

	Lab 6 – EasyScope Remote Control (30 Minutes) <i>Note:</i> (Screenshots below show a white background configuration of your WaveAce to save black ink in printing, this configuration is explained in Lab 2 – VIEW)
Overview	The <b>EasyScope</b> software utility includes with each WaveAce oscilloscope provides remote control of your oscilloscope. This exercise demonstrates the use of this tool.
	A test at the end of the Lab allows you to check your knowledge.
Goal	Learn how to:
	- Remotely save and recall waveform graphs
	- Remotely save and recall waveform data
	- Perform pass/fail testing
	- Remotely save a picture (screen shot)
	In this Lab you will learn how you can operate the scope using your PC.
System Requirements	<ul> <li>1 x WaveAce passive probe.</li> <li>A PC with a free USB</li> <li>USB cable (included with WaveAce escillescope)</li> </ul>
Setup	Connect the probe to Channel 2 and the probe top to the calibrator (CAL) output loop on the front panel. Use the sprung hook accessory of the probe to clip to the CAL output loop.
	Connect the oscilloscope scope to your PC but do not turn it on at this stage.
	If EasyScope and USB driver are already installed proceed to step 9, if not start at step 1.
Step 1	Insert the installation disk into a suitable drive on the PC, open the LeCroy EasyScope_V folder and the Setup folder and run Setup.exe.
	🔁 EasyScope 3.0
	Welcome to the EasyScope 3.0 Setup Wizard
	The installer will guide you through the steps required to install EasyScope 3.0 on your computer.
	WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
	Cancel < Back. Next >



Click Next >.

### Step 2

Step 3

🛃 EasyScope 3.0	_ 🗆 ×
Select Installation Folder	
The installer will install EasyScope 3.0 to the following folder.	
To install in this folder, click "Next". To install to a different folder, enter it be	elow or click "Browse".
<u>F</u> older:	
C:\Program Files\LeCroy\EasyScope 3.0\	Browse
	Disk Cost
Install EasyScope 3.0 for yourself, or for anyone who uses this computer:	
C Everyone	
<ul> <li>Just me</li> </ul>	
Cancel < Back	Next >

#### Click Next >.



Click Next > and the installation will proceed.



#### Step 4



After installation has completed click Close.

### Step 5 Step 6

If only the the USB driver is already installed proceed to step 9.

Turn on the oscilloscope and connect it to your PC using the USB serial cable. Microsoft Windows automatically detects the oscilloscope and displays the Found New Hardware Wizard. Select Install from a list or specific location (Advanced).



Click Next >.

Choose Include this location in the search and click Browse to locate the USB Driver folder and then click Next. The USB Driver will be installed.



ound New Hardware Wizard					
Please choose your search and installation options.					
Search for the best driver in these locations.					
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.					
Search removable media (floppy, CD-ROM)					
✓ Include this location in the search:					
F:\LeCroy EasyScope_V300R001B01D01P13_EN\ 💌 Browse					
C Don't search. I will choose the driver to install.					
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.					
< Back Next > Cancel					

Click Next >.

F

Step 8

With some versions of Windows you may see a warning message at this point. If so click on Continue Anyway. When installation has completed click Finish to exit. Turn off the oscilloscope.



Step 9

For convenience the installer places an icon on the Windows desktop.



Run the EasyScope application either directly or by double clicking this icon. Two red circles will be displayed in the top right corner of the application window. Turn on the scope and the left circle e will change to green. Click the Connect icon at the top left and the two green circles are displayed.



#### Step 10

Reset the scope configuration to the default factory settings using the front panel DEFAULT SETUP button. An alternative method is to use the front panel SAVE/RECALL button, then press the Type button until Factory is displayed and finally press the Load button.



At any time the menu on the right-hand side of the screen can be removed/restored by pressing the front panel MENU ON/OFF button.

#### Step 11

Turn CH1 off and CH2 on by pressing the front panel CH1 and CH2 buttons. Pressing a channel button also displays the corresponding vertical settings. DC coupling on CH2 is selected by default. Check the slider switch on the probe is set to X10 and using the Probe button set 10X on the screen.



#### Step 12

Press the [blue] AUTO button on the front panel. In a few seconds you should have a triggered signal with a number of cycles shown on the screen.





### Step 13

Notes: As an alternative to manually refreshing the graph using the Refresh button the Mode can be set to Auto. In this mode the graph is updated automatically every few seconds.

Waveforms can be saved in either binary (\*.wdf) or ASCII (\*.csv). Binary files are more compact but ASCII files are more convenient when used with an external application such as Excel etc. In the Goto View section of the EasyScope screen click on Wave Graph and then click on Refresh in the Graph windows. A graph of the waveforms is displayed and the current settings are shown below.



Click on Save and on the pop-up screen choose the channel (CH1) and clock OK. The next screen allows you to select the destination and save format. Set type as graph file (\*.csv), name it Lab6.csv and click Save.



	Save Wave Grap	oh File				? ×
	Save in:	🔁 WaveAceWa	veforms	•	- 🗈 💣 📰•	
Select the Chan X	My Recent Documents Desktop					
C CH2 C Chan 3 C Chan 4 C Chan 5 C Chan 6 C Chan 7	My Documents My Computer My Network Places	File name: Save as type:	Lab6.csv graph file( ".csv)		T	Save Cancel

Step 14

In the Graph Show box click on CH1 to turn off the CH1 graph. Now in Graph Oper click on Open and select the Lab6.csv file. The previously saved data is displayed as Chan3.



### Step 15

Note: Data can also be printed by clicking on the Print button. A preview screen is first shown

#### In Goto View click on Wave Data. The current data is listed.



### and clicking on the printer icon will print to the default printer.

🧱 EasyScope									- 🗆 ×
Panel(P) View(V) Setting(E) Help	(H)								••
Connect Disc Exit SideBar	Panel	<b>%</b> About							
Goto View Wave Graph		Wave Data	Co	py Print	Save a	s			
	#	CH1	CH2	Chan3	Chan4	Chan5	Chan6	Chan7	<u> </u>
Wave Data	1	130	**	130					
TTave Data	2	130	**	130					
	3	104	**	104					
Wave Measure	5	201	**	201					
[]]	6	204	**	204					
DS0 Bitman	7	202	**	202					
	8	202	**	202					
<u> </u>	9	202	**	202					
- Open Files	10	204	**	204					
open riles	12	202	**	202					
Graph file	13	204	**	204					
·	14	205	**	205					
Data file	15	202	**	202					
	16	202	**	202					
Measure file	17	204	**	204					
	18	205	**	205					
Bitmap file	19	202	**	202					
	20	205		205					
- Device Setting Oper-	21	202	**	202					
	23	203	**	202					
Upload Upen	24	204	**	204					
Save Save As	25	201	**	201					
	26	206	**	206					
Download	27	204	**	204					Ů
Current file:	28	204	**	204					
	29	201	**	201					
	30	204	**	204					
	32	204	**	204					
	33	203	**	203					
	34	20.4	**	204					-1
Save Wave Data file successed£i				R	eady		L	eCroy:WaveAce 232,300MHZ,2G5a/s	2008-11-06

Click on Save as and select CH1 and OK. The type is now always wavedata file (\*.wdf). Name the file Lab6.wdf and click Save.

					? ×
Save in	🔁 WaveAceV	Vaveforms	•	+ 🗈 💣 📰•	
My Recent Documents					
Desktop					
My Documents					
My Computer					
My Network Places	File name:	Lab6.wdf		•	Save

#### Step 16

Select the Wave Graph view again and in Graph Show turn on CH1 and turn off Chan3. In the Measure section select CH1 and click Auto so the waveform is continually refreshed.





Now select the Wave Measure view and CH1 is compared to a set of Pass/Fail settings.

E 🧏 😹 ↔ nect Disc Exit SideB	ar Panel About									
Goto View	Measurem	ent	Сору	rint Sa	ve As P	ass Fail				
	The current Wa	ve to 'Pass F	ail': CH1							
Wave Data	Item Name	CH1	CH2	Chan3	Chan4	Chan5	Chan6	Chan7	Pass   Fail	
	Vpp	3.24V							Pass	
Wave Measure	Vmax	3.20V							Pass	
	¥min	-40.00m¥							Fail	
	Vamp	2.96V							Fail	
DSO Bitmap	Vtop	3.04V							Pass	
	Vbase	80.00mV							Pass	
	Vmean	1.56V							Pass	
)nen Filec	Mean	1.56¥							Pass	
pentines	¥rms	2.16V							Pass	
ranh file	Crms	2.12V							Pass	
	FOV	0.00%							Fail	
loto filo	FPRE	5.40%							Fail	
	ROV	0.00%							Fail	
	RPRE	2.70%							Fail	
leasure file	Period	1.00ms							Pass	
	Frequent	1.00KHz							Fail	
litmap file	Positive Wi	500.00us							Pass	
	Negative Wi	500.00us							Pass	
Doution Cotting Oper	Rise Time	4.00us							Pass	
Device Setting Oper-	Fall Time	4.00us							Pass	
Upload Open	Width	5.49ms							Pass	
	PDut	50.00%							Fail	
Save Save As	NDut	50.00%							Fail	
h i a	Phase	****							Fail	
Download	FRR	****							Fail	
Current file:	FRF	****							Fail	
	FFR	****							Fail	
	FFF	****							Fail	
	LRR	****							Fail	
	LBE	****							Fail	

To change a setting click on Pass|Fail, select a measurement and set Enable to allow the limits to be changed.



Pas	s   Fail	setting				×
	PASS	FAIL SETTINGS				
	S	elect Measure Ty	pe			
		Vpp	• •	Enable		
	F	ass Range Settin	gs			
		Under Limit se	tting			
		Minimum: <mark>-1</mark>		۷		
		Over Limit Sett	ting			
		Maximum: <mark>1</mark>		٧		
		Note: The valid into the edit box	number th is -999~99	at can inpu 19	t	
		ОК		Cance	:1	

Step 17

Measurement data can also be saved used the Save As button and is saved as a (\*.wmf) file. The Measure file button in the Open Files box can be used to recall these measurements.



In Goto View click on DSO Bitmap. Click on the Refresh button and the current scope screen is displayed.

As for the other Views this view can be saved to disk (and recalled) by using the Save and Open buttons.



LeCroy	WaveAce EduPack
	Test
Question 1	How would you load a channel's waveform data into Excel?
Question 2	Is it possible to save and recall instrument Setups to and from the PC?
Question 3	On the Wave Graph view there is a checkbox called GetAllData. Check this and click on the Refresh button. More cycles are now shown on the graph. Why is this?
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Summary Ir

In this lab you have learned to control the WaveAce using the EasyScope application and to save and recall information.

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