

Technical Specifications

Compliance

Conduction-cooled 6U VME64x

Power Consumption

25 Watts (typical)

Processor

Freescale QorIQ P2010 (1 core)

Memory

1/4 Gb DDR3 SDRAM at 6.4 GB/s peak with ECC protection

2 GB Flash (NAND)

128 MB Flash (NOR)

256 KB NVRAM

FPGA/User-Programmable/User I/O Lines

Xilinx, Spartan-6 LX100T user-programmable FPGA with dual 128 MB DDR3 SDRAM and 8 MB Flash (SPI)

32 user-specific I/O lines on PMC-J14 to VME-P2

48 user-specific I/O lines on PMC-J24 to VME-P2

64 user-specific I/O lines on FPGA to CES FlexIO

I/O Customization

1x CES FlexIO static routing module (interconnect between PMCs/XMCs, VME-P2 and user FPGA)

Buses

1x 64-bit VME64x 2eSST bus on VME-P1/P2

1x 64-bit PCI 3.0 bus at 33/66 MHz on PMC-J11/J12/J13/J21/J22/J23

High-Speed Links/Connections

1x PCIe x4 on VME-P0

3x PCIe x4 on XMC-J15/J25/J26 (1x each) (VITA 42.3)

3x 10/100Base-TX/1000Base-T on VME-P2

1x USB 2.0 host on VME-P2

2x RS-232 on VME-P2

4 high-speed links on FPGA to XMC-J16⁽¹⁾

(1) Depends on FPGA configuration

Sites

2x PMC/XMC sites (VITA 42.3)

Board Management Controller

Power management

Board start-up and voltage monitoring

Temperature monitoring (thermal sensors on critical positions)

Development/Debug

Onboard JTAG test port

Rear I/O transition module

Xilinx ChipScope Pro FPGA debugging tool

Ruggedization Levels

Level	Description	Cooling Type	Operating Temperature	Vibration (1 hour per axis)	Operating Shocks
C4	Extended range CC	Conduction	-40°C to 85°C [CC4]	5-100 Hz: increase at 3 dB/octave, 100-1000 Hz: 0.1 g ² /Hz, 1000-2000Hz: decrease at 6 dB/octave	40g, 11ms saw-tooth, three axes

Environmental Specifications

Condition	Limits, standards	Comments
Non-operating temperature	-55°C to 105°C [C4]	
Humidity	95%	
Altitude	-1,500 to 60,000 feet	May require conformal coating
Fungus resistance	No nutrient materials	
Workmanship	IPC-A-160 class 3	
Soldering	IPC J-STD-001 class 3	
PCB Manufacturing	IPC-A-600 class 3	
Conformal coating	IPC-CC-830	Optional
Materials	REACH compliant	ROHS variants as an option
Flammability	UL 94 Class V-0	
Quality	EN 9100:2008	

Product Ordering

RIO6-8096AF	Conduction-cooled 6U VME SBC with QorIQ P2010 @ 1.0 GHz, 512 KB L2, 1 GB DDR3, 2 GB NAND, 128 MB NOR, 256 KB NVRAM, Spartan-6 LXT
RIO6-8096EF	Conduction-cooled 6U VME SBC with QorIQ P2010 @ 1.0GHz, 512 KB L2, 4 GB DDR3, 2 GB NAND, 128 MB NOR, 256 KB NVRAM, Spartan-6 LXT
OWW-30920B	VxWorks® BSP for RIO6-809x
OWW-30930E	VxWorks 653 BSP for RIO6-809x
OWX-30930D	Linux® Toolbox for RIO6-809x

Related Hardware Products

BPA-6513A0	Passive blackpane adaptor for high-speed links (3 slots)
ISC-8422R0	Low-power, conduction-cooled 6U VME PMC/XMC carrier board for RIO6-8096
RTM-6290A0	Rear I/O Transition Module for RIO6-8096/97 (3x RJ45: 3x GbE, 2x µDB9: 2x RS-232, 6x µDB9: 6x RS-422/485, 1x DB9: service interface, 1x USB Type A: 1x USB 2.0, 5x Harting: 5x 16x GPIO)

BuiltSAFE, Innovation That Matters, and Mercury Systems are trademarks of Mercury Systems, Inc. Other product and company names mentioned may be trademarks and/or registered trademarks of their respective holders. Mercury Systems, Inc. believes this information is accurate as of its publication date and is not responsible for any inadvertent errors. The information contained herein is subject to change without notice.

Copyright © 2017 Mercury Systems, Inc.

3265.01E-0917-ds-RIO6-8096



INNOVATION THAT MATTERS™

MERCURY MISSION SYSTEMS INTERNATIONAL S.A.

Avenue Eugène-Lance 38, PO Box 584
CH-1212 Grand Lancy 1 • Geneva – Switzerland
+41 (0)22 884 51 00

CORPORATE HEADQUARTERS

50 Minuteman Road • Andover, MA 01810 USA
(978) 967-1401 • (866) 627-6951 • Fax (978) 256-3599