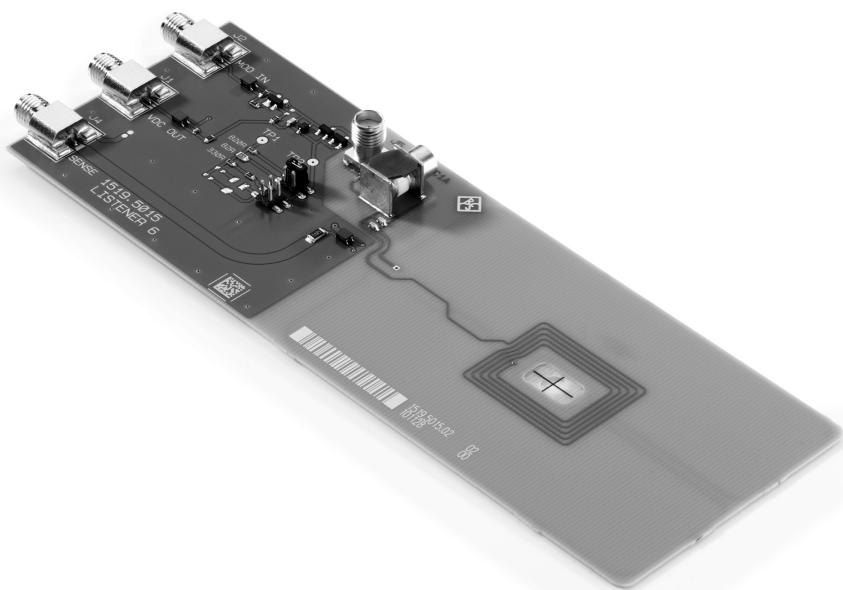


R&S® CSNFC-B8

NFC Forum Reference Equipment Specifications



CONTENTS

Definitions	3
NFC Forum reference equipment	4
NFC Forum – reference polling devices	4
<i>Poller-0</i>	4
<i>Poller-3</i>	4
<i>Poller-6</i>	4
NFC Forum – reference listening devices	5
<i>Listener-1</i>	5
<i>Listener-3</i>	5
<i>Listener-6</i>	5
8-shaped coil	6
Ordering information	7

Definitions

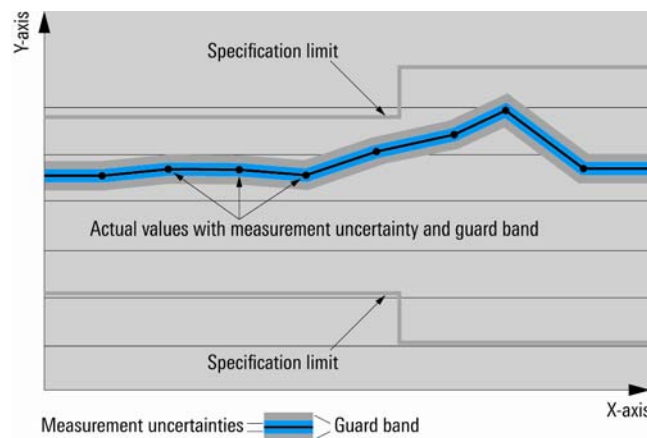
General

Product data applies under the following conditions:

- Three hours storage at ambient temperature followed by 30 minutes warm-up operation
- 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.



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 indicated as follows: "parameter: value".

Typical data as well as nominal and measured values are not warranted by Rohde & Schwarz.

NFC Forum reference equipment

NFC Forum reference equipment acts as polling or listening device according to the NFC Forum's NFC Analog Specification (ANALOG 1.0). Three NFC Forum reference listening devices and three NFC Forum reference polling devices with different antenna coil designs and sizes are defined in the NFC Analog Specification (ANALOG 1.0). The NFC Forum reference equipment is designed and manufactured on the basis of the NFC Analog Specification (ANALOG 1.0), Annex C, Design Information for NFC Forum Reference Equipment.

All poller and listener antennas can be tuned by trimmers using a network analyzer. This procedure is described in the NFC Analog Specification (ANALOG 1.0), Annex B4/B5. All antennas are factory pretuned.

NFC Forum – reference polling devices

Poller-0

Frequency range		13.55 MHz to 13.57 MHz 13.56 MHz (nom.)
Input impedance in free air		50 Ω
Max. input power		20 V (V_{pp}) into 50 Ω
Connectors	J1 – signal input	SMA female
	J2 – measurement output	SMA female
Operating temperature		+23 °C \pm 3 °C
Outer dimensions (PCB only)	W \times H \times D	150 mm \times 1.6 mm \times 90 mm (5.90 in \times 0.06 in \times 3.54 in)

Poller-3

Frequency range		13.55 MHz to 13.57 MHz 13.56 MHz (nom.)
Input impedance in free air		50 Ω
Max. input power		20 V (V_{pp}) into 50 Ω
Connectors	J1 – signal input	SMA female
	J2 – measurement output	SMA female
Operating temperature		+23 °C \pm 3 °C
Outer dimensions (PCB only)	W \times H \times D	150 mm \times 1.6 mm \times 54 mm (5.90 in \times 0.06 in \times 2.12 in)

Poller-6

Frequency range		13.55 MHz to 13.57 MHz 13.56 MHz (nom.)
Input impedance in free air		50 Ω
Max. input power		20 V (V_{pp}) into 50 Ω
Connectors	J1 – signal input	SMA female
	J2 – measurement output	SMA female
Operating temperature		+23 °C \pm 3 °C
Outer dimensions (PCB only)	W \times H \times D	150 mm \times 1.6 mm \times 54 mm (5.90 in \times 0.06 in \times 2.12 in)

NFC Forum – reference listening devices

Listener-1

Frequency range		13.55 MHz to 13.57 MHz, 13.56 MHz (nom.)
Input impedance in free air		50 Ω
Connectors	J1 – VCC (DC) out	SMA female
	J2 – modulator input	SMA female
	J4 – sense	SMA female
Operating temperature		+23 °C \pm 3 °C
Outer dimensions (PCB only)	W \times H \times D	154 mm \times 0.8 mm \times 54 mm (6.06 in \times 0.03 in \times 2.12 in)

Listener-3

Frequency range		13.55 MHz to 13.57 MHz, 13.56 MHz (nom.)
Input impedance in free air		50 Ω
Connectors	J1 – VCC (DC) out	SMA female
	J2 – modulator input	SMA female
	J4 – sense	SMA female
Operating temperature		+23 °C \pm 3 °C
Outer dimensions (PCB only)	W \times H \times D	154 mm \times 0.8 mm \times 54 mm (6.06 in \times 0.03 in \times 2.12 in)

Listener-6

Frequency range		13.55 MHz to 13.57 MHz, 13.56 MHz (nom.)
Input impedance in free air		50 Ω
Connectors	J1 – VCC (DC) out	SMA female
	J2 – modulator input	SMA female
	J4 – sense	SMA female
Operating temperature		+23 °C \pm 3 °C
Outer dimensions (PCB only)	W \times H \times D	154 mm \times 0.8 mm \times 54 mm (6.06 in \times 0.03 in \times 2.12 in)

8-shaped coil

Two 8-shaped coils based on the NFC Analog Specification (ANALOG 1.0), Annex D, are contained in the NFC Forum reference equipment.

Version 1		
Interface		designed for standard measurement probe of oscilloscope
Operating temperature		+23 °C ± 3 °C
Outer dimensions (PCB only)	W × H × D	47 mm × 0.8 mm × 47 mm (1.85 in × 0.03 in × 1.85 in)

Version 2		
Interface		cable clamp for 2 wires, max. 0.75 mm ²
Operating temperature		+23 °C ± 3 °C
Outer dimensions (PCB only)	W × H × D	47 mm × 0.8 mm × 47 mm (1.85 in × 0.03 in × 1.85 in)

Ordering information

Designation	Type	Order No.
NFC Forum Reference Equipment	R&S®CSNFC-B8	1519.5096.02

Service you can rely on

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

About Rohde & Schwarz

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

Environmental commitment

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

Certified Quality System
ISO 9001

Rohde & Schwarz GmbH & Co. KG

www.rohde-schwarz.com

Regional contact

- ▮ Europe, Africa, Middle East | +49 89 4129 12345
customersupport@rohde-schwarz.com
- ▮ North America | 1 888 TEST RSA (1 888 837 87 72)
customer.support@rsa.rohde-schwarz.com
- ▮ Latin America | +1 410 910 79 88
customersupport.la@rohde-schwarz.com
- ▮ Asia/Pacific | +65 65 13 04 88
customersupport.asia@rohde-schwarz.com
- ▮ China | +86 800 810 8228/+86 400 650 5896
customersupport.china@rohde-schwarz.com

R&S® is a registered trademark of Rohde & Schwarz GmbH & Co. KG
Trade names are trademarks of the owners | Printed in Germany (bb)
PD 3606.7818.22 | Version 01.00 | November 2012 | R&S®CSNFC-B8
Subject to change

© 2012 Rohde & Schwarz GmbH & Co. KG | 81671 München, Germany



3606781822