THORLABS

CCD and CMOS Cameras

DCU223x, DCU224x
DCC1240x
DCC1545M, DCC1645C
DCC3240X
DCC3260X

DCx Camera Samples Manual

2018

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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 C# Example Code

uc480_DotNet_C#_Cockpit is comprehensive example code which has options for open free-run, open and stop, exit, snapshot, zoom options, settings, auto-shutter, save image, load image, recording video, etc..

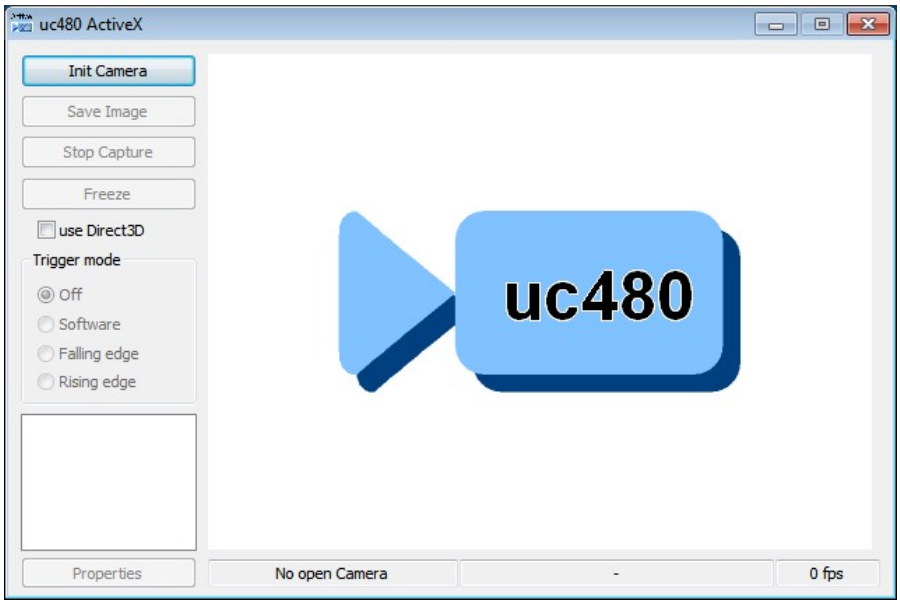
uc480_DotNet_C#_SimpleLive_1 and _2 are simple examples with interfaces. They use different techniques to initialize the camera and display the image.

Example code is found at the following location after installation:

```
C:\Program Files\Thorlabs\Scientific Imaging\DCx Camera Support
\Develop\Source
```


2 C++ Samples

2.1 ActiveX Demo (32-bit Installations Only)



Application

The program uc480 ActiveX demo uses the ActiveX interface of the uc480 SDK in order to demonstrate the recording of live images or still images as well as the wide adjustment possibilities of the DCx Cameras. In addition, the images can be stored in the bitmap format.

Functional range

After a connected camera has been initialized, a live image is displayed. Changing between live mode, snap mode, and trigger mode is possible. A still image (snap mode) can be stored as BMP file. With the Properties button a dialog for adjusting the settings of the connected camera is opened. With the option Use Direct3D, Direct3D functions are used for the image display.

Code

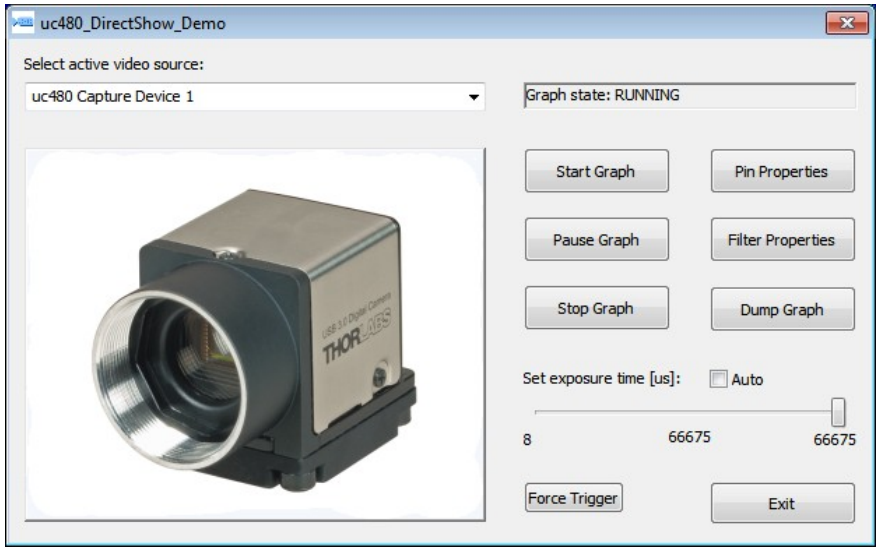
The camera functions are accessed via the `Axuc480Cam` object of the ActiveX wrapper class `CDuc480Cam`. More information on programming with ActiveX can be found in the **DCx Camera ActiveX Programming Interface Manual.**

Location

ActiveX is only supported on 32-bit platforms, and the ActiveX demo is only available on 32-bit OS installations at:

```
C:\Program Files\Thorlabs\Scientific Imaging\DCx Camera Support
\Samples\uc480activexdemo_vc.exe
```

2.2 DirectShow Demo (32-bit Installations Only)



Application

This demo shows how to capture images with a camera using the uc480 DirectShow interface.

Functional range

To be able to open a DCx Camera with DirectShow software, a unique camera ID in a range from 1 to 8 has to be assigned to the camera using the IDS Camera Manager. The appropriate ID has to be registered using the DirectShow Device Manager which is also installed in the uc480 programs directory.

Click "Start Graph" or "Stop Graph" in order to start or stop live image acquisition. Camera settings can be changed via the "Pin properties" or the "Filter properties" button. Properties marked with an asterisk (*) cannot be changed while the graph is running.

Code

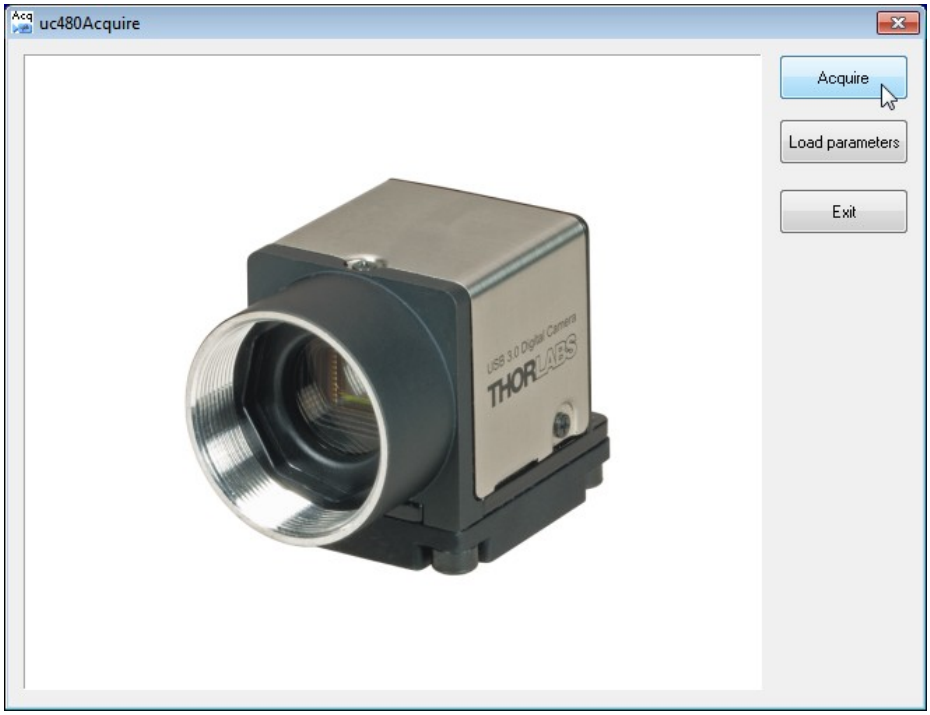
The code uses Windows DirectShow functions to access the camera. More information on programming with DirectShow can be found in the **DCx Camera DirectShow Programming Interface Manual**.

Location

DirectShow is only supported on 32-bit platforms, and the DirectShow demo is only available on 32-bit OS installations at:

```
C:\Program Files\Thorlabs\Scientific Imaging\DCx Camera Support
\Samples\uc480_directshow_demo.exe
```

2.3 Simple Acquire Demo



Application

This simple program illustrates how a single image can be taken from a connected DCx Camera via the uc480 SDK functions.

Functional range

On pressing the Acquire button the camera is initialized (only at the first time) and a single image is taken and displayed. The program uses the DIB display mode.

Location

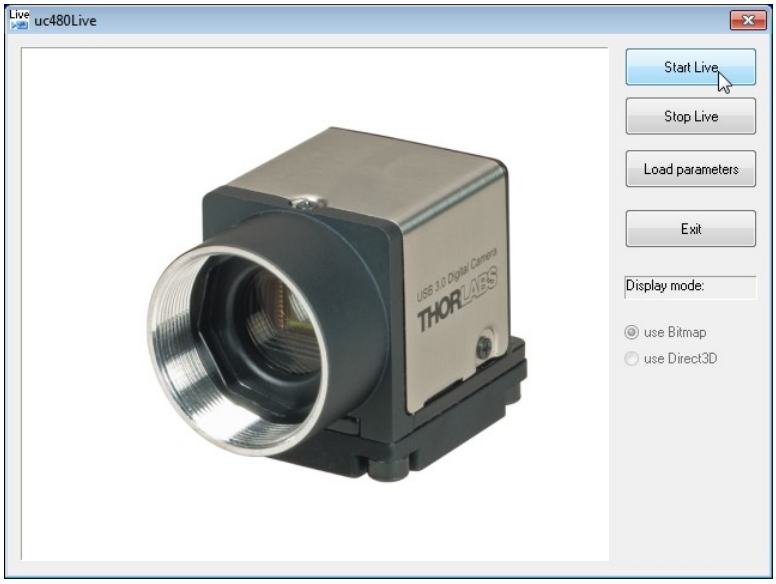
This executable sample is installed to

```
C:\Program Files\Thorlabs\Scientific Imaging\DCx Camera Support
\Samples\uc480Acquire.exe
```

Source files are installed to

```
C:\Program Files\Thorlabs\Scientific Imaging\DCx Camera Support
\Develop\Source\uc480Acquire
```

2.4 Simple Live Demo



Application

This simple program illustrates how a live image can be acquired from a connected DCx Camera with the help of the uc480 SDK functions.

Functional range

With the program start a connected DCx Camera is initialized. With the "Stop Live" and "Start Live" buttons the live image can be stopped and/or restarted. The program runs in DIB mode.

Code

In order to update the display with each new image from the camera the program queries the uc480 Message `IS_FRAME`.

Location

This executable sample is installed to

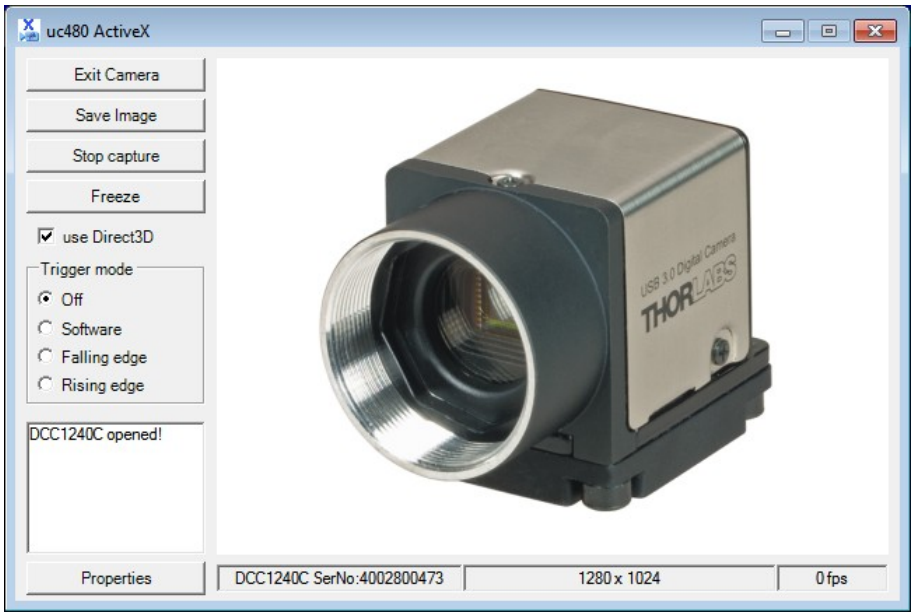
```
C:\Program Files\Thorlabs\Scientific Imaging\DCx Camera Support
\Samples\uc480Live.exe
```

Source files are installed to

```
C:\Program Files\Thorlabs\Scientific Imaging\DCx Camera Support
\Develop\Source\uc480Live
```

3 VB.NET Samples (32-bit Installations Only)

3.1 ActiveX Demo



Application

The program uc480 ActiveX demo uses the ActiveX interface of the uc480 SDK to demonstrate the acquisition of live images or still images as well as the extensive adjustment possibilities of the DCx Cameras. In addition, pictures can be stored in the bitmap format.

Functional range

After a connected camera was initialized a live image is displayed. The change between live mode and snap mode is possible. A still image (snap mode) can be stored as BMP File. Via the Properties button a dialog for adjustment of the attributes of the connected DCx Camera is opened. In this dialog the trigger mode can also be activated and user data can be written to the EEPROM of the camera.

Code

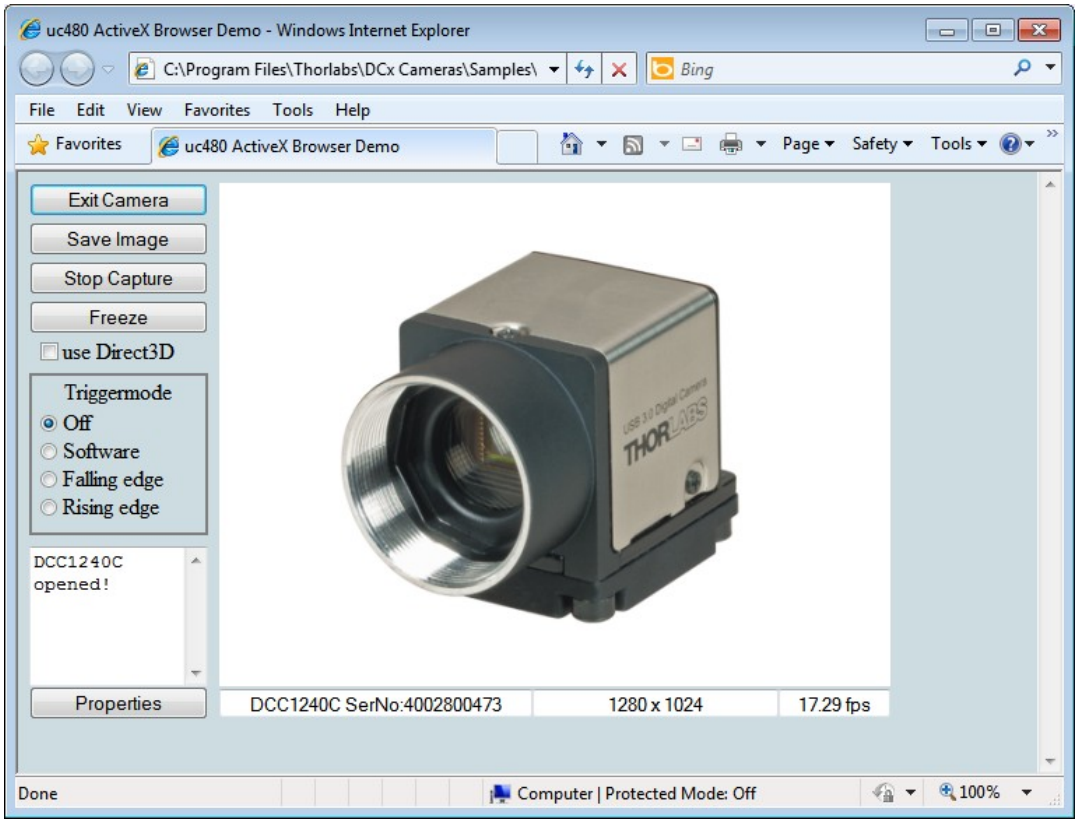
The camera functions are accessed via the `uc480CamOcx` object of the ActiveX wrapper class `CDuc480Cam`, which can be found in the VB editor over the dialog "Components ->Controls -> uc480Cam ActiveX Control Module".

Location

ActiveX is only supported on 32-bit platforms and the ActiveX demo is is only available on 32-bit OS installations at:

```
C:\Program Files\Thorlabs\Scientific Imaging\DCx Camera Support
\Samples\uc480activexdemo_vb.exe
```

4 ActiveX Browser Demo (32-bit Installations Only)



Application

This demo offers the same function as the ActiveX VB6 demo, but it works web browser based. It needs Internet Explorer version 5.0 or higher and the permission of ActiveX content.

Functional range

The functions (see function range ActiveX VB6 demo) can be accessed by a context menu (right-click on the picture).

Code

The code is written in JavaScript and is contained in the page source code.

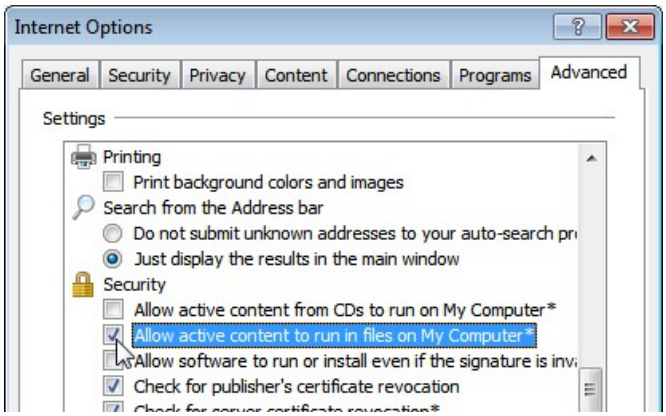
Location

ActiveX is only supported on 32-bit platforms, and the ActiveX browser demo is only available on 32-bit OS installations at:

```
C:\Program Files\Thorlabs\Scientific Imaging\DCx Camera Support
\Samples\uc480activex_ie.htm
```

Note

Your browser must allow handling of ActiveX content. For Internet Explorer, enable the option "Allow active content to run in files on My Computer":



Mozilla Firefox does not allow ActiveX components to run generally.

5 Exclusion of Liability and Copyright

Thorlabs Scientific Imaging has taken every possible care in preparing this Operation Manual. We however assume no liability for the content, completeness or quality of the information contained therein. The content of this manual is regularly updated and adapted to reflect the current status of the software. We furthermore do not guarantee that this product will function without errors, even if the stated specifications are adhered to.

Should you require further information about this product or encounter specific problems that are not discussed in sufficient detail in the User Manual, please contact your nearest Thorlabs office.

6 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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