## BACnet/IP Slave I/O Modules



# FAQ for BNET-5000

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### 1. 如何透過 ICDT BACnet Pioneer 測試 BNET-5000?

ICDT BACnet Pioneer是元米科技提供的免費測試軟體·將以BNET-5304控制DO[0] 並讀回DI[0]為例·BNET-5310亦可依此流程測試:

(1) 安裝軟體 ICDT BACnet Pioneer
 <u>http://www.icdt.com.tw/main/index.php/2013-07-09-05-16-50/2013-07-18-14-43-35/file</u>
 <u>/24-bacnetpioneerv1001</u>
 相關資訊請參閱元米科技:
 <u>http://www.icdt.com.tw</u>

- (2) 將 BNET-5304 的 DO.PWR 接 *電源+5VDC*、GND 接 *電源地*、DO0 接 DIO,開啟電源 並接上網路線。
- (3)執行 IDT BACket 找出本機及 BNET-5304 的 Device ID/Instance(預設 3577)。選 3577:

🔀 BACnet Pioneer	
۹ 🖉 🖉 🚽 🚽	
4194302 3577	
Environ 1	

(4) 點選 Device 3577(.....) · 啟動掃描 BNET-5304 物件。



(5) 點選 BINARY OUTPUT→0, 啟動掃描 BOO 物件屬性。



(6) 雙擊 Present Value, 設置 BOO 為 Active。

Ė

• BINA	ARY OUTPUT
ė o (	
	Active Text : BOOActiveText
	Description : BNET-5304 BO0
1	Event State : Normal
1	Inactive Text : BO0InactiveText
1	Object Identifier : BINARY OUTPUT 0
	Object Name : BNET-5304 BO0
	Object Type : Binary Output
	Out Of Service : False
	Polarity : Normal
	Present Value : Active
	Priority Array : 16
1	Reliability : No Fault Detected
	Relinquish Default : Inactive
	Status Flags : In Alarm=False Fault=False Overridden=False Out Of Service=False

(7) 點選 BINARY INPUT→0→Present Value · 確認 BIO 為 Inactive ·

- BNET-5304 的 DI 為 Close GND 才是 Active。在本範例中,若 BOO 為 Inactive, 則 BIO 為 Active。
- ICDT Pioneer 必須點選項目,該項目數值才會更新。



### 2. 如何透過 BACnet Visual Test Shell (VTS) 測試 BNET-5000?

以Visual Test Shell (VTS)控制BNET-5304的DO[0]並讀回DI[0]為例 · BNET-5310 亦可依此流程測試:

(1) 取得 Visual Test Shell (VTS), 請參考網址:

<u>http://vts.sourceforge.net/</u> 或 <u>http://sourceforge.net/projects/vts</u>

(2) 將 BNET-5304 的 DO.PWR 接 *電源+5VDC*、GND 接 *電源地*、DO0 接 DIO,開啟電源

並接上網路線。

(3)執行 💦 YINATE of Charles · 如果您 VTS 已設置 Devices · Ports · Names · 請跳至步驟(7)。

(4) 點選 Edit→Devices..., 設置 Name 為 MyDevice、Instance 為 1111, 按下 OK。



(5) 點選 Edit→Ports...,按下 New 按鈕,設置:

- Name 設為 MyPort; 勾選 Enable
- Network 設為1;選擇 MyDevice
- IP 頁籤 Interface 選擇可與 BNET-5304 通訊網路介面
- 按下 OK 或 Apply 繼續

¥TS - [vts3.cfg]							E	
le <u>Edit View Send EPIC</u> ☐ <u>D</u> elete All Packets Ctrl- <u>R</u> efresh	Iests Help	1	2					
o. De <u>v</u> ices	Dest	ination SNE	T SADDR	DNET	DADDR	Service Type	2	
Names Change Logfile Capture Filter Display <u>Fi</u> lter								
Preferences	Po	rt Configurat	ion					
	F	Name	Туре	Config	Sta	atus	New	
		→ MyPort	IP	0xBAC0	;Realte Ne	ew L	Delete	
							ок	
							Cancel	
	<u>1</u>	lame: MyPor	t MuDev	vice	۹ •	<sup>7</sup> Enable —	Apply	
		Null IP	Ethemet	ARCNET	MSTP   PTP			
		Interface Rea	altek RTL8168	3C(P)/8111C	(P) PCI-E Giga	bit Ethernet NIC	- Packe 💌	
		UDP Port: Oxf C Raw C BTR (Anne C BEMD (Anne C BMP (Annes C Foreign Dev Host: XX	3AC0 x-[]) nex-]) xice (Annex-J) x.x[/mask][.p	Usually Oxf 0 = dynami BBMD Pe BBMD Pe Iime- ort	BACO (47808) cally assigned real			
	Ē			10				
			1					

(6) 點選 *Edit→Names...*,按下 *New* 按鈕,設置:

- Address Type 選擇 Local Station
- Name 設為 BNET-5304
- Port 選擇 MyPort
- Address 設置 BNET-5304 的 IP 192.168.255.1:47808(BNET-5304 預設值)
- 按下 *OK* 繼續。
- 註:TD 為本機,不可移除。

VIEW VIEW Send	EPICS Test	s Heln						
Delete All Pack	ets Ctrl+D		2					
Refresh		0 (P (P)						
De <u>v</u> ices		Destinatio	n SNET	SADDR	DNET	DADDR	Service Type	L.
Por <u>t</u> s								
Names								
Canture Filter								
Display <u>Filter</u>								
Preferences								
		Names						
		Name		Port	Network	Address	[	Ne <u>w</u>
		TD	304	MyPort MyPort		192.168.20	0.20:47808 05.1:47808	Delete
								Import
								Export
		1						
		Addres	s <u>T</u> ype		<u>N</u> ame	BNET-5304		Cancel
		C N	ull 		Port	MuPort	-	
		C Lo	ical Broadca	ist	<u>r</u> on			
		CB	emote Broad	cast	Network			-
			Silloto Dioda	1000	and the second	Provide statements and statements and		
		C B C B	emote Statio	n ast	Address	192.168.255.1	:47808	
		C B C G	emote Statio obal Broadc	n ast	<u>A</u> ddress	192.168.255.1 Hex (C0-A8-00 or IP:port (192.	:47808 I-01-BA-C0) 168.0.1:47808)	
		C R C G	emote Statio obal Broadc	n ast	Address	192.168.255.1 Hex (C0-A8-00 or IP:port (192.	:47808 +01-BA-C0) 168.0.1:47808)	
		C R C G	emote Statio obal Broadc	n ast	Address	192.168.255.1 Hex (C0-A8-00 or IP:port (192.	:47808 H01-BA-C0) 168.0.1:47808)	
		C B C G	emote Statio obal Broadc	n ast	Address	192.168.255.1 Hex (C0-A8-00 or IP:port (192.	:47808 +01-8A-C0) 168.0.1:47808)	
		C G	emote Statio obal Broadc	n ast	Address	192.168.255.1 Hex (C0-A8-00 or IP:port (192.	:47808 •01-8A-C0) 168.0.1:47808)	

(7) 點選 Send→Object Access→WriteProperty,將開啟 WriteProperty 視窗。



(8) WriteProperty 視窗→IP 頁籤: Destination 選擇 BNET-5304



(9) WriteProperty 視窗→WriteProperty 頁籤, 依序設置 binary-output, 0、

present-value、BinaryPV(active),按下 Send & Close 按鈕,步驟如下所示:

WriteProperty		
IP   BVLCI   NPCI   Confirmed-Request WriteProperty	MyPort	•
Object ID binary-output, 0 ID Property present-value  Array Value Any Prionity	☐ IP ☐ BVLL Network ☐ Alarm and Event ☐ File Access ☐ Object Access ☐ AddListEleme ☐ CreateObject ☐ CreateObject ☐ CreateObject ☐ CreateObject ☐ ReadProperty ☐ WriteProperty ☐ WriteProperty	ent irror ACK Error ACK Multiple Multiple-ACK lement Multiple-Error
C0A8FF01 BAC0810A 00150104 0003410F 0C010000 0019553F 91013F	History:0 💌	Send
	<u>C</u> lose	Send & Close

● Object ID 項目按下 ID...按鈕選擇 binary-output, BOØ 則 instance 設為 Ø。

Object ID	×
An object identifi an instance num	ier is made of two components: an object type and ber.
Object Type	binary-output
Reserved Type	4 Reserved types range 0127
Vendor Type	Vendor Types range 1281023
Instance	0 Instance range 04194303
Here is how the	value can be entered directly:
	binary-output, 0

- Property 選擇 Present-Value
- Value 按下 Any...按鈕,開啟視窗 Add 並選擇 BinaryPV,開啟 Set...設為 active。

ABSTRACT-SYNTAX.&Type	
Type       Context       Data         BinaryPV       9101       Add         Bemove       Bemove         Iype       BinaryPV       ▼         Context       ▼       ▼         Quite       Set         OK       Cancel	BACnet BinaryPY BinaryPV active

#### ● 按下 Send & CLose, VTS 送出封包與 BNET-5304 立即回應如下:

💦 V I S	5 - [vts3.cfg]									
<u>F</u> ile <u>E</u>	ile <u>Edit Vi</u> ew Send EPICS <u>I</u> ests <u>H</u> elp									
00	D 🖻 🗑 🎒 🗙 U 🚸 🔷 😡 🖻 🗐 🦹 📓									
E .	<b>9 🐹   🕮 </b> 🗐	) El	) 仍 仍 謹	P 🕘						
No.	TimeStamp	Port	Source	Destination	SNET	SADDR	DNET	DADDR	Service Type	
<b>→</b> 0	16:33:28.776	M	TD	BNET-5304					WriteProperty, ID=66 binary-output_0, present-value, active (1)	]
←1	16:33:28.776	М	BNET-5304	TD					Simple ACK, ID=66, WriteProperty ACK	
Ready										NUM

讀回 DIO 為 Inactive

(10)點選 *Send→Object Access→ReadProperty*,將開啓 ReadProperty 視窗。

file <u>E</u> dit <u>V</u> iew	Send EPICS Tests Help									
No TimeStam	✓ MyPort (IP)	tion	SNET	SADDR	DNFT	DADDR	Service Time			
→0 17:32:56.9 ↓1 17:32:56.9	IP BVLL Alarm and Event	5304	ONLI	SHOPK	DIEI	DIDDK	WinterDoperty, ID=68 binary-output_0, present-value, active (1) Simple ACK, ID=68, WinteProperty ACK			
	Object Access	A CI CI CI CI CI CI CI CI CI CI CI CI CI C	ddListElem hangeList- reateObjec reateObjec reateObjec eadPropert eadPropert eadPropert eadPropert adRange emoveList riteProper riteProper	tent Error t-t-ACK t-Error t y-ACK yMultiple-A Element ty Multiple-F	.CK Error					

(11)ReadProperty 視窗→IP 頁籤: Destination 選擇 BNET-5304

ReadProperty	
[IP] BVLCI   NPCI   Confirmed-Request   ReadProperty	MyPort •
Destination BNET-5304 T 192.168.255.1:47808	IP BVLL Network Alarm and Event File Access Object Access AddListElement CreateObject ACK CreateObject-ACK CreateObject-ACK CreateObject-Emor DelteObject ReadProperty-ACK ReadPropertyMultiple ReadPropertyMultiple-ACK ReadPropertyMultiple-ACK ReadPropertyMultiple-ACK ReadPropertyMultiple-ACK ReadPropertyMultiple-ACK ReadPropertyMultiple-ACK ReadPropertyMultiple-ACK
Object ID required	▼ Send
	Close Send & Close

(12)ReadProperty 視窗→ReadProperty 頁籤, 依序設置 binary-input, 0、

**present-value**,最後按下 Send & Close 按鈕,步驟如下所示:

ReadProperty	
IP   BVLCI   NPCI   Confirmed-Request ReadProperty	MyPort 🔹
Object ID binary-input, 0 ID Property present-value	IP         BVLL         Network         Alarn and Event         File Access         Object Access         AddListElement         CreateObject         CreateObject ACK         CreateObject Error         DeleteObject         ReadProperty         ReadPropertyMultiple         ReadPropertyMultiple         ReadPropertyMultiple         WritePropertyMultiple         WritePropertyMultiple         WritePropertyMultiple         WritePropertyMultiple         WritePropertyMultiple
C0A8FF01 BAC0810A 00110104 0003430C 0C00C000 001955	Send
	<u>C</u> lose Send & Close

● Object ID 項目按下 ID...按鈕選擇 binary-input · BOØ 則 instance 設為 Ø。

Object ID									
An object identifier is made of two components: an object type and an instance number.									
Object Type	analog-input 🗨								
Reserved Type	0 Reserved types range 0127								
Vendor Type	Vendor Types range 1281023								
Instance	0 Instance range 04194303								
Here is how the value can be entered directly:									
	analog-input, 0 OK								

- Property 選擇 Present-Value
- 按下 *Send & CLose*, VTS 送出封包與 BNET-5304 確認讀回 *Inactive*:注意 BNET-5304 的 DI 為 Close GND 才是 *Active*。若 BOO 為 *Inactive*, 則 BIO 為 *Active*。

🙀 7 IS - [yis3.cfg]													
<u>F</u> ile ]	File Edit View Send EPICS Tests Help												
D 🚔 🖶 🎒 🗙 U 🏟 🚸 🦣 🔤 🖻 🦹 📓													
▶ 🖬 🐹 🔚 副 副 副 副 副 副 副 副 副 副 副 副 副 副 副 副 副 副													
No.	TimeStamp	Port	Source	Destination	SNET	SADDR	DNET	DADDR	Service Type				
<b>→</b> 0	17:32:56.901	М	TD	BNET-5304					WriteProperty, ID=68 binary-output_0, present-value, active (1)				
← 1	17:32:56.948	М	BNET-5304	TD					Simple ACK, ID=68, WriteProperty ACK				
<b>→</b> 2	17:33:22.089	M	TD	BNET-5304					ReadProperty, ID=69 binary-input_0, present-value				
← 3	17:33:22.089	M	BNET-5304	TD					ReadProperty-ACK, ID=69, binary-input_0, present-value, inactive (0)				
									ReadProperty-	ACK, ID=69, bina			
Ready	Ready												