

MULTI-FUNCTION 6U cPCI I/O CARD



Convection Cooled Option

FEATURES

- Multiple I/O and communication functions on a single slot 6U cPCI card.
- Up to ten separate D/S channels.
- User can specify five different function modules.
- Control via cPCI or Ethernet.
- Automatic background BIT testing continually checks and reports health of each channel.
- FIFO Buffering/Trigger (select modules).
- Optional onboard 5VA programmable reference supply.
- Connections via front panel, rear connector or both.
- Designed for Commercial or MIL applications.
- Convection and Conduction cooled versions.
- Software Support Kit and Drivers available.

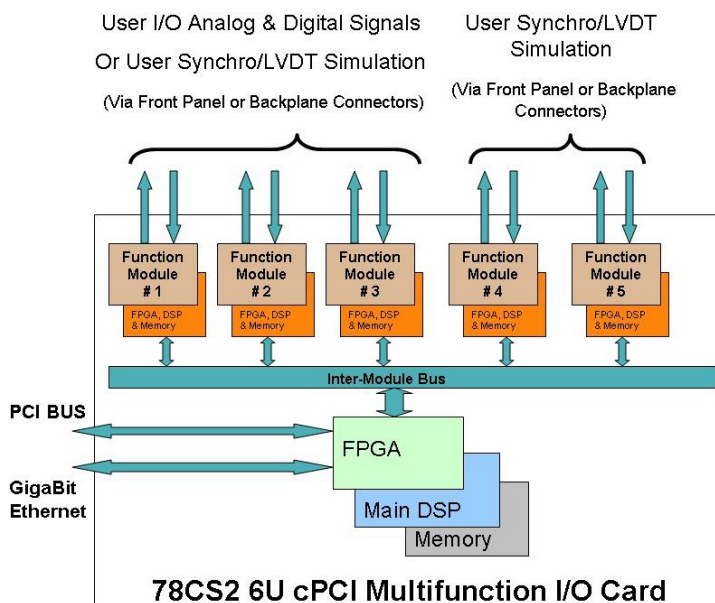


Conduction Cooled Option

DESCRIPTION

The 78CS2 is a single slot Multi-function 6U cPCI card for applications requiring Digital-to-Synchro/Resolver (D/S) stimulus output, as well as I/O and Communication functions. The 78CS2 provides up to ten separate D/S channels with multiple programmable features. The "mother board" contains 5 independent module slots, each of which can be populated with a function specific module. The card can be configured for 10 D/S channels, or D/S in combination with A/D, D/A, Discrete I/O, TTL I/O, RTD, LVDT and S/D. In addition, the 78CS2 incorporates serial communication modules such as RS232/422/485 and ARINC429. This unique design eliminates the need for specialized, single function cards by providing a broad assortment of functions on one single card that can be controlled either via cPCI or 10/100/1000BaseT Ethernet port. This approach increases packaging density, saves enclosure slots, reduces power consumption and adds continuous background BIT testing. The available functions are listed on the following page.

Automatic background BIT testing, an important feature, is always enabled and continually checks the health of each channel. There is no need to guess or make assumptions about system performance. A fault is immediately reported and the specific channel is identified. This capability is of tremendous benefit because it identifies and reports a failure, without the need to shut down the equipment for troubleshooting. Testing is totally transparent to the user, requires no external programming, and has no effect on the standard operation of the card. (See Operations Manual for more details).



GENERAL BOARD SPECIFICATION

•Power: +5VDC

•Operating Temp: 0° C to 70° C or -40° C to 85° C

•Size: 233mm x 20mm x 160mm (6U)

AVAILABLE MODULES

A/D Converter	Module	Channels	Input Scaling	Resolution	Accuracy	Sampling (programmable)
	C1	10	±1.25,2.5,5 or 10 VDC	16 bit	0.05% FS	200 KHz max
	C2	10	±5,10,20 or 40 VDC	16 bit	0.1% FS	200 KHz max
	C3	10	0-25 mA	16 bit	0.1% FS	200 KHz max
	C4	10	±6.25,12.5,25 or 50 VDC	16 bit	0.1% FS	200 KHz max
D/A Converter	Module	Channels	Max Output Range	Current	Accuracy	Settling time
	F1	10	±10 or 0-10 VDC	20 mA	0.05% FS	15µs max
	F3	10	±5 or 0-5 VDC	20 mA	0.05% FS	10µs max
	F5	4	±25 or 0-25 VDC	100 mA	0.05% FS	10µs max
	J3	10	±1.25 or 0-1.25 VDC	20 mA	0.05% FS	10µs max
	J5	10	±2.5 or 0-2.5 VDC	20 mA	0.05% FS	350µs max
	J8	4	±100 VDC or 0-100 VDC	10 mA	0.15% FS	10µs max
Synchro Simulation	Module	Channels	Power	Frequency	Resolution	Accuracy
	3 ^{*1} ,4 ^{*1}	1	3.0 VA / channel	47 Hz – 10KHz	16 bit (.0055°)	± 0.067°
	1 ^{*1} ,2 ^{*1}	2	1.5 or 2.2 VA / channel	47 Hz – 10KHz	16 bit (.0055°)	± 0.017°
	6 ^{*1}	3	0.25 VA /channel	47 Hz – 10KHz	16 bit (.0055°)	± 0.1°
LVDT Simulation	Module	Channels	Power	Frequency	Resolution	Accuracy
	5 ^{*1}	2/4	1.2 VA / channel	47 Hz – 10KHz	16 bit	0.1% FS
	5 ^{*1}	3	0.1 VA / channel	47 Hz – 10KHz	16 bit	0.2% FS
Discrete I/O	Module	Channels	Input Range	Output Range	Programmable	
	K6	16	0 – 60 VDC	0 – 60 VDC	Input or Output	
TTL	Module	Channels	Input Range	Output level	Programmable	
	D7	16	0 – 5.5 V	TTL/CMOS	Input or Output	
Differential Transceiver	Module	Channels	Input Range (422)	Input Range (485)	Output Range (422/485)	
	D8	11	-10V to +10V	-7V to +12V	-0.25V to +5V	
Encoder	Module	Channels	Signal Voltage	Resolution	Counter Modes	
	E7	4	24 VDC	32 bit	SSI, Encoder, Quadrature	
LVDT Measurement	Module	Channels	Frequency	Resolution	Accuracy	Interface
	L ¹	4	360 Hz to 20 KHz	16 bit	0.025% FS	2 or 3/4 wire
Synchro Measurement	Module	Channels	Frequency	Resolution	Accuracy	Tracking Rate
	S ¹	4	50 Hz to 20 KHz	16 bit	1 arc-min	190 RPS
RTD	Module	Channels	Resolution	Accuracy	Interface	
	G4	6	16 bit	0.05% FS	2, 3 or 4 wire (programmable)	
ARINC 429/575	Module	Channels	Frequency	Input/output	Buffer Size	
	A4	6	100 KHz or 12.5 KHz	RX/TX (programmable)	255 Words TX & RX	
MIL-STD-1553	Module	Channels	Operational Modes	Onboard RAM	Coupled	
	N7	2	BC,RT, BM, BM/RT	128Kbyte per ch	Transformer	
	N8	2	BC,RT, BM, BM/RT	128Kbyte per ch	Direct	
CANBus	Module	Channels	CAN protocol	Max Data Rate	Buffer Size	
	P6	4	Version 2.0B/J1939	1 Mbps per ch	16 K word TX & RX	
RS-232/422/485	Module	Channels	Communication	Data rate (Sync)	Data rate (Async)	Buffer Size
	P8	4	Sync/Async	4 Mbps per ch.	1 Mbps per ch.	64 KB TX & RX
Reference	Module	Channels	Frequency	Accuracy	Voltage	Power
	W ¹	1	47 Hz – 10KHz	+/- 2%	2 – 115 VRMS	2.2 VA

1 - Indicates wide selection (see part number designation in Operations Manual)

PART NUMBER DESIGNATION

78CS2 - XX XX XX XX XX X X X X X - XX

SLOT 1, 2 & 3 DEFINITION

Enter either D/S, DLV, S/D, LVD, Multifunction or Ref Module W1 as defined below, **See Note below**

SLOT 4 & 5 DEFINITION

Enter D/S or DLV Module only or Z0 if no module is used in this slot

ON-BOARD REFERENCE SUPPLY (M7)

- 0 = No On-Board Reference Module
- 1 = 2-28Vrms, 360-10KHz Programmable On-Board Ref Module
- 2 = Reserved for future use
- 3 = 115Vrms Fixed, 360-10KHz Programmable On-Board Ref Module

MECHANICAL

F = Front Panel (J6 & J7) I/O only; P = Rear (J1, J4, & J5) I/O only
W = P with Wedgelocks; B = Front Panel (J6 & J7) and Rear (J1, J4, & J5) I/O

ENVIRONMENTAL

C = 0°C to +70°C; H = -40°C to +85°C with removable conformal coating;
K = C with removable conformal coating

ETHERNET

0 = None ; 1 = Front ; 2 = Rear

ENCODERS (used only with S/D or LVDT Module (in slots 1 and/or 2)

0 = No Encoder outputs; 1 = Encoders included for each specified Synchro/LVDT module

±12V DC POWER OPTION

- 0 = cPCI Power is used
- 1 = cPCI±12VDC Power is isolated from PCB power planes.

SPECIAL OPTION CODE (Leave blank for standard)

For detailed specifications & complete part number designation, visit www.naii.com to download Operations Manual.

For Ordering Information:

Phone – 631-567-1100

Fax – 631-567-1823

E-mail – sales @naii.com

Note: Enter 'Z0' if slot is not populated and no On-board Reference Supply is chosen. If slot is unpopulated and an On-board Reference Supply is selected, enter either 'W6' if low voltage supply is selected (1), or 'W7' if high voltage supply (3) is selected