NI Motion Assistant™

Version 1.1

National Instruments Motion Assistant is a stand-alone prototyping tool for quickly developing motion applications. Motion Assistant allows you to graphically construct and preview motion applications without writing any code. When you have completed a prototype in Motion Assistant, you can generate LabVIEW code and code recipes from the prototype for further application development using NI-Motion.

Introduction

National Instruments Motion Assistant is the graphical prototyping tool for motion control applications. Motion Assistant contains the following features: simple and complex moves, graphical prototyping, and code creation.

Simple and Complex Moves

Motion Assistant offers several move types that represent the most often used moves in motion control. Supported moves include the following:

- Reference moves include home and index moves.

- Straight-line moves create simple point-to-point movement for basic motion applications.

- Arc moves enable circular, three-dimensional, and helical arc types.

- Contouring moves allow any trajectory specified by a series of coordinates.

Graphical Prototyping

Motion Assistant is a fully graphical interface that allows you to prototype a motion application by creating a series of moves. The position, velocity, and acceleration of the moves are all graphed and editable in two and three dimensions.

Code Creation

When you are finished creating the prototype of the motion control application, you can use the Motion Assistant code creation feature to export LabVIEW code for completing the application in LabVIEW or code recipes to follow for coding the application in a text language like C, C++, or Visual Basic.

Motion Assistant also creates placeholders in the LabVIEW code or code recipes for non-motion code, such as data or image acquisition, in any location you specify.

Changes and Improvements

Motion Assistant now supports the digital output and position compare output features that are available on NI motion controllers. These features are designed to be used with motion control to synchronize or coordinate external processes with moves.

- The digital output feature allows you to write to an ancillary digital output line on the motion controller under the following move conditions:
  - Before Move Completes
  - After Move Completes
  - After Blend Completes
- The position compare output feature allows you to write to the position compare output lines on the motion controller at a specified position in the move. If you are using a 735x motion controller, you can configure multiple or periodic position compare outputs. Both options add multiple position compare outputs to a single move.

Hardware Support

Motion Assistant is compatible with NI-Motion 5.1.1 and later. To create LabVIEW code from a Motion Assistant prototype, you must have LabVIEW 6.1 or later installed.

Motion Assistant requires that either the actual controller or the virtual representation of one of the following motion controllers be installed in the computer:

- 735x—All Motion Assistant features are available for this family of controllers.
- 7344—All Motion Assistant features are available for this controller, excluding multiple and periodic position compare outputs.

- 7340—All Motion Assistant features are available for this controller, excluding multiple and periodic position compare outputs.

- 733*x*—Motion Assistant reference and straight-line move features are available for this family of controllers, excluding multiple and periodic position compare outputs.

- 7342—Motion Assistant reference and straight-line move features are available for this controller, excluding multiple and periodic position compare outputs.

Using Motion Assistant without Hardware

If you do not have one of the listed motion controllers, you can use a virtual motion controller in Measurement & Automation Explorer (MAX) to preview the functionality of Motion Assistant. Follow the instructions in the *Motion Assistant Help* to install a virtual motion controller.

Note You must have NI-Motion 5.2 or later installed to use a virtual motion controller.

Installation

Note You must install the NI-Motion driver software before installing Motion Assistant.

Complete the following steps to install Motion Assistant:

1. Insert the Motion Assistant CD into the CD-ROM drive. The Motion Assistant installation screen launches automatically.

2. If you do not have NI-Motion 5.1.1 or later installed, click **NI-Motion 6.0 Installation** to install NI-Motion and update any previous version of the driver software.

3. Click **Motion Assistant 1.1 Installation** to install Motion Assistant.

4. If you want to install virtual motion controllers, click **Create Virtual Motion Controllers**.

5. Refer to the ReadMe.txt file for last-minute information not included in this document.

Note Visit ni.com/motion for Motion Assistant updates.

Licensing Motion Assistant

Complete the following steps to activate the full version of Motion Assistant:

1. Select **Start»Programs»National Instruments» NI License Manager** to launch the National Instruments License Manager utility.

2. Expand the **Software Licenses** category. Expand the tree items until **NIMotion** appears in the list.

3. Expand **NIMotion**, right-click **Motion Assistant**, and click **Activate License**.

4. Follow the on-screen instructions to activate Motion Assistant.

5. Use the serial number included with the copy of Motion Assistant to obtain the key code.

Note Do not lose the key code. It is required for activating your licensed copy of Motion Assistant. National Instruments recommends you make a backup copy of the key code and store it in a secure location.

Note You must activate the license for Motion Assistant even if you previously had a licensed version.

Using the Online Manuals

The Motion Assistant software documentation is installed as a compiled HTML help file and is embedded into the application for your convenience. These release notes also are installed as an Adobe Portable Document File (PDF).

To navigate PDF documents, click any entry in the table of contents to jump directly to the corresponding manual page. Click the bookmarks in the left margin of the page to display major sections within each document.

Note When you choose the **View»Go To Page** option or are printing pages in a PDF document, you must use the page numbers in the lower left corner of the Acrobat window instead of the number displayed in the bottom center of each manual page or listed in the contents and index. Acrobat assigns consecutive numbers to each page throughout the document and displays the page number. The numbers may not match those shown at the bottom center of each manual page.