gStack-RIO 使用說明

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產品簡述

- WPC 自行研發的 gStack 產品系列係採用 Rack 機箱設計，自行搭配控制器及模組卡片。
- 專為分散式、高密度 I/O應用打造。每個機箱本身具備八個插槽，可供使用者彈性的選擇模組搭配。
- 前置面板設計的模組卡片可快速抽換，有利於系統維修更換及未來功能擴充。
- 使用 gStack-RIO driver，使用者可以使用 LabVIEW 開發
  1. Host PC 應用程式
  2. Real-time 應用程式

Software architecture

User-defined PC software

gStack-RIO driver API

Host PC

- -

Real-time target

User-defined RT software

NI FPGA interface (direct pass-through)

gStack-RIO driver API

Pre-program FPGA bitfile

Pre-program FPGA bitfile

Appearance – Entire system

gStack chassis

gStack module cards

gStack controller
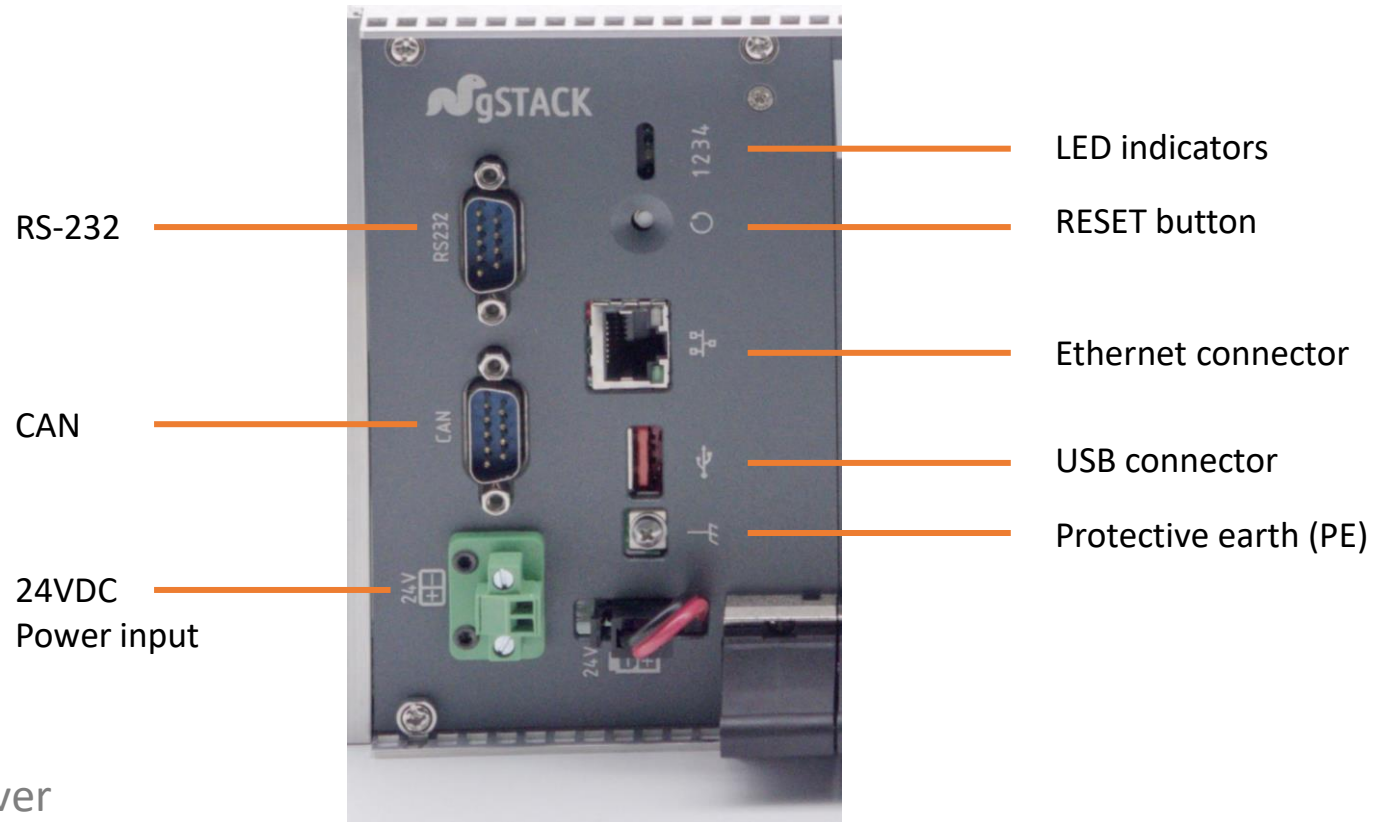
Appearance – gStack-RIO controller

Features
- sbRIO-9607
- Zynq-7020
- 667MHz Dual core CPU
- 512MB DRAM
- 512MB Flash
- Ethernet/USB/CAN/RS-232
- LabVIEW PC/RT programmable
- Software: gStack Manager, gStack driver

RS-232

CAN

24VDC
Power input

LED indicators

RESET button

Ethernet connector

USB connector

Protective earth (PE)

Quick start guide

1. Configure sbRIO with proper network setting via NI MAX.

2. Download gStack-RIO manager from WPC official site.

3. Open gStack-RIO manager and select proper module type corresponding to slot.

4. Confirm if the module functions properly via Test panels?

5. Download & install gStack-RIO driver from WPC official site.

6. Open LabVIEW environment then you can programmatically using your gStack-RIO system.

Download gStack-RIO software from WPC official site.

gStack-RIO 控制器

Download gStack-RIO manager

gStack-RIO manager required installation of LabVIEW 2015 Run-time engine.

Download gStack-RIO driver

Configure network setting via NI MAX
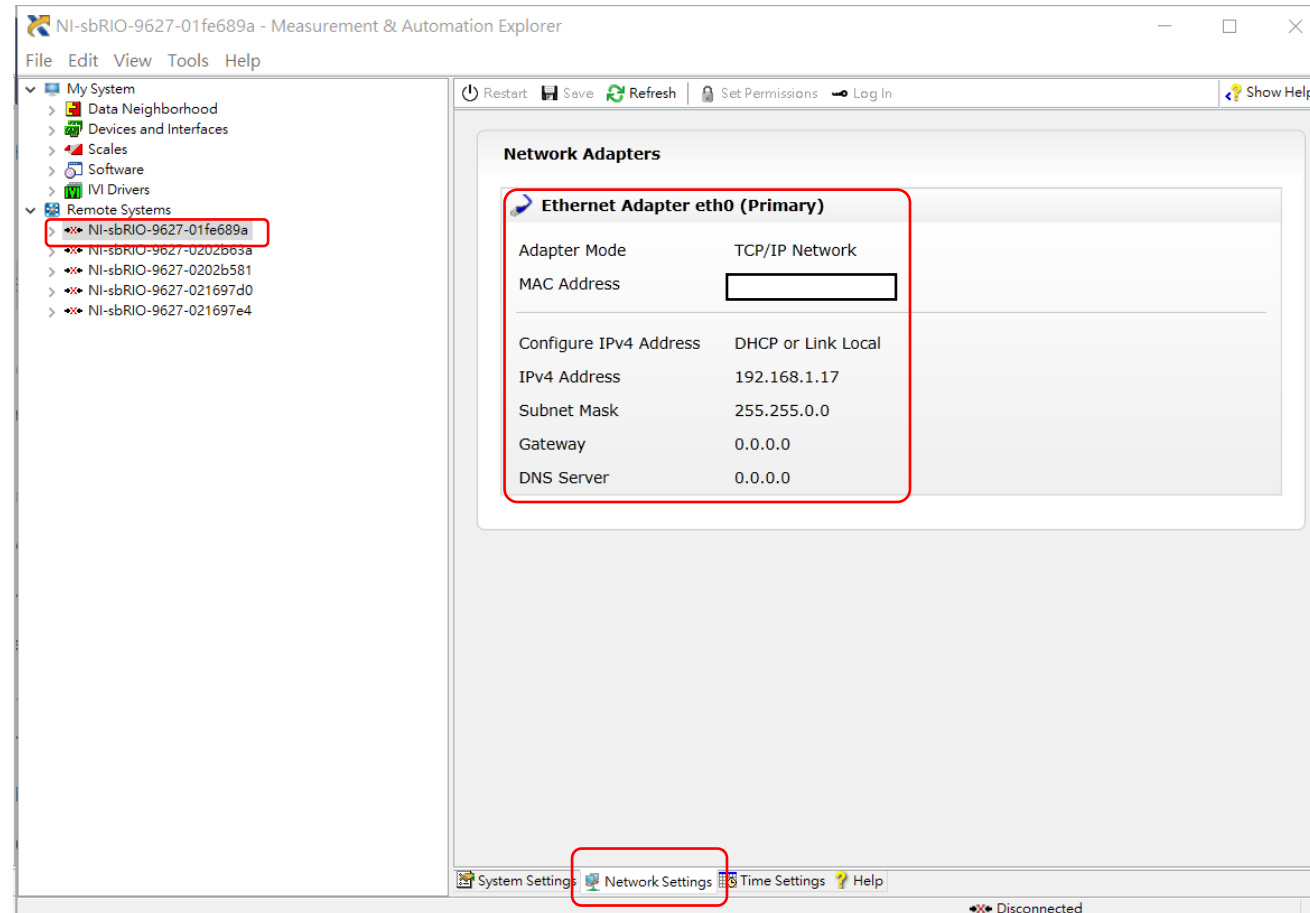
gStack-RIO manager
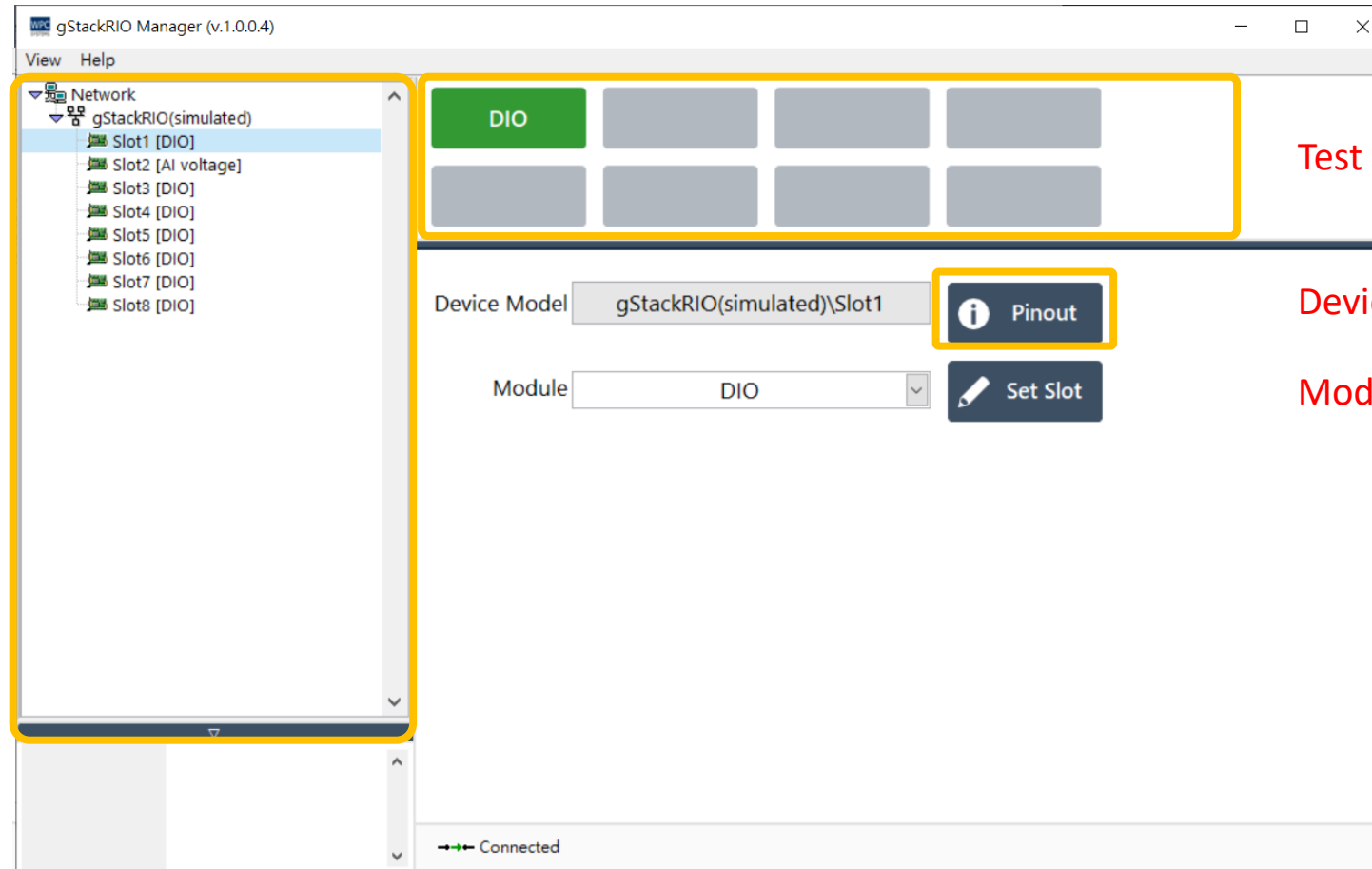
Test panels

Device pinout

Module setting

Device List

Device Info

Confirm if the module functions properly via Test panels?
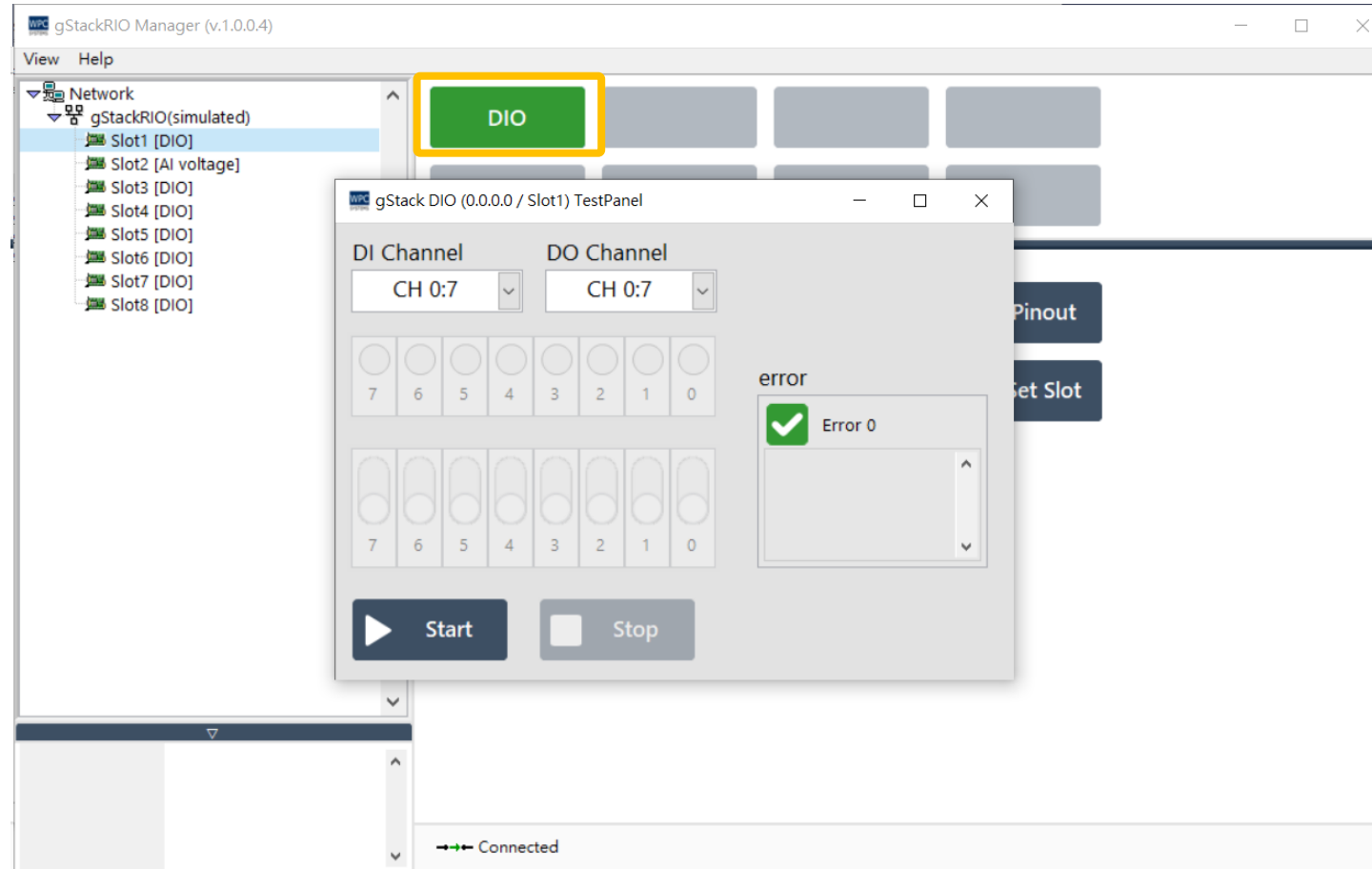
Search "gStack" in NI Example finder

Example project
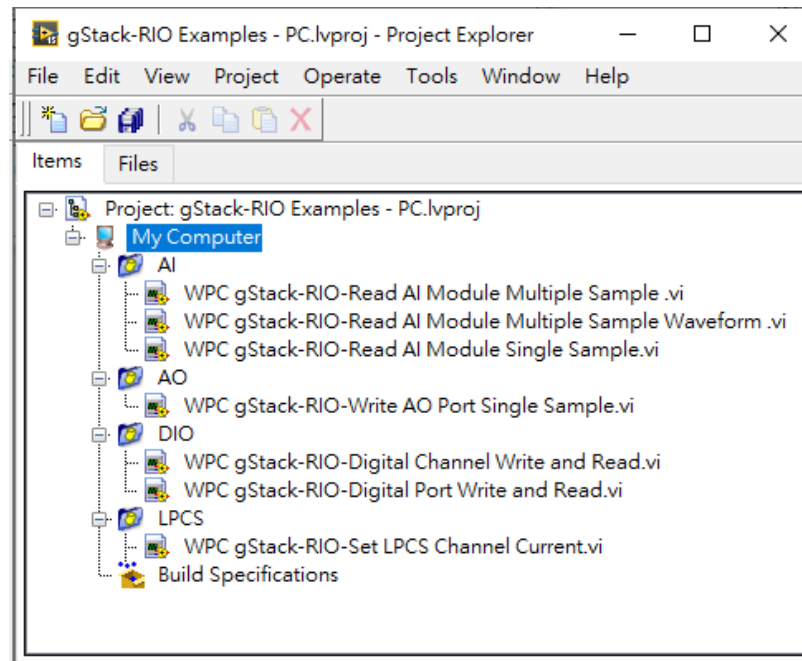
Example project (host PC)
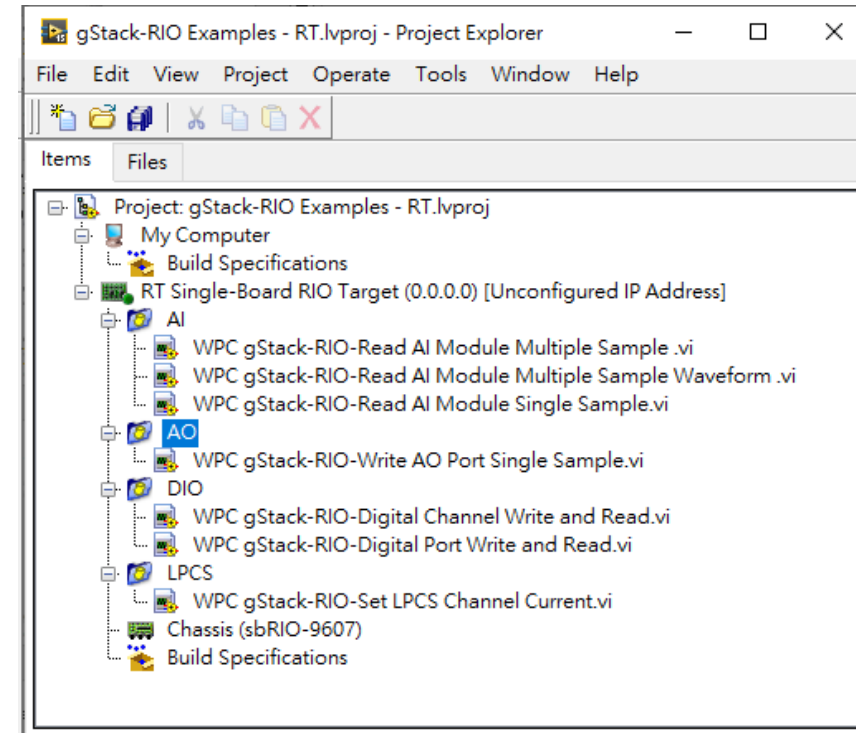
Example project (real-time target)

gStack LabVIEW driver API
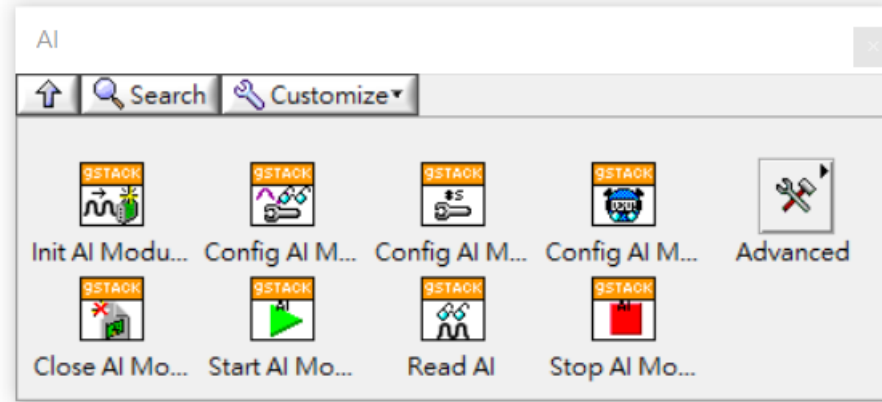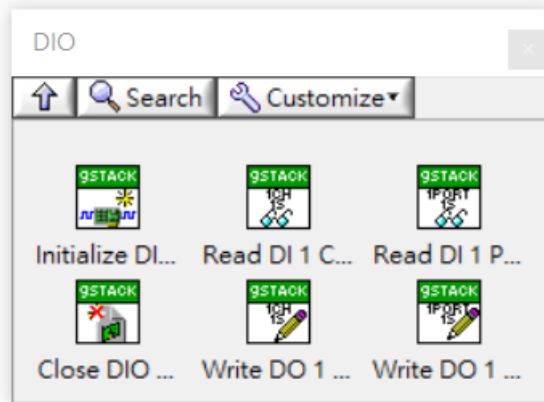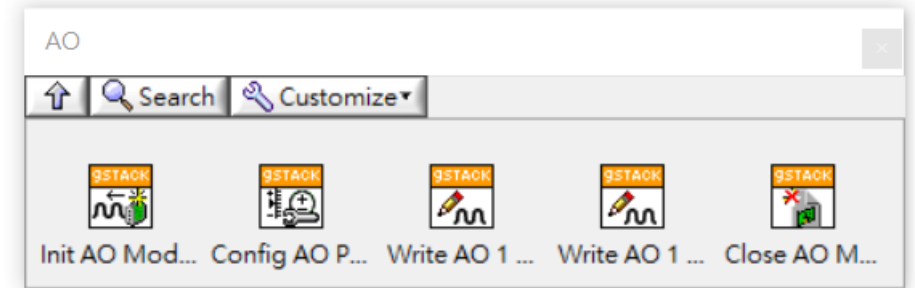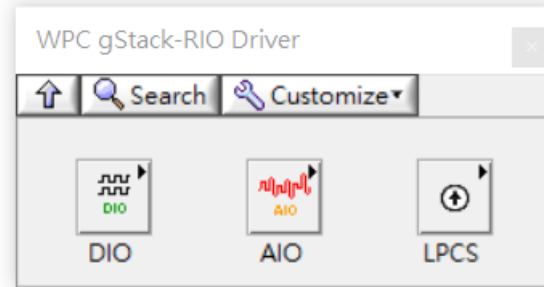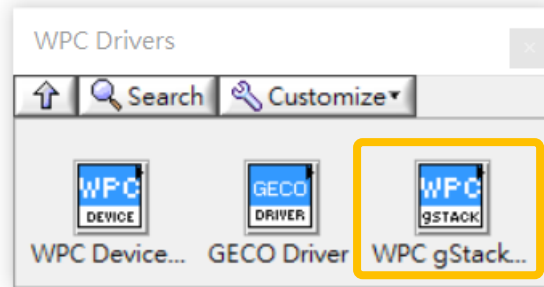
gStack-RIO module pinout

cPCI-16-16ch-DIO

- **Model: WPC-gStack-16-16-DIO**
- 16ch sinking output (NPN)
- 16ch sourcing input (NPN)

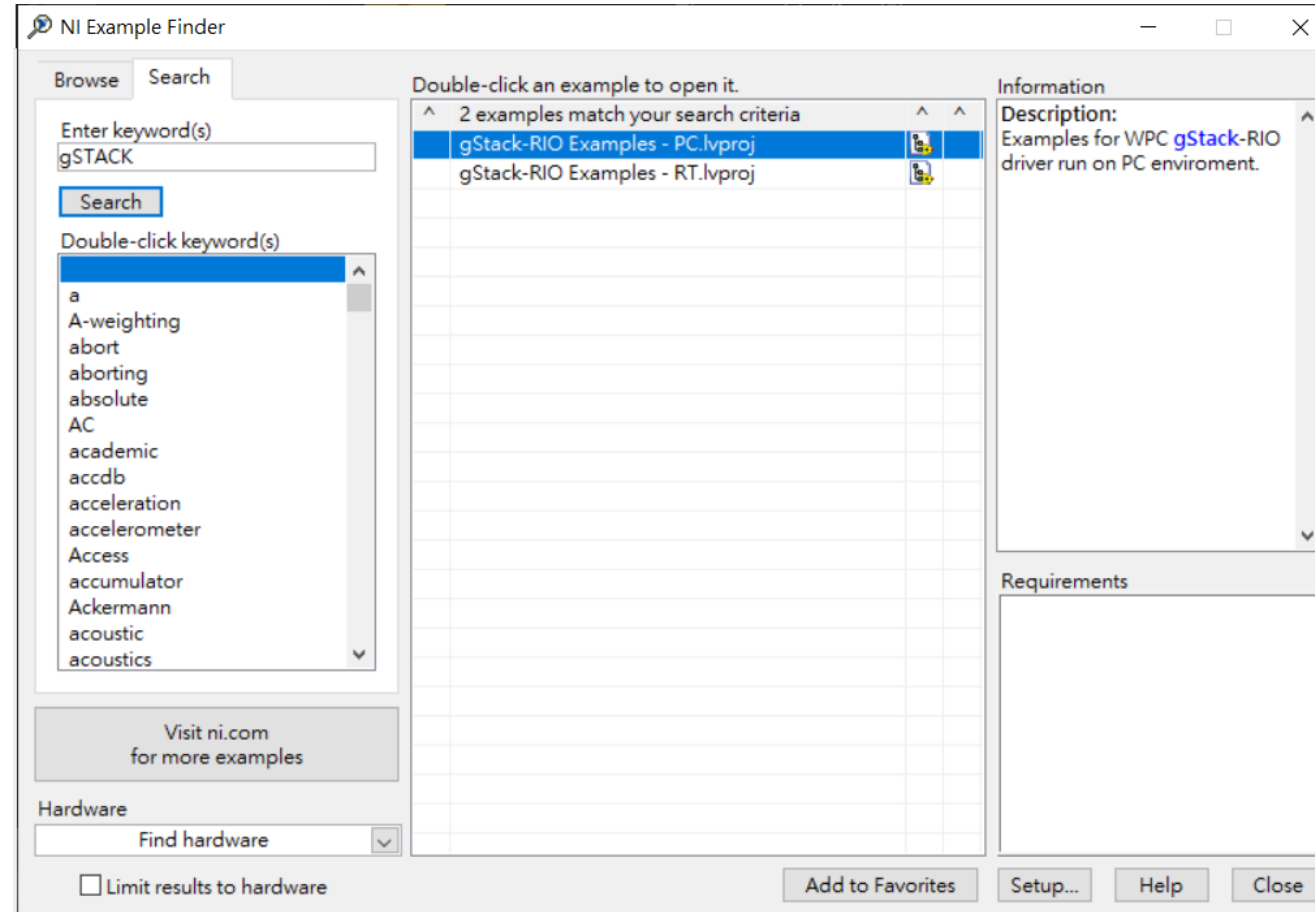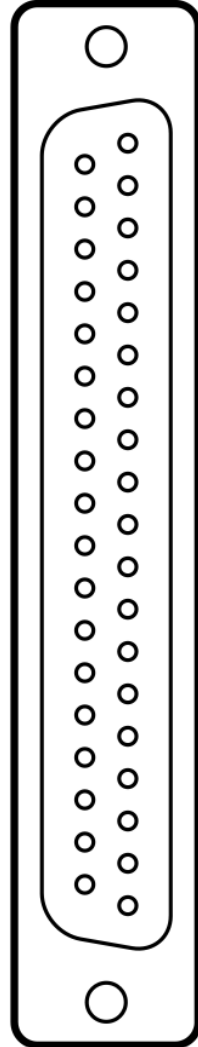|			
		1	DO0
DO1	20		
		2	DO2
DO3	21		
		3	DO4
DO5	22		
		4	DO6
DO7	23		
		5	DO8
DO9	24		
		6	DO10
DO11	25		
		7	DO12
DO13	26		
		8	DO14
DO15	27		
		9	DI0
DI1	28		
		10	DI2
DI3	29		
		11	DI4
DI5	30		
		12	DI6
DI7	31		
		13	DI8
DI9	32		
		14	DI10
DI11	33		
		15	DI12
DI13	34		
		16	DI14
DI15	35		
		17	0V
0V	36		
		18	0V
24V	37		
		19	24V

cPCI-16ch-AI-CURR

- **Model: WPC-gStack-16-AI-CURR**
- +/-20mA current input
- 24-bit resolution
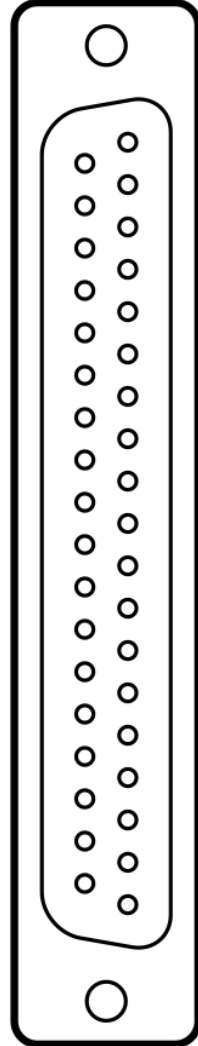
		1	AI0+
AI0-	20	2	AI1+
AI1-	21	3	AI2+
AI2-	22	4	AI3+
AI3-	23	5	AI4+
AI4-	24	6	AI5+
AI5-	25	7	AI6+
AI6-	26	8	AI7+
AI7-	27	9	AI8+
AI8-	28	10	AI9+
AI9-	29	11	AI10+
AI10-	30	12	AI11+
AI11-	31	13	AI12+
AI12-	32	14	AI13+
AI13-	33	15	AI14+
AI14-	34	16	AI15+
AI15-	35	17	AGND
AGND	36	18	AGND
AGND	37	19	AGND

cPCI-32ch-AI-VOLT

- **Model: WPC-gStack-32-AI-VOLT**
- +/-10V voltage input
- 24-bit resolution
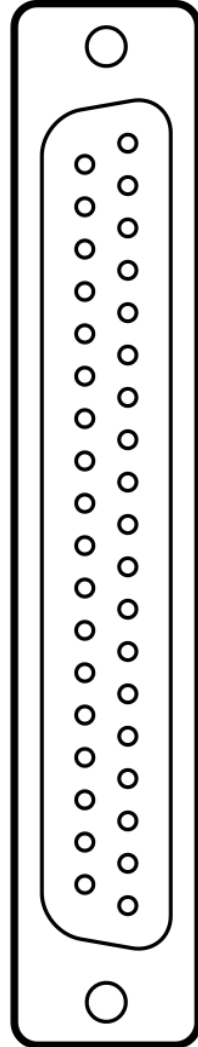
		1	AI0
AI1	20		
		2	AI2
AI3	21		
		3	AI4
AI5	22		
		4	AI6
AI7	23		
		5	AI8
AI9	24		
		6	AI10
AI11	25		
		7	AI12
AI13	26		
		8	AI14
AI15	27		
		9	AI16
AI17	28		
		10	AI18
AI19	29		
		11	AI20
AI21	30		
		12	AI22
AI23	31		
		13	AI24
AI25	32		
		14	AI26
AI27	33		
		15	AI28
AI29	34		
		16	AI30
AI31	35		
		17	AGND
AGND	36		
		18	AGND
AGND	37		
		19	AGND

cPCI-32ch-AO

- **Model: WPC-gStack-32-AO**
- +/-10V voltage output
- 16-bit resolution
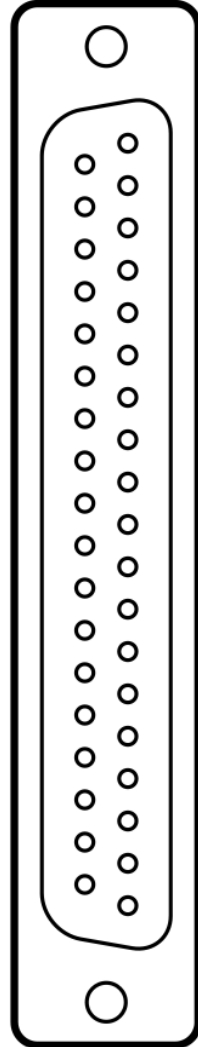
		1	AO0
AO1	20	2	AO2
AO3	21	3	AO4
AO5	22	4	AO6
AO7	23	5	AO8
AO9	24	6	AO10
AO11	25	7	AO12
AO13	26	8	AO14
AO15	27	9	AO16
AO17	28	10	AO18
AO19	29	11	AO20
AO21	30	12	AO22
AO23	31	13	AO24
AO25	32	14	AO26
AO27	33	15	AO28
AO29	34	16	AO30
AO31	35	17	AGND
AGND	36	18	AGND
AGND	37	19	AGND

cPCI-8ch-LPCS

- **Model: WPC-gStack-8ch-LPCS**
- 8ch Current source (programmable)
- 48V / 0.45A max.
- Source current
- Measure current / voltage
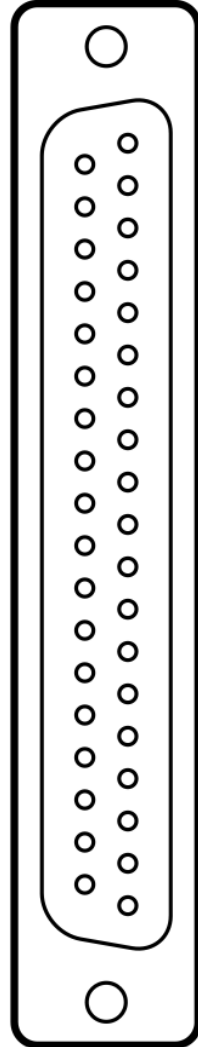
		1	OUT0+
OUT0-	20		
		2	OUT1+
OUT1-	21		
		3	OUT2+
OUT2-	22		
		4	OUT3+
OUT3-	23		
		5	OUT4+
OUT4-	24		
		6	OUT5+
OUT5-	25		
		7	OUT6+
OUT6-	26		
		8	OUT7+
OUT7-	27		
		9	
	28		
		10	
	29		
		11	
	30		
		12	
	31		
		13	
	32		
		14	
	33		
		15	
	34		
		16	
0V	35		
		17	Vcs
0V	36		
		18	Vcs
0V	37		
		19	Vcs
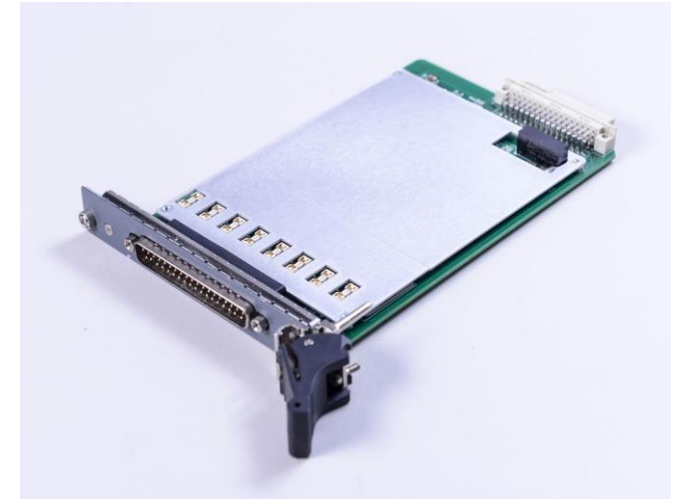
cPCI-32ch-2W-MUX

- **Model: WPC-gStack-32ch-2W-MUX**
- 1-to-32ch multiplexer
- 2-wire

	35	1	
+CH_1	35	1	+CH_0
-CH_1	36	2	-CH_0
+CH_3	37	3	+CH_2
-CH_3	38	4	-CH_2
+CH_5	39	5	+CH_4
-CH_5	40	6	-CH_4
+CH_7	41	7	+CH_6
-CH_7	42	8	-CH_6
+CH_9	43	9	+CH_8
-CH_9	44	10	-CH_8
+CH_11	45	11	+CH_10
-CH_11	46	12	-CH_10
+CH_13	47	13	+CH_12
-CH_13	48	14	-CH_12
+CH_15	49	15	+CH_14
-CH_15	50	16	-CH_14
+CH_17	51	17	+CH_16
-CH_17	52	18	-CH_16
+CH_19	53	19	+CH_18
-CH_19	54	20	-CH_18
+CH_21	55	21	+CH_20
-CH_21	56	22	-CH_20
+CH_23	57	23	+CH_22
-CH_23	58	24	-CH_22
+CH_25	59	25	+CH_24
-CH_25	60	26	-CH_24
+CH_27	61	27	+CH_26
-CH_27	62	28	-CH_26
+CH_29	63	29	+CH_28
-CH_29	64	30	-CH_28
+CH_31	65	31	+CH_30
-CH_31	66	32	-CH_30
+COM	67	33	+COM
-COM	68	34	-COM

cPCI-32ch-Relay

- **Model: WPC-gStack-32ch-Relay**
- 32ch SPST relay
- Form A/B manual configurable

+CH_1	35	1	+CH_0
-CH_1	36	2	-CH_0
+CH_3	37	3	+CH_2
-CH_3	38	4	-CH_2
+CH_5	39	5	+CH_4
-CH_5	40	6	-CH_4
+CH_7	41	7	+CH_6
-CH_7	42	8	-CH_6
+CH_9	43	9	+CH_8
-CH_9	44	10	-CH_8
+CH_11	45	11	+CH_10
-CH_11	46	12	-CH_10
+CH_13	47	13	+CH_12
-CH_13	48	14	-CH_12
+CH_15	49	15	+CH_14
-CH_15	50	16	-CH_14
+CH_17	51	17	+CH_16
-CH_17	52	18	-CH_16
+CH_19	53	19	+CH_18
-CH_19	54	20	-CH_18
+CH_21	55	21	+CH_20
-CH_21	56	22	-CH_20
+CH_23	57	23	+CH_22
-CH_23	58	24	-CH_22
+CH_25	59	25	+CH_24
-CH_25	60	26	-CH_24
+CH_27	61	27	+CH_26
-CH_27	62	28	-CH_26
+CH_29	63	29	+CH_28
-CH_29	64	30	-CH_28
+CH_31	65	31	+CH_30
-CH_31	66	32	-CH_30
	67	33	
	68	34	