

## **FRC2006 – LabVIEW-based CMUcam2 Demo Application**

Russ Beavis

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The LabVIEW CMUcam2 Camera Demo Application needs the following minimum components in order to run effectively:

1. A Laptop or Desktop with a serial port (or use a USB-Serial converter)
2. You might want to set the display screen resolution to at least 1024x768
3. Windows NT/2000/XP or MacOSX Operating System
4. LabVIEW 8.0 Student Edition or better installed on the machine
5. NI-VISA installed on the machine (not installed with LabVIEW for PC)
6. LabVIEW Camera Demo Application files copied to machine
7. Hardware configured and electrically connected as per “CMUcam2 test app wiring.pdf”

Perform the following steps to install the software:

1. Install LabVIEW on the laptop or desktop machine. LabVIEW 8.0 Student Edition for Windows/MacOSX is included with the FIRST kit.
2. Install NI-VISA on the laptop or desktop machine. NI-VISA is available for free on the National Instruments website (<http://www.ni.com/support/visa/default.htm>) by clicking on “VISA driver downloads”. Download the latest version of VISA supported by your operating system, and install the software. NI-VISA is installed with LabVIEW on the Mac, but Windows users must install NI-VISA separately.
3. Configure MAX to use the serial port for the camera
  - 1) Open "Measurement and Automation Explorer " (MAX) from the Start - Programs - National Instruments window
  - 2) Select "Devices and Interfaces" from the MAX Configuration drop down menu
  - 3) Select "Ports (Serial & Parallel)
  - 4) Select COM2 (COM1)
  - 5) Select "Port Settings" in the pop-up window
  - 6) Set the Baud rate to 115200
  - 7) Select "Validate"
  - 8) Close "Measurement and Automation Explorer"
4. Copy the demo software and support files from the internet to a directory on the PC/laptop - C:\FIRST\ is the preferable root directory with subdirectories for “camera demo”, “motor sim” and “motor tester”.
5. Launch LabVIEW and open either “CMUcam2 GUI.vi” or “CMUcam2 – simple app.vi”. The VIs can be found bundled into the “CMUcam2 demo.llb” LabVIEW VI library file.

Instructions for use:

1. Adjust the “serial port” control on the opened VI as necessary to identify the correct port to which the camera is attached.
2. Adjust other parameters as desired.
3. Run the VI by clicking the “run arrow” on the toolbar. You can adjust all parameters while running (please don’t change the serial port while running).
4. Enjoy!