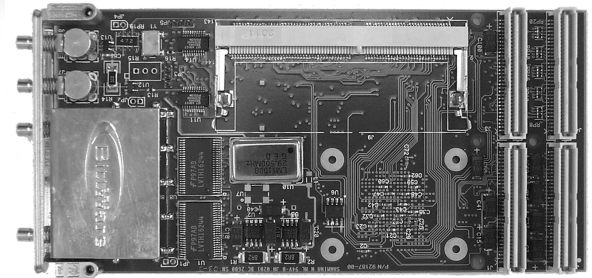


Darter-PMC+

2-Channel, 100 MHz High-Speed Analog Input Board



High-Speed Analog Interfacing

BittWare's Darter-PMC+ board is a high-speed analog input board that provides snapshot data capture for two 12-bit A/D channels, each sampled at up to 100 MHz, and streams the analog data directly to a 64–512 MB on-board SDRAM buffer. A 64-bit, 66 MHz PCI interface makes the captured data available to the host board. A PMC+ format board, the Darter-PMC+ attaches to any PMC capable carrier board and to BittWare's PMC+ capable carrier boards.

100 MHz Analog Interface

The Darter-PMC+ provides two 12-bit A/D transformer-coupled conversion channels. Using high-quality 12-bit, 100 MHz A/D converters from Analog Devices (AD9432), the analog interface provides a bandwidth of 400 kHz to 500 MHz.

DataFIN ASIC

Providing the Darter-PMC+'s sophisticated acquisition control and data movement capabilities is BittWare's DataFIN ASIC. The DataFIN provides the 64-bit, 66 MHz PCI interface, SDRAM control, and ADC control. It supports snapshot and continuous acquisition with programmable sample rate, triggering, and buffer sizes. Once the SDRAM buffer is filled with captured data, the DataFIN can either DMA the data to the host in master mode or allow the host to retrieve the data in slave mode. The DataFIN interfaces to the SDRAM during data capture at 64 bits, 66 MHz for 528 MB/s burst throughput.

SDRAM Interface

The Darter-PMC+ features an on-board SO-DIMM that supports 64, 128, 256, or 512 MB of SDRAM.

On-Board or External Clock

The Darter-PMC+ features a 100 MHz on-board oscillator. Depending on the option ordered, the on-board clock is either an oven-controlled crystal oscillator (OCXO) or a standard oscillator (XO). The board also features an external clock input for an externally derived clock. The clock circuit supports a high-quality bypass feature, which allows you to directly couple the external or on-board clock sources to the front-end A/D converters. Both the on-board and external clocks connect to the DataFIN, where you can use a 4-bit divider to vary the sample rate from 1–16 (clock/2, clock/3...clock/16).

Standard BittWare PMC+ Interface

The Darter-PMC+ is fully compatible with any PMC capable carrier board. When attached to one of BittWare's PMC+ capable carrier boards, it supports BittWare's PMC+ extensions, which include a reset line and interrupts.

Features

- 2 channel, 100 MHz, 12-bit A/D converter
- Up to 512 MB SDRAM
- 64-bit, 66 MHz PCI interface
- 100 MHz OCXO or external clock input
- Internal or external trigger input
- Divisor to divide clock from 1–16
- DataFIN™ ASIC for A/D and PCI interface
- Standard BittWare PMC+ interface
- Analog Devices AD9432 A/D converter
 - SNR of 67 dB
 - SFDR of 80 dB



Specifications

BOARD ARCHITECTURE

Analog Interface

- Two 12-bit, 100 MHz A/D converters (AD9432), each with a single input channel
 - SNR of 67 dB
 - SFDR of 80 dB
- Analog bandwidth of 400 kHz to 500 MHz
- 2.0Vpp differential analog input range
- SMB analog input connectors, transformer coupled and terminated in 50Ω

On-Board Memory

- 64, 128, 256, or 512 MB SDRAM (standard 144-pin SODIMM)

DataFIN ASIC

- ADC interface and control
- SDRAM interface and control
- 64-bit, 66 MHz PCI interface (PCI Local Bus Specification, Rev. 2.2)
- Clock divisors for sample rates from 1–16
- Standard BittWare PMC+ interface

PCI/PMC Interface

- 64-bit, 66 MHz PCI rev. 2.2 compliant interface
- Universal 5V/3V PCI signaling

- Provides 64-bit, 66 MHz master/slave (528 MB/s peak transfer rate) access
- Backward compatible with 32-bit, 33 MHz PCI interfaces

PMC+ Interface

- Provides interrupt line to host board
- Provides reset line to host board

Clocking Options

- 100 MHz On-board Oven Controlled Crystal Oscillator (OCXO) or standard oscillator (XO)
- 100 MHz external clock input

Power

- +12V, +5V, and +3.3V required (available via PCI interface)

Size

- 149mm × 74mm (5.9" × 2.9")

SOFTWARE SUPPORT

- BittWare's software development kit for Windows® 95/98/NT/2000 and Linux contains a C-callable library of board control and communications routines
- Example software for controlling the board and viewing captured data

Ordering Information

DRPM-XY-ZA

Channels=X

1 Channel = 1

2 Channels = 2

SDRAM=Y

64 MB = 5

128 MB = 6

256 MB = 7

512 MB = 8

A= Speed

1 = 100 MHz

Z= Oscillator

1 = Standard

2 = OCXO

