THORLABS

CCD and CMOS Cameras

DCU223x, DCU224x
DCC1240x
DCC1545M, DCC1645C
DCC3240X
DCC3260X

Manual uc480 LabVIEW .NET 4.81

2018

Version: 4.81
Date: 7/30/2018

Contents

Warning

Sections marked by this symbol explain dangers that might result in personal injury or death. Always read the associated information carefully, before performing the indicated procedure.

Attention

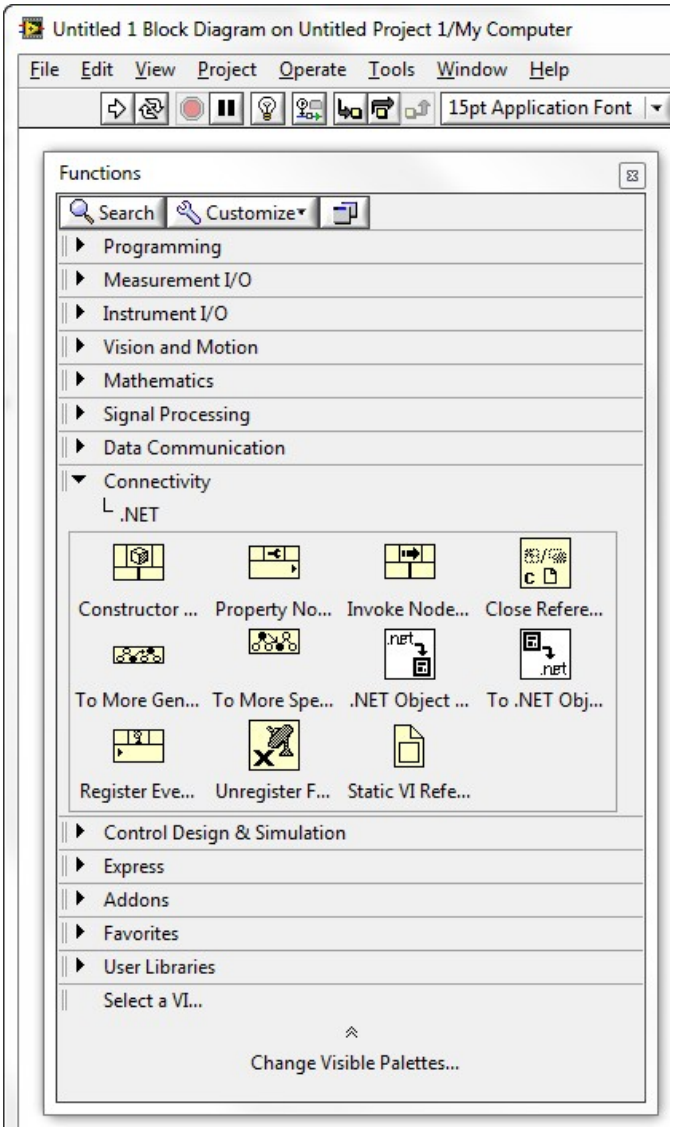
Paragraphs preceeded by this symbol explain hazards that could damage the instrument and the connected equipment or may cause loss of data.

1 Welcome

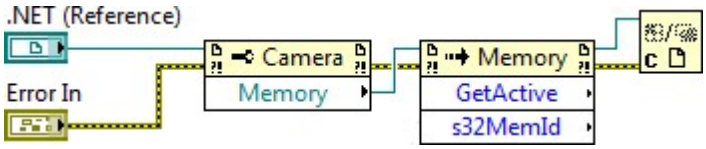
The uc480 .NET LabVIEW manual contains all the information you need to program your own applications with your uc480 camera in LabVIEW. The uc480 .NET LabVIEW interface is part of the DCx Camera software pacakges which can be downloaded for free on the Thorlabs website. In addition to the drivers, the software packages inc and a Software Development Kit (SDK) for creating your own uc480 programs. Demo applications make it easier to start uc480 programming.
LabVIEW allows you to call functions via the .NET interface. Select the uc480DotNet.dll with the constructor. With the properties and method nodes you can access every function of the uc480 .NET interface. So you can access all methods of the uc480 .NET interface directly.

2 Using uc480 cameras with VIs

To include the uc480DotNET.dll the LabVIEW functions for .NET are used. Open in the functions palette the "Connectivity" area where you find the functions for .NET. Here, you can instantiate a .NET class and call their methods. Via uc480DotNet.dll you can access all classes and methods of the uc480 .NET interface. The uc480 .NET interface is described in DCx_DotNET_ProgInterface.pdf



It is important that you call the "Close Reference" function after using the reference of a property node because otherwise a memory leak arises. A VI or .NET object is loaded into memory whenever you create a reference to it. The VI or .NET object stays in memory until you close the reference and the VI or .NET object is not used by any other VI.



Additional special VIs are available which are located in the function palette under "Own libraries->uc480":

- ArrayToImage
- Error_Handling

The descriptions of the uc480 VIs are structured as follows:

1. Description
   Description of the VI
2. Parameters

Description of the inputs and outputs

3. VI

Image of the VI with all inputs and outputs

2.1 ArrayToImage

Description

ArrayToImage converts one-dimensional U8 integer arrays into a LabVIEW compliant image.

Parameters

InArray	Memory array to be converted
.NET Reference	Image height and width and color format
Image	LabVIEW compliant image
Error In/Out	LabVIEW error wire

VI

2.2 Error_Handling

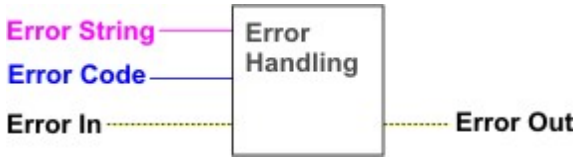
Description

Error_Handling activates or deactivates error reporting. If error reporting is active, any errors that occur stop the control flow of LabVIEW and output the uc480 error in a message. The user can either quit the application or continue working.

Parameters

Error Code	Number of the uc480 error code
Error String	Description of the uc480 error code
Error In/Out	LabVIEW error wire

VI



3 Sample programs

The following example programs are installed with the uc480 .NET LabVIEW interface. You can find these examples under <LabVIEW Installation directory>/instr.lib/uc480.NET.

Example	Description
Basics	Starts the camera and captures images. The demo program shows the sequence of camera initialization, image acquisition and camera closing.
Binning_and_Subsampling	Starts the camera and displays the live image. Various settings for binning and subsampling can be made.
Eeprom	Starts the camera and displays the live image. The camera EEPROM can be read and written.
Flash_and_Trigger	Starts the camera and displays the live image. Various settings for flash and trigger can be made.
GetCameraList	Starts the camera and displays the live image. A list of all available cameras is displayed.
ImageSize	Starts the camera and displays the live image. The demo program shows the use of AOIs (area of interest).
Pixel_Peek	Starts the camera and displays the live image. The color values on the current cursor position are displayed.
Sharpness_Measurement	Starts the camera and displays the live image. The image sharpness can be measured in area which has to be defined.
SimpleLive	Starts the camera and displays the live image. On camera start an INI file is loaded. Additionally you can set the pixel clock, frame rate and exposure.
SimpleLive_MultiCamera	Starts two cameras and displays their live images.

4 Appendix

4.1 Thorlabs Worldwide Contacts

For technical support or sales inquiries, please visit us at www.thorlabs.com/contact for our most up-to-date contact information.

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