

NI Motion Assistant™ Release Notes

This document contains installation and programming considerations, system requirements, licensing information, a list of changes in this version of NI Motion Assistant, and a list of NI Motion Assistant known issues.

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General Information

National Instruments Motion Assistant is a stand-alone prototyping tool for quickly developing motion applications. NI Motion Assistant allows you to graphically construct and preview motion applications without writing any code. When you have completed a prototype in NI Motion Assistant, you can generate LabVIEW or C code for further application development using NI-Motion. You also can generate code recipes for coding the application in a text-based language, such as Microsoft Visual Basic.

NI Motion Assistant includes the following features:

- **Simple and complex moves**—NI Motion Assistant offers several move types that represent the most often used moves in motion control:
 - Reference moves include moves to find home, index, forward limit, reverse limit, and center.
 - 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 points.
 - CAD moves create a move profile based on an imported CAD file.
- **Graphical prototyping**—NI Motion Assistant provides 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 graphed and editable in two and three dimensions.

NI Motion Assistant provides the full function set implementations for LabVIEW, LabWindows™/CVI™, C, and Visual Basic. The NI Motion Assistant software also provides example programs for LabVIEW, C, or Visual Basic to demonstrate the NI Motion Assistant application programming interface (API) functionality.
- **Code creation**—When you are finished creating a prototype of your motion control application, you can use the NI Motion Assistant code creation feature to export LabVIEW or C code for completing the application with NI-Motion. You also can generate code recipes to follow for coding the application in a text language, such as Microsoft Visual Basic.

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

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Installation and Upgrade Information

Note: If you already have a registered version of NI Motion Assistant 1.3 or earlier, you can purchase an upgrade to NI Motion Assistant 2.3.1 using National Instruments part number 850553C-01. Registered NI Motion Assistant 2.x users can upgrade to NI Motion Assistant 2.3.1 for free.

Installation

You must install the NI-Motion driver software before installing NI Motion Assistant. To install NI Motion Assistant, insert the NI Motion Assistant CD into the CD-ROM drive. The NI Motion Assistant installation screen launches automatically. Select the appropriate option depending on whether you want to install NI Motion Assistant, review the release notes, or exit the

installation program.

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

Licensing NI Motion Assistant

At the end of the NI Motion Assistant installation process, a licensing wizard appears. Follow the onscreen instructions to activate the license for NI Motion Assistant.

Refer to the *Activating Your Software* topic in the *NI Motion Assistant Help* for detailed information about activation.

Note You are required to activate the license for NI Motion Assistant even if you previously had a licensed version.

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Hardware Support

NI Motion Assistant is compatible with NI-Motion 7.0 and later. To create LabVIEW code from an NI Motion Assistant prototype, you must have LabVIEW 7.1 or later installed. NI Motion Assistant requires that either the actual controller or the virtual representation of one of the following motion controllers be installed in the computer:

- **NI 7350 Series Controllers**—All NI Motion Assistant features are available for this family of controllers.
- **NI 7340 Series Controllers**—All NI Motion Assistant features are available for this family of controllers, excluding multiple and periodic position compare outputs.
- **NI 7330 Series Controllers**—NI Motion Assistant reference, straight-line, and arc move features are available for this family of controllers, excluding multiple and periodic position compare outputs.
- **NI PCI-7390 Controllers**—NI Motion Assistant reference, straight-line, and arc move features are available for this controller, excluding multiple and periodic position compare outputs.

Using NI 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 NI Motion Assistant. Follow the instructions in the *NI Motion Assistant Help* to install a virtual motion controller. You must have NI-Motion 7.0 or later installed to use a virtual motion controller.

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NI Motion Assistant 2.3.1 Changes and Enhancements

LabVIEW 2009 Support

NI Motion Assistant 2.3.1 is fully supported on LabVIEW 2009.

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NI Motion Assistant 2.3.1 General Considerations

Using NI Motion Assistant with the LabVIEW Real-Time Module

You cannot generate LabVIEW code from an NI Motion Assistant script for a real-time target. Refer to the *LabVIEW Real-Time Module Considerations* section of *How do I create code from a motion script?* in the *NI Motion Assistant Help* for detailed instructions about creating code for RT targets.

CAD Moves

The following additional considerations apply to CAD moves:

- CAD moves are processor and memory intensive operations. For this reason, National Instruments recommends a system with at least a 2 GHz Intel Pentium 4 processor or equivalent and 1 GB of RAM for optimal performance.
- On slower systems, loading CAD files and recalculating the move profiles after changing move constraints, or adding position compare or digital outputs can take a significant amount of time. During this time, it is possible to make configuration changes to the move. However, these changes may not be applied until the CAD move is redrawn after a change. If you make changes to any of the move parameters, wait until the CAD move profile is completely finished redrawing on the position graph before making additional

changes to the move.

- On all systems, CAD files that contain many move segments or that are very large in size may take a significant amount of time to load into NI Motion Assistant due to the large CAD move profile calculation.

Contoured Moves

NI Motion Assistant uses a technique called smart contouring to smoothly move through the positions you specify. Refer to the *Contoured Move* glossary topic of the *NI Motion Assistant Help* for smart contouring guidelines you must follow to avoid unexpected behavior.

Calculating Moves

The controller starts from the current position of the axes and travels to the end of the first move. To ensure that the actual system and the position profile you specify match, you must always begin an NI Motion Assistant script with a Reference Move. Refer to *Reference Move* in the *Motion Step Help* book of the *NI Motion Assistant Help* for detailed instructions about adding and configuring a Reference Move Step.

Launching CHM Files in a 64-bit Environment

Because of the way the 64-bit version of Microsoft Windows Vista executes CHM files, links from the CHM file to launch the MAX application do not work if the CHM file is opened from the **Start** menu or directly from the <Motion Assistant>\Help\ folder. These links work correctly when the CHM file is opened from inside the NI Motion Assistant or NI LabVIEW environment.

Updating Referenced Files in NI Motion Assistant Scripts

If you make changes to a file referenced in an NI Motion Assistant script, such as buffered breakpoint positions, contour points, or CAD files, you must reload the file for these changes to take effect.

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NI Motion Assistant 2.3.1 Known Issues

You can access the software and documentation known issues list online. Refer to the [National Instruments Web site](#) for an up-to-date list of known issues in NI Motion Assistant 2.3.1.

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Previous Changes and Enhancements

Refer to KnowledgeBase article 47EKNFFL, [NI Motion Assistant Release Notes](#), at [ni.com/kb](#) for access to previous NI Motion Assistant release notes, starting with NI Motion Assistant 1.3.

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Important Information

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