GETTING STARTED GUIDE

NI ELVIS RIO Control Module

This document describes how to begin using the NI ELVIS RIO Control Module.

Safety Guidelines

Operate the NI ELVIS RIO CM only as described in the user documentation.

**Caution** Do not operate the NI ELVIS RIO CM in a manner not specified in this document. Product misuse can result in a hazard. You can compromise the safety protection built into the product if the product is damaged in any way. If the product is damaged, return it to NI for repair.

Electromagnetic Compatibility Guidelines

This product was tested and complies with the regulatory requirements and limits for electromagnetic compatibility (EMC) stated in the product specifications. These requirements and limits provide reasonable protection against harmful interference when the product is operated in the intended operational electromagnetic environment.

This product is intended for use in industrial locations. However, harmful interference may occur in some installations, when the product is connected to a peripheral device or test object,
or if the product is used in residential or commercial areas. To minimize interference with radio and television reception and prevent unacceptable performance degradation, install and use this product in strict accordance with the instructions in the product documentation.

Furthermore, any changes or modifications to the product not expressly approved by National Instruments could void your authority to operate it under your local regulatory rules.

**Caution** To ensure the specified EMC performance, operate this product only with shielded cables and accessories.

**Caution** To ensure the specified EMC performance, the length of the cable connected to the USB device port must be no longer than 3m (10ft) and cable connected to USB host port must be no longer than 30 m (100 ft).

**Caution** To ensure the specified EMC performance, only use direct board-to-board connections to connect myRIO Expansion Port (MXP) connectors.

### Preparing the Environment

**Caution** Clean the NI ELVIS RIO CM with a soft, nonmetallic brush. Make sure that the device is completely dry and free from contaminants before returning it to service.

Ensure that the environment in which you are using the NI ELVIS RIO CM meets the following specifications.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature</td>
<td>10 °C to 35 °C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-20 °C to 70 °C</td>
</tr>
<tr>
<td>Operating humidity (IEC 60068-2-78)</td>
<td>10% RH to 90% RH, noncondensing</td>
</tr>
<tr>
<td>Storage humidity (IEC 60068-2-78)</td>
<td>10% RH to 90% RH, noncondensing</td>
</tr>
<tr>
<td>Maximum altitude</td>
<td>2,000 m</td>
</tr>
<tr>
<td>Pollution Degree (IEC 60664)</td>
<td>2</td>
</tr>
</tbody>
</table>

Indoor use only.

**Note** Refer to the *NI ELVIS RIO Control Module Specifications* on [ni.com/manuals](http://ni.com/manuals) for complete specifications.

### Unpacking the Kit

**Caution** To prevent electrostatic discharge (ESD) from damaging the device, ground yourself using a grounding strap or by holding a grounded object, such as your computer chassis.
1. Touch the antistatic package to a metal part of the computer chassis.

2. Remove the device from the package and inspect the device for loose components or any other sign of damage.

   **Caution** Never touch the exposed pins of connectors.

   **Note** Do not install a device if it appears damaged in any way.

3. Unpack any other items and documentation from the kit.

   Store the device in the antistatic package when the device is not in use.

## Verifying the Kit Contents

Verify that the following items are included in the NI ELVIS RIO CM kit.

![Figure 1. NI ELVIS RIO CM Kit Contents](image)

1. NI ELVIS RIO CM Device
2. NI LabVIEW 2016 ELVIS RIO Control Software Bundle
3. Getting Started Guide
4. M4 Mounting Screw (x4)
5. USB 2.0 A-to-B (Angled) Cable

## Installing the NI ELVIS RIO CM

**What to Use**

- **Hardware**
  - NI ELVIS II Series Workstation
  - NI ELVIS II Series AC/DC power supply
  - USB 2.0 A-to-B (Angled) Cable
  - M4 mounting screws
  - Computer

- **Software**
  - NI LabVIEW 2016 ELVIS RIO Control Software Bundle

- **Tools**
  - Screwdriver, Phillips #1
What to Do

**Note** Refer to the *NI ELVIS RIO Control Module User Manual* and the *NI ELVIS II Series User Manual* on [ni.com/manuals](http://ni.com/manuals) to identify ports and connectors.

1. Position the NI ELVIS RIO CM on the NI ELVIS II Series Workstation.

2. Slide the Workstation Interface Connector of the NI ELVIS RIO CM into the Prototyping Board Connector on the workstation and ease it into place.

3. Secure the NI ELVIS RIO CM to the workstation using two M4 mounting screws.
Powering Up the NI ELVIS RIO CM

1. Install required software from the NI LabVIEW 2016 ELVIS RIO Control Software Bundle DVD.

2. Connect the NI ELVIS RIO CM to the NI ELVIS II Series Workstation. Refer to the Install the NI ELVIS RIO CM section for more information.

3. Connect the USB Device Port on the NI ELVIS RIO CM to the computer with the USB cable.

4. Turn on the Workstation Power Switch to power up the NI ELVIS II Series Workstation.
5. Turn on the Prototyping Board Power Switch to power up the NI ELVIS RIO CM.
6. Launch the Getting Started Wizard from the USB Monitor.

   **Note** The Getting Started Wizard can also be launched through the LabVIEW Getting Started Window or LabVIEW Project right-click menu.

   **Tip** The USB Monitor pop-up window appears once the NI ELVIS RIO CM is connected to the computer and powered up.

7. Test the onboard devices with the test panel at the end of the Getting Started Wizard.

**Connecting MXP Plants to the NI ELVIS RIO CM**

**Caution** To prevent damage to the MXP plant and MXP connectors, secure the NI ELVIS RIO CM to the NI ELVIS II Series Workstation using two M4 mounting screws.

**Caution** To prevent damage to the NI ELVIS RIO CM and MXP plant, ensure that the NI ELVIS RIO CM power is turned off before connecting the MXP plant.

1. Position the opening in the MXP plant over the prototyping board mounting bracket on the NI ELVIS II Series Workstation.

   **Note** For smaller MXP plants that are clear of the prototyping board mounting bracket, position the MXP plant so that the MXP connectors are aligned.

2. Slide the MXP plant into the MXP connectors on the NI ELVIS RIO CM.
3. Secure the MXP plant to the NI ELVIS RIO CM using two M4 mounting screws.
Note  For information about MXP plant design requirements, visit ni.com/info and enter the Info Code mxpplanttemplates.
Where to Go Next

EXPLORE
- Learn the application development environment (ADE) for your application.
- Learn LabVIEW Basics

LEARN
- Learn about hardware features or review device specifications.
- NI ELVIS RIO Control Module Specifications
- NI ELVIS RIO Control Module User Manual

CREATE
- Create custom applications with an application programming interface (API).
- NI ELVIS RIO Control Module Examples*
- NI ELVIS RIO Control Module Setup*
- NI ELVIS RIO Control Toolkit Tutorial*

DISCOVER
- Learn more about your products through ni.com.
- Support: ni.com/support
- Software Support: ni.com/info ex8g43
- Services: ni.com/services
- NI Community: ni.com/community

*This item is also installed with the NI ELVIS RIO Control Toolkit

Worldwide Support and Services

The NI website is your complete resource for technical support. At ni.com/support, you have access to everything from troubleshooting and application development self-help resources to email and phone assistance from NI Application Engineers.

Visit ni.com/services for NI Factory Installation Services, repairs, extended warranty, and other services.

Visit ni.com/register to register your NI product. Product registration facilitates technical support and ensures that you receive important information updates from NI.

NI corporate headquarters is located at 11500 North Mopac Expressway, Austin, Texas, 78759-3504. NI also has offices located around the world. For telephone support in the United States, create your service request at ni.com/support or dial 1 866 ASK MYNI (275 6964). For telephone support outside the United States, visit the Worldwide Offices section of ni.com/niglobal to access the branch office websites, which provide up-to-date contact information, support phone numbers, email addresses, and current events.