

ProDAQ VXI Data Acquisition Systems

ProDAQ 3043 PowerPC-Based VXIbus Slot-0 Controller



OVERVIEW

The ProDAQ 3043 high-performance, slot-0 controller provides a powerful, fully-customizable platform for embedded applications. Using the Motorola MPC7455 PowerPC processor at speeds of more than one GHz and beyond, it provides the computational power for algorithmic-intensive computations.

The ProDAQ 3043 provides balanced performance from the processor, memory, local buses, and I/O subsystems. The powerful Marvell Discovery system controller, with support for a 133 MHz host bus and a 133 MHz SDRAM memory bus, is well-matched to the high-speed processor. The ProDAQ 3043 can be configured for use as a VXIbus processor module in non-slot-0 applications.

PMC Expansion Slots

To match the system I/O to the outstanding processor performance, the ProDAQ 3043 provides dual 64-bit, 33/66 MHz PCI buses. Each PCI bus has a PMC site supporting cards running at 33 MHz or 66 MHz. The Universe II VME/VXI interface is isolated from the PMC sites on a dedicated 33 MHz PCI bus segment, so that both PMC sites are capable of 66 MHz operation.

I/O Interfaces

The ProDAQ 3043 also offers a Gigabit Ethernet interface, 10/100/1000 Base-TX Ethernet interface, and two serial ports. All of this adds up to a set of well-balanced, high-performance subsystems for unparalleled performance.

Slot-0 Capabilities

Automatic slot-0/non-slot-0 detection enables the ProDAQ 3043 to be used as a VXIbus slot-0 controller or VXIbus processor module in non-slot-0 applications.

Trigger Interface

The ProDAQ 3043 supports both the VXIbus TTL and ECL trigger lines. Trigger signals can be generated under software control. On detection of a trigger signal, a local interrupt can be generated.

Features & Benefits

- ▶ **Single slot** C-size VXIbus slot-0 controller
- ▶ **1 GHz PowerPC** 7455 with **2 MB L3 cache**
- ▶ 512 MB or 1 GB ECC-protected **SDRAM**, 32+8 MB **flash memory**
- ▶ Two **PMC expansion slots** with **front-panel I/O**
- ▶ **Gigabit Ethernet** and 10/100/1000 Mbit **Ethernet interfaces**
- ▶ Automatic **slot-0/non-slot-0** operation

For more information, visit www.bustec.com.

Learn more about the **ProDAQ 3043** on our website by scanning the code below.





SPECIFICATIONS

PROCESSOR

Type	PowerPC7455 with AltiVec™
Clock Freq.	1 GHz
On-chip L1 Cache	32 kB Instruction / 32 kB Data
On-chip L2 Cache	256 kB Instruction / 256 kB Data
L3 Cache	2 MB SRAM

MEMORY:

MAIN

FLASH

Type	PC133 ECC-protected SDRAM	Onboard programmable, extension sockets
Size	512 MB onboard, expandable by 512 MB mezzanine	32 MB onboard, up to 8 MB in two TSOP sockets

ETHERNET:

INTERFACE 1

INTERFACE 2

Type	10/100/1000 BASE-TX	10/100 BASE-TX
Controller	Intel 82544EI Gigabit Ethernet controller	Controller integrated in system controller
Connector	RJ-45 on front-panel	RJ-45 on front-panel

ASYN. SERIAL PORT

Controller	16C550C
Connector	RJ-45 on front-panel

COUNTERS/ TIMERS

Device	M48T37V with 32 kB NVRAM (4 kB available for user)
Counter/Timer	Eight 32-bit
Watchdog Timer	Reset on timeout

VXIBUS INTERFACE

DTB Master	A16, A24, A32, D08-D32, BLT, D64MBLT
DTB Slave	A24, A32, D08-D32, BLT
Arbiter	RR/ PRI
Interrupt Handler/Generator	IRQ 1-7
Trigger Interface	VXIbus TTL Trigger 0-7, VXIbus ECL Trigger 0-1
Slot-0/System Controller	Auto slot-0 detection

IEEE P1386.1 PMC SLOTS

Address Data	A32, D32 and D64
PCI Bus Clock	33/66 MHz
Signaling Env.	3.3 V or 5 V
Power	+3.3 V, +5 V, ±12 V, 7.5 W max. per slot
Module Types	One double-wide or two single-wide
IO Routing	Front-panel

POWER REQUIREMENTS

Current Consumption	Voltage (V)	Current (mA)
	+24	80
	+12	15
	+5	7500
	-2	50
	-5.2	150
	-12	10
	-24	0
Power Consumption	< 40.6 W	

Ordering Information

- ▶ **3043-AD** PowerPC-Based VXIbus slot-0 controller with 1 GHz PowerPC 7455, 512 MB DRAM, 32+8 MB flash
- ▶ **3043-AE** PowerPC-Based VXIbus slot-0 controller with 1 GHz PowerPC 7455, 1024 MB DRAM, 32+8 MB flash

Contact Bustec

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SPECIFICATIONS (CONT.)

PHYSICAL CHARACTERISTICS

Dimensions	VXIbus single-slot C-size module
Weight	1200 g

ENVIRONMENTAL

Temperature	0 °C to +50 °C (operational) -40 °C to +70 °C (storage only)
Humidity	10 % - 90 % (non-condensing)

SHOCK & VIBRATION

Functional Shock	30 g peak, half-sine, 11 ms pulse (Test performed in accordance to IEC 60068-2-27 and MIL-T-28800E class 3.)
Random Vibration	5 to 500 Hz, 0.3 g _{RMS} operational 5 to 500 Hz, 2.4 g _{RMS} non-operational (In accordance with IEC 60068-2-64 and MIL-T-28800E / MIL-STD-810E meth. 514.)

SOFTWARE SUPPORT

VXIplug&play compatible VISA library for VxWorks (Contact Bustec Ltd. for more information)

WARRANTY PERIOD

12 months (extended periods available at additional cost)

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