
75 W/70 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A75BC70
75 W/125 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A75BC125
75 W/250 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A75BC250
125 W/70 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A125BC70
125 W/125 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A125BC125
125 W/160 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A125BC160
125 W/250 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A125BC250
160 W/125 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A160BC125
160 W/160 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A160BC160
200 W/70 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A200BC70
200 W/125 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A200BC125
200 W/250 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A200BC250
400 W/125 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A400BC125
400 W/70 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-A400BC70

### Frequency bands from 80 MHz to 1 GHz and 0.69 GHz to 3.2 GHz

Designation	Type	Configuration No.
125 W/30 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-BC125D30
125 W/60 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-BC125D60
125 W/110 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-BC125D110
250 W/30 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-BC250D30
250 W/60 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-BC250D60
250 W/110 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-BC250D110

### Frequency bands from 0.69 GHz to 3.2 GHz and 2.5 GHz to 6.0 GHz

Designation	Type	Configuration No.
30 W/15 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D30E15
30 W/30 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D30E30
60 W/15 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D60E15
60 W/30 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D60E30
60 W/60 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D60E60
110 W/30 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D110E30
110 W/60 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D110E60
110 W/100 W, air-cooled, 4 HU desktop model	R&S®BBA150	BBA150-D110E100

Accessories supplied: power cord, user manual on CD.

## Options

Designation	Type	Order No.
GPIO remote control	R&S®BBA-B101	5355.8250.02 <sup>38</sup>
PoE switch	R&S®BBA-B102	5355.8243.30
Optical Ethernet remote control	R&S®BBA-B105	5355.8266.03
RF input switch (1:2 or 2:1, N)	R&S®BBA-B110	5355.8866.02 <sup>36</sup>
RF input switch (1:6, N)	R&S®BBA-B116	5355.8950.12
RF output switch (2:1 or 1:2, N)	R&S®BBA-B120	5355.8795.02 <sup>36</sup>
RF output switch (2:2, $\frac{7}{16}$ " EIA)	R&S®BBA-B121	5355.8895.12 <sup>36</sup>
RF output switch (2:2, $\frac{7}{8}$ " EIA)	R&S®BBA-B122	5355.8989.12
RF output switch (2:2, 1 $\frac{5}{8}$ " EIA)	R&S®BBA-B123	5355.8943.12
RF output switch (6:1, N)	R&S®BBA-B126	5355.8995.12
Fast amplifier mute, for R&S®BBA150-Ax above 3 MHz only	R&S®BBA-B130	5355.8114.02
DC block input protection (N)	R&S®BBA-B132	5353.9236.03
RF forward/RF reflected sample ports (N front)	R&S®BBA-B140	5355.8837.02
RF forward/RF reflected sample ports (N rear)	R&S®BBA-B140	5355.8837.03
Detected forward/detected reflected sample ports (N front)	R&S®BBA-B141	5355.8850.02
Detected forward/detected reflected sample ports (N rear)	R&S®BBA-B141	5355.8850.03
Sample port switch (2 x 2 :1, N)	R&S®BBA-B142	5355.8872.02 <sup>36</sup>
Sample port switch (2 x 6:1, N)	R&S®BBA-B146	5355.8972.02
Transparent I/O	R&S®BBA-B160	5355.8889.02

## Service

Designation	Type	Order No.
Upgrade frequency band/RF output power	R&S®BBA-UPGR	on request
<b>Service options</b>		
Service level agreement BASIC, 1, 2 or 3 year(s)	R&S®SB1/2/3AMP	5354.6560.02/03/04
Service level agreement ADVANCED, 1, 2 or 3 year(s) depending on regional availability	R&S®SA1/2/3AMP	5354.6560.07/08/09
Service level agreement PREMIUM, 1, 2 or 3 year(s) depending on regional availability	R&S®SP1/2/3AMP	5354.6560.12/13/14
Regular product maintenance 1 to 6 year(s)	R&S®SV1AMP	5354.6560.22-.28

## Accessories

Designation	Type	Order No.
Rackmounting brackets (pair)	R&S®ZR1-RA02	5355.8208.00
Mounting rails, for R&S®BBA150 with transport lock (pair)	R&S®ZR1-SLR03	5355.8220.12
Mounting rails, for R&S®BBA150 without transport lock (pair)	R&S®ZR1-SLR03	5355.8220.13
Mounting rails, for other equipment (pair)	R&S®ZR1-SLR02	5353.9565.02
AC power cord (German plug)	R&S®ZR1-PSEA	5355.8514.02
AC power cord (without plug)	R&S®ZR1-PSEA	5355.8514.03
AC power cord (NEMA 5-15 US plug)	R&S®ZR1-PSEA	5355.8514.04
AC power cord (NEMA L5-30 US plug)	R&S®ZR1-PSEA	5355.8514.05
AC power cord (JIS C8303 Japanese plug)	R&S®ZR1-PSEA	5355.8514.06
AC power cord (PRC3/16 Chinese plug)	R&S®ZR1-PSEA	5355.8514.07
AC power cord (BS13/13 British plug)	R&S®ZR1-PSEA	5355.8514.08
AC power cord (ZA3 South African, Indian plug)	R&S®ZR1-PSEA	5355.8514.09
AC power cord (12G Swiss plug)	R&S®ZR1-PSEA	5355.8514.10
AC power cord (BR/3/20 Brazil plug)	R&S®ZR1-PSEA	5355.8514.11
Operating manual, German, printed version	R&S®BBA-MA	5355.8120.03
Operating manual, English, printed version	R&S®BBA-MA	5355.8120.02
Rack wheels	R&S®ZR1-RW	5353.9707.03
Rubber wheels, for racks up to 20 HU	R&S®ZR1-RW	5353.9707.04

<sup>38</sup> Variant of order number depends on system configuration.



## Service that adds value

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

## Rohde & Schwarz

The Rohde&Schwarz technology group is among the trail-blazers when it comes to paving the way for a safer and connected world with its leading solutions in test & measurement, technology systems and networks&cybersecurity. Founded more than 85 years ago, the group is a reliable partner for industry and government customers around the globe. The independent company is headquartered in Munich, Germany and has an extensive sales and service network with locations in more than 70 countries.

[www.rohde-schwarz.com](http://www.rohde-schwarz.com)

## Sustainable product design

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

Certified Quality Management

**ISO 9001**

Certified Environmental Management

**ISO 14001**

## Rohde & Schwarz training

[www.training.rohde-schwarz.com](http://www.training.rohde-schwarz.com)

## Rohde & Schwarz customer support

[www.rohde-schwarz.com/support](http://www.rohde-schwarz.com/support)

