**NATIONAL
INSTRUMENTS**®
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Installation Guide

How to Install Ferrite Noise-Suppression Devices

This guide describes how to install a simple, snap-on noise-suppression device, called a ferrite, onto your interface cables to attain a desired level of electromagnetic compatibility (EMC).

Introduction

To ensure that your National Instruments hardware meets all EMC standards applicable to your country, you need to install ferrites onto the external cables of some instrumentation systems. Ferrites reduce unwanted electromagnetic noise your National Instruments hardware emits or receives.

Ferrites have little or no effect upon the operation of your National Instruments hardware. However, failing to use them as directed in this guide could be a violation of national EMC standards and/or laws, such as those of the Federal Communications Commission (USA), Department of Communications (Industry Canada), CENELEC (European Union), or Voluntary Control Council for Interference (Japan).

Every National Instruments hardware product includes a *Declaration of Conformity* that lists the equipment or steps required for the product to conform to the EMC standards of the European Union, known as the CE mark. These requirements usually apply to other national standards as well. If you are using more than one piece of National Instruments hardware, check the *Declaration of Conformity* for each piece to determine which cable requires a ferrite.

What You Need to Get Started

❏ Your National Instruments hardware, installed

❏ The cables indicated on the *Declaration of Conformity* for your National Instruments hardware

❏ The ferrite or ferrites appropriate for your system configuration

Ferrite Installation

Your National Instruments hardware should already be installed and the external cables connected to it according to the instructions in your hardware installation guide, getting started manual, or user manual. Power to the National Instruments hardware should be *off* while installing ferrites on your external cables.

To install the ferrite, snap it closed as shown in Figure 1 around your interface cable as close as possible to where the interface cable plugs into the hardware. Placing the ferrite elsewhere on the cable noticeably impairs its effectiveness.
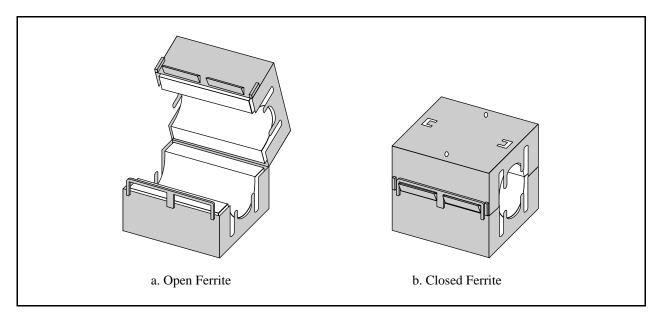

a. Open Ferrite   b. Closed Ferrite

Figure 1. Snapping the Ferrite Closed

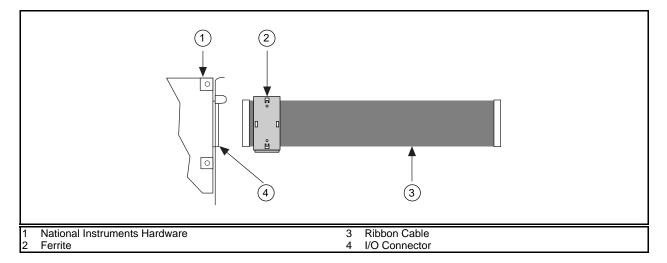Refer to the following figures for examples of how to install ferrites on various types of cables.

| 1 | National Instruments Hardware | 3 | Ribbon Cable |
| 2 | Ferrite | 4 | I/O Connector |

Figure 2. Ferrite Installation for an Instrumentation System with a Ribbon Cable

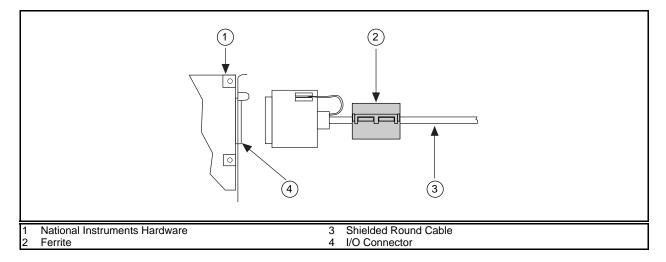|			
1	National Instruments Hardware	3	Shielded Round Cable
2	Ferrite	4	I/O Connector

Figure 3. Ferrite Installation for an Instrumentation System with a Shielded Round Cable

You would install the ferrite, as shown in Figure 3, onto various types of external cables, such as the VXIpc-850 external SCSI and Ethernet cables, the serial cable for the AT Serial board, or the GPIB-ENET 10BaseT cable.

Figure 4 shows an example of a configuration that requires ferrites on more than one cable connected to a single piece of hardware.

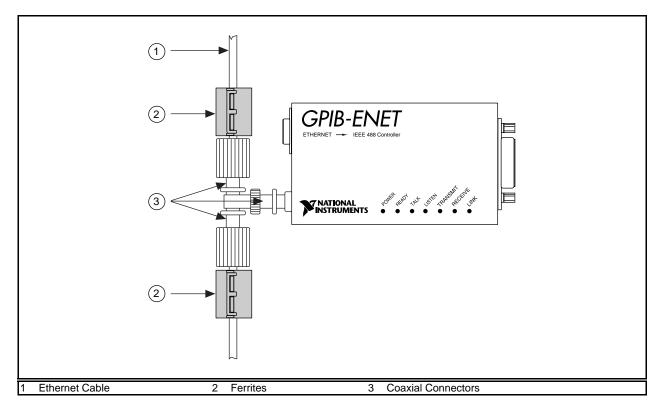|					
1	Ethernet Cable	2	Ferrites	3	Coaxial Connectors

Figure 4. Ferrites Installed on the GPIB-ENET Ethernet Cables