North Atlantic Industries

Excellence in ALL we do

Model 78C2

MULTI-FUNCTION cPCI I/O CARD

Convection Cooled Option

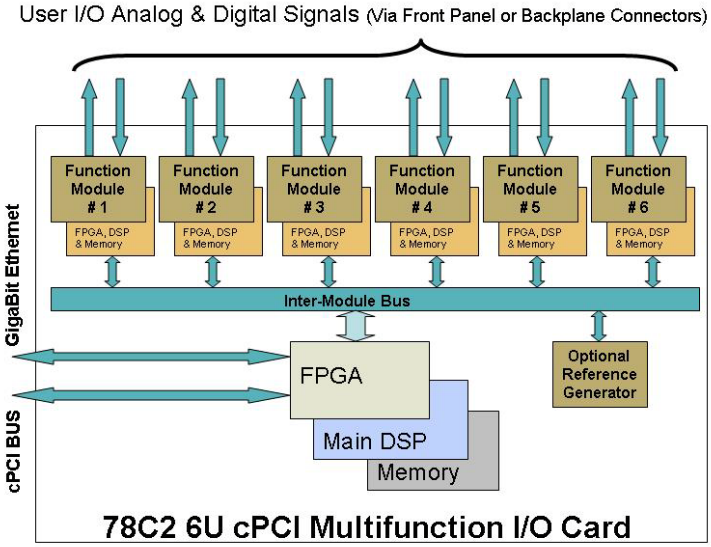
FEATURES

- Multiple I/O and serial communication functions on a single slot 6U cPCI card.
- User can specify six different function modules.
- Automatic background BIT testing continually checks and reports the health of each channel.
- Control via cPCI or Ethernet.
- Connections via Front panel, Rear panel, or both.
- Designed for both Commercial and MIL applications.
- Conduction or Convection cooled versions.
- Software Support Kit and Drivers available.

Conduction Cooled Option

DESCRIPTION

The 78C2 is a 6U cPCI multi-function I/O and serial communications card. The "mother board" contains 6 independent module slots, each of which can be populated with a function specific module, and can be controlled via Ethernet (10/100/1000Base-T) as well as the cPCI bus. This enhanced Motherboard, using multiple DSP, allows for higher processing power and dedicated control for each module. This unique design eliminates the need for multiple specialized, single function cards by providing a single board solution for a broad assortment of signal interface modules, such as I/O, Synchro/Resolver-to-Digital and LVDT. In addition, the 78C2 incorporates serial communication modules such as RS232/422/485 and ARINC429. Our approach increases packaging density, saves enclosure slots, reduces power consumption and adds continuous background BIT testing. A Software Support Kit (SSK) is provided. Future features will add a temperature sensor, an elapsed time indicator and a ferroelectric RAM. 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 detailed information).

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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 FUNCTION 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**	**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**	**Accuracy**	**Resolution**	**Power**
	6[1]	3	47 Hz – 10KHz	± 0.1°	16 bit	0.25 VA / channel
DLV	**Module**	**Channels**	**Frequency**	**Accuracy**	**Resolution**	**Power**
	5[1]	3	47 Hz – 10KHz	0.2% FS	16 bit	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[2]	-10V to +10V	-7V to +12V	-0.25V to +5V	
LVDT	**Module**	**Channels**	**Frequency**	**Accuracy**	**Resolution**	**Interface**
	L[1]	4	360 Hz to 20 KHz	0.025% FS	16 bit	2,3 or 4 wire
S/D	**Module**	**Channels**	**Frequency**	**Accuracy**	**Resolution**	**Tracking Rate**
	S[1]	4	50 Hz to 20 KHz	1 arc-min	16 bit	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		
RS-232/422/485	**Module**	**Channels**	**Communication**	**Data rate (Sync)**	**Data rate (Async)**	
	P8	4	Async / Sync	4 Mbits/s per ch.	1 Mbit/s 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 in Operations Manual)
2 – 16 Channels available with front I/O

PART NUMBER DESIGNATION

78C2 – XX XX XX XX XX XX X X X X X –XX

Slot # 1 2 3 4 5 6

MODULE (SLOT) DEFINITION
Enter Module Designation (i.e.C1) for each slot (1 through 6)
Enter "Z0" if slot is not populated

ON-BOARD REFERENCE SUPPLY (M7)
0 = No On-Board Reference Supply
1 = 2-28Vrms, 360-10kHz, Programmable
2 = Reserved for future use
3 = 115Vrms Fixed, 360-10kHz, Programmable

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 TO 70 °C
E = -40 TO +85 °C
H = E with conformal coating
K = C with conformal coating

ETHERNET
0 = No Ethernet
1 = Front Panel Ethernet Connection
2 = P0 Ethernet Connection

ENCODER OUTPUTS FOR SYNCHRO / RESOLVER MODULES
0 = No Encoder outputs
1 = Encoders included for each specified Synchro module

SPECIAL OPTION CODE (OR LEAVE BLANK

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

For Ordering Information:
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