

## Remote Control - LeCroy Oszilloskop WaveSurfer 3000 mit LabVIEW via VICP LAN-Schnittstelle

Damit LeCroy Oszilloskope der Serie WaveSurfer 3000 mit LabVIEW via LAN (VICP) gesteuert werden können werden folgende Schritte benötigt.

### 1. Download des LabVIEW Treibers für Teledyne LeCroy XStream-DSO / MAUI Oszilloskope

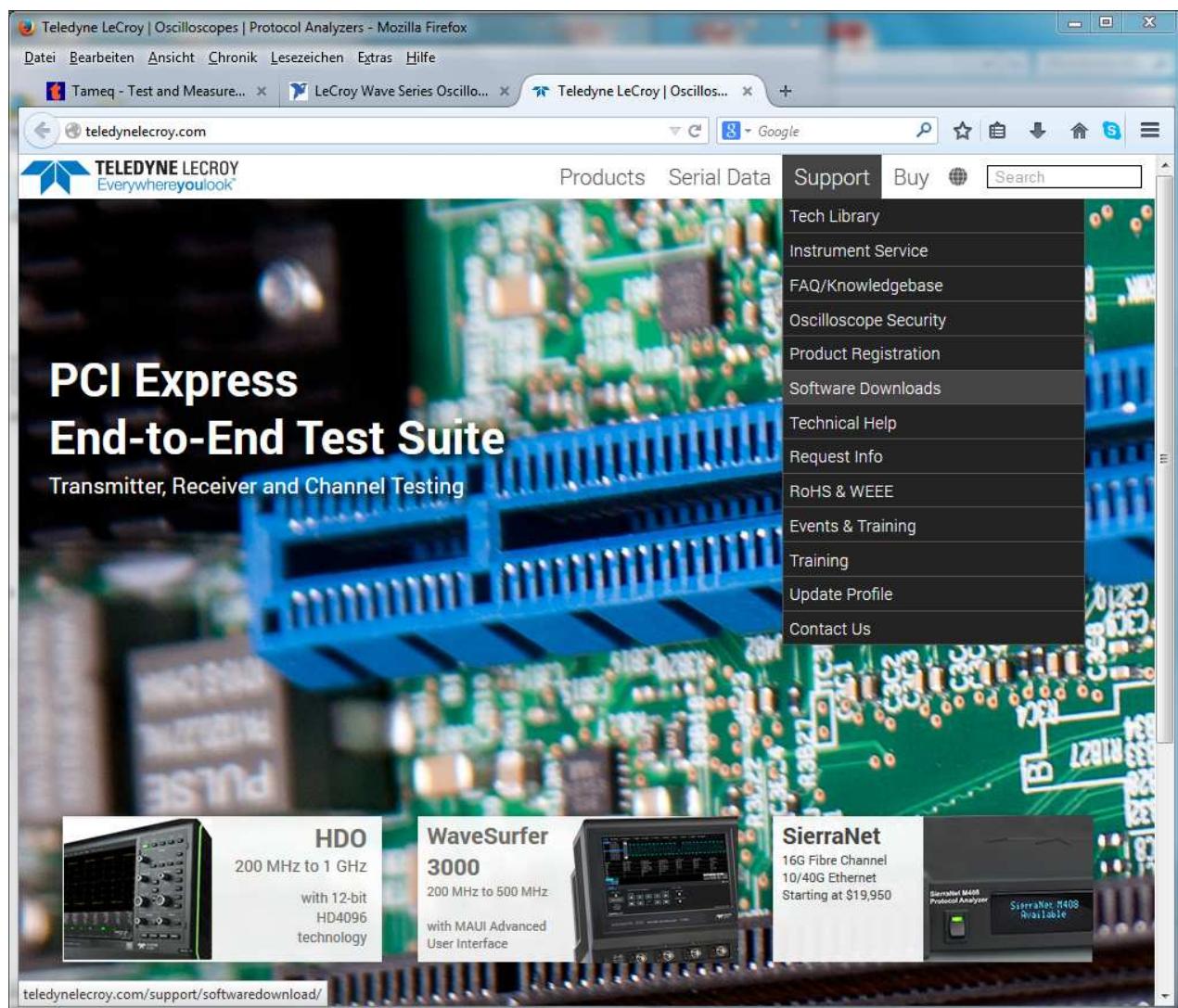
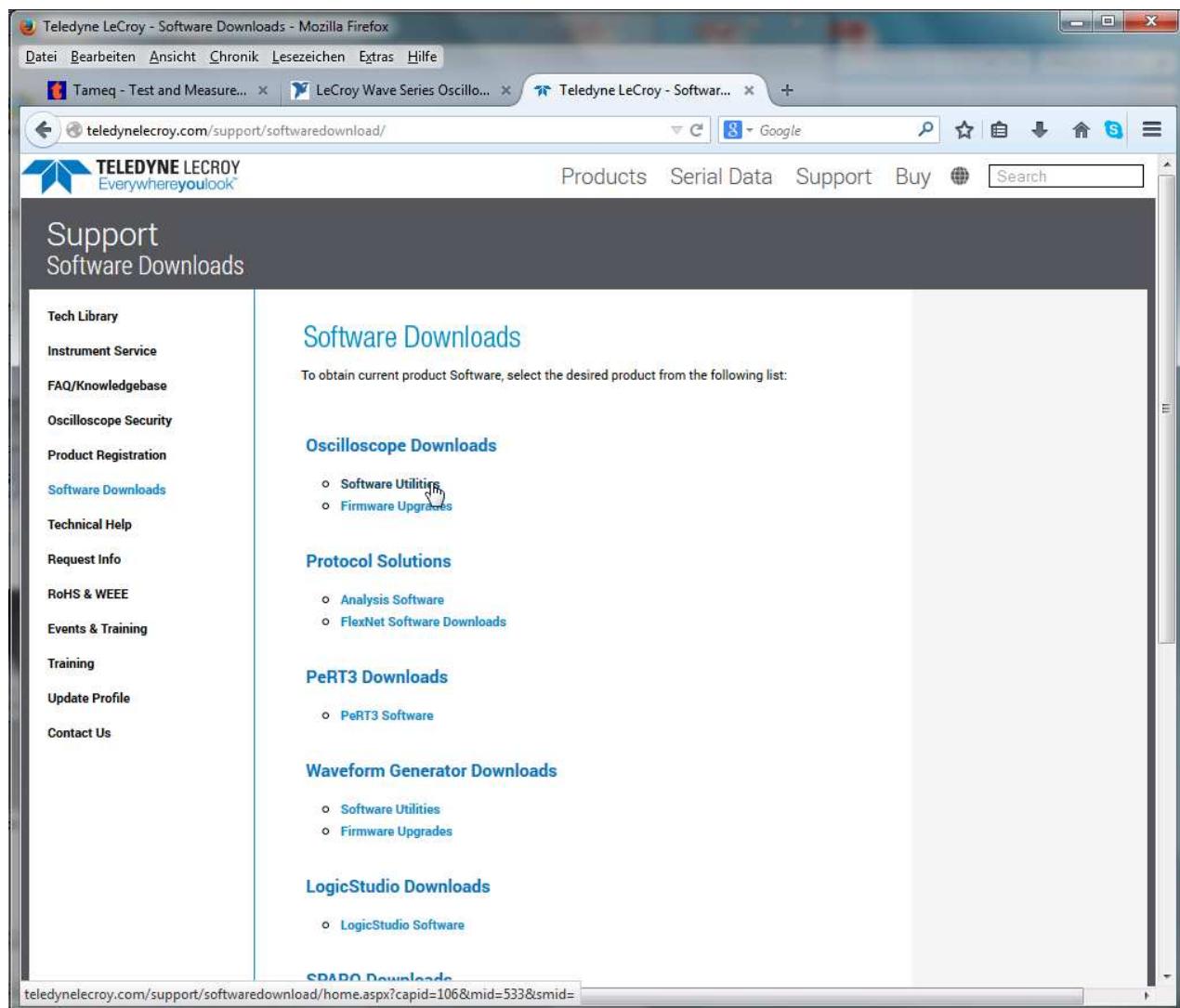
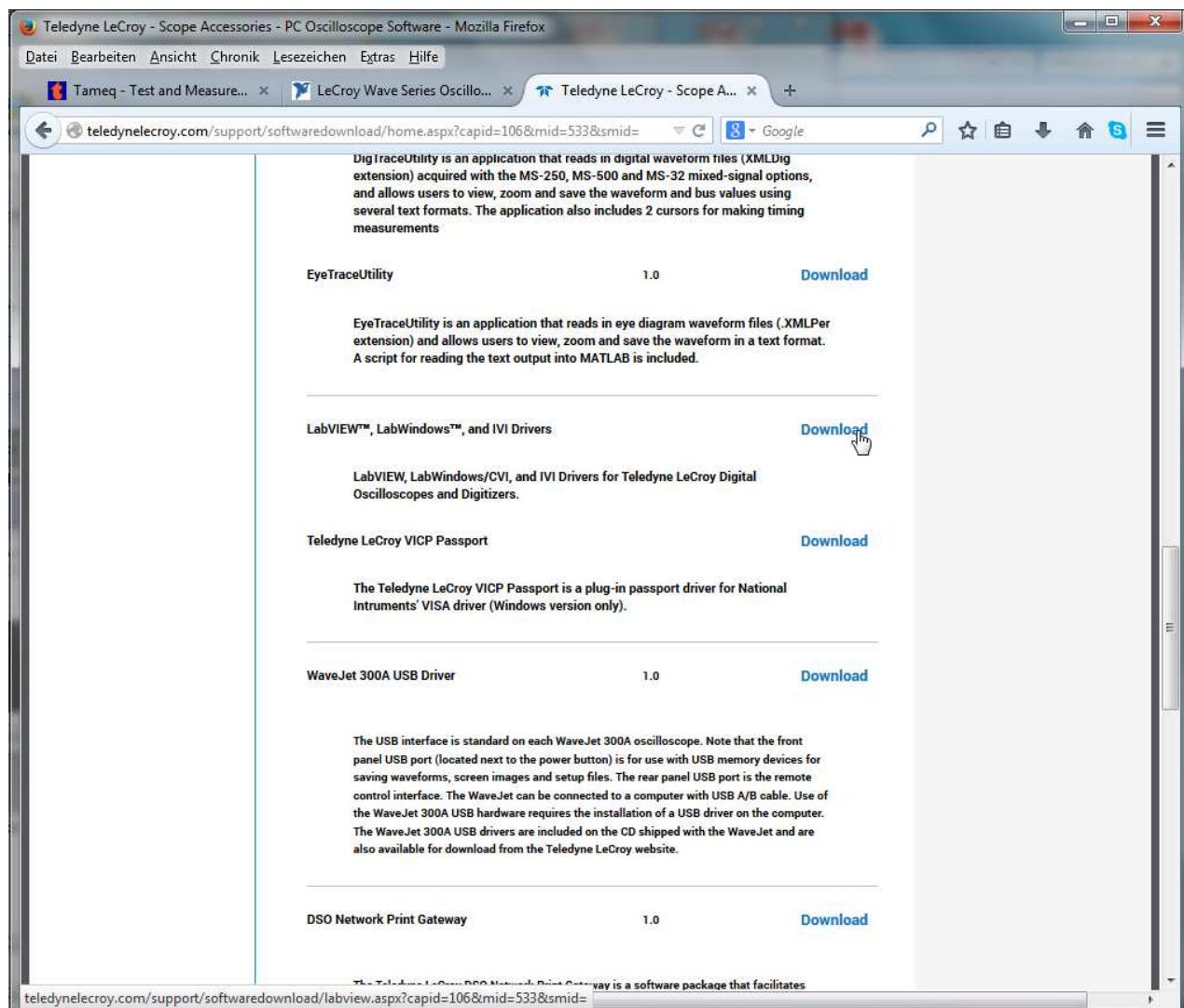


Abbildung 1 – Webseite von Teledyne LeCroy/Support/Software Downloads.



Teledyne LeCroy - Software Downloads - Mozilla Firefox  
Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe  
Tameq - Test and Measure... x LeCroy Wave Series Oscillo... x Teledyne LeCroy - Software... x +  
teledynelecroy.com/support/softwaredownload/ g Google Products Serial Data Support Buy Search  
TELEDYNE LECROY Everywhereyoulook  
Support Software Downloads  
Tech Library  
Instrument Service  
FAQ/Knowledgebase  
Oscilloscope Security  
Product Registration  
**Software Downloads**  
Technical Help  
Request Info  
RoHS & WEEE  
Events & Training  
Training  
Update Profile  
Contact Us  
Software Downloads  
To obtain current product Software, select the desired product from the following list:  
Oscilloscope Downloads  
o Software Utilities  
o Firmware Upgrades  
Protocol Solutions  
o Analysis Software  
o FlexNet Software Downloads  
PeRT3 Downloads  
o PeRT3 Software  
Waveform Generator Downloads  
o Software Utilities  
o Firmware Upgrades  
LogicStudio Downloads  
o LogicStudio Software  
SDABO Downloads  
teledynelecroy.com/support/softwaredownload/home.aspx?capid=106&mid=533&smid=

Abbildung 2 – Klicken auf Software Utilities.



DigTraceUtility is an application that reads in digital waveform files (XMLDig extension) acquired with the MS-250, MS-500 and MS-32 mixed-signal options, and allows users to view, zoom and save the waveform and bus values using several text formats. The application also includes 2 cursors for making timing measurements

**EyeTraceUtility** 1.0 [Download](#)

EyeTraceUtility is an application that reads in eye diagram waveform files (.XMLPer extension) and allows users to view, zoom and save the waveform in a text format. A script for reading the text output into MATLAB is included.

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**LabVIEW™, LabWindows™, and IVI Drivers** [Download](#)

LabVIEW, LabWindows/CVI, and IVI Drivers for Teledyne LeCroy Digital Oscilloscopes and Digitizers.

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**Teledyne LeCroy VICP Passport** [Download](#)

The Teledyne LeCroy VICP Passport is a plug-in passport driver for National Instruments' VISA driver (Windows version only).

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**WaveJet 300A USB Driver** 1.0 [Download](#)

The USB interface is standard on each WaveJet 300A oscilloscope. Note that the front panel USB port (located next to the power button) is for use with USB memory devices for saving waveforms, screen images and setup files. The rear panel USB port is the remote control interface. The WaveJet can be connected to a computer with USB A/B cable. Use of the WaveJet 300A USB hardware requires the installation of a USB driver on the computer. The WaveJet 300A USB drivers are included on the CD shipped with the WaveJet and are also available for download from the Teledyne LeCroy website.

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**DSO Network Print Gateway** 1.0 [Download](#)

The Teledyne LeCroy DSO Network Print Gateway is a software package that facilitates

Abbildung 3 – Suchen nach LabVIEW Drivers und klicken auf Download.

Teledyne LeCroy - Instrument Drivers for Digital Oscilloscopes - Mozilla Firefox

Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe

Tameq - Test and Measure... x LeCroy Wave Series Oscillo... x Teledyne LeCroy - Instrum... x +

teledynelecroy.com/support/softwaredownload/labview.aspx?capid=106&mid=533&smdir=

Google

X-Stream DSOs

Type: LabVIEW™ driver

Follow this link to National Instrument's page for LabVIEW Plug and Play drivers: NI X-Stream LabVIEW Drivers. NI has developed a "traditional" driver as well as a "project-style" driver or use in LabVIEW 8.0 and above.

Installation instructions can be found in an HTML readme file that is within the ZIP file containing the driver download. Read this first to avoid installation issues. Also contained in the readme file are instructions for finding Example programs.

Designed for:

- WaveMaster 8 Zi Oscilloscopes
- SDA 8 Zi Oscilloscopes
- DDA 8 Zi Oscilloscopes
- SDA Oscilloscopes
- SDA 7 Zi Oscilloscopes
- DDA Oscilloscopes
- DDA 7 Zi Oscilloscopes
- WaveMaster 8000(a) Oscilloscopes
- WavePro 7 Zi Oscilloscopes
- WavePro 7000(a) Oscilloscopes
- WaveRunner 6000(a) Oscilloscopes
- WaveRunner Xi/MXi(-A) Oscilloscopes
- WaveSurfer Xs/MXs(-A) Oscilloscopes
- WaveSurfer 400 Oscilloscopes

Software requirements

- LabVIEW 7.0 or higher
- NI-VISA 3.0 or higher
- Latest Teledyne LeCroy VICP Passport (for VICP connections only; not required for GPIB or LXI)

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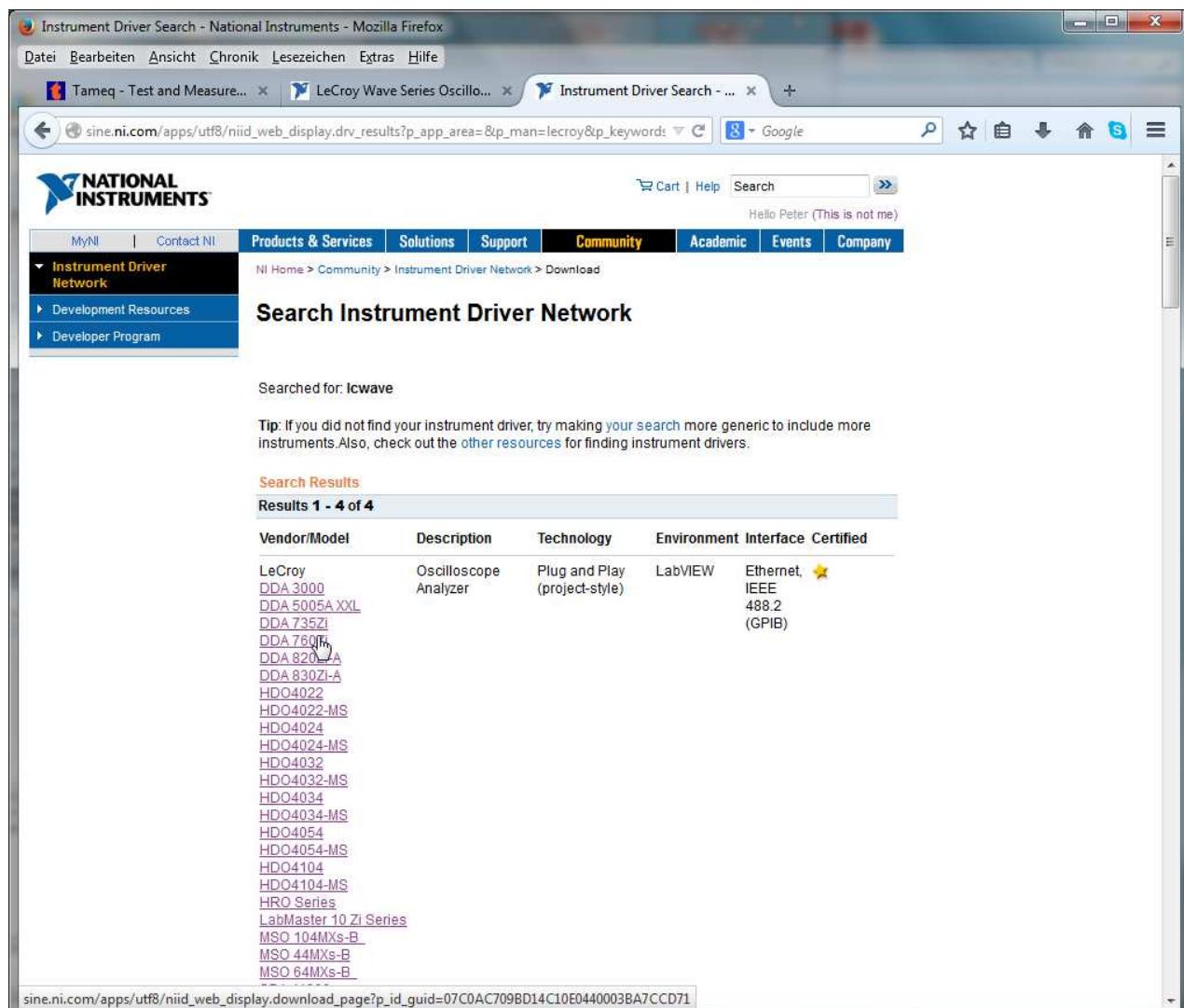
WaveJet DSOs

Type: LabVIEW™ driver

Follow this link to National Instrument's page for LabVIEW Plug and Play drivers: NI WaveJet LabVIEW driver

Installation instructions can be found in an HTML readme file that is within the ZIP file containing the driver download. Read this first to avoid installation issues. Also

Abbildung 4 – Unter XStreamDSO klicken auf NI X-Stream LabVIEW Drivers.



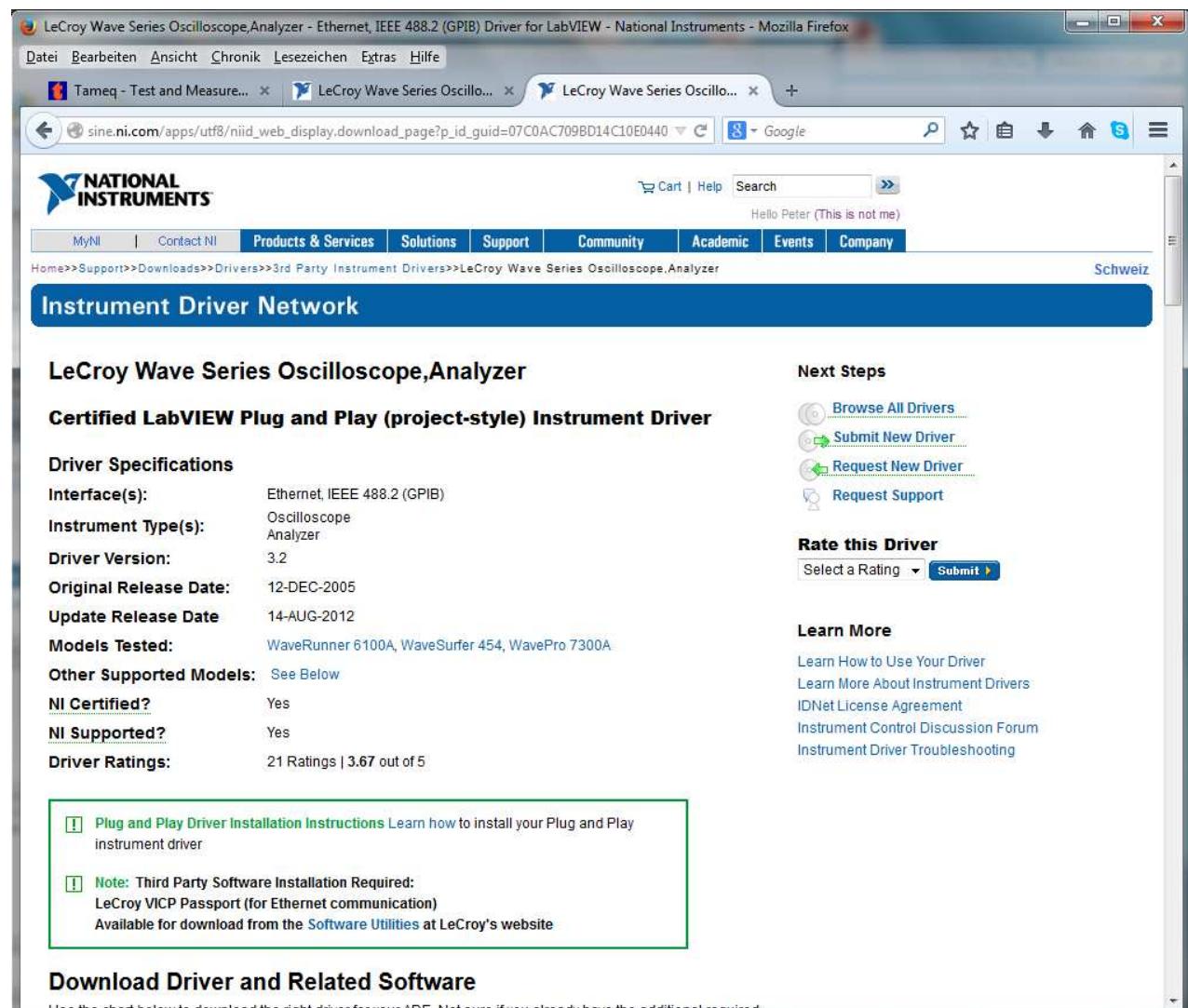
The screenshot shows a Mozilla Firefox browser window with the following details:

- Title Bar:** Instrument Driver Search - National Instruments - Mozilla Firefox
- Menu Bar:** Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe
- Tab Bar:** Tameq - Test and Measure... (active), LeCroy Wave Series Oscillo..., Instrument Driver Search - ...
- Address Bar:** sine.ni.com/apps/utf8/niid\_web\_display.drv\_results?p\_app\_area=&p\_man=lecroy&p\_keywords=lcwave
- Search Bar:** Google
- Content Area:**
  - National Instruments Logo:** NATIONAL INSTRUMENTS
  - Navigation Bar:** MyNI | Contact NI | Products & Services | Solutions | Support | Community | Academic | Events | Company
  - Left Sidebar:** ▾ Instrument Driver Network (selected), Development Resources, Developer Program
  - Breadcrumbs:** NI Home > Community > Instrument Driver Network > Download
  - Section Header:** Search Instrument Driver Network
  - Text:** Searched for: lcwave
  - Tip:** If you did not find your instrument driver, try making your search more generic to include more instruments. Also, check out the other resources for finding instrument drivers.
  - Section Header:** Search Results
  - Table:** Results 1 - 4 of 4

Vendor/Model	Description	Technology	Environment	Interface	Certified
LeCroy	Oscilloscope Analyzer	Plug and Play (project-style)	LabVIEW	Ethernet, IEEE 488.2 (GPIB)	★
<a href="#">DDA 3000</a>					
<a href="#">DDA 5005A XXL</a>					
<a href="#">DDA 735Zi</a>					
<a href="#">DDA 760Zi</a>					
<a href="#">DDA 820Zi-A</a>					
<a href="#">DDA 830Zi-A</a>					
<a href="#">HDO4022</a>					
<a href="#">HDO4022-MS</a>					
<a href="#">HDO4024</a>					
<a href="#">HDO4024-MS</a>					
<a href="#">HDO4032</a>					
<a href="#">HDO4032-MS</a>					
<a href="#">HDO4034</a>					
<a href="#">HDO4034-MS</a>					
<a href="#">HDO4054</a>					
<a href="#">HDO4054-MS</a>					
<a href="#">HDO4104</a>					
<a href="#">HDO4104-MS</a>					
<a href="#">HRO Series</a>					
<a href="#">LabMaster 10 Zi Series</a>					
<a href="#">MSO 104MXs-B</a>					
<a href="#">MSO 44MXs-B</a>					
<a href="#">MSO 64MXs-B</a>					

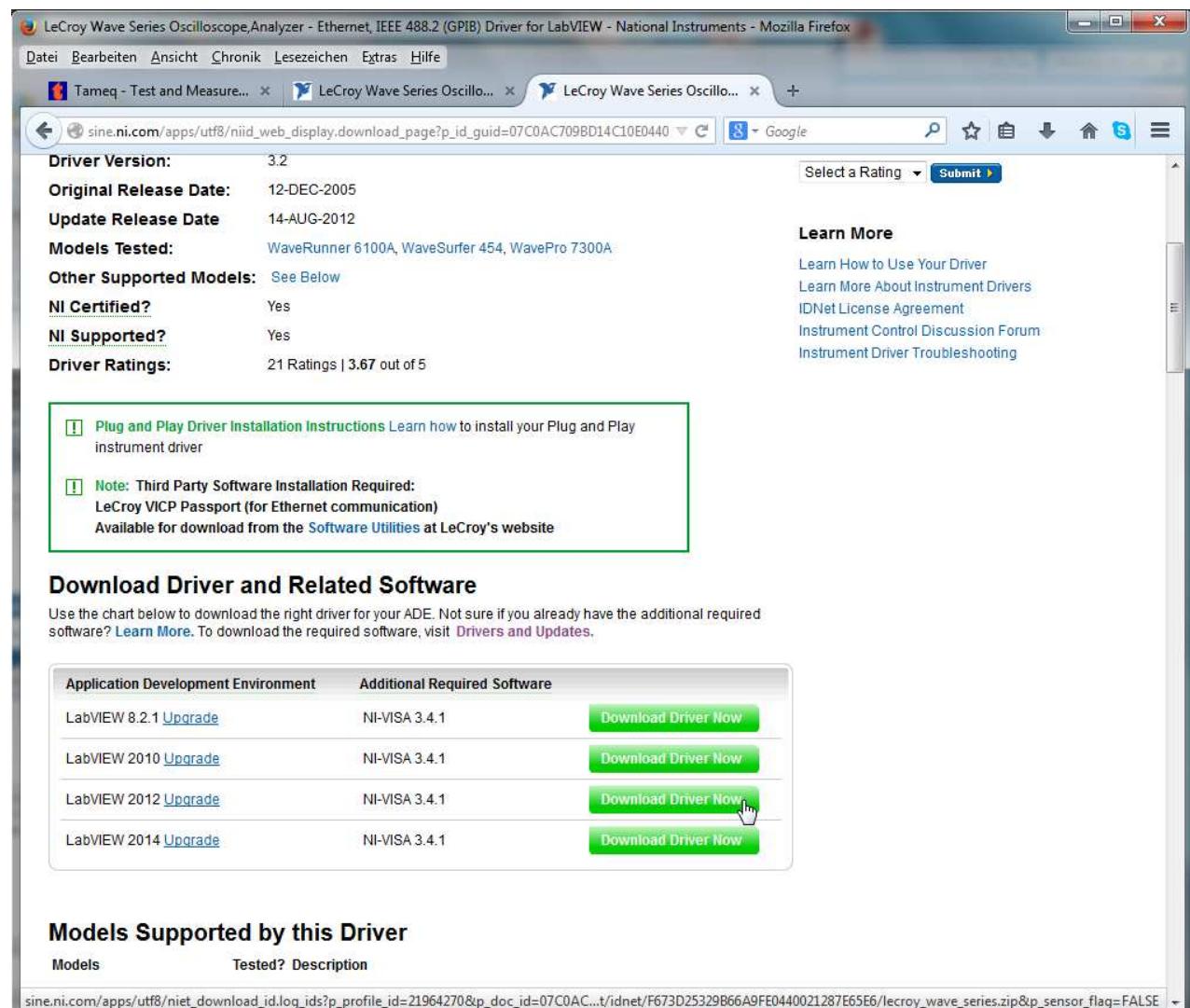
  - Page Bottom:** sine.ni.com/apps/utf8/niid\_web\_display.download\_page?p\_id\_guid=07C0AC709BD14C10E0440003BA7CCD71

Abbildung 5 – Klicken auf die Oszilloskop-Serie (die Serie WaveSurfer 3000 ist noch nicht aufgelistet).



The screenshot shows a Mozilla Firefox browser window displaying the National Instruments (NI) website. The URL in the address bar is [sine.ni.com/apps/utf8/niid\\_web\\_display.download\\_page?p\\_id\\_guid=07C0AC709BD14C10E0440](http://sine.ni.com/apps/utf8/niid_web_display.download_page?p_id_guid=07C0AC709BD14C10E0440). The page content is for the LeCroy Wave Series Oscilloscope, Analyzer. It includes sections for Driver Specifications, Interface(s), Instrument Type(s), Driver Version, Original Release Date, Update Release Date, Models Tested, Other Supported Models, NI Certified?, NI Supported?, and Driver Ratings. A 'Next Steps' sidebar lists options like Browse All Drivers, Submit New Driver, Request New Driver, and Request Support. A 'Rate this Driver' section allows users to select a rating and submit it. A 'Learn More' section links to various resources such as Learn How to Use Your Driver, Learn More About Instrument Drivers, IDNnet License Agreement, Instrument Control Discussion Forum, and Instrument Driver Troubleshooting. A note at the bottom states: "Use the chart below to download the right driver for your ADE. Not sure if you already have the additional required".

Abbildung 6 – NI-Webseite mit Treiber in Project-Style von LeCroy Oszilloskopen.



Application Development Environment	Additional Required Software	Action
LabVIEW 8.2.1 <a href="#">Upgrade</a>	NI-VISA 3.4.1	<a href="#">Download Driver Now</a>
LabVIEW 2010 <a href="#">Upgrade</a>	NI-VISA 3.4.1	<a href="#">Download Driver Now</a>
LabVIEW 2012 <a href="#">Upgrade</a>	NI-VISA 3.4.1	<a href="#">Download Driver Now</a>
LabVIEW 2014 <a href="#">Upgrade</a>	NI-VISA 3.4.1	<a href="#">Download Driver Now</a>

Abbildung 7 – Download Driver Now klicken von gewünschter LabVIEW-version.

Dieser Treiber benötigt NI-VISA 3.4.1 oder höher auf dem Rechner, mit dem die Kommunikation zum Oszilloskop hergestellt werden soll.

## 2. Installation des LabVIEW Treibers

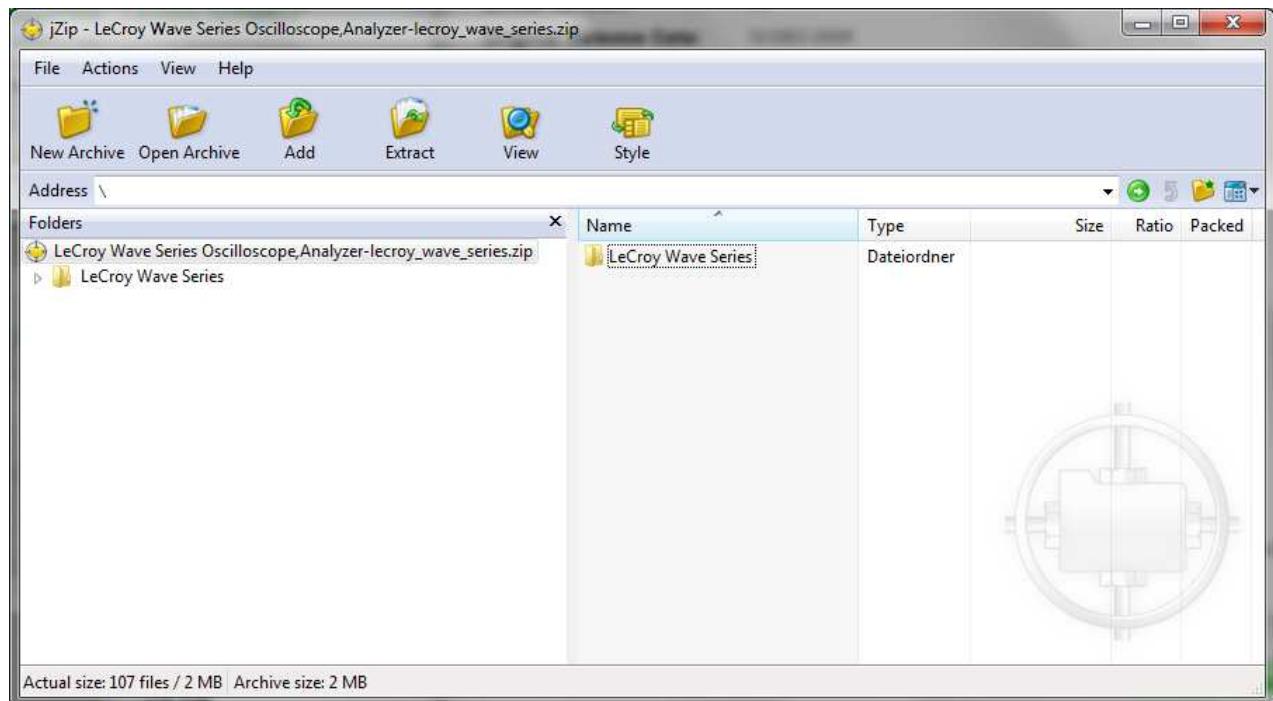


Abbildung 8 – Oeffnen der heruntergeladenen ZIP-Datei.

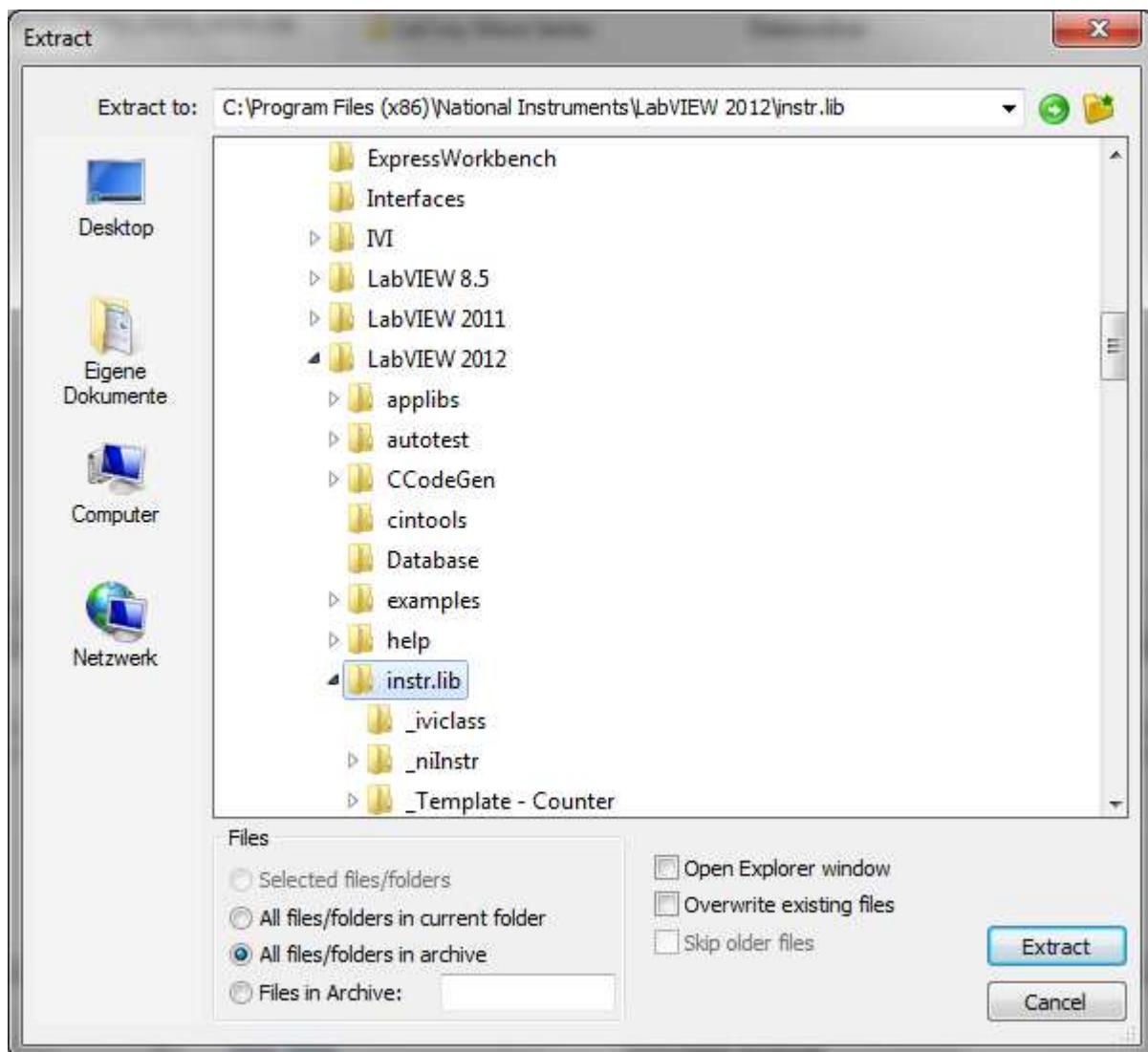


Abbildung 9 – Auspacken des Treibers unter der gewünschten LabVIEW Version/instr.lib.

### 3. Installation von Teledyne LeCroy Passport

LeCroy empfiehlt Anwendern, die ein Oszilloskop via LAN steuern möchten die Installation von LeCroy Passport.

Damit das WaveSurfer Oszilloskop via TCPIP (VICP) gesteuert werden kann muss auf dem Rechner die Software LeCroy Passport installiert sein. LeCroy Passport installiert einen zusätzlichen Treiber in die NI-VISA-Umgebung, der die Nutzung des VICP-Protokolls von LeCroy ermöglicht.

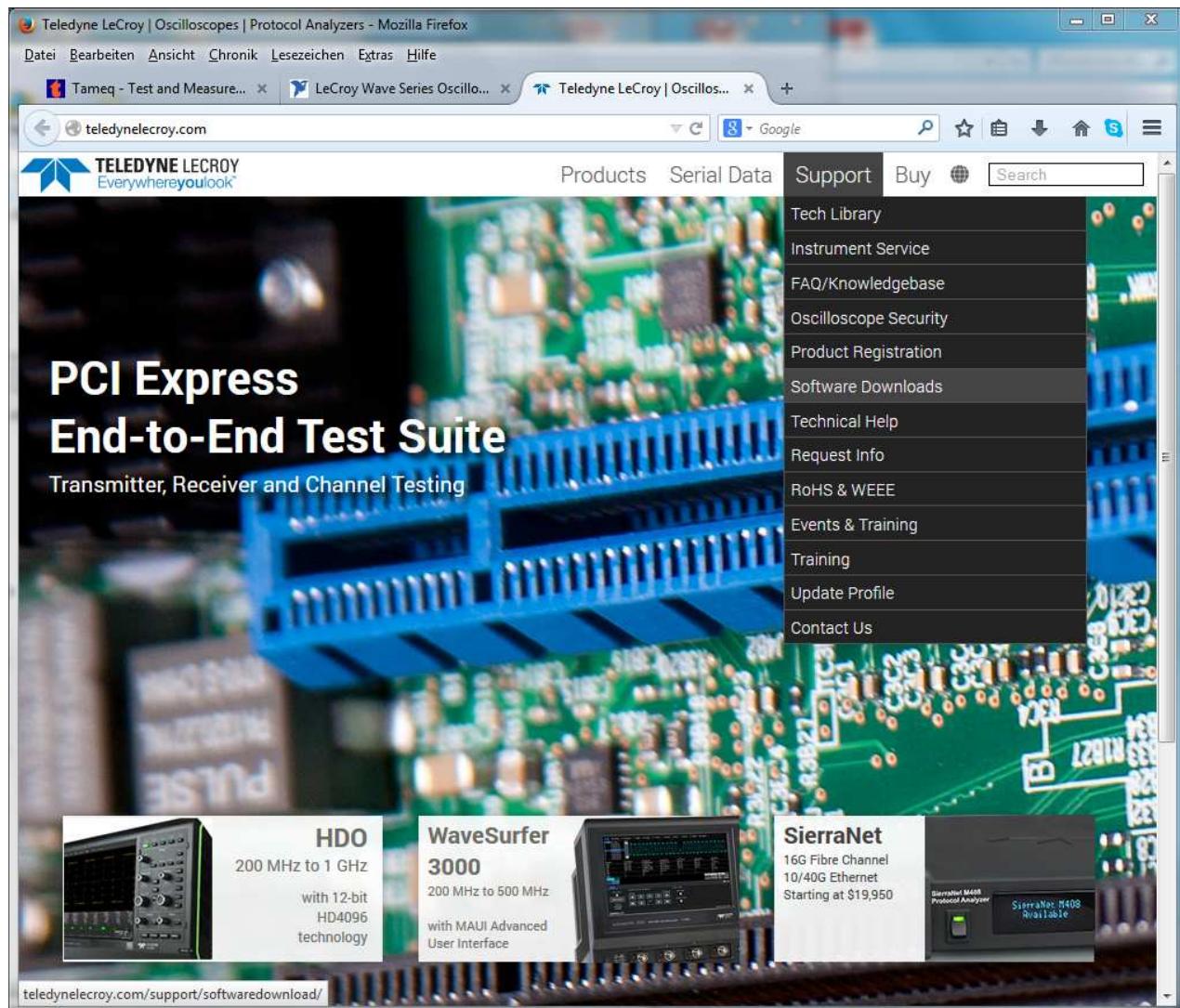
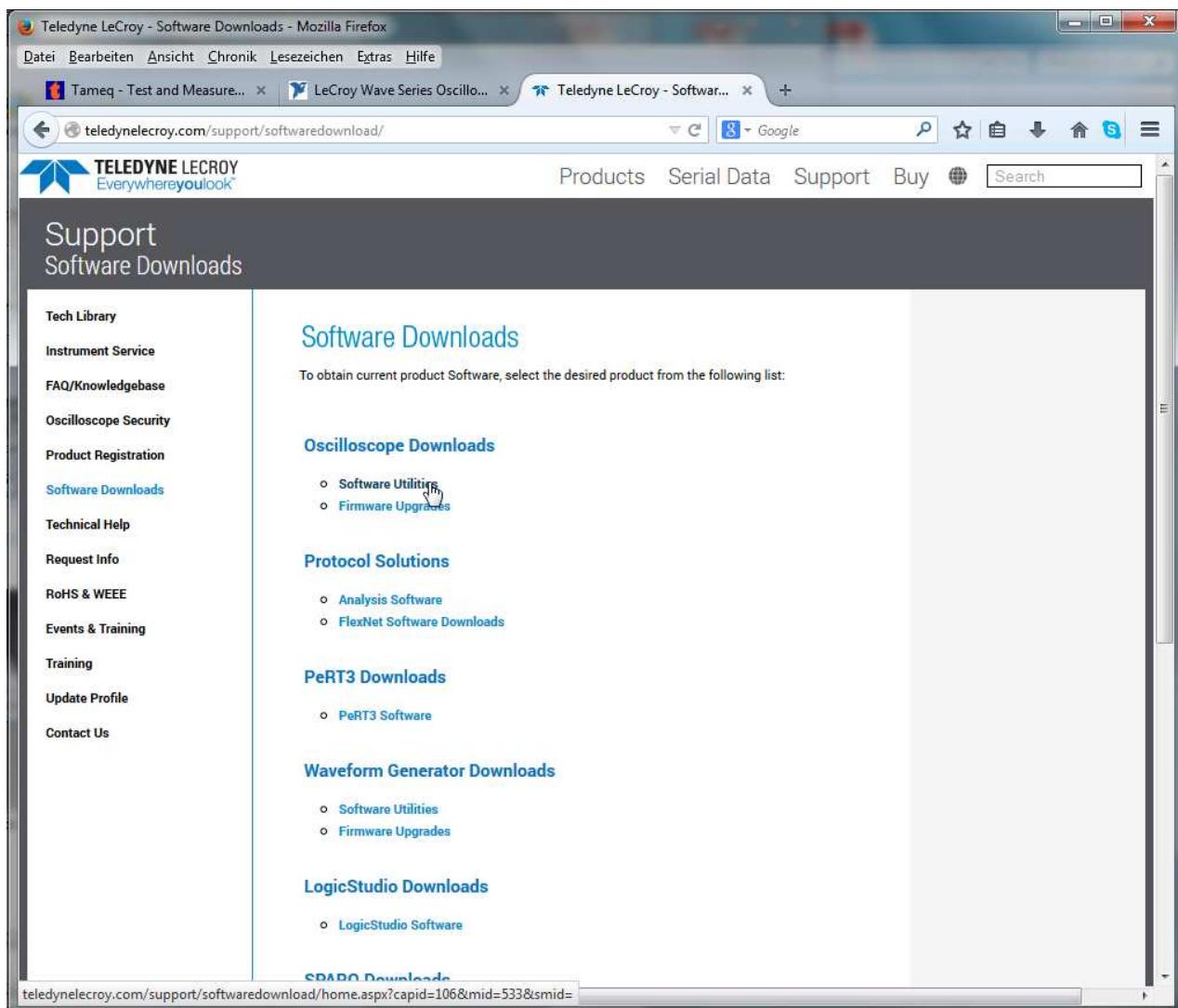


Abbildung 10 – Webseite von Teledyne LeCroy/Support/Software Downloads.



The screenshot shows a Mozilla Firefox browser window with the following details:

- Title Bar:** Teledyne LeCroy - Software Downloads - Mozilla Firefox
- Menu Bar:** Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe
- Tab Bar:** Tameq - Test and Measure... x LeCroy Wave Series Oscillo... x Teledyne LeCroy - Software Downloads x
- Address Bar:** teledynelecroy.com/support/softwaredownload/
- Page Content:**
  - Header:** TELEDYNE LECROY Everywhereyoulook
  - Navigation:** Products Serial Data Support Buy
  - Search:** Search
  - Main Section:** Support Software Downloads
  - Left Sidebar:** Tech Library, Instrument Service, FAQ/Knowledgebase, Oscilloscope Security, Product Registration, Software Downloads (highlighted), Technical Help, Request Info, RoHS & WEEE, Events & Training, Training, Update Profile, Contact Us.
  - Content Area:**
    - Software Downloads:** To obtain current product Software, select the desired product from the following list:
      - Oscilloscope Downloads:**
        - Software Utilities (highlighted)
        - Firmware Upgrades
      - Protocol Solutions:**
        - Analysis Software
        - FlexNet Software Downloads
      - PeRT3 Downloads:**
        - PeRT3 Software
      - Waveform Generator Downloads:**
        - Software Utilities
        - Firmware Upgrades
      - LogicStudio Downloads:**
        - LogicStudio Software
      - SDABO Downloads:**

Abbildung 11 – Klicken auf Software Utilities.

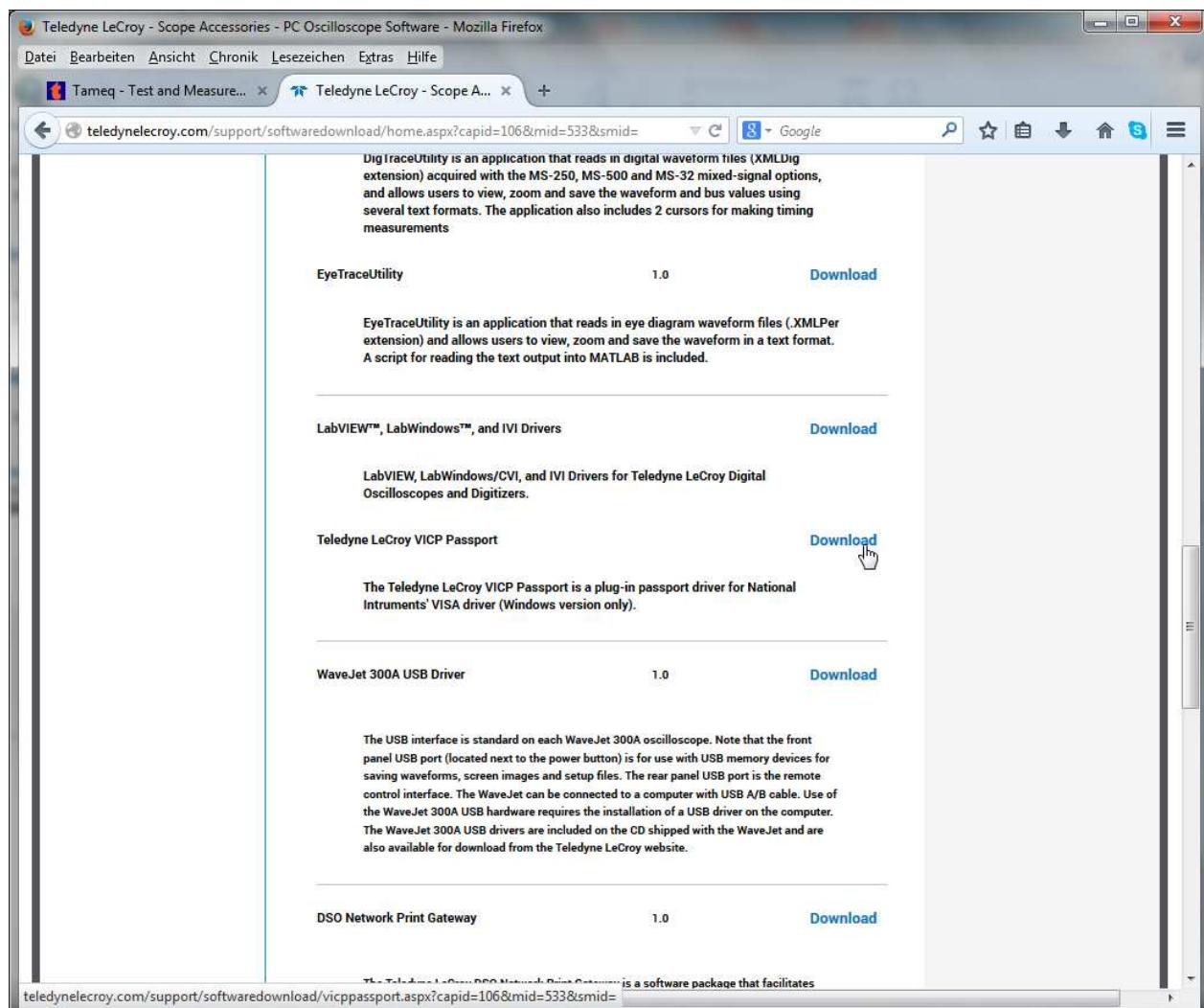


Abbildung 12 – Suchen nach Teledyne LeCroy VICP Passport und klicken auf Download.

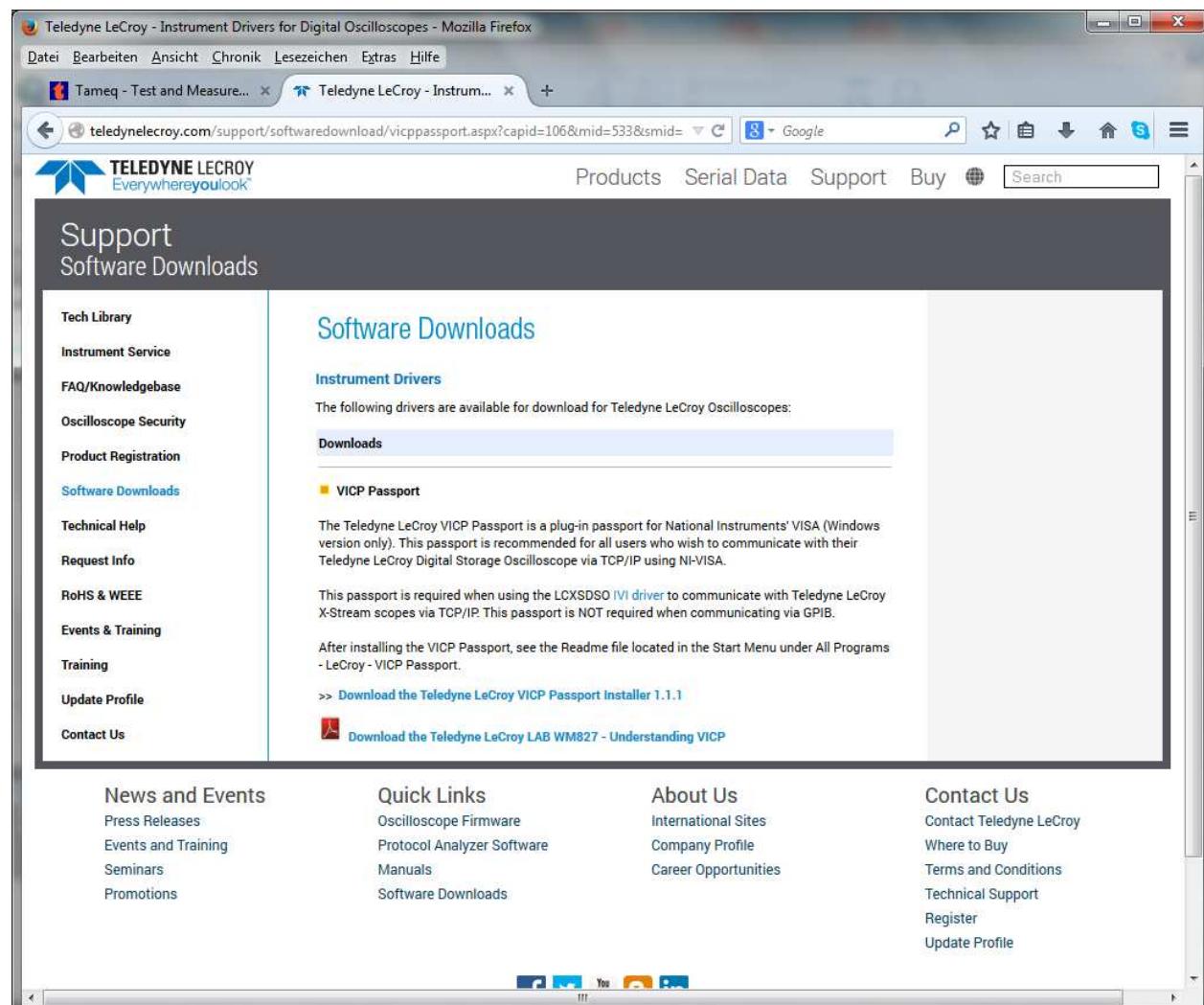


Abbildung 13 – Klicken auf Download the Teledyne LeCroy VICP Passport Installer.

Die Installation starten mit Doppelklick auf die Datei lecroyvicppassportinstaller\_v1.1.1.exe.



Abbildung 14 – Klicken auf Next, um weiter zu fahren.

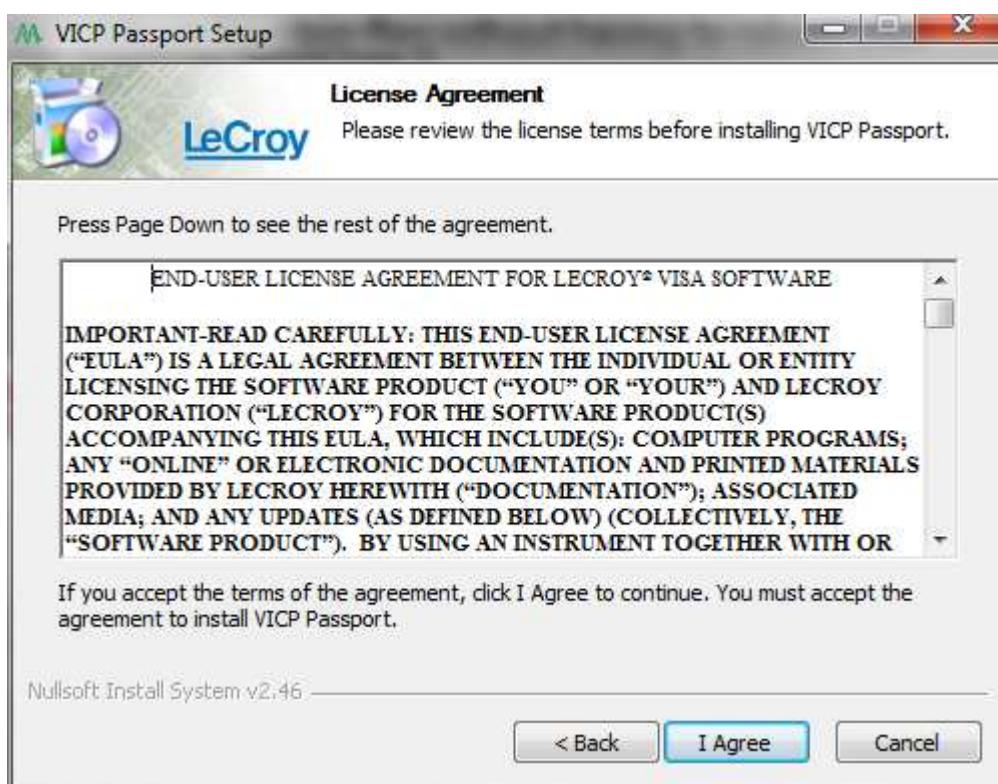


Abbildung 15 – Klicken auf I Agree, um weiter zu fahren.

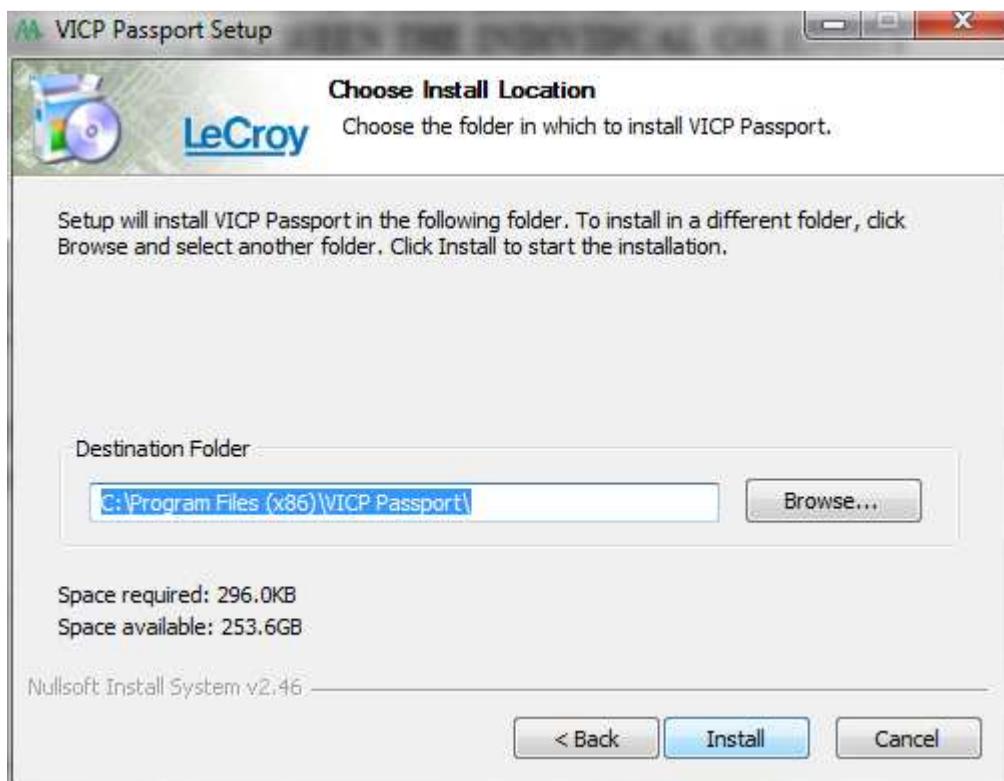


Abbildung 16 – Destination ändern oder gleich mit Klick auf Install die Installation jetzt zu starten.



Abbildung 17 – Die Installation ist abgeschlossen. Auf Finish klicken um das Fenster zu schliessen.

## LeCroy VICP Passport for NI-VISA

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The VICP Passport for NI-VISA extends the National Instruments VISA driver to support the LeCroy VICP protocol, used in the network remote control of LeCroy's DSOs.

Two versions are installed with the single installer, a 32-bit passport, and a 64-bit passport, which is installed on 64-bit Windows O/S versions only.

The switching between each passport is transparent, and will depend upon the application being used to interface to VISA.

Once installed, LeCroy networked instruments may be accessed using a resource name formatted as follows:

VICP::<dnsAddress>

e.g.

VICP::MYSCOPE

or

VICP::172.11.22.33

## Troubleshooting Tip

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The VICP Passport DLL can create a diagnostic log in C:\LeCroyPassport.txt if the following registry key is set to a value of 1 (default is 0):

[HKEY\_LOCAL\_MACHINE\SOFTWARE\LeCroy\LeCroyVICPPassport]  
"EnableLogging"=dword:00000001

## 4. Einstellungen der LAN-Karte des Rechners

Der Rechner, auf dem das LabVIEW-Programm laufen soll, muss für die Kommunikation via LAN-Schnittstelle vorbereitet werden.

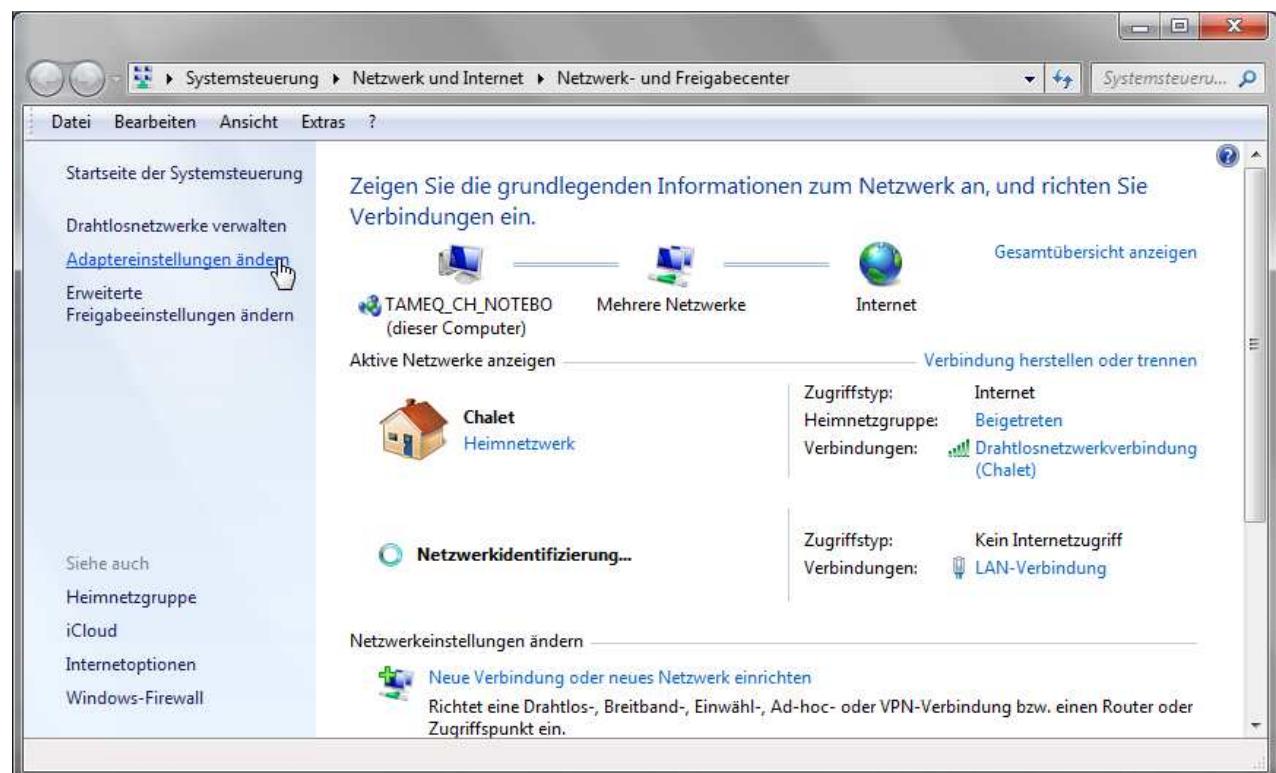


Abbildung 18 – Klicken auf Adapttereinstellungen ändern.

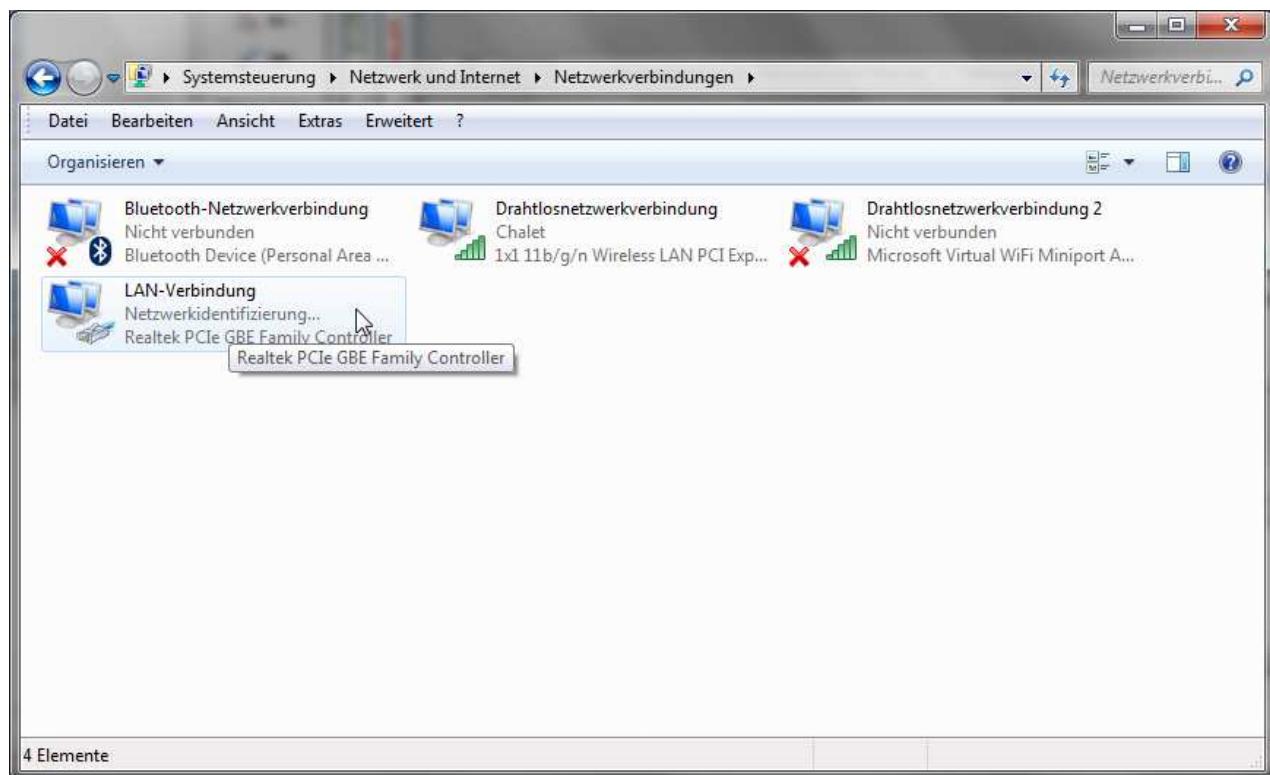


Abbildung 19 – LAN-Verbindung öffnen.

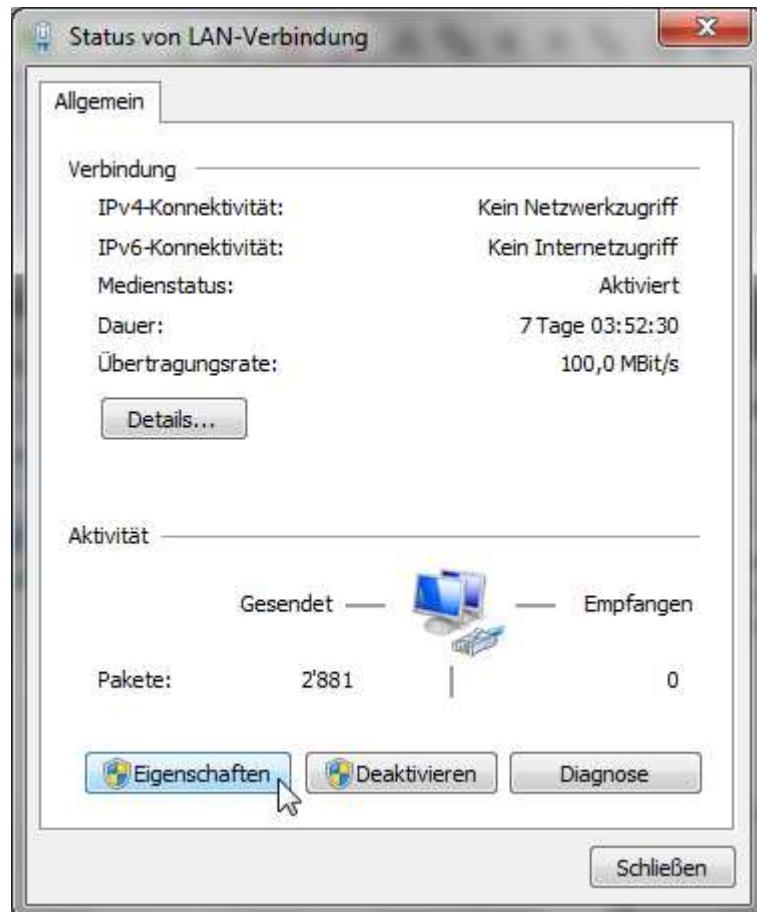


Abbildung 20 – Klicken auf Eigenschaften.

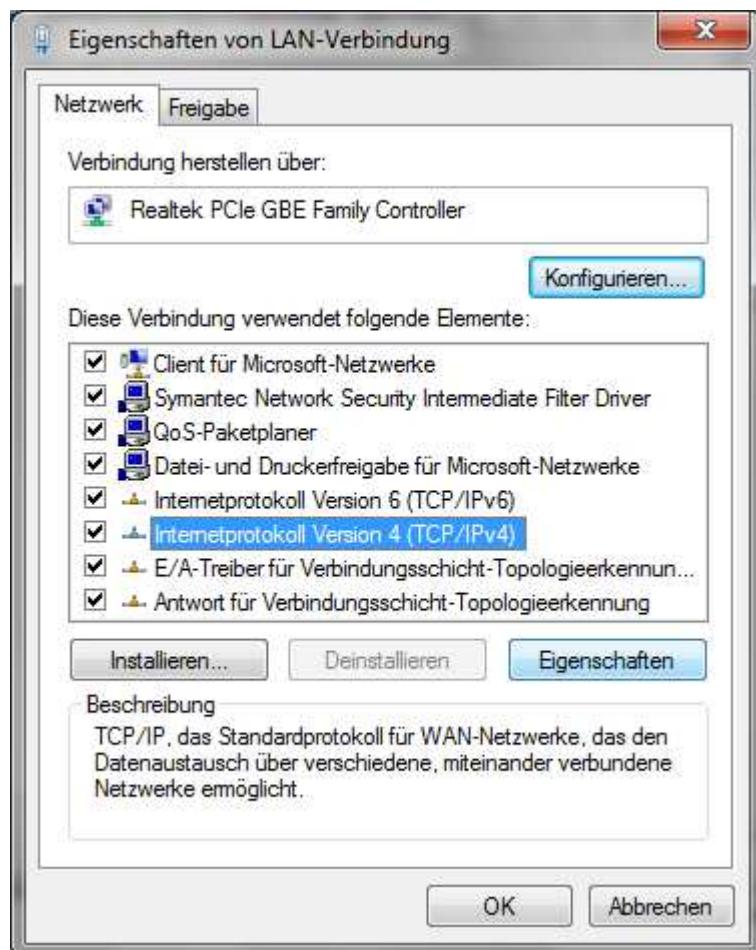


Abbildung 21 – (TCP/IPv4) selektieren und klicken auf Eigenschaften.



Abbildung 22 – IP-Adresse automatisch beziehen anwählen.

Dieser Schritt ist notwendig, weil die Serie WaveSurfer 3000 keine statischen IP-Adressen vergeben kann.

## 5. Vorbereiten des LeCroy WaveSurfer 3000 Oszilloskops

Das Oszilloskop wird über ein Standard-LAN-Kabel direkt mit dem Rechner verbunden. Daraufhin werden die IP-Adressen an den Rechner und das Oszilloskop automatisch vergeben. Die IP-Adresse des Oszilloskops sieht man im folgenden Bild.

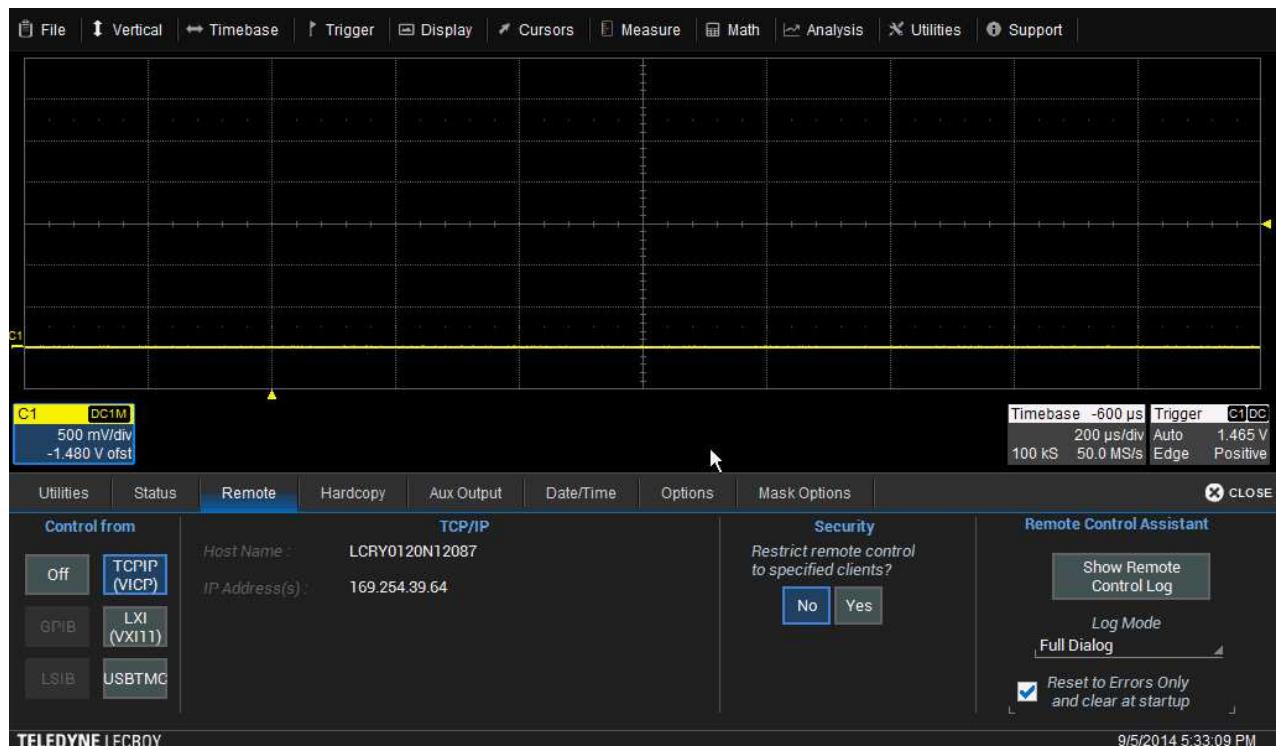


Abbildung 23 – Unter Utilities/Remote die Schnittstelle TCPIP (VICP) anwählen. Die IP-Adresse wurde automatisch vergeben.

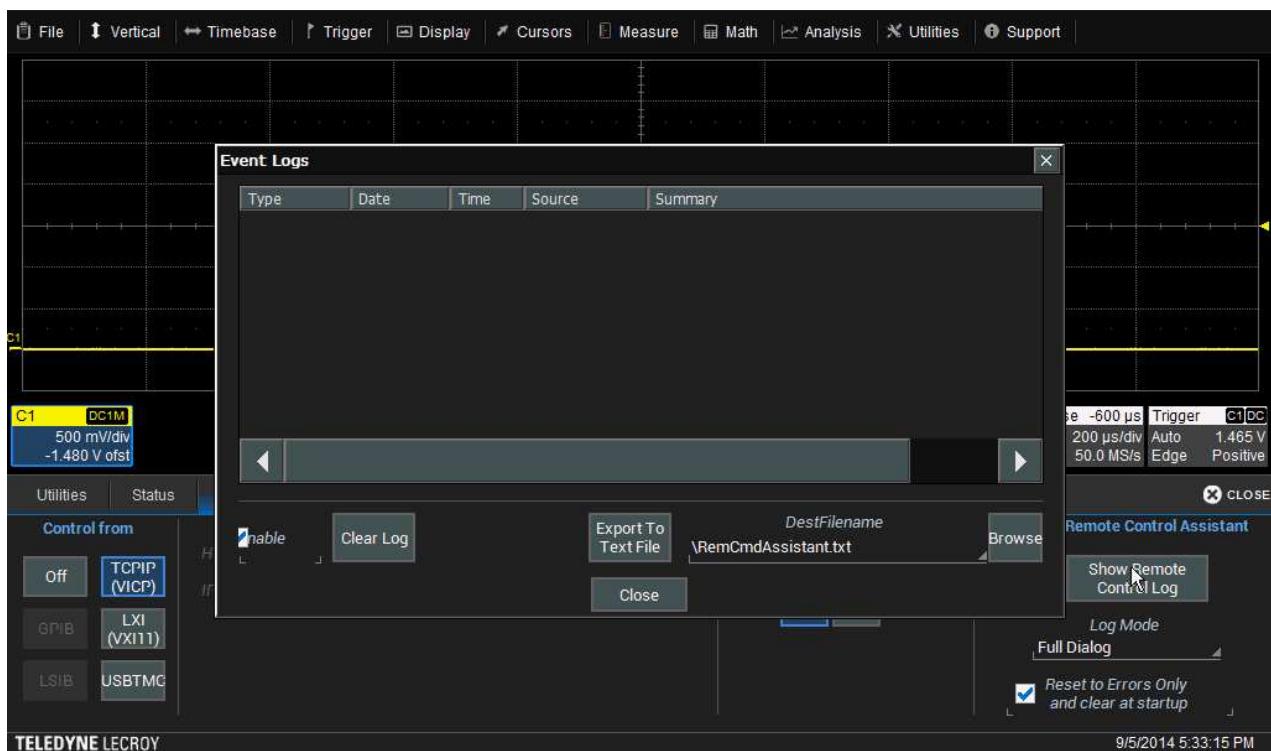


Abbildung 24 – Mit Show Remote Control Log und Log Mode Full Dialog kann die Kommunikation aufgezeichnet werden.

Zur Unterstützung bei der Programmierung besteht beim Oszilloskop die Möglichkeit, den kompletten Dialog oder nur die Fehler zu registrieren.

Das Oszilloskop ist betriebsbereit zum Ansteuern mit dem X-StreamDSO LabVIEW Treiber via LAN-Schnittstelle nach dem LeCroy VICP-Protokoll.

## 6. Inbetriebnahme des LabVIEW-Treibers

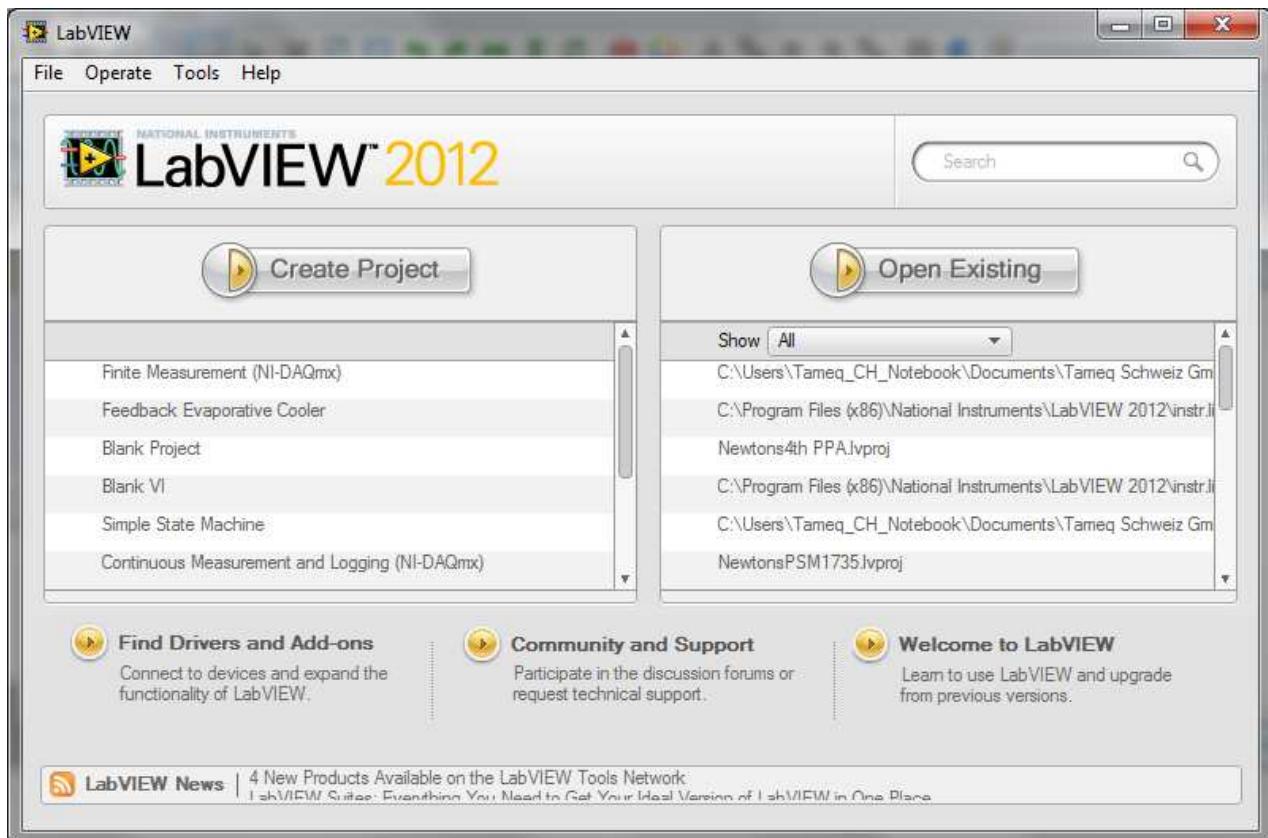


Abbildung 25 – Starten von LabVIEW.

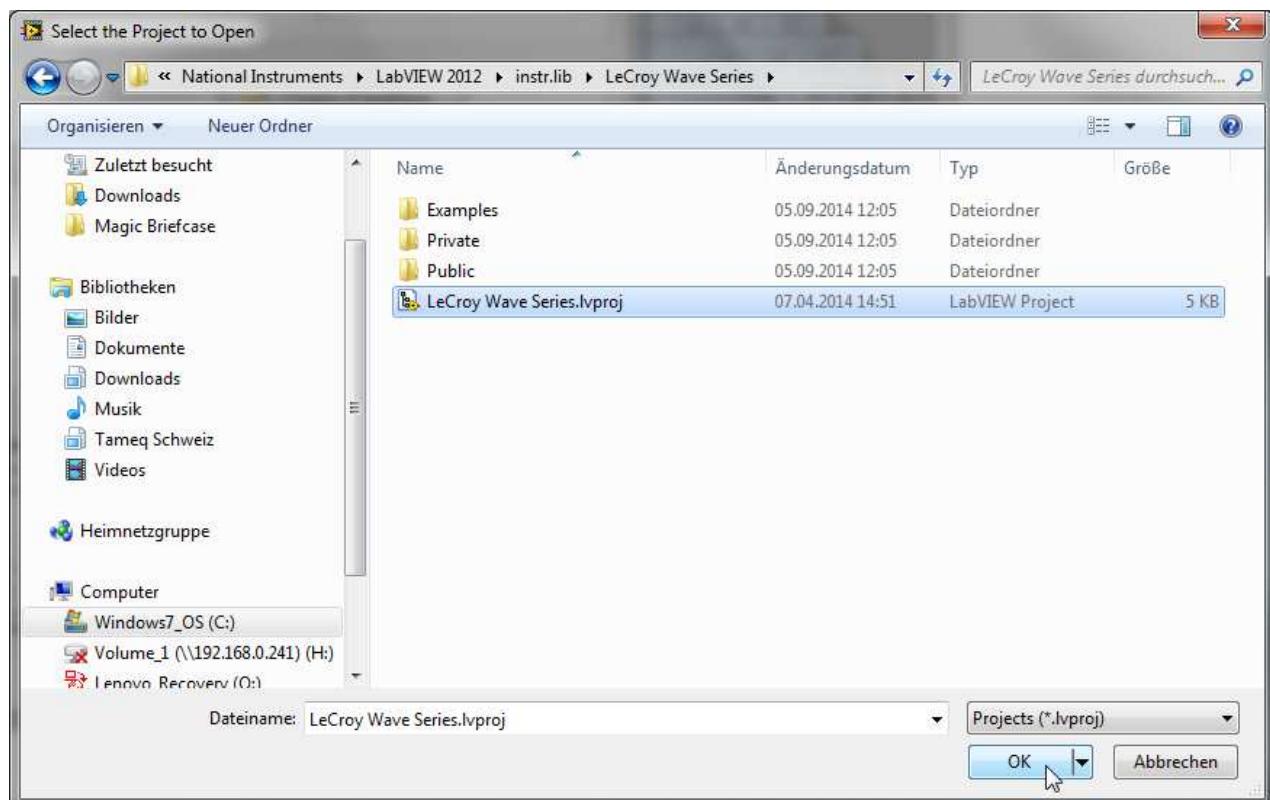


Abbildung 26 – Oeffnen des LabVIEW-Projektes LeCroy Wave Series.lvproj.

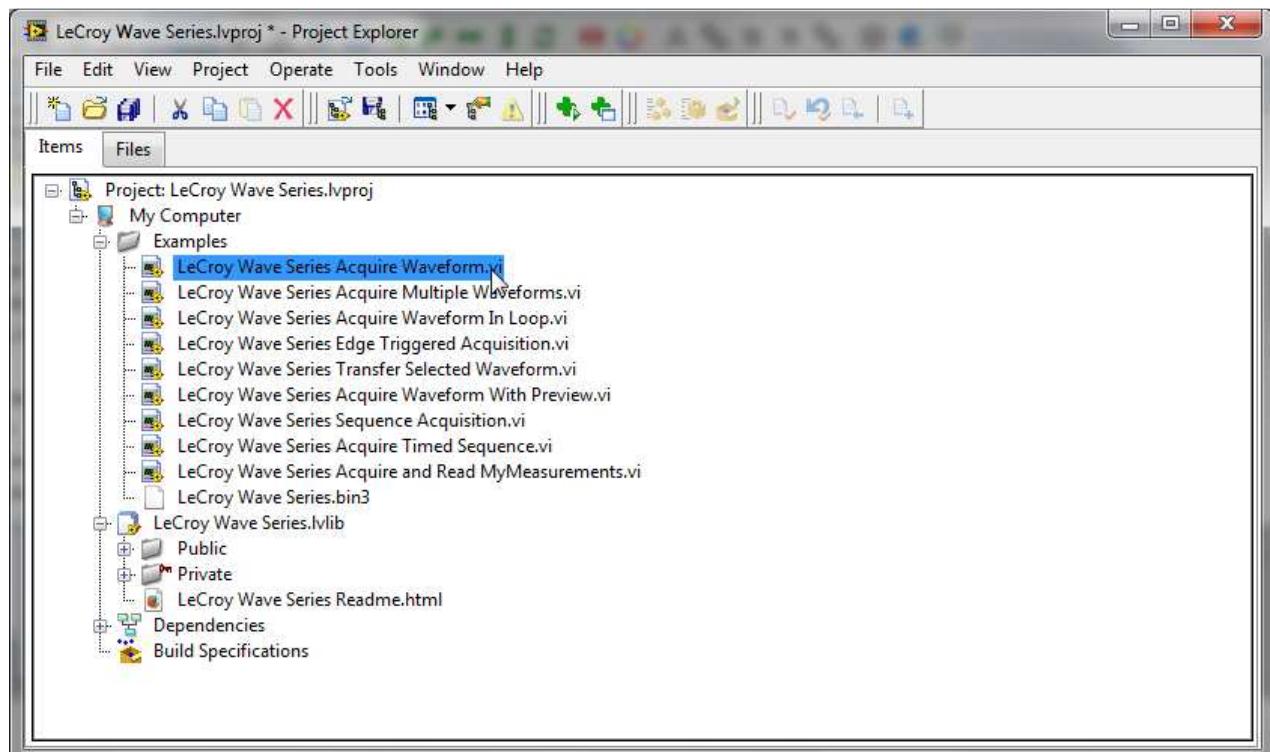


Abbildung 27 – Oeffnen des Beispiels LeCroy Wave Series Acquire Waveform.vi.

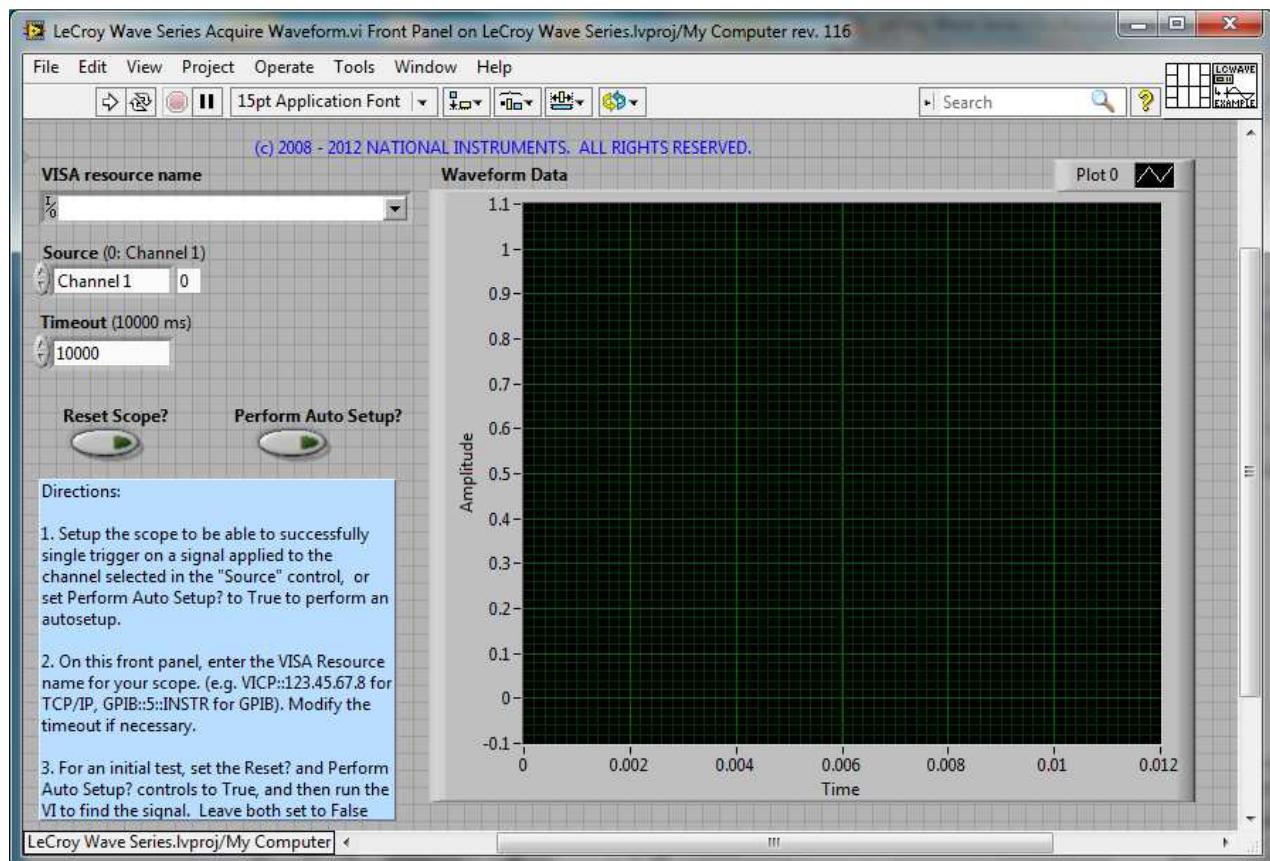


Abbildung 28 – Oberfläche des vi's zur Aufzeichnung einer Kurve.

In das Feld VISA resource name wird folgender Text eingetragen: VICP::169.254.39.64, wobei die LAN-Adresse den Oszilloskop-Einstellungen entnommen wurde.

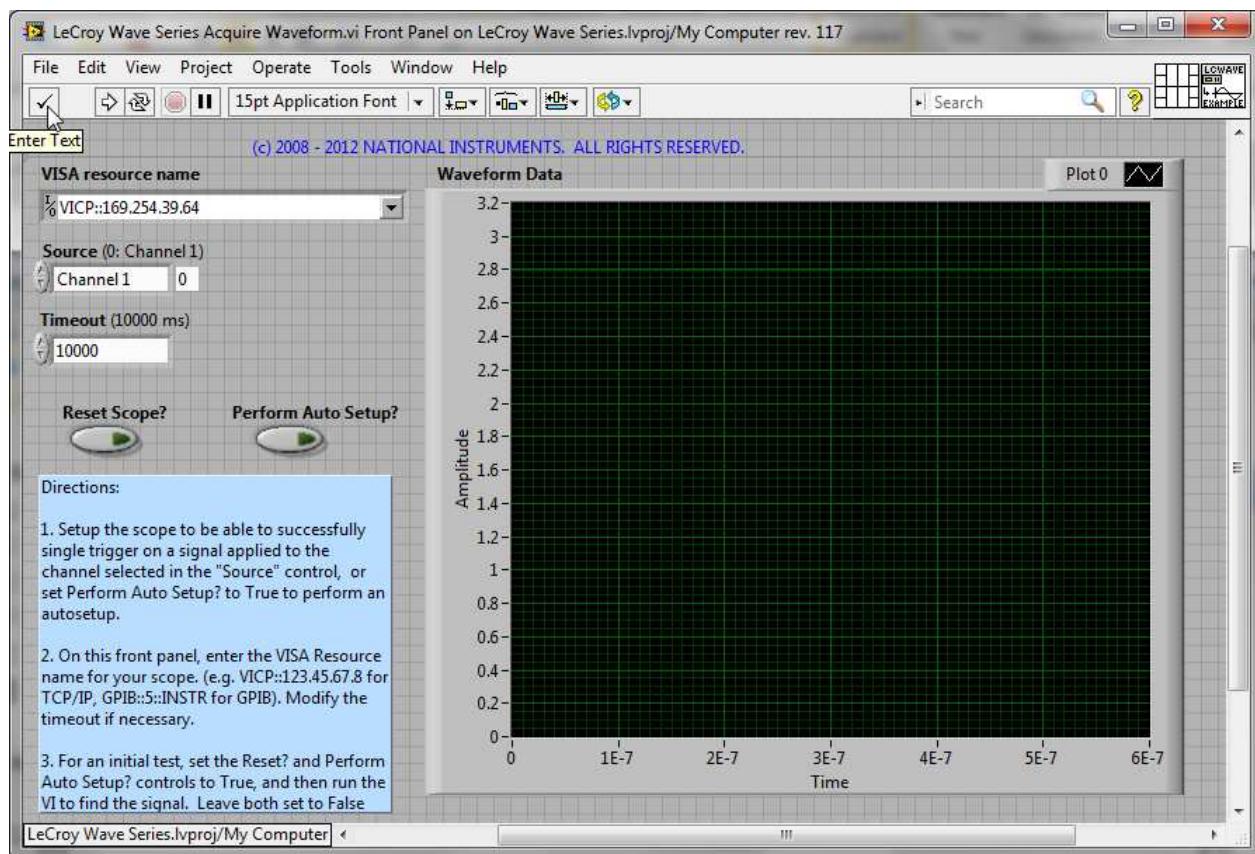


Abbildung 29 – Den VISA resource name entsprechend der LAN-Adresse eingeben.

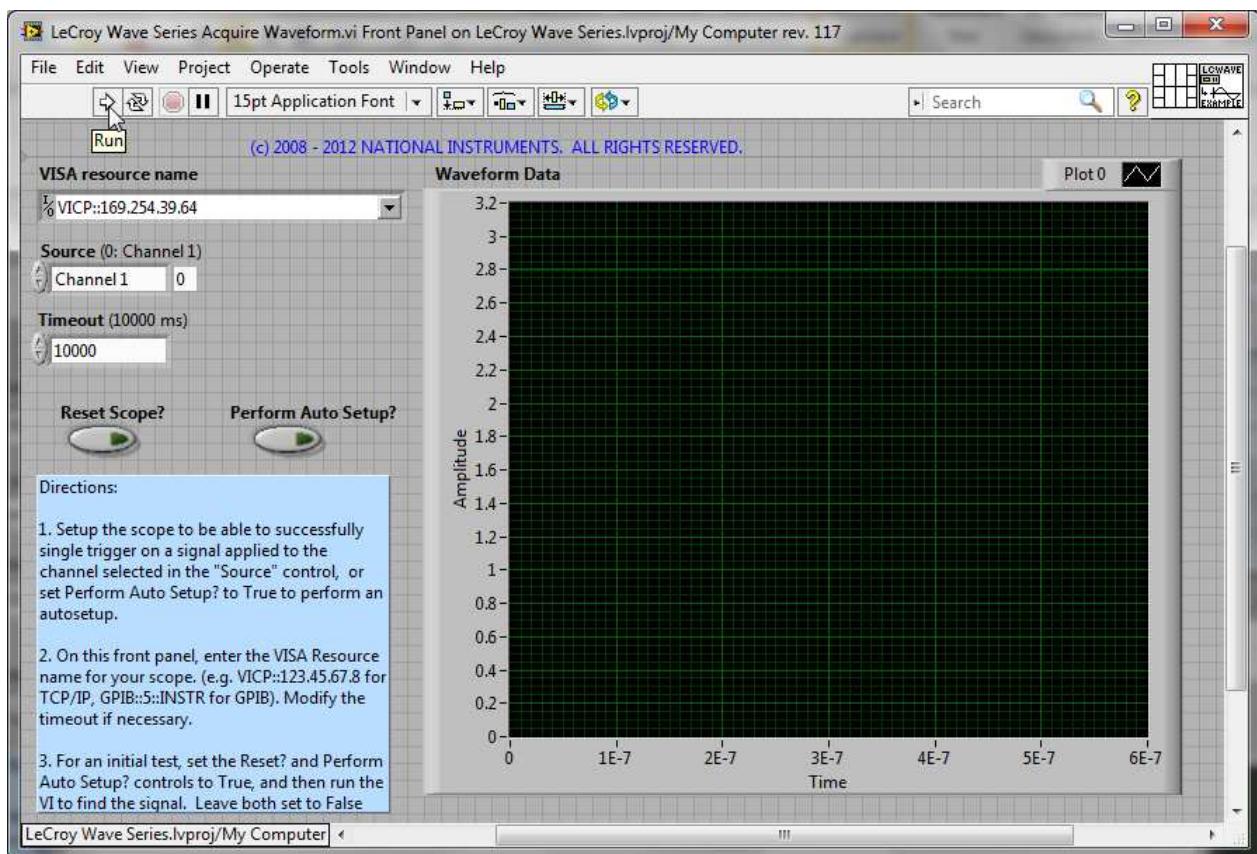


Abbildung 30 – Run klicken, sobald am Oszilloskop ein Signal anliegt, auf das getriggert werden kann.

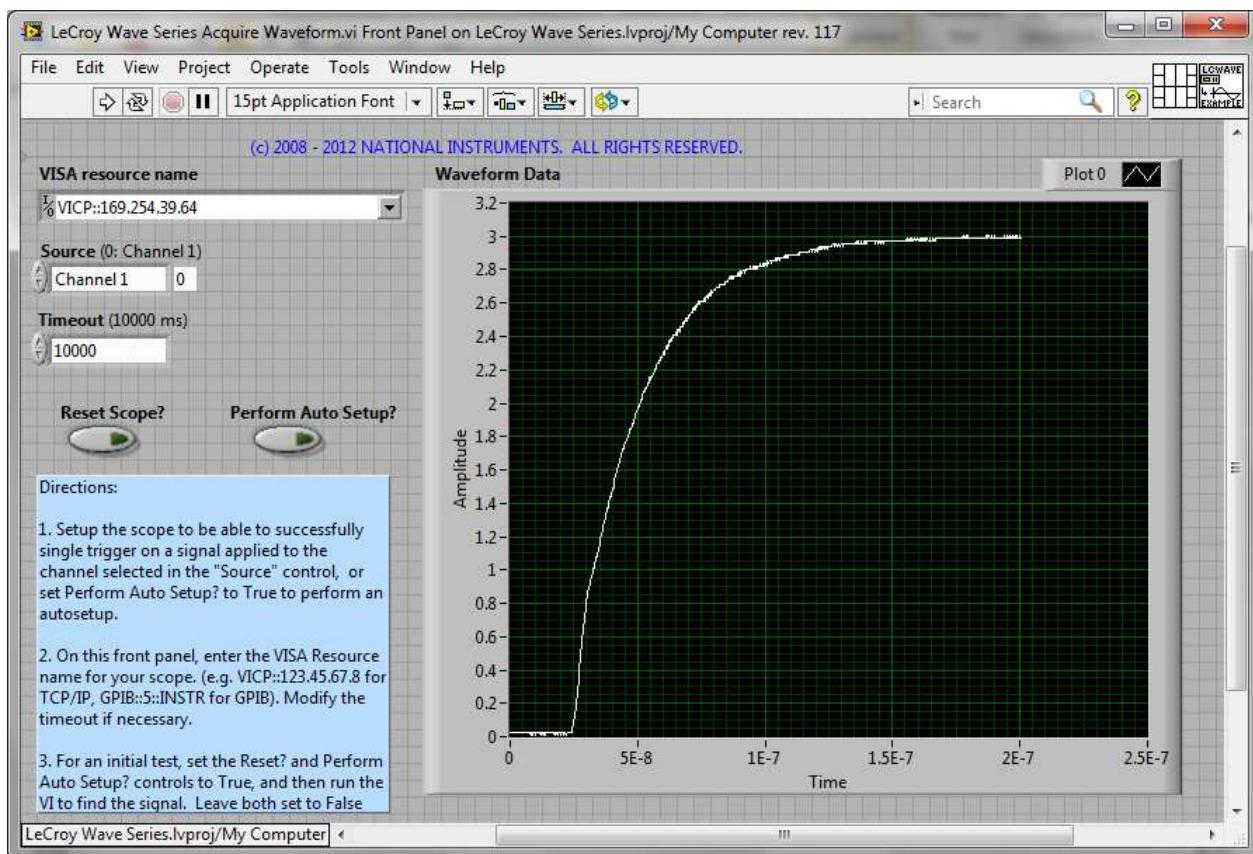


Abbildung 31 – Die vom Oszilloskop gelesene Kurve wird dargestellt nach erfolgreichem Ausführen des vi's.

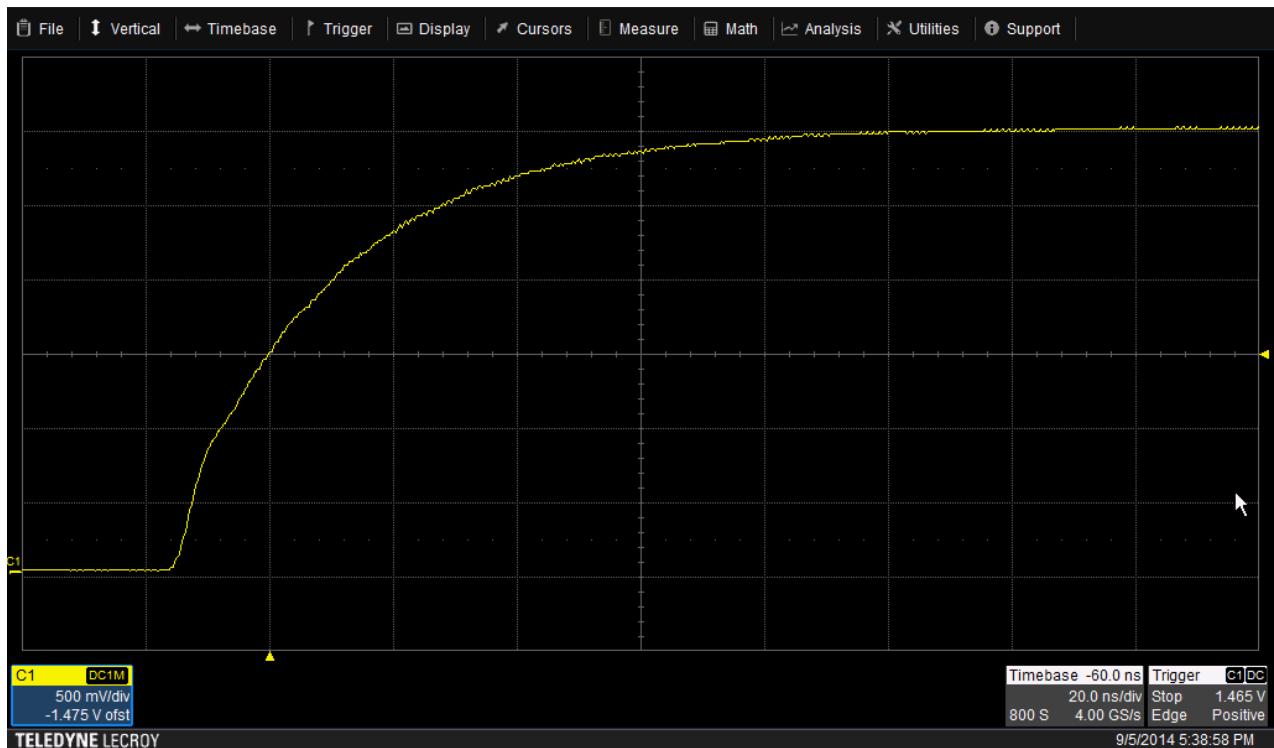


Abbildung 32 – Oberfläche des WaveSurfer 3000 nach erfolgreichem Ausführen des LabVIEW-Beispiels.

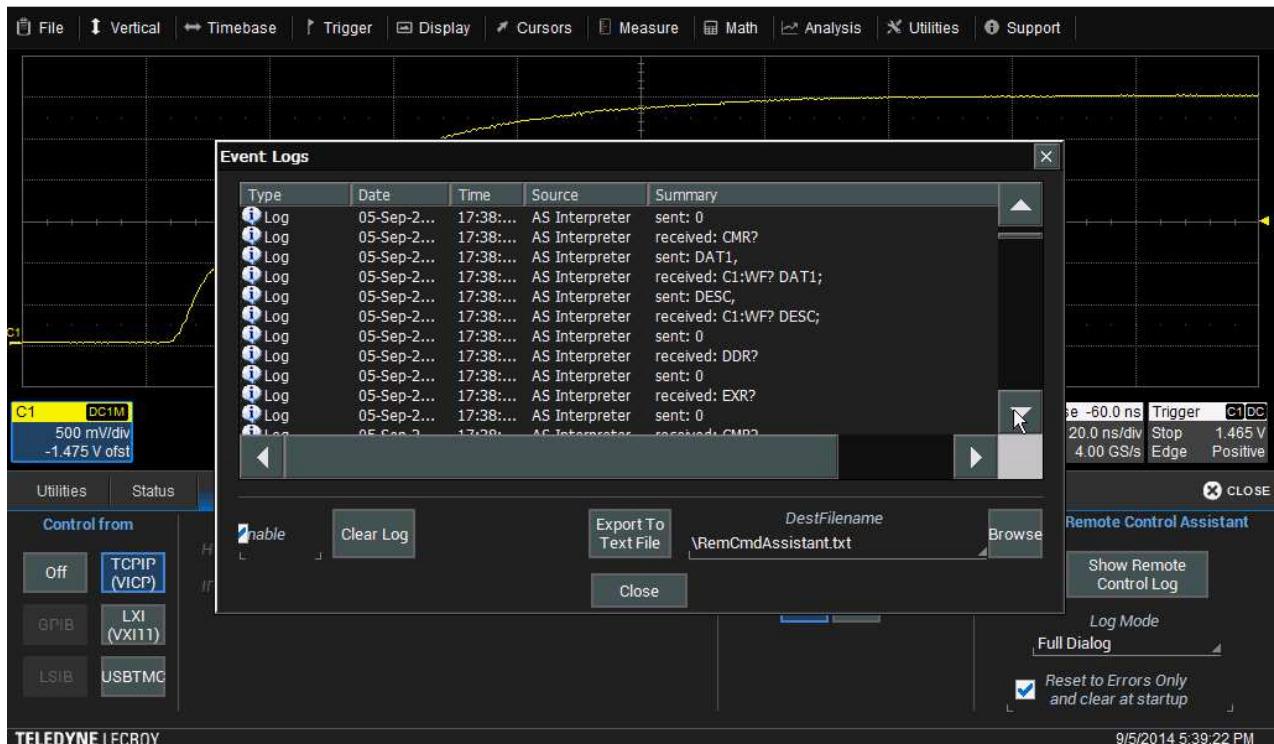


Abbildung 33 – Die Event Logs nach einem erfolgreichen Durchlauf des LabVIEW Beispiels.