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Model 64D2

MULTIFUNCTION COMMUNICATIONS & I/O WITH PROCESSOR

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Convection Cooled Option

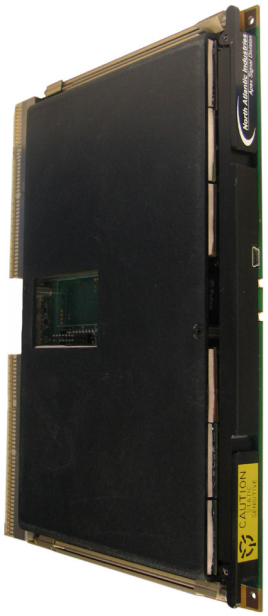
FEATURES

Board

- Processor, Digital I/O and Communications functions in a single 6U VME slot.
- Up to 18 channels of Sync/Async User Programmable RS232/422/485
- Up to 6 Dual Redundant Channels of MIL-STD1553 supporting Bus Controller, Remote Terminal or Bus Monitor
- Up to 144 programmable discrete I/O channels)
- Automatic background BIT
- Full access and control via VMEBus or Ethernet
- I/O available via Front panel, rear connector, or both
- Designed for Commercial and Rugged applications.
- Convection or conduction cooled.
- Software Support Kit and Driver are available.

Processor

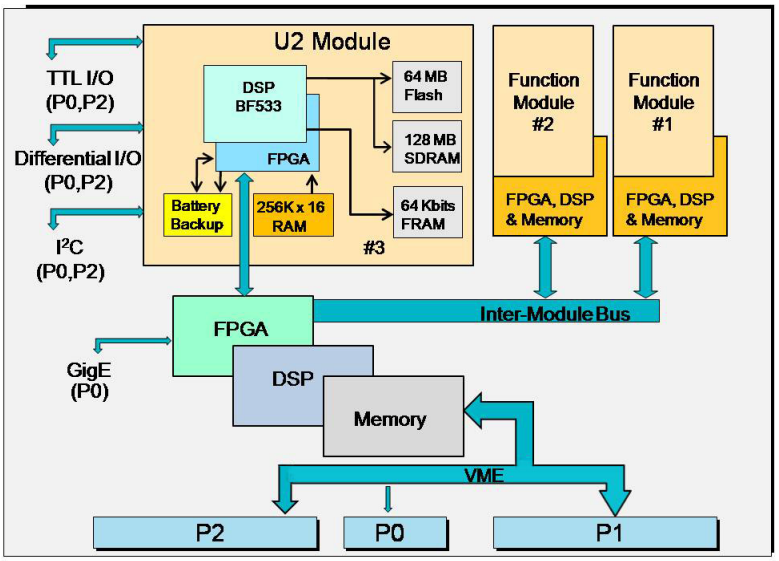
- Analog Devices BF533 DSP Processor
- Unicoi RTOS
- JTAG emulation/debugging
- Ethernet, RS232, USB, I^2C
- Differential and TTL I/O
- Windows PC Development – ADI Visual DSP++
- Remote Download capability
- Watchdog timer and Real-time clock



Conduction Cooled Option

DESCRIPTION

The 64D2 is a 6U VME multifunction communications and digital I/O board with local processing capability and VMEBus Master/Slave support. It is available in air cooled or conduction cooled configurations. The "mother board" contains 3 independent slots, each of which can be populated with a function specific module. Additionally, Slot 3 can be populated with a DSP processor. This unique design eliminates the need for specialized, single function boards required for system integration by providing a combination of communication and digital I/O functions on one single board, thus reducing board count and power dissipation. All I/O data written to or read from the board can be managed over the Ethernet port or via the VMEBus. The high density function modules provide the highest channel capacity available. Each K9 Discrete I/O module provides 48 channels of Discrete I/O. Therefore, a 64D2 board fully populated with three K9 modules provides 144 individual I/O channels. All of the available functions are listed on the following page.



64D2 VME Multifunction Communications Card with Processor

Automatic background BIT testing, an important feature, is always enabled and continually checks the health of each channel. A fault is immediately reported and the specific channel is identified. Continuous background BIT enables users to identify system faults without the need to shutdown or use additional test equipment. Testing is totally transparent to the user, requires no external programming and has no effect on the standard operation of the board. (See individual module section in Operation Manual for more detailed information).

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PROCESSOR DESCRIPTION

Based on the Analog Devices Blackfin™ BF-533 DSP processor, users can confidently take advantage of the powerful Analog Devices, Inc. (ADI) Visual DSP++ Development Environment. The 64D2 fitted with the U2 Processor allows users to develop application code in support of their I/O and communication intensive application without the need for a Single Board Computer. The U2 coupled with NAI's extensive I/O function capabilities and software library support offers developers a real time embedded system environment. Additionally, this low power solution can interface directly to the I/O, perform embedded algorithms and communicate directly to system and sub-system computers. Operating system, run time and overhead are reduced due to direct DSP control. Additional core interfaces added to the FPGA allows for a flexible communication interface selection for controlling I/O specific modules.

User Requirements/Utility Library

- Analog Devices Visual DSP++ 4.5
- Blackfin Emulator
- NAI I/O and Communications Library support

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)

PROCESSOR MODULE

Processor	Module	Flash	RAM	SDRAM	FRAM
Blackfin DSP	U2	8MB	512KB	16MB	8KB (non-volatile)

AVAILABLE FUNCTION MODULES

Discrete I/O	**Module**	**Channels**	**Input Range**	**Output Range**	**Programmable**
	K9	48	0 – 80 VDC	0 – 80 VDC	Input or Output
TTL	**Module**	**Channels**	**Input Range**	**Output level**	**Programmable**
	D6	48	0 – 5.5 V	TTL/CMOS	Input or Output
MIL-STD-1553	**Module**	**Channels**	**Onboard RAM**	**Operational Modes**	**Output Signal**
	N3	2	128 kbyte per ch.	BC/RT or MT	20 Vp-p
	N4	2	128 kbyte per ch.	BC/RT or MT	28 Vp-p
RS-232/422/485	**Module**	**Channels**	**Communication**	**Data rate (Sync)**	**Data rate (Async)**
	P4	4	Async / Sync	8 Mbits/s per ch.	800 kbit/s per ch.
	P5	6	Async / Sync	4 Mbits/s per ch.	800 kbit/s per ch.

PART NUMBER DESIGNATION

64D2 – XX XX XX X X X –XX
Slot # 1 2 3

MODULE (SLOT) DEFINITION
Enter Module Designation (i.e. D6) for each one of Slots 1 through 3; enter a "Z0" if slot is not to be populated. **Note 1**

MECHANICAL
F = Front Panel J1-J6 and P2 & P0
S = Front Panel J1-J6 and P2 I/O (No P0)
P = P2 & P0 I/O only
G = P2 I/O only (No P0)
W = P 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-J6 and P2 & P0
T = VME64 Front Panel with J1-J6 and P2 (No P0)
D = VME64 Blank Front Panel, Low profile extractors and P2 & P0 I/O only

ENVIRONMENTAL
C = 0 TO 70 °C
E = -40 TO +85 °C
H = E With removable coating
K = C With removable coating

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

SPECIAL OPTION CODE (OR LEAVE BLANK)

Note 1: U2 Processor module can only be specified in Slot 3.
Note 2: If Ethernet port is specified at P0, then slot 3 cannot be populated with a Function Module. This does not apply if slot 3 is populated with a Processor Module.

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

For Ordering Information:
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