

Functions/Features

- Multiple I/O and Serial Communications functions on a single slot 6U VME card
- User can specify up to six different function modules
- Control via VME or Ethernet
- Connections via Front Panel, Rear Panel, or both
- Continuous, automatic background Built-in-Test
- Designed for Commercial and Rugged applications
- Software Support Kit(s) and Driver(s) are available



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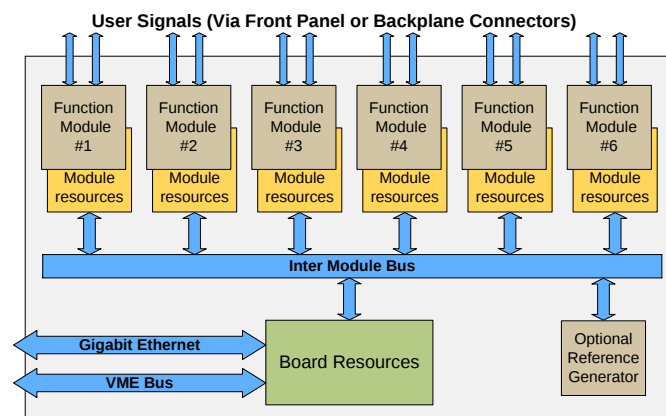
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Description

The 64C2 is a single slot, 6U VME multi-function I/O and serial communications card. The motherboard contains six 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 by the VME databus. This enhanced motherboard using multiple DSPs enables higher processing power and dedicated pre-processing and control for each module function. This unique design eliminates the need for multiple, specialized, single-function cards by providing a single-board solution for a broad assortment of programmable, multi-channel signal interface I/O modules such as: Digital (TTL/CMOS, Differential, Discrete, Relay); Analog (A/D, D/A, RTD, Strain Gage, Isolated Power Supply); Positional/Motion Control (Synchro/Resolver/ LVDT/RVDT Measurement/ Simulation, AC Reference, Encoder/Counter).

In addition, the 64C2 incorporates communication modules such as RS-232/422/423(188C)/485, MIL-STD-1553, CANBus and ARINC 429/575. This approach increases packaging density, saves enclosure slots and reduces power consumption. Additional enhancements include FIFO data buffering for A/D, D/A, S/D and LVDT functions. (Please see all available functions on the following page.)

NAI's flexible, leading-edge, fully programmable and continuous background built-in-test (BIT) feature is always enabled and continually checks the health of each channel. If a fault is detected, it is immediately reported and the specific channel is identified with no downtime for troubleshooting. Testing is totally transparent to the user, requires no external programming, and has no effect on the standard operation of the card.



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

(GEN2 Platforms)

Note 1 – Indicates wide selection (See part number in Operations Manual)

Note 2 – Contact factory for availability

	Module	Channels	Input Scaling	Resolution	Accuracy (±)	Sampling (programmable)
A/D Converter	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
	CA	10	(Channels 1-6 are C2 type and Channels 7-10 are C3 type)			
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	±25 or 0-25 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	10µs max
RTD	Module	Channels	Update rate	Resolution	Accuracy (±)	Interface
	G4	6	16.7 Hz/channel	16 bit	(±) 0.05% FS	2, 3 or 4 wire
Strain Gage	Module	Channels	Update rate	Resolution	Accuracy (±)	Interface
	G5 ²	4	4.7 Hz – 4.8 KHz	16 bit	(±) 0.1% FS	Conventional 4-Arm Bridge
Encoder/Counter	Module	Channels	Signal Voltage	Resolution	Modes	
	E7	4	RS422 / 24 VDC	32 bit	Encoder (SSI, A-Quad-B), Counter (up/down)	
L(R)VDT/D	Module	Channels	Frequency	Resolution	Accuracy (±)	Interface
	L ¹	4	360 Hz to 20 KHz	16 bit	(±) 0.025% FS	2 or 3/4 wire
SYN(RSL)/D	Module	Channels	Frequency	Resolution	Accuracy (±)	Tracking Rate
	S ¹	4	50 Hz to 20 KHz	16 bit	(±) 1 arc-min	190 RPS
D/SYN(RSL)	Module	Channels	Frequency	Resolution	Accuracy (±)	Power
	6 ¹	3	47 Hz – 10 KHz	16 bit	(±) 0.1°	0.25 VA / channel
D/L(R)VDT	Module	Channels	Frequency	Resolution	Accuracy (±)	Power
	5 ¹	3	47 Hz – 10 KHz	16 bit	(±) 0.2% FS	0.1 VA / channel
I/O, TTL/CMOS	Module	Channels	Input Range	Output level	Programmable	
	D7	16	0 – 5.5 V	TTL/CMOS	Input or Output	
I/O, Differential	Module	Channels	Input Range (422)	Input Range (485)	Output Range (422/485)	
	D8	11	-10V to +10V	-7V to +12V	-0.25V to +5V	
I/O, Discrete	Module	Channels	Input Range	Output Range	Programmable	Notes
	K6 (v4)	16	0 – 60 VDC	0 – 60 VDC	Input or Output	(500 mA – 2 A) (source/sink)
	K7	12	±80V	±80V	Input or Output	Isolated switch (600mA)
Relay	Module	Channels	Type	SW Volt/Current	SW Power (max)	Notes
	KN ² , KL ²	4	DPDT (1 CH Form C)	220V / 2A (max)	60W / 62.5 VA	KN=non-latch, KL=latching
Serial Communications	Module	Channels	HW Interface levels support	Bit rate (Async/Sync)	Tx/Rx Buffer	Notes
	P8	4	RS-232/422/423(MIL-STD-188C)/485	1 / 4 Mbit/s per Ch.	32KB	Partial modem
CANBus	Module	Channels	CAN protocol	Message Buffer	Data rate (Prog)	Notes
	P6, PA	4	P6= 2.0A/B / PA=J1939	16K RX/TX	1 Mb/s max.	Bosch® IP Core
MIL-STD-1553	Module	Channels	Operational Modes	Onboard RAM	Bus Coupling Configuration	
	N7, N8	2	BC, RT, BM, BM/RT	128Kbyte per ch	N7 = Transformer / N8 = Direct	
ARINC 429/575	Module	Channels	Frequency	Input/output	Message Buffer	
	A4	6	100 KHz or 12.5 KHz	RX/TX	256 word Tx/Rx	
DC Power Supply	Module	Channels	Voltage Output	VOut Regulation	Current Output	
	V1, V2	1, 2	+/- 15V	+/- 1%	+/- 450 mA(max)	
AC Reference	Module	Channels	Frequency	Accuracy	Voltage	Power
	W ¹	1	47 Hz – 20KHz	+/- 3%	2 – 115 VRMS	6 VA

Part Number Designation

64C2 – 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). **Note 1**

ON-BOARD REFERENCE SUPPLY (M7)

0 = No On-Board Reference Supply; 1 = 2-28Vrms, programmable freq.
2 = Reserved for future use; 3 = 115Vrms fixed, programmable freq.

MECHANICAL

F = Front Panel J1, J2, and P2 & P0 I/O;
S = Front Panel J1, J2, and P2 I/O (No P0)
P = P2 & P0 I/O only
G = P2 I/O only (No P0)
W = P; conduction cooled with wedge-locks
A = VME64 Blank Front Panel and P2 & P0 I/O only
R = VME64 Blank Front Panel and P2 only (No P0)
B = VME64 Front Panel with J1, J2, P2 & P0
T = VME64 Front Panel with J1, J2, P2 I/O (No P0)
D = VME64 Blank Front Panel, low profile extractors and P2 & P0 I/O only

ENVIRONMENTAL

C = 0 TO 70 °C; H = -40 TO +85 °C 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 = Encoder interface included for each specified Synchro module

SPECIAL OPTION CODE (OR LEAVE BLANK)

Note 1: Enter 'Z0' if slot is **not** populated and no On-board Reference Supply is chosen. If slot #1 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.

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

For Ordering Information:

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