

Keysight N2823A and N5448B Coaxial Phase Matched Cables



User Guide

The Keysight N5448B and N2823A consist of a pair of phase matched flexible coaxial cables with 2.92 mm male connectors on both ends, providing extended cable length to the compatible Keysight test fixtures, InfiniiMax 2.92 mm probe heads and other RF/microwave test connections. These cables allow flexibility, convenience and improved usability to the test setup.

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This manual provides these notices:



CAUTION

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Symbol	Description
	This symbol indicates the Environmental Protection Use Period (EUP) for the product's toxic substances for the China RoHS requirements.
	<p>This product complies with the WEEE Directive (2002/96/EC) marking requirements. The affixed label indicates that you must not discard this electrical/ electronic product in domestic household waste.</p> <p>Product Category: With reference to the equipment types in WEEE Directive Annex I, this product is classed as a "Monitoring and Control instrumentation product.</p> <p>Do not dispose in household waste.</p> <p>To return unwanted products, contact your local Keysight office, or see www.keysight.com/environment/product/ for more information.</p>

Cables Compatibility

The N2823A 39 inches (1 m) long cable is compatible with the following Keysight test fixtures:

- N7015A Type-C high-speed plug test fixture
- N7016A Type-C low-speed signal access and control fixture.

The N5448B 10 inches (25cm) long cable is compatible with the following Keysight probe head:

- N5444A InfiniiMax III 2.92mm differential probe head

These cables can also be used for any RF/microwave applications that require phase-matched 2.92mm cable connections with excellent measurement repeatability.

NOTE

To adapt the 2.92mm male connectors of the N2823A/N5448B cables and the N7015A test fixture, use the Keysight 3.5mm female-to-3.5mm female adapter (part number 5061-5311).



This adapter is also recommended to connect the 2.92mm male connector of the N2823A/N5448B cables to the channel input of an Infiniium V Series, Z Series, or 90000X oscilloscope.

N2823A Cable Dimensions



Side View of the N2823A Cable



2.92 mm Male Connectors at both ends
of the cables

N5448B Cable Dimensions



Side View of the N5448B Cable



2.92 mm Male Connectors at both ends
of the cables

Cable Features

- Low signal loss
- Broad frequency range
- 2.92mm (male) to 2.92mm (male) connection
- Improved usability by adding extra length to the test fixtures and probe heads

- Tightly matched phase error
- Up to 40GHz bandwidth
- Strain relieved

Cables Performance Specifications

Specification	Value	
	For N2823A	For N5448B
Impedance	50 ±1 Ohm	50 ±1 Ohm
Capacitance	88pF/m *	88pF/m *
Band width	Up to 40GHz	Up to 40GHz
Insertion loss (Maximum)	4.2 dB	1.3 dB
	(Refer to Figure 1 and Figure 2 for Insertion Loss plots.)	
VSWR (Maximum)	1:1.433 (0.2-40GHz)	1:1.433 (0.2-40GHz)
Input Voltage (Maximum)	1400 V *	1400 V *
Frequency Range	0.2 ~ 40.0 GHz	0.2 ~ 40.0 GHz
Skew	4360 ±5 ps 5.0(p-p) psec (max) for each cable pair	1090 ±5 ps 5.0(p-p) psec (max) for each cable pair
Return Loss (Minimum)	30 dB (0.2-1.7GHz) 25 dB (1.7-4GHz) 22 dB (4-10GHz) 20 dB (10-16GHz) 18 dB (16-32GHz) 15 dB (32-40GHz)	30 dB (0.2-1.7GHz) 25 dB (1.7-4GHz) 22 dB (4-10GHz) 20 dB (10-16GHz) 18 dB (16-32GHz) 15 dB (32-40GHz)

* - Indicates a Reference value.

Insertion Loss Plots for Cables

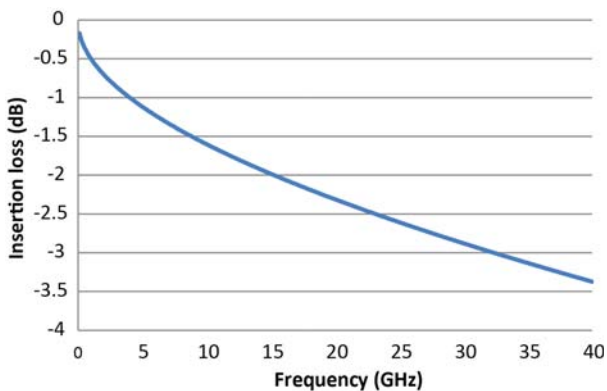


Figure 1 Insertion Loss Plot for N2823A Cable

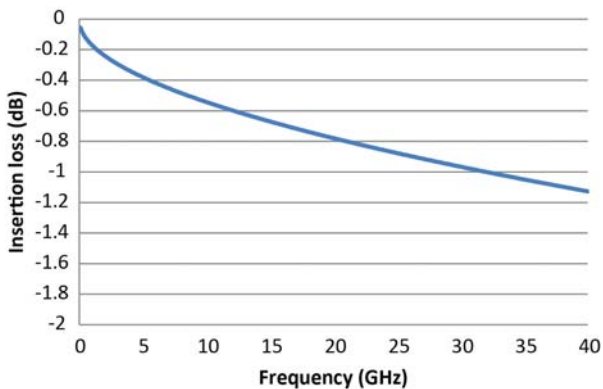
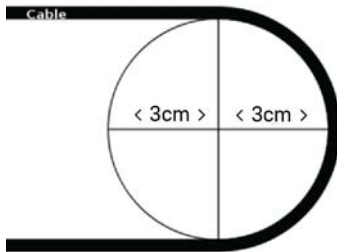


Figure 2 Insertion Loss Plot for N5448B Cable

Handling Cables

CAUTION

The maximum bend radius for the N2823A and N5448B coaxial cable pairs is 30mm. Bending these cables at too tight a radius or twisting the cables can cause damage, reduce performance, and impact the precision of these cables. Also, ensure that the plastic caps that are provided with these cables are installed when the cables are not in use.

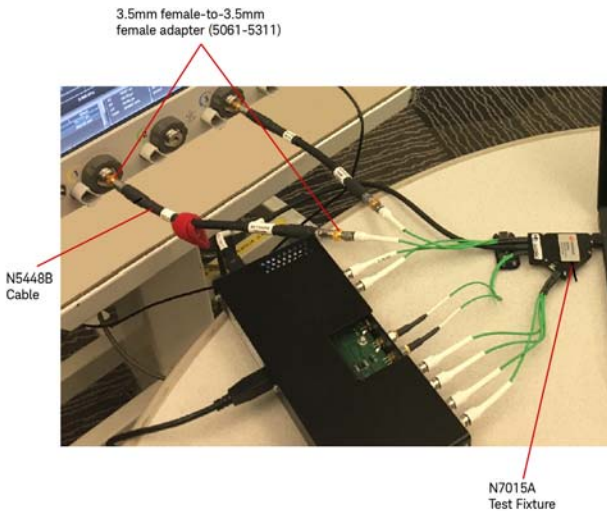


Usage Examples

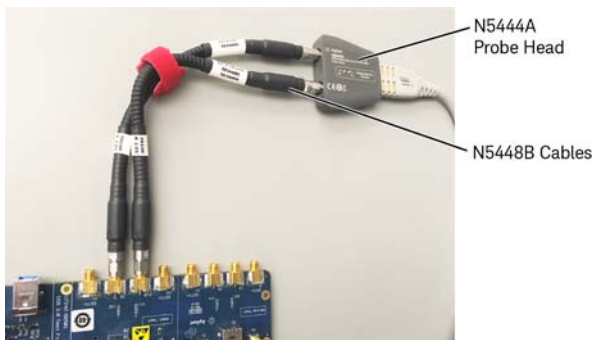
The following are some examples of the usage of the N2823A / N5448B cables with Keysight test fixtures and probe heads.

Example 1

In this example, the N5448B cables are used to extend the reach of the matched cable pairs for the differential high speed lines of the N7015A Type-C High Speed Test Fixture to facilitate their connectivity with the Infiniium Oscilloscope channels.



Example 2



Downloading the S-parameter File

The N7015A high speed test fixture has four high speed differential paths from its 2.92 mm connectors to its type C plug. In order to correct for the signal loss of the N2823A coaxial phase-matched cable pair when used with the N7015A test fixture in the de-embedding software such as InfiniiSim, download the S-parameter file from www.keysight.com/find/N2823A. On this product page, click the **Technical Support** link and then click the **Drivers, Firmware, & Software** tab.