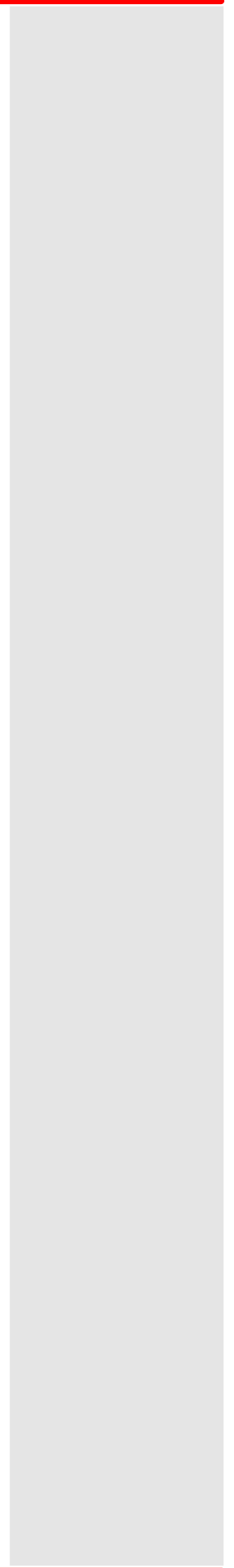




**BP209 Series
Beam Software V 8.0
Write Your Own Application**

- **Drivers**
- **Samples**
- **Programmer's Reference**



1 Write Your Own Application

In order to write your own application, you need a specific instrument driver and some tools for use in different programming environments. The driver and tools are installed to your computer during software installation and cannot be found in the installation package.

In this section the location of drivers and files, required for programming in different environments, are given for installation under Windows® 8.1 and Windows®^F 10 (32 and 64 bit).

In order to fully support 64 bit LabView version, the installation package provides two installer components, the 32bit and the 64bit component:

- for Windows® 8.1 (32/64 bit) and Windows® 10 (32/64 bit): Install "Thorlabs Beam VXIpn Instrument Driver (32bit)"
- for Windows® 8.1 (64 bit) and Windows® 10 (64 bit): Install "Thorlabs Beam VXIpn Instrument Driver (64 bit)"

In other words, the 32 bit VXIpn driver works with both 32 and 64 bit operating systems, while the 64 bit driver requires a 64 bit operating system.

Note

Beam Software and drivers contain 32 bit and 64 bit applications.

In 32 bit systems, only the 32 bit applications are installed to

`C:\Program Files\...`

In 64 bit systems the 64 bit components are being installed to

`C:\Program Files\...`

while necessary 32 bit components can be found at

`C:\Program Files (x86)\...`

In the table below you will find a summary of what files you need for particular programming environments.

Programming environment	Necessary files
C, C++, CVI	*.h (header file) *.lib (static library)
C#	.net wrapper dll
Visual Studio	*.h (header file) *.lib (static library) or .net wrapper dll
LabView	*.fp (function panel) and NI VISA instrument driver. Beside that, LabVIEW driver vi's are provided with the *.llb container file. Note: LabVIEW drivers and components are installed only, if a LabVIEW installation was recognized.

Note

All above environments require also the NI VISA instrument driver dll !

During NI-VISA Runtime installation, a system environment variable `VXIPNPPATH` for including files is created. It stores information where the drivers are installed, usually to `C:\Program Files\IVI Foundation\VISA\WinNT\`.

This is the reason why a system reboot is required after the installation of a NI-VISA Runtime: This environment variable is necessary for installation of the application software components.

In the next sections the location of above files for all hardware, supported by Beam Software drivers, is described in detail.

1.1 32 bit Operating System

Note

According to the VPP6 (Rev6.1) Standard the installation of the 32 bit VXIpn driver includes both the WINNT and GWINNT frameworks.

VXIpn Instrument driver:

C:\Program Files\IVI Foundation\VISA\WinNT\Bin\TLBP2_32.dll

Note

This instrument driver is required for all development environments!

Header file

C:\Program Files\IVI Foundation\VISA\WinNT\include\TLBP2.h

Static Library

C:\Program Files\IVI Foundation\VISA\WinNT\lib\msc\TLBP2_32.lib

Function Panel

C:\Program Files\IVI Foundation\VISA\WinNT\TLBP2\TLBP2.fp

Online Help for VXIpn Instrument driver:

C:\Program Files\IVI Foundation\VISA\WinNT\TLBP2\Manual\TLBP2.html

NI LabVIEW driver

The LabVIEW Driver is a 32 bit driver and compatible with 32bit NI-LabVIEW versions 8.5 and higher only.

C:\Program Files\National Instruments\LabVIEW xxxx\Instr.lib\TLBP2...
...\TLBP2.llb

(LabVIEW container file with driver vi's and an example. "LabVIEW xxxx" stands for actual LabVIEW installation folder.)

.net wrapper dll

C:\Program Files\Microsoft.NET\Primary Interop Assemblies...
...\Thorlabs.TLBP2_32.Interop.dll

C:\Program Files\IVI Foundation\VISA\VisaCom\...
...\Primary Interop Assemblies\ Thorlabs.TLBP2_32.Interop.dll

Example for C

Project file:

C:\Program Files\IVI Foundation\VISA\WinNT\TLBP2\Examples\...
...\CVI Sample\CSample.prj

Source file:

C:\Program Files\IVI Foundation\VISA\WinNT\TLBP2\Examples\...
...\CVI Sample\CSample.c

Executable sample demo:

C:\Program Files\IVI Foundation\VISA\WinNT\TLBP2\Examples\...
...\CVI Sample\CSample.exe

Example for C#

Solution file:

```
C:\Program Files\IVI Foundation\VISA\WinNT\TLBP2\Examples...  
...\MS VS 2012 CSharp Demo\DotNet_Sample\Thorlabs.BP2_CSharpDemo...  
...\Thorlabs.BP2_CSharpDemo.sln
```

Project file:

```
C:\Program Files\IVI Foundation\VISA\WinNT\TLBP2\Examples ...  
...\MS VS 2012 CSharp Demo\DotNet_Sample\Thorlabs.BP2_CSharpDemo...  
...\Thorlabs.BP2_CSharpDemo.csproj
```

Executable sample demo:

```
C:\Program Files\IVI Foundation\VISA\WinNT\TLBP2\Examples ...  
...\MS VS 2012 CSharp Demo\DotNet_Sample\Thorlabs.BP2_CSharpDemo...  
...\output\Thorlabs.BP2_CSharpDemo.exe
```

Example for LabView

```
C:\Program Files\National Instruments\LabVIEW xxxx\Instr.lib\TLBP2...  
...\TLBP2.llb
```

(LabVIEW container file with driver vi's and an example. "LabVIEW xxxx" stands for actual LabVIEW installation folder.)

1.2 64 bit Operating System

Note

According to the VPP6 (Rev6.1) Standard the installation of the 64 bit VXIpn driver includes the WINNT, WIN64, GWINNT and GWIN64 frameworks. That means, that the 64 bit driver includes the 32 bit driver as well.

In case of a 64 bit operating system, 64bit drivers and applications are installed to

```
"C:\Program Files"
```

while the 32 bit files - to

```
"C:\Program Files (x86)"
```

Below are listed both installation locations, so far applicable.

VXIpn Instrument driver:

```
C:\Program Files (x86)\IVI Foundation\VISA\WinNT\Bin\TLBP2_32.dll
C:\Program Files\IVI Foundation\VISA\Win64\Bin\TLBP2_32.dll
C:\Program Files\IVI Foundation\VISA\Win64\Bin\TLBP2_64.dll
```

Note

This instrument driver is required for all development environments!

Header file

```
C:\Program Files (x86)\IVI Foundation\VISA\WinNT\include\TLBP2.h
C:\Program Files\IVI Foundation\VISA\Win64\include\TLBP2.h
```

Static Library

```
C:\Program Files (x86)\IVI Foundation\VISA\WinNT\lib\msc...
...\TLBP2_32.lib
C:\Program Files\IVI Foundation\VISA\Win64\lib\msc\TLBP2_32.lib
C:\Program Files\IVI Foundation\VISA\Win64\Lib_x64\msc\TLBP2_64.lib
```

Function Panel

```
C:\Program Files (x86)\IVI Foundation\VISA\WinNT\TLBP2\TLBP2.fpl
```

Online Help for VXIpn Instrument driver:

```
C:\Program Files (x86)\IVI Foundation\VISA\WinNT\TLBP2\...
...\Manual\TLBP2.html
```

NI LabVIEW driver

The LabVIEW Driver supports 32bit and 64bit NI-LabVIEW2009 and higher.

```
C:\Program Files\National Instruments\LabVIEW xxxx\Instr.lib\TLBP2...
...\TLBP2.llb
```

(LabVIEW container file with driver vi's and an example. "LabVIEW xxxx" stands for actual LabVIEW installation folder.)

.net wrapper dll

C:\Program Files (x86)\Microsoft.NET\Primary Interop Assemblies...
...\Thorlabs.TLBP2_32.Interop.dll

C:\Program Files (x86)\IVI Foundation\VISA\VisaCom\...
...\Primary Interop Assemblies\Thorlabs.TLBP2_32.Interop.dll

C:\Program Files\IVI Foundation\VISA\VisaCom64\...
...\Primary Interop Assemblies\Thorlabs.TLBP2_64.Interop.dll

Example for C

Project file:

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\TLBP2\Examples\...
...\CVI Sample\CSample.prj

Source file:

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\TLBP2\Examples\...
...\CVI Sample\CSample.c

Executable sample demo:

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\TLBP2\Examples\...
...\CVI Sample\CSample.exe