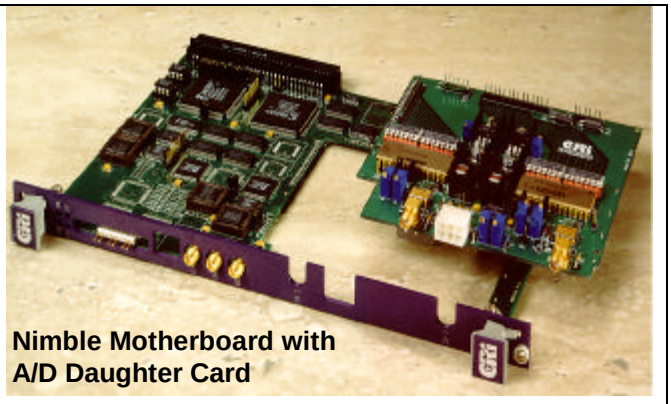
NIMBLE: High Performance A/D Product Family for the VME/VSB Bus

BENEFITS / FEATURES

- Versatile design consists of separate digital motherboard and A/D daughter card
- Daughter cards exist for a variety of A/D ICs which allow Nimble to conform to specific performance needs
- All digital signals driving the analog daughter card are optocoupled for total isolation (for Fs < 30 MHz)
- Analog daughter card receives its power from separate linear supply for clean operation and digital isolation
- Daughter cards range from 10 - 16 bits with sampling rates beyond 50 MSPS
- Digital sampling control including Frame Start and Sample Gate (see ***DESCRIPTION*** for details)
- 6U x 160 mm VME single slot form factor
- VME slave interface (A16/A24, D32)
- Optional VSB master allows Nimble to download data to off-the-shelf memory boards and general purpose machines
- High-speed front panel parallel port (directly compatible with CRI DSP boards)
- On-board FIFO (up to 64K samples deep for one channel; 32K samples deep for dual channel configurations)
- Front panel SMA input for convert clock, Frame Start, and Sample Gate
- External convert clock source standard; on-board crystal option available
- Various input impedance and voltage ranges available
- Power for digital motherboard: 2.6A @ +5V

APPLICATIONS

- Digital Receivers
- Radar
- Signal Intelligence
- Data Acquisition



Nimble Motherboard with A/D Daughter Card

DESCRIPTION

The Nimble product line is an extremely flexible design in a 6U x 160 mm VME format. A daughter card contains the entire A/D section; all signals that drive the daughter card are optocoupled (for Fs < 30 MHz). In addition, the daughter card receives its own source of linear power from a front panel connector. This linear supply source is regulated down to the required voltages. Thus, the Nimble design isolates the digital motherboard from the A/D section.

CRI has designed an entire family of A/D daughter cards around various A/D ICs. Based upon various manufacturers' A/D technology, the Nimble daughter cards provide anywhere from 16 bits @ 2 MSPS to 12 bits @ 41+ MSPS. Single or dual channel configurations are available.

The digital motherboard has functions specifically designed for radar and image processing applications. The functions control the sampling digitally instead of gating the sampling clock; this arrangement keeps the A/Ds very stable for improved performance.

Sample Gate is a front panel SMA input which the operator can use to turn sampling on or off. Frame Start is a front panel SMA trigger input which signals Nimble to collect "n" samples. "n" is completely programmable over the VMEbus.

An optional VSB interface is available on Nimble to facilitate data transfers to off-the-shelf mass memory boards or to general purpose processing machines.

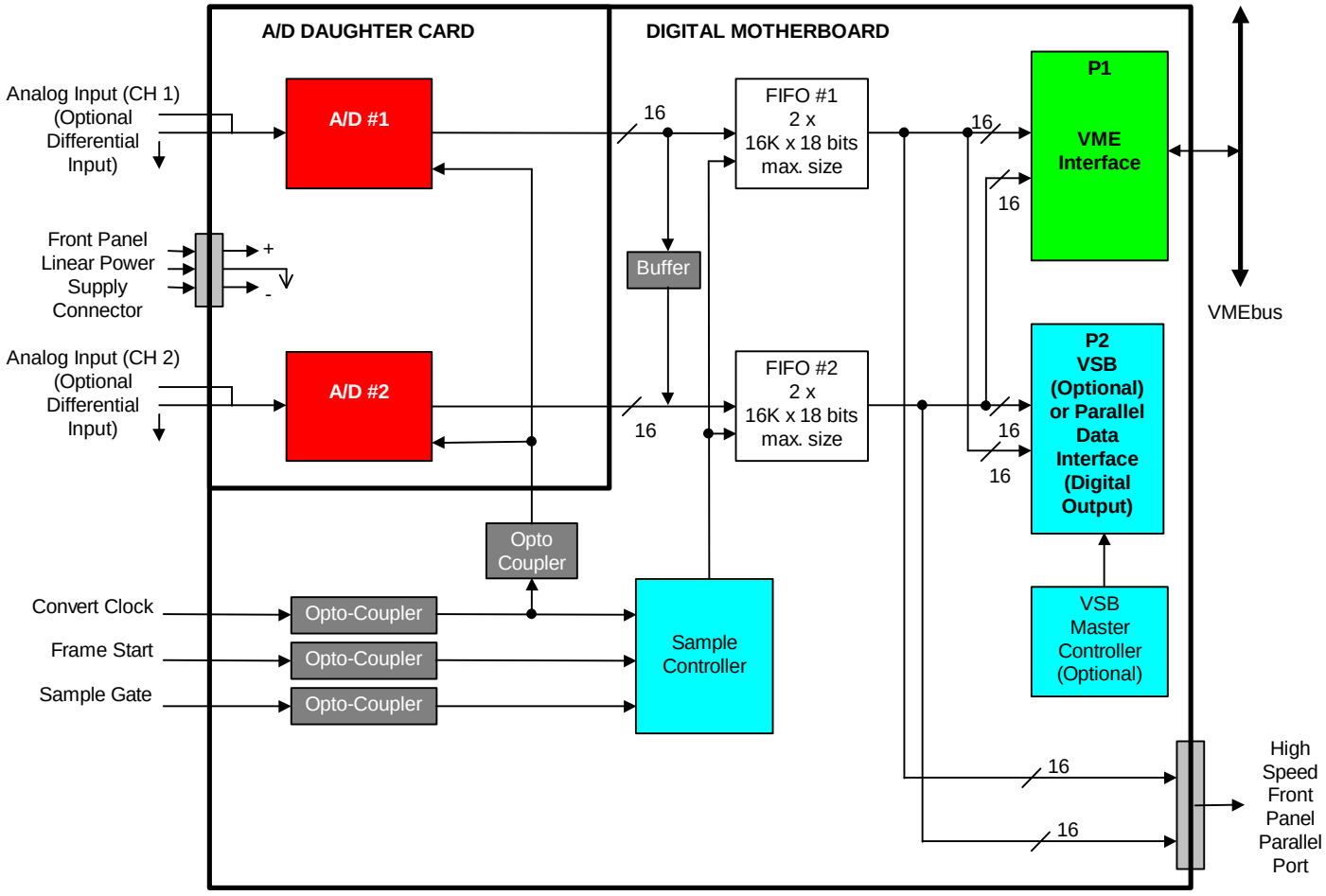


FIGURE 1: NIMBLE A/D BOARD BLOCK DIAGRAM

DESCRIPTION (CONTINUED)

The digital motherboard contains four synchronous FIFOs. At present, each FIFO can be up to 16K samples deep. In a dual channel configuration, each channel uses a pair of FIFOs. This configuration results in a maximum depth of 32K per channel. Single channel operation permits a maximum depth of 64K samples.

CRI designed the Nimble board to seamlessly interface with CRI's other off-the-shelf DSP products. The 40-pin front panel output port is a high speed parallel port (two 16-bit data channels).

Each channel of A/D data is in 2's complement format and sign-extended to fit within the channel's 16-bit field.

ORDERING INFORMATION

For delivery and pricing information, please contact CRI. The various daughter card options are listed below:

- Nimble 6 (16 bit, 2 MSPS hybrid performance)
- Nimble 7 (14 bit, 10 MSPS monolithic performance)
- Nimble 8 (12 bit, 41+ MSPS monolithic performance; DC coupled)
- Nimble 9 (12 bit, 41+ MSPS monolithic performance, AC coupled)

CATALINA RESEARCH INCORPORATED

Main Office:
1321 Aeroplaza Drive
Colorado Springs, CO 80916
phone: 719 637 0880
fax: 719 637 3839

East Coast Office:
70 Walnut Street
Wellesley, MA 02181
phone: 781 239 8078
fax: 781 239 8005

Internet:
sales@cri-dsp.com
support@cri-dsp.com
www.cri-dsp.com