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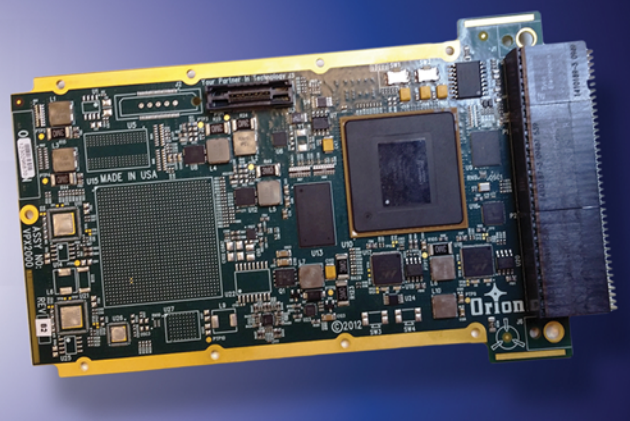
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ORION TECHNOLOGIES

OpenVPX™

VPX2000

Dual Altera Arria V REDI (VITA 48) 3U VPX FPGA Module



Power and Flexibility

The Orion VPX2000 FPGA board is a Dual FPGA 3U VPX card ideally suited for a variety of applications.

Configurable Altera Arria V FPGAs with highspeed reduced latency DRAM (RLDRAM) memory buffers and four high-throughput PCIe 2.0 interfaces provide a powerful and flexible logic processor module capable of executing custom instruciton sets and algorithms.

The VPX2000 is available in 5 levels of ruggedization from commercial temperature air cooled (0.8" pitch) to extended temperature REDI (Vita 48.2, 1" pitch).

Features

- Dual or Single Reconfigurable Altera Arria V FPGAs
- 576MB RLDRAM memory per FPGA
- 1Gbit P33 NOR Flash per FPGA
- One 10Gb XAUI port per FPGA to backplane
- Dual Gigabit Base-BX Ethernet per FPGA to backplane
- Two Gen-2 x1 PCIe lanes per FPGA to backplane
- On-board temperature monitoring integrated in the FPGAs
- Twenty-eight GPIOs per FPGA to backplane
- Two Serial ports per FPGA, RS232/ RS422/RS485
- FPGAs linked via thirty-two differential signals
- FPGA code loads from the PCIe bus or from on-board prom
- Programmable Clock generation
- Full 2 Level Maintenance allows in-field replacement
- 18W maximum total power dissipation
- Available as single FPGA card
- JTAG interface enables on-board code debugging
- Mictor connector per FPGA for debug
- Rear Transition Module (RTM) available
- Designed for air cooled or -40 to 85°C operation

AMERICA'S FASTEST-GROWING Inc. 5000 PRIVATE COMPANIES

Hardware Specifications

Dual Serial Ports
- Controller: Arria V
- Signal levels: Standard RS232/ RS422/RS485
- Access:VPX Connectors P1/P2

FPGA
- Altera Arria V
- Multiple SKUs available

FPGA Features
- 28 nm technology
- 503,500 equivalent logic elements
- 190,000 adaptive logic elements
- Twenty-four 6.375 Gbps transceivers
- Several Arria V hardcores available
- Altera and third-party IP Cores available

General Purpose I/O
- Configuration: Twenty-eight GPIO
- Signal levels: Configurable by Arria V
- Access: VPX Connectors P1/P2

Memory
- 576MB RLDRAM for each FPGA
- Boot PROM for each FPGA
- 1Gbit NOR flash for each FPGA
- 27,045Mbit on-chip for each FPGA

Miscellaneous
Temp Sensor
- Built in temperature sensor on FPGA

Reset
- Power on reset, push button reset and VPX backplane reset

JTAG
- FPGA JTAG interface on RTM

LEDS
- Runtime Status LEDS

Peripherals per FPGA
One XAUI port
- Controller: Arria V
- Access: VPX Connectors P1/P2
- Two x1 PCIe
- Version: 2.0

Two 10/100/1000 Base-BX Ports
- Controller: Arria V
- Phy: Marvell
- Configuration: Auto Negotiating 10/100/1000
- Access VPX Connectors P1/P2

VPX Connector
- Two x1 PCI Express 2.0 lanes from each FPGA
- One XAUI port from each FPGA
- Two 1000 Base-BX from each FPGA

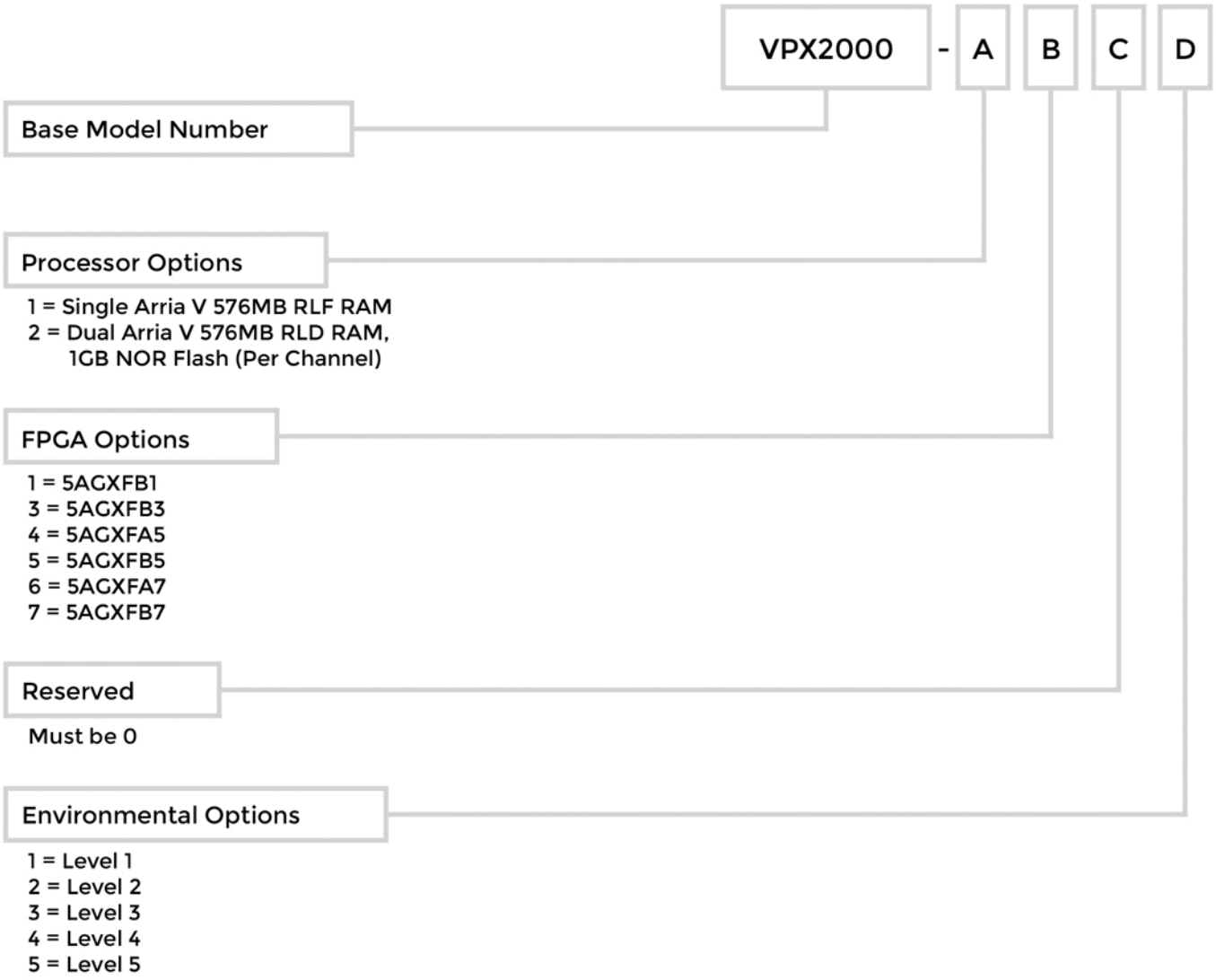
Environmental

VPX2000

	Level 1	Level 2	Level 3	Level 4	Level 5
Cooling Method	Air-Cooled	Air-Cooled	Air-Cooled	Conduction	Conduction
Conformal Coating	Standard	Standard	Standard	Standard	Standard
Operating Temperature	0 to +55°C	-40 to +55°C	-40 to +70°C	-40 to +70°C	-40 to +85°C
Vibration	0.002g²/Hz*	0.002g²/Hz*	0.04g²/Hz*	0.1g²/Hz*	0.1g²/Hz*
Shock	20g Peak Sawtooth 11 ms duration	20g Peak Sawtooth 11 ms duration	20g Peak Sawtooth 11 ms duration	40g Peak Sawtooth 11 ms duration	40g Peak Sawtooth 11 ms duration
Humidity	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing

*Flat response to 1000 Hz

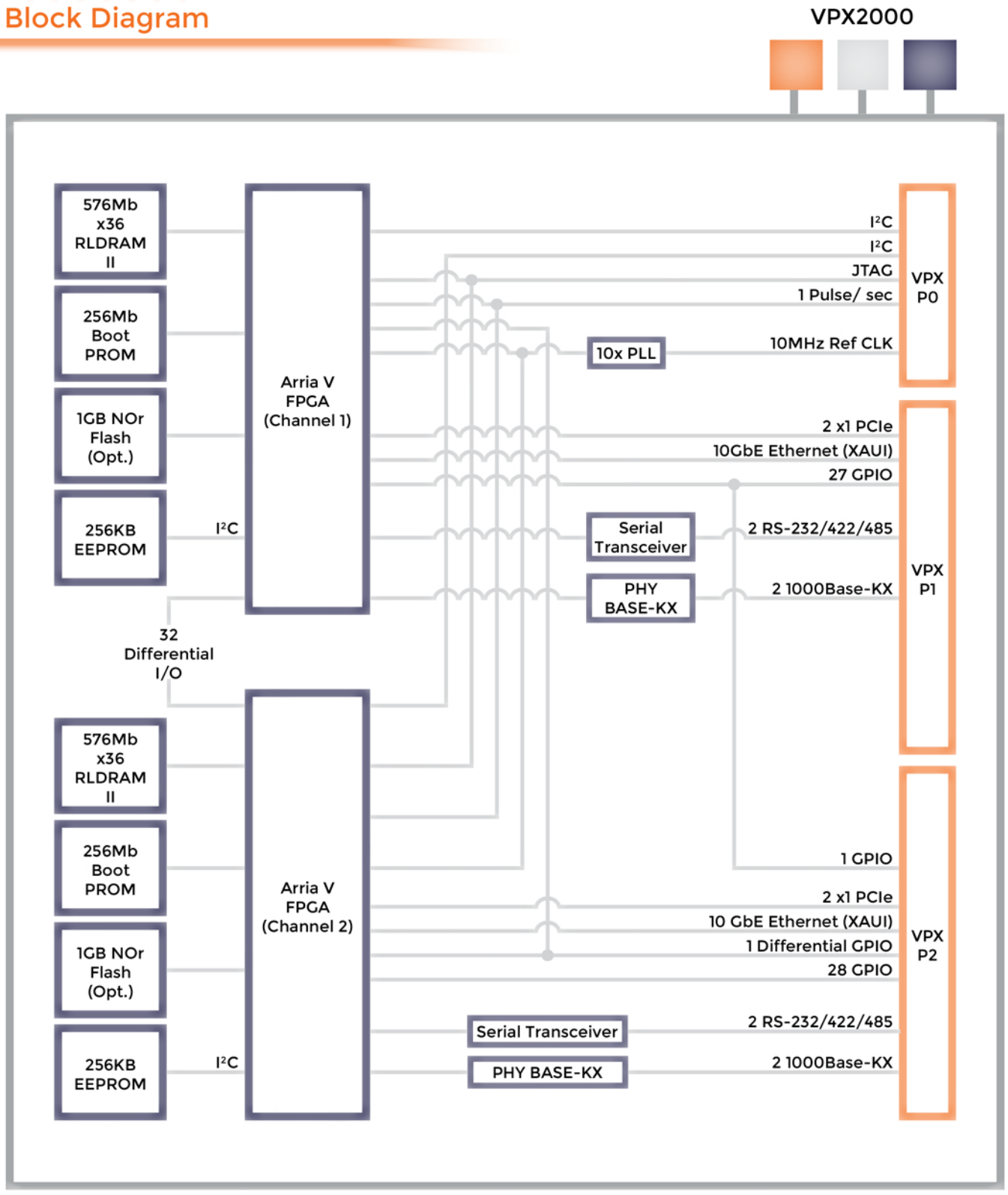
Options Guide



Orion has successfully generated products utilizing an extensive assortment of microprocessors since 1990. Our single board computer product offering includes both custom and standard form factors such as VPX, VME, Compact PCI, XMC and PMC. The majority of our products are offered in five ruggedization levels from standard commercial to rugged, extended temperature with conduction cooling. At Orion, we put the customer at the center of our business. We strive to provide the highest quality of products backed by our exceptional service and support.

Whether it's a small quantity, one-time requirement or a high volume product for years to come, we would like to be your partner in embedded solutions.

Block Diagram



Inc. 5000

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