

<b>Classification</b>	DCON Utility Pro FAQ				<b>No.</b>	DCON_002	
<b>Author</b>	Martin/Anna	<b>Version</b>	1.0.0	<b>Date</b>	2019/08/13	<b>Page</b>	1/2

## 如何透過儲存/載入(Save/Load)專案管理維護所有已完成設定的模組?

DCON Utility Pro 從 V4.0.0.1 開始提供儲存專案 (Save Project)功能

儲存專案功能的主要目的為

- a. 儲存所有模組的通信參數, 如果 RS-485 網絡上有很多模組, 能快速還原先前的搜尋結果。
- b. 儲存詳細的模組設定內容, 有助了解模組有哪些功能, 並節省紀錄模組設定的文書工作。

使用情境: 假設一個案場布置了很多模組分散在一棟建築物裡面, 這些模組會根據需求設定不同的組態。通常會有下面幾個需求

1. 每一模組通訊參數紀錄 (COM Port, Protocol, Baud Rate, Checksum, Parity format 等項目)。
2. 每一模組設定細項紀錄 (Power On Value, Safe Value, Watchdog, AI input range, AO output range 等項目)。
3. 確保在將來由於損壞而更新和更換模塊時可以提供正確的設定內容供比對。

要記錄每一模組的設定資料其實是一件非常繁雜又專業的事情, 使用者通常不知道一個模組到底有那些功能, 一般只會專注在模組要使用的功能, 例如溫度量測的感測器類別, 卻忘了還需要設定資料格式是工程單位 (Engineering format or float format) 還是 2 補數格式 (Hex format), 等最後模組重新設定更新到現場後發現讀取數據有問題。

當案子完成後, 一切工作就緒。過了幾年後有些模組會損壞更新, 更新後的模組設定是否正確可以使用載入 (Load Project)功能協助現場檢查比對更新後的模組設定是否與一開始儲存的資料相同。這對案子後續維護運作是一項非常重要的工作。

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以下將介紹上述兩項功能如何操作。

## 一、專案儲存功能

### 步驟一：完成模組搜尋

ID	Address	Baud Rate	Checksum	Format	Status	Description	Comments
RU-87P4	1[01h]	115200	Disabled	N,8,1	Auto Config. Ena...	[DCON]4*Slot Auto Configuration Remote ...	Supported
-87017Z	2[02h]	115200	Disabled	N,8,1	87PN Slot 0	[DCON]10/20 *AI(mA,mV,V)Differential/Si...	Supported
-87082	3[03h]	115200	Disabled	N,8,1	87PN Slot 1	[DCON]2*Counter/Frequency + 2*DO	Supported
-87028U	4[04h]	115200	Disabled	N,8,1	87PN Slot 2	[DCON]8*AO (V)	Supported
-87013	5[05h]	115200	Disabled	N,8,1	87PN Slot 3	[DCON]4*AI (RTD)	Supported
tR5	3[03h]	9600	Disabled	N,8,1	Remote I/O	[Modbus RTU]5*DO (Relay DO)	Supported

ID	Address	Baud Rate	Checksum	Format	Status	Description	Comments
7028	1[01h]	9600	Disabled	N,8,1	Remote I/O	[Modbus RTU]8*AO (V/mA)	Supported
7026	3[03h]	9600	Disabled	N,8,1	Remote I/O	[Modbus RTU]2*AO + 6*AI + 3*DO + 3*...	Supported

步驟二：逐一點選搜尋到的模組 ID 並打開配置表單完成模塊的配置。

7026 Firmware[0A01]

Configuration | AO | AI | DI | Host WDT | Commands Log | Summary | About

Set AO value with Engineering format

Type	Slew Rate	AO Value	ReadBack	Range	Output
CH: [03] +/- 10 V	immediate	0000	0000	8000~	0000
CH: [03] +/- 10 V	immediate	0000	0000	8000~	0000

Buttons: Set Channel Type Code As CH, Set to [Power On Value], Set to [Safe]

Read AO

tR5 Firmware[A106]

Configuration | DO | Host WDT | Commands Log | Summary | About

Bit Status

CH:00  CH:01  CH:02  CH:03  CH:04

DO Value: 03h

Buttons: Set to [Power On Value], Set to [Safe Value]

Read DO  
 Read Power ON Value  
 Read Safe Value

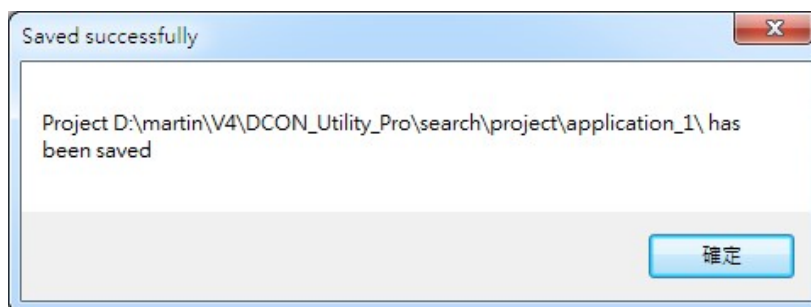
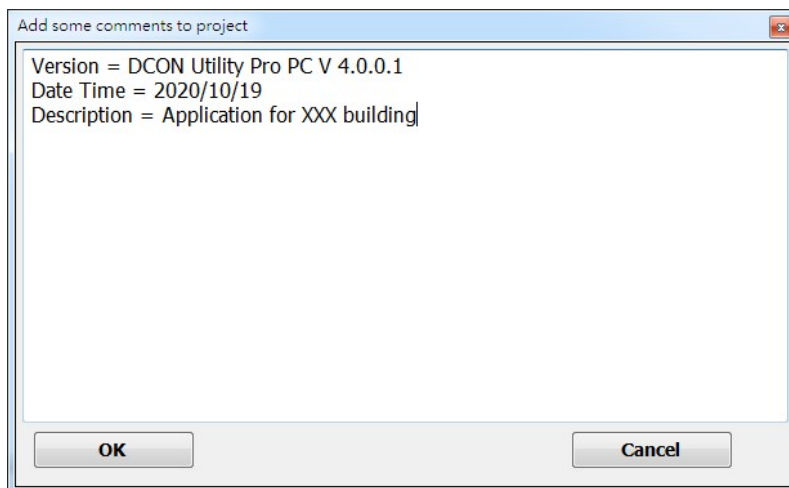
Wait for loading tR5 ....

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### 步驟三：選擇 “Save Project” 功能

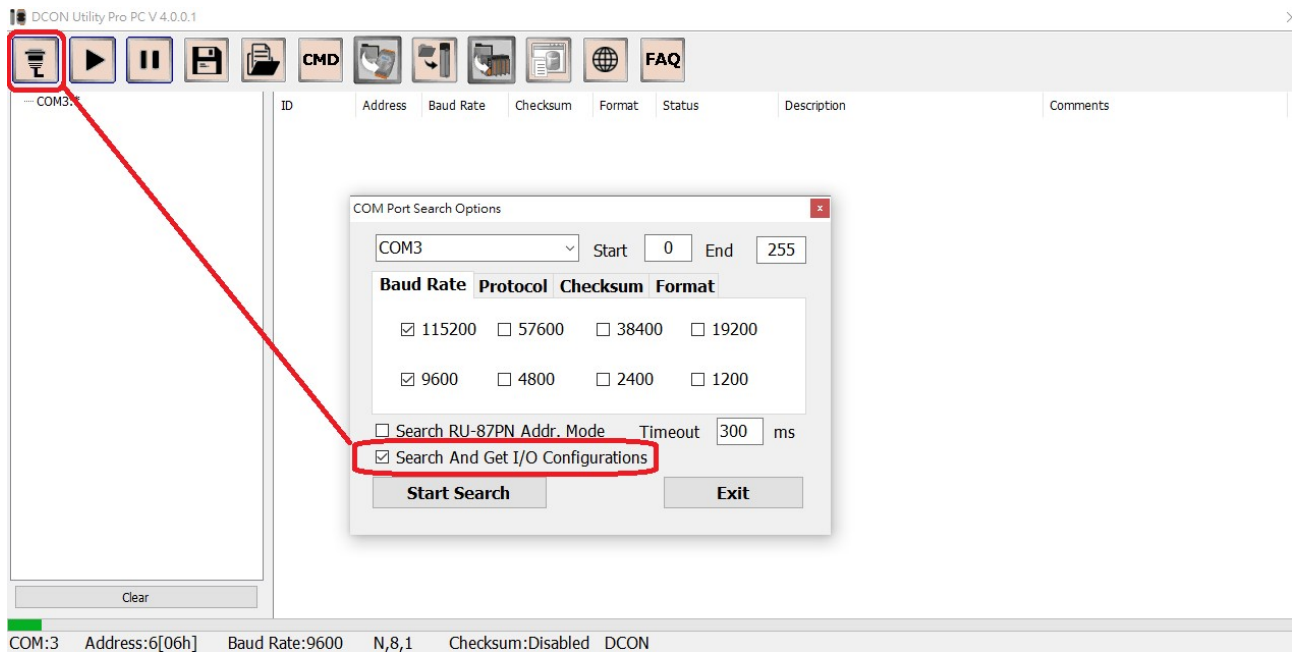
將 I / O 設置另存為專案保存相關文件時，輸入一些項目備註，有助於將來對專案內容的了解，儲存成功它將顯示項目文件路徑。



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如果在運行 DCON Utility Pro 之前，所有模組已配置完成，而搜尋完成後是否必須全部模組再逐一設定過才能存成專案？

當執行 DCON Utility Pro 時，若 COM 端口搜尋選項有勾選 “Search and Get I/O Configurations” 功能，它可以在 I / O 模塊被搜尋時的當下，直接讀取該模組的設置，在搜尋結束後直接將配置的結果存成專案，可以省去逐一點選模組 ID 進入設定表單的時間。



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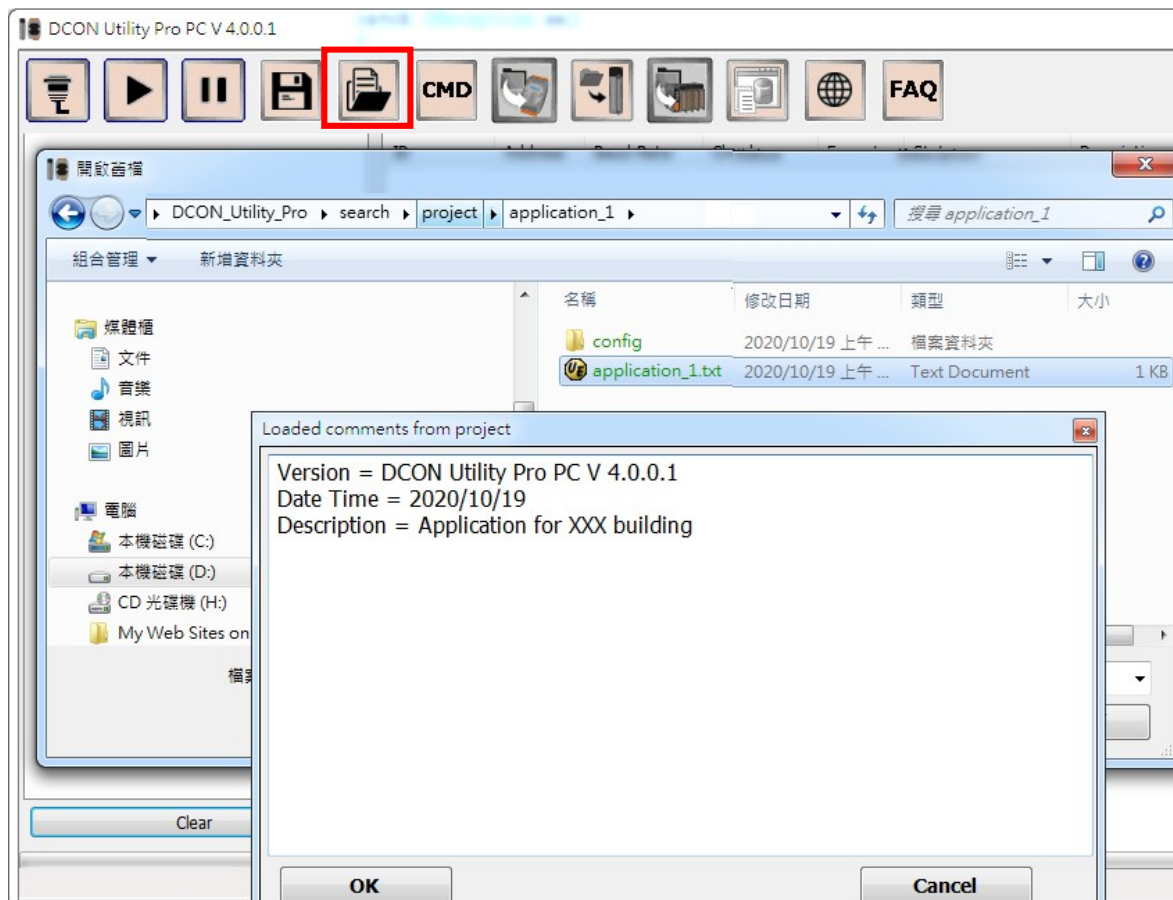
## 二、載入專案功能

執行載入儲存的專案(“Load Project”)功能會需要開啟 COM Port，並根據專案儲存內容檢查 RS-485 網路上模組及設定內容是否與先前儲存專案時的狀態一致。所以若要執行載入儲存的專案功能前必須關閉現場正在執行的應用程式。

當一個應用案場執行多年後，可能會有模組因損壞進行更換的情形。對於現場維護，使用 DCON Utility Pro “Load Project” 可提供以下用途。



### 1. 檢視之前的備註內容。





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## 2. 還原之前搜尋的結果，並且比對模組內部設定是否與專案內容相同

ID	Address	Baud Rate	Checksum	Format	Status	Description	Comments
RU-87P4	1[01h]	115200	Disabled	N,8,1	Auto Config. Ena...	[DCON]4*Slot Auto Configuration Remote ...	Matched
-87017Z	2[02h]	115200	Disabled	N,8,1	87PN Slot 0	[DCON]10/20 *AI(mA,mV,V)Differential/Si...	Matched
-87082	3[03h]	115200	Disabled	N,8,1	87PN Slot 1	[DCON]2*Counter/Frequency + 2*DO	Matched
-87028U	4[04h]	115200	Disabled	N,8,1	87PN Slot 2	[DCON]8*AO (V)	Matched
-87013	5[05h]	115200	Disabled	N,8,1	87PN Slot 3	[DCON]4*AI (RTD)	Matched
TR5	3[03h]	9600	Disabled	N,8,1	Remote I/O	[Modbus RTU]5*DO (Relay DO)	Matched

Load Search Project file = D:\martin\VA\DCON\_Utility\_Pro\search\project\application\_1\application\_1.txt

COM port I/O list	Configurations loaded from module	Configurations loaded from file
<ul style="list-style-type: none"> <li>COM1 <ul style="list-style-type: none"> <li>-7028:01:6:0:N81:1:Matched</li> <li>-7026:03:6:0:N81:1:Matched</li> </ul> </li> <li>COM13 <ul style="list-style-type: none"> <li>RU-87P4:01:A:0:N81:0:Matched</li> <li>-87017Z:02:A:0:N81:0:Matched</li> <li>-87082:03:A:0:N81:0:Matched</li> <li>-87028U:04:A:0:N81:0:Matched</li> <li>-87013:05:A:0:N81:0:Matched</li> <li>TR5:03:6:0:N81:1:Matched</li> </ul> </li> </ul>	<pre> VERSION = 0A01 GET_COMMUNICATE_PARAMETER = Baud rate 9600  Format N81 GET_MODBUS_MISC = Fast Mode, 60Hz Filter GET_MODBUS_DATAFORMAT = 2's Complement Format GET_CH0_AO_TYPE_CODE = [03h]+/- 10 V GET_CH0_AO_SLEW_RATE = [00h]immediate GET_CH1_AO_TYPE_CODE = [03h]+/- 10 V GET_CH1_AO_SLEW_RATE = [00h]immediate GET_CH0_AO_FOR_SAFE = 2's Complement Format,0h GET_CH0_AO_FOR_POWER = 2's Complement Format,0h GET_CH1_AO_FOR_POWER = 2's Complement Format,0h GET_CHANNEL_ENABLE_STATUS = 3Fh GET_CH0_INPUT_RANGE = [08h] GET_CH1_INPUT_RANGE = [08h] GET_CH2_INPUT_RANGE = [08h] GET_CH3_INPUT_RANGE = [08h] GET_CH4_INPUT_RANGE = [08h] GET_CH5_INPUT_RANGE = [08h] GET_CH0_AI_ALARM_ENABLE_STATUS = Disable GET_CH1_AI_ALARM_ENABLE_STATUS = Disable GET_CH2_AI_ALARM_ENABLE_STATUS = Disable GET_CH0_LOW_ALARM_LIMIT = -10000 GET_CH0_HIGH_ALARM_LIMIT = 10000 </pre>	<pre> VERSION = 0A01 GET_COMMUNICATE_PARAMETER = Baud rate 9600  Format N81 GET_MODBUS_MISC = Fast Mode, 60Hz Filter GET_MODBUS_DATAFORMAT = 2's Complement Format GET_CH0_AO_TYPE_CODE = [03h]+/- 10 V GET_CH0_AO_SLEW_RATE = [00h]immediate GET_CH1_AO_TYPE_CODE = [03h]+/- 10 V GET_CH1_AO_SLEW_RATE = [00h]immediate GET_CH0_AO_FOR_SAFE = 2's Complement Format,0h GET_CH0_AO_FOR_POWER = 2's Complement Format,0h GET_CH1_AO_FOR_POWER = 2's Complement Format,0h GET_CHANNEL_ENABLE_STATUS = 3Fh GET_CH0_INPUT_RANGE = [08h] GET_CH1_INPUT_RANGE = [08h] GET_CH2_INPUT_RANGE = [08h] GET_CH3_INPUT_RANGE = [08h] GET_CH4_INPUT_RANGE = [08h] GET_CH5_INPUT_RANGE = [08h] GET_CH0_AI_ALARM_ENABLE_STATUS = Disable GET_CH1_AI_ALARM_ENABLE_STATUS = Disable GET_CH2_AI_ALARM_ENABLE_STATUS = Disable GET_CH0_LOW_ALARM_LIMIT = -10000 GET_CH0_HIGH_ALARM_LIMIT = 10000 </pre>

左側是項目的 COM 端口和 I / O 樹狀列表。

Load Search Project file = D:\martin\VA\DCON\_Utility\_Pro\search\project\application\_1\application\_1.txt

COM port I/O list	Configurations loaded from module	Configurations loaded from file
<ul style="list-style-type: none"> <li>COM1 <ul style="list-style-type: none"> <li>-7028:01:6:0:N81:1:Matched</li> <li>-7026:03:6:0:N81:1:Matched</li> </ul> </li> <li>COM13 <ul style="list-style-type: none"> <li>RU-87P4:01:A:0:N81:0:Matched</li> <li>-87017Z:02:A:0:N81:0:Matched</li> <li>-87082:03:A:0:N81:0:Matched</li> <li>-87028U:04:A:0:N81:0:Matched</li> <li>-87013:05:A:0:N81:0:Matched</li> <li>TR5:03:6:0:N81:1:Matched</li> </ul> </li> </ul>	<pre> VERSION = 0A01 GET_COMMUNICATE_PARAMETER = Baud rate 9600  Format N81 GET_MODBUS_MISC = Fast Mode, 60Hz Filter GET_MODBUS_DATAFORMAT = 2's Complement Format GET_CH0_AO_TYPE_CODE = [03h]+/- 10 V GET_CH0_AO_SLEW_RATE = [00h]immediate GET_CH1_AO_TYPE_CODE = [03h]+/- 10 V GET_CH1_AO_SLEW_RATE = [00h]immediate GET_CH0_AO_FOR_SAFE = 2's Complement Format,0h GET_CH0_AO_FOR_POWER = 2's Complement Format,0h GET_CH1_AO_FOR_POWER = 2's Complement Format,0h GET_CHANNEL_ENABLE_STATUS = 3Fh GET_CH0_INPUT_RANGE = [08h] GET_CH1_INPUT_RANGE = [08h] GET_CH2_INPUT_RANGE = [08h] GET_CH3_INPUT_RANGE = [08h] GET_CH4_INPUT_RANGE = [08h] GET_CH5_INPUT_RANGE = [08h] GET_CH0_AI_ALARM_ENABLE_STATUS = Disable GET_CH1_AI_ALARM_ENABLE_STATUS = Disable GET_CH2_AI_ALARM_ENABLE_STATUS = Disable GET_CH0_LOW_ALARM_LIMIT = -10000 GET_CH0_HIGH_ALARM_LIMIT = 10000 GET_CH1_LOW_ALARM_LIMIT = 0 GET_CH1_HIGH_ALARM_LIMIT = 0 GET_CH2_LOW_ALARM_LIMIT = -10000 GET_CH2_HIGH_ALARM_LIMIT = 10000 GET_DI_REVERSE = None GET_ME_DO_SAFE_VALUE = 07h GET_ME_DO_POWER_ON = 07h GET_WDT_TIMER = 25sec GET_WDT_ENABLE = Disabled GET_WDT_OVERRIDE = Disabled GET_RESPONSE_DELAY_TIME = 0ms </pre>	<pre> VERSION = 0A01 GET_COMMUNICATE_PARAMETER = Baud rate 9600  Format N81 GET_MODBUS_MISC = Fast Mode, 60Hz Filter GET_MODBUS_DATAFORMAT = 2's Complement Format GET_CH0_AO_TYPE_CODE = [03h]+/- 10 V GET_CH0_AO_SLEW_RATE = [00h]immediate GET_CH1_AO_TYPE_CODE = [03h]+/- 10 V GET_CH1_AO_SLEW_RATE = [00h]immediate GET_CH0_AO_FOR_SAFE = 2's Complement Format,0h GET_CH0_AO_FOR_POWER = 2's Complement Format,0h GET_CH1_AO_FOR_POWER = 2's Complement Format,0h GET_CHANNEL_ENABLE_STATUS = 3Fh GET_CH0_INPUT_RANGE = [08h] GET_CH1_INPUT_RANGE = [08h] GET_CH2_INPUT_RANGE = [08h] GET_CH3_INPUT_RANGE = [08h] GET_CH4_INPUT_RANGE = [08h] GET_CH5_INPUT_RANGE = [08h] GET_CH0_AI_ALARM_ENABLE_STATUS = Disable GET_CH1_AI_ALARM_ENABLE_STATUS = Disable GET_CH2_AI_ALARM_ENABLE_STATUS = Disable GET_CH0_LOW_ALARM_LIMIT = -10000 GET_CH0_HIGH_ALARM_LIMIT = 10000 GET_CH1_LOW_ALARM_LIMIT = 0 GET_CH1_HIGH_ALARM_LIMIT = 0 GET_CH2_LOW_ALARM_LIMIT = -10000 GET_CH2_HIGH_ALARM_LIMIT = 10000 GET_DI_REVERSE = None GET_ME_DO_SAFE_VALUE = 07h GET_ME_DO_POWER_ON = 07h GET_WDT_TIMER = 25sec GET_WDT_ENABLE = Disabled GET_WDT_OVERRIDE = Disabled GET_RESPONSE_DELAY_TIME = 0ms </pre>

COM1;7026:[3,3,6,2,0,0];3[03h];9600;Disabled;N,8,1;Remote I/O;[Modbus RTU]2\*AO + 6\*AI + 3\*DO + 3\*DI (mA,V);0A01;1

從模組取得的設定細節。

專案載入的模組設定細節。

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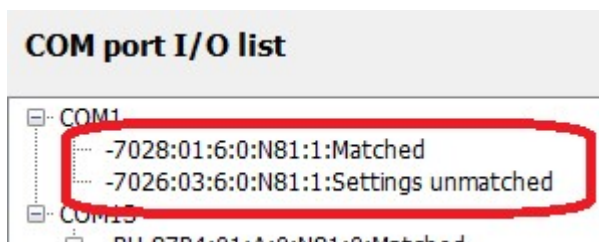
以下是在現場使用載入專案功能會發現的一些異常狀況

### 狀況一、模組都存在且通訊參數都正確，但模組設定有差異

如果現場模組因損壞而更換過，或是有被調整過，在載入專案時會檢查目前模組是否與先前存的設定是否相同。如果設置不匹配，則會突出顯示。

COM port I/O list	Configurations loaded from module	Configurations loaded from file
<pre> COM1 ├── -7028:01:6:0:N81:1:Matched └── -7026:03:6:0:N81:1:Settings unmatched COM13 ├── -RU-87P4:01:A:0:N81:0:Matched ├── -870172:02:A:0:N81:0:Matched ├── -87082:03:A:0:N81:0:Matched ├── -87028U:04:A:0:N81:0:Matched ├── -87013:05:A:0:N81:0:Matched └── -R5:03:6:0:N81:1:Matched </pre>	<pre> VERSION = 0A01 GET_COMMUNICATE_PARAMETER = Baud rate 9600  Format N81 GET_MODBUS_MISC = Fast Mode, 60Hz Filter &gt;&gt; GET_MODBUS_DATAFORMAT = Engineering Format GET_CH0_AO_TYPE_CODE = [03h]+/- 10 V GET_CH0_AO_SLEW_RATE = [00h]immediate GET_CH1_AO_TYPE_CODE = [03h]+/- 10 V GET_CH1_AO_SLEW_RATE = [00h]immediate &gt;&gt; GET_CH0_AO_FOR_SAFE = Engineering Format,0 &gt;&gt; GET_CH1_AO_FOR_SAFE = Engineering Format,0 &gt;&gt; GET_CH0_AO_FOR_POWER = Engineering Format,0 &gt;&gt; GET_CH1_AO_FOR_POWER = Engineering Format,0 GET_CHANNEL_ENABLE_STATUS = 3Fh GET_CH0_INPUT_RANGE = [08h] GET_CH1_INPUT_RANGE = [08h] GET_CH2_INPUT_RANGE = [08h] GET_CH3_INPUT_RANGE = [08h] GET_CH4_INPUT_RANGE = [08h] GET_CH5_INPUT_RANGE = [08h] GET_CH0_AI_ALARM_ENABLE_STATUS = Disable GET_CH1_AI_ALARM_ENABLE_STATUS = Disable GET_CH2_AI_ALARM_ENABLE_STATUS = Disable GET_CH0_LOW_ALARM_LIMIT = -10000 GET_CH0_HIGH_ALARM_LIMIT = 10000 GET_CH1_LOW_ALARM_LIMIT = 0 GET_CH1_HIGH_ALARM_LIMIT = 0 GET_CH2_LOW_ALARM_LIMIT = -10000 GET_CH2_HIGH_ALARM_LIMIT = 10000 GET_DI_REVERSE = None GET_MF_DO_SAFE_VALUE = 07h GET_MF_DO_POWER_ON = 07h GET_WDT_TIMER = 25sec GET_WDT_ENABLE = Disabled GET_WDT_OVERWRITE = Disabled GET_RESPONSE_DELAY_TIME = 0ms </pre>	<pre> VERSION = 0A01 GET_COMMUNICATE_PARAMETER = Baud rate 9600  Format N81 GET_MODBUS_MISC = Fast Mode, 60Hz Filter &gt;&gt; GET_MODBUS_DATAFORMAT = 2's Complement Format GET_CH0_AO_TYPE_CODE = [03h]+/- 10 V GET_CH0_AO_SLEW_RATE = [00h]immediate GET_CH1_AO_TYPE_CODE = [03h]+/- 10 V GET_CH1_AO_SLEW_RATE = [00h]immediate &gt;&gt; GET_CH0_AO_FOR_SAFE = 2's Complement Format,0h &gt;&gt; GET_CH1_AO_FOR_SAFE = 2's Complement Format,0h &gt;&gt; GET_CH0_AO_FOR_POWER = 2's Complement Format,0h &gt;&gt; GET_CH1_AO_FOR_POWER = 2's Complement Format,0h GET_CHANNEL_ENABLE_STATUS = 3Fh GET_CH0_INPUT_RANGE = [08h] GET_CH1_INPUT_RANGE = [08h] GET_CH2_INPUT_RANGE = [08h] GET_CH3_INPUT_RANGE = [08h] GET_CH4_INPUT_RANGE = [08h] GET_CH5_INPUT_RANGE = [08h] GET_CH0_AI_ALARM_ENABLE_STATUS = Disable GET_CH1_AI_ALARM_ENABLE_STATUS = Disable GET_CH2_AI_ALARM_ENABLE_STATUS = Disable GET_CH0_LOW_ALARM_LIMIT = -10000 GET_CH0_HIGH_ALARM_LIMIT = 10000 GET_CH1_LOW_ALARM_LIMIT = 0 GET_CH1_HIGH_ALARM_LIMIT = 0 GET_CH2_LOW_ALARM_LIMIT = -10000 GET_CH2_HIGH_ALARM_LIMIT = 10000 GET_DI_REVERSE = None GET_MF_DO_SAFE_VALUE = 07h GET_MF_DO_POWER_ON = 07h GET_WDT_TIMER = 25sec GET_WDT_ENABLE = Disabled GET_WDT_OVERWRITE = Disabled GET_RESPONSE_DELAY_TIME = 0ms </pre>

點選不匹配的模組可以比對差異的設定



Configurations loaded from module	Configurations loaded from file
<pre> VERSION = 0A01 GET_COMMUNICATE_PARAMETER = Baud rate 9600  Format N81 GET_MODBUS_MISC = Fast Mode, 60Hz Filter &gt;&gt; GET_MODBUS_DATAFORMAT = Engineering Format GET_CH0_AO_TYPE_CODE = [03h]+/- 10 V GET_CH0_AO_SLEW_RATE = [00h]immediate GET_CH1_AO_TYPE_CODE = [03h]+/- 10 V GET_CH1_AO_SLEW_RATE = [00h]immediate &gt;&gt; GET_CH0_AO_FOR_SAFE = Engineering Format,0 &gt;&gt; GET_CH1_AO_FOR_SAFE = Engineering Format,0 &gt;&gt; GET_CH0_AO_FOR_POWER = Engineering Format,0 &gt;&gt; GET_CH1_AO_FOR_POWER = Engineering Format,0 GET_CHANNEL_ENABLE_STATUS = 3Fh </pre>	<pre> VERSION = 0A01 GET_COMMUNICATE_PARAMETER = Baud rate 9600  Format N81 GET_MODBUS_MISC = Fast Mode, 60Hz Filter &gt;&gt; GET_MODBUS_DATAFORMAT = 2's Complement Format GET_CH0_AO_TYPE_CODE = [03h]+/- 10 V GET_CH0_AO_SLEW_RATE = [00h]immediate GET_CH1_AO_TYPE_CODE = [03h]+/- 10 V GET_CH1_AO_SLEW_RATE = [00h]immediate &gt;&gt; GET_CH0_AO_FOR_SAFE = 2's Complement Format,0h &gt;&gt; GET_CH1_AO_FOR_SAFE = 2's Complement Format,0h &gt;&gt; GET_CH0_AO_FOR_POWER = 2's Complement Format,0h &gt;&gt; GET_CH1_AO_FOR_POWER = 2's Complement Format,0h GET_CHANNEL_ENABLE_STATUS = 3Fh </pre>

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## 狀況二、COM Port 不存在或已變更

載入專案並發現 COM 端口已不存在的錯誤。當更換新的 PC 並重新安裝 USB 轉換器時，通常會發生此類錯誤。由於 COM 端口錯誤無法從模塊取得設定內容，“從模塊加載的配置”區域為空。

COM port I/O list	Configurations loaded from module	Configurations loaded from file
<pre> COM1 ├── -7028:01:6:0:N81:1:Matched ├── -7026:03:6:0:N81:1:Settings unmatched ├── COM13:Not exist ├── -RU-87P4:01:A:0:N81:0:Port 13 not exist │   ├── -87017Z:02:A:0:N81:0:Port 13 not exist │   ├── -87082:03:A:0:N81:0:Port 13 not exist │   ├── -87028U:04:A:0:N81:0:Port 13 not exist │   └── -87013:05:A:0:N81:0:Port 13 not exist └── -tR5:03:6:0:N81:1:Port 13 not exist           </pre>		<pre> VERSION = A106 GET_COMMUNICATE_PARAMETER = Baud rate 9600  Format N81 GET_DO_POWER_ON = 3h GET_DO_SAFE_VALUE = 18h GET_WDT_TIMER = 25sec GET_WDT_ENABLE = Disabled GET_WDT_OVERWRITE = Enabled GET_RESPONSE_DELAY_TIME = 5ms           </pre>

## 狀況三、原本模組不存在

找不到模組，可能是由於

1. 模塊損壞，無法通信。
2. 模塊的通信參數錯誤（包括錯誤的網絡地址/鮑率/校驗和/奇偶校驗格式/協議），或者模組連接到錯誤的 COM 端口。使用搜索功能找出該模塊。

COM port I/O list	Configurations loaded from module	Configurations loaded from file
<pre> COM1 ├── -7028:01:6:0:N81:1:Module not found ├── -7026:03:6:0:N81:1:Matched ├── COM13 │   ├── -RU-87P4:01:A:0:N81:0:Matched │   ├── -87017Z:02:A:0:N81:0:Matched │   ├── -87082:03:A:0:N81:0:Matched │   ├── -87028U:04:A:0:N81:0:Matched │   └── -87013:05:A:0:N81:0:Matched └── -tR5:03:6:0:N81:1:Matched           </pre>		<pre> VERSION = A202 GET_COMMUNICATE_PARAMETER = Baud rate 9600  Format N81 GET_MOBUS_DATAFORMAT = Engineering Format GET_CH0_AO_TYPE_CODE = [04h]0 ~ +5 V GET_CH0_AO_SLEW_RATE = [00h]immediate GET_CH1_AO_TYPE_CODE = [05h]+/- 5 V GET_CH1_AO_SLEW_RATE = [01h]0.0625 V/sec GET_CH2_AO_TYPE_CODE = [05h]+/- 5 V GET_CH2_AO_SLEW_RATE = [01h]0.0625 V/sec GET_CH3_AO_TYPE_CODE = [05h]+/- 5 V GET_CH3_AO_SLEW_RATE = [01h]0.0625 V/sec GET_CH4_AO_TYPE_CODE = [05h]+/- 5 V GET_CH4_AO_SLEW_RATE = [00h]immediate GET_CH5_AO_TYPE_CODE = [05h]+/- 5 V GET_CH5_AO_SLEW_RATE = [01h]0.0625 V/sec GET_CH6_AO_TYPE_CODE = [05h]+/- 5 V GET_CH6_AO_SLEW_RATE = [01h]0.0625 V/sec GET_CH7_AO_TYPE_CODE = [05h]+/- 5 V GET_CH7_AO_SLEW_RATE = [01h]0.0625 V/sec GET_CH0_AO_FOR_SAFE = Engineering Format,0 GET_CH1_AO_FOR_SAFE = Engineering Format,0 GET_CH2_AO_FOR_SAFE = Engineering Format,0 GET_CH3_AO_FOR_SAFE = Engineering Format,0 GET_CH4_AO_FOR_SAFE = Engineering Format,0 GET_CH5_AO_FOR_SAFE = Engineering Format,0 GET_CH6_AO_FOR_SAFE = Engineering Format,0 GET_CH7_AO_FOR_SAFE = Engineering Format,0 GET_CH0_AO_FOR_POWER = Engineering Format,0 GET_CH1_AO_FOR_POWER = Engineering Format,0 GET_CH2_AO_FOR_POWER = Engineering Format,0 GET_CH3_AO_FOR_POWER = Engineering Format,0 GET_CH4_AO_FOR_POWER = Engineering Format,0 GET_CH5_AO_FOR_POWER = Engineering Format,0           </pre>



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### 狀況四、原本模組已變更為另一型號的模組

發現另一個具有相同通信参数的模組。例如，原本專案規劃使用 M-7028 两个通道提供 +/- 10V 輸出，有一天它损坏了，有人用 M-7024 替待 M-7028 的 +/- 10V 電壓輸出。系統可以正常工作，但是使用“Load Project”功能會找出與專案規劃內容有差異的地方。

The screenshot shows the DCON Utility Pro V4.0.0.1 interface. The top part displays a table of loaded modules with the following data:

ID	Address	Baud Rate	Checksum	Format	Status	Description	Comments
RU-87P4	1[01h]	115200	Disabled	N,8,1	Auto Config. Ena...	[DCON]4*Slot Auto Configuration Remote ...	Matched
-87017Z	2[02h]	115200	Disabled	N,8,1	87PN Slot 0	[DCON]10/20 *AI(mA,mV,V)Differential/Si...	Matched
-87082	3[03h]	115200	Disabled	N,8,1	87PN Slot 1	[DCON]2*Counter/Frequency + 2*DO	Matched
-87028U	4[04h]	115200	Disabled	N,8,1	87PN Slot 2	[DCON]8*AO (V)	Matched
-87013	5[05h]	115200	Disabled	N,8,1	87PN Slot 3	[DCON]4*AI (RTD)	Matched
tR5	3[03h]	9600	Disabled	N,8,1	Remote I/O	[Modbus RTU]5*DO (Relay DO)	Matched

The bottom part of the interface shows a comparison between the loaded project configuration and configurations from a module file. A red box highlights a mismatch in the COM1 module ID:

- COM1**
  - 7028:01:6:0:N81:1:[7024]Module unmatche
  - 7026:03:6:0:N81:1:Matched
- COM13**
  - RU-87P4:01:A:0:N81:0:Matched
  - 87017Z:02:A:0:N81:0:Matched
  - 87082:03:A:0:N81:0:Matched
  - 87028U:04:A:0:N81:0:Matched
  - 87013:05:A:0:N81:0:Matched
  - tR5:03:6:0:N81:1:Matched

The right side of the interface shows configurations loaded from a file:

```

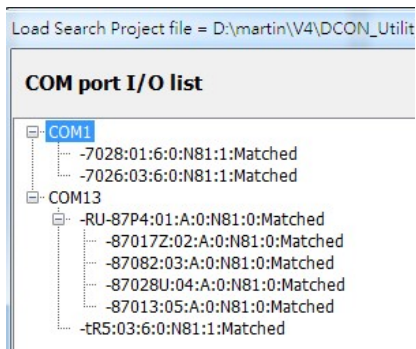
VERSION = A202
GET_COMMUNICATE_PARAMETER = Baud rate 9600| Format N81
GET_MODBUS_DATAFORMAT = Engineering Format
GET_CH0_AO_TTYPE_CODE = [04h]0 ~ +5 V
GET_CH0_AO_SLEW_RATE = [00h]immediate
GET_CH1_AO_TTYPE_CODE = [05h]+/- 5 V
GET_CH1_AO_SLEW_RATE = [01h]0.0625 V/sec
GET_CH2_AO_TTYPE_CODE = [05h]+/- 5 V
GET_CH2_AO_SLEW_RATE = [01h]0.0625 V/sec
GET_CH3_AO_TTYPE_CODE = [05h]+/- 5 V
GET_CH3_AO_SLEW_RATE = [01h]0.0625 V/sec
GET_CH4_AO_TTYPE_CODE = [05h]+/- 5 V
GET_CH4_AO_SLEW_RATE = [00h]immediate
GET_CH5_AO_TTYPE_CODE = [05h]+/- 5 V
GET_CH5_AO_SLEW_RATE = [01h]0.0625 V/sec

```

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## 狀況五、有額外新增的模組

“Load Project” 可以協助使用者比對並找出現場與專案內容的差異地方，但無法發現原始專案中未包含的額外模組的差異。例如，最初有兩個模塊 (M-7028 和 M-7026) 連接到 COM1，如果將另一個 M-7024 加到 COM1，使用 “Load Project” 功能進行檢查時並沒有辦法發現這個不同的地方。



ID	Address	Baud Rate	Checksum	Format	Status	Description
7028	1[01h]	9600	Disabled	N,8,1	Remote I/O	[Modbus RTU]8*AO (V/mA)
7024	2[02h]	9600	Disabled	N,8,1	Remote I/O	[Modbus RTU]4*AO (mA,V)
7026	3[03h]	9600	Disabled	N,8,1	Remote I/O	[Modbus RTU]2*AO + 6*AI + 3*DO + 3*

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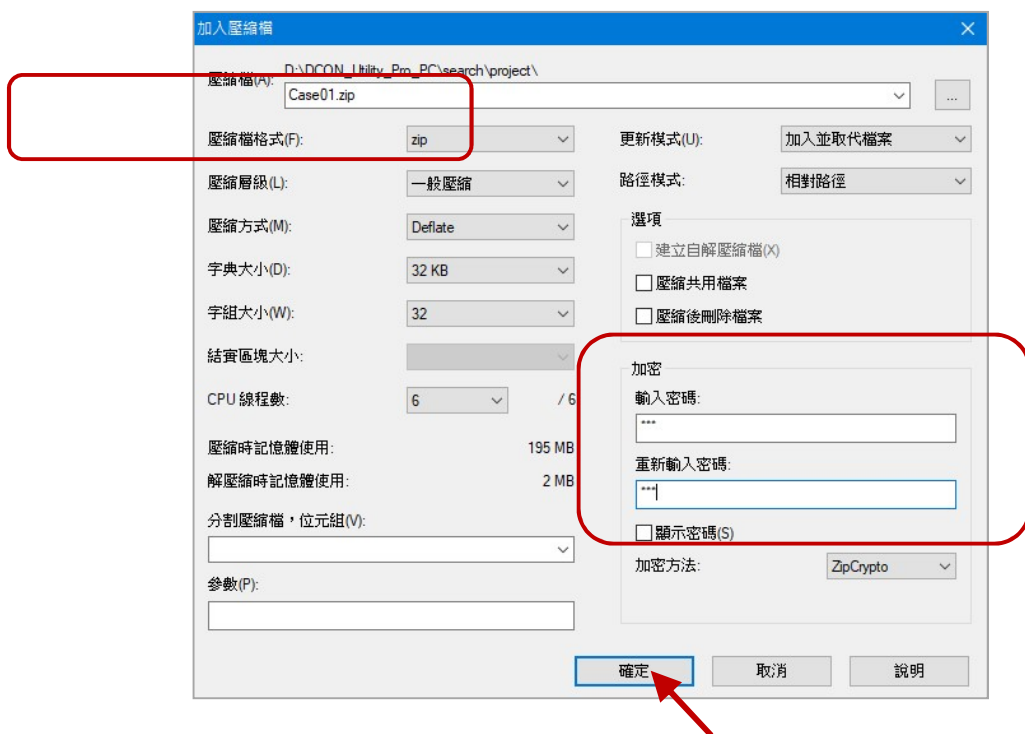
**備註 1:**

**a. 將 DCON Utility Pro 跟專案存一份備份當副本.**

I / O 專案內容將存儲在.. \ DCON\_Utility\_Pro\_PC \ search \ project 中。建議將 DCON Utility Pro 連同儲存的專案備份成副本，以避免將來 DCON Utility Pro 改版造成的相容性的問題。

**b. 可使用 Zip 壓縮工具加密專案內容**

客戶可以將相關工程文件文件如配置圖、採購文件等連同 DCON Utility Pro 產生的專案資料夾放一起使用壓縮工具加密壓縮以保護相關資料內容。



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備註 2: 若在 PAC 平台上將底板搜尋設定底板插槽上的 I-87K 模組，執行 “Save Project” 功能，會同時將底板上 I/O 模組設定內容儲存到 auto\_config\ 路徑下。使用 “Restore For Backplane I-87K I/O” 的工具程式可以用來還原底板 I-87K 模組設定。

