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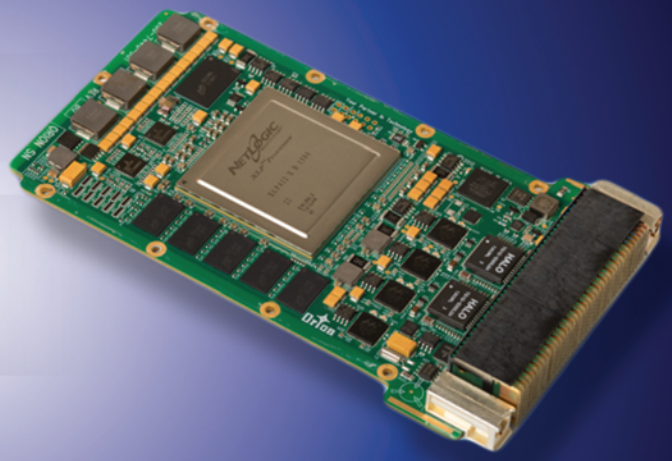
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ORION TECHNOLOGIES

OpenVPX

VPX7440

3U VPX Broadcom XLP432 Single Board Computer (Air or Conduction Cooled)



Power and Flexibility

The Orion VPX7440 single board computer (SBC) is a flexible, rugged, high-performance, Multi-Core SBC ideally suited for a range of applications. Based on the highly scalable Broadcom XLP432, the VPX7440 is ideal for any computing requirement.

Incorporating the power of the thirty-two core Broadcom XLP432 processor, and the unparalleled complement of I/O, the VPX7440 can be adapted to any Military, Industrial, or Commercial application where customization and configurability are key.

The VPX7440 is available in 5 levels of ruggedization from commercial temperature air-cooled (0.8" pitch) to extended temperature REDI (Vita 48.2, 1" pitch").

With four OpenVPX 4-lane PCI Fat Pipes, eight Ethernet ports, two configurable serial ports, twenty-eight GPIO, one differential GPIO and USB 2.0 port, the VPX7440 design has optimized high-speed multi-core processing with user I/O.

Combining Multi-Core processing, a complete offering of user I/O, and 5 levels of ruggedization, the VPX7440 is perfect for any embedded application where high performance is a must!

AMERICA'S FASTEST-GROWING PRIVATE COMPANIES Inc. 5000

Features

- Thirty-two Core Broadcom XLP432 processors up to 1.6GHz
- Thirty-two nxCPU processing engines
- 64KB L1 instruction cache per core
- 32KB L1 data cache per core
- 512KB internal L2 cache per core
- 8MB shared L3 cache
- Extended Temperature and Rugged REDI (Vita 48.2)
- Full 2 level maintenance allows in-field replacement
- OpenVPX (Vita 65) compliant including support for multiple module profiles
- On-board temperature monitoring
- Up to 4GB DDR3-1600 SDRAM with ECC
- Up to 4GB NAND Flash
- Four PCIe 2.0 Fat Pipes (x4 lanes each)
- Two 10/100/1000 Base-T Ethernet ports
- Four 10/100/1000 Base-BX Ethernet ports
- Two Serial ports: RS-232/RS-422 / RS-485 configurable
- Twenty-eight General Purpose I/O
- One differential General Purpose I/O
- One USB 2.0 port
- On-board Real-Time Clock
- Various Board Support Packages (BSP's) available including Linux and Wind River VxWorks

Hardware Specifications

Processor
- Broadcom MIPS64 Processor with up to 32 cores
- Processor Speed: 1.6GHz
- L1-I/L1-D Cache (per core): 64KB/ 32KB
- L2 Cache (per core): 512KB
- L3 Cache (shared): Up to 8MB

Processor Features
- Up to 32 nxCPU processing engines
- RSA Acceleration Engine: 40K/ sec (RSA1024)
- Security Acceleration Engine: 40Gpbs
- Hardware IEEE 1588 Timestamping

Memory
- DRAM Memory Type: DDR3 SDRAM
- DRAM Memory Size: Up to 4GB (soldered)
- 16Mb NOR Boot Flash
- 4GB NAND Flash

PCIe
- PCIe lanes: Four x4 lanes v2.0
- Access: Two x4 lanes VPX Connector P1 and Two x4 lanes VPX connector P2

Two 1 Gb Ethernet Base-T Ports
- Controller: Integrated MAC
- PHY: Marvell 88E1111 PHY
- Configuration: Auto Negotiating 10/100/1000
- Access: VPX Connector P1

Two Serial Ports
- Controller Type: Integrated
- Signal levels: Configurable RS-232/422
- Access: VPX Connector P1

USB Port
- Controller: Integrated on Processor
- Version: 2.0
- Access: VPX Connector P2

Four 1 Gb Ethernet Base-BX Ports
- Controller: Integrated MAC
- PHY: Marvell 88E1112 PHY
- Configuration: Auto Negotiating 10/100/1000
- Access: VPX Connector P1

JTAG
- Processor EJTAG emulator interface

General Purpose I/O
- Configuration: 28 GPIOs
- Signal levels: 3.3V LVCMOS
- Access: VPX Connector P2

Relative Humidity
- Operating: 5% to 95%, non-condensing
- Storage: 5% to 95%, non-condensing

Temperature
- Operating: -40°C to +85°C
- Storage: -50°C to +100°C

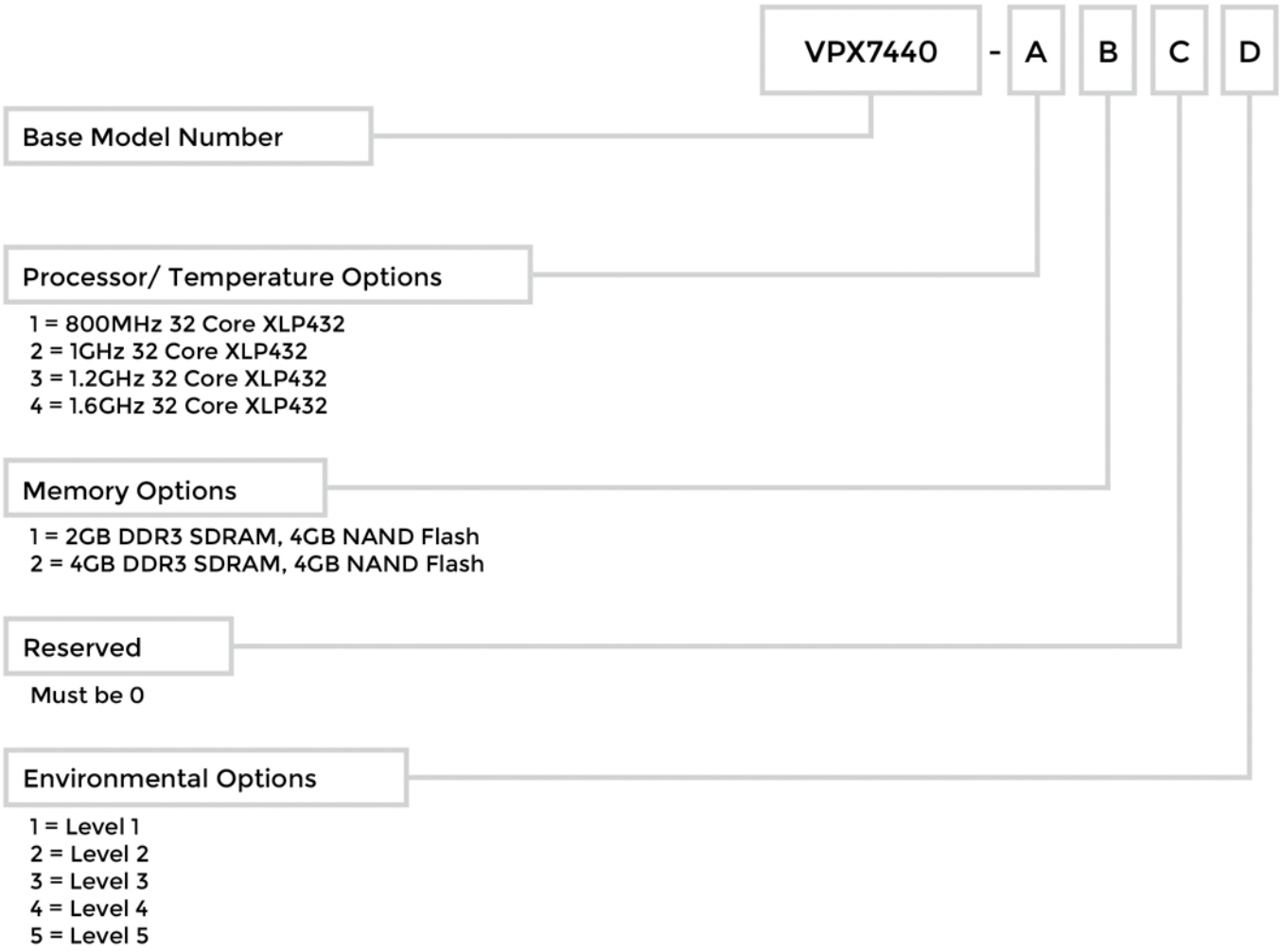
Environmental

VPX7440

	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

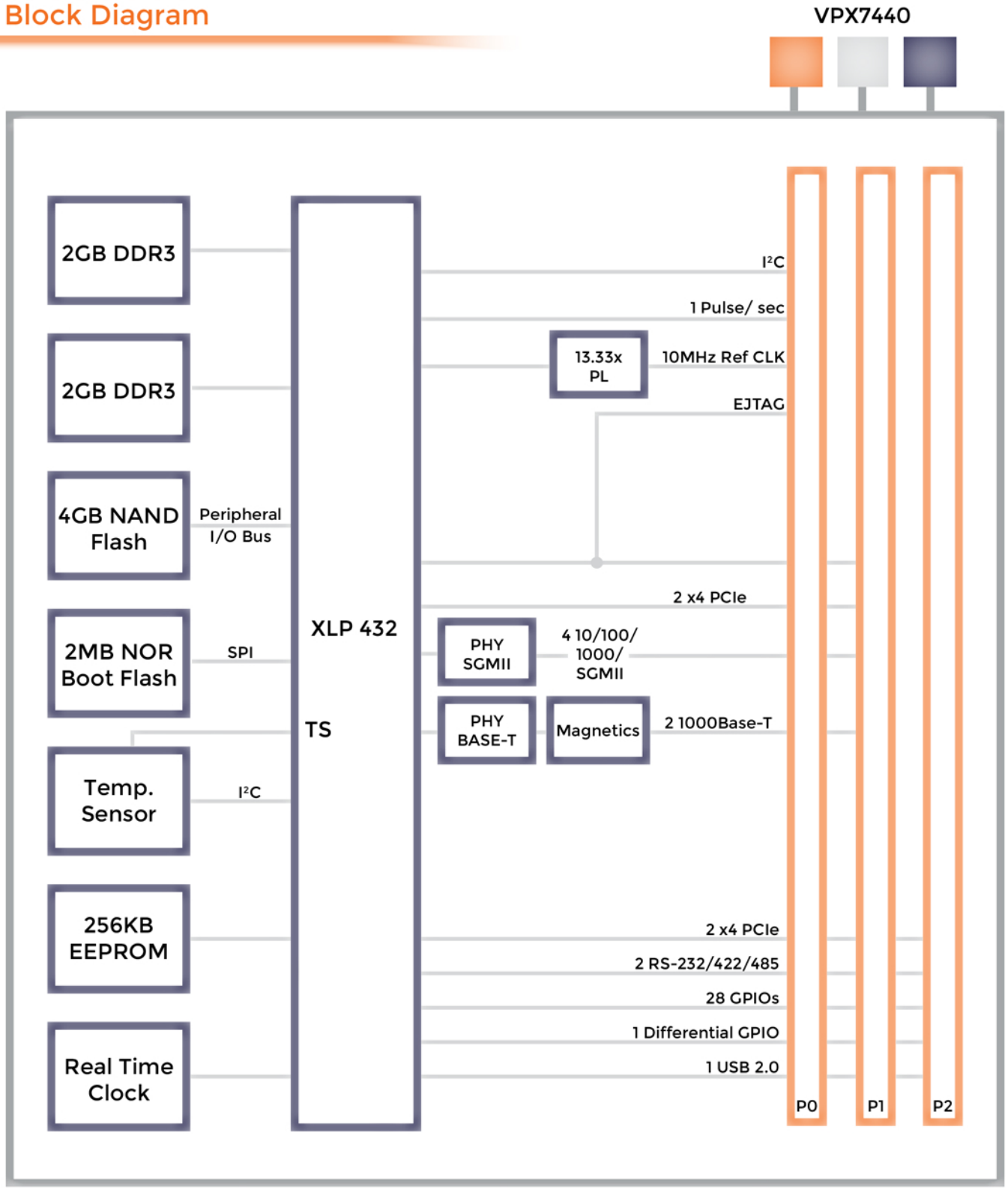
Options Guide



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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