

# Keysight 86205B RF Bridge



Operating  
and Service  
Manual



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# Notices

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### CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the likes of that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a **CAUTION** notice until the indicated conditions are fully understood and met.

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### WARNING



A **WARNING** notice denotes a hazard. It calls attention to an operating procedure, practice, or the likes of that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a **WARNING** notice until the indicated conditions are fully understood and met.

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## Certification

Keysight Technologies certifies that this product met its published specifications at the time of shipment from the factory. Keysight Technologies further certifies that its calibration measurements are traceable to the United States National Institute of Standards and Technology (NIST, formerly NBS), to the extent allowed by the Institute's calibration facility, and to the calibration facilities of the other International Standards Organization members.

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	<p>This symbol indicates separate collection for electrical and electronic equipment mandated under EU law as of August 13, 2005. All electrical and electronic equipment are required to be separated from normal waste for disposal (Reference WEEE Directive, 2002/96/EC).</p>
	<p>This symbol indicates the time period during which no hazardous or toxic substance elements are expected to leak or deteriorate during normal use. Forty years is the expected useful life of the product.</p>

## Contacting Keysight

For more information, please contact your nearest Keysight office.

### Americas

Canada	(877) 894-4414
Latin America	305 269 7500
United States	(800) 829-4444

### Asia Pacific

Australia	1 800 629 485
China	800 810 0189
Hong Kong	800 938 693
India	1 800 112 929
Japan	81 426 56 7832
Korea	080 769 0800
Malaysia	1 800 888 848
Singapore	1 800 375 8100
Taiwan	0800 047 866
Thailand	1 800 226 008

### Europe

Austria	0820 87 44 11
Belgium	32 (0) 2 404 93 40
Denmark	45 70 13 15 15
Finland	358 (0) 10 855 2100
France	0825 010 700
Germany	01805 24 6333
Ireland	1890 924 204
Italy	39 02 92 60 8484
Netherlands	31 (0) 20 547 2111
Spain	34 (91) 631 3300
Sweden	0200-88 22 55
Switzerland(French)	41 (21) 8113811 (Opt 2)
Switzerland(German)	0800 80 53 53 (Opt 1)
United Kingdom	44 (0) 118 9276201
Other European Countries:	<a href="http://www.keysight.com/find/contactus">www.keysight.com/find/contactus</a>

Or, go to [www.keysight.com/find/assist](http://www.keysight.com/find/assist) for more information.

# Contents

<b>1</b>	<b>Introduction</b>	<b>7</b>
	Product Overview	8
	Specifications	9
<b>2</b>	<b>Environmental Specifications &amp; Physical Dimensions</b>	<b>11</b>
	Environmental Specifications	12
	Physical Dimensions	13
<b>3</b>	<b>Installation and Service</b>	<b>15</b>
	Installation	16
	Initial Inspection	16
	Service Instructions	17
	Adjustment	17
	Repair	17
	Maintenance	17

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**Keysight 86205B RF Bridge  
Operating and Service Manual**

# **1 Introduction**

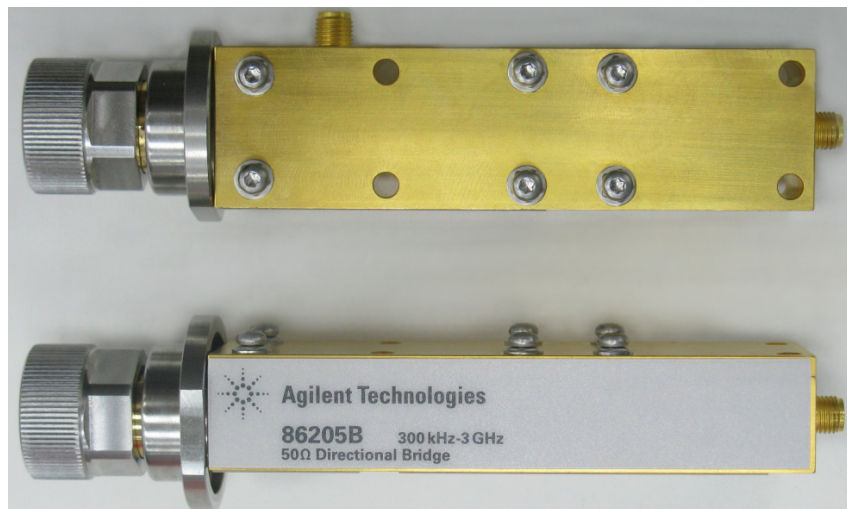
Product Overview 8  
Specifications 9

This chapter provides you an overview of the Keysight 86205B RF Bridge.

## Product Overview

The Keysight 86205B high directivity RF bridge offers unparalleled performance in a variety of general purpose applications. It is ideal for accurate reflection measurements and signal-leveling applications. It combines the directivity and broadband frequency range of directional bridges and the low insertion loss and flat coupling factor of directional couplers.

The bridge has an exceptionally wide RF frequency range; 300 kHz to 3 GHz. It is an ideal accessory when used with the E5061/71 family of ENA series network analyzers.



**Figure 1** Keysight 86205B RF bridge

## Specifications

<b>Model</b>	<b>Keysight 86205B</b>
Frequency range	300 kHz to 3 GHz
Impedance	50 $\Omega$
Directivity (min)	38 dB, 300 kHz to 1.3 GHz
	33 dB, 1.3 GHz to 3 GHz
Return loss (min)	14 dB
Insertion loss (max)	2 dB, 300 kHz to 1 GHz
	2.5 dB, 1 GHz to 3 GHz
Coupling factor	18 $\pm$ 3 dB

## **1 Introduction**

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## **2 Environmental Specifications & Physical Dimensions**

Environmental Specifications 12

Physical Dimensions 13

This chapter contains the environmental specifications and physical dimensions of the Keysight 86205B RF Bridge.

# Environmental Specifications

The Keysight 86205B RF Bridge is designed to fully comply with Keysight Technologies' product operating environmental specifications as shown in [Table 1](#).

**Table 1** Environmental specifications

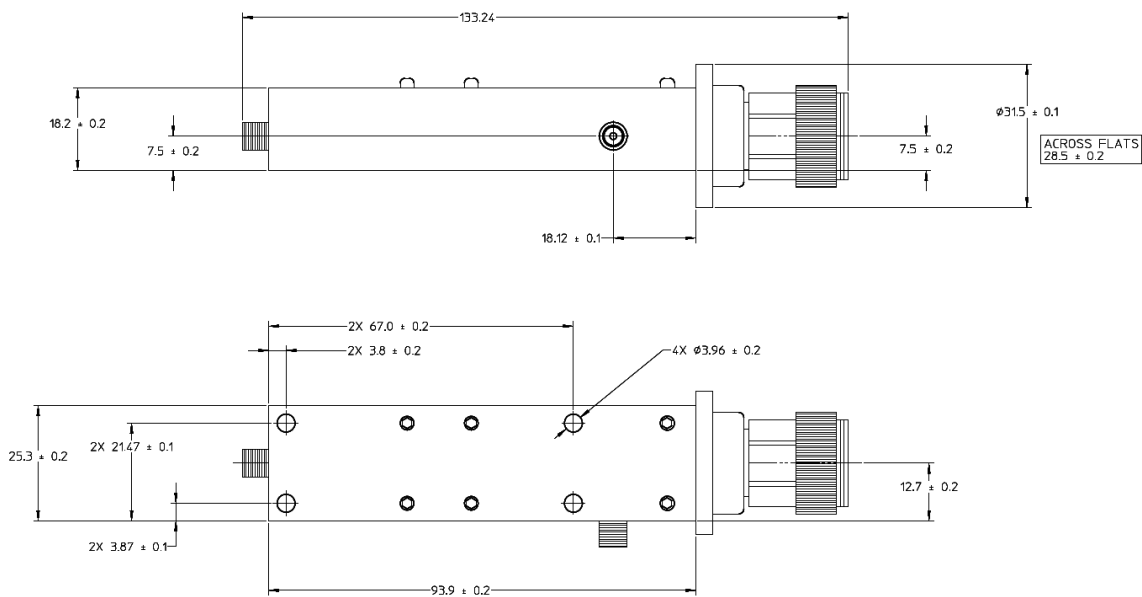
Temperature:	
• Operating	0 °C to +55 °C
• Storage	−40 °C to +70 °C
• Cycling	−50 °C to +85 °C, 10 cycles at 20 °C per minute, 20 minutes dwell time
Relative humidity:	
• Operating	50% to 95% RH at 40 °C, 24 hours cycling, repeated 5 times
Shock	Half-sine waveform, 0.5 ms duration, 1000 g, all 6 faces, 3 shock pulses per orientation
Vibration	50 Hz to 2000 Hz, 7 grms, 15 min/axis (x, y, and z axes)
ESD immunity	
• Direct discharge	6 kV per IEC 61000-4-2
• Air discharge	15 kV per IEC 61000-4-2

# Physical Dimensions

Table 2 shows the physical dimensions of the Keysight 86205B RF Bridge.

**Table 2** Physical dimensions

Weight	0.31 kg (0.68 lb)
Shipping weight	0.69 kg (1.52 lb)
Dimensions	Per Figure 2



Dimensions in millimeters

**Figure 2** Dimensions of Keysight 86205B RF Bridge

## **2 Environmental Specifications & Physical Dimensions**

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# **3**

## **Installation and Service**

Installation	16
Initial Inspection	16
Service Instructions	17
Adjustment	17
Repair	17
Maintenance	17

This chapter describes the installation and service instructions of the Keysight 86205B RF Bridge.

## Installation

### Initial Inspection

- 1 Unpack and inspect the shipping container and its contents thoroughly to ensure that nothing was damaged during shipment. If the shipping container or cushioning material is damaged, the contents should be checked both mechanically and electrically.
- 2 If the contents are incomplete, if there is mechanical damage or defect, or if the instrument does not pass the electrical performance test, contact the nearest Keysight Technologies Sales and Service office. Refer to the Service and Support information in the front matter of this manual. Keysight Technologies will arrange for repair or replacement of the damaged or defective equipment. Keep the shipping materials for the carrier's inspection.
- 3 If you are returning the instrument under warranty or for service, repackaging the instrument requires original shipping containers and materials or their equivalents. Keysight Technologies can provide packaging materials identical to the original materials. Refer to the Service and Support information in the front matter of this manual for the Keysight Technologies office nearest to you. Attach a tag indicating the type of service required, return address, model number, and serial number. Mark the container **FRAGILE** to insure careful handling. In any correspondence, refer to the instrument by model number and serial number.

## Service Instructions

### Adjustment

The Keysight 86205B RF Bridge does not have internal adjustments and should not be opened.

### Repair

The Keysight 86205B RF Bridge is not recommended for repair. In case repair services are required, please contact your nearest Keysight Sales and Service Center.

## Maintenance

The connectors, particularly the connector faces, must be kept clean. Keysight recommends that the connectors be periodically inspected and cleaned if necessary.

### **3 Installation and Service**

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