Acquire images with NI Vision Software from a U3V camera

This application note shows you how to acquire images with IDS USB3 Vision cameras in combination with the NI Measurement & Automation Explorer (NI MAX) and NI Vision Builder for Automated Inspection (AI) software.

1) Install NI MAX and NI Vision Builder AI software

Ensure that NI MAX and NI Vision Builder AI are installed completely on your system.

NI MAX cannot be downloaded separately, but comes packaged with National Instruments drivers (NI-VISA, NI-DAQmx, etc.) and in the NI System Configuration package. You can download the latest version of the NI System Configuration at the following link:

http://www.ni.com/download/ni-system-configuration-15.0.0/5454/en/

NI Vision Builder AI can be downloaded here: http://www.ni.com/vision/vbai.htm

Please consider that this piece of software is not for free and a valid license is required to run the software after the trial period has expired. For more information on this topic please contact National Instruments.

2) Check NI USB3 Vision Driver

To ensure that the system recognizes all connected U3V cameras as NI Vision Acquisition Devices, open the Windows Device Manager and check if you can find your device in the “NI Acquisition Devices” section (Figure 1).

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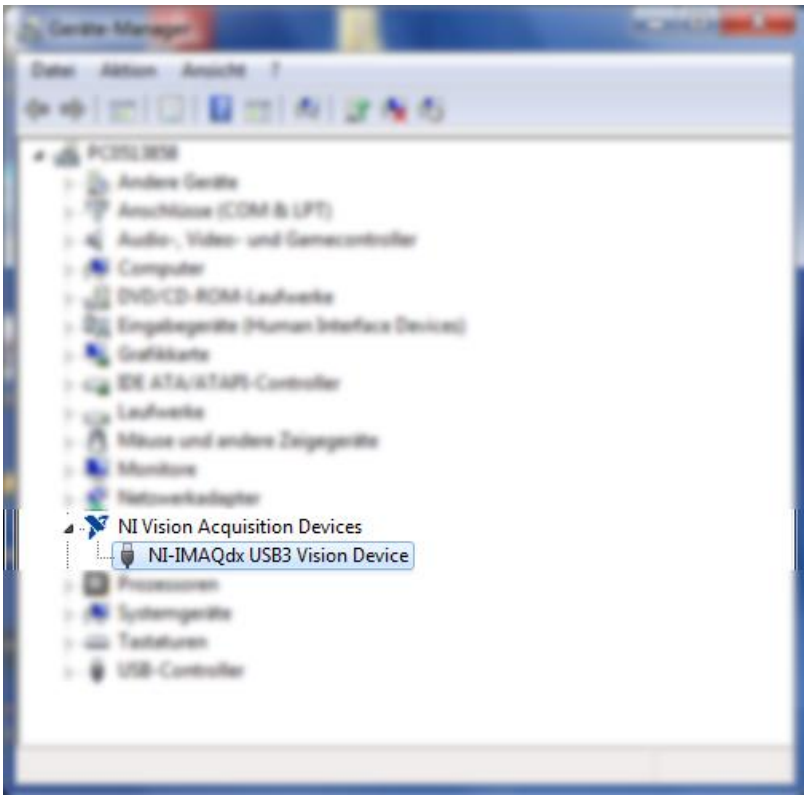

Figure 1: U3V cameras in Windows device manager

3) Start NI MAX

First start the NI MAX application, e. g. with an icon on the desktop (Figure 2) or via “Start → Programs → National Instruments → Measurement & Automation”.

Figure 2: Desktop icon for NI MAX

As soon as the application is ready to go, select the configuration window to find an “IDS Imaging Development System GmbH U3V camera” device. You can find the camera in the “My System” → “Devices and Interfaces” section. Click on the “Grab” button to start the live video from the previously selected device (Figure 3).

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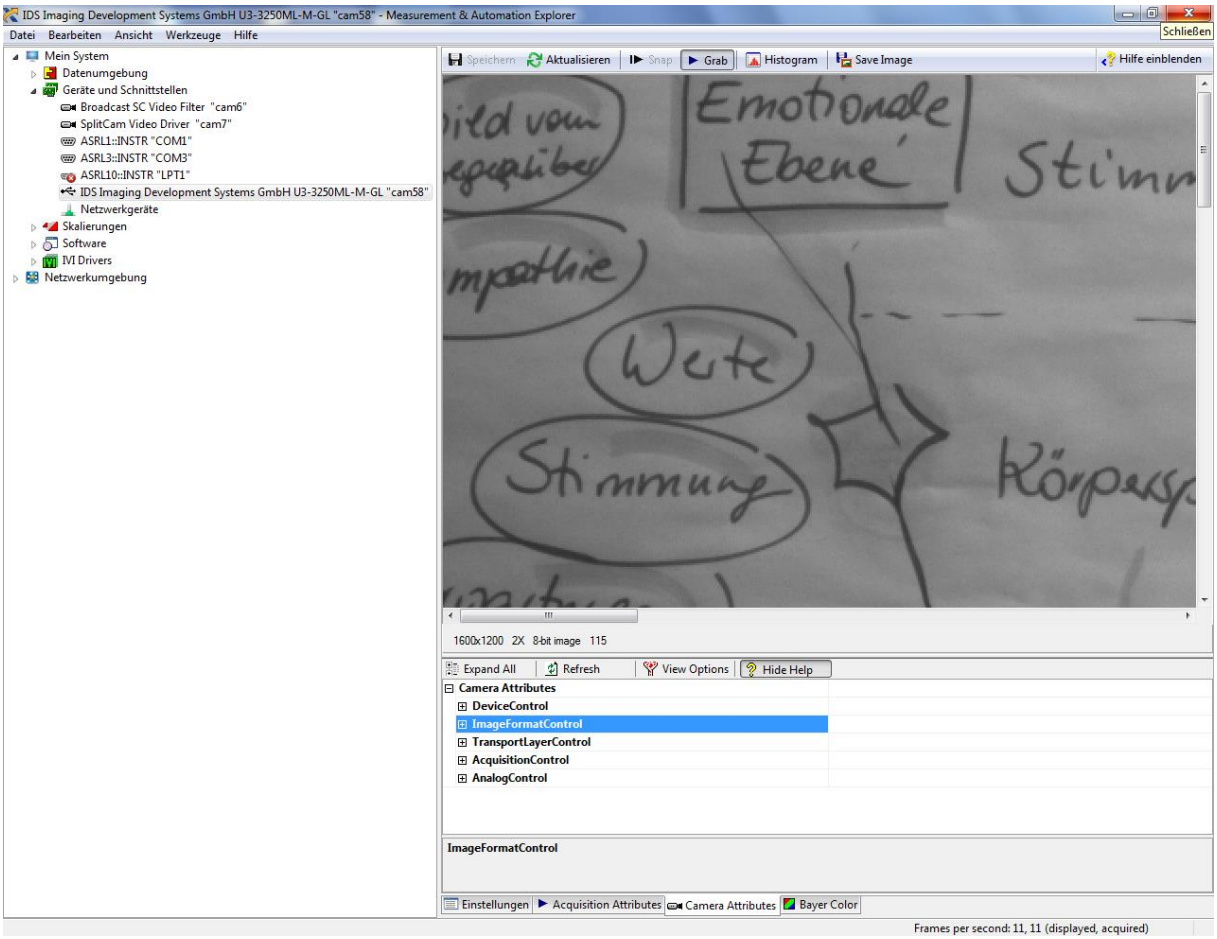

Figure 3: The Measurement & Automation Explorer

You can also set some camera-specific parameters. To do this, just stop the image acquisition and select the register “Camera Attributes” to change e. g. the pixel clock (see Figure 4). The maximum, minimum, and also the increment are shown in the window below.

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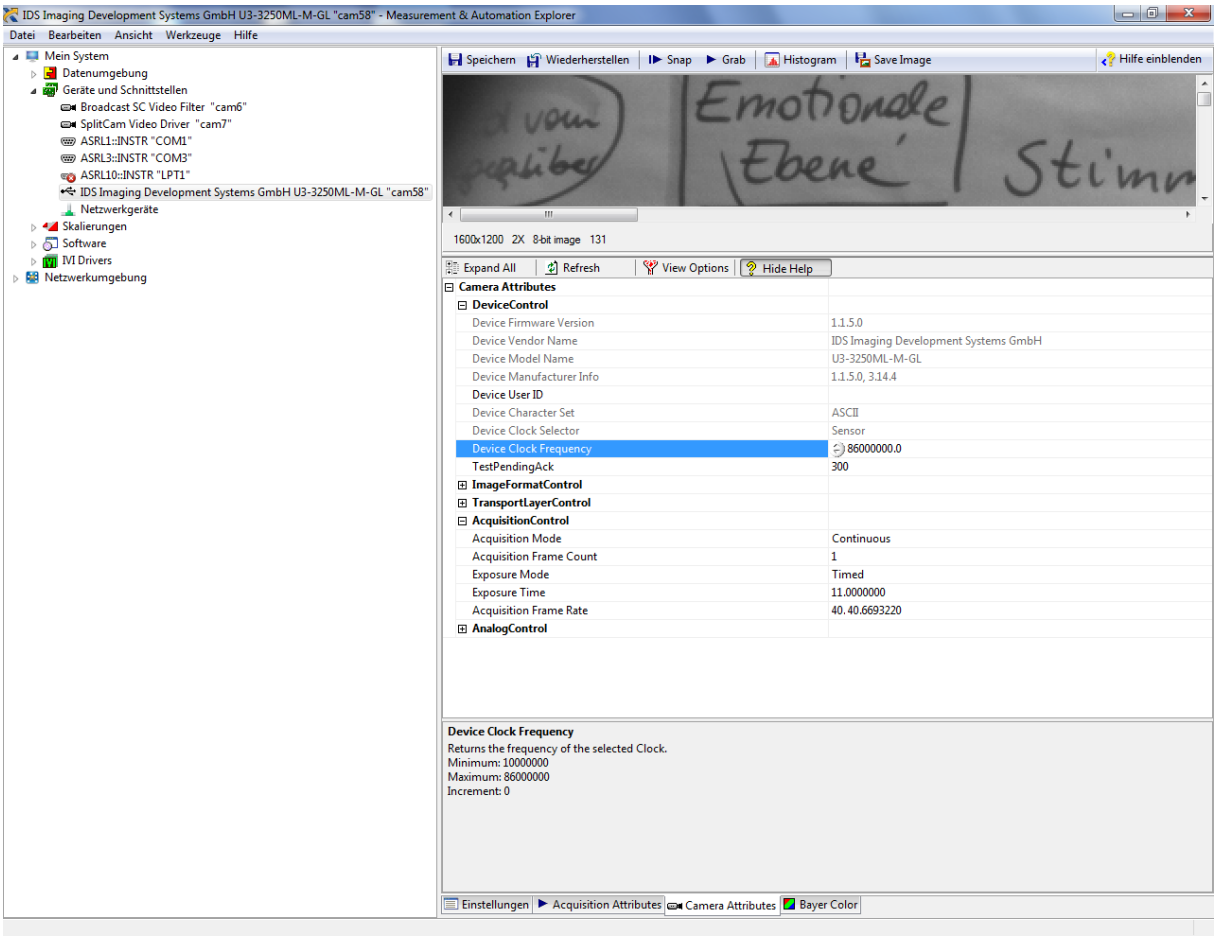

Figure 4: Change parameters

4) NI Vision Builder AI

Run the Vision Builder AI e. g. by clicking on the Vision Builder AI icon on your desktop (see Figure 5).

Figure 5: Run Vision Builder AI

When the NI Vision Builder “Welcome” screen opens, select “My computer” as target and start a “New inspection” (see Figure 6).

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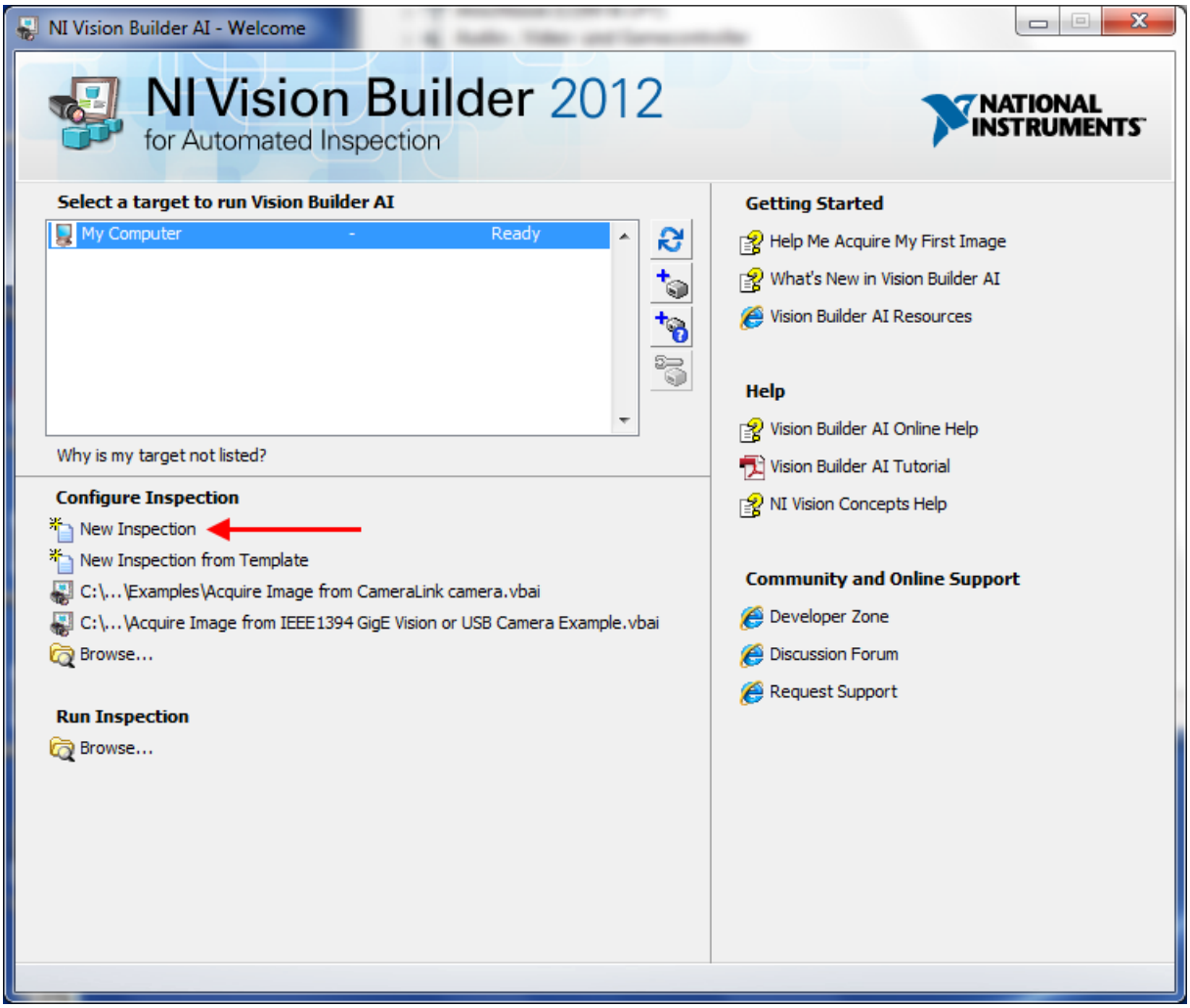

Figure 6: Select “My computer” as target and start a “New inspection”

The NI Vision Builder interface will be opened. On the right side of this user interface you will find a tool box called “Inspection Steps: Acquire Images”. Please call the 2nd option to acquire images from the IDS U3V camera (see Figure 7).

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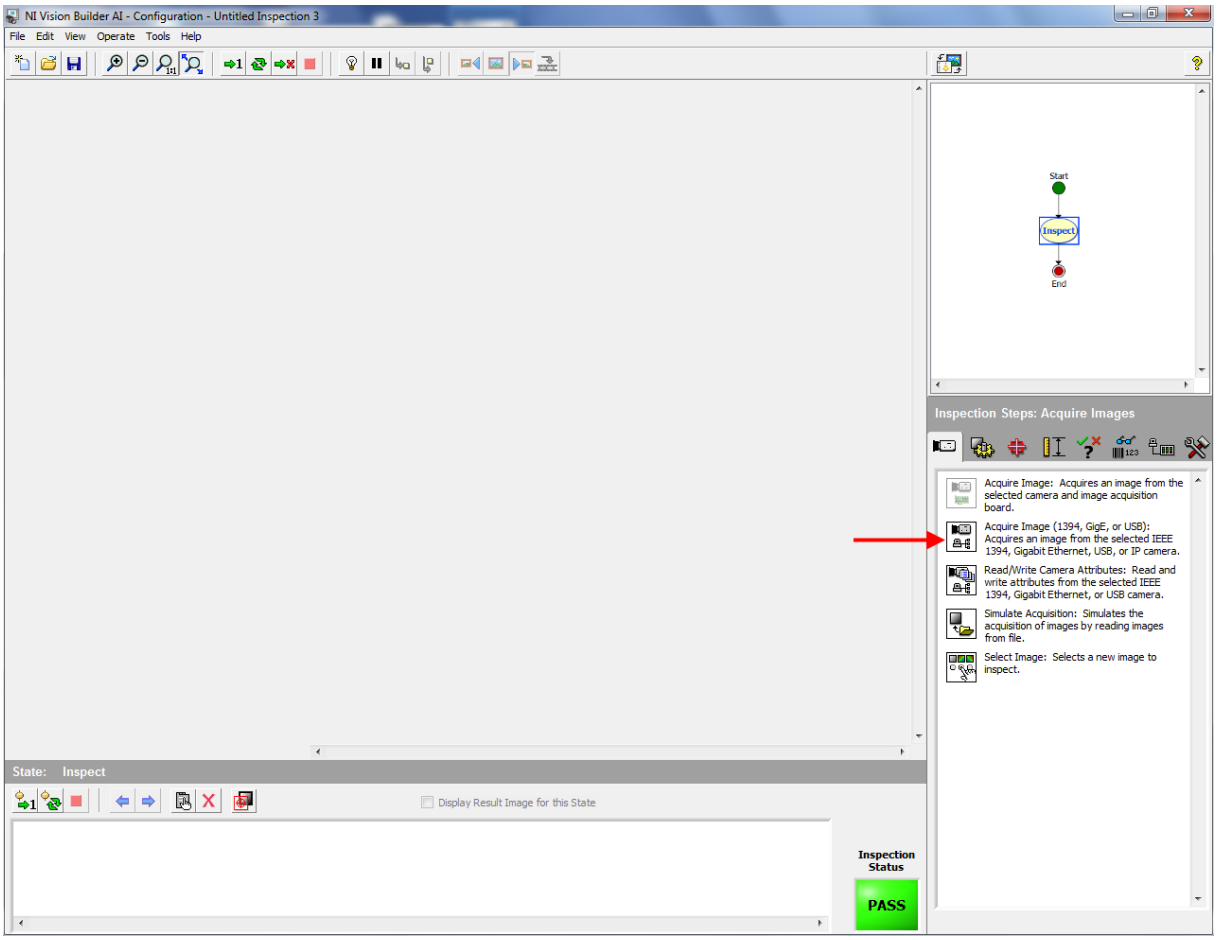

Figure 7: NI Vision Builder user interface

Select a connected device and wait for a short time until the camera has been initialized. Then click on the “Acquire Images” button. Now you can see that the NI Vision Builder acquires images from a specified U3V device.

You can also set some camera-specific parameters. To do this, just select the register “Attributes” to change e. g. the exposure time (see Figure 8).

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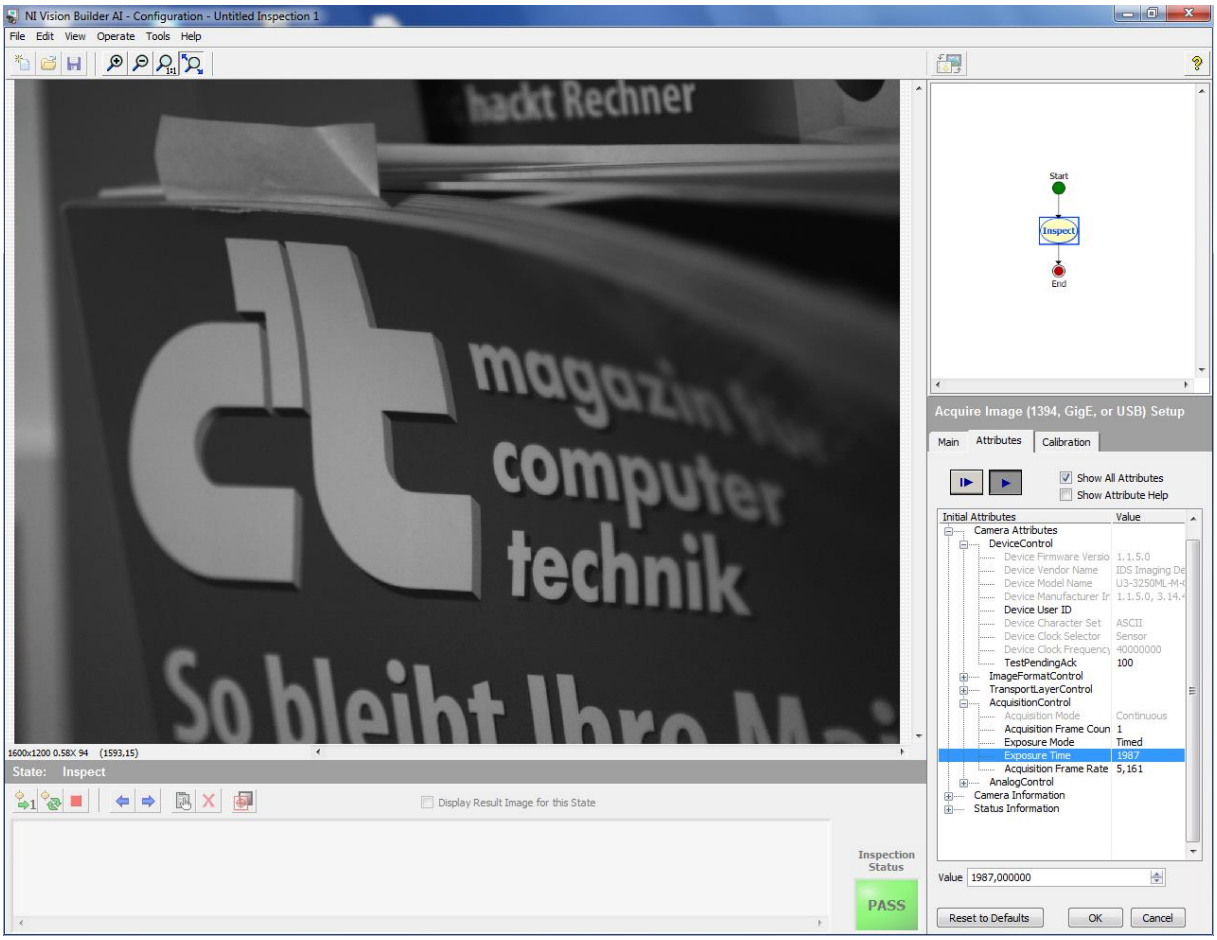

Figure 8: Change parameters

For more information, please contact the IDS support team: http://en.ids-imaging.com/support.html

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