

如何利用 LabView GPIB 指令讀取 D120 步進馬達控制器設定狀態

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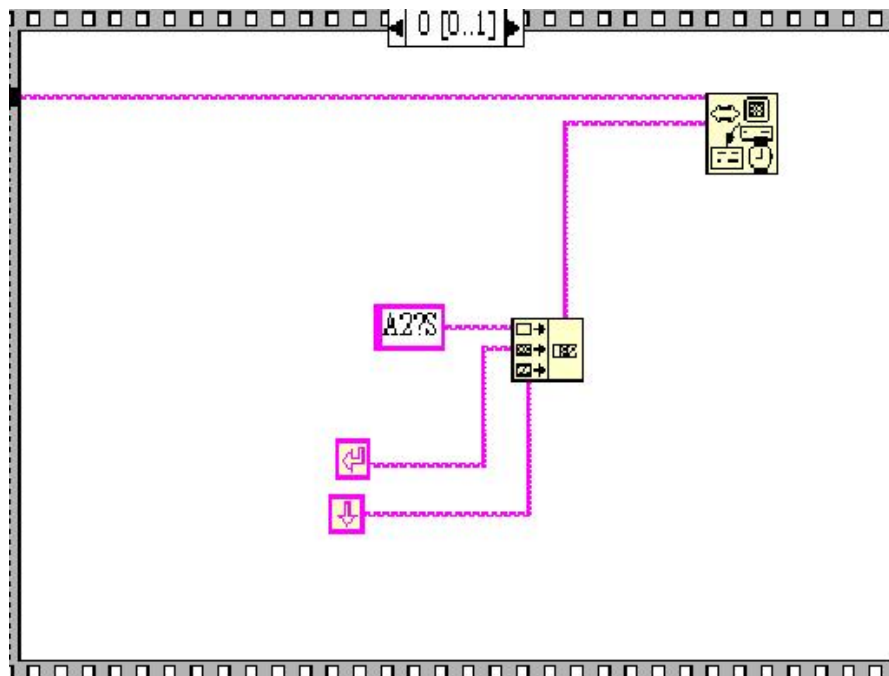
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一、目的：

當我們透過 LabView 的 GPIB 指令，使用 D120 步進馬達控制器操控精密平移台的運動模式，LabView 程式除了要能讓 D120 正確接受指令產生動作，同時我們更希望能讓 D120 正確回傳該精密平移台的位置、速度、加速度等相關設定參數。

二、方法：（範例說明）

步驟一： 使用 GPIB Write Vi 由電腦下指令 (A2?S<CR><LF>) 給D120 步進馬達控制器，要求 D120 步進馬達控制器回傳第二組平移台 (Axis2) 目前所在位置(?S)。其中該 GPIB 指令需搭配適當的結束字元<CR>及<LF>，才能讓 D120 正確接受指令。

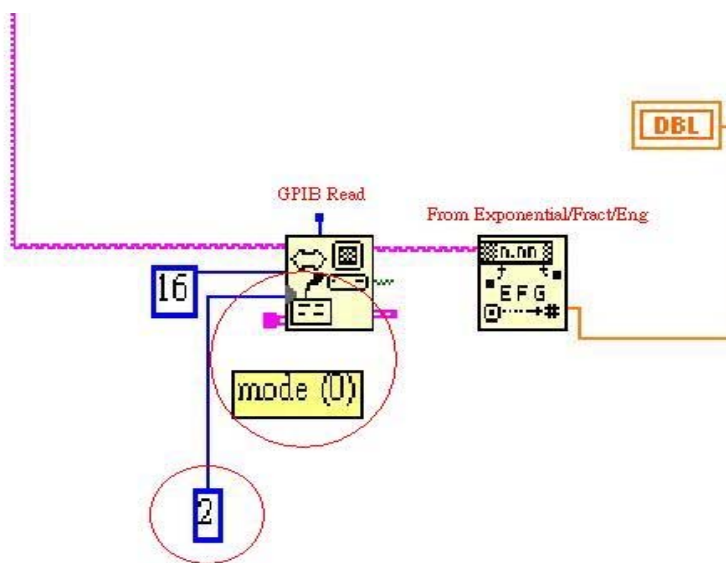


步驟二： 使用”GPIB Read Vi”讀取儀器回傳的資料字串，此時我們需設定一些參數：address string、byte count、Mode，並執行把字串轉成數字的動作。當我們使用 D120 步進馬達控制器的回傳功能時，必須在 mode 處設定適當的參數，這樣才能使 D120 步進馬達控制器正確回傳資料字串，請參考下列說明：

- (1) byte count：設定所讀取資料所需字串的位元（byte）長度，本範例設定值為「16」
- (2) mode： 設定字串終止模式。
 - 0: 沒有終止字元。
 - 1: 終止字元為〈CR〉。
 - 2: 終止字元為〈LF〉。

我們發現針對 D120 步進馬達控制器， mode 設定值需為「1」或「2」，才能使 GPIB Read 正常工作。

(3)將讀取資料字串連接上一個把字串轉成數字的 VI（例如：From Exponential/Fract/Eng），再連接上”Digital Indicator”，即可在螢幕上顯示讀取的資料。



三、附錄：

(若欲詳知各 VI 參數設定方法，請自行至 [LabView Online Help](#) 查閱！)

The screenshot shows the 'Functions and VIs' window with the 'GPIB Write' VI selected. The window title is 'Functions and VIs'. Below the title bar are three tabs: '索引(I)', '上一步(B)', and '列印(P)'. The main content area has a yellow background and contains the following text:

GPIB Write

Writes **data** to the GPIB device identified by **address string**.

Click the **parameters** for more information.

timeout ms (488.2 global)

The diagram shows the GPIB Write VI block with the following inputs and outputs:

- Inputs: timeout ms (488.2 global), address string, data, mode (0), error in.
- Outputs: status, error out.

The screenshot shows the 'Functions and VIs' window with the 'Concatenate Strings' VI selected. The window title is 'Functions and VIs'. Below the title bar are three tabs: '索引(I)', '上一步(B)', and '列印(P)'. The main content area has a yellow background and contains the following text:

Concatenate Strings

[String Function Descriptions](#)

Concatenates input strings and one-dimensional arrays of strings into a single, output string. For array inputs, this function concatenates each element of the array.

The diagram shows the Concatenate Strings VI block with the following inputs and output:

- Inputs: string 0, string 1, ..., string n-1.
- Output: concatenation of string0, string1, ..., string n-1.

(若欲詳知各 VI 參數設定方法，請自行至 LabView Online Help 查閱！)

Functions and VIs

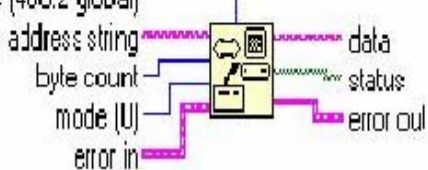
索引 | 上一步 | 列印

GPIB Read

Reads **byte count** number of bytes from the GPIB device at **address string**.

Click the parameters for more information.

timeout ms (400.2 global)



The diagram shows the GPIB Read VI block with the following connections:
Inputs: address string (blue), byte count (green), mode (U) (purple), error in (pink).
Outputs: data (blue), status (green), error out (pink).

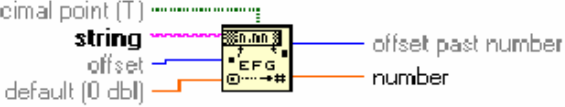
Functions and VIs

索引 | 上一步 | 列印

From Exponential/Fract/Eng

[String Function Descriptions](#)

Interprets the characters 0 through 9, plus, minus, e, E, and the decimal point (usually period) in **string** starting at **offset** as a floating-point number in engineering notation, or exponential or fractional format and returns it in **number**.



The diagram shows the From Exponential/Fract/Eng VI block with the following connections:
Inputs: string (blue), offset (green), default (0 dbl) (purple).
Outputs: offset past number (blue), number (green).

use system decimal point (T)
EFG

Note If you wire the characters Inf or NaN to string, this function returns the G values Inf and NaN, respectively.