RLB Series
Return Loss Bridges for UTP and Balanced Systems

BETA TRANSFORMER TECHNOLOGY CORPORATION
A subsidiary of Data Device Corporation

Data Sheet

In communication circuits, maximum power transfer occurs when source and load impedance are matched. By relating it to a reference source impedance, the magnitude of a load impedance may, meaningfully, be expressed as "return loss."

North Hills Series RLB Return Loss Bridges interface with network analyzers to measure return loss of UTP cable and other balanced systems. There are models for balanced reference impedances from 100 to 150 ohm for either 50 or 75 ohm network analyzers, covering frequency ranges from 10kHz to 300MHz.

There is also a companion **RLC Series of Return Loss Bridges** for 50, 75, and 93 ohm coax reference impedances.

Application Note 155 explains the meaning of return loss and includes formulas and tables relating impedance, return loss, reflection factor and transmission losses. **Application Note 157** is a tutorial on return loss bridges.

The North Hills RLB Series Return Loss Bridge

Features:

- Excellent Bridge directivity
- Frequency range 0.01 to 300 MHz
- 100 to 150 ohm balanced impedances available

Benefits:

- High-accuracy balanced impedance measurements.
- Easy interface with 50Ω impedance analyzers or LCR meters

Test Procedure:

Step 1: Plug the bridge input directly into the Network Analyzer Output.

Step 2: Apply the bridge reflected signal output to the Network Analyzer input through a cable of impedance equal to that of the Network Analyzer.

Step 3: Set the Network Analyzer display to 5 dB/div with the zero line on top. With test port open, normalize display to 0 dB.

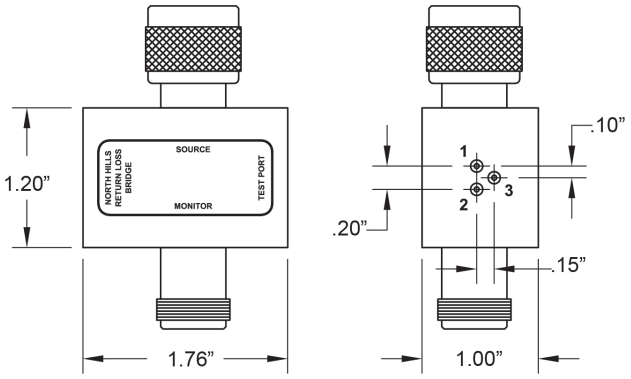
Step 4: Terminate the test port with the test load and measure return loss directly.

North Hills™

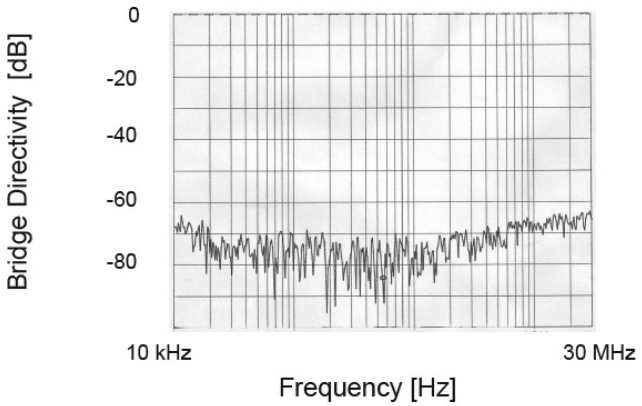
For more information: www.BTTC-Beta.com/RLBSeries

Technical Drawings

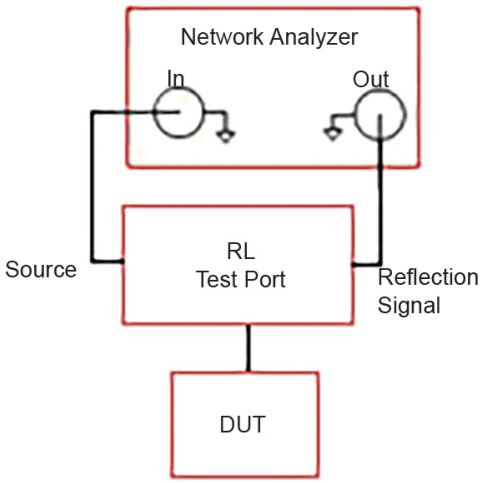
Mechanical Drawing



Typical Characteristics - Model 511RLB



Block Diagram



Specifications

Materials (unless otherwise specified)	
Parameter	**Value**
Connectors:	N Type
Socket Terminals	For ø.040 inch (18 GA.) PIN
Finish	Chemical Film Treatment IAW MIL-C-5541, Class 3 Yellow Alodine
Weight	110 grams (3.9 oz) Typical

Ordering Information

Coax Impedance OHM	Network Analyzers	
	50 ohm Part #	75 ohm part #
10kHz - 30MHZ		
100	511RLB	7111RLB
110	521RLB	7211RLB
120	5311RLB	7311RLB
135	5411RLB	7411RLB
150	5511RLB	7511RLB
.1MHz - 000MHZ		
100	5121RLB	7121RLB
110	5221RLB	7221RLB
120	5321RLB	7321RLB
135	5421RLB	7421RLB
150	5521RLB	7521RLB
1MHz - 300MHZ		
100	5131RLB	7131RLB
110	5231RLB	7231RLB
120	5331RLB	7331RLB
135	5431RLB	7431RLB
150	5531RLB	7531RLB

Specifications subject to change without notice.

Certified System SAI GLOBAL AS9100 Aerospace
Certified System SAI GLOBAL ISO 9001 Quality

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