## **Advantech DLL Driver User Guide**

1. The following is the CD content.

網址(D) 🚺 F:\					💙 🌛 移至
		名稱 🔺	大小	類型	修改日期
檔案及資料夾工作	۲	ActiveDAQ		檔案資料夾	2006/4/7 下午 01:55
		Bin		檔案資料夾	2006/4/7 下午 01:56
其他位置	8	🛅 Dasylab		檔案資料夾	2006/4/7 下午 01:56
		C Documents		檔案資料夾	2006/4/7 下午 01:56
⊒t sn 2a tal		DOS		檔案資料夾	2006/4/7 下午 01:56
21-410 (1.41	$\checkmark$	C Drivers		檔案資料夾	2006/4/7 下午 01:58
		🛅 Examples		檔案資料夾	2006/4/7 下午 01:58
		🛅 LabVIEW		檔案資料夾	2006/4/7 下午 01:58
		🗀 Linux		檔案資料夾	2006/4/7 下午 01:58
		🛅 Tools		檔案資料夾	2006/4/7 下午 01:58
		🛅 Utilities		檔案資料夾	2006/4/7 下午 01:58
		🗀 WinCE		檔案資料夾	2006/4/7 下午 01:58
		🔂 autorun.exe	124 KB	應用程式	2004/12/28 下午 01:
		🧿 autorun.inf	1 KB	安裝資訊	2004/12/28 下午 01:
		질 autorun.ini	1 KB	組態設定値	2005/9/8 下午 05:42
		CONTENT.HTM	12 KB	HTML Document	2006/3/31 下午 05:54
		💕 QuickStart.chm	2,622 KB	已編譯的 HTML He	2005/9/28 下午 06:38
		README.HTM	299 KB	HTML Document	2006/3/31 下午 05:54

2. First, we have to install the Advantech DeviceManager.

🗁 Tools						
檔案(F) 編輯(E) 檢視(V)	我的最愛(A) 工具(T)	說明(H)				27
③上一頁 - ◎ - 6	🌔 🔎 搜尋 🌔 資料	₩夾 🛄 •				
網址① 🛅 F:\Tools						🖌 🌛 移至
	名稱 🔺		大小	類型	修改日期	
檔案及資料夾工作	🎽 🚺 Dev Mgr.	exe	11,631 KB	應用程式	2006/3/31 上午 1	1:48
	MotionM	lanager.exe	10,949 KB	應用程式	2005/10/27 上午	11:
其他位置	*					

3. And install the Device Driver.

網址① 🛅 F:\Drivers\USB			💙 ラ 移至
	名稱 ▲	大小 類型	修改日期
檔案及資料夾工作	🕙 📑 USB4711.exe	1,361 KB 應用程式	2005/12/14 下午 05:
	USB4718.exe	1,543 KB 應用程式	2006/1/20 上午 10:52
其他位置	S TUSB4761.exe	1,202 KB 應用程式	2006/3/31 下午 06:03
詳細資料	*		

4. Insert the Device, (If PCI or ISA device, turn off the computer and insert the card.), then it will be detected atomically (For PCI or USB, if ISA device, we have to add it in Advantech DeviceManager)

5. Wire the circuit, Configure and Test the Device in the DeviceManager.

💼 Advantech Automation	🔸 💼 Device	Manager 🔹 🕨	🐗 Advante	ch Device Manager
im WinRAR	🔸 💼 Motion	•	🧝 Device I	Driver's Manual
🛅 SnagIt 7	🔸 🛅 ActiveI	)AQ 🕨	🤕 Uninstal	l Device Manager
🛅 Microsoft Visual Studio 6.0	🔸 🛅 DAQ V	Is for LabVIEW 🛛 🕨		
🛅 Microsoft Web Publishing	🔸 🛅 ActiveI	)AQ Pro 🕨 🕨		
im Winamp	🔸 🛅 DASYI	ab 🕨		
🛅 IrfanView	🔸 🛅 LabVIB	(W 🕨		
🛅 National Instruments	🔸 🛅 ADAM	•		N
National Instruments LabVIEW 7.1	🛅 ІСОМ	•		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
🛅 Mozilla Firefox	🔸 🛅 ADAM	View ►		
1 Adobe Reader 7.0	🛅 Modbu	s Ethernet 🛛 🕨		
🔏 Windows Messenger	🛅 Modbu	s OPC Server 🔹 🕨		
Advantech Device Manager				1
Your ePlatform Part	ner			1
	Davia	a Mamam	ior S	
ADVANTECH	Benie	e manag	GI	
Installed Devices:				
My Computer			<u>S</u> etup	
✓ 0001 Advantech DEMO I/O	=1H >			
		-	<u>T</u> est	
A			<u>R</u> emove	
000: DeviceNumber, we wi	l put this num	ber in the		
"Drv_DeviceOpen" functi	on to open this	s device	<u>C</u> lose	
Supported Devices:				
Advantech DEMO Board		<u>^</u>	6 bbA	
Advantech PCI-1680				
Advantech PCI-1710/L/HG/HGL Advantech PCI-1711			A <u>b</u> out	
Advantech PCI-1711L (PCI-1731)			Import	
<ul> <li>Advantech PCI-1712</li> <li>Advantech PCI-1713</li> </ul>			Furnert	
Advantech PCI-1714/UL		-	Export	
📔 🚟 Advantech PCI-1716				
				1

6. We have to check what Software function this Device can support. So we check it in the Device Driver manual.

🖬 Advantech Automation 🛛 🛛	🕨 🛅 Device Manager	►	🐗 Advantech Device Manager
im WinRAR .	• 🛅 Motion	→	😰 Device Driver's Manual
🛅 SnagIt 7	• 🛅 ActiveDAQ	→	🥑 Uninstall Device Manager
🛅 Microsoft Visual Studio 6.0	<ul> <li>DAQ VIs for LabVIEW</li> </ul>	→	
🛅 Microsoft Web Publishing 🛛 🛛	🔸 🛅 ActiveDAQ Pro	→	царана (р. 1997) 1997 — Прила Сарана (р. 1997) 1997 — Прила (р. 1997)
🛅 Winamp 🕨	• 🧰 DASYLab	→	
🛅 IrfanView 🛛	<ul> <li>LabVIEW</li> </ul>	→	
im National Instruments	🕨 🛅 ADAM	→	N
National Instruments LabVIEW 7.1	🛅 ІСОМ	→	1
🛅 Mozilla Firefox 🛛	▶ 🛅 ADAMView	→	
🚮 Adobe Reader 7.0	🛅 Modbus Ethernet	→	
🔏 Windows Messenger	🛅 Modbus OPC Server	→	



🛃 Advantech Device Driver Manual						
□ ← △ □ □ · □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □						
内容© 索引 搜尋 Eunction Support Table for PCI					<b>^</b>	
Welcome to Advantech Device E     Advantech Device Driver Overvie     Getting Started with Advantech D	ce C ervit ch C Series hardware.					
Oevice Driver Programming Exam     Oevice Driver Programming Guide	evice Driver Programming Exameter Function Devices					
Euroction Reference     Function Support Tables     PCI Series     MIC3000 Series		PCI- 1710	PCI- 1710L	PCI- 1710HG	PCI- 1710HGL	PC 17
? PCM Series	Device functions					
PCL Series	DRV_DeviceOpen	Γ	7	7	Γ	7
	DRV_DeviceClose	Γ	7	Γ	Γ	Ţ
Data Structures     Error Codes	DRV_DeviceGetFeatures	Γ	7	7	Γ	Ţ
Endreddes	DRV_DeviceGetProperty	Γ	7	7	Γ	7
<ul> <li></li></ul>	DRV_DeviceSetProperty	Γ	Γ	Г	Γ	Γ.

## 7. There are full of information here.

🐕 Advantech Device Driver Manual			
内容(C) 索引(M) 搜尋(S)	Device Configuration How to configure in Devicemanager		
Welcome to Advantech Device Driver     Advantech Device Driver Overview     Getting Started with Advantech Device Driver     Device Driver Programming Examples	USB-4711 device driver provides a device setting dialog box for user to set the driver default device property values, and these values will be saved in system. The device properties will be referenced by the device driver functions.		
Vevice Driver Programming Guide     Eunction Beference	Board ID :		
PCI Series     PCI Series     UIIS Series	USB device has a virtual "Board ID". It is the "ID" of device. When there are multi USB device connected to Host, we can use this ID to identify each device. This ID is exist in EPROM of USB device, so it will not disappeared or changed when power off.		
USB-4711 Device Driver User Manual	It can be set form 0 $\sim$ 15. Default is 0.		
CD Device Introduction     Device Features     Device Configuration	Note: If multi-devices are connected to the Host, each device must have different "Board ID" or Host will fail to find the device.		
	Locate : When click this button, the LED of USB device( if Board ID=10) will start to blink. When multi-devices is connected, we can find the device with specified Board ID via this "Locate" button.		
Data Structures	AO		
Device Event     Device Properties     Fror Codes	Channel O/1 Ref : Set the D/A reference voltage for the A/O output channel 0/1. This value will be saved in system and will be referenced by the device driver functions.		
🗉 📀 USB-4718 Device Driver User Manual	Calibration : Calibrate the AO with the range specified in Channel 0/1 Ref.		
Advantech Customer Services	AI		
	Calibration : Calibrate the AI with all ranges.		
	US8-4711 Device Setting		

8. It's helpful if we can know what example can be used for our device. And there are hyperlinks to link with the Example instruction and locate the example path. Please note the example package have to been installed first.

🗁 Examples - Microsoft Internet Explorer			
檔案(F) 編輯(E) 檢視(V) 我的	5最愛(A) 工具(T) 説明(H)		
🔇 上一頁 🔹 🛞 🖌 🏂 🍃	🔎 搜尋 🌾 資料夾 🛄 🔹		
網址 D 🛅 F:\Examples			
	名稱 ▲	大小	
檔案及資料夾工作	All_Examples.exe	22,806 KB	
	BCB_Examples.exe	3,808 KB	
其他位置	😵 🚺 Console_Examples.exe	2,379 KB	
	Delphi_Examples.exe	13,033 KB	
The fam Cardinal	🔊 🚺 VB_Examples.exe	2,724 KB	
<b>計測資料</b>	VC_Examples.exe	5,279 KB	



8. Then we can operate the selected example and refer to the source code to write our own

program.

Advantech Driver Demo : Interrupt Data Transfer	
Setting Display Run	
Sup Status	
openevent	
Select Device from Device List Scan Channel FIFO Setting FIFO Size : Fifo Siz	
Gain Option Input Range Pacer Rate Conv. #	
Single/Auto     Triggering     Buffer     Data Type     Event       Cyclic     Internal     Single     Raw Data     Enable       Noncyclic     External     Double     Voltage     Disable	
Cancel	
	-

Advantech Driver Demo : Interrupt Data Transfer	
<u>S</u> etting <u>D</u> isplay <u>R</u> un	
Stop Status	
openevent	
Select Device Scan Channel FIFO Setting	The FIFO settting is not necessary for USB module.
Select Device from Device List	
Gain Option Input Range Pacer Rate Conv. #	
Single/Auto     Triggering     Buffer     Data Type     Event       Cyclic     Internal     Single     Raw Data     Enable       Noncyclic     External     Double     Voltage     Disable	For High speed operation of USB4711, we recommand setting ConV# to be 8192 or above
OK Gain List Cancel	
$\Box_{\!s}$	

The USB module doesn't have the Interrupt Counter count.



Advantech Driver Demo : Interrupt Data Transfer	
<u>S</u> etting <u>D</u> isplay <u>R</u> un	
Stop Status	
openevent 🔀	
Select Device Scan Channel FIFU Setting Scan Channel Fifu Setting Select Device from Device List O Fifo Size : 2048	For achieving the High speed AI, the FIFO have to be Enabled for PCI/ISA device, the FIFO Size should be the helf of Hardware FIFO(Hardware FIFO is
Gain Option C Gain List	4096Ks for PCI-1710)
Single/Auto       Triggering       Buffer       Data Type       Event         © Cyclic       Internal       © Single       © Raw Data       Image: Construction of the second	The Con V#must be set to be the FIFO Size or the multiple of FIFO Size.
DK Gain List Cancel	
Ŗ	

## The setting of PCI/ISA card is as following. (Suppose using PCI-1710)

The PCI/ISA Device have the Interrupt Counter count.

Advantech Driver Demo : Interrupt Data Transfo	2 <b>1</b>
Setting Display Run	
Stop Status	
	Interrupt Counter = 2
Fast A/D Data	Buffer change Counter = 2
	Overrun Counter = 0
Data	
Buf[20] = 4.472656	
But[21] = 4.4/2656	
Buf[23] = -4.755859 Buf[24] = -4.770509	
Buf[25] = -4.770508 Cancel	
Buf[26] = -4.770508 Buf[27] = -4.770508	
Buf[28] = -4.770508	
Buf[30] = -4.770508	
Buf[31] = -4.770508	

My signal source is 1Khz Square waveform.

When using 100Khz sampling rate to sample the waveform, there should be 100 data to present one cycle of Square waveform. So 50 points are in Low Level and 50 points are in High Level.

--End—