# *MODEL ADC/DAC*

## *"VME" DAUGHTER BOARD*

## *PROVIDES:*

- ***12 INDIVIDUAL 16 BIT ADC's***
- ***4 INDIVIDUAL 16 BIT DAC's***
- ***3 UP, DOWN, PRESET COUNTERS***
- ***I/O FROM VME BUS OR REAR PANEL P2 CONNECTOR***

***DESCRIPTION:***

The ***JOERGER ENTERPRISES, INC.*** Model ADC/DAC is a daughter card used with the VME-M motherboard. It offers a sophisticated VME array that interfaces to the VME64x data bus. The module features are set via a front panel JTAG input connector. This allows the module to be programmed for its application. This mother/daughter card combination provides the user with an array of functions without the need and cost of the daughter cards FPGA's and memory. It is meant for control applications that do not require these features. So it offers the user sophisticated control at an inexpensive price. The module offers:

- Twelve Independent 16 bit ADC's, 250khz max clock rate, with +/- 5 and +/- 10 volt input ranges selectable
- Four Independent 16 bit DAC's, +/- 10 volt output, 10usec, resets to zero, re-readable
- Three 16 bit up/down/preset counters
- I/O capability from the VME bus, P2 rear panel connector and front panel
- Provides module identification, serial number, model type and options

***ANALOG TO DIGITAL CONVERTER***

Twelve individual ADC's are provided. Each channel's input is buffered and the data is held in sample and hold amplifiers. The input range of the module can be set for +/- 5 or +/- 10 volts. Resolution is 16 bits and an external reference is used to provide 6 ppm/°C stability. SNR is 85db typical. The maximum sampling speed for each channel is 250khz. The clock speed is programmable.

***APPLICATIONS:***

Instrumentation and Control Systems
Multi-Axis Positioning Systems

Power Line Monitoring Systems

***DIGITAL TO ANALOG CONVERTER***

Four individual DAC's are provided. Resolution is 16 bits and each output is buffered. The output range is +/- 10 volts. Maximum conversion speed for each channel is 10useconds, data is reset to zero and the input data can be re-read for verification.

***APPLICATIONS:***

Process Control
Closed-Loop Servo Control
Motor Control
Data Acquisition Systems
DAC-Per Pin programmers

***COUNTERS AND I/O CONTROL***

An FPGA is provided on the card. It is programmed from the front panel JTAG input connector. It can accept I/O signals from the front panel, the VME array and the rear panel P2 connector. Control and clocking are available from the VME array. The array is programmed as three 16 bit UP, DOWN, PRESET counters, which can be coupled to provide 48bit capability. But the array is re-programmable. This feature allows the customer to use all the signals available and program it to perform whatever function is required. However the ability to program a FPGA and some knowledge of the array is required.

***APPLICATIONS:***

Three 16 bit UP, DOWN and PRESET counters
I/O capability
Re-programmable array

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|---|---|
| **CONNECTOR:** | 26 pin 3M 1552 series ribbon connector |
| **POWER REQUIREMENTS:** | + 3.3V, +5V, +12V, -12V |
| **SIZE:** | Single width daughter card |



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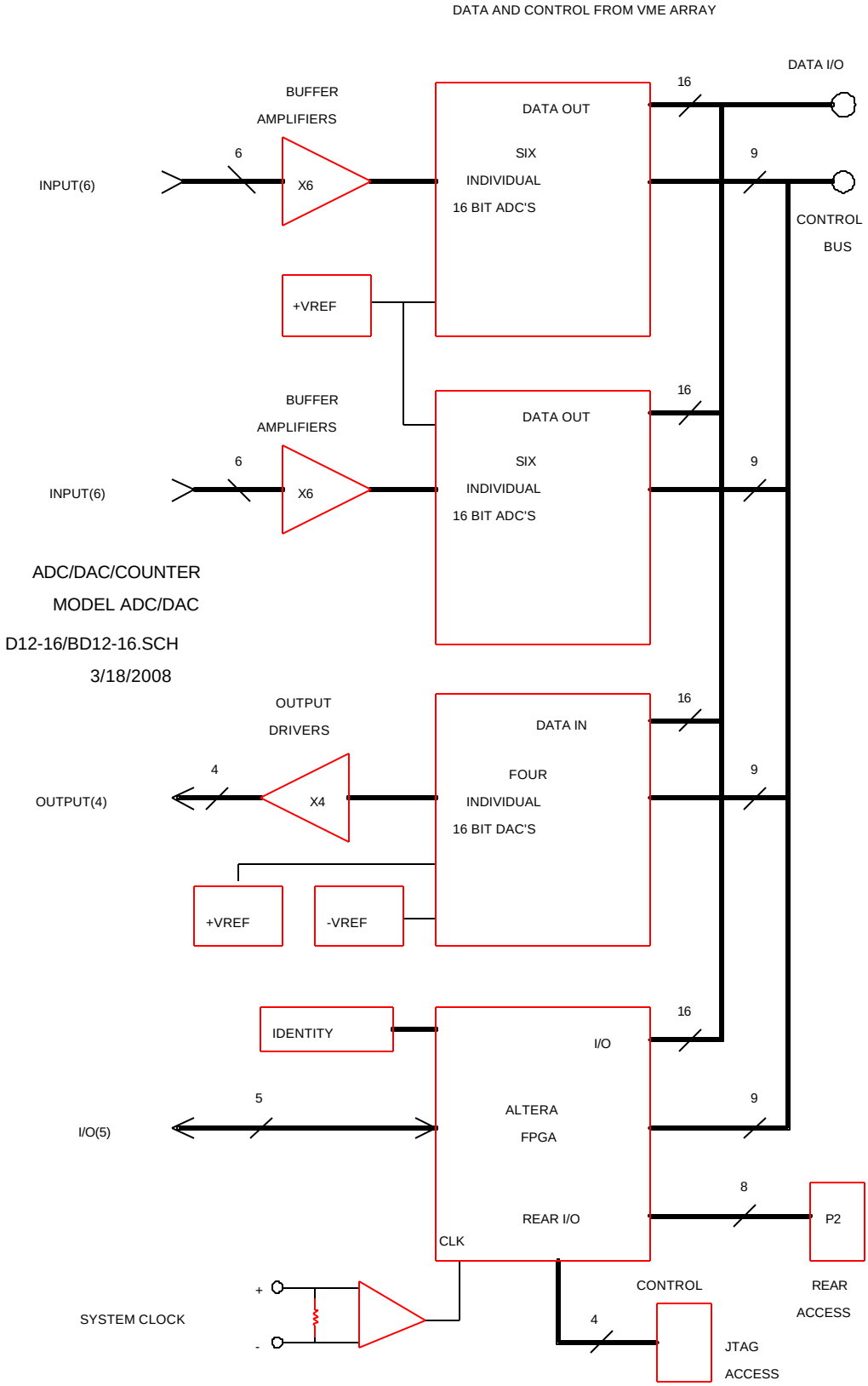
DATA AND CONTROL FROM VME ARRAY
DATA I/O
BUFFER
AMPLIFIERS
DATA OUT
16
6
SIX
INDIVIDUAL
16 BIT ADC'S
9
INPUT(6)
X6
CONTROL
BUS
+VREF
BUFFER
AMPLIFIERS
DATA OUT
16
6
SIX
INDIVIDUAL
16 BIT ADC'S
9
INPUT(6)
X6
ADC/DAC/COUNTER
MODEL ADC/DAC
D12-16/BD12-16.SCH
3/18/2008
OUTPUT
DRIVERS
DATA IN
16
4
FOUR
INDIVIDUAL
16 BIT DAC'S
9
OUTPUT(4)
X4
+VREF
-VREF
IDENTITY
I/O
16
5
ALTERA
FPGA
9
I/O(5)
8
REAR I/O
P2
CLK
+
SYSTEM CLOCK
-
CONTROL
REAR
ACCESS
4
JTAG
ACCESS