



CCS Series Spectrometer Write Your Own Application

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

Version: 2.03
Date: 31-May-2017

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 being installed to your computer during software installation and cannot be found on the installation CD.

In this section the location of drivers and files, required for programming in different environments, are given for installation under Windows XP (32 bit) and Windows 7 (32 and 64 bit)

Note

OSA software and drivers are available as 32 bit and 64 bit applications. As for this reason, in 32 bit systems only the 32 bit versions are installed, they are installed to

```
C:\Program Files\...      (executables)
C:\Windows\System32\...   (libraries/DLLs)
```

while in 64 bit systems – both the 32 bit and the 64 bit versions are installed to:

```
C:\Program Files\...      (64bit executables)
C:\Windows\System32\...   (64bit libraries/DLLs)
C:\Program Files (x86)\... (32bit executables)
C:\Windows\SysWOW64\...   (32bit libraries/DLLs)
```

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

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

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

1.1 NI VISA Instrument driver 32bit on 32bit systems

C:\Program Files\IVI Foundation\VISA\WinNT\Bin\TLCCS_32.dll

Note

This instrument driver is required for all development environments!

The source code of this driver can be found in

C:\Program Files\IVI Foundation\VISA\WinNT\Thorlabs CCSseries\TLCCS.c

Online Help for NI VISA Instrument driver:

C:\Program Files\IVI Foundation\VISA\WinNT\Thorlabs CCSseries\...
...Manual\TLCCS.html

NI LabVIEW driver (including an example VI)

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

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

Header file

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

Static Library

C:\Program Files\IVI Foundation\VISA\WinNT\lib\msc\TLCCS_32.lib

Function Panel

C:\Program Files\IVI Foundation\VISA\WinNT\Thorlabs CCSseries\...
...TLCCS.fp

.net wrapper dll

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

Example for C

C:\Program Files\IVI Foundation\VISA\WinNT\Thorlabs CCSseries\...
...Examples\C

sample.c - C program how to communicate with a CCS series spectrometer

sample.exe - same, but executable

Example for C#

Solution file:

C:\Program Files\IVI Foundation\VISA\WinNT\Thorlabs CCSseries\...
...Examples\CSharp\CCS100_CSharpDemo.sln

Project file

```
C:\Program Files\IVI Foundation\VISA\WinNT\Thorlabs CCSseries\...  
...Examples\CSharp\CCS100_CSharpDemo\CCS100_CSharpDemo.csproj
```

Executable sample demo

```
C:\Program Files\IVI Foundation\VISA\WinNT\Thorlabs CCSseries\...  
...Examples\CSharp\CCS100_CSharpDemo\bin\Release\CCS100_CSharpDemo.exe
```

Example for LabView

Included in driver IIb container

1.2 NI VISA Instrument driver 32bit on 64bit systems

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\Bin\TLCCS_32.dll

Note

This instrument driver is required for all development environments!

The source code of this driver can be found in

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\...
...Thorlabs CCSseries\TLCCS.c

Online Help for NI VISA Instrument driver:

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\...
...Thorlabs CCSseries\Manual\TLCCS.html

NI LabVIEW driver (including an example VI)

C:\Program Files (x86)\National Instruments\LabVIEW xxxx\...
...Instr.lib\TLCCS\TLCCS.llb

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

Header file

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\include\TLCCS.h

Static Library

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\lib\msc\TLCCS_32.lib

Function Panel

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\...
...Thorlabs CCSseries\TLCCS.fp

.net wrapper dll

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

Example for C

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\Thorlabs
CCSseries\...
...Examples\C

sample.c - C program how to communicate with a CCS series spectrometer

sample.exe - same, but executable

Example for C#

Solution file:

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\Thorlabs
CCSseries\...
...Examples\CSharp\CCS100_CSharpDemo.sln

Project file

```
C:\Program Files (x86)\IVI Foundation\VISA\WinNT\Thorlabs  
CCSseries\...  
...Examples\CSharp\CCS100_CSharpDemo\CCS100_CSharpDemo.csproj
```

Executable sample demo

```
C:\Program Files (x86)\IVI Foundation\VISA\WinNT\Thorlabs  
CCSseries\...  
...Examples\CSharp\CCS100_CSharpDemo\bin\Release\CCS100_CSharpDemo.exe
```

Example for LabView

Included in driver IIb container.

1.3 NI VISA Instrument driver 64bit on 64bit systems

C:\Program Files\IVI Foundation\VISA\Win64\Bin\TLCCS_64.dll

Note

This instrument driver is required for all development environments!

The source code of this driver can be found in

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\...
...Thorlabs CCSseries\TLCCS.c

Online Help for NI VISA Instrument driver:

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\...
...Thorlabs CCSseries\Manual\TLCCS.html

NI LabVIEW driver (including an example VI)

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

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

Header file

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\...
...include\TLCCS.h

Static Library

C:\Program Files\IVI Foundation\VISA\Win64\lib_x64\...
...msc\TLCCS_64.lib

Function Panel

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\...
...Thorlabs CCSseries\TLCCS.fp

.net wrapper dll

C:\Program Files (x86)\Microsoft.NET\Primary Interop Assemblies\...
...Thorlabs.ccs.interop64.dll

Example for C

C:\Program Files (x86)\IVI Foundation\VISA\WinNT\...
...Thorlabs CCSseries\Examples\C

sample.c - C program how to communicate with a CCS series spectrometer

sample64.exe - same, but 64bit executable

Example for C#

Solution file (same as 32bit on 64bit systems):

```
C:\Program Files (x86)\IVI Foundation\VISA\WinNT\...  
...Thorlabs CCSseries\Examples\CSharp\CCS100_CSharpDemo.sln
```

Project file (same as 32bit on 64bit systems):

```
C:\Program Files (x86)\IVI Foundation\VISA\WinNT\...  
...Thorlabs CCSseries\Examples\CSharp\CCS100_CSharpDemo\...  
...CCS100_CSharpDemo.csproj
```

Executable sample demo (same as 32bit on 64bit systems):

```
C:\Program Files (x86)\IVI Foundation\VISA\WinNT\...  
...Thorlabs CCSseries\Examples\CSharp\CCS100_CSharpDemo\...  
...bin\Release\CCS100_CSharpDemo.exe
```

Note

To get a 64bit executable you can set your project options to compile for 64bit targets. You have to set the references for the executable to the 64bit DLLs (see above, Thorlabs.ccs.interop64.dll).

Example for LabView

Included in driver IIb container.



THORLABS
www.thorlabs.com
