

RLT Series

Return Loss Bridges for Twinax Networks



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 RLT Return Loss Bridges interface with network analyzers to measure return loss of twinaxial networks. 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 and a **RLB Series** for twisted pair (UTP) and other balanced systems.

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.

Features:

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

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.

Benefits:

- Easy interface with 50 Ω or 75 Ω impedance network analyzers
- Excellent directivity across a broad frequency range

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.

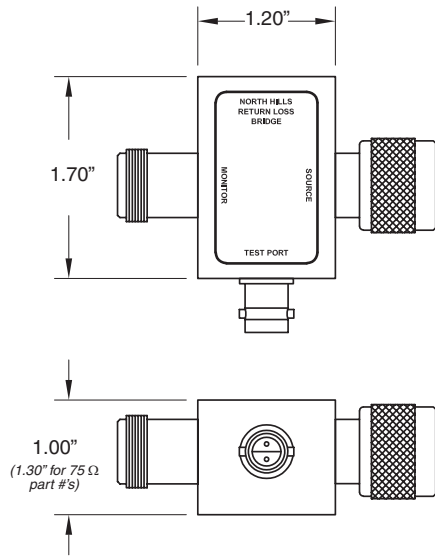


**Patent Pending*

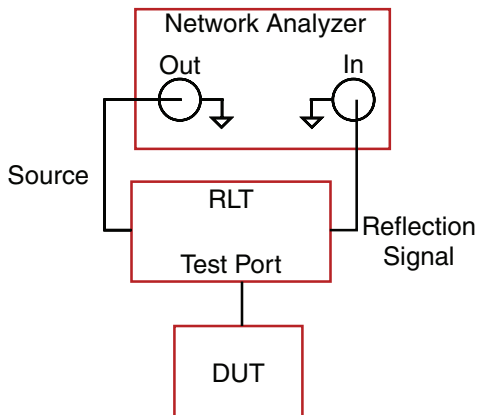
The North Hills RLT Series Return Loss Bridge

Technical Drawings

Mechanical Drawing



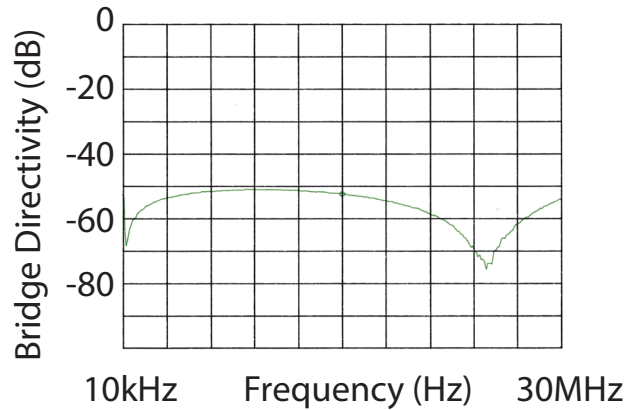
Return Loss Bridge Measurement Circuit



Specifications

Materials (unless otherwise specified)	
Parameter	Value
Connectors:	N Type
Test Port	Twinax BNC
Case/Cover Material	Aluminum Alloy 6061-T6
Weight	110 grams (3.9 oz) Typical

Typical Characteristics - Model 51100RLT



Ordering Information

Twinax Impedance OHM	Network Analyzers	
	50 ohm Part #	75 ohm part #
10kHz - 30MHz		
.1MkHz - 100MHz		
1MHz - 30MHz		

Specifications subject to change without notice.



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