LabView NI-VISA 及 VISA 物件安裝與使用介紹

2010/01/18 莊卓穎

前言:

不同於過去實驗室程式使用的 GPIB 物件,PAT-001 及 SHOT-602 皆採用 VISA (Virtual Instrument Software Architecture)物件, VISA 可透過 GPIB 或 Serial 序列埠(例如 RS232) 操控儀器,不受介面限制,因此能進行更廣泛的儀器控制。

一、安裝 LabView NI-VISA:

1. LabView 的 Serial 序列埠(例如 RS232)程式會使用到 NI-VISA, 一般的 LabView 安裝程序 並無安裝。如果在測試 PAT-001 或 SHOT-602 之 LabView 程式時發現錯誤訊息: VISA Error-1073807202 (oxBFFF009E),代表沒有安裝 NI-VISA,請由 Data Server (Z:\Lab Softwares\LabView VISA 4.6\visa460full)下載安裝。

PAT-001 010810.vi					
File Edit View Project Operate Tools Window Help					
Runng					
PAT-001 Controller					
	∀ersion 2010.01.08				
Port Number	Previous Wavelength (nm)				
0=COM1 2 1=COM2	0.0000				
	Central Peak To (nm)				
Initialize					
	Move				
	■ 1073807202 🛛				
	Error -1073807202 occurred at VISA Open in PAT-001 010810.vi				
STOP	This error code is undefined. No one has provided a description for				
	this code, or you might have wired a number that is not an error code to the error code input.				
	Continue Stop Why not found?				

2. 依步驟解壓縮並開始安裝,完成後重新啟動電腦。



WinZip Self-Extractor - visa460full.exe					
To unzip all files in visa460full.exe t folder press the Unzip button.	Unzip				
Linzin to folder:		Run <u>₩</u> inZip			
ruments Downloads\NI-VISA\4.6	<u>B</u> rowse	<u>C</u> lose			
☑	About				
When <u>d</u> one unzipping open:	<u>H</u> elp				
. weiup.exe					





Chart Installation					
Review the following summary	before continuing.		7		IONAL RUMENTS
Upgrading					
NI Measurement & Automation Explorer Adding or Changing NI-VISA 4.6 Run Time Support Configuration Support Development Support Remote Server NI Instrument I/O Assistant 2.5.0 NI Spy	4.b. I				
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Click the Next button to begin installation. C	Click the Back butto	n to change t	he installation	settings.	
Click the Next button to begin installation. C	Click the Back butto	n to change t	he installation	settings.	
Click the Next button to begin installation. C	Click the Back butto	In to change t	he installation	settings.	



3. 自行撰寫的 PAT-001 及 SHOT-602 controller 位於 Data Server (Z:\All Lab Programs Backup) 上,目前最新版本是 PAT-001 011310。

二、LabView VISA 使用說明:

程式基本組成為 VISA Open (開啟 VISA)、VISA Write (寫入 VISA)、VISA Read (讀取 VISA)、VISA Close (關閉 VISA)。如下方例圖,每個 VISA 都要給 VISA Resource Name,若是 Serial 就輸入[ASRL][COM port number][::INSTR],若是 GPIB 就輸入[GPIB::][GPIB

Address][::INSTR]。可使用 Format Into String 物件將所有條件變成字串輸入,%d%s 代表字串格式(%d 代表 Format decimal integer、%s 代表 Format string),接上所有條件後,按右鍵選 Edit Format String, LabView 會自動判斷格式。

2. 下方例圖是給一個 Q:指令,查詢 stage 現在位置。

(1) 給定 Source Name 打開 VISA。

(2) 寫入 Q:指令查詢現在位置,每個指令後方都要加上兩個 ASCII 設定: \r (回應輸入字元 Carrier Return)、\n (換行 Line Feed)。

(3) 讀回現在位置。由 Hyperterminal 的測試得知,讀回的字串有 28 個字元,所以 byte count 給定 28。另外,若在 read buffer 的地方 create indicator,則可在面板顯示出讀回的值。

(4) 關閉 VISA 以便其他程式使用。沒有使用 VISA Close 的話,在 LabView 關閉之前,會一直佔線,其他程式都無法使用序列埠。



🖪 Edit Format String	X
Current format sequence	Selected operation (example)
Format decimal integer 🔥	Format decimal integer (12) 🛛 🛛 😽
Format string	Options
	Right justify 💌
×	Pad using spaces
Add New Operation	Use minimum field width:
Remove This Operation	
Corresponding format string	
%1 %s	
	OK Cancel Help