

Power and Flexibility

The Orion **CPC7525** Single Board Computer (SBC) is the industry's most flexible, rugged, high-performance SBC in today's embedded marketplace.

By incorporating the power of the IBM 750 FX/GX PowerPC™ and the unparalleled complement of I/O via the customer configurable "**Personality Modules**", we can adapt to almost any Military, Industrial or Commercial application.



The **CPC7525's** three Gb Ethernet, two serial ports, GPIO and PMC P14 IO are all accessible through CompactPCI connector J2.

The ability to **automatically detect** whether to function as a high-performance system controller or an intelligent peripheral card allows the user to migrate from one application to another without hardware reconfiguration

Add one of Orion's PMC7520 or PMC7525 PrPMC modules and you have a single-slot, dual-processor supercomputing workhorse.



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CPC7525

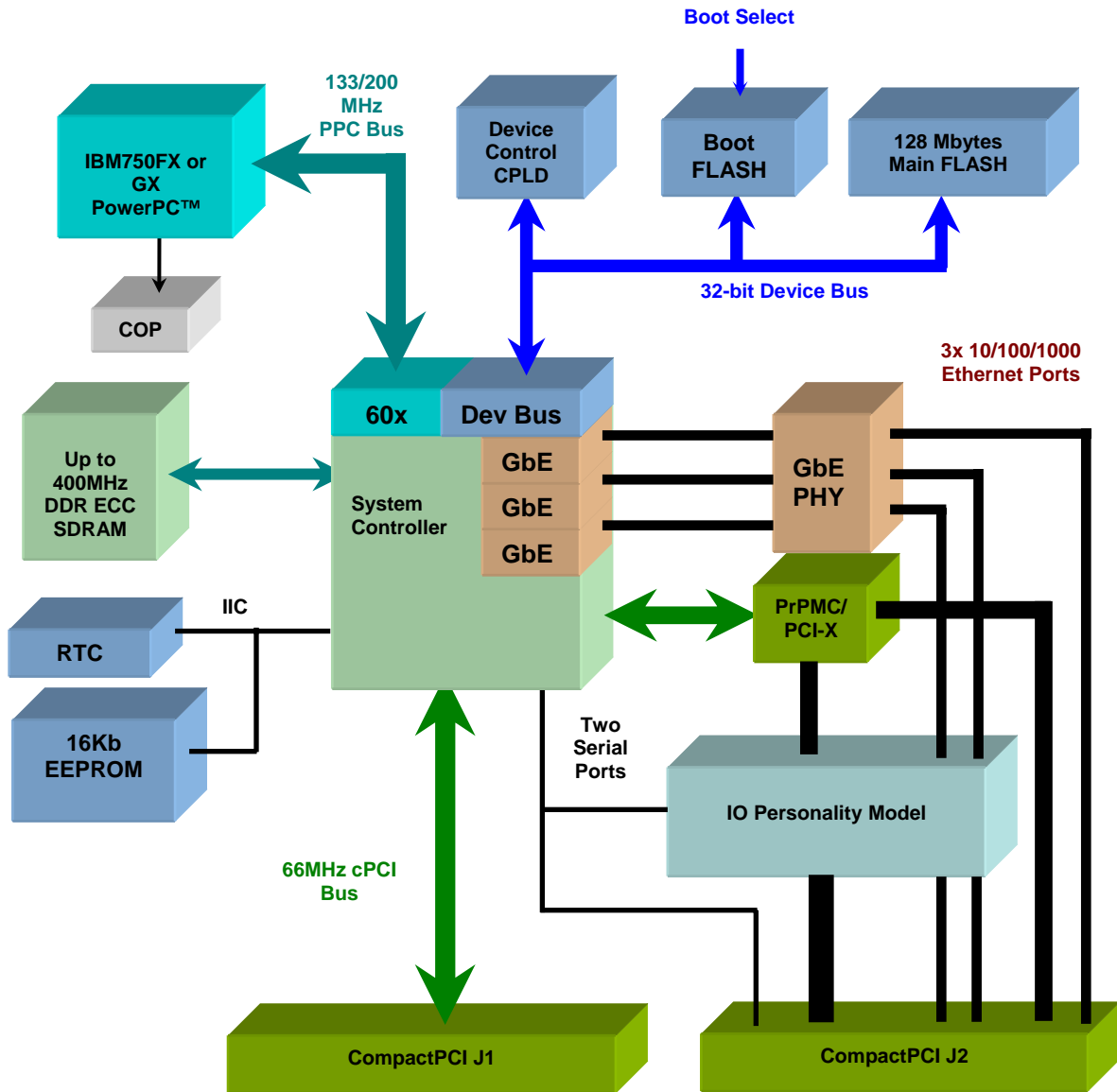
**Conduction or Air Cooled 3U
PowerPC SBC for CompactPCI**



Features:

- ◆ PowerPC™ IBM 750FX/GX up to 1GHz
- ◆ 512KB (FX), 1MB (GX) L2 Cache
- ◆ Up to 200MHz PowerPC™ Processor Bus
- ◆ Extended Temperature Rugged design
- ◆ On-board temperature monitoring
- ◆ 15W typical power dissipation
- ◆ 256MB – 1GB soldered DDR SDRAM with ECC
- ◆ 128MB on-board user FLASH
- ◆ 66MHz CompactPCI bus (PCI-X)
- ◆ 64-bit/133MHz PCI-X PMC slot (**PrPMC**)
- ◆ Customer Configurable I/O via Personality Modules
- ◆ **Three** 10/100/1000 Ethernet ports
- ◆ **Two** Serial ports
- ◆ **Six** General purpose I/O
- ◆ PMC front panel & P14 Rear I/O
- ◆ PICMG CompactPCI 2.0 R3.0 compliant
- ◆ PCISIG PCI R2.2 compliant
- ◆ Auto detects System or peripheral functionality
- ◆ RTC, GP, WD & timers
- ◆ COP/JTAG Debug header
- ◆ Single-slot 3U
- ◆ VxWorks, Linux & LynxOS Software Support
- ◆ U-Boot ROM Monitor Debugger
- ◆ Orion's Two-Year warranty & support

Orion ...Your partner in technology



CPC7525 Block Diagram

Hardware Specifications

Processor:

PowerPC™: 750FX 750GX

Max Core Frequency	600MHz	1GHz
Inst. Cache:	32KB	32KB
Data Cache:	32KB	32KB
L2 Cache:	512KB	1MB
L2 Cache Frequency:	Core Frequency	

Processor Bus:

PowerPC Bus Frequency:	133MHz (200MHz for commercial temperature 1GHz 750GX)
PowerPC Bus Width:	A32/D64 (60X Bus)
Address Parity:	Yes
Data Parity:	Yes

CompactPCI Bus:

cPCI Bus Frequency:	33/66MHz
cPCI Bus Width:	32-bit
cPCI Signal Voltage:	Universal +3.3V, +5.0V
PMC PCI Compliance:	PICMG PCI R2.2, PCI-X (Addendum rev 1.0b)
cPCI Compliance:	PICMG CompactPCI 2.0 R3.0
System Controller:	Yes. Auto detection
Peripheral Controller:	Yes. Auto detection

Local PMC Bus:

PMC Bus Frequency:	133/66/33MHz
PMC Bus Width:	64-bit
PMC Signal Voltage:	+3.3V
PCI Compliance:	PCISIG PCI R2.2, PCI-X
PrPMC Support:	Yes. Non-monarch
PMC IO access:	Standard front panel, cPCI J2

Local Device Bus:

Bus Frequency:	133MHz
Bus Width:	A32/D32
Signal Voltage:	+3.3V

Memory:

DRAM Memory Type:	DDR SDRAM (PC2100/PC3200)
DRAM Memory Size:	256, 512MB or 1GB
On-Board User FLASH:	128MB
Boot FLASH:	2MB (1MB User-definable)
I2C EEPROM	16KB User-definable

Peripherals:

Three 10/100/1000 Ethernet Ports:

Controller:	Integrated Discovery III MAC
Configuration:	Auto Negotiating 10/100/1000
Access:	CompactPCI J2, Transition module

Dual Serial Ports:

Controller Type:	Integrated Discovery III MPSC
Configuration:	DTE
Access:	CompactPCI J2
Signal levels:	Configurable by Personality Module

General Purpose I/O:

Access:	CompactPCI J2
Configuration:	3 input, 3 output
Signal levels:	Configurable by Personality Module

Miscellaneous:

Timers:	◆ Programmable 32/64-bit timers ◆ Watchdog timer
Real Time Clock: Reset:	ST Micro MT41T00S Backed Up J2 reset generates CompactPCI reset when System Controller. Switch resets local logic when Peripheral controller.
COP/JTAG: JTAG:	Processor COP/JTAG emulator interface JTAG for board-level testing
LEDS:	◆ Four Runtime Status LEDS (front panel) ◆ RJ-45 Ethernet LEDS (front panel)

Specifications:

Power: 750FX 750GX

PCI Typical +3.3v:	2.1 A	2.2 A
PCI Maximum +3.3v:	2.3 A	2.4 A
PCI Typical +5v:	1.3 A	1.6 A
PCI Maximum +5v:	1.8 A	2.2 A
Typical Power Dissipation:	13.5W	15.25W
Max Power Dissipation:	16.6W	18.9W

Environmental:

Operating Temperature:	0° to 60°C (commercial) -40° to 85°C (Conduction, measured at the rail)
Storage Temperature:	-40° to 85°C
Relative Humidity:	5% to 95% non-condensing
Board Size:	Single-slot 3U CPCI 160mm x 100mm
Weight:	9.65 oz, 273 grams (with conduction cooled heat spreader)



Ordering Information

Commercial Temp. Air Cooled

Ext. Temp. Conduction Cooled

IBM 750FX PowerPC

IBM 750FX PowerPC

600MHz IBM750FX, Three 10/100/1000 Ethernet

600MHz IBM750FX, Three 10/100/1000 Ethernet

256MB SDRAM	CPC7520-00
512MB SDRAM	CPC7520-01
1GB SDRAM	CPC7520-02

256MB SDRAM	CPC7520-00
512MB SDRAM	CPC7520-01
1GB SDRAM	CPC7520-02

256MB SDRAM, 128MB On-board FLASH	CPC7520-03
512MB SDRAM, 128MB On-board FLASH	CPC7520-04
1GB SDRAM, 128MB On-board FLASH	CPC7520-05

256MB SDRAM, 128MB On-board FLASH	CPC7520-03
512MB SDRAM, 128MB On-board FLASH	CPC7520-04
1GB SDRAM, 128MB On-board FLASH	CPC7520-05

IBM 750GX PowerPC

IBM 750GX PowerPC

1GHz IBM750GX, Three 10/100/1000 Ethernet

1GHz IBM750GX, Three 10/100/1000 Ethernet

256MB SDRAM	CPC7520-10
512MB SDRAM	CPC7520-11
1GB SDRAM	CPC7520-12

256MB SDRAM	CPC7520-10
512MB SDRAM	CPC7520-11
1GB SDRAM	CPC7520-12

256MB SDRAM, 128MB On-board FLASH	CPC7520-13
512MB SDRAM, 128MB On-board FLASH	CPC7520-14
1GB SDRAM, 128MB On-board FLASH	CPC7520-15

256MB SDRAM, 128MB On-board FLASH	CPC7520-13
512MB SDRAM, 128MB On-board FLASH	CPC7520-14
1GB SDRAM, 128MB On-board FLASH	CPC7520-15

At Orion Technologies, our goal is to serve you, our customers. We are dedicated to finding high-quality, cost-effective solutions to meet your application. We will modify any Orion Technologies product or will design a custom solution to fill your requirements.

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