North Atlantic Industries

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Model 78CS2

MULTI-FUNCTION 6U cPCI I/O CARD

Convection Cooled Option

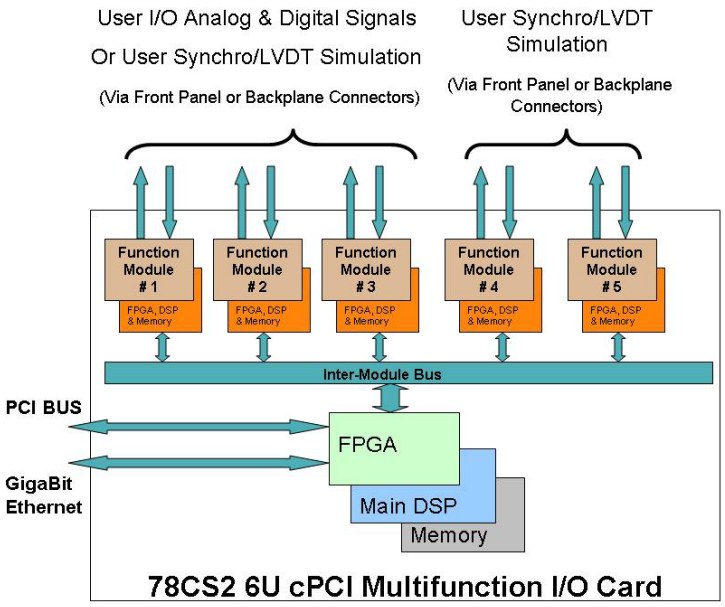
FEATURES

- 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).

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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	6.25,125.,25 or 50 VDC	16 bit	0.1% FS	200 KHz max
D/A Converter	**Module**	**Channels**	**Output Range**	**Resolution**	**Accuracy**	**Settling time**
	F1	10	±10 or 0-10 VDC	16 bit	0.05% FS	15µs max
	F3	10	±5 or 0-5 VDC	16 bit	0.05% FS	10µs max
	F5	4	±20 or 0-20 VDC	16 bit	0.05% FS	10µs max
	J3	10	±1.25 or 0-1.25 VDC	16 bit	0.05% FS	10µs max
	J5	10	±2.5 or 0-2.5 VDC	16 bit	0.05% FS	350µs max
	J8	4	±20 to ±80 VDC	16 bit	0.15% FS	10µs max
D/S	**Module**	**Channels**	**Frequency**	**Resolution**	**Accuracy**	**Settling time**
	*[1]	1	47 Hz – 10KHz	16 bit (.0055°)	± 0.067°	<100 µs
	*[1]	2	47 Hz – 10KHz	16 bit (.0055°)	± 0.017°	<100 µs
	6[1]	3	47 Hz – 10KHz	16 bit	± 0.1°	0.25 VA / channel
DLV	**Module**	**Channels**	**Frequency**	**Resolution**	**Accuracy**	**Settling time**
	*	2/4	47 Hz – 10KHz	16 bit	0.1% FS	<100 µs
	5[1]	3	47 Hz – 10KHz	16 bit	0.2% FS	0.1 VA / channel
Discrete I/O	**Module**	**Channels**	**Input Range**	**Output Range**	**Programmable**	
	K6	16	0 – 80 VDC	0 – 80 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	
LVDT	**Module**	**Channels**	**Frequency**	**Resolution**	**Accuracy**	**Interface**
	L[1]	4	360 Hz to 20 KHz	16 bit	0.025% FS	2,3 or 4 wire
S/D	**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	
ARINC 429	**Module**	**Channels**	**Frequency**	**Input/output**		
	A4	6	100 KHz or 12.5 KHz	RX/TX		
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**	**Data Rate**		
	P6	4	Version 2.0B/J1939	1 Mbps per ch		
RS-232/422/485	**Module**	**Channels**	**Communication**	**Data rate (Sync)**	**Data rate (Async)**	
	P8	4	Sync/Async	4 Mbps per ch.	1 Mbps per ch.	
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

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, or Z0 if no module is used in this slot.

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
E = -40°C to +85°C
H = E 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:

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