

# R&S® BBA150

## BROADBAND AMPLIFIER

Excellent amplifiers from 4 kHz to 6 GHz  
with high power density



Product Brochure  
Version 10.00

**ROHDE & SCHWARZ**

Make ideas real



# AT A GLANCE

The R&S®BBA150 broadband amplifier series generates power in the frequency range from 4 kHz to 6 GHz. The compact amplifiers are rugged and provide high availability. They are ideal for amplitude, frequency, phase and pulse modulation. Extensive switching options for input, output and sample ports are available for different applications.



The R&S®BBA150 broadband amplifiers cover the following frequency bands: 9 kHz to 250 MHz, 4 kHz to 400 MHz, 80 MHz to 1 GHz, 690 MHz to 3.2 GHz and 2.5 GHz to 6 GHz. They can be used to address a variety of applications, including the various standards for EMS measurements up to 6 GHz. In the industry environment, the R&S®BBA150 broadband amplifiers are suitable for development and product validation tests in quality assurance and in the development and production of components. Other fields of use include research, physical engineering and communications.

The lightweight, modular R&S®BBA150 broadband amplifiers are optimized for the required frequency band. They are available in two versions. The low-power amplifier comes as a 4 HU 19" rackmount that can be used as a desktop model or installed in a rack. Instruments with higher power must be installed in racks. The amplifiers are operated either using the display and buttons, via a remote control interface (automated operation) or via a web browser. The modular design allows you to later upgrade the power and frequency range. The comprehensive service concept and global availability of spare parts promote the trust and confidence of customers around the world.

R&S®BBA150-A2500

# KEY FACTS

- ▶ Frequency ranges:
  - 9 kHz to 250 MHz
  - 4 kHz to 400 MHz
  - 80 MHz to 1 GHz
  - 690 MHz to 3.2 GHz
  - 2.5 GHz to 6 GHz
- ▶ Output power from 15 W to 3 kW
- ▶ 100 % mismatch protection
- ▶ Suitable for amplitude, frequency, phase and pulse modulation
- ▶ Three-year warranty and flexible service level agreements

# BENEFITS

One of the most advanced broadband amplifiers

▶ [page 4](#)

Reliable with high availability

▶ [page 5](#)

Flexible control and operation

▶ [page 6](#)

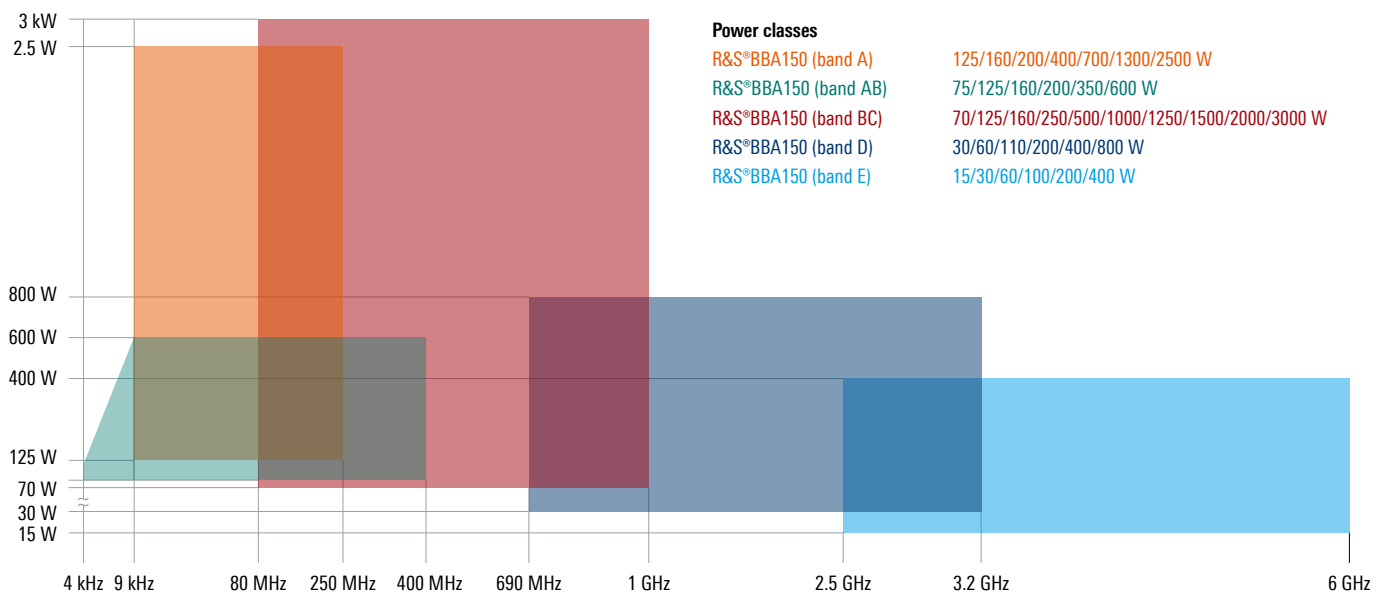
All in one

▶ [page 8](#)

Clearly structured functional elements

▶ [page 10](#)

## R&S®BBA150 model overview



# ONE OF THE MOST ADVANCED BROADBAND AMPLIFIERS

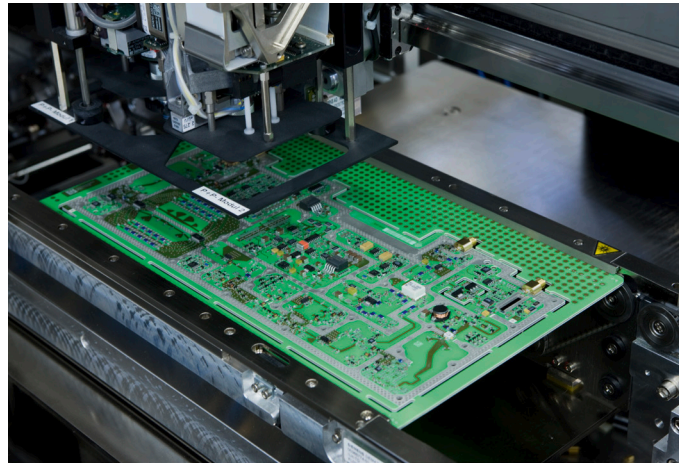
Outstanding RF design meets high-quality series production in one of Europe's most advanced plants

## Sophisticated RF design

State-of-the-art design and simulation software used during development, the use of power semiconductors from internationally leading manufacturers and Rohde&Schwarz engineers' decades of experience in developing amplifiers produce one of the most advanced amplifiers currently available. Semiconductor dies directly bonded onto printed boards prevent parasitic effects caused by housed transistors and thus make it possible to achieve high output power in the frequency range from 2.5 GHz to 6 GHz. Efficiency and ruggedness ensure smooth operation. Lean firmware with effective monitoring and protection mechanisms provides operational safety. Generous dimensioning of the RF amplifier stages provides sufficient margin and ensures compliance with specified parameters.

## Compact and lightweight

The mechanical design of the R&S®BBA150 sets standards. Thanks to its lightweight design and special aluminum-copper heat sink, the R&S®BBA150 weighs only half as much as conventional amplifiers in the same power class. If desired, different frequency bands can be combined in a single amplifier. The RF output power of up to 500 W below 1 GHz and up to 200 W above 1 GHz in just four height units means excellent power density.



Automated insertion of components into printed boards at Rohde & Schwarz

## Series production in one of Europe's most advanced plants

The R&S®BBA150 broadband amplifiers are series-produced in one of Europe's most advanced plants. The multiple award-winning Rohde&Schwarz plant in Teisnach, Germany offers excellent manufacturing depth. From precision mechanical engineering and machining to printed board production and final assembly, all manufacturing steps are brought together under one roof. Automated final test setups ensure that all products that the Rohde&Schwarz plant delivers to its customers comply with specifications.

## Awards received by the Rohde & Schwarz Teisnach plant include

- ▶ 2010: Factory of the Year, Germany
- ▶ 2013: Best German Factory Finalist, European Industrial Excellence Award
- ▶ 2014: Bavarian Quality Award
- ▶ 2014: Factory of the Year, Germany
- ▶ 2015: TOP Innovation Award
- ▶ 2016: Global Excellence in Operations (GEO) overall award winner, Germany
- ▶ 2017: Best Business Award
- ▶ 2020: Manufacturing Excellence Award
- ▶ 2023: Factory of the Year, Germany, Excellence in Small Series Production category

# RELIABLE WITH HIGH AVAILABILITY

Broadband amplifiers as reliable as the radio and TV broadcast transmitters from Rohde & Schwarz

## Outstanding expertise in amplifier development

The R&S®BBA150 broadband amplifiers have high mismatch tolerance and are rugged enough to handle an RF short circuit or open RF output. The expertise gained over many years in the development of power amplifiers is based on R&D for Rohde & Schwarz radio and TV broadcast transmitters. Their reliability is well-known and a major reason for the company's global market leadership in digital terrestrial transmitter technology.

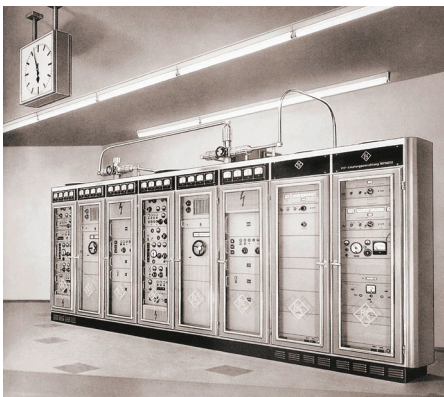
## Cost benefit due to low downtime

The R&S®BBA150 fulfills the Rohde & Schwarz promise to offer reliable amplifiers that maximize user effectiveness. Low downtime is an important economic factor.

## Knowledge transfer

All of the Rohde & Schwarz radio and TV transmitter manufacturing expertise has gone into the development of the broadband amplifiers.

### Radio transmitters



VHF radio transmitter with 2 × 5 kW

### Broadband amplifiers



R&S®BBA100



R&S®BBA150



R&S®BBL200



R&S®BBA130



R&S®BBA300

1963

2010

2013

2014

2016

2022

# FLEXIBLE CONTROL AND OPERATION

Operation of the R&S®BBA150 is always efficient – whether local or via remote control or web GUI

## Manual operation

The R&S®BBA150 can be operated manually via the display and buttons on its front panel. This is ideal for use in labs, for example, to easily change settings. A clever menu structure provides straightforward access to all essential information and settings. During operation, the RF output power, reflected power and VSWR are displayed.

## Local and remote operation via web browser and PC

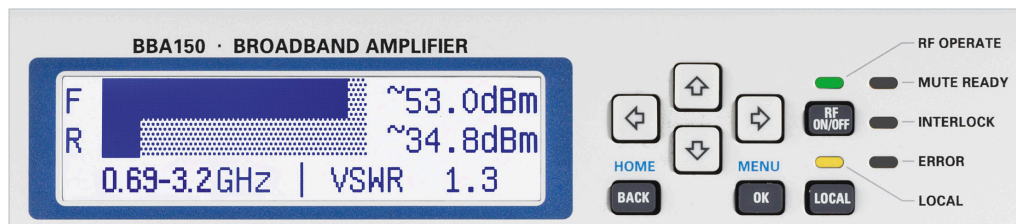
The web GUI integrated into the R&S®BBA150 can be accessed via LAN and web browser. The broadband amplifier can be conveniently operated via its graphical user interface using a laptop near the instrument or a control workstation PC. A common web browser (e.g. Google Chrome, Mozilla Firefox, Microsoft Edge) is all that is needed.

## Integration into the R&S®ELEKTRA EMC test software

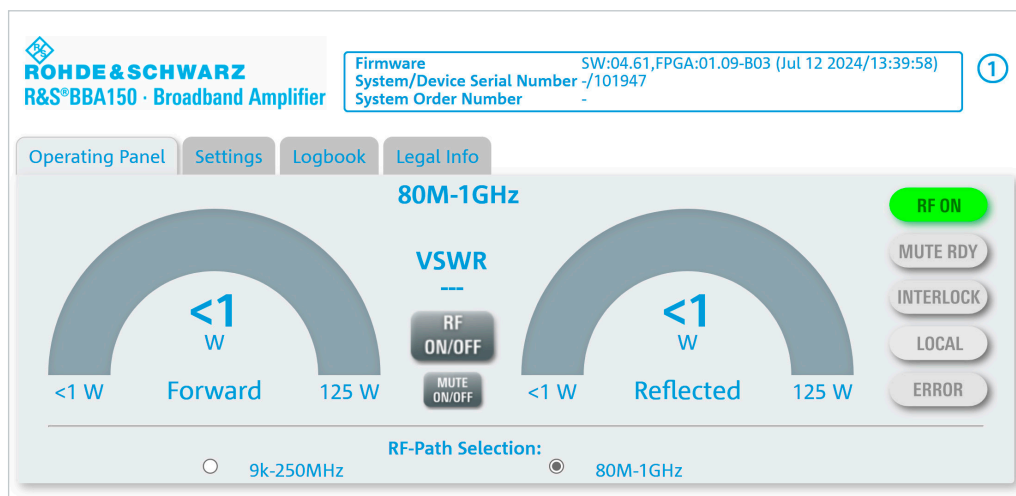
Complex EMC measurement scenarios almost always require the use of higher-level measurement and control software such as R&S®ELEKTRA. The complete integration of the R&S®BBA150 into the EMC test software offers many different options for controlling the amplifier and adjusting settings for immunity measurements in line with common standards such as CISPR, IEC, ISO, EN, ETSI, VDE, FCC and ANSI.

## Remote control via Ethernet

The standard Ethernet interface enables the automation of test sequences using remote control SCPI commands. To make integration especially easy, the IP network address can be set manually or assigned automatically via DHCP.




Display and buttons on the R&S®BBA150 front panel



Operating panel in the R&S®BBA150 web GUI

### Safety thanks to two different interlocks

Two different interlocks are available. You can choose the one that best suits your application. The automatic interlock restarts the amplifier without user interaction as soon as the interlock circuit is closed again. The interactive interlock requires user confirmation before RF power can be output again.

**ROHDE & SCHWARZ**  
R&S®BBA150 · Broadband Amplifier

FirmwareSW:04.61,FPGA:01.09-B03 (Jul 12 2024/13:39:58)

System/Device Serial Number-/101947

System Order Number-

1

Operating Panel

Settings

Logbook

Legal Info

- Gain Adjustment

Gain Adjustment-00.00 dBSet Gain

- Misc. Settings

Power Unit☒ Watt☐ dBm

Automatic RF-ON ?☒ Off☐ On☐ Last

Fan Control ?☐ Mode 1☒ Mode 2

- Ethernet

IP Address172.26.123.8

Subnet Mask255.255.255.0

Gateway172.26.123.1

DHCP Client☒ On☐ Off

Host NameBBA150-A200BC125-101947

SCPI Timeout ?☒ 30 Minutes (recommended def.)☐ 1 Day (not recommended)

RF-OFF on lost Remote Ctrl. ?☐ Yes☒ No

Set Network Configuration

- Maintenance

Run Self-Test

Run Self-Test at Start☐ Yes☒ No

Run Bias-Current-Calibration

- System Info

General

Current Timestamp000d 01h 57min 17s

System TypeBBA150 A200BC125

System/Dev. Serial No.-/101947

Device Types of UnitsA200BC125

FirmwareSW:04.61,FPGA:01.09-B03 (Jul 12 2024/13:39:58)

Ethernet

Connection1Gbit/s FD

MAC Address00:90:B8:1E:95:61

Options

NameDescriptionPart Number

R&S® BBA-B130Fast Amplifier Mute, only for applications above 3 MHz5355.8114.02

Settings panel in the  
R&S®BBA150 web GUI

# ALL IN ONE

Flexible amplifier systems with various frequency bands and power classes



## Compact, modular design

Though compact, the R&S®BBA150 broadband amplifier offers functions that normally involve significantly higher technical investment. The design is optimized for maximum flexibility in a small footprint. The compact, modular design of the amplifier stages and other components enables highly integrated system setups based on 19" rackmounts. The frequency and power of these rackmounts can be flexibly configured.

## Compact and flexible: twin-band and dual-band amplifiers in four height units

Two frequency bands can be integrated into a four HU desktop model, either as a twin-band or a dual-band amplifier.

Twin-band amplifiers consist of two amplifiers, both with the same frequency band, that operate in parallel. These types of amplifiers are ideal for two-tone measurements and for applications that require the same test setup for multiple tests in a small space. Multiple twin-band units fit in a single rack.

Dual-band amplifiers contain two amplifiers with different frequency bands, and only one of these amplifiers is active at any given time. The optional switches for this option are integrated into the housing. The dual-band amplifiers cover the following frequency ranges: 9 kHz to 1 GHz, 80 MHz to 3.2 GHz and 690 MHz to 6 GHz.

The R&S®BBA150-A2500BC125 amplifier system in a 19" rack with 42 HU consists of:

- ▶ Power amplifier, frequency band A, 2.5 kW
- ▶ Power amplifier, frequency band BC, 125 W
- ▶ Input switch
- ▶ Output switch
- ▶ Sample port switch

### Extensive switching options for inputs, outputs and sample ports

Single-band and dual-band amplifiers can be combined to build a single system with multiple frequency bands. Numerous switching options allow you to mix and match the individual amplifiers to obtain the best configuration for your specific application.

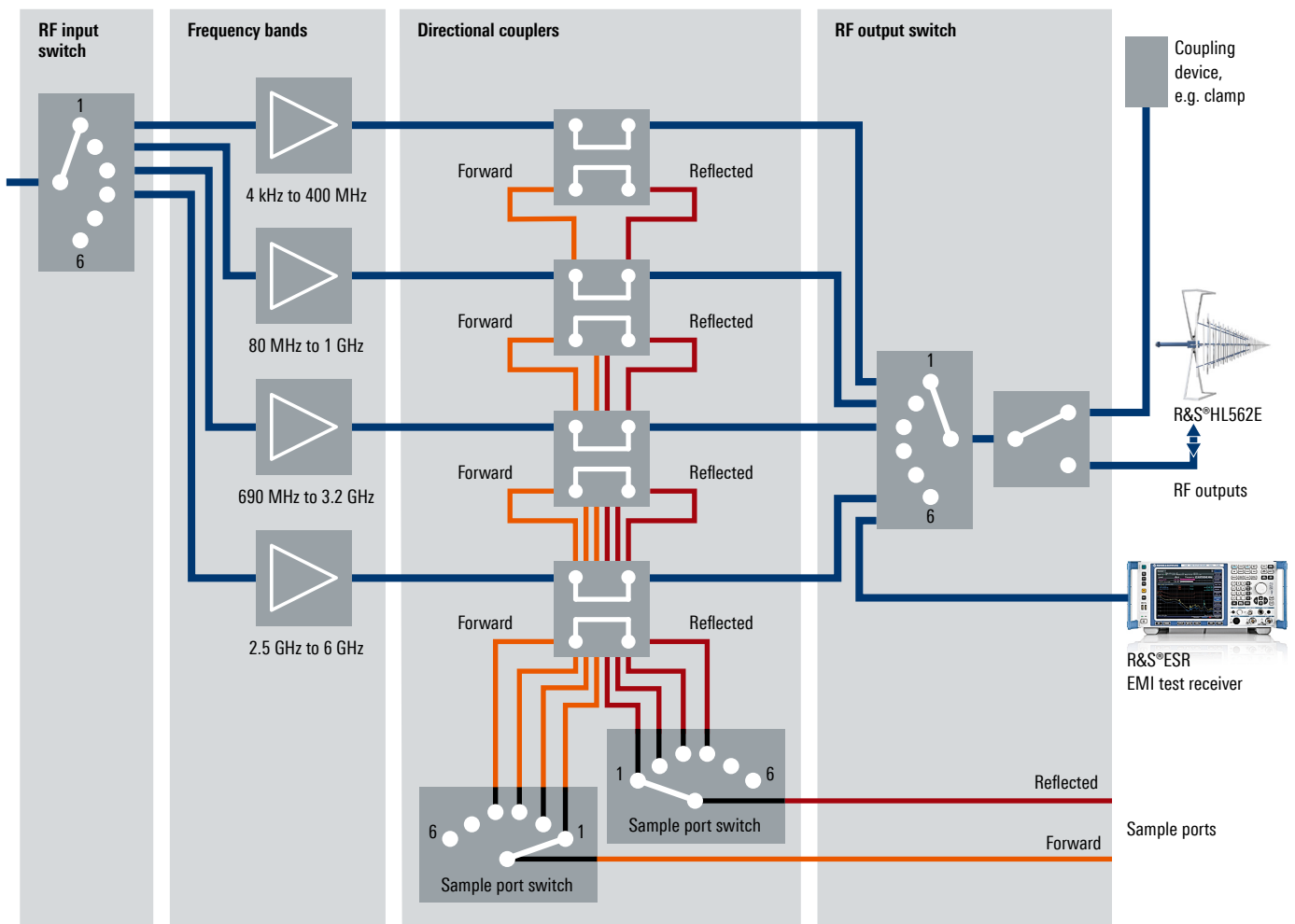
Every scenario is covered by flexibly combining the following components: the input switch sets the RF input signal to one of the frequency bands so that a central input can be used without having to disconnect and reconnect the signal source.

Optional sample ports are available to measure the forward and reflected power at the amplifier's output. Sample port switches make the signals from the various frequency bands available at two central outputs.

RF output switches allow flexible connection of the frequency bands to different loads, e.g. clamps or antennas. Different RF output switches can be configured in an application-specific manner.

All switches in the system are controlled via the built-in system controller. The desired RF path can be selected with a single remote control command or the press of a button. An RF path is the signal path from the input to the output of the amplifier system.

### Combined amplifier system with switching options (example)

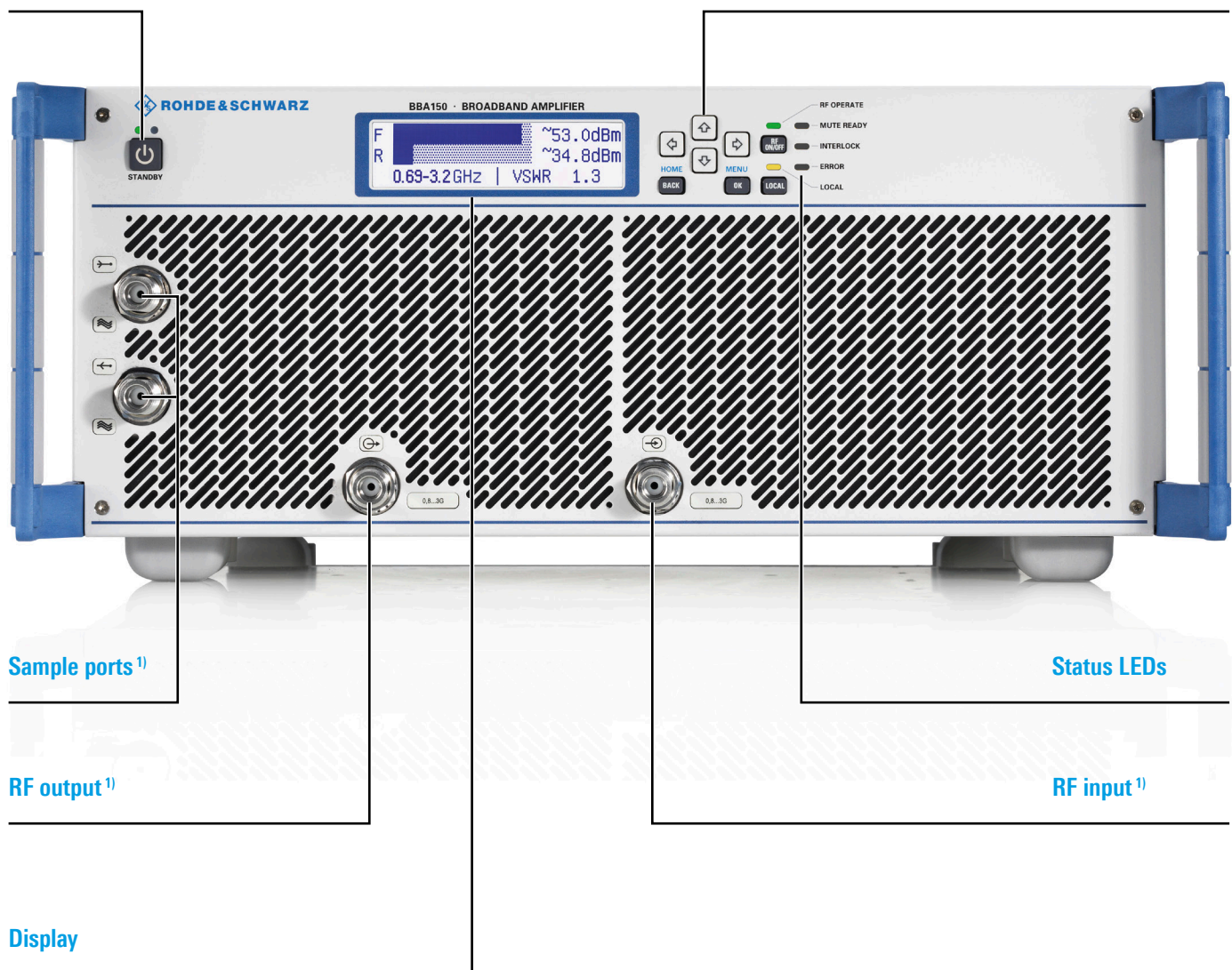


# CLEARLY STRUCTURED FUNCTIONAL ELEMENTS

## FRONT VIEW OF DESKTOP MODEL

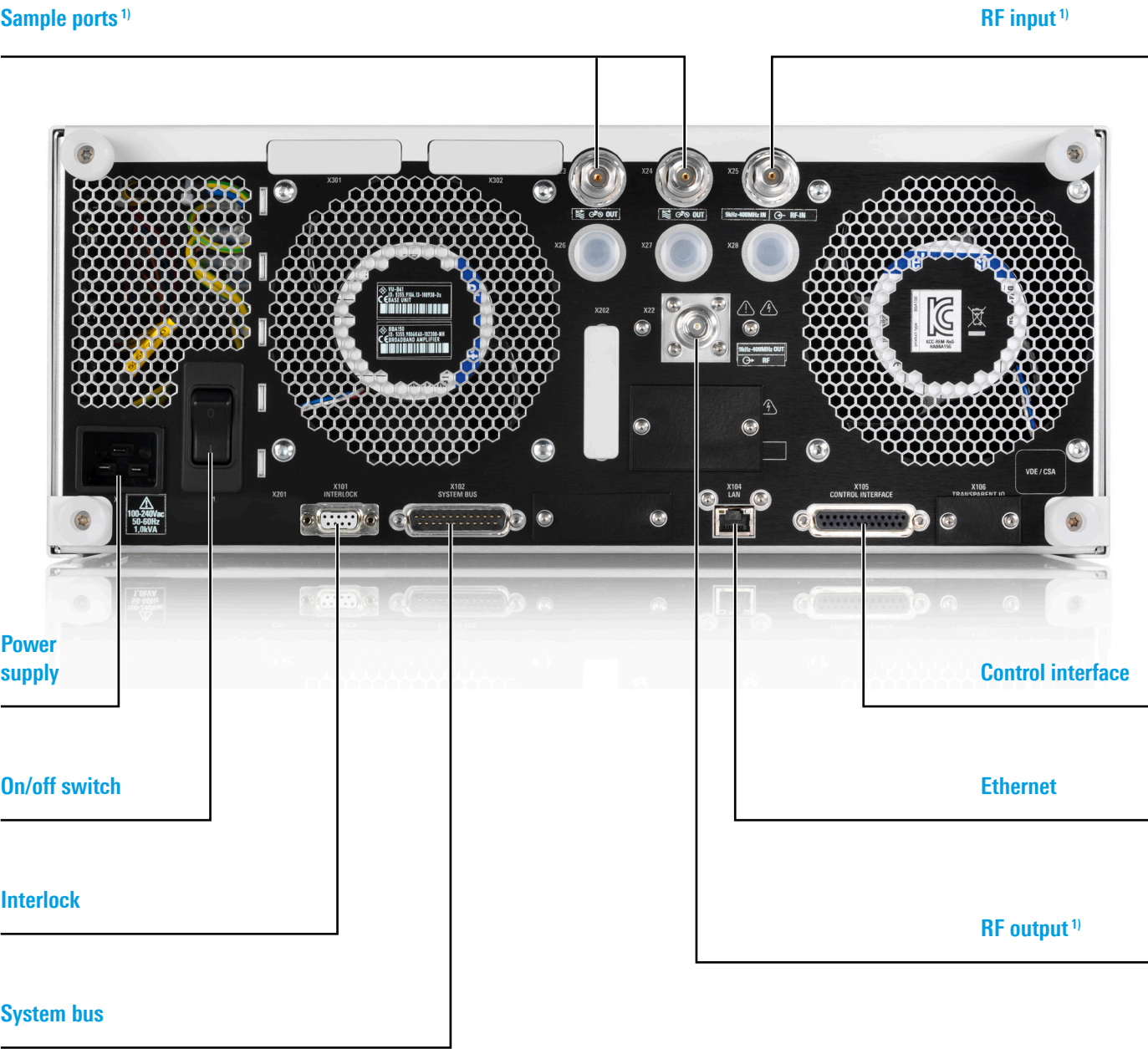
System on/standby

Operating buttons



<sup>1)</sup> Optional or configuration-dependent.

# REAR VIEW OF DESKTOP MODEL



<sup>1)</sup> Optional or configuration-dependent.

# SPECIFICATIONS IN BRIEF

## Specifications in brief

### RF specifications

Amplifier type		class A
Frequency range		<ul style="list-style-type: none"> <li>▶ 9 kHz to 250 MHz, instantaneously</li> <li>▶ 4 kHz to 400 MHz, instantaneously</li> <li>▶ 80 MHz to 1 GHz, instantaneously</li> <li>▶ 690 MHz to 3.2 GHz, instantaneously</li> <li>▶ 2.5 GHz to 6 GHz, instantaneously</li> </ul>
Nominal output power	9 kHz to 250 MHz	125 W to 2.5 kW
	4 kHz to 400 MHz	75 W to 600 W
	80 MHz to 1 GHz	70 W to 3 kW
	690 MHz to 3.2 GHz	30 W to 800 W
	2.5 GHz to 6 GHz	15 W to 400 W
Nominal output load		50 $\Omega$
Gain flatness		$\pm 4.0$ dB (or better; see specifications document)
Gain adjustment range		> 15 dB
Modulation capability		AM, FM, $\phi$ M, PM
Nominal input impedance		50 $\Omega$
Maximum RF input level		+15 dBm
	9 kHz to 250 MHz	+5 dBm
Input level for nominal output power		-3.4 dBm (nom.)
Nominal output impedance		50 $\Omega$
Output mismatch protection, VSWR		100%, without damage

### RF and sample connectors

RF input port		N female
RF output port		N female, 7/16 DIN female or 1 5/8" EIA female
RF sample ports	forward output power, optional	N female
	reflected output power, optional	N female
Detected sample ports	forward output power, optional	N female
	reflected output power, optional	N female

### Graphical user interface

Local graphical display		200 × 48 pixel, monochrome
Web GUI	via Ethernet	RJ-45, 10/100 Mbit/s, autonegotiation, half/full duplex

### Remote control

Ethernet		RJ-45, 10/100 Mbit/s, autonegotiation, half/full duplex
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### Environmental conditions

Temperature loading	operating temperature range	0°C to +40°C
	storage temperature range	-20°C to +70°C
Damp heat		max. +40°C at 95% relative humidity, without condensation
Altitude	operating altitude	up to 2000 m
	storage altitude	up to 4600 m

### Protection

Load VSWR		infinite
Interlock		1 automatic interlock, 1 interactive interlock
Input protection against bias voltage	optional	DC block level $\leq$ 50 V DC
Transient voltage compatibility		category II, in line with IEC 60364-4-443
Short-circuit breaking capacity		automatic all-pole 20 A circuit breaker
Thermal overload		shutdown in case of thermal overload

## Specifications in brief

### General data

Operating voltage range	R&S®BBA150-A125 to -A200/-AB75 to -AB200/-BC70 to -BC250/-D30 to -D110/-E15 to -E100	100 V to 240 V AC ± 10%, single phase, 47 Hz to 63 Hz
	R&S®BBA150-A400/-AB350/-D200/-E200	120 V to 240 V AC ± 10%, single phase, 47 Hz to 63 Hz
	R&S®BBA150-A700/-AB600/-BC500/-BC1000/-D400/-E400	200 V to 240 V AC ± 10%, single phase, 47 Hz to 63 Hz
	R&S®BBA150-A1300/-A2500/-BC1250 to -BC3000/-D800	380 V to 415 V AC ± 10%, three phase, with N, 47 Hz to 63 Hz
Air cooling		forced air, built-in fans, air entry at front, air exit at rear
Dimensions (W × H × D)		
Desktop model	including fans, handles and feet	430 mm × 196 mm × 580 mm (16.9 in × 7.7 in × 22.8 in)
	for rackmounting	19" 1/1, 4 HU
Rack models	R&S®BBA150-A700/-BC1000/-D400/-E400	19" × 12 HU × 800 mm (31.5 in)
	R&S®BBA150-D800	19" × 20 HU × 800 mm (31.5 in)
	R&S®BBA150-A1300/-BC1250/-BC1500/-BC2000	19" × 20 HU × 1000 mm (39.4 in)
	R&S®BBA150-A2500	19" × 35 HU × 800 mm (31.5 in)
	R&S®BBA150-BC3000	19" × 35 HU × 1000 mm (39.4 in)

All specified parameters are valid for an ambient temperature of +25°C, input impedance of 50 Ω and output impedance of 50 Ω.

# ORDERING INFORMATION

Designation	Type	Configuration No.
<b>R&amp;S®BBA150 single-band power amplifiers</b>		
<b>Frequency band from 9 kHz to 250 MHz</b>		
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
1.3 kW, air-cooled, 20 HU, rack model	R&S®BBA150	BBA150-A1300
2.5 kW, air-cooled, 35 HU, rack model	R&S®BBA150	BBA150-A2500
<b>Frequency band from 4 kHz to 400 MHz</b>		
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
<b>Frequency band from 80 MHz to 1 GHz</b>		
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
1 kW, air-cooled, 12 HU, rack model	R&S®BBA150	BBA150-BC1000
1.25 kW, air-cooled, 20 HU, rack model	R&S®BBA150	BBA150-BC1250
1.5 kW, air-cooled, 20 HU, rack model	R&S®BBA150	BBA150-BC1500
2 kW, air-cooled, 20 HU, rack model	R&S®BBA150	BBA150-BC2000
3 kW, air-cooled, 35 HU, rack model	R&S®BBA150	BBA150-BC3000

Designation	Type	Configuration No.
<b>Frequency band from 690 MHz to 3.2 GHz</b>		
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
<b>Frequency band from 2.5 GHz to 6 GHz</b>		
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, 4 HU, desktop model	R&S®BBA150	BBA150-E400
Accessories supplied: power cord, user manual on CD		
<b>R&amp;S®BBA150 twin-band power amplifiers<sup>1)</sup></b>		
<b>Frequency bands 2 × from 9 kHz to 250 MHz</b>		
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
<b>Frequency bands 2 × from 80 MHz to 1 GHz</b>		
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
<b>Frequency bands 2 × from 690 MHz to 3.2 GHz</b>		
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
<b>Frequency bands 2 × from 2.5 GHz to 6 GHz</b>		
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		
<b>R&amp;S®BBA150 dual-band power amplifiers<sup>1)</sup></b>		
<b>Frequency bands from 9 kHz to 250 MHz and from 80 MHz to 1 GHz</b>		
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/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
<b>Frequency bands from 80 MHz to 1 GHz and from 690 MHz to 3.2 GHz</b>		
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

Designation	Type	Configuration No.
<b>Frequency bands from 690 MHz to 3.2 GHz and from 2.5 GHz to 6 GHz</b>		
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		
<b>Options</b>		
GPIO remote control, external converter	R&S®BBA-B101	5355.8250.02
GPIO remote control, for racks up to and including 30 HU	R&S®BBA-B101	5355.8250.03
GPIO remote control, for racks higher than 30 HU	R&S®BBA-B101	5355.8250.04
RF input switch (1:2 or 2:1, N)	R&S®BBA-B110	5355.8866.02 <sup>2)</sup>
RF input switch (1:6, N)	R&S®BBA-B116	5355.8950.02
RF output switch (2:1 or 1:2, N)	R&S®BBA-B120	5355.8795.02 <sup>2)</sup>
RF output switch (2:2, 7/16")	R&S®BBA-B121	5355.8895.02 <sup>2)</sup>
RF output switch (2:2, 7/8" EIA)	R&S®BBA-B122	5355.8989.02
RF output switch (2:2, 1 5/8" EIA)	R&S®BBA-B123	5355.8943.02
RF output switch (6:1, N)	R&S®BBA-B126	5355.8995.02
Fast amplifier mute, only for applications above 3 MHz	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 (dual-port, N front)	R&S®BBA-B142	5355.8872.02
Sample port switch (dual-port, N rear)	R&S®BBA-B142	5355.8872.03
Transparent I/O	R&S®BBA-B160	5355.8889.02

<sup>1)</sup> Amplifier systems with two or more frequency bands are available in many combinations. The table shows only a selection of the multiband power amplifiers.

<sup>2)</sup> The last two digits of the order number depend on the system configuration.

<b>Service options</b>		
Frequency range/output power upgrade		on request
Calibration		on request
Service level agreements (SLA)		
BASIC Coverage of repair costs (material and performance), access to the Rohde&Schwarz Support Center and basic support		Contact your local Rohde&Schwarz sales office
CUSTOMIZED The BASIC SLA plus additional modules to achieve the required coverage, e.g. on-site service, technical support or regular product maintenance		
PREMIUM On-site service within two working days (for rack systems) or prioritized repair within nine working days at the plant/service center (for benchtop models), provision of spare parts and components, software/firmware updates, fast technical support during business hours, regular product maintenance, annual review meeting and access to the Rohde&Schwarz Support Center		

For more information on the individual services and their availability, see "Service Levels Description for Rohde&Schwarz Broadband Amplifiers" (PD 3607.6467.92).

Your local Rohde&Schwarz expert will help find the best solution for you.

Contact your local Rohde&Schwarz sales office for more information: [www.sales.rohde-schwarz.com](http://www.sales.rohde-schwarz.com)

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