

# User's Guide

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## Agilent Technologies PSA Series Spectrum Analyzers Option 015 6 GHz Return Loss Measurement Accessory Kit



Agilent Part Number E4440-90615 Supercedes E4440-90295  
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E4440-90615

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## General Information

### Introduction

Option 015 Accessory Kit has been assembled to ensure that you have the necessary accessories to set up return loss and loss/gain measurements. These accessories can be used to make measurements with the PSA using option 215. The option 215 software allows you to synchronize the tracking between an external source and the spectrum analyzer.

Because your device under test and system configuration are unique, you must provide any additional connectors, adaptors, and cables to make the final connections to your equipment. This document describes common measurement and normalization configurations for these measurements. For more information about measurements and normalization, refer to the *External Source Control Personality Guide PSA Series Spectrum Analyzers Option 215*.

### Option 015 Accessory Kit Contents

The Option 015 Accessory Kit contains the devices listed below.

Description	Specifications	Quantity	Part Number
RF Bridge	300 kHz to 6 GHz Type N 50 ohm	1	86205A
Power Divider	DC to 18 GHz Type N 50 ohm	1	11636A
Coaxial Termination	DC to 18 GHz Type N(m) 50 ohm	1	909A Option 012
Coaxial Short	DC to 18 GHz Type N(m)	1	11512A
Coaxial Cable	16 inches Type N-N 50 ohm	2	8121-0101
6 dB Coaxial Attenuator	DC to 18 GHz Type N(m) 50 ohm	2	0955-2031

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## Return Loss Measurement Setup

### Purpose

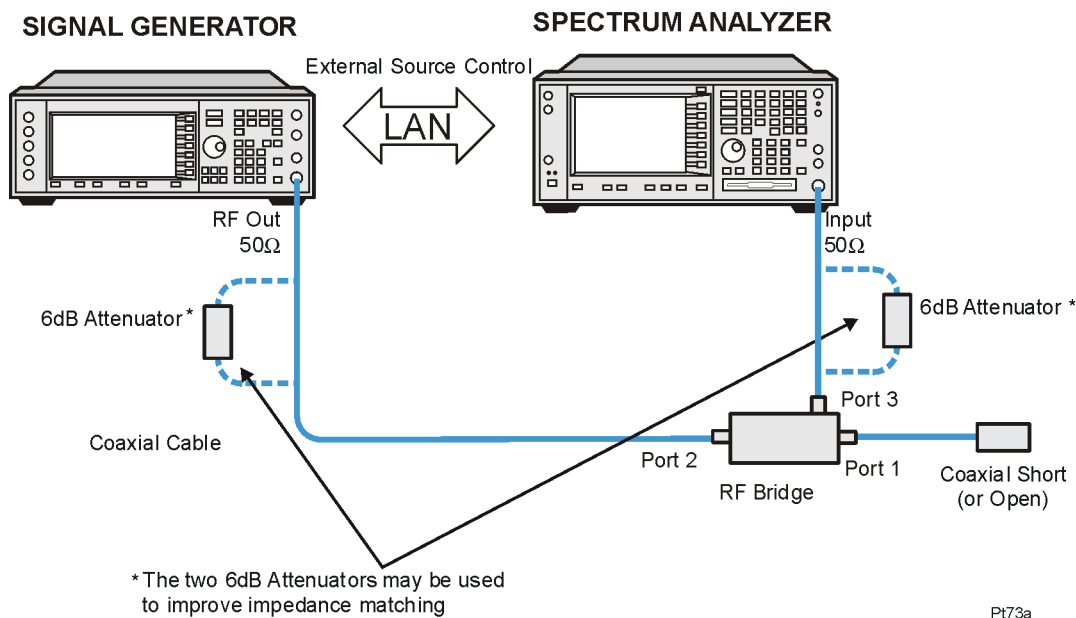
To make return loss measurements using the Option 015 Accessory Kit, set up the equipment as shown below.

### Measurement Normalization Setup

Connect the signal generator output, RF bridge, coaxial short (or open), 6 dB attenuator (optional), and the spectrum analyzer RF input as shown in Figure 1. Leave port 1 of the RF bridge open for the initial setup.

For more information on measurement normalization, refer to the *External Source Control Personality Guide, PSA Series Spectrum Analyzers Option 215*.

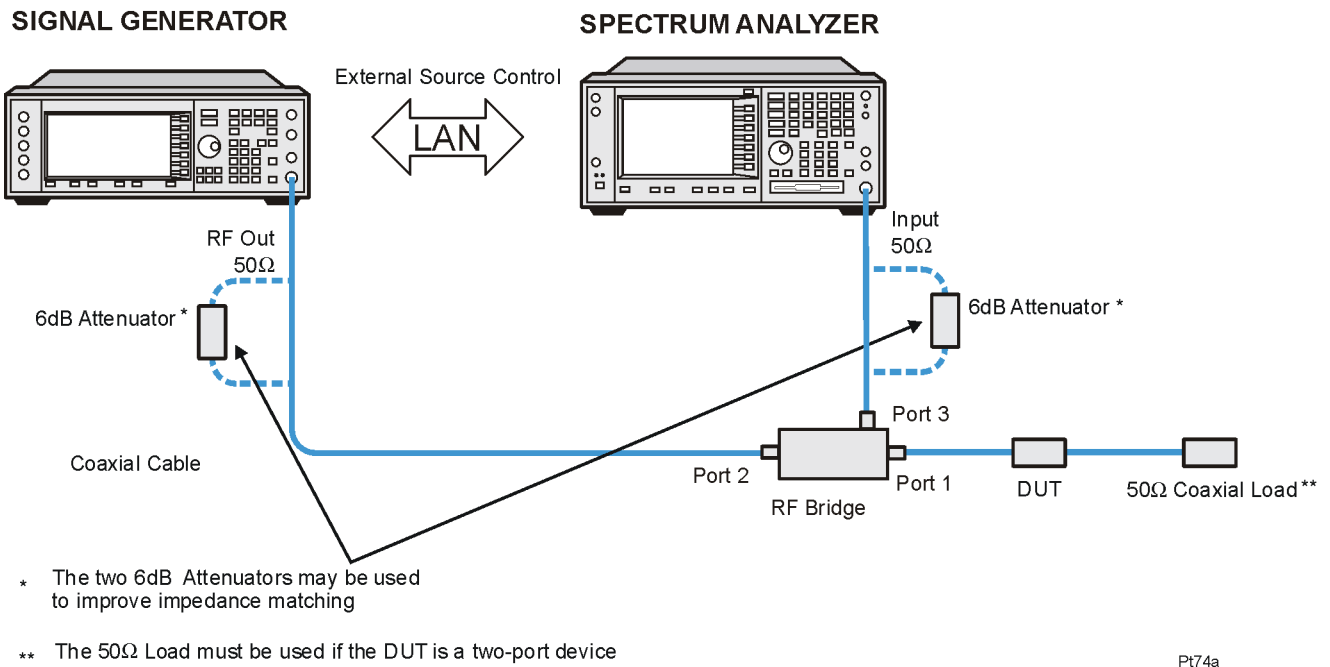
**Figure 1** Normalizing the Measurement



## Measurement Setup

Connect the signal generator output, RF bridge, device under test (DUT), 50 ohm load (if the device is a two-port device), 6 dB attenuator (optional), and the spectrum analyzer RF input as shown in Figure 2. For more measurement information, refer to the *External Source Control Personality Guide, PSA Series Spectrum Analyzers Option 215*.

**Figure 2** Measurement Setup



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## Loss/Gain Measurement Setup

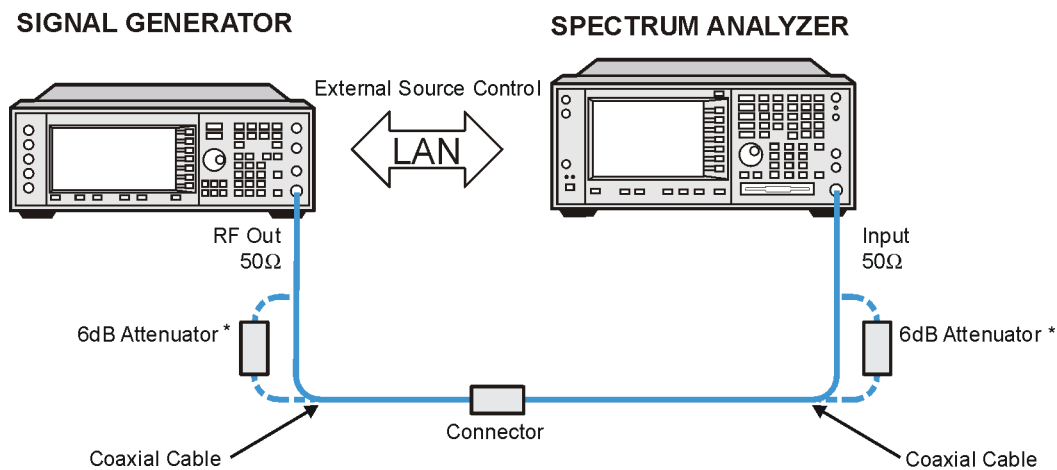
### Purpose

To make loss/gain measurements using the Option 015 Accessory Kit, set up the equipment as shown below.

### Measurement Normalization Setup

Connect the signal generator output, 6 dB attenuator (optional), and the spectrum analyzer RF input as shown in Figure 3. For more information on measurement normalization, refer to the *External Source Control Personality Guide, PSA Series Spectrum Analyzers Option 215*.

**Figure 3** Normalizing the Measurement



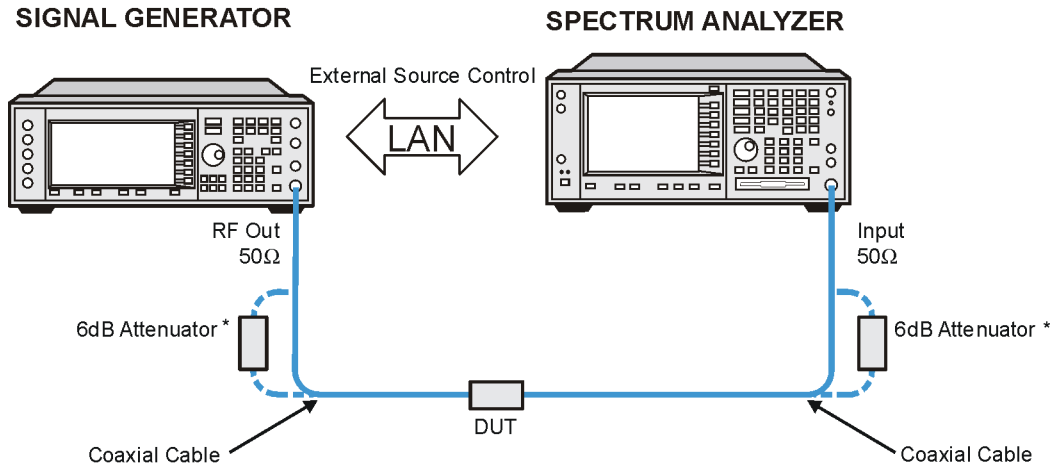
\* The two 6dB Attenuators may be used to improve impedance matching

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## Measurement Setup

Connect the signal generator output, device under test, 6 dB attenuator (optional), and the spectrum analyzer RF input as shown in Figure 4. For more measurement information, refer to the *External Source Control Personality Guide, PSA Series Spectrum Analyzers Option 215*.

**Figure 4** Measurement Setup



\* The two 6dB Attenuators may be used to improve impedance matching

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