

GPU EXPANSION ENCLOSURES

FOR HIGH PERFORMANCE COMPUTING AND
SERVER-BASED GRAPHICS APPLICATIONS



GPU expansion enclosures transparently connect
multiple GPU cards to host systems at 80-160Gb/s.

ONE STOP
SYSTEMS

1U

GPU EXPANSION

Supports two double-wide or four single-wide GPUs
80 Gb/s bandwidth to each slot
PCIe x16 cable adapter and cable included



Ideal for
**high performance
computing and server-based
graphics applications**

1U SPECIFICATIONS

Enclosure

Dimensions: 19" w x 1.75" h x 21" d
Removable front bezel with air filter
Front panel LEDs: Power, Fail, Link status
One rear panel PCIe x16 cable connector
Rack ears and rack slides included

PCIe Expansion Slots

PCIe 2.0-compliant
Two or Four PCIe x16 slots (electrical and mechanical)

Power

850W power supply
Each slot provides 3.3V & 12V plus a 6-pin 12V connector

System Monitor

Monitors 8 temp sensors
Monitors 8 fan tachometers
Monitors 3 voltages +12V, +5V, +3.3V

Operating Environment

Temperature Range: Operating: 0°C to 50°C
Storage: -40°C to +85°C
Humidity:
Operating: 10% to 90% relative humidity (non-condensing)
Non-operating: 5% to 95% relative humidity (non-condensing)
Altitude: Operating 0 to 10,000 feet
Storage: 0 to 50,000 feet

Host cable adapter

One PCIe x16 Gen 2 cable adapter
PCIe half-card
Standard and low profile brackets provided

PCIe x16 cable

Standard PCIe x16 shielded differential pairs with side band signals
PCIe External Cabling Specification, Rev. 1.0
Cables can be ordered in 1m, 2m, and 3m lengths

Brackets for I/O cards provided upon request

PCIe Over Cable

The 1U expansion enclosure cables to the host system with a single PCIe x16 cable. The high-speed cable allows data transfers to and from the host simultaneously at 80Gb/s each way.

Installation

The PCIe x16 Gen 2 cable adapter easily installs in the PCIe x16 slot of the host system. No additional software is required for the expansion enclosure to be fully operational.

System Monitoring

An internal system monitor surveys system parameters of temperature, fan speed, and power voltages. System status can be easily accessed through an Ethernet port on the rear of the enclosure.

Power

The 850 watt power supply provides ample power for high-end GPU boards. Additional 12V power is provided by 6-pin cables for each slot.

Cooling

Eight individually removable fans provide superior cooling across the boards. A power modulator controls the speed of the fans based on temperature within the chassis.

2U

GPU EXPANSION

Supports four double-wide or eight single-wide GPUs

80 Gb/s bandwidth to each slot

One or two PCIe x16 cable adapters and cables included



Ideal for
**high performance
computing and server-based
graphics applications**

2U SPECIFICATIONS

Enclosure

Dimensions: 19" w x 3.5" h x 21" d
Removable front bezel with air filter
Front panel LEDs: Power, Fail, Link status
One or two rear panel PCIe x16 cable connectors
Rack ears and rack slides included

PCIe Expansion Slots

PCIe 2.0 compliant
Four or Eight PCIe x16 slots (electrical and mechanical)

Power

Dual 850W power supplies
Each slot provides 3.3V & 12V plus a 6-pin 12V connector

System Monitoring

Monitors 8 temp sensors
Monitors 4 fan tachometers
Monitors 3 voltages +12V, +5V, +3.3V

Operating Environment

Temperature Range: Operating: 0°C to 50°C
Storage: -40°C to +85°C
Humidity:
Operating: 10% to 90% relative humidity (non-condensing)
Non-operating: 5% to 95% relative humidity (non-condensing)
Altitude: Operating 0 to 10,000 feet
Storage: 0 to 50,000 feet

Host cable adapter

One or two PCIe x16 Gen 2 cable adapters
PCIe half-card
Standard and low profile brackets provided

PCIe x16 cable

Standard PCIe x16 shielded differential pairs with side band signals
PCIe External Cabling Specification, Rev. 1.0
Cables can be ordered in 1m, 2m, and 3m lengths

Brackets for I/O cards provided upon request

PCIe Over Cable

The 2U expansion enclosure cables to the host system with one or two PCIe x16 cables. The high-speed cables allow data transfers to and from the hosts simultaneously up to 160Gb/s each way.

Installation

The two PCIe x16 Gen 2 cable adapters can be installed in the PCIe x16 slots of the same host system or of two different hosts. No additional software is required for the expansion enclosure to be fully operational.

System Monitoring

The internal system monitor surveys system parameters of temperature, fan speed, and power voltages. System status can be easily accessed through an Ethernet port on the rear of the enclosure.

Power

Dual 850 watt hot swappable power supplies provide ample power for high-end GPU boards. Additional 12V power is provided by 6-pin cables for each slot.

Cooling

Superior cooling is provided across all the boards. A pulse width modulator controls the speed of the fans based on temperature within the chassis.

TOWER

LOW-COST GPU EXPANSION

Supports two double-wide GPUs

Four additional PCIe slots available

PCIe x16 cable adapter
and cable included



TOWER SPECIFICATIONS

Enclosure

Dimensions: 7.5" w x 16.5" h x 19.5" d
One rear panel PCIe x16 cable interface

PCIe Expansion Slots

PCIe 2.0 compliant
Two PCIe x16 slots (electrical and mechanical)
One PCIe x8 slots (with x16 connectors)
Two PCIe x4 slots (with x16 connectors)

Power

750W power supply
Each slot provides 3.3V & 12V plus a 6-pin 12V connector

Operating Environment

Temperature Range: Operating: 0°C to 50°C
Storage: -40°C to +85°C
Humidity:
Operating: 10% to 90% relative humidity (non-condensing)
Non-operating: 5% to 95% relative humidity (non-condensing)
Altitude: Operating 0 to 10,000 feet
Storage: 0 to 50,000 feet

Host cable adapter

One PCIe x16 Gen 2 cable adapter
PCIe half-card
Standard and low profile brackets provided

PCIe x16 cable

Standard PCIe x16 shielded differential pairs with side band signals
PCIe External Cabling Specification, Rev. 1.0
Cables can be ordered in 1m, 2m, and 3m lengths

PCIe Over Cable

The Tower expansion enclosure cables to the host system with one PCIe x16 cable. The high-speed cable allows data transfers to and from the hosts simultaneously up to 80Gb/s each way.

Installation

The PCIe x16 Gen 2 cable adapter easily installs in the PCIe x16 slot of the host system. No additional software is required for the expansion enclosure to be fully operational.

Power

The 750 watt power supply provides ample power for high-end GPU boards. Additional 12V power is provided by 6-pin cables for each slot.

Cooling

Superior cooling is provided across all the boards.

SUGGESTED GPU CARDS

NVIDIA Tesla™ C2050

# of Tesla GPUs	1
# of CUDA Core	448
Frequency of CUDA Cores	1.15 GHz
Double Precision floating point performance (peak)	515 Gflops
Single Precision floating point performance (peak)	1.03 Tflops
Total Dedicated Memory	3GB GDDR5
Memory Speed	1.5 GHz
Memory Interface	384-bit
Memory Bandwidth	144 GB/sec
System Interface	PCIe x16 Gen2

AMD FirePro™ V8800

# of Cypress GL GPUs	1
# of Stream Cores	1600
Frequency of Core Clock	825 MHz
Double Precision floating point performance (peak)	528 Gflops
Single Precision floating point performance (peak)	2.6 Tflops
Total Dedicated Memory	2GB GDDR5
Memory Speed	1.15 GHz
System Interface	PCIe x16 Gen2

NVIDIA Tesla™ C2070

# of Tesla GPUs	1
# of CUDA Core	448
Frequency of CUDA Cores	1.15 GHz
Double Precision floating point performance (peak)	515 Gflops
Single Precision floating point performance (peak)	1.03 Tflops
Total Dedicated Memory	6GB GDDR5
Memory Speed	1.5 GHz
Memory Interface	384-bit
Memory Bandwidth	144 GB/sec
System Interface	PCIe x16 Gen2

AMD FirePro™ V9800

# of Cypress GL GPUs	1
# of Stream Cores	1600
Frequency of Core Clock	850 MHz
Double Precision floating point performance (peak)	544 Gflops
Single Precision floating point performance (peak)	2.72 Tflops
Total Dedicated Memory	4GB GDDR5
Memory Speed	1.15 GHz
System Interface	PCIe x16 Gen2

ORDERING INFORMATION

GPU Expansion Enclosures

OSS-PCIe-1U-ENCL-EXP-2	1U enclosure with two PCIe x16 Gen 2 expansion slots, 850 watt power supply, system monitor, one PCIe x16 Gen 2 host cable adapter, and 1 meter PCIe x16 cable
OSS-PCIe-1U-ENCL-EXP-4	1U enclosure with four PCIe x16 Gen 2 expansion slots, 850 watt power supply, system monitor, one PCIe x16 Gen 2 host cable adapter, and 1 meter PCIe x16 cable
OSS-PCIe-2U-ENCL-EXP-4-1	2U enclosure with four PCIe x16 Gen 2 expansion slots, dual 850 watt power supplies, system monitor, one PCIe x16 Gen 2 host cable adapter, and 1 meter PCIe x16 cable
OSS-PCIe-2U-ENCL-EXP-4-2	2U enclosure with four PCIe x16 Gen 2 expansion slots, dual 850 watt power supplies, system monitor, two PCIe x16 Gen 2 host cable adapters, and two 1 meter PCIe x16 cables
OSS-PCIe-2U-ENCL-EXP-8-1	2U enclosure with eight PCIe x16 expansion slots, dual 850 watt power supply, system monitor, one PCIe x16 Gen 2 host cable adapter, and 1 meter PCIe x16 cable
OSS-PCIe-2U-ENCL-EXP-8-2	2U enclosure with eight PCIe x16 Gen 2 expansion slots, dual 850 watt power supplies, system monitor, two PCIe x16 Gen 2 host cable adapters, and two 1 meter PCIe x16 cables
OSS-PCIe-TW-ENCL-EXP-2-1	Tower enclosure with two PCIe x16 expansion slots, 750 watt power supply, one PCIe x16 Gen 2 host cable adapter, and 1 meter PCIe x16 cable

Call today to add these powerful systems to your data center requirements.



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Thank you for choosing One Stop Systems!

One Stop Systems (OSS) expands data center capabilities with its expansion enclosures. These powerful engines provide connectivity to host servers up to 160Gb/s through standard PCI Express cables and very little latency because no conversion software is required. Data centers can now off-load system processors with computational accelerator boards that appear as part of the host system. These units are easy to install and much less expensive than implementing additional servers to handle the workload.

One Stop Systems has been first-to-market with many of the PCI Express-over-cable products available today. OSS continues to lead the market in innovative products that expand the definition of server computing. This is a result of years of R&D effort to produce tested products that are most requested by our customers. Many of the products developed are customized to fit specific customer requirements. From NEBS-compliant servers for telecom to embedded systems and modules for defense to acceleration systems for data centers, One Stop Systems has become synonymous with responsiveness to customer needs.

Call us today with your requirements and visit us at www.onestopsystems.com.

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