LabVIEW™ for FTC Release Notes

FTC 2010

These release notes contain system requirements and installation instructions for LabVIEW for FTC.

LabVIEW for FTC includes LabVIEW 2009 Student Edition for Windows, LabVIEW 2009 Student Edition for Mac OS, the LabVIEW 2009 LEGO® MINDSTORMS® NXT Module Beta, and the LabVIEW FTC 2010 Toolkit. The NXT Module Beta and the FTC Toolkit are available through download only.

Read the *Installing LabVIEW for FTC* section of this document before you install any of the software and then follow the instructions in the *Installing LabVIEW for FTC* section. After you install the software, read the *Updating the NXT Brick Firmware* section for information about the NXT brick firmware that you must download in order to compete in the *FIRST* Tech Challenge (FTC) competition.

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System Requirements

LabVIEW for FTC has the following requirements:

- **(Windows)** Windows Vista/XP/2000
- **(Mac OS)** Mac 10.4 or 10.5
- 1.7 GB of disk space

Note Refer to the *LabVIEW 2009 Release Notes*, at ni.com/manuals, for a complete list of system requirements for LabVIEW for Windows and LabVIEW for Mac OS.

Installing LabVIEW for FTC

Use the LabVIEW Student Edition DVD to install LabVIEW first. Then download and install the NXT Module Beta and the FTC Toolkit.

Installing LabVIEW Student Edition

Install the appropriate version of LabVIEW for the operating system you are using.

Windows

Complete the following steps to install LabVIEW Student Edition for Windows.

1. Log on as an administrator or as a user with administrator privileges.
2. Disable any automatic virus detection programs before you install. Some virus detection programs may interfere with the installation program.
3. Insert the LabVIEW for Windows installation DVD.
4. Run `setup.exe`.
5. Follow the instructions that appear on the screen.
6. After installation, enable any virus detection programs you disabled.

Note After you complete installation, you must activate LabVIEW. Refer to the *Activation Instructions for National Instruments Software* for information about activating LabVIEW.

Mac OS

Complete the following steps to install LabVIEW Student Edition for Mac OS.

1. Disable any automatic virus detection programs before you install. Some virus detection programs may interfere with the installation program.
2. Insert the LabVIEW for Mac OS installation DVD.
3. Select **Easy Install** to install all LabVIEW 2009 files. This is the default installation for LabVIEW.
4. Follow the instructions that appear on the screen.

Downloading and Installing the NXT Module Beta and the FTC Toolkit

After you install the LabVIEW Student Edition, complete the following steps to download and install the NXT Module Beta and the FTC Toolkit.

1. Ensure LabVIEW is closed.
2. Visit the National Instruments Web site at `ni.com/info` and enter the info code `FTCsoftware`.
3. Complete the form that appears.
4. Press the <Enter> key to submit the form. The download page appears.
5. Download the appropriate NXT Module and FTC Toolkit software for the operating system you are using.
6. Extract all of the files from the NXT Module zip file you download in step 5.
7. **(Windows)** Run `setup.exe`. **(Mac OS)** Double-click the NXT Module `.dmg` file and then double-click the `NI LabVIEW 2009 LEGO MINDSTORMS NXT Module.mpkg` file to launch the installer.
8. Follow the instructions that appear on the screen.
9. Repeat steps 6 through 8 to install the FTC Toolkit. In step 6, extract all of the files from the FTC Toolkit zip file. **(Mac OS)** In step 7, double-click the FTC Toolkit `.dmg` file and then double-click the `FTC_2010_Toolkit.mpkg` file to launch the installer.
10. After installation, enable any virus detection programs you disabled.

Note You do not have to activate the NXT Module Beta or the FTC Toolkit.

Updating the NXT Brick Firmware

Caution You **must** download version 1.28 of the NXT brick firmware to your NXT brick in order to compete in the FTC competition.

The field management system at the FTC competition cannot communicate with your robot unless you use version 1.28 of the firmware on the NXT brick. LabVIEW for FTC provides the correct version of this firmware.

Refer to Chapter 3, *Building the Robot Control System*, of the *Getting Started with NI LabVIEW for FTC* manual for information about downloading the firmware from LabVIEW to the NXT brick. Access the *Getting Started with NI LabVIEW for FTC* manual by navigating to the `labview\manuals` directory and opening `FTC_Getting_Started.pdf`.

New Features in LabVIEW for FTC

LabVIEW for FTC includes the following new features to help you better manage and implement components of an FTC application.

LabVIEW 2009 LEGO® MINDSTORMS® NXT Module Beta

The NXT Module Beta includes new VIs that allow you to build LabVIEW programs that run on the host computer and communicate with an NXT brick or that run directly on an NXT brick.

The NXT Module Beta also includes the TETRIX Motor Configurator, which allows you to specify custom names for motors and servos you want to use in LabVIEW VIs.

FTC Template VIs

The FTC template VIs provide a way to start building LabVIEW programs for an FTC robot. These VIs are designed to work with the robot you build in the *Getting Started with NI LabVIEW for FTC* manual. You can run the VIs without making changes, or you can update the VIs to perform advanced tasks.

Where to Go from Here

Refer to the following documents and Web site for information about programming with LabVIEW for FTC.

- *Getting Started with NI LabVIEW for FTC*—Use this manual to learn how to build a robot for the FTC competition and how to develop VIs that you can use to control the robot. Access this manual by navigating to the `labview\manuals` directory and opening `FTC_Getting_Started.pdf`.
- *FTC Tools Help*—Use the *FTC Tools Help* located in the *LabVIEW NXT Module Help* to access information about FTC VIs. Access the *FTC Tools Help* by selecting **Help»NXT Module Help** in LabVIEW.
- *LabVIEW Help*—Use the *LabVIEW Help* to access information about LabVIEW programming concepts, step-by-step instructions for using LabVIEW, and reference information about LabVIEW VIs, functions, palettes, menus, tools, properties, methods, events, dialog boxes, and so on. The *LabVIEW Help* also lists the LabVIEW documentation resources available from National Instruments. Access the *LabVIEW Help* by selecting **Help»Search the LabVIEW Help** in LabVIEW.
- *LabVIEW Quick Reference Card*—Use this card as a reference for information about documentation resources, keyboard shortcuts, data type terminals, and tools for editing, execution, and debugging. Access this manual by navigating to the `labview\manuals` directory and opening `LV_Quick_Reference.pdf`.
- *National Instruments FIRST Community*—Use the National Instruments *FIRST* Community Web site at `ni.com/first` to read the latest training tutorials, download example programs, and connect with real-world engineers.

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