Matrox® **Display Wall**

Mura™ IPX Series • Mura™ MPX Series • C-Series™

System Builder's Guide

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Product overview

Matrox Mura MPX Series products combine input and output cards onto a single-slot PCIe® ×16 2.0 card. Mura MPX Series products feature universal input channel support for both digital and analog video (HD, DVI, RGB/VGA®, SDI, Component, S-video, and Composite). Mura MPX Series video capture cards work with output/input boards to provide additional analog video inputs.

Mura IPX Series products are PCIe ×8 Gen 2.0 cards that provide high-density capture, encode, and decode functionality to enhance video walls and operator workstations with advanced video processing and networking capabilities.

Matrox C-Series multi-display video cards, featuring six and nine-output models, allow you to drive multiple displays or projectors from a single graphics card. Designed and built to ensure excellent reliability, stability and ease of deployment, C-Series PCIe ×16 Gen 3.0 cards are ideal for demanding commercial and critical systems.

Hardware summary – Mura MPX Series

The Matrox Mura MPX Series family of products includes the following key features:

- Maximum output resolution of 2048 × 1152 (DVI) and 2048 × 1536 (RGB/VGA) per display.
- Maximum input resolution of 2560 × 1600 @ 30 Hz (DVI, 2048 × 1536 @ 47 Hz (RGB/VGA), and 1920 × 1080 (Component) per input.
- Designed for control rooms, operation centers and other mission critical environments, as well as digital signage and presentation systems.
- Facilitates video switching, signal conversion, scaling, compositing, and de-interlacing from a single card.

Mura MPX-4/4

	Mura MPX-4/4
Part number	MURA-MPX44HF
Card type	PCIe ×16 2.0
Form factor	ATX
Connectors	2× KX20
Memory	2 GB DDR2
Output support	4
Input support	4
Power consumption	Typical: 37W @ 12V, 0.5W @ 3.3V or 37.5W Total Worst Case: 43W @ 12V, 0.5W @ 3.3V or 43.5W Total
Weight	298 g
Dimensions	L: 9.50 in / W: 0.75 in / H: 4.407 in L: 24.13 cm / W: 1.91 cm / H: 11.2 cm
Regulatory compliance	Class A: FCC, CE, RCM, VCCI, ICES-3, CSA, KC

Mura MPX-4/2

	Mura MPX-4/2
Part number	MURA-MPX42HF
Card type	PCIe ×16 2.0
Form factor	ATX
Connectors	2× KX20
Memory	2 GB DDR2
Output support	4
Input support	2
Power consumption	Typical: 37W @ 12V, 0.5W @ 3.3V or 37.5W Total Worst Case: 43W @ 12V, 0.5W @ 3.3V or 43.5W Total
Weight	294 g
Dimensions	L: 9.50 in / W: 0.75 in / H: 4.407 in L: 24.13 cm / W: 1.91 cm / H: 11.2 cm
Regulatory compliance	Class A: FCC, CE, RCM, VCCI, ICES-3, CSA, KC

Mura MPX-4/0

	Mura MPX-4/0
Part number	MURA-MPX40HF
Card type	PCIe ×16 2.0
Form factor	ATX
Connector	1× KX20
Memory	2 GB DDR2
Output support	4
Input support	0
Power consumption	Typical: 36W @ 12V, 0.5W @ 3.3V or 36.5W Total Worst Case: 41W @ 12V, 0.5W @ 3.3V or 41.5W Total
Weight	290 g
Dimensions	L: 9.50 in / W: 0.75 in / H: 4.407 in L: 24.13 cm / W: 1.91 cm / H: 11.2 cm
Regulatory compliance	Class A: FCC, CE, RCM, VCCI, ICES-3, CSA, KC

Mura MPX-V16

	Mura MPX-V16
Part number	MURA-MPXV16F
Card type	PCIe ×4 1.0
Form factor	ATX
Connectors	2× DVI-I
Memory	256 MB DDR SDRAM
Output support	—
Input support	16 inputs
Power consumption	Maximum: 17W @ 12V
Weight	184 g
Dimensions	L: 8.10 in / W: 0.75 in / H: 4.376 in L: 20.6 cm / W: 1.91 cm / H: 11.1 cm
Regulatory compliance	Class A: FCC, CE, RCM, VCCI, ICES-3, CSA, KC

Mura MPX-V8

	Mura MPX-V8
Part number	MURA-MPXV8F
Card type	PCIe ×4 1.0
Form factor	ATX
Connector	1× DVI-I
Memory	128 MB DDR SDRAM
Output support	—
Input support	8 inputs
Power consumption	Maximum: 10W @ 12V
Weight	158 g
Dimensions	L: 8.10 in / W: 0.75 in / H: 4.376 in L: 20.6 cm / W: 1.91 cm / H: 11.1 cm
Regulatory compliance	Class A: FCC, CE, RCM, VCCI, ICES-3, CSA, KC

Mura MPX-SDI

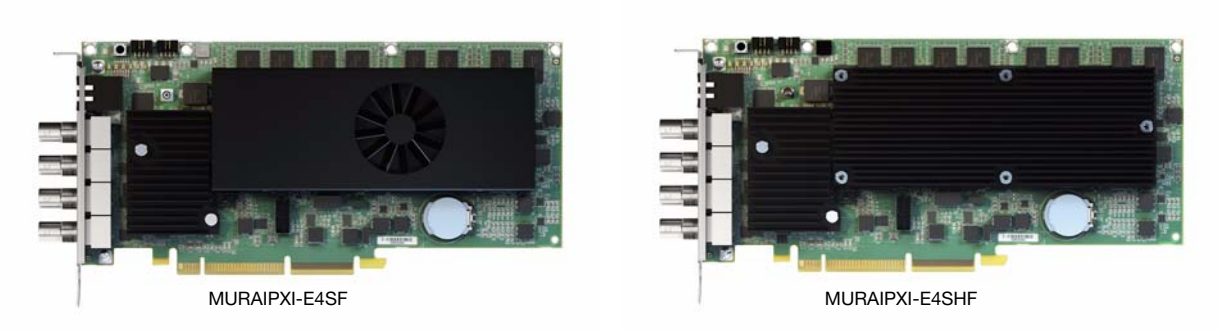
	Mura MPX-SDI
Part number	MURA-MPXSDIF
Card type	PCIe ×16 1.0
Form factor	ATX
Connectors	1× KX20, 2× DIN 1.0/2.3
Memory	1 GB DDR2
Output support	2
Input support	2
Power consumption	Typical: 20W @ 12V, 0.03W @ 3.3V or 20.03W Total
Weight	236 g
Dimensions	L: 6.60 in / W: 0.75 in / H: 4.407 in L: 16.80 cm / W: 1.91 cm / H: 11.2 cm
Regulatory compliance	Class A: FCC, CE, RCM, VCCI, ICES-3, CSA, KC

Hardware summary – Mura IPX Series

The Matrox Mura Series of products include the following key features:

- Multi-channel 4K/HD/SD encode and decode over standard IP
- DisplayPort™ and HDMI® capture, IP encode and IP decode support on a single card
- Flexible stream and record capabilities anywhere on the network
- Separate on-board network interface controller for zero impact on the system
- RGB 10:10:10 and 8:8:8 plus YUV 4:4:4, 4:2:2, and 4:2:0 color space support
- Ideal for control rooms, operation centers, board rooms and other mission critical environments as well as digital signage and presentation systems.

MURAIPXI-E4SF/MURAIPXI-E4SHF

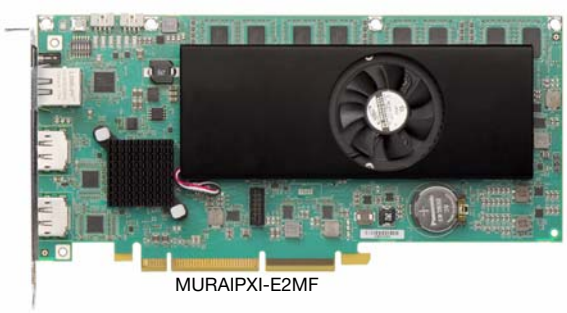


MURAIPXI-E4SF

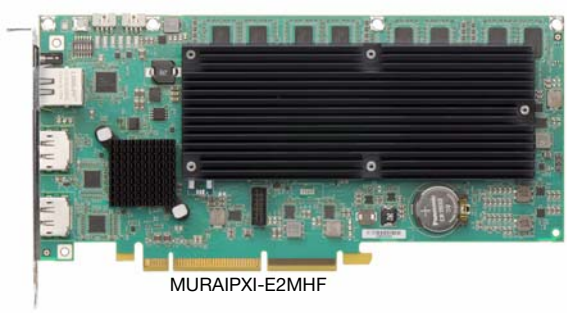
MURAIPXI-E4SHF

	MURAIPXI-E4SF	MURAIPXI-E4SHF
Part number	MURAIPXI-E4SF	MURAIPXI-E4SHF
Card type	PCIe ×16 2.0 (×16 mechanical, ×8 electrical)	PCIe ×16 2.0 (×16 mechanical, ×8 electrical)
Form factor	ATX	ATX
Connector	4× BNC 1x 100/1000 Base-T RJ45 Ethernet Port	4× BNC 1x 100/1000 Base-T RJ45 Ethernet Port
Memory	8 GB	8 GB
Output support	—	—
Input support	4× BNC + IP	4× BNC + IP
Decode support	Multi-channel 4K H.264	Multi-channel 4K H.264
Encode support	Multi-channel 4K H.264	Multi-channel 4K H.264
Power consumption	Typical: 27.12W @ 12V, 6.27W @ 3.3V, or 33.39W Total	Typical: 27.12W @ 12V, 6.27W @ 3.3V, or 33.39W Total
Weight	398g	334g
Dimensions	L: 9.02 in / W: 0.75 in / H: 4.38 in L: 22.91 cm / W: 1.91 cm / H: 11.13 cm	
Regulatory compliance	Class B: FCC, CE, RCM, VCCI, ICES-3, CSA, KC	

MURAIPXI-E2MF/MURAIPXI-E2MHF



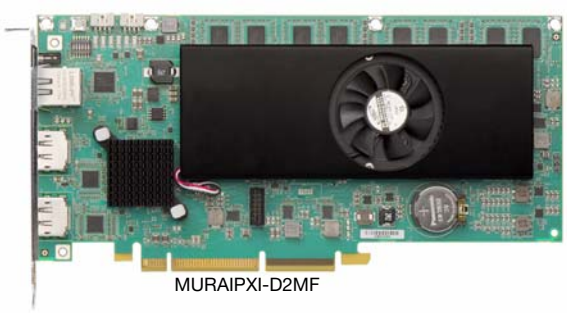
MURAIPXI-E2MF



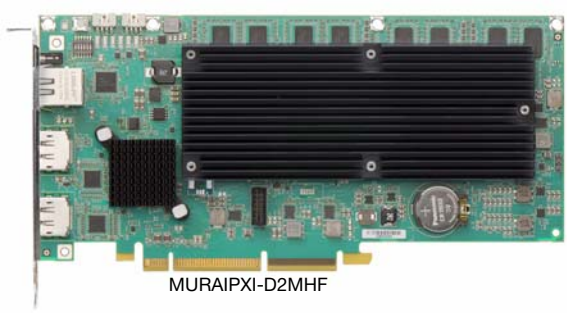
MURAIPXI-E2MHF

	MURAIPXI-E2MF	MURAIPXI-E2MHF
Part number	MURAIPXI-E2MF	MURAIPXI-E2MHF
Card type	PCIe ×16 2.0 (×16 mechanical, ×8 electrical)	PCIe ×16 2.0 (×16 mechanical, ×8 electrical)
Form factor	ATX	ATX
Connector	2× DisplayPort 1.2, 1x 100/1000 Base-T RJ45 Ethernet Port	2× DisplayPort 1.2, 1x 100/1000 Base-T RJ45 Ethernet Port
Memory	8 GB	8 GB
Output support	—	—
Input support	2× DisplayPort 1.2 + IP	2× DisplayPort 1.2 + IP
Decode support	Multi-channel 4K H.264	Multi-channel 4K H.264
Encode support	Multi-channel 4K H.264	Multi-channel 4K H.264
Power consumption	Typical: 24.6W @ 12V, 6.105W @ 3.3V, or 30.705W Total	Typical: 24.6W @ 12V, 6.105W @ 3.3V, or 30.705W Total
Weight	304g	268g
Dimensions	L: 9.02 in / W: 0.75 in / H: 4.38 in L: 22.91 cm / W: 1.91 cm / H: 11.13 cm	
Regulatory compliance	Class B: FCC, CE, RCM, VCCI, ICES-3, CSA, KC	

MURAIPXI-D2MF/MURAIPXI-D2MHF



MURAIPXI-D2MF

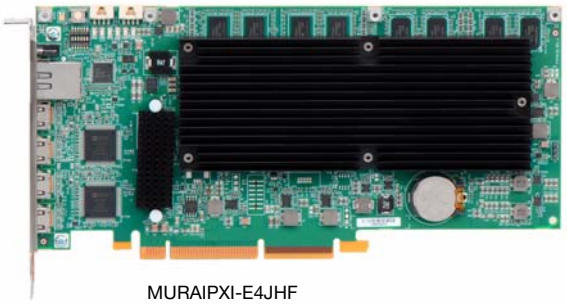


MURAIPXI-D2MHF

	MURAIPXI-D2MF	MURAIPXI-D2MHF
Part number	MURAIPXI-D2MF	MURAIPXI-D2MHF
Card type	PCIe ×16 2.0 (×16 mechanical, ×8 electrical)	PCIe ×16 2.0 (×16 mechanical, ×8 electrical)
Form factor	ATX	ATX
Connector	2× DisplayPort 1.2, 1x 100/1000 Base-T RJ45 Ethernet Port	2× DisplayPort 1.2, 1x 100/1000 Base-T RJ45 Ethernet Port
Memory	8 GB	8 GB
Output support	—	—
Input support	2× DisplayPort 1.2 + IP	2× DisplayPort 1.2 + IP
Decode support	Multi-channel 4K H.264	Multi-channel 4K H.264
Encode support	—	—
Power consumption	Typical: 24.6W @ 12V, 6.105W @ 3.3V, or 30.705W Total	Typical: 24.6W @ 12V, 6.105W @ 3.3V, or 30.705W Total
Weight	304g	268g
Dimensions	L: 9.02 in / W: 0.75 in / H: 4.38 in L: 22.91 cm / W: 1.91 cm / H: 11.13 cm	
Regulatory compliance	Class B: FCC, CE, RCM, VCCI, ICES-3, CSA, KC	

MURAIPXI-E4JF/MURAIPXI-E4JHF

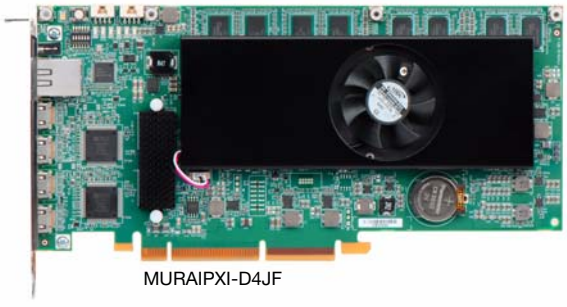
MURAIPXI-E4JF



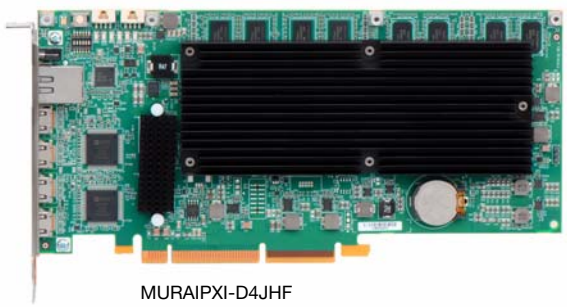
MURAIPXI-E4JHF

	MURAIPXI-E4JF	MURAIPXI-E4JHF
Part number	MURAIPXI-E4JF	MURAIPXI-E4JHF
Card type	PCIe ×16 2.0 (×8 2.0 electrically)	PCIe ×16 2.0 (×8 2.0 electrically)
Form factor	ATX	ATX
Connector	4x Mini HDMI (Type C), 1x 100/1000 Base-T RJ45 Ethernet Port	4x Mini HDMI (Type C), 1x 100/1000 Base-T RJ45 Ethernet Port
Memory	8 GB	8 GB
Output support	—	—
Input support	4× HDMI, IP	4× HDMI, IP
Decode support	Multi-channel 4K H.264	Multi-channel 4K H.264
Encode support	Multi-channel 4K H.264	Multi-channel 4K H.264
Power consumption	Typical: 24.6W @ 12V, 6.105W @ 3.3V, or 30.705W Total	Typical: 24.6W @ 12V, 6.105W @ 3.3V, or 30.705W Total
Weight	312g	278g
Dimensions	L: 9.02 in / W: 0.75 in / H: 4.38 in L: 22.91 cm / W: 1.91 cm / H: 11.13 cm	
Regulatory compliance	Class B: FCC, CE, RCM, VCCI, ICES-3, CSA, KC	

MURAIPXI-D4JF/MURAIPXI-D4JHF



MURAIPXI-D4JF



MURAIPXI-D4JHF

	MURAIPXI-D4JF	MURAIPXI-D4JHF
Part number	MURAIPXI-D4JF	MURAIPXI-D4JHF
Card type	PCIe ×16 2.0 (×8 2.0 electrically)	PCIe ×16 2.0 (×8 2.0 electrically)
Form factor	ATX	ATX
Connector	4x Mini HDMI (Type C), 1× 100/1000 Base-T RJ45 Ethernet Port	4x Mini HDMI (Type C), 1x 100/1000 Base-T RJ45 Ethernet Port
Memory	4 GB	4 GB
Output support	—	—
Input support	4× HDMI, IP	4× HDMI, IP
Decode support	Multi-channel 4K H.264	Multi-channel 4K H.264
Encode support	—	—
Power consumption	Typical: 24.6W @ 12V, 6.105W @ 3.3V, or 30.705W Total	Typical: 24.6W @ 12V, 6.105W @ 3.3V, or 30.705W Total
Weight	304g	268g
Dimensions	L: 9.02 in / W: 0.75 in / H: 4.38 in L: 22.91 cm / W: 1.91 cm / H: 11.13 cm	
Regulatory compliance	Class B: FCC, CE, RCM, VCCI, ICES-3, CSA, KC	

Hardware summary – Matrox C-Series

The Matrox C-Series family of products includes the following key features:

- Pair up to two (2) C-Series for up to 18 synchronized outputs
- High-resolution monitor support, including Full HD and 4K/UHD
- **C900** – maximum resolution of 1920 × 1080 @ 60 Hz per output
- **C680** – maximum resolution of 3840 × 2160 @ 60 Hz for 3 outputs or 3840 × 2160 @ 30 Hz for 6 outputs
- Low-cost video wall integration with six and nine-output card options
- OpenGL® 4.4, OpenCL™ 1.2, and Microsoft® DirectX 12 support enables latest professional applications
- Support for the following operating systems:
  - All professional, embedded, and standard versions of Windows® 10 and 7
  - Window® Server® 2016, 2008 R2, 2012 R2
  - Linux®
- Ideal for control rooms, operation centers, board rooms, and other mission critical environments as well as digital signage and presentation systems

Matrox C900

	Matrox C900
Part number	C900-E4GBF
Card type	PCIe ×16 3.0
Form factor	ATX
Connector	9x Mini HDMI
Memory	4 GB
Output support	9
Input support	—
Power consumption	75W Total
Weight	414g
Dimensions	L: 9.02 in / W: 0.75 in / H: 4.376 in L: 22.91 cm / W: 1.91 cm / H: 11.12 cm
Regulatory compliance	Class A: FCC, CE, RCM, VCCI, ICES-3, CSA, KC

Matrox C680

	Matrox C680
Part number	C680-E4GBF
Card type	PCIe ×16 3.0
Form factor	ATX
Connector	6x Mini DisplayPort™
Memory	4 GB
Output support	6
Input support	—
Power consumption	50W Total
Weight	302g
Dimensions	L: 6.60 in / W: 0.75 in / H: 4.045 in L: 16.76 cm / W: 1.91 cm / H: 10.27 cm
Regulatory compliance	Class B: FCC, CE, RCM, VCCI, ICES-3, CSA, KC

Why choose a validated platform?

Matrox display wall products are designed for control rooms, operation centers, and other mission critical environments that require stable, reliable, and durable solutions. Matrox display wall products work in numerous non-validated, COTS motherboards and systems, but only a select few of these off-the-shelf solutions can be thoroughly tested, verified, and validated by Matrox. Choosing a validated platform guarantees a high-quality solution to drive your display wall system.

Some of the key benefits of using a Matrox-validated platform include:

- **Optimized Performance** – Carefully selected by Matrox to ensure better performance, a validated platform guarantees that your display wall product will work at or close to optimum performance.
- **Extensive Validation Process** – Systems are put to the test by Matrox Engineering, QA, Sales, and Marketing departments. From development and testing to sales and product demos, our employees use these systems in various practices to monitor performance. Using a validated platform guarantees the same level of performance experienced by Matrox staff.
- **Easier Deployment** – Using an already validated system takes the guesswork out of building a display wall system. Integrators can use a validated platform to quickly and easily deploy solutions across a wide range of project sizes.
- **Faster Customer Support** – Customer support is faster, easier, and more precise because our technical support team is already familiar with the validated system you're using.
- **Uncompromised Compatibility** – Using a validated platform ensures that your display wall product has been thoroughly tested and verified for uncompromised compatibility.
- **Improved Reliability** – Systems validated by Matrox have guaranteed thermal and ventilation characteristics, resulting in better product longevity.

Platforms validated by Matrox

Matrox is constantly reviewing new systems and looking to validate new platforms across multiple price points. Any system suggestions are welcome. The following tables are summaries of the active list.

Validated systems

Validated System	Maximum number of boards supported per system
InoNet Magnius-II	2
Shuttle SH97R6	2
Trenton TVC3400	2
Trenton TVC4400	2
Dell® Precision™ Rack 7910	3
HP® Z420 Workstation	3
Dell® Precision™ 5810 Tower Workstation	4
Dell® Precision™ 5820 Tower Workstation	4
Delo Step-PC Professional VS-Series X79	4
HP® Z4 G4 Workstation	4
HP® Z440 Workstation	4
HP® Z640 Workstation	4
Lenovo ThinkStation P520	4
Trenton TVC2404	4
Advantech (AVS-540 with ASMB-815 MB)	6
HP® Z6 G4 Workstation	6

Validated System	Maximum number of boards supported per system
HP® Z620 Workstation	6
HP® Z8 Workstation	6
Seneca VWC-PLUS	7
Portwell® M8030	8
Trenton TVC4403 with TSB7053	9
Portwell® M9020B (with ROBO-8110A SHB)	10
Portwell® M9020B (with ROBO-8113VG2AR SHB)	10
Portwell® M9020B (with ROBO-8113VG2AR-Q170-KBL SHB)	10
Advantech (AVS-860)	11
Advantech (AVS-860 with PCE-5129 SHB)	11
Advantech (AVS-860 with PCE-7129 SHB)	11
Seneca VWC-PRO	12
Trenton TVC5402	12
Trenton TVC5402 (with TKL8255 SHB)	12
Trenton TVC5401 (with TSB7053 SHB)	16

Validated motherboards

Validated motherboard	Maximum number of boards supported per system
Advantech ASMB-785G4-00A1E	3
ASUS® WS C422 PRO/SE	4
ASUS® X99-A II	4
ASUS® X99-DELUXE II	4
ASUS® Z270-WS	4
ASUS® WS Z390 PRO	4
MSI X299 SLI PLUS	4
SUPERMICRO® C9Z390-PWG	4
SUPERMICRO® H11SS-i	4
Advantech ASMB-813I-00A1E	6
Advantech ASMB-815	6
ASUS® WS X299 SAGE	7
ASUS® WS C422 SAGE/10G	7
ASUS® WS C621E SAGE	7
ASUS® X99-E WS/USB 3.1	7
GIGABYTE™ MW51-HP0	7
Portwell® M9010A (with ROBO-8110A SHB)	10
Portwell® M9010A (with ROBO-8113-VG2AR SHB)	10
Portwell® M9010A (with ROBO-8113VG2AR-Q170-KBL SHB)	10
Advantech PCE-5B12 BP with PCE-7129/PCE-5129 SHB	11
Advantech PCE-5B19/PCE-5129	16
Advantech PCE-5B19/PCE-7129	16
Advantech PCE-5B19/PCE-5128	17

Validated PCIe expansion solution

Validated expansion solution	Maximum number of boards supported per system
Magma ExpressBox 3T	2

Validated chassis

Validated chassis	Currently supported motherboards
Advantech ACP-4000MB-00XE	▪ Advantech ASMB-815
Advantech HPC-7400	▪ Advantech ASMB-813I-00A1E
Advantech IPC-623	▪ Advantech PCE-5B19/PCE-5128 ▪ Advantech PCE-5B12/PCE-7127 ▪ Advantech PCE-5B12/PCE-5129 ▪ Advantech PCE-5B12/PCE-7129 ▪ Advantech PCE-5B19/PCE-5129 ▪ Advantech PCE-5B19/PCE-5129 ▪ Advantech PCE-7B17/PCE-7127
Chenbro RM41300-FS81	▪ ASUS® WS C422 PRO/SE ▪ ASUS® WS C422 SAGE/10G ▪ ASUS® WS C621E SAGE ▪ ASUS® WS X299 Sage ▪ ASUS® WS Z390 PRO ▪ ASUS® X99-A II ▪ ASUS® X99-DELUXE ▪ ASUS® X99-DELUXE II ▪ ASUS® X99-E WS/USB3.1 ▪ ASUS® Z270-WS ▪ GIGABYTE™ MW51-HP0 ▪ MSI X299 SLI PLUS ▪ SUPERMICRO® C9Z390-PGW ▪ SUPERMICRO® H11SSL-i
iStarUSA® D-400-2F80	▪ ASUS® WS C422 PRO/SE ▪ ASUS® WS C422 SAGE/10G ▪ ASUS® WS C621E SAGE ▪ ASUS® WS X299 SAGE ▪ ASUS® WS Z390 PRO ▪ ASUS® X99-A II ▪ ASUS® X99-Deluxe ▪ ASUS® X99-DELUXE II ▪ ASUS® X99-E WS/USB3.1 ▪ ASUS® Z270-WS ▪ GIGABYTE™ MW51-HP0 ▪ MSI X299 SLI PLUS ▪ SUPERMICRO® C9Z390-PGW ▪ SUPERMICRO® H11SSL-i

Validated chassis	Currently supported motherboards
iStarUSA D-400L-7	▪ ASUS® WS C422 PRO/SE ▪ ASUS® WS C422 SAGE/10G ▪ ASUS® WS C621E SAGE ▪ ASUS® WS X299 Sage ▪ ASUS® WS Z390 PRO ▪ ASUS® X99-A II ▪ ASUS® X99-DELUXE II ▪ ASUS® X99-E WS/USB3.1 ▪ ASUS® Z270-WS ▪ GIGABYTE™ MW51-HP0 ▪ MSI X299 SLI PLUS ▪ SUPERMICRO® C9Z390-PGW ▪ SUPERMICRO® H11SSL-i
NORCO RPC-432	▪ ASUS® WS C422 PRO/SE ▪ ASUS® WS Z390 Pro ▪ SUPERMICRO® C9Z390-PGW
Portwell 10 slot chassis	▪ PBPE-11A-MT (BP) / ROBO-8110A (SHB) ▪ PBPE-11A-MT (BP) / ROBO-8113VG2AR (SHB)
Rackmaster 20 slot chassis	▪ Advantech PCE-5B19 (BP)/PCE-5128 (SHB) ▪ Advantech PCE-5B19 (BP)/PCE-5129 (SHB) ▪ Advantech PCE-5B19 (BP)/PCE-7129 (SHB) ▪ Advantech PCE-5B12 (BP)/PCE-7127 (SHB) ▪ Advantech PCE-5B12 (BP)/PCE-5129 (SHB) ▪ Advantech PCE-5B12 (BP)/PCE-7129 (SHB)
SUPERMICRO® SuperChassis 842XTQ-R606B	▪ ASUS® WS C422 PRO/SE ▪ ASUS® WS X299 Sage ▪ ASUS® X99-A II ▪ ASUS® X99-DELUXE ▪ ASUS® X99-DELUXE II ▪ ASUS® X99-E WS ▪ ASUS® X99-E WS / ASUS® X99-E WS/USB 3.1 ▪ ASUS® Z270-WS ▪ ASUS® Z87 WS ▪ GIGABYTE™ MW51-HPO ▪ MSI X299 SLI PLUS

C-Series system requirements

For C-Series based display walls (with or without Mura IPX Series cards), the demands and requirements of a system are more generic than for Mura MPX Series based display walls. To use as a C-Series based display wall, a system ***must*** meet the following requirements:

- The system must be properly ventilated and the Mura IPX Series and C-Series cards must not exceed the maximum allowed temperature. For more information, see "System ventilation", page 185.
- A system with a QPI based architecture has poor peer-to-peer bandwidth. Support for intercard transfers should be limited to cards installed on the same segment of the QPI bus. It shouldn't cross over the QPI bus due to limited bandwidth available over the QPI interface. For more information, see "A word about system architectures", page 190.
- Mura IPX Series cards used in a non-validated system ***must*** have a fansink.

Validated systems

The following systems have been validated by Matrox to work with Matrox Mura MPX Series, Mura IPX Series, C900, and C680 products.

> **Note:** For Windows 7 installation, make sure your Mura system is in Legacy BIOS mode (MBR drive format). If your system came with UEFI mode (GPT drive format), make sure the Compatibility Support Module (CSM) is enabled to use the Legacy BIOS mode.

Before you begin

To ensure optimal performance, read the following guidelines before installing your Matrox graphics hardware.

Mura MPX Series based video wall system

> **Note:** If graphics hardware is built into the motherboard of your system, you need to disable it in Windows® Device Manager on Mura MPX Series based video wall systems. For more information, see your system manual or Windows help.

> **Note:** 7th generation desktop processors are unsupported for Mura MPX Series based controllers.

> **Note:** Always insert your ***Mura MPX-4/4***, ***MPX-4/2***, ***MPX-4/0***, and ***Mura IPX Series*** cards in the ***PCIe® 2.0/3.0 ×16*** slots (×16 or ×8 electrical). All other Mura cards can be inserted in PCIe ×4 slots if no other PCIe ×16 slot is available.
>
> Mura MPX Series based video wall system ***MUST*** use Matrox validated platforms.

> **Note:** The ribbon cables for framelock are currently unsupported with Mura IPX Series.

- **Mura MPX-4/4, MPX-4/2, MPX-4/0, and Mura IPX Series** – Insert these cards in the PCIe ×16 slots that are ×16/×8 electrical.
- **Console display** – To add a console display to your Mura Series based system, you can use the following graphics cards in a PCIe ×4, ×8, or ×16 slot:
  - Matrox M9148 LP PCIe ×16 (P/N: M9148-E1024LAF)*
  - Matrox M9140 LP PCIe ×16 (P/N: M9140-E512LAF)*
  - Matrox M9138 LP PCIe ×16 (P/N: M9138-E1024LAF)*
  - Matrox M9128 LP PCIe ×16 (P/N: M9128-E1024LAF)*
  - Matrox M9125 PCIe ×16 (P/N: M9125-E512F)*
  - Matrox M9120 Plus LP PCIe x16 (P/N: M9120-E512LPUF)*
  - Matrox M9120 Plus LP PCIe x1 (P/N: M9120-E512LAU1F)*
  - Matrox M9120 PCIe ×16 (P/N: M9120-E512F)*
  - Matrox P690 PCIe ×16 (P/N: P69-MDDE128F)
  - Matrox P690 Plus LP PCIe ×16 (P/N: P69-MDDE256LAUF)
- **Mura MPX-V16, MPX-V8, and MPX-SDI** – Insert these cards in the PCIe ×4 slot.

* Supported with Mura display wall drivers version 3.01 or later

Supported configurations

- Multiple Mura MPX Series cards
- Multiple Mura MPX Series and multiple Mura IPX Series cards

C900/C680 based video wall system

> **Note:** Always insert your ***C900*** and ***C680*** in the ***PCIe® 2.0/3.0 ×16*** slots and your ***Mura IPX Series*** cards in the ***PCIe® 2.0/3.0 ×16 or ×8*** slots (×16 or ×8 electrical). All other Mura cards can be inserted in PCIe ×4 slots if no other PCIe ×16 slot is available.

> **Note:** To avoid possible problems, we recommend you use only Matrox PowerDesk software to change your display settings. Third party console displays can only be used in independent mode.

> **Note:** The ribbon cables for framelock are currently unsupported with Mura IPX Series

- **C-Series and Mura IPX Series** – Insert these cards in the PCIe ×16 slots that are ×16/×8 electrical.
- **Console display** – To add a console display to your C-Series based system, you can use the following graphics cards in a PCIe ×4 slot:
  - Matrox M9148 LP PCIe ×16 (P/N: M9148-E1024LAF)
  - Matrox M9140 LP PCIe ×16 (P/N: M9140-E512LAF)
  - Matrox M9138 LP PCIe ×16 (P/N: M9138-E1024LAF)
  - Matrox M9128 LP PCIe ×16 (P/N: M9128-E1024LAF)
  - Matrox M9125 PCIe ×16 (P/N: M9125-E512F)
  - Matrox M9120 Plus LP PCIe ×16 (P/N: M9120-E512LPUF)
  - Matrox M9120 Plus LP PCIe ×1 (P/N: M9120-E512LAU1F)
  - Matrox M9120 PCIe ×16 (P/N: M9120-E512F)
  - Intel® HD Graphics 530 (onboard)
  - Intel® HD Graphics 630 (onboard)
  - NVIDIA® NVS 510
  - NVIDIA® NVS 310
  - NVIDIA® Quadro P400

Supported configurations

- Up to 2 × C900
- Up to 2 × C900 and multiple Mura IPX Series capture cards
- Up to 2 × C680
- Up to 2 × C680 and multiple Mura IPX Series capture cards
- 1× C900 and 1× C680. In this configuration, the outputs between C900 and C680 cards aren't framelocked.
- 1× C900, 1× C680, and multiple Mura IPX Series capture cards. In this configuration, the outputs between C900 and C680 cards aren't framelocked.

Third party based video wall system

> **Note:** Always insert your ***third party graphics hardware*** in the ***PCIe® 2.0/3.0 ×16*** slots and your ***Mura IPX Series*** cards in the ***PCIe® 2.0/3.0 ×16 or ×8*** slots (×16 or ×8 electrical).

Supported configurations

- NVIDIA® M4000 + NVIDIA sync card + multiple Mura IPX Series 4K capture cards
- NVIDIA® M6000 + multiple Mura IPX Series 4K capture cards
- Intel® HD Graphics 530 graphics hardware + multiple Mura IPX Series 4K capture cards
- Intel® HD Graphics 630 graphics hardware + multiple Mura IPX Series 4K capture cards
- NVIDIA® P4000 + multiple Mura IPX series 4K capture cards
- NVIDIA® P5000 + multple Mura IPX Series 4K capture cards
- NVIDIA® P6000 + multple Mura IPX Series 4K capture cards
- AMD WX7100 + multple Mura IPX Series 4K capture cards
- AMD WX9100 + multiple Mura IPX Series capture cards

For the latest list of supported third party graphics hardware, see the release notes for your Mura display wall driver.

> **Note:** Optional power supply may be required for maximum support of third party graphics hardware.

> **Note:** If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware.

> **Note:** Mura IPX Series cards leverage DirectX under Windows and OpenGL under Linux. Therefore, Matrox doesn't foresee any compatibility issues with other third party graphics brands and models or other configurations not mentioned above. Although Matrox strives to test a wide variety of setups and configurations of the most common use-cases, it's impossible to test all possible setups and configurations. If you're having any issues with the setup of your third party graphics + Mura IPX Series configuration, we recommend first removing all Mura IPX Series cards to verify the stability of the isolated third party graphics configuration. If you have any questions or a request for a specific brand and model to be tested, contact us at DWCSupport@matrox.com.

Currently supported systems

The following validated systems are currently supported. For a list of systems that are EOL (End of Life), see page 74.

Advantech (AVS-540 with ASMB-815 MB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	6
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	5
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	5
Maximum supported C900/C680	2
Motherboard	ASMB-815
PCIe expansion slots	▪ 2 PCIe x16 3.0 slots (x16 mechanical, x8/x16 electrical) ▪ 3 PCIe x8 3.0 slot (x8 mechanical, x8 electrical) ▪ 1 PCIe x4 3.0 slot (x4 mechanical, x4 electrical)
Chipset	Intel C620
Processor	Intel Xeon Scalable Processors (Xeon Silver / 4112 @ 2.6 GHz)
System memory	16 GB DDR4 ECC-RDIMM 2400 MHz
System BIOS version	Core version: 5.0.1.2 0.75 X64 Project version: S8150000060X022
Power supply	700W 80 plus single power supply
Chassis	4U

Notes	▪ If you plan on using local USB keyboard/mouse, you must add a PCI USB controller. Using the onboard USB controller may result in erratic USB behavior.
	▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware.
	▪ In the system BIOS, select **Socket Configuration** → **IIO Configuration**, change the following from **[Auto]** to **[x8x8]**:
	  ▪ IOU0 (IIO PCIe Br1) [x8x8]
	  ▪ IOU1 (IIO PCIe Br2) [x8x8]
	  ▪ IOU2 (IIO PCIe Br3) [x8x8]
	▪ In the system BIOS, select **Advanced** → **PCI Subsystem Settings**, make sure **Above 4G** is disabled.
	▪ With all slots populated, there could be a performance drop in the data transferred from a Mura IPX Series input to a graphics card. This may reduce the number of source frames successfully transferred from a Mura IPX Series input to a graphics card. For more information, please contact Matrox Display Wall Technical Support team at dwcsupport@matrox.com.
	▪ Installing full length cards on PCIEx4 _SLOT2 and PCIEx8_SLOT3 will obstruct access to the SATA6 and SATA7 connectors on the motherboard.
	▪ The chassis fans must remain at full speed.

* Maximum of 1 console per system.

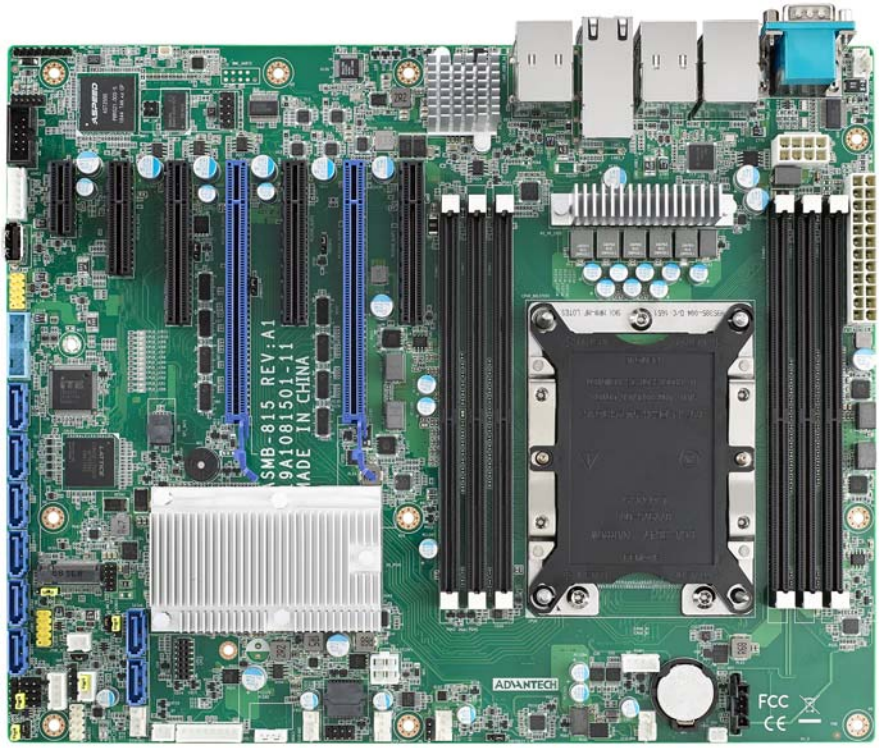
Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX1_Slot1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIEX4_Slot2	Console Display	F	Console Display	E	Empty (Unusable)	

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIEX8_Slot3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
PCIEX16_Slot 4	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIEX8_Slot5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PCIEX16_Slot 6	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIEX8_Slot7	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Advantech (AVS-860)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes (Requires Mura driver version 3.01 or later)	Yes (Requires Mura drivers version 2.09 or newer)	Yes (Requires Mura drivers version 2.09 or newer)	No foreseeable compatibility issues

Maximum number of cards supported	11
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	10
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	10
Maximum supported C900/C680	2
Motherboard	PCE-7127/PCE-5128 (SHB), PCE-5B12-00A1 (Backplane)
PCIe expansion slots	▪ 10 PCIe ×16 2.0 slots (×16 mechanical, ×16 electrical) ▪ 1 PCIe ×16 2.0 slot (×16 mechanical, ×4 electrical)
Chipset	▪ Intel® C216 (PCE-7127) ▪ Intel® Q87 (PCE-5128)
Processor	▪ Intel® Xeon® E3-1275 V2, 3.50 GHz (PCE-7127) ▪ Intel® Core™ i7-4770S, 3.10 GHz (PCE-5128)
System memory	4 GB DDR3, 1333 MHz
System BIOS	▪ Core version: 4.6.5.3 0.18 x64 (PCE-7127) Project version: PCE 7127X005 ▪ Core version: 4.6.5.4 0.35 x64 (PCE-5128) Project version: PCE 5128XH01
Power supply	800W redundant Optional power supply required for maximum support of third party graphics hardware.
Chassis	6U rack mount
Notes	▪ If you're inserting a P690 card (to use as a console display) in the slot labeled **PPCIEx4_1**, make sure the PCIe root port 1 of the ASPM settings is disabled. To disable ASPM, in the system BIOS, go to **Advanced → PCI Subsystem Settings → PCI Express Settings → ASPM Support**. ▪ Once the Mura cards are installed in the system, install the hold down clamp. Make sure to insert the rubber foot to secure the cards into position. It's there to protect the cards against shock and vibration. For more information, see the system / chassis manual. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ The chassis fans must remain at full speed.

* Maximum of 1 console display per system.

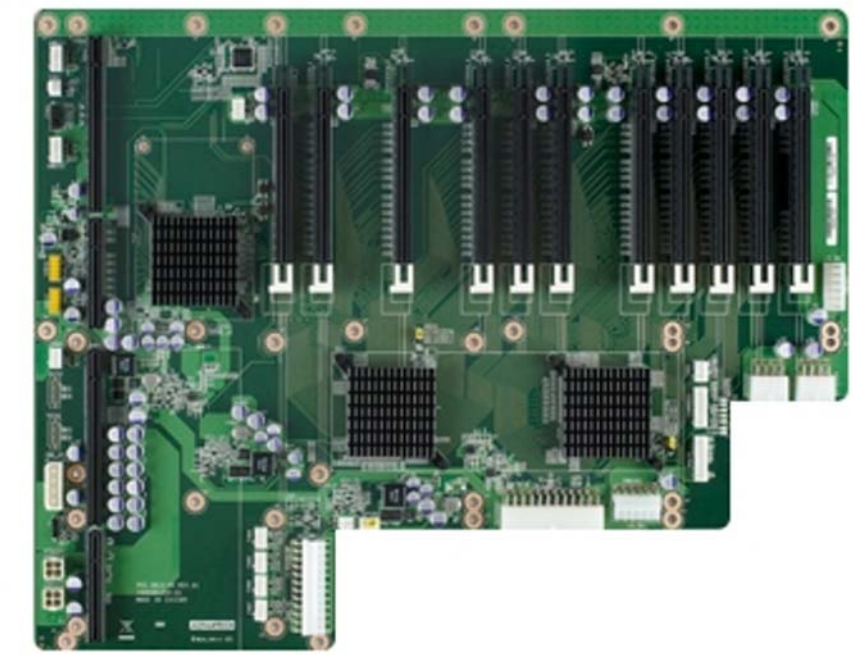
Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
P1PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
P1PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P1PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
P1PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P1PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P2PCIEX16_1	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PPCIEX4_1	Console display	F	Console display	E	Empty (Unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Advantech (AVS-860 with PCE-5129 SHB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes (Requires Mura driver version 3.01 or later)	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	11
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	10
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	10
Maximum supported C900/C680	2
Motherboard	PCE-5129 (SHB), PCE-5B12-00A1 (Backplane)
PCIe expansion slots	▪ 10 PCIe ×16 2.0 slots (×16 mechanical, ×16 electrical) ▪ 1 PCIe ×16 2.0 slot (×16 mechanical, ×4 electrical)
Chipset	Intel® Q170
Processor	Intel® Core™ i7-6770S, 3.40 GHz
System memory	16 GB DDR4
System BIOS version	Core version: 5.0.1.2.0.20 ×64 Project version: 5129000QF60F201
Power supply	800W redundant Optional power supply required for maximum support of third party graphics hardware.
Chassis	6U rack mount
Notes	▪ Once the Mura cards are installed in the system, install the hold down clamp. Make sure to insert the rubber foot to secure the cards into position. It's there to protect the cards against shock and vibration. For more information, see the system / chassis manual. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ The chassis fans must remain at full speed.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P1PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
P1PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P1PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
P1PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P1PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_1	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P2PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PPCIEX4_1	Console display	F	Console display	E	Empty (Unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

Advantech (AVS-860 with PCE-7129 SHB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes (Requires Mura driver version 3.01 or later)	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	11
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	10
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	10
Maximum supported C900/C680	2
Motherboard	PCE-7129 (SHB), PCE-5B12-00A1 (Backplane)
PCIe expansion slots	▪ 10 PCIe ×16 2.0 slots (×16 mechanical, ×16 electrical) ▪ 1 PCIe ×16 2.0 slot (×16 mechanical, ×4 electrical)
Chipset	Intel® C236
Processor	Intel® Core™ i7-6770S, 3.40 GHz
System memory	32 GB DDR4
System BIOS version	Core version: 5.0.1.2.0.20 ×64 Project version: 7129000CF60E201
Power supply	800W redundant Optional power supply required for maximum support of third party graphics hardware.
Chassis	6U rack mount
Notes	▪ Once the Mura cards are installed in the system, install the hold down clamp. Make sure to insert the rubber foot to secure the cards into position. It's there to protect the cards against shock and vibration. For more information, see the system / chassis manual. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ The chassis fans must remain at full speed.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P1PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
P1PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P1PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
P1PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P1PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_1	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P2PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PPCIEX4_1	Console display	F	Console display	E	Empty (Unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

Dell® Precision™ Rack 7910

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	3

PCIe expansion slots	▪ **Riser 1**:
	  ▪ Slot 1 – One half-height, low-profile ×8 link
	  ▪ Slot 2 – One half-height, low-profile ×8 link
	  ▪ Slot 3 – One half-height, low-profile ×8 link
	▪ **Riser 2**:
	  ▪ Slot 4 – One full-height, full-length ×16 link (Note: To use slots 1 to 4, make sure both processors are installed.)
	  ▪ Slot 5 – One full-height, full-length ×16 link
	▪ **Riser 3 (Default)**:
	  ▪ Slot 6 – One full-height, full-length ×16 link
	  ▪ Slot 7 – One full-height, full-length ×16 link
	▪ **Riser 3 (Alternate for GPU)**:
	  ▪ Slot 6 – One full-height, full-length ×16 link

Chipset	Intel® C612
Processor	Intel® Xeon® E5-2609 processor V3, 1.9 GHz
System memory	8 GB DDR4
System BIOS version	1.4.3
Power supply	1100W
Expansion slot configuration	▪ Insert the two Mura MPX-4/4 cards in the slots labeled **SLOT6_G3_x8(CPU1)PCIe3x16** and **SLOT7_G3_x8(CPU1)** of **Riser 3**. ▪ Insert the Mura MPX-V16 card in the slot labeled **SLOT5_G3_x8(CPU1)** of **Riser2**.
Notes	▪ In the system BIOS, go to **Integrated Devices**, and set **Memory mapped I/O above 4GB** to **Disabled**. ▪ To add the ribbon cables (for framelock), remove the plastic casing on the system close to the Mura MPX-4/4 cards. You can replace the plastic casing when you're done.

Dell® Precision™ 5810 Tower Workstation

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	4
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	2
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	2
Maximum supported C900/C680	2
Chipset	Intel® C612
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots (×16 mechanical and electrical) ▪ 1 PCIe ×16 3.0 slot (×16 mechanical, ×4 electrical) ▪ 1 PCIe ×4 2.0 slot ▪ 1 PCIe ×1 2.0 slot
Processor	Intel® Xeon® E5-1620 processor V3, 3.5 GHz
System memory	8 GB DDR4
System BIOS version	A06
Power supply	685W
Notes	▪ If the build date of your Mura MPX-4/4, MPX-4/2, or MPX-4/0 card is before March 1, 2015, your card requires a firmware update to work with this specific system. You can find the build date of your Mura card on the backside of the card and on the product box. Please contact DWC support to update your card, if applicable. ▪ Due to mechanical conflict with RAM cooling cover, a full-length card can't be placed on the PCIe ×8 slot close to the RAM. If your console display is a full-length card, use PCIe ×4 slot instead

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
SLOT1_PCIe3x16	Console display	F	Console display	E	Empty	
SLOT2_PCIe3x16	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
SLOT3_PCIe2x1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
SLOT4_PCIe3x16	MURAIPXI-D4JF	A, C	Mura MPX-4/4	B, D	MURAIPXI-D4JF	A
SLOT5_PCIe2x4	Empty		Mura MPX-V8	D	Empty	
SLOT1_PCI	Empty		Empty		Empty	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8

Option	Product
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Dell® Precision™ 5820 Tower Workstation

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	4
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	3
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	2
Maximum supported C900/C680	2
Chipset	Intel® C422
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots (×16 mechanical and electrical) ▪ 1 PCIe ×16 3.0 slot (×16 mechanical, ×8 electrical) ▪ 1 PCIe ×16 3.0 slot (×16 mechanical, ×4 electrical)
Processor	Intel® Xeon® W-2102 CPU, 3.5 GHz
System memory	16 GB
System BIOS version	Dell Inc. 1.11.1, 2019-04-24
Power supply	425W

Notes	▪ In the system BIOS → **Thermal config**, make sure the following are configured properly:
	  ▪ **Thermal mode** → **Auto**
	  ▪ **PCIe Zone** → at least **25%**.
	  ▪ **CPU/Memory Zone** → at least **25%**.
	▪ In the system BIOS → **Advanced Configurattions** → **ASPM** → **Disabled.**
	▪ No console support with C-Series controllers.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIe3 X8_Slot1	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PCIe3 X16_Slot2	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIe3 X1_Slot3	Empty (Unusable)				Empty (Unusable)	
PCIe3 X16_Slot4	C680	A, C	Mura MPX-4/4	A, B, D	Third-party graphics hardware	A
PCIe3 X4_Slot5	Empty		Console display	E	Empty	
PCI_Slot6	Empty				Empty	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8

Option	Product
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

HP® Z4 G4 Workstation

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	No	No	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	4
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	2 (Only Mura IPX Series)
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	1 (Only console)
Maximum supported C900/C680	2
PCIe expansion slots	▪ 2 PCIe x16 3.0 slots (x16 mechanical and electrical) ▪ 1 PCIe x8 3.0 slots (x16 mechanical, x8 electrical) ▪ 2 PCIe x4 3.0 slot
Chipset	Intel® C422
Processor	Intel® Xeon W-2135 CPU @ 3.70 GHz
System memory	32 GB DDR4
System BIOS version	P61 v01.61
Power supply	750W
Notes	▪ In the system BIOS → **Advanced** → **Built-IN Device options** → **Increase idle fan speed** → **100%.**

* Maximum of 1 console per system.

Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
PCIe3X16_ Slot1	C680	C	—		Third party graphics hardware	
PCIe3X4_ Slot2	Console display	F	—		Empty (Unusable)	
PCIe3X16_ Slot3	C680	A, C	—		Third party graphics hardware	A
PCIe3X4_ Slot4	Empty (Unusable)		—		Empty (Unusable)	
PCIe3X8_ Slot5	MURAIPXI-D4JF	A	—		MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16 , Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

HP® Z420 Workstation

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	3
Available PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots (×16 mechanical and electrical) ▪ 1 PCIe ×8 3.0 slot (×8 mechanical and electrical) ▪ 1 PCIe ×8 2.0 slot (×8 mechanical, ×4 electrical) ▪ 1 PCIe ×4 2.0 slot (×4 mechanical, ×1 electrical)
Chipset	Intel® C602
Processor	Intel® Xeon® E5-1607, 3.00 GHz Quad Core
System memory	6 GB UDDR3
System BIOS version	J61 V03.15
Power supply	600W
Notes	A ribbon cable is required to framelock two Mura cards (P/N: F16279-00). For more information, contact your Matrox representative.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
1 PCIe2 x4 (1)	—		Empty		—	
2 PCIe3 x16	—		Mura MPX-4/4	B	—	
3 PCIe2 x8 (4)	—		Empty		—	
4 PCIe3 x8	—		Mura MPX-V16	D	—	
5 PCIe3 x16	—		Mura MPX-4/4	A, B	—	
6 PCI 32/33	—		Empty (Unusable)		—	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

HP® Z440 Workstation

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	4
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	3
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	3
Maximum supported C900/C680	2
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots (×16 mechanical and electrical) ▪ 1 PCIe ×8 3.0 slot (×16 mechanical, ×8 electrical) ▪ 1 PCIe ×4 2.0 slot (×8 mechanical, ×4 electrical) ▪ 1 PCIe ×1 2.0 slot (×4 mechanical, ×1 electrical)
Chipset	Intel® C612
Processor	Intel® Xeon® CPU E5-1603 v3, 2.80 GHz
System memory	16 GB DDR4
System BIOS version	V02.34
Power supply	700W
Notes	▪ In the system BIOS, go to **Settings** → **Power Management** → **Fan Speed Control**, then select **Medium**. ▪ If your Mura MPX-4/4, MPX-4/2, or MPX-4/0 card build date is before March 1, 2015, your card requires a firmware update to work with this specific system. You can find the build date of your Mura card on the backside of the card and on the product box. Please contact DWC support to update your card, if applicable.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIe2 x1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIe3 x16	C680	A, C	Mura MPX-4/4	B	Third party graphics hardware	
PCIe2 x4	Console display	F	Console display	E, D	Empty (unusable)	
PCIe3 x8	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIe3 x16	MURAIPXI-D4JF	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCI 32/33	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8

Option	Product
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

HP® Z6 G4 Workstation

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	6
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	3
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	5
Maximum supported C900/C680	2
PCIe expansion slots	▪ 2 PCIe x16 3.0 slots (x16 mechanical and electrical) ▪ 1 PCIe x8 3.0 slots (x16 mechanical, x8/x4 electrical) ▪ 3 PCIe x4 3.0 slot
Chipset	Intel C622
Processor	Intel Xeon Gold 5122 CPU @ 3.6 GHz
System memory	16 GB RDDR4 ECC
System BIOS version	P60 v01.42 02/26/2018
Power supply	700W
Notes	▪ In the system BIOS, select **Advanced** → **Built-In Device options**, and make sure **Idle fan speed** is set to **100%**. ▪ In the system BIOS, select **Advanced** → **System Options** → **PCIe MMIO Assignment mode**, then select **32 bit** with Mura MPX Series based controllers. ▪ In the system BIOS, select **Advanced** → **System Options** → **PCIe MMIO Assignment mode**, then select **Auto** with C-Series or third party based controllers. ▪ To ensure slot4 remains x8 electrical, don't install the SSD in the second M.2 slot.

* Maximum of 1 console per system.

Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
PCIe3 X4_Slot1	Empty (unusable)		Mura MPX-V8	D	Empty (Unusable)	
PCIe3 X16_Slot2	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIe3 X4_Slot3	Console display	F	Console display	D,E	Empty (Unusable)	
PCIe3 X8_Slot4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A,B,D	MURAIPXI-D4JF	A
PCIe3 X16_Slot5	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIe3 X4_Slot6	Empty (unusable)		Mura MPX-V8	D	Empty (unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680

Option	Product
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

HP® Z620 Workstation

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	3
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots ▪ 1 PCIe ×8 3.0 slot ▪ 1 PCIe ×8 2.0 slot (×8 mechanical, ×4 electrical) ▪ 1 PCIe ×4 2.0 slot (×4 mechanical, ×1 electrical)
Chipset	Intel® C602
Processor	Intel® Xeon® E5-2640, 2.50 GHz
System memory	12 GB ECC DDR3
System BIOS version	V3.93
Power supply	800W
Notes	▪ A ribbon cable is required to framelock two Mura cards (P/N: F16279-00). For more information, contact your Matrox representative. ▪ To remove one of the two cards, remove the module that houses the second CPU. This module hides the board retaining clip.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
1 PCIe2 x4 (1)	—		Empty (Unusable)		—	
2 PCIe3 x16	—		Mura MPX-4/4	B	—	
3 PCIe2 x8 (4)	—		Console display		—	
4 PCIe3 x8	—		Mura MPX-V8	D, E	—	
5 PCIe3 x16	—		Mura MPX-4/4	A, B	—	
6 PCI 32/33	—		Empty (Unusable)		—	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

HP® Z640 Workstation

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	4
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	4
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	3
Maximum supported C900/C680	2
PCIe expansion slots	▪ 2 PCIe 3.0 slots (×16 mechanical, ×16 electrical) ▪ 1 PCIe 3.0 slot (×16 mechanical, ×8 electrical) ▪ 1 PCIe 2.0 slot (×16 mechanical, ×4 electrical) ▪ 1 PCIe 2.0 slot (×16 mechanical, ×1 electrical)
Chipset	Intel® C612
Processor	Intel® Xeon® E5-2640 v.3, 2.60 GHz, Dual CPU
System memory	16 GB DDR4
System BIOS version	v02.48
Power supply	925W
Notes	In the system BIOS, go to **Advanced** → **Power Options**. Under **Thermal Options**, set **Fan Idle Mode** to ***.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIe2 x1	Empty (unusable)		Empty (unusable)		Empty (unusable)	
PCIe3 x16	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	
PCIe2 x4	Console display	F	Console display	E	Empty (unusable)	
PCIe3 x8	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIe3 x16	MURAIPXI-D4JF	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCI 32/33	Empty (unusable)		Empty (Unusable)		Empty (unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16 , Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

HP® Z8 Workstation

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	No	No	Yes	Yes (Requires 3.03 or later)	No foreseeable compatibility issues

Maximum number of cards supported	6
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	4 (Only Mura IPX Series)
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	1 (only console)
Maximum supported C900/C680	2
PCIe expansion slots	▪ 4 PCIe ×16 3.0 slots (×16 mechanical and electrical) ▪ 1 PCIe ×8 3.0 slots (×16 mechanical, ×8/×4 electrical) ▪ 2 PCIe ×4 3.0 slot
Chipset	Intel® C622
Processor	Intel® Xeon Gold 6146 Dual CPU @ 3.20 GHz
System memory	32 GB DDR4 ECC Reg
System BIOS version	P60 v01.71, 11/5/2018
Power supply	1125W
Notes	▪ In the system BIOS, select **Advanced** → **Built-IN Device options**, then increase idle fan speed to **100%**. ▪ The second CPU must be populated for slot 3 and slot 6 to be available. ▪ In the system BIOS, select **Advanced** → **Port Options**, then make sure **Serial Port A** is disabled.

* Maximum of 1 console per system.

Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
PCIe3 X8_Slot1	MURAIPXI-D4JF	A	—		MURAIPXI-D4JF	A
PCIe3 X16_Slot2	C680	C	—		Third party graphics hardware	
PCIe3 X16_Slot3	MURAIPXI-D4JF	A	—		Third party graphics hardware	A
PCIe3 X16_Slot4	MURAIPXI-D4JF	A	—		Third party graphics hardware	A
PCIe3 X4_Slot5	Empty (unusable)		—		Empty (unusable)	
PCIe3 X16_Slot6	C680	A, C	—		Third party graphics hardware	A
PCIe3 X4_Slot7	Console	F	—		Empty (unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680

Option	Product
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

InoNet Magnius-II

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	2
Motherboard	Advantech ASMB-785G4-00A1E
PCIe expansion slots	▪ 2 PCIe ×16 2.0 slots ▪ 1 PCIe ×4 2.0 slot ▪ 1 PCIe ×1 2.0 slot
Chipset	Intel® C206
Processor	Intel® Xeon® E3-1200 processor
System memory	8 GB DDR3
System BIOS version	1.1
Power supply	500W redundant
Performance considerations	▪ 1 card → ×16 (use the slot labeled **PCIE6**) ▪ 2 cards → ×8 (switch to ×8 when slot labeled **PCIE4** is used)

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCI1	—		Empty (Unusable)		—	
PCI2	—		Empty (Unusable)		—	
PCIE3	—		Mura MPX-V8	D	—	
PCIE4	—		Mura MPX-4/4	A, B, D	—	
PCI5	—		Empty (Unusable)		—	
PCIE6	—		Mura MPX-4/4	A, B, D	—	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Lenovo ThinkStation P520

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	4
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	3
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	2
Maximum supported C900/C680	2
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots ▪ 1 PCIe ×8 3.0 slot (open ended) ▪ 2 PCIe ×4 3.0 slot
Chipset	Intel® C422
Processor	Intel® Xeon W 2123 CPU @ 3.60 GHz
System memory	16 GB
System BIOS version	Lenovo S03KT25A, 3/20/2019
Power supply	690W
Notes	▪ In the system BIOS, select **POWER → Fan Control Stepping → 7- Higher Fan Speed.** ▪ In the system BIOS, select **ADVANCE → PCIE/PCI settings → M.2 Slot 1 status → PCIE Port → Disable.** ▪ In the system BIOS, select **ADVANCE → PCIE/PCI settings → M.2 Slot 2 status → PCIE Port → Disable.** ▪ **C-Series or third party based controllers –** In the system BIOS, select **STARTUP → CSM → Disable.** ▪ **C-Series or third party based controllers –** In the system BIOS, select **ADVANCE → PCIE/PCI settings → Above 4G Decoding → Enable.** ▪ **Mura MPX Series based controllers** – In the system BIOS, select **Boot Mode → Legacy only.** ▪ **Mura MPX Series based controllers** – In the system BIOS, select **STARTUP → CSM → Enable.** ▪ **Mura MPX Series based controllers** – In the system BIOS, select **STARTUP → CSM → Set Network, Storage, Video & Other PCI devices → Legacy.** ▪ **Mura MPX Series based controllers** – In the system BIOS, select **ADVANCE → PCIE/PCI settings → Above 4G Decoding → Disable.**

* Maximum of 1 console per system.

Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
PCIe3 X8_Slot1	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PCIe3 X16_Slot2	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIe3 X4_Slot3	Console display	F	Console display	E	Empty (unusable)	
PCIe3 X16_Slot4	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCI_Slot5	Empty (unusable)		Empty (unusable)		Empty (unusable)	
PCIe3 X4_Slot3	Empty (unusable)		Empty (unusable)		Empty (unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Portwell® M8030

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	8
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	8
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	See Notes for console support
Maximum supported C900/C680	2
Motherboard	Portwell PBPE-09A-MT (Backplane), ROBO-6911VG2AR (SHB)
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots (×16 mechanical and electrical) ▪ 6 PCIe ×16 3.0 slots (×16 mechanical, ×8 electrical)
Chipset	Intel® C236
Processor	Intel® i7-6700 CPU @ 3.40 GHz
System memory	16 GB
System BIOS version	90821T00 (2019/08/21)
Power supply	950W Redundant
Chassis	4U rackmount

Notes	▪ **C-Series based Controllers** – In the system BIOS, select **Configuration → Graphics Configuration → Internal Graphics → Enable.**
	▪ **Mura MPX Series based controllers** –
	  ▪ In the system BIOS, select **Configuration → Graphics Configuration → Internal Graphics → Disable.**
	  ▪ In the system BIOS, select **Configuration → Chipset Configuration → Above 4GB MMIO Bios assignment → Disabled.**
	  ▪ In the system BIOS, select **Boot Configuration → Boot option filter → Legacy only.**
	▪ Only onboard console support with C-Series based controller.
	▪ The system BIOS is available at ftp://pw_m8030:YXCN54Ek@privftp.matrox.com.

* Maximum of 1 console per system.

Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
J1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
J2	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
J3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
J4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
J5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
J6	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
J7	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
J8	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D, E	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

Portwell® M9020B (with ROBO-8110A SHB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	10
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	10
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	9
Maximum supported C900/C680	2
Motherboard	Portwell ROBO-8110A (SHB), PBPE-11A-MT (Backplane)
PCIe expansion slots	10 PCIe ×16 2.0 slots (×16 mechanical and electrical)
Chipset	Intel® C206
Processor	Intel® Core™ i3-2120 dual-core processor or Intel® Xeon® E3-1200 Series quad-core processor
System memory	8 GB DDR3
System BIOS version	1APBB 0.04 ×64
Chassis	4U rackmount
Power supply	950W redundant PSU
Notes	▪ Optional system memory upgrade is available. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
J1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
J2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
J3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
J4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
J5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
J6	C680	A, C	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
J7	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
J8	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
J9	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
J10	MURAIPXI-D4JF	A, F	MURAIPXI-D4JF	A, B, D, E	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Portwell® M9020B (with ROBO-8113VG2AR SHB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes (Requires Mura driver version 3.01 or later)	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	10
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	10
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	8
Maximum supported C900/C680	2
Motherboard	Portwell ROBO-8113VG2AR (SHB) PBPE-11A-MT (Backplane)
PCIe expansion slots	10 PCIe ×16 2.0 slots (×16 mechanical and electrical)
Chipset	Intel® C236
Processor	Intel® Core™ i3-6100 @3.7 GHz
System memory	16 GB DDR4
System BIOS version	R1.00.E1
Chassis	4U rackmount
Power supply	950W redundant PSU
Notes	▪ Optional system memory upgrade is available. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ The system BIOS is available at ftp://PortwellBIOS:RVHdu3GW@privftp.matrox.com.

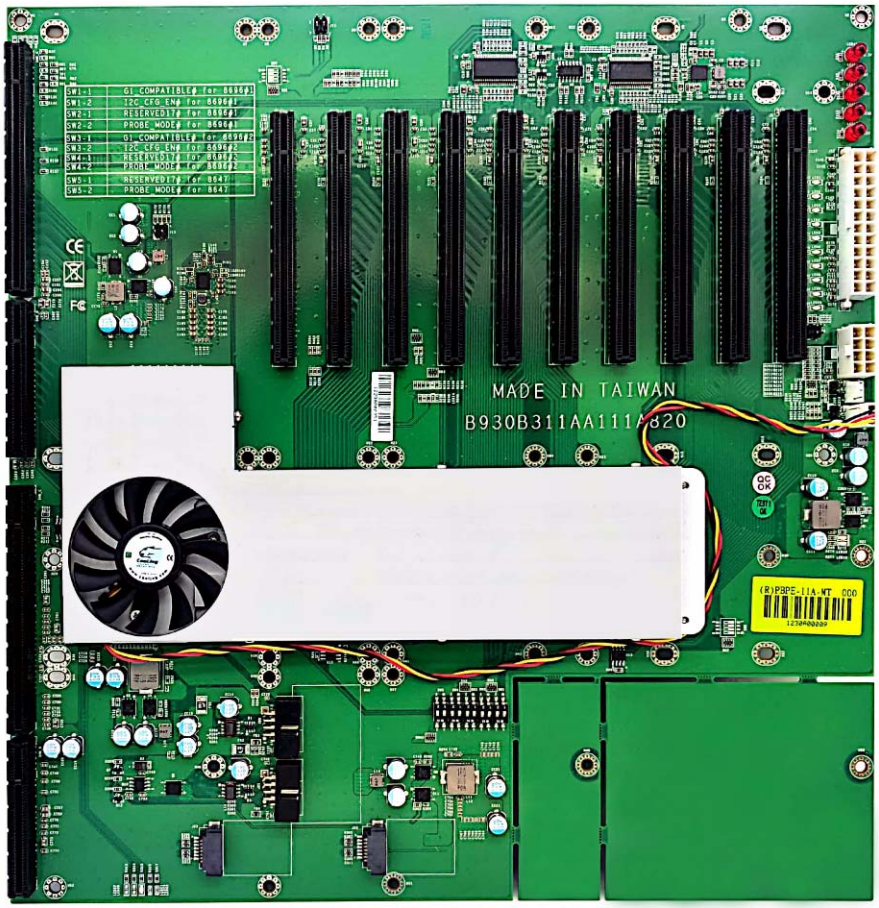
* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
J1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
J2	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
J3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
J4	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
J5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
J6	C680	A, C	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
J7	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
J8	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
J9	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
J10	MURAIPXI-D4JF	A, F	Mura MPX-4/4	A, B, D, E	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Portwell® M9020B (with ROBO-8113VG2AR-Q170-KBL SHB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	No	No	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	10
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	9 (Only Mura IPX Series)
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	See note for console support
Maximum supported C900/C680	2
Motherboard	Portwell PBPE-11A-MT (Backplane) Portwell ROBO-8113VG2AR-Q170-KBL-PCIE4 (SHB)
PCIe expansion slots	10 PCIe ×16 2.0 slots (×16 mechanical and electrical)
Chipset	Intel® Q170
Processor	Intel® Core™ i7-7700 CPU @3.6 GHz
System memory	16 GB
System BIOS version	R1.00.E0 (12/19/2019)
Chassis	4U rackmount
Power supply	950W redundant PSU
Notes	▪ Optional system memory upgrade is available. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ In the system BIOS → **Advanced** → **Graphics Configuration** → **Internal Graphics** → select **Disabled**. ▪ In the system BIOS → **Advanced** → **Chipset Configuration** → **Above 4G Decoding** → select **Disabled**. ▪ In the system BIOS → **Advanced** → **Chipset Configuration** → **Above 4G MMIO BIOS Assignment** → select **Disabled**. ▪ No console support with C-Series controller. ▪ The system BIOS is available at ftp://PortwellBIOS:RVHdu3GW@privftp.matrox.com.

* Maximum of 1 console display per system.

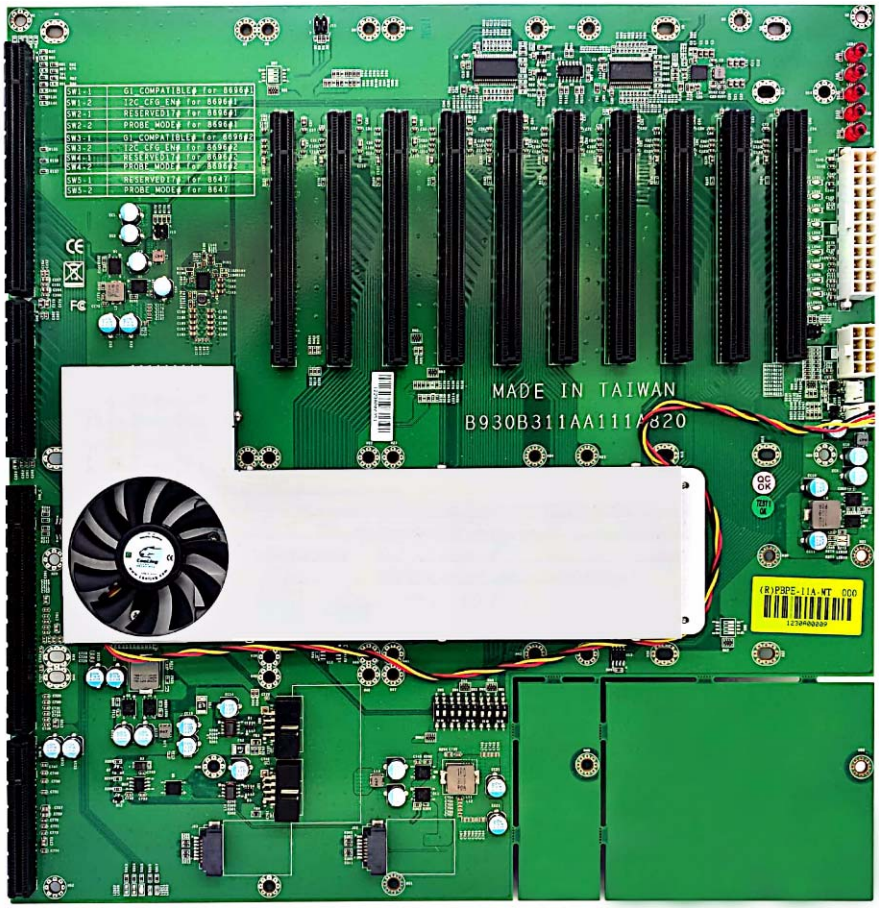
Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
J1	C680	C			Third party graphics hardware	
J2	MURAIPXI-D4JF	A			MURAIPXI-D4JF	A
J3	MURAIPXI-D4JF	A			Third party graphics hardware	A
J4	MURAIPXI-D4JF	A			MURAIPXI-D4JF	A
J5	MURAIPXI-D4JF	A			Third party graphics hardware	A
J6	C680	A, C			MURAIPXI-D4JF	A
J7	MURAIPXI-D4JF	A			Third party graphics hardware	A
J8	MURAIPXI-D4JF	A			MURAIPXI-D4JF	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
J9	MURAIPXI-D4JF	A			Third party graphics hardware	A
J10	MURAIPXI-D4JF	A			MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Seneca VWC-PLUS

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Part number	VWC-PLUS
Maximum number of cards supported	7
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	7
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	6
Maximum supported C900/C680	2
Motherboard	ASUS® X99-E WS/USB 3.1
PCIe expansion slots	7 PCIe ×16 3.0/2.0 slots
Chipset	Intel® X99
Processor	Intel® Core™ i7-5930K, 3.5 GHz/i7-6850K, 3.6 GHz
System memory	32 GB DDR4
System BIOS version	3601
Power supply	860W
Chassis	4U
Performance considerations	▪ 1-4 cards → ×16 ▪ 7 cards → 1 ×16 + 6 ×8
Notes	▪ In the system BIOS, go to **Advanced Mode** → **Boot**, then set **Above 4G Decoding** to **Disabled**. ▪ The system BIOS is available at ftp://asusbios:9lwMwTaD@privftp.matrox.com.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	A
PCIEX16_2	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PCIEX16_4	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PCIEX16_6	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
PCIEX16_7	MURAIPXI-D4JF	A, F	Console display	E, D	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680

Option	Product
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Shuttle SH97R6

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No	No foreseeable compatibility issues	No	No foreseeable compatibility issues

Part number	SH97R6
Maximum number of cards supported	2
Motherboard	SH97R6
PCIe expansion slots	▪ 1 PCIe ×16 slot ▪ 1 PCIe ×4 slot
Chipset	Intel® H97
Processor	Intel® Core™ i7 4790, 3.6 GHz
System memory	8 GB DDR3
System BIOS version	1.04
Power supply	300W
Chassis	Mini server

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIe ×16	—		Mura MPX-4/4	B	—	
PCIe ×4	—		Mura MPX-V16	D	—	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Trenton TVC2404

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	4
Motherboard	TSB 7053 (SHB), BPC8219 (Backplane)
PCIe expansion slots	▪ 3 PCIe ×16 2.0 slot (×16 mechanical and electrical) ▪ 1 PCIe ×16 2.0 slot (×16 mechanical and ×4 electrical)
Chipset	Intel® C206
Processor	Intel® Core™ i7-3770 quad core processor 3.4 GHz
System memory	16 GB DDR3, 1600 MHz
System BIOS version	0ACCI 0.08 X64
Power supply	600W
Chassis	2U rack mount

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIe1 ×4	—		Console display	D, F	—	
PCIe2 ×16	—		Mura MPX-4/4	B	—	
PCIe3 ×16	—		Mura MPX-4/4	A, B, D	—	
PCIe4 ×16	—		Mura MPX-4/4	A, B, D	—	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Trenton TVC3400

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	2
Motherboard	Trenton JXMS7031
PCIe expansion slots	▪ 1 PCIe ×16 2.0 slot (×16 mechanical and electrical via riser card) ▪ 2 PCIe ×16 2.0 slots (×16 mechanical and ×8 electrical via riser card)
Chipset	Intel® 3420
Processor	Intel® Xeon® EC5549 processor
System memory	4 GB DDR3 Mini-DIMM
System BIOS version	0ABYI 0.04 X64
Power supply	550W
Chassis	3U shelf mount
Notes	▪ The integrated graphics hardware must be disabled in Windows® Device Manager. For more information, see your system manual or Windows help. ▪ The mouse pointer may stutter or freeze when it's moved over a display. To fix this, try reinstalling the network adapter driver. ▪ Optional system memory upgrade is available.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIe1	—		Mura MPX-4/4	B	—	
PCIe2	—		Empty		—	
PCIe3	—		Mura MPX-4/4	A, B, D	—	
PCI	—		Empty (Unusable)		—	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Trenton TVC4400

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	2
Motherboard	Trenton JXMS7031 (single CPU)
PCIe expansion slots	▪ 1 PCIe ×16 2.0 slot (×16 mechanical and electrical) ▪ 2 PCIe ×16 2.0 slots (×16 mechanical and ×8 electrical)
Chipset	Intel® 3420
Processor	Intel® Xeon® EC5509, quad-core 2.00 GHz
System memory	4 GB DDR3 Mini-DIMM
System BIOS version	0ABYI 0.04 X64
Power supply	550W
Chassis	4U shelf mount
Notes	▪ The integrated graphics hardware must* be disabled in Windows® Device Manager. For more information, see your system manual or Windows help. ▪ Optional system memory upgrade is available.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIe1*	—		Empty (Unusable)		—	
PCIe2	—		Mura MPX-4/4	B	—	
PCIe3	—		Mura MPX-4/4	A, B, D	—	
PCI	—		Empty (Unusable)		—	

* Unavailable with single CPU system.

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Trenton TVC4403 with TSB7053

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	9 (No intercard transfers in ×4 slots)
Motherboard	TSB7053 (SHB), BPG7087 (Backplane)
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	9
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	8
Maximum supported C900/C680	2
PCIe expansion slots	▪ 4 PCIe ×16 2.0 slots ▪ 6 PCIe ×4 2.0 slots (no intercard transfers)
Chipset	Intel® C206
Processor	3rd Generation Intel® i7 Quad-Core CPU Intel® Xeon® E-3 1200 Series Quad-Core CPU
System memory	4 GB DDR3
System BIOS version	TTICIM08.ROM
Power supply	800W redundant
Chassis	4U rack mount
Performance considerations	▪ 1-4 cards → ×16 ▪ 5 cards → 4 ×16 + 1 ×4 ▪ 6 cards → 4 ×16 + 2 ×4 ▪ 7 cards → 4 ×16 + 3 ×4 ▪ 8 cards → 4 ×16 + 4 ×4 ▪ 9 cards → 4 ×16 + 5 ×4
Notes	▪ While using up to 4 cards, the slot labeled **PCIe4** is used for the primary display. ▪ While using more than 4 cards, if both slots labeled **PCIe3** and **PCIe4** are used, **PCIe3** is used for the primary display. ▪ Optional system memory upgrade is available. ▪ Check with supplier for available CPU options. ▪ With C-Series based controllers, the integrated graphics must be disabled in the system BIOS to successfully install the driver. ▪ With Mura MPX Series based controllers, the integrated graphics must be enabled in the system BIOS but disabled in the Windows Device Manager.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIe1x4	Console display	F	Mura MPX-4/4	B	Empty	
PCIe2x4	Empty		Empty (unusable)		Empty	
PCIe3x4	Empty		Mura MPX-4/4	A, B, D	Empty	
PCIe4x16	C680	C	Mura MPX-4/4	A, B, D	Third party graphics hardware	
PCIe5x4	Empty		Mura MPX-4/4	A, B, D	Empty	

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIe6x16	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIe7x4	Empty		Mura MPX-4/4	A, B, D	Empty	
PCIe8x16	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIe9x4	Empty		Mura MPX-4/4	A, B, D, E	Empty	
PCIe10x16	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Trenton TVC5401 (with TSB7053 SHB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	16 (max. 29 GPUs)
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	16
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	15
Maximum supported C900/C680	2
Motherboard	TSB7053 (SHB), BPG8032 (Backplane)
PCIe expansion slots	▪ 17 PCIe ×16 2.0 slots (mechanical and electrical) ▪ 1 PCIe ×16 2.0 slot (mechanical, ×4 electrical)
Chipset	Intel® C206
Processor	3rd Generation Intel® i7 Quad-Core CPU (TSB7053) Intel® Xeon® E-3 1200 Series Quad-Core CPU (TSB7053)
System memory	4 GB DDR3
System BIOS version	TTICIM08.ROM (TSB7053)
Power supply	1485W redundant
Chassis	5U rack mount
Notes	▪ The integrated graphics hardware must be disabled in Windows® Device Manager. For more information, see your system manual or Windows help. ▪ The maximum number of GPUs supported by Windows is 29. ▪ Due to a mechanical conflict with the SHB, slots labeled **PCIe1** and **PCIe2** aren't functional. ▪ Optional system memory upgrade is available.

* Maximum of 1 console display per system.

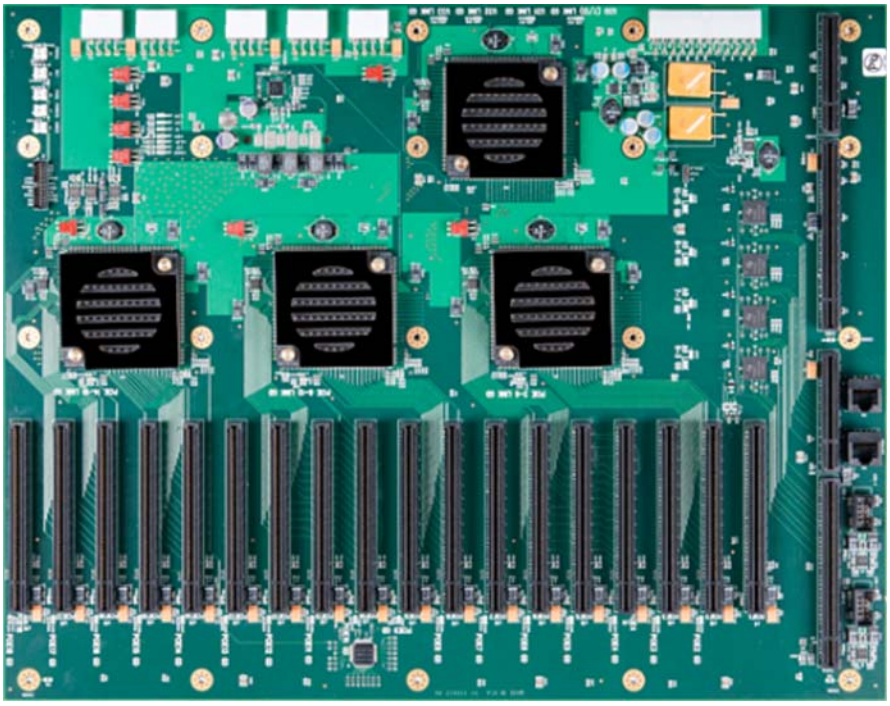
Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIE1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIE2	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIE3	MURAIPXI-D4JF	A, F	MURAIPXI-D4JF	A, D, E	Third party graphics hardware	A
PCIE4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, D	MURAIPXI-D4JF	A
PCIE5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE6	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE7	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIE8	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE9	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIE10	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE11	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE12	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIE13	C680	C	Mura MPX-4/4	A, B, D	Third party graphics hardware	
PCIE14	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE15	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE16	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE17	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE18	MURAIPXI-D4JF	A	Mura MPX-4/4	B	Third party graphics hardware	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Trenton TVC5402

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	12
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	8
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	11
Maximum supported C900/C680	2
Motherboard	TSB7053 (SHB), BPG8194 (Backplane)
PCIe expansion slots	▪ 8 PCIe ×16 3.0 slots (mechanical and electrical) ▪ 5 PCIe ×16 3.0 slots (mechanical, ×4 electrical)
Chipset	Intel® C206
Processor	Intel® Core i7-3770, 3.4 GHz, Quad-Core
System memory	8 GB DDR3
System BIOS version	V2.7
Power supply	1200W redundant
Chassis	5U rack mount
Notes	▪ The integrated graphics hardware must be disabled in Windows® Device Manager. For more information, see your system manual or Windows help. ▪ Optional system memory upgrade is available.

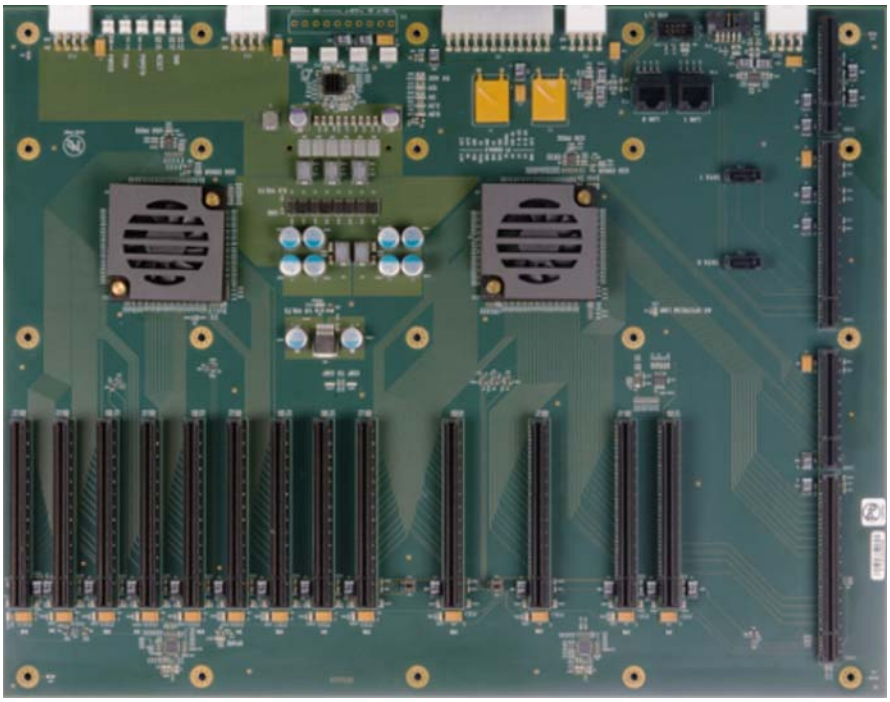
* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIE1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIE2	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIE3	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIE4	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE6	Empty (Unusable)		Mura MPX-V16	D	Empty (Unusable)	
PCIE7	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIE8	Empty (Unusable)		Mura MPX-V8	A, B, D	Empty (Unusable)	
PCIE9	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE10	Empty (Unusable)		Mura MPX-V8	A, B, D	Empty (Unusable)	
PCIE11	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE12	Console display	F	Console display	D, E	Empty (Unusable)	
PCIE13	C680	C	Mura MPX-4/4	B	Third party graphics hardware	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Trenton TVC5402 (with TKL8255 SHB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	12
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	8
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	6
Maximum supported C900/C680	2
Motherboard	Trenton TKL8255 (SHB), BPG8194 (Backplane)
PCIe expansion slots	▪ 8 PCIe x16 3.0 slots (mechanical and electrical) ▪ 5 PCIe x16 3.0 slots (mechanical, x4 electrical)
Chipset	C236
Processor	Intel i7-6700 @ 3.4 GHz (16 Lanes)
System memory	32 GB DDR4
System BIOS version	0ACKV 0.04 x64
Power supply	900W redundant
Chassis	5U rack mount
Notes	▪ The integrated graphics hardware must be disabled in Windows Device Manager. For more information, see your system manual or Windows help. ▪ The system BIOS is available at ftp://TKL8255:7HfvSAO7@privftp.matrox.com. ▪ In the system BIOS, go to **Chipset** → **System Agent (SA) Configuration** → **Graphics Configuration** → **Primary Display**, then select **IGFX**.

* Maximum of 1 console display per system.

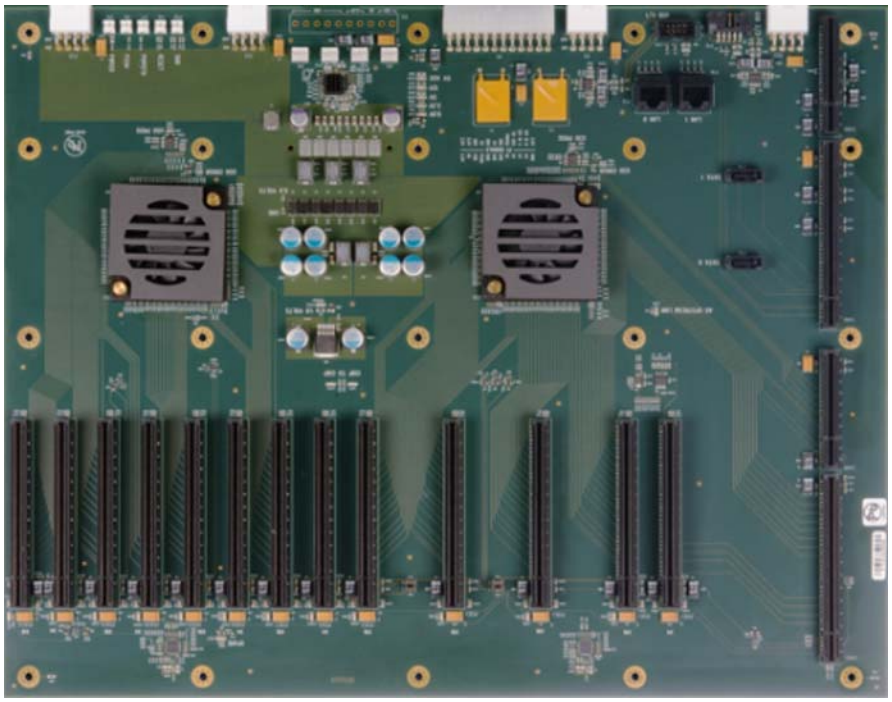
Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX16_1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable	
PCIEX16_2	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIEX16_3	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PCIEX16_6	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
PCIEX16_7	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIEX16_8	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
PCIEX16_9	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIEX16_10	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
PCIEX16_11	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIEX16_12	Console display	F	Console display	D, E	Empty (Unusable)	
PCIEX16_13	C680	A, C	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



End of Life (EOL) systems

Advantech (AVS-240)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	3
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	2
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	1
Maximum supported C900/C680	2
Motherboard	Advantech ASMB-820
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots (×16 mechanical, ×16 and ×8 electrical) ▪ 1 PCIe ×4 2.0 slot (×4 mechanical, ×4 electrical) ▪ 1 PCIe ×1 2.0 slot (×1 mechanical, ×1 electrical)
Chipset	Intel® C602J
Processor	Intel® Xeon® E5-2420 processor
System memory	8 GB DDR3
System BIOS version	1.1
Power supply	80 PLUS 500W PSU

* Maximum of 1 console display per system.

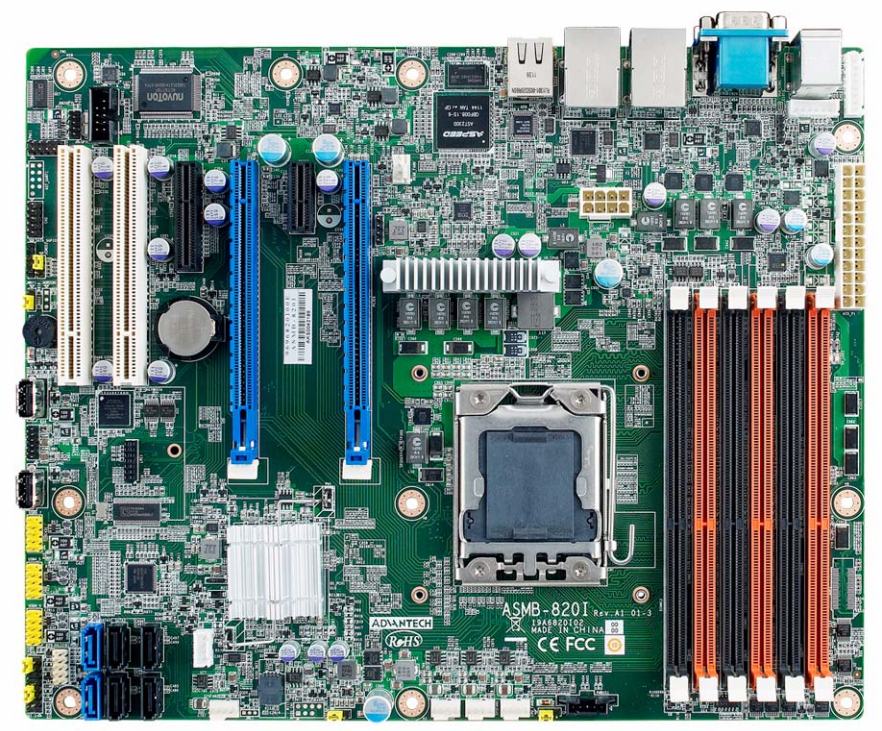
Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCI	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCI	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIE3	Empty (Unusable)		Mura V16	D	Empty (Unusable)	
PCIE4	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIE5	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIE6	MURAIPXI-D4JF	A, C, F	Mura MPX-4/4	A, B, E	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8

Option	Product
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Advantech (AVS-290)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	3
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	2
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	2
Maximum supported C900/C680	2
Motherboard	Advantech ASMB-781G4-00A1E
PCIe expansion slots	▪ 2 PCIe ×16 2.0 slots (×16 mechanical, ×16 and ×8 electrical) ▪ 1 PCIe ×4 2.0 slot ▪ 1 PCIe ×1 2.0 slot
Chipset	Intel® C206
Processor	Intel® Xeon® E3-1200 processor
System memory	8 GB DDR3
System BIOS version	1.1
Power supply	400W
Performance considerations	▪ 1 card → ×16 ▪ 2 cards → ×8

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCI1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCI2	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIE3	Empty (Unusable)		Mura MPX-V8	D, E	Empty (Unusable)	
PCIE4	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCI5	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIE6	MURAIPXI-D4JF	A, C, F	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16 , Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Advantech (AVS-540 with ASMB-822I MB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	6
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	5
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	5
Maximum supported C900/C680	2
Motherboard	ASMB-822I
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots (×16 mechanical, ×16 and ×8 electrical) ▪ 3 PCIe ×16 3.0 slots (×16 mechanical, ×8 electrical) ▪ 1 PCIe ×8 slot (×8 mechanical, ×4 electrical)
Chipset	Intel® C602J
Processor	Intel® Xeon® E5-2600 Series
System memory	4 GB DDR3 1333 MHz, up to 96 GB DDR3 1600 MHz
System BIOS version	V1.10
Power supply	700W 80 plus single power supply Optional power supply required for maximum support of third party graphics hardware.
Chassis	4U
Notes	▪ If you plan on using local USB keyboard/mouse, you must add a PCIe USB controller to one of the available PCIe x16 slots. Using the onboard USB controller may result in erratic USB behavior. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ With all slots populated, there could be a performance drop in the data transferred from a Mura IPX Series input to a graphics card. This may reduce the number of source frames successfully transferred from a Mura IPX Series input to a graphics card. For more information, please contact Matrox Display Wall Technical Support team at dwcsupport@matrox.com. ▪ The chassis fan must remain at full speed.

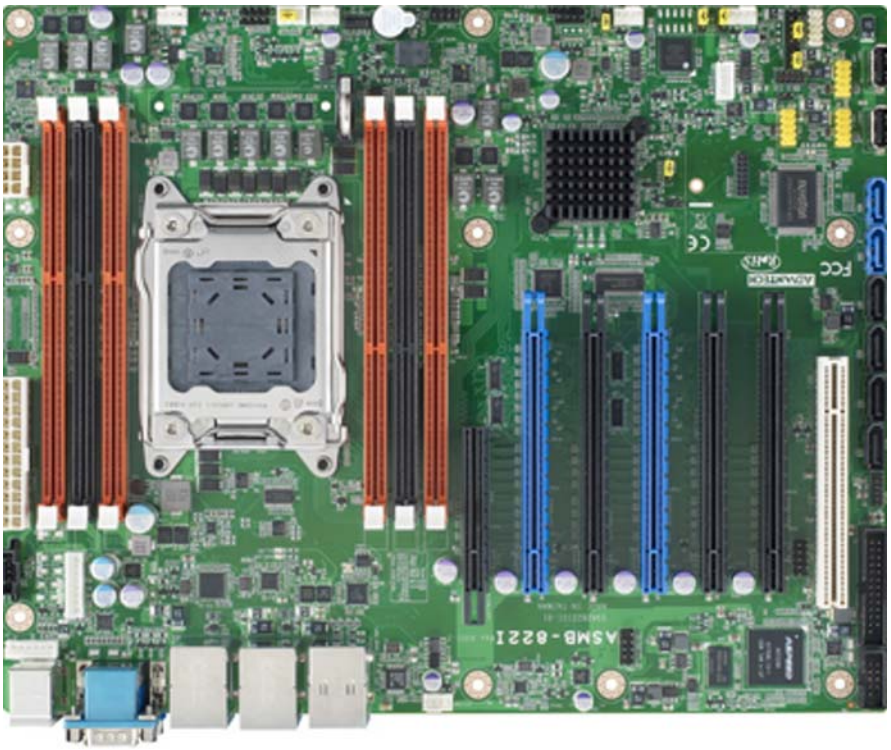
* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
1 (PCI)	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
2 (PCIe)	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Empty (Unusable)	
3 (PCIe)	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
4 (PCIe)	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
5 (PCIe)	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
6 (PCIe)	C680	C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
7 (PCIe)	Console display	F	Mura MPX-V16	D, E	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Advantech (AVS-541)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	15
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	5
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	14
Maximum supported C900/C680	2
Motherboard	PCE-7127 (SHB), PCE-7B17-00A1E (Backplane)
PCIe expansion slots	▪ 5 PCIe ×16 3.0 slots (×16 mechanical, ×8 electrical) ▪ 6 PCIe ×16 3.0 slots (×16 mechanical, ×4 electrical) ▪ 3 PCIe ×4 3.0 slots ▪ 1 PCIe ×4 2.0 slot
Chipset	Intel® C216
Processor	Intel® Xeon® E3-1275 V2, 3.50 GHz
System memory	4 GB DDR3, 1333 MHz
System BIOS version	V1.10
Power supply	810W redundant
Chassis	4U
Notes	▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ The chassis fan must remain at full speed.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PPCIEX4_1	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
P1PCIEX8_1	MURAIPXI-D4JF	A	Mura MPX-4/4	B	MURAIPXI-D4JF	A
P1PCIEX4_3	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
P1PCIEX4_4	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
P1PCIEX8_2	MURAIPXI-D4JF	A	Mura MPX-4/4	B, D	Third party graphics hardware	A
P1PCIEX4_5	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
P1PCIEX4_6	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
P1PCIEX8_3	C680	C	Mura MPX-4/4	B, D	Third party graphics hardware	
P2PCIEX4_1	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
P2PCIEX4_2	Console	F	Mura MPX-V8	D	Empty (Unusable)	
P2PCIEX4_3	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
P2PCIEX8_1	C680	A, C	Mura MPX-4/4	B, D	Third party graphics hardware	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P2PCIEX4_4	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
P2PCIEX4_5	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
P2PCIEX8_2	MURAIPXI-D4JF	A	Mura MPX-4/4	B, D, E	MURAIPXI-D4JF	A
P2PCIEX4_6	Empty		Empty		Empty	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Advantech (AVS-840)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes (Requires Mura drivers version 2.09 or newer)	Yes (Requires Mura drivers version 2.09 or newer)	No foreseeable compatibility issues

Maximum number of cards supported	11
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	10
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	10
Maximum supported C900/C680	2
Motherboard	PCE-7127/PCE-5128 (SHB), PCE-5B12-00A1 (Backplane)
PCIe expansion slots	▪ 10 PCIe ×16 2.0 slots (×16 mechanical, ×16 electrical) ▪ 1 PCIe ×16 2.0 slot (×16 mechanical, ×4 electrical)
Chipset	▪ Intel® C216 (PCE-7127) ▪ Intel® Q87 (PCE-5128)
Processor	▪ Intel® Xeon® E3-1275 V2, 3.50 GHz (PCE-7127) ▪ Intel® Core™ i7-4770S, 3.10 GHz (PCE-5128)
System memory	4 GB DDR3, 1333 MHz
System BIOS version	▪ Core version: 4.6.5.3 0.18 x64 (PCE-7127) Project version: PCE 7127X005 ▪ Core version: 4.6.5.4 0.35 x64 (PCE-5128) Project version: PCE 5128XH01

Power supply	▪ 810W redundant
	Optional power supply required for maximum support of third party graphics hardware:
	▪ Optional single power supply:
	  ▪ Enermax 1200W (Part#: EPF1200EW)
	  ▪ EVGA 850W (Part#: 220-G3-0850-X1)
	  ▪ 1200W (Advantech part # 96PS-A1K2WPS2)

Chassis	4U rack mount ▪ Chassis Part#: IPC-623BP-00XBE (for single power supply) ▪ Chassis Part#: IPC-623BP-00RBE (for redundant power supply) ▪ Chassis Part#: IPC-623BP-1KZC (for single power supply from Advantech)
Notes	▪ If you're inserting a P690 card (to use as a console display) in the slot labeled **PPCIEx4_1**, make sure the PCIe root port 1 of the ASPM settings is disabled. To disable ASPM, in the system BIOS, go to **Advanced → PCI Subsystem Settings → PCI Express Settings → ASPM Support**. ▪ Once the Mura cards are installed in the system, install the hold down clamp. Make sure to insert the rubber cushions into the notches of the hold down clamp and adjust the rubber cushions to secure the cards into position. The rubber cushions protect the cards against shock and vibration. For more information, see the system / chassis manual. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ Choose a power cord with an IEC C19 plug for chassis IPC-623BP-1KZC ▪ The chassis fans must remain at full speed.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
P1PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
P1PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P1PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
P1PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P1PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_1	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PPCIEX4_1	Console display	F	Console display	E	Empty (Unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8

Option	Product
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

Advantech (AVS-840 with PCE-5129 SHB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes (Requires Mura driver version 3.01 or later)	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	11
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	10
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	10
Maximum supported C900/C680	2
Motherboard	PCE-5129 (SHB), PCE-5B12-00A1 (Backplane)
PCIe expansion slots	▪ 10 PCIe ×16 2.0 slots (×16 mechanical, ×16 electrical) ▪ 1 PCIe ×16 2.0 slot (×16 mechanical, ×4 electrical)
Chipset	Intel® Q170
Processor	Intel® Core™ i7-6770S, 3.40 GHz
System memory	16 GB DDR4
System BIOS version	Core version: 5.0.1.2 0.20 x64 Project version: 5129000QF60F201

Power supply	▪ 810W redundant
	Optional power supply required for maximum support of third party graphics hardware:
	▪ Optional single power supply:
	  ▪ Enermax 1200W (Part#: EPF1200EW)
	  ▪ EVGA 850W (Part#: 220-G3-0850-X1)
	  ▪ 1200W (Advantech part # 96PS-A1K2WPS2)

Chassis	4U rack mount ▪ Chassis Part#: IPC-623BP-00XBE (for single power supply) ▪ Chassis Part#: IPC-623BP-00RBE (for redundant power supply) ▪ Chassis Part#: IPC-623BP-1KZC (for single power supply from Advantech)
Notes	▪ Once the Mura cards are installed in the system, install the hold down clamp. Make sure to insert the rubber cushions into the notches of the hold down clamp and adjust the rubber cushions to secure the cards into position. The rubber cushions protect the cards against shock and vibration. For more information, see the system / chassis manual. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ Choose a power cord with an IEC C19 plug for chassis IPC-623BP-1KZC ▪ The chassis fans must remain at full speed.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
P1PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
P1PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P1PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P1PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P1PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_1	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PPCIEX4_1	Console display	F	Console display	E	Empty (Unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

Advantech (AVS-840)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes (Requires Mura drivers version 2.09 or newer)	Yes (Requires Mura drivers version 2.09 or newer)	No foreseeable compatibility issues

Maximum number of cards supported	11
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	10
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	10
Maximum supported C900/C680	2
Motherboard	PCE-7127/PCE-5128 (SHB), PCE-5B12-00A1 (Backplane)
PCIe expansion slots	▪ 10 PCIe ×16 2.0 slots (×16 mechanical, ×16 electrical) ▪ 1 PCIe ×16 2.0 slot (×16 mechanical, ×4 electrical)
Chipset	▪ Intel® C216 (PCE-7127) ▪ Intel® Q87 (PCE-5128)
Processor	▪ Intel® Xeon® E3-1275 V2, 3.50 GHz (PCE-7127) ▪ Intel® Core™ i7-4770S, 3.10 GHz (PCE-5128)
System memory	4 GB DDR3, 1333 MHz
System BIOS version	▪ Core version: 4.6.5.3 0.18 x64 (PCE-7127) Project version: PCE 7127X005 ▪ Core version: 4.6.5.4 0.35 x64 (PCE-5128) Project version: PCE 5128XH01

Power supply	▪ 810W redundant
	Optional power supply required for maximum support of third party graphics hardware:
	▪ Optional single power supply:
	  ▪ Enermax 1200W (Part#: EPF1200EW)
	  ▪ EVGA 850W (Part#: 220-G3-0850-X1)
	  ▪ 1200W (Advantech part # 96PS-A1K2WPS2)

Chassis	4U rack mount ▪ Chassis Part#: IPC-623BP-00XBE (for single power supply) ▪ Chassis Part#: IPC-623BP-00RBE (for redundant power supply) ▪ Chassis Part#: IPC-623BP-1KZC (for single power supply from Advantech)
Notes	▪ If you're inserting a P690 card (to use as a console display) in the slot labeled **PPCIEx4_1**, make sure the PCIe root port 1 of the ASPM settings is disabled. To disable ASPM, in the system BIOS, go to **Advanced → PCI Subsystem Settings → PCI Express Settings → ASPM Support.** ▪ Once the Mura cards are installed in the system, install the hold down clamp. Make sure to insert the rubber cushions into the notches of the hold down clamp and adjust the rubber cushions to secure the cards into position. The rubber cushions protect the cards against shock and vibration. For more information, see the system / chassis manual. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ Choose a power cord with an IEC C19 plug for chassis IPC-623BP-1KZC ▪ The chassis fans must remain at full speed.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P1PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
P1PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P1PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
P1PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P1PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_1	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PPCIEX4_1	Console display	F	Console display	E	Empty (Unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

Advantech (AVS-840 with PCE-7129 SHB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes (Requires Mura driver version 3.01 or later)	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	11
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	10
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	10
Maximum supported C900/C680	2
Motherboard	PCE-7129 (SHB), PCE-5B12-00A1 (Backplane)
PCIe expansion slots	▪ 10 PCIe ×16 2.0 slots (×16 mechanical, ×16 electrical) ▪ 1 PCIe ×16 2.0 slot (×16 mechanical, ×4 electrical)
Chipset	Intel® C236
Processor	Intel® Core™ i7-6770S, 3.40 GHz
System memory	32 GB DDR4
System BIOS version	Core version: 5.0.1.2 0.20 x64 Project version: 7129000CF60E201
Power supply	▪ 810W redundant Optional power supply required for maximum support of third party graphics hardware: ▪ Optional single power supply: ▪ Enermax 1200W (Part#: EPF1200EW) ▪ EVGA 850W (Part#: 220-G3-0850-X1) ▪ 1200W (Advantech part # 96PS-A1K2WPS2)
Chassis	4U rack mount ▪ Chassis Part#: IPC-623BP-00XBE (for single power supply) ▪ Chassis Part#: IPC-623BP-00RBE (for redundant power supply) ▪ Chassis Part#: IPC-623BP-1KZC (for single power supply from Advantech)
Notes	▪ Once the Mura cards are installed in the system, install the hold down clamp. Make sure to insert the rubber cushions into the notches of the hold down clamp and adjust the rubber cushions to secure the cards into position. The rubber cushions protect the cards against shock and vibration. For more information, see the system / chassis manual. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ Choose a power cord with an IEC C19 plug for chassis IPC-623BP-1KZC ▪ The chassis fans must remain at full speed.

* Maximum of 1 console display per system.

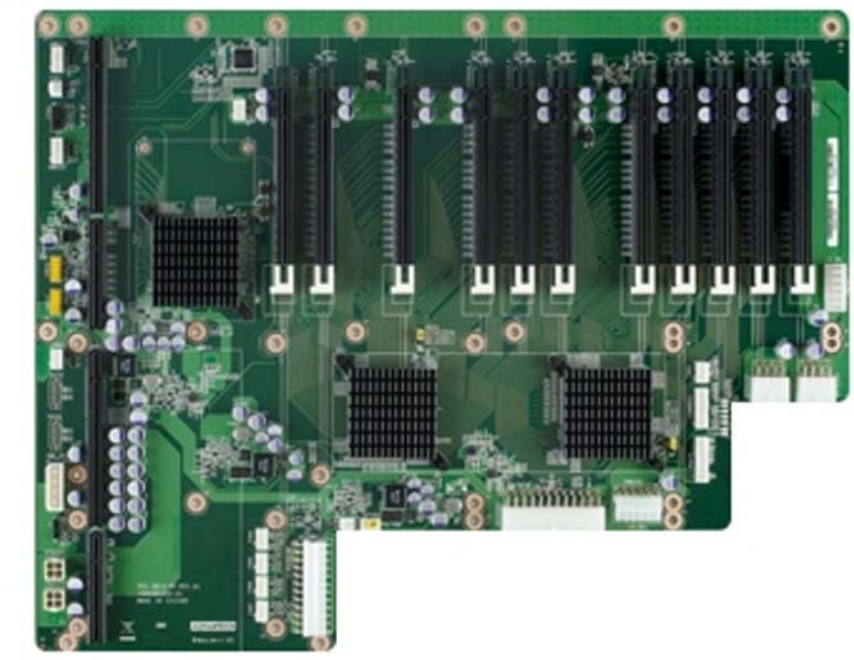
Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P1PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
P1PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P1PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P1PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P1PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_1	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PPCIEX4_1	Console display	F	Console display	E	Empty (Unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Blue Chip Ultima 2M

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	2
Motherboard	BCT130 (SBC) + BP-PCIE-2M/2 (Passive Backplane)
PCIe expansion slots	▪ 2 PCIe ×16 2.0 slots (×16 mechanical, ×16 electrical) ▪ 1 PCIe x16 2.0 slot (×16 mechanical, ×1 electrical) ▪ 1 PCIe x1 2.0 slot
Chipset	Intel® Q86 PCH
Processor	Intel® i7-4770S, 3.10 GHz
System memory	16 GB DDR3, 1333 MHz
System BIOS version	2.13.1215
Power supply	300W
Notes	▪ Intel Gen 4 i3, i5, and i7 CPU options available from the supplier. ▪ Dual redundant PSU option available from the supplier.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P15	—		Mura MPX-4/4	A, B	—	
P14	—		Mura MPX-4/4	B	—	
P13	—		Console display	E	—	
P17	—		Empty (Unusable)		—	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Blue Chip Ultima 5M

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	5
Motherboard	BCT120 (SBC) + BP-PCIE-5M/3 (Passive Backplane)
PCIe expansion slots	▪ 5 PCIe ×16 2.0 slots ▪ 3 PCIe ×1 2.0 slots
Chipset	Intel® Q77 PCH
Processor	Intel® Quad Core™ i5-3450, 3.10 GHz
System memory	4 GB DDR3, 1333 MHz
System BIOS version	2.13.1215
Power supply	750W
Notes	▪ Intel Gen 3 i5 and i7 CPU options available from the supplier. ▪ Dual redundant PSU option available from the supplier. ▪ Memory can be upgraded to a maximum of 16 GB.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIe4	—		Empty (Unusable)		—	
PCIe5	—		Mura MPX-4/4	A, B, D	—	
PCIe6	—		Mura MPX-4/4	A, B, D	—	
PCIe7	—		Mura MPX-4/4	B	—	
PCIe8	—		Mura MPX-4/4	A, B, D	—	
PCIe9	—		Mura MPX-4/4	B	—	
PCIe10	—		Empty (Unusable)		—	
PCIe11	—		Empty (Unusable)		—	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Blue Chip Ultima Mura i7

Maximum number of cards supported	7
Motherboard	ASUS® P6T7 WS
PCIe expansion slots	▪ Slots 1, 3, and 5 – PCIe ×16 2.0 at ×16 or ×8 mode ▪ Slot 7 – PCIe ×16 2.0 at ×16 mode ▪ Slots 2, 4, and 6 – PCIe ×16 2.0 at ×8 mode
Chipset	Intel® Q77 PCH
Processor	Intel® i5-3450, 3.10 GHz
System memory	3 GB DDR3
System BIOS version	1001
Power supply	750W
Expansion slot configuration	▪ Insert the first 4 cards in the blue slots labeled **1**, **3**, **5**, and **7**. ▪ Insert the last 3 cards in the slots labeled **2**, **4**, and **6**.
Performance considerations	▪ 1-4 cards (in blue slots) → ×16 ▪ 5 cards → 3 ×8 + 2 ×8 ▪ 6 cards → 2 ×16 + 4 ×8 ▪ 7 cards → 1 ×16 + 6 ×8
Notes	If you install a card in PCIe ×16 slot **7**, the two front USB connectors won't be functional due to mechanical conflicts. The six USB connectors in the back are functional.

Dell® Precision™ Workstation T3500

Maximum number of cards supported	2
PCIe expansion slots	▪ 2 PCIe ×8 slots wired as ×4 (one half-length) ▪ 2 PCIe ×16 2.0 slots
Chipset	Intel® X58
Processor	Intel® Xeon® E5507, 2.27 GHz
System memory	4 GB DDR3
System BIOS version	A08
Power supply	525W
Expansion slot configuration	Insert the Mura cards in slots **2** and **4** labeled **PCIe2 ×16 75W**.

Dell® Precision™ Workstation T3600

Maximum number of cards supported	3
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots (×16 mechanical and electrical) ▪ 1 PCIe ×16 3.0 slot (×16 mechanical and ×4 electrical) ▪ 1 PCIe ×4 2.0 slot ▪ 1 PCIe ×1 2.0 slot
Chipset	Intel® C600
Processor	Intel® Xeon® E5-1603, 2.27 GHz
System memory	8 GB DDR3
System BIOS version	A06

Power supply	425W
Expansion slot configuration	▪ Insert the Mura MPX-4/4 cards in slots labeled **SLOT2-PCIe3x16** and **SLOT4-PCIe3x16**. ▪ Insert the Mura MPX-V16 or MPX-V8 card in the slot labeled **SLOT1-PCIe3x4**.
Notes	In the system BIOS, go to **Settings** → **Power Management** → **Fan Speed Control**, then select **Medium**. If you experience erratic USB behavior with the onboard USB controller, add a PCIe USB controller to your system.

Dell® Precision™ Workstation T3610

Maximum number of cards supported	3
PCIe expansion slots	▪ 2 PCIe x16 3.0 slots (x16 mechanical, x16 electrical) ▪ 1 PCIe x16 3.0 slot (x16 mechanical, x8 electrical) ▪ 1 PCIe ×4 2.0 slot ▪ 1 PCIe ×1 2.0 slot
Chipset	Intel® C602
Processor	Intel® Xeon® E5-1620 processor V2, 3.70 GHz
System memory	8 GB DDR3, 1333 MHz
System BIOS version	A03
Power supply	685W
Expansion slot configuration	▪ Insert the first Mura MPX-4/4 card in the slot labeled **SLOT4-PCIe3x16**. ▪ Insert the second Mura MPX-4/4 card in the slot labeled **SLOT2-PCIe3x16**. ▪ Insert the Mura MPX-V16 or MPX-V8 card in the slot labeled **SLOT1-PCIe3x8**.
Possible maximum configuration	2 Mura MPX-4/4 cards + 1 Mura MPX-V16 or MPX-V8 card
Notes	In the system BIOS, go to **Settings** → **Power Management** → **Fan Speed Control**, then select **Medium**.

Delo Step-PC Professional VS-Series X79

	Mura MPX Series	**Mura MPX + IPX Series**	**C-Series**	**C-Series + Mura IPX Series**
Validated	Yes	No foreseeable compatibility issues	Yes	Yes

Part number	1044185
Maximum number of cards supported	4
PCIe expansion slots	▪ 3 PCIe ×16 3.0/2.0 slots (dual ×16, or ×16, ×8, ×8) ▪ 1 PCIe ×16 3.0/2.0 slot (×8 mode) ▪ 2 PCIe ×16 2.0 3.0/2.0 slots (×1 mode)
Motherboard	ASUS P9X79 WS
Chipset	Intel® X79 Express
Processor	Intel® Core™ i7-3930K Hexa-Core processor (S2011), max. 3.8 GHz, 12 MB cache
System memory	12 GB DDR3 dual-channel
Chassis	Delo Step Multi-View
Power supply	550W SeaSonic

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIEX16_1	C680	C	Mura MPX-4/4	B	—	
PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B	—	
PCIEX16_3	Console display	F	Console display	D	—	
PCIEX16_4	C680	C	Mura MPX-4/4	A, B	—	
PCIEX16_5	Empty		Empty		—	
PCIEX16_6	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B	—	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Delo Step-PC Professional VS-Series Z77

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	4
Motherboard	ASUS P8Z77 WS
PCIe expansion slots	▪ 4 PCIe ×16 3.0/2.0 slots (dual ×16 or ×16, ×8, ×8, or quad ×8) ▪ 2 PCIe ×1 2.0 slots
Chipset	Intel® Z77 Express
Processor	Intel® Core™ i7-3770T Quad-Core processor (S1155), max. 3.7 GHz, 8 MB cache, HD4000, 45W
System memory	8 GB DDR3 dual-channel
Chassis	Delo Step Multi-View
Power supply	550W SeaSonic

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIEX16_1	—		Mura MPX-4/4	B	—	
PCIEX16_2	—		Mura MPX-4/4	A, B	—	
PCIEX1_1	—		Empty (Unusable)		—	

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIEX16_3	—		Mura MPX-4/4	A, B	—	
PCIEX1_2	—		Empty (Unusable)		—	
PCIEX16_4	—		Mura MPX-4/4	A, B	—	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

HP® Z600 Workstation

Maximum number of cards supported	2
PCIe expansion slots	▪ 2 PCIe ×16 2.0 slots ▪ 1 PCIe 2.0 slot (×8 mechanical, ×4 electrical) ▪ 1 PCIe 1.0 slot (×8 mechanical, ×4 electrical)
Chipset	Intel® 5520
Processor	Intel® Xeon® E5504, 2.00 GHz
System memory	6 GB DDR3
System BIOS version	786G4 v03.15
Power supply	650W
Expansion slot configuration	Insert the Mura cards in slots **2** and **4** with green tabs labeled **PCIe2 ×16 75W**.

Nijkerk (System MURA V1)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	7
Motherboard	ASUS® P6T7 WS
PCIe expansion slots	▪ Slots 1, 3, and 5 – PCIe ×16 2.0 at ×16 or ×8 mode ▪ Slot 7 – PCIe ×16 2.0 at ×16 mode ▪ Slots 2, 4, and 6 – PCIe ×16 2.0 at ×8 mode
Chipset	Intel® X58 Express
Processor	Intel® Core™ i7-950, 3.20 GHz
System memory	6 GB DDR3
System BIOS version	1001
Chassis	NCS-R416A-MB-NOIR
Power supply	750W
Performance considerations	▪ 1-4 cards (blue slots) → ×16 ▪ 5 cards → 3 ×8 + 2 ×8 ▪ 6 cards → 2 ×16 + 4 ×8 ▪ 7 cards → 1 ×16 + 6 ×8
Notes	If you install a card in PCIe ×16 slot **7**, the two front USB connectors won't be functional due to mechanical conflicts. The six USB connectors in the back are functional.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
1	—		Mura MPX-4/4	A, B, D	—	
2	—		Mura MPX-4/4	A, B, D	—	
3	—		Mura MPX-4/4	A, B, D	—	
4	—		Mura MPX-4/4	A, B, D	—	
5	—		Mura MPX-4/4	A, B, D	—	
6	—		Mura MPX-4/4	A, B, D	—	
7	—		Mura MPX-4/4	A, B, D	—	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Pyramid Multiplex R-19 Mura System

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Part number	CPYIV-VX330A01
Maximum number of cards supported	2
Motherboard	Advantech ASMB-781G4-00A1E
PCIe expansion slots	▪ 2 PCIe ×16 2.0 slots ▪ 1 PCIe ×4 2.0 slot ▪ 1 PCIe ×1 2.0 slot
Chipset	Intel® C206
Processor	Intel® Core™ i3-2120, 3.30 GHz
System memory	8 GB DDR3 1333 ATP
System BIOS version	1.1
Power supply	500W industrial BEA-550H

Pyramid Multiplex S Mura System

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Part number	CPYIV-BF320A01
Maximum number of cards supported	1
Motherboard	SB331-IPM
PCIe expansion slots	▪ 1 PCIe ×16 3.0/2.0 slot (×16 mechanical and electrical) ▪ 1 PCIe ×16 3.0/2.0 slot (×16 mechanical, ×4 electrical) ▪ 2 PCIe ×1 2.0 slots
Chipset	Intel® Q67
Processor	Intel® Core™ i3-2120, 3.30 GHz
System memory	8 GB DDR3
System BIOS version	2.14.1219
Power supply	300W
Notes	Insert the optional Mura MPX-V16 or MPX-V8 card in the slot labeled **PCIE4**.

Seneca PrysmHD Plus

Part number	prysmHD-plus
Maximum number of cards supported	7
Motherboard	ASUS® X99-E WS
PCIe expansion slots	7 PCIe ×16 3.0/2.0 slots
Chipset	Intel® X99
Processor	Intel® Core™ i7-5930K, 3.5 GHz
System memory	32 GB DDR4

System BIOS version	0902
Power supply	860W
Chassis	4U
Expansion slot configuration	▪ If you're installing one card, insert the Mura card in the slot labeled **PCIEX16_1**. ▪ If you're installing two cards, insert the Mura cards in the slots labeled **PCIEX16_1** and **PCIEX16_3**. ▪ If you're installing up to four cards, insert the third and fourth Mura card in the slots labeled **PCIEX16_5** and **PCIEX16_7**. ▪ If you're installing more than four cards, use the remaining available slots.
Performance considerations	▪ 1-4 cards → ×16 ▪ 7 cards → 1 ×16 + 6 ×8

Seneca VWC-4

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	Yes	Yes

Part number	VWC-4
Maximum number of cards supported	5
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	4
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	4
Maximum supported C900/C680	2
Motherboard	ASUS® P9X79 WS
PCIe expansion slots	4 PCIe ×16 3.0/2.0 slots (dual ×16 or ×16, ×8, ×8, or quad ×8, black and blue)
Chipset	Intel® X79
Processor	Intel® Core™ i7, third generation processor
System memory	8 GB DDR3 1333 MHz
System BIOS version	3101
Power supply	750W single power supply option for redundant power
Chassis	4U
Performance considerations	▪ 1-2 cards → ×16 ▪ 3 cards → 1 ×16 + 2 ×8 ▪ 4 cards → 4 ×8
Notes	For two-card configurations, a longer ribbon cable (for framelock) is required (P/N: F16279-00). For more information, contact your Matrox representative.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIEX16_3	Console display	F	Console display	D	Empty	

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIEX16_4	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIEX16_5	Empty		Empty		Empty	
PCIEX16_6	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Seneca VWC-PRO

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	12
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	8
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	6
Maximum supported C900/C680	2
Motherboard	Trenton TKL8255 (SHB), BPG8194 (Backplane)
PCIe expansion slots	▪ 8 PCIe x16 3.0 slots (mechanical and electrical) ▪ 5 PCIe x16 3.0 slots (mechanical, x4 electrical)
Chipset	C236
Processor	Intel i7-6700 @ 3.4 GHz (16 Lanes)
System memory	32 GB DDR4
System BIOS version	0ACKV 0.04 x64
Power supply	900W redundant
Chassis	5U rack mount
Notes	▪ The integrated graphics hardware must be disabled in Windows Device Manager. For more information, see your system manual or Windows help. ▪ The system BIOS is available at ftp://VWC_PRO:0GEg2TEi@privftp.matrox.com. ▪ In the system BIOS, go to **Chipset** → **System Agent (SA) Configuration** → **Graphics Configuration** → **Primary Display**, then select **IGFX**.

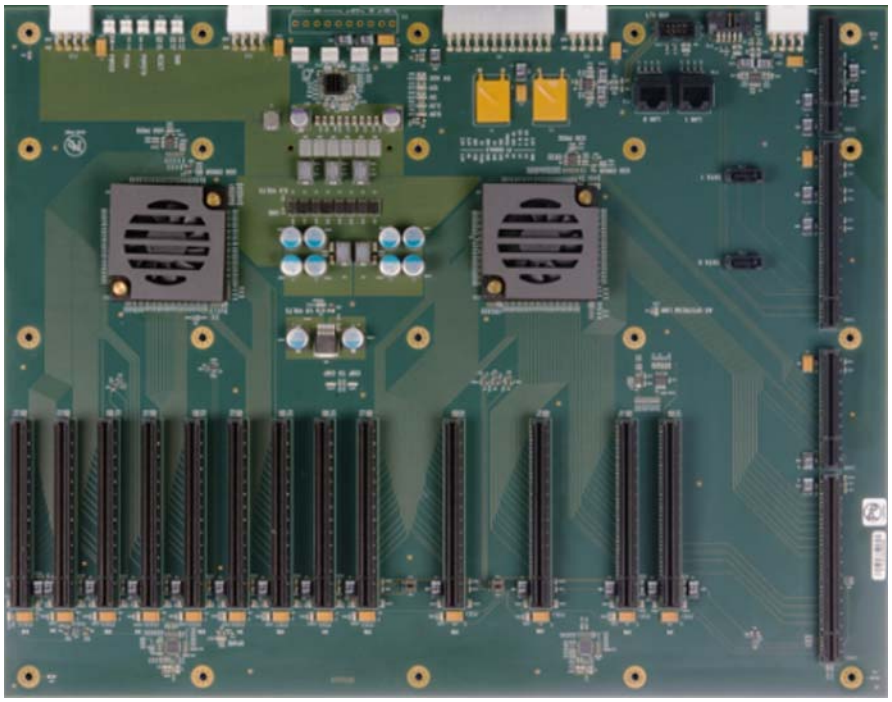
* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX16_1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIEX16_2	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIEX16_3	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PCIEX16_6	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
PCIEX16_7	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIEX16_8	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
PCIEX16_9	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIEX16_10	Empty (Unusable)		Mura MPX-V8	D	Empty (Unusable)	
PCIEX16_11	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
PCIEX16_12	Console display	F	Console display	D, E	Empty (Unusable)	
PCIEX16_13	C680	A, C	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Synnex Canada Touch Mura X79

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	Yes	Yes

Part number	TOUCH MURA X79
Maximum number of cards supported	4
Motherboard	ASUS® P9X79 WS
PCIe expansion slots	▪ 4 PCIe ×16 3.0/2.0 slots (dual ×16 or ×16, ×8, ×8, or quad ×8, black and blue) ▪ 2 PCIe ×16 3.0/2.0 slots at ×4 mode (white)
Chipset	Intel® X79
Processor	Intel® Core™ i7-3820, 3.60 GHz
System memory	8 GB DDR3 1333 MHz
System BIOS version	3101
Power supply	900W
Chassis	Chenbro RM422 4U
Performance considerations	▪ 1-2 cards → ×16 ▪ 3 cards → 1 ×16 + 2 ×8 ▪ 4 cards → 4 ×8
Notes	For two-card configurations, a longer ribbon cable (for framelock) is required (P/N: F16279-00). For more information, contact your Matrox representative.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX16_1	C680	C	Mura MPX-4/4	B	—	
PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B	—	
PCIEX16_3	Console display	F	Console display	D	—	
PCIEX16_4	C680	C	Mura MPX-4/4	A, B	—	
PCIEX16_5	Empty		Empty		—	
PCIEX16_6	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B	—	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Synnex Canada Touch Mura Z77

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Part number	TOUCH MURA Z77
Maximum number of cards supported	4
Motherboard	ASUS® P8Z77 WS
PCIe expansion slots	▪ 4 PCIe ×16 3.0/2.0 slots (dual ×16 or ×16, ×8, ×8, or quad ×8) ▪ 2 PCIe ×1 2.0 slots
Chipset	Intel® Z77 Express
Processor	Intel® Core™ i7-3770K, 3.50 GHz
System memory	8 GB DDR3
System BIOS version	0502 ×64
Power supply	900W
Chassis	Chenbro RM422 4U
Performance considerations	▪ 1-2 cards → ×16 ▪ 3 cards → 1 ×16 + 2 ×8 ▪ 4 cards → 4 ×8
Notes	For two-card configurations, a longer ribbon cable (for framelock) is required (P/N: F16279-00). For more information, contact your Matrox representative.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIEX16_1	—		Mura MPX-4/4	B	—	
PCIEX16_2	—		Mura MPX-4/4	A, B	—	
PCIEX1_1	—		Empty (Unusable)		—	
PCIEX16_3	—		Mura MPX-4/4	A, B	—	
PCIEX1_2	—		Empty (Unusable)		—	
PCIEX16_4	—		Mura MPX-4/4	A, B	—	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Trenton TVC4403 with JXTS6966

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	9 (No intercard transfers in ×4 slots)
Motherboard	JXTS6966 (SHB), BPG7087 (Backplane)
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	9
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	8
Maximum supported C900/C680	2
PCIe expansion slots	▪ 4 PCIe ×16 2.0 slots ▪ 6 PCIe ×4 2.0 slots (no intercard transfers)
Chipset	▪ Intel® 3420
Processor	Quad-Core Intel® Xeon® EC5500 Series
System memory	4 GB DDR3
System BIOS version	0ACAR 0.08×64
Power supply	800W redundant
Chassis	4U rack mount
Performance considerations	▪ 1-4 cards → ×16 ▪ 5 cards → 4 ×16 + 1 ×4 ▪ 6 cards → 4 ×16 + 2 ×4 ▪ 7 cards → 4 ×16 + 3 ×4 ▪ 8 cards → 4 ×16 + 4 ×4 ▪ 9 cards → 4 ×16 + 5 ×4
Notes	▪ While using up to 4 cards, the slot labeled **PCIe4** is used for the primary display. ▪ While using more than 4 cards, if both slots labeled **PCIe3** and **PCIe4** are used, **PCIe3** is used for the primary display. ▪ Optional system memory upgrade is available. ▪ Check with supplier for available CPU options. ▪ With C-Series based controllers, the integrated graphics must be disabled in the system BIOS to successfully install the driver. ▪ With Mura MPX Series based controllers, the integrated graphics must be enabled in the system BIOS but disabled in the Windows Device Manager.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIe1x4	Console display	F	Mura MPX-4/4	B	Empty	
PCIe2x4	Empty		Empty (unusable)		Empty	
PCIe3x4	Empty		Mura MPX-4/4	A, B, D	Empty	
PCIe4x16	C680	C	Mura MPX-4/4	A, B, D	Third party graphics hardware	
PCIe5x4	Empty		Mura MPX-4/4	A, B, D	Empty	
PCIe6x16	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIe7x4	Empty		Mura MPX-4/4	A, B, D	Empty	
PCIe8x16	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIe9x4	Empty		Mura MPX-4/4	A, B, D, E	Empty	
PCIe10x16	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Trenton TVC4406

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	4
Motherboard	ASUS® P9X79 WS
PCIe expansion slots	▪ 4 PCIe ×16 3.0/2.0 slots (dual ×16 or ×16, ×8, ×8, or quad ×8, black and blue) ▪ 2 PCIe ×16 3.0/2.0 slots at ×4 mode (white)
Chipset	Intel® X79
Processor	Intel® Core™ i7-3820, 3.8 GHz
Heatsink (for CPU)	LGA 2011 fan heatsink for the CPU
System memory	4 GB DDR3
System BIOS version	0603 X64 dated 11/11/2011
Power supply	800W redundant
Power supply bracket	Standard with the Trenton chassis
Chassis	4U rack mount
Performance considerations	▪ 1-2 cards → ×16 ▪ 3 cards → 1 ×16 + 2 ×8 ▪ 4 cards → ×8
Notes	For two-card configurations, a longer ribbon cable (for framelock) is required (P/N: F16279-00). For more information, contact your Matrox representative.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIEX16_1	C680	C	Mura MPX-4/4	B	—	
PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	—	
PCIEX16_3	Console display	F	Console display	D	—	
PCIEX16_4	C680	C	Mura MPX-4/4	A, B, D	—	
PCIEX16_5	Empty		Empty		—	
PCIEX16_6	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D, E	—	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Trenton TVC5401 (with JXTS6966 SHB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	16 (max. 29 GPUs)
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	16
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	15
Maximum supported C900/C680	2
Motherboard	JXTS6966 (SHB), BPG8032 (Backplane)
PCIe expansion slots	▪ 17 PCIe ×16 2.0 slots (mechanical and electrical) ▪ 1 PCIe ×16 2.0 slot (mechanical, ×4 electrical)
Chipset	Intel® 3420
Processor	Intel® Xeon® EC5500 Series (single or dual), Quad-Core
System memory	4 GB DDR3
System BIOS version	0ACAR 0.08x64
Power supply	1485W redundant
Chassis	5U rack mount
Notes	▪ Optional dual CPU configuration is available. ▪ The integrated graphics hardware must be disabled in Windows® Device Manager. For more information, see your system manual or Windows help. ▪ The maximum number of GPUs supported by Windows is 29. ▪ Due to a mechanical conflict with the SHB, slots labeled **PCIe1** and **PCIe2** aren't functional. ▪ Optional system memory upgrade is available.

* Maximum of 1 console display per system.

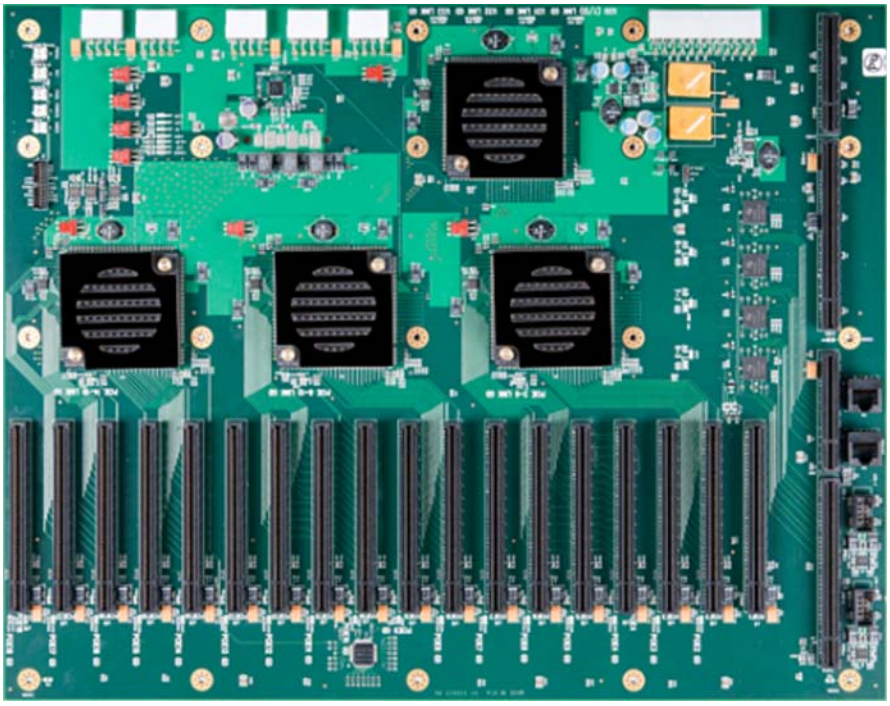
Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIE1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIE2	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIE3	MURAIPXI-D4JF	A, F	MURAIPXI-D4JF	A, D, E	Third party graphics hardware	A
PCIE4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, D	MURAIPXI-D4JF	A
PCIE5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE6	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE7	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIE8	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE9	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIE10	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE11	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE12	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIE13	C680	C	Mura MPX-4/4	A, B, D	Third party graphics hardware	
PCIE14	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE15	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE16	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE17	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIE18	MURAIPXI-D4JF	A	Mura MPX-4/4	B	Third party graphics hardware	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Trenton TVC4502

Maximum number of cards supported	1
Motherboard	Trenton JXMI8001
Available PCIe expansion slots	2 PCIe ×16 2.0 slots (×16 mechanical, ×8 electrical)
Chipset	Intel® 3420
Processor	Intel® Xeon® EC5509 quad-core, 2.00 GHz
System memory	4 GB DDR3 Mini-DIMM
System BIOS version	0ABYI 0.04 X64
Power supply	550W
Power supply bracket	Standard with the Trenton chassis
Chassis	4U rack mount

Validated motherboards

The following motherboards have been validated by Matrox to work with Matrox Mura MPX Series, Mura IPX Series, C900, and C680 products.

Note: For improved performance, we recommend you avoid using PCIe® ×4 slots or lower.

Note: If graphics hardware is built into the motherboard of your system, you need to disable it in Windows® Device Manager on Mura MPX Series based video wall systems. For more information, see your system manual or Windows help.

Currently supported motherboards

Note: Make sure your Mura system is in Legacy BIOS mode (MBR drive format). If your system came with UEFI mode (GPT drive format), make sure the Compatibility Support Module (CSM) is enabled to use the Legacy BIOS mode.

The following validated motherboards are currently supported. For a list of motherboards that are EOL (End of Life), see page 159.

Advantech ASMB-785G4-00A1E

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	3
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	2
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	2
Maximum supported C900/C680	2
Motherboard	Advantech ASMB-785G4-00A1E
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots (×16 mechanical, 1×16 or 2×8 electrical) ▪ 2 PCIe ×4 3.0 slots (×4 mechanical, ×4 electrical)
Chipset	Intel® C236
Processor	Intel® Xeon® E3-1225 V5 3.3 GHz
System memory	8 GB DDR4
System BIOS version	5.12
Power supply	400W80 plus single power supply
Chassis	IPX-7130-00XE
Notes	▪ In the system BIOS, you should disable power saving mode. ▪ To use two ×8 links on the PCIe ×16 slot6 and slot4, set JPEG1 to pin2-3 closed and keep JPEG2 pin1-2 closed to enable on the motherboard.

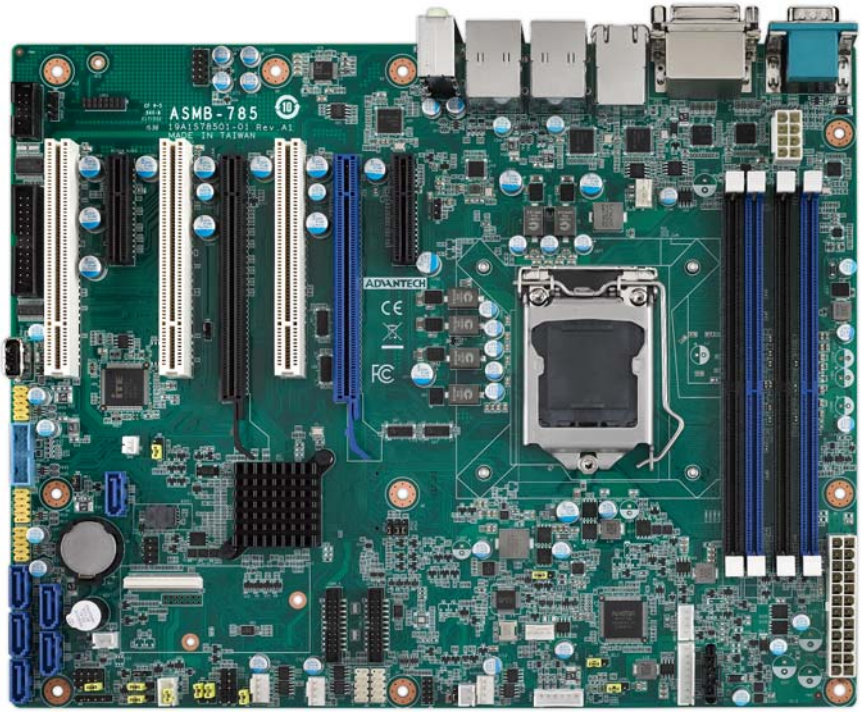
* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCI Slot1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIe ×4 Slot2	Console display	F	Console display	E	Empty (Unusable)	
PCI Slot3	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIe ×16 Slot4	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCI Slot5	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIe ×16 Slot6	MURAIPXI-D4JF	A, C	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIe ×4 Slot7	Empty	F	MURA-MPX-V8	D, E	Empty	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Advantech ASMB-813I-00A1E

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	6
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	5
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	5
Maximum supported C900/C680	2
Motherboard	Advantech ASMB-813I-00A1E
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots (×16 mechanical, ×16 and ×8 electrical) ▪ 3PCIe ×16 3.0 slot (×16 mechanical, ×8 electrical) ▪ 1 PCIe ×8 2.0 slot (×8 mechanical, ×4 electrical)
Chipset	Intel® C612
Processor	Intel® Xeon® E5-2620 V4 2.1 GHz
Heatsink (for CPU)	LGA 2011-R3
System memory	8 GB DDR4 ECC-RDIMM 2400 MHz
System BIOS version	Core version: 5.11 0.24 X64 Project version: ASMB S813X208
Power supply	1400W 80 plus Redundant power supply
Chassis	HPC-7400
Notes	▪ In the system BIOS, select **IntelRCSetup → IIO Configuration → CPU0 PCIe Configuration.** The following has to be changed from **[Auto]** to **[x8x8]:** ▪ IOU0 (PCIe Slot5/6) [x8x8] ▪ IOU1 (PCIe Slot3/4) [x8x8] ▪ Make sure the JPRSNT1 & JPRSNT2 jumpers on the motherboard are set to 2-3 when populating PCIe slots 3 and 5. ▪ If you're using the onboard console with C-Series controller, make sure that, in the system BIOS, **IntelIRCsetup → VGA Priority** is set to **Onboard Device.** ▪ In the system BIOS, **Advanced ‡ PCI Subsystem settings- Above 4G Decoding** should be set to **Disabled.** ▪ With all slots populated, there could be a performance drop in the data transferred from a Mura IPX Series input to a graphics card. This may reduce the number of source frames successfully transferred from a Mura IPX Series input to a graphics card. For more information, please contact Matrox Display Wall Technical Support team at dwcsupport@matrox.com.

* Maximum of 1 console display per system.

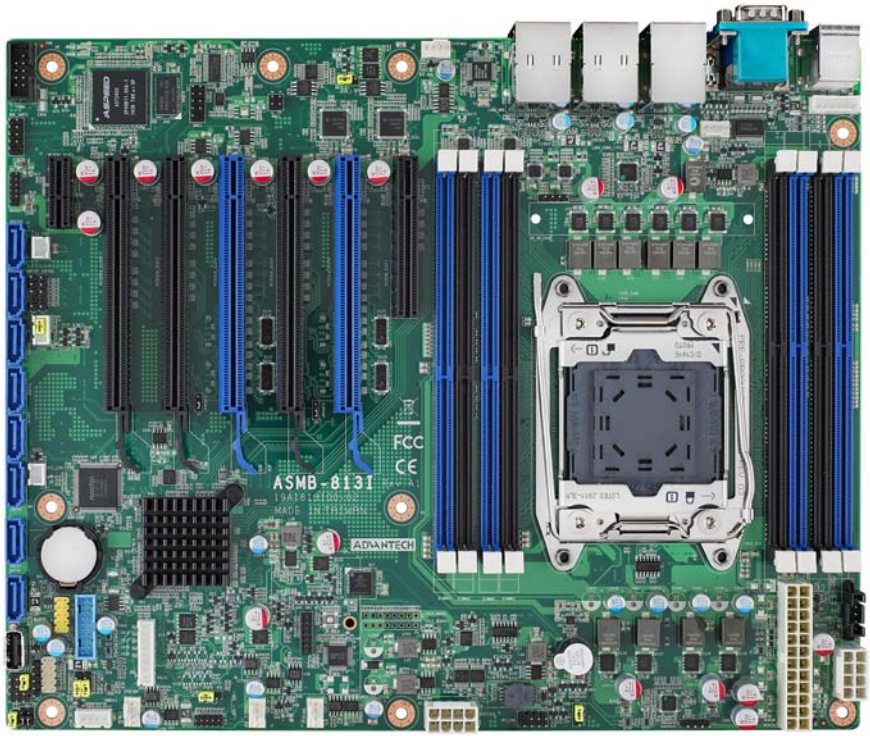
Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX1_Slot1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIEX8_Slot2	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
PCIEX8_Slot3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
PCIEX16_Slot 4	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIEX8_Slot5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIEX16_Slot 6	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIEX4_Slot7	Console display	See notes	Console Display	E	Console display	See notes

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Advantech ASMB-815

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	6
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	5
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	5
Maximum supported C900/C680	2
Motherboard	ASMB-815
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots (×16 mechanical, ×8/×16 electrical) ▪ 3 PCIe ×8 3.0 slots (×8 mechanical/electrical) ▪ 1 PCIe ×4 3.0 slot (×4 mechanical, ×4 electrical)
Chipset	Intel C620
Processor	Intel Xeon Scalable Processors (Xeon Silver / 4112 @ 2.6 GHz)
Heatsink (for CPU)	LGA 3647-P0
System memory	16 GB DDR4 ECC-RDIMM 2400 MHz
System BIOS version	Core version: 5.0.1.2 0.75 X64 Project version: S8150000060X022
Power supply	700W 80 plus single power supply
Chassis	Advantech ACP-4000MB-00XE

Notes	▪ If you plan on using local USB keyboard/mouse, you must add a PCI USB controller. Using the onboard USB controller may result in erratic USB behavior.
	▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware.
	▪ In the system BIOS, select **Socket Configuration → IIO Configuration**, change the following from **[Auto]** to **[x8x8]**:
	  ▪ IOU0 (IIO PCIe Br1) [x8x8]
	  ▪ IOU1 (IIO PCIe Br2) [x8x8]
	  ▪ IOU2 (IIO PCIe Br3) [x8x8]
	▪ In the system BIOS, select **Advanced → PCI Subsystem Settings**, make sure **Above 4G** is disabled.
	▪ With all slots populated, there could be a performance drop in the data transferred from a Mura IPX Series input to a graphics card. This may reduce the number of source frames successfully transferred from a Mura IPX Series input to a graphics card. For more information, please contact Matrox Display Wall Technical Support team at dwcsupport@matrox.com.
	▪ Installing full length cards on PCIEx4 _SLOT2 and PCIEx8_SLOT3 will obstruct access to the SATA6 and SATA7 connectors on the motherboard.
	▪ The chassis fans must remain at full speed.

* Maximum of 1 console per system.

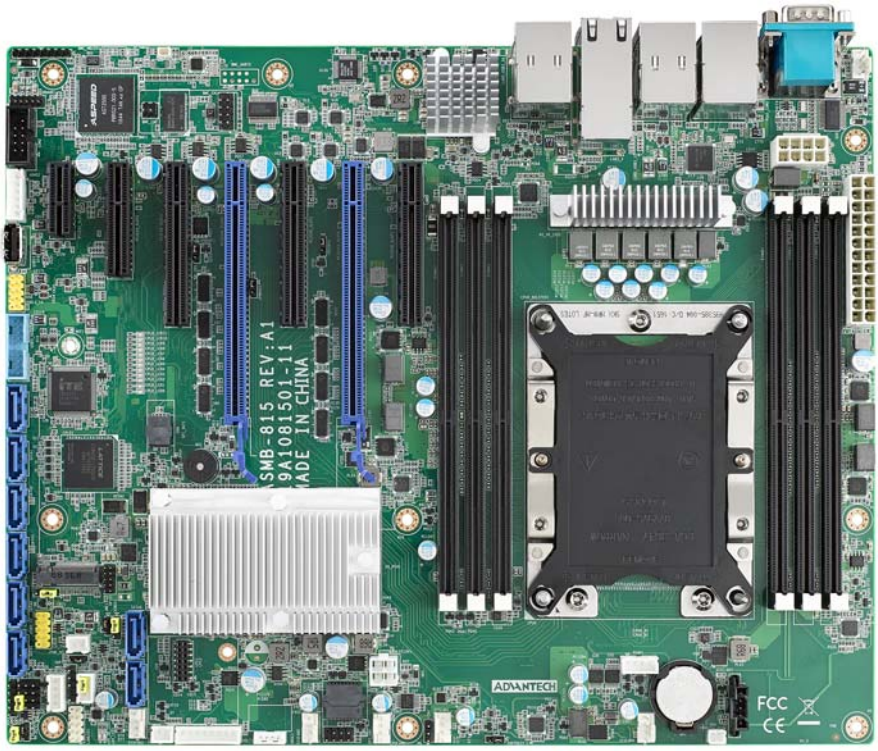
Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX1_Slot1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIEX4_Slot2	Console Display	F	Console Display	E	Empty (Unusable)	
PCIEX8_Slot3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIEX16_Slot 4	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIEX8_Slot5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PCIEX16_Slot 6	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIEX8_Slot7	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Advantech PCE-5B12 BP with PCE-7129/PCE-5129 SHB

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	11
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	10
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	10
Maximum supported C900/C680	2
Motherboard	PCE-7129/PCE-5129 (SHB), PCE-5B12-00A1 (Backplane)
PCIe expansion slots	▪ 10 PCIe ×16 2.0 slots (×16 mechanical, ×16 electrical) ▪ 1 PCIe ×16 2.0 slot (×16 mechanical, ×4 electrical)
Chipset	Intel C236 (PCE-7129) Intel Q170 (PCE-5129)
Processor	Intel® Core™ i7-6770S, 3.40 GHz (PCE-7129/PCE-5129) (Advantech Part# 1960052651N021)
Heatsink for the CPU	2U CPU cooler
System memory	32 GB DDR4 ECC-RDIMM 2400 MHz
System BIOS version	Core version: 5.0.1.2 0.20 x64 Project version: 7129000CF60E201 (PCE-7129) Project version: 5129000QF60F201 (PCE-5129)
Power supply	Single power supply (not included with the chassis): ▪ Enermax 1200W (Part#: EPF1200EW) ▪ EVGA 850W (Part#: 220-G3-0850-X1)
Chassis	IPC-623 4U rackmount Chassis Part#: IPC-623BP-00XBE (for single power supply)
Notes	▪ Once the Mura cards are installed in the system, install the hold down clamp. Make sure you insert the rubber cushions into the notches of the hold down clamp and adjust the rubber cushions to secure the cards into position. The rubber cushions protect the cards against shock and vibration. For more information, see the system / chassis manual. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ The single power supply must be ordered separately. ▪ The chassis fans must remain at full speed.

* Maximum of 1 console per system.

Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
P1PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
P1PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P1PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
P1PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P1PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P2PCIEX16_1	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P2PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P2PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PPCIEX4_1	Console display	F	Console Display	E	Empty (unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

Advantech PCE-5B19/PCE-5128

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	17
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	15
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	16
Maximum supported C900/C680	2
Motherboard	PCE-5128 (SHB) PCE-5B19-00A1E (Backplane)
PCIe expansion slots	▪ 17 PCIe ×16 3.0 slots (×16 mechanical, ×16 electrical) ▪ 1 PCIe ×16 3.0 slot (×16 mechanical, ×4 electrical)
Chipset	Intel® Q87 (PCE-5128)
Processor	Intel® Core™ i7-4770S, 3.10 GHz
Heatsink (for CPU)	2U CPU cooler
System memory	8 GB DDR3
System BIOS version	Core version: 4.6.5.4 0.35 x64 Project version: PCE 5128XH01
Power supply	Single power supply (not included with the chassis): ▪ Enermax 1200W (Part#: EPF1200EW) ▪ EVGA 850W (Part#: 220-G3-0850-X1) ▪ 1200W (Advantech part # 96PS-A1K2WPS2)
Power supply bracket	Standard
Chassis	IPC-623 4U rack mount ▪ Chassis Part#: IPC-623BP-00XBE ▪ Chassis Part#: IPC-623BP-1KZC (for single power supply from Advantech)
Notes	▪ The maximum number of GPUs supported by Windows is 29. ▪ The **P1PCIE1** ×4 slot is unusable due to the adjacent SHB slot. ▪ The single power supply must be ordered separately. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ Choose power cord with IEC C19 plug for chassis IPC-623BP-1KZC. ▪ The chassis fans must remain at full speed.

* Maximum of 1 console display per system.

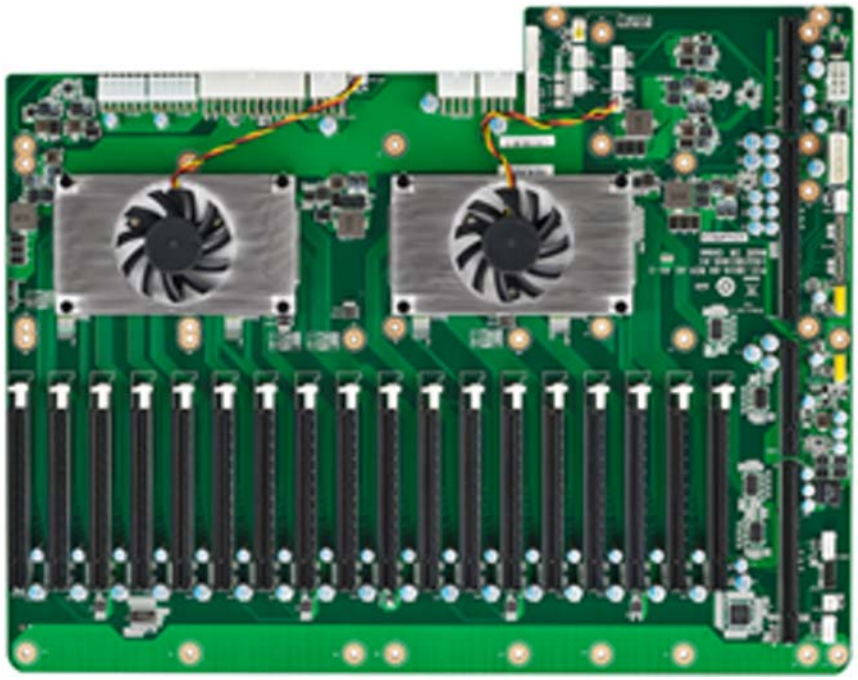
Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
P1PCIE_1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
P2PCIE_1	Empty (Unusable)		Mura MPX-V16	D	Empty (Unusable)	
P2PCIE_2	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
P3PCIE_1	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P3PCIE_2	MURAIPXI-D4JF	A,	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P3PCIE_3	MURAIPXI-D4JF	A,	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P3PCIE_4	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P3PCIE_5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P4PCIE_1	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P4PCIE_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P4PCIE_3	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P4PCIE_4	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P4PCIE_5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P5PCIE_1	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P5PCIE_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P5PCIE_3	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P5PCIE_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, D	MURAIPXI-D4JF	A
P5PCIE_5	Console display	F	Console display	E	Empty (Unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Advantech PCE-5B19/PCE-5129

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes (Requires Mura driver version 3.01 or later)	Yes	Yes	Yes

Maximum number of cards supported	16
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	Mura MPX Series only: 14 Mura MPX Series with a console display: 14 (plus a console display) Mura MPX Series + Mura IPX Series: 9 + 5
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	14
Maximum supported C900/C680	2
Motherboard	PCE-5129 (SHB) PCE-5B19-00A1E (Backplane)
PCIe expansion slots	▪ 17 PCIe ×16 3.0 slots (×16 mechanical, ×16 electrical) ▪ 1 PCIe ×16 3.0 slot (×16 mechanical, ×4 electrical)
Chipset	Intel® Q170
Processor	Intel® Core™ i7-6770S, 3.40 GHz
Heatsink (for CPU)	2U CPU cooler
System memory	16 GB DDR4
System BIOS version	Core version: 5.0.1.2 0.20 x64 Project version: 5129000QF60F201
Power supply	Single power supply (not included with the chassis): ▪ Enermax 1200W (Part#: EPF1200EW) ▪ EVGA 850W (Part#: 220-G3-0850-X1) ▪ 1200W (Advantech part # 96PS-A1K2WPS2)
Power supply bracket	Standard
Chassis	IPC-623 4U rack mount ▪ Chassis Part#: IPC-623BP-00XBE ▪ Chassis Part#: IPC-623BP-1KZC (for single power supply from Advantech)
Notes	▪ The maximum number of GPUs supported by Windows is 29. ▪ The **P1PCIE1** ×4 slot is unusable due to the adjacent SHB slot. ▪ The single power supply must be ordered separately. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ Choose power cord with IEC C19 plug for chassis IPC-623BP-1KZC. ▪ The chassis fans must remain at full speed.

* Maximum of 1 console display per system.

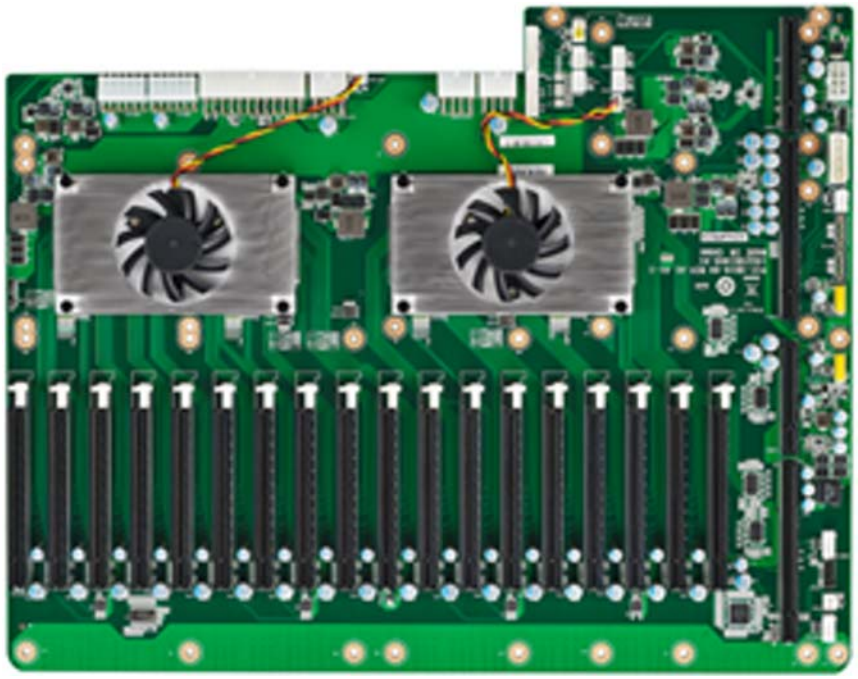
Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
P1PCIE_1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
P2PCIE_1	Empty (Unusable)		Console Display	E	Empty (Unusable)	
P2PCIE_2	C680		Empty (Unusable)		Third party graphics hardware	
P3PCIE_1	C680	A, C	Mura MPX-4/4	B	Third party graphics hardware	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P3PCIE_2	MURAIPXI-D4JF	A,	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P3PCIE_3	MURAIPXI-D4JF	A,	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
P3PCIE_4	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P3PCIE_5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P4PCIE_1	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
P4PCIE_2	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P4PCIE_3	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P4PCIE_4	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P4PCIE_5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P5PCIE_1	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P5PCIE_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P5PCIE_3	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P5PCIE_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P5PCIE_5	Console display	F	Mura MPX-4/4	A, B, D	Empty (Unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Advantech PCE-5B19/PCE-7129

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes (Requires Mura driver version 3.01 or later)	Yes	Yes	Yes

Maximum number of cards supported	16
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	Mura MPX Series only: 14 Mura MPX Series with a console display: 14 (plus a console display) Mura MPX Series + Mura IPX Series: 7 + 6
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	14
Maximum supported C900/C680	2
Motherboard	PCE-7129 (SHB) PCE-5B19-00A1E (Backplane)
PCIe expansion slots	▪ 17 PCIe ×16 3.0 slots (×16 mechanical, ×16 electrical) ▪ 1 PCIe ×16 3.0 slot (×16 mechanical, ×4 electrical)
Chipset	Intel® C236
Processor	Intel® Core™ i7-6770S, 3.40 GHz
Heatsink (for CPU)	2U CPU cooler
System memory	32 GB DDR4
System BIOS version	Core version: 5.0.1.2 0.20 x64 Project version: 7129000CF60E201
Power supply	Single power supply (not included with the chassis): ▪ Enermax 1200W (Part#: EPF1200EW) ▪ EVGA 850W (Part#: 220-G3-0850-X1) ▪ 1200W (Advantech part # 96PS-A1K2WPS2)
Power supply bracket	Standard
Chassis	IPC-623 4U rack mount ▪ Chassis Part#: IPC-623BP-00XBE ▪ Chassis Part#: IPC-623BP-1KZC (for single power supply from Advantech)
Notes	▪ The maximum number of GPUs supported by Windows is 29. ▪ The **P1PCIE1** ×4 slot is unusable due to the adjacent SHB slot. ▪ The single power supply must be ordered separately. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ The P2PCIE_1 & P2PCIE_2 x16 slots can't use full-length PCIe cards due to a mechanical conflict with the SHB CPU heatsink. ▪ Choose power cord with IEC C19 plug for chassis IPC-623BP-1KZC. ▪ The chassis fans must remain at full speed.

* Maximum of 1 console display per system.

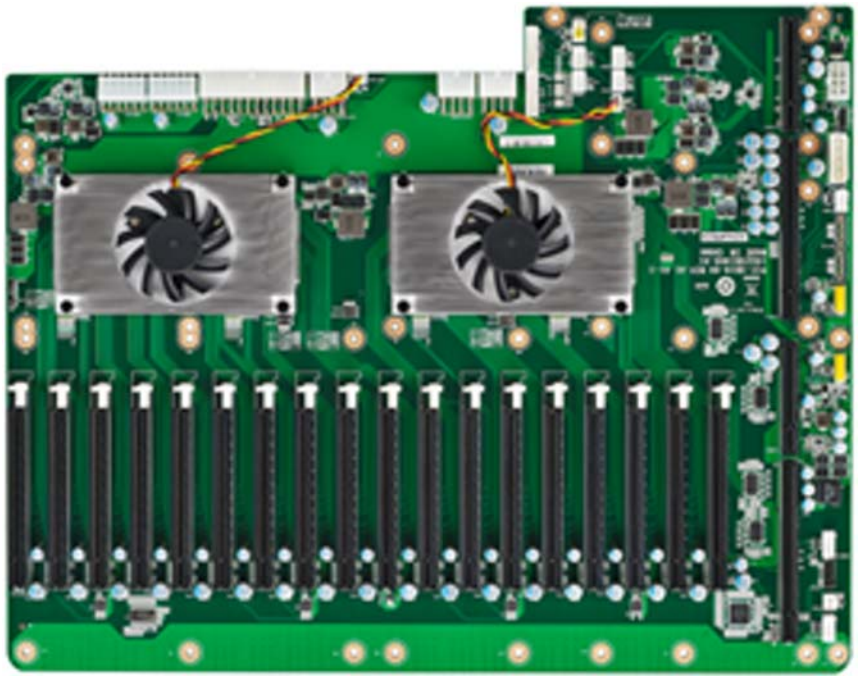
Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
P1PCIE_1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
P2PCIE_1	Empty (Unusable)		Console Display	E	Empty (Unusable)	
P2PCIE_2	C680		Empty (Unusable)		Third party graphics hardware	

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
P3PCIE_1	C680	A, C	Mura MPX-4/4	B	Third party graphics hardware	A
P3PCIE_2	MURAIPXI-D4JF	A,	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P3PCIE_3	MURAIPXI-D4JF	A,	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
P3PCIE_4	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
P3PCIE_5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P4PCIE_1	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
P4PCIE_2	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P4PCIE_3	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P4PCIE_4	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P4PCIE_5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P5PCIE_1	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P5PCIE_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P5PCIE_3	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
P5PCIE_4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
P5PCIE_5	Console display	F	Mura MPX-4/4	A, B, D	Empty (Unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



ASUS® WS C422 PRO/SE

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	No	No	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	4
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	3 (Only Mura IPX Series)
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	See note for console support
Maximum supported C900/C680	2
Motherboard	Asus® WS C422 PRO/SE
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots (×16 mechanical, ×16 electrical) ▪ 2 PCIe ×16 3.0 slots (×16 mechanical, ×8/×16 electrical) ▪ 1 PCIe ×4 3.0 slot (×4 mechanical, ×4 electrical)
Chipset	Intel® C422
Processor	Intel® Xeon® W-2133 CPU @ 3.6GHz
Heatsink for the CPU	LGA 2066 for Intel® Xeon-W series
System memory	12 GB DDR4
System BIOS version	0702, 2018-06-14
Power supply	750W (P/N: EVGA Supernova 750G3)
Chassis	Chenbro RM41300 FS81 (includes fans)
Notes	▪ The chassis must be ordered from Chenbro. Power supply isn't included with the chassis. ▪ To use the onboard graphics, make sure the 3-pin **VGA_SW1** jumper is set to **Enable** on the motherboard. Then install the VGA bracket cable that came with the motherboard in an empty slot and connect to the internal VGA connector **VGA_HDR1** on the motherboard. ▪ Only onboard console support with C-Series based controller.

* Maximum of 1 console per system.

Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX16_1	C680	C	—		Third party graphics hardware	
PCIEX16_2	C680	A,C	—		Third party graphics hardware	A
PCIEX4_1	Empty		—		Empty	
PCIEX16_3	MURAIPXI-D4JF	A	—		MURAIPXI-D4JF	A
PCIEX16_4	MURAIPXI-D4JF	A	—		MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8

Option	Product
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

ASUS® WS C422 SAGE/10G

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes (Requires 3.03 or later	No foreseeable compatibility issues

Maximum number of cards supported	7
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	7
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	6
Maximum supported C900/C680	2
Motherboard	Asus WS C422 SAGE/10G
PCIe expansion slots	7 PCIe ×16 3.0 slots (×16 mechanical, ×16/x8 electrical)
Chipset	Intel® C422
Processor	Intel® Xeon W-2123 CPU @ 3.6GHz
Heatsink for the CPU	LGA 2066
System memory	16 GB DDR4
System BIOS version	0905 2018-11-30
Power supply	850W (P/N:EVGA Supernova 850G3)
Chassis	Chenbro RM41300-FS81 (includes fans)
Notes	▪ The chassis must be ordered from Chenbro. Power supply isn't included with the chassis. ▪ The chassis fan speed must be set to full speed. To change the fan speed, go to system BIOS main page (EZ mode), select **QFan Control**, select the header to which the fans are connected, change from **Standard** to **Full Speed**, and apply the changes. ▪ In the system BIOS, go to **Advanced Mode** → **Boot**, then set **Above 4G Decoding** to **ON** and set **First VGA 4G Decode** to **Above_4G**. ▪ **Windows 10** – In the system BIOS, go to **Advanced Mode** → **Boot** → **CSM Configuration** → **CSM** set to **Disable**. ▪ **Windows 7** – In the system BIOS, go to **Advanced Mode** → **Boot** → **CSM Configuration** → **CSM** set to **Enable**. ▪ Moving application windows on the console display may affect the performance of the video wall. ▪ The system BIOS is available at ftp://c422_sage:RRCygpAK@privftp.matrox.com.

* Maximum of 1 console per system.

Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIEX16_2	MURAIPXI-D4JF	A, F	MURAIPXI-D4JF	A, B, D, E	MURAIPXI-D4JF	A
PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
PCIEX16_4	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
PCIEX16_6	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIEX16_7	C680	A, C	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

ASUS® WS C621E SAGE

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	No	No	Yes	Yes (requires 3.03 or later)	No foreseeable compatibility issues

Maximum number of cards supported	7
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	6 (Only Mura IPX Series)
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	See note for console support.
Maximum supported C900/C680	2
Motherboard	Asus WS C621E SAGE
PCIe expansion slots	▪ 3 PCIe ×16 3.0 slots (×16 mechanical, ×16 electrical) ▪ 2 PCIe ×16 3.0 slots (×16 mechanical, ×8/×16 electrical) ▪ 2 PCIe ×16 3.0 slot (×16 mechanical, ×8 electrical)
Chipset	Intel® C621 PCH
Processor	Intel® Xeon Bronze 3104 Dual CPU @ 1.70GHz
Heatsink for the CPU	LGA 3647
System memory	16 GB DDR4
System BIOS version	5701
Power supply	850W (P/N:EVGA Supernova 850G3)
Chassis	Chenbro RM41300-FS81 (includes fans)
Notes	▪ The chassis must be ordered from Chenbro. Power supply isn't included with the chassis. ▪ The chassis fan speed must be set to full speed. To change the fan speed, go to the system BIOS main page (EZ mode), select **QFan Control**, select the header to which the fans are connected, change from **Standard** to **Full Speed**, and apply the changes. ▪ To use the onboard graphics, make sure the 3-pin VGA_SW1 jumper is set to **Enable** on the motherboard. Then, install the VGA bracket cable that came with the motherboard in an empty slot and connect to the internal VGA connector VGA_HDR1 on the motherboard. ▪ In the system BIOS, go to **Advanced Mode** → **Boot** → **CSM Configuration** → make sure **CSM** is set to **Disable** ▪ In the system BIOS, go to **Advanced Mode** → **PCI Subsystem settings**, then make sure **Above 4G Decoding** is set to **Enable** and **First VGA 4G Decode** to **Above_4G**. ▪ Only onboard console support with C-Series based controller. ▪ The console display should never be set as the primary display in Windows. ▪ Moving application windows on the console display may affect the performance of your video wall.

* Maximum of 1 console per system.

Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX16_1	C680	C	—		Third party graphics hardware	
PCIEX16_2	MURAIPXI-D4JF	A	—		MURAIPXI-D4JF	A
PCIEX16_3	MURAIPXI-D4JF	A	—		Third party graphics hardware	A
PCIEX16_4	MURAIPXI-D4JF	A	—		MURAIPXI-D4JF	A
PCIEX16_5	MURAIPXI-D4JF	A	—		Third party graphics hardware	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIEX16_6	MURAIPXI-D4JF	A	—		Third party graphics hardware	A
PCIEX16_7	C680	A, C	—		MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

ASUS® WS X299 SAGE

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	7
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	7
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	6
Maximum supported C900/C680	2
Motherboard	Asus® WS X299 SAGE
PCIe expansion slots	▪ 1 PCIe ×16 3.0 slots (×16 mechanical, ×16 electrical) ▪ 3 PCIe ×16 3.0 slots (×16 mechanical, ×8/×16 electrical) ▪ 3 PCIe ×8 3.0 slot (×16 mechanical, ×8 electrical)
Chipset	Intel® X299
Processor	Intel® Core i9-7900X @ 3.30GHz; X-series 44 lane CPU
CPU Heatsink	LGA 2066-4
System memory	16 GB DDR4
System BIOS version	0905, 2018.11.30
Power supply	850W (P/N:EVGA Supernova 850G3)
Chassis	Chenbro RM41300-FS81 (includes fans)
Notes	▪ The chassis must be ordered from Chenbro. Power supply isn't included with the chassis. ▪ The chassis fan speed must be set to full speed. To change the fan speed, go to system BIOS main page (EZ mode) → select **QFan Control** → Select the header to which the fans are connected → change from **Standard** to **Full Speed** and apply the changes. ▪ In the system BIOS, go to **Advanced Mode** → **Boot**, then set **Above 4G Decoding** to **ON** and set **First VGA 4G Decode** to **Above_4G**. ▪ The console display should never be set as the primary display in Windows. ▪ System BIOS available at ftp://asusbiosx299:5eyidt85@privftp.matrox.com.

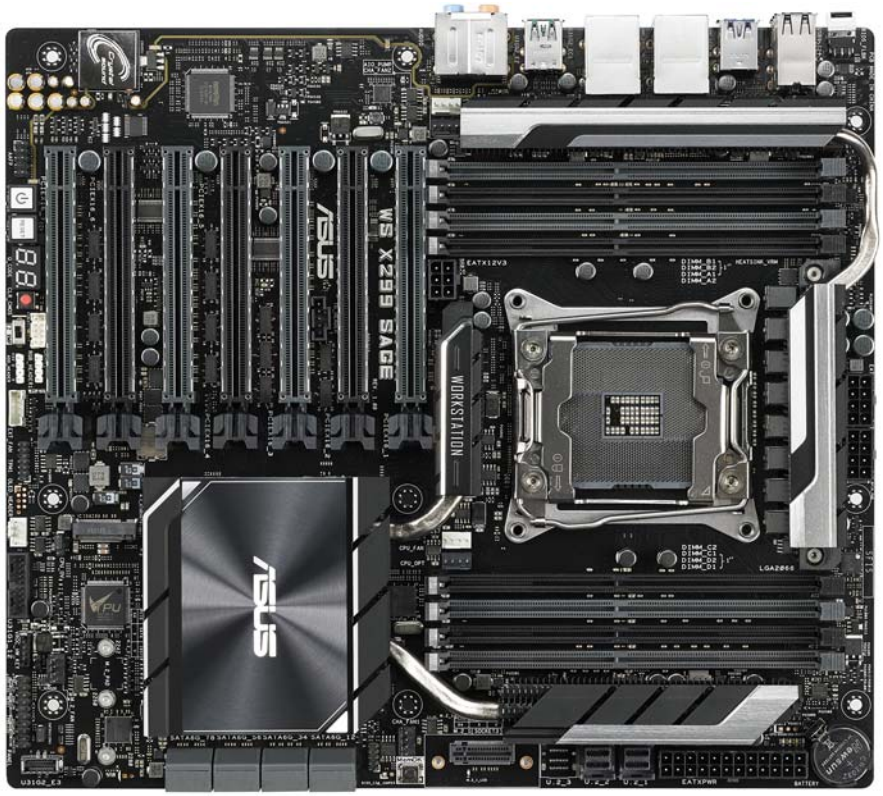
* Maximum of 1 console per system.

Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX16_1	C680	C	MURA MPX-4/4	B	Third party graphics hardware	
PCIEX16_2	MURAIPXI-D4JF	A, F	MURAIPXI-D4JF	A, B, D, E	MURAIPXI-D4JF	A
PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
PCIEX16_4	MURAIPXI-D4JF	A	MURA MPX-4/4	A, B, D	Third party graphics hardware	A
PCIEX16_5	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
PCIEX16_6	MURAIPXI-D4JF	A	MURA MPX-4/4	A, B, D	Third party graphics hardware	A
PCIEX16_7	C680	A, C	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



ASUS® X99-A II

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	4
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	3
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	3
Maximum supported C900/C680	2
Motherboard	ASUS® X99-A II
PCIe expansion slots	▪ 3 PCIe ×16 3.0/2.0 slots (one ×16, two ×16/×8, three ×8/×8/×8) ▪ 1 PCIe ×16 2.0 slot (maximum ×4 mode) ▪ 2 PCIe ×1 2.0 slots
Chipset	Intel® X99
Processor	▪ Intel® Core™ i7-6800K, 3.3 GHz (28 lane CPU)
Heatsink (for CPU)	LGA 2011-V3
System memory	8 GB DDR4, 2133 MHz
System BIOS version	3902
Power supply	▪ iStarUSA – ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8)
Chassis	▪ Chenbro RM41300-FS81 (includes fans)
Performance considerations	▪ 1 card → ×16 ▪ 2 cards → 1 ×16 + 1 ×8 ▪ 3 cards → 3 ×8
Notes	▪ Chenbro – The chassis must be ordered from Chenbro. ▪ iStarUSA – The power supply must be ordered from iStarUSA. ▪ For more information on supported chassis, see “Validated chassis”, page 179.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIEX16_2	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIEX16_3	MURAIPXI-D4JF	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIEX16_4	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIEX16_5	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIEX16_6	Console display	F	Console display	E	Empty (Unusable)	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

ASUS® X99-DELUXE II

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	4
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	4
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	3
Maximum supported C900/C680	2
Motherboard	ASUS® X99-DELUXE II
PCIe expansion slots	▪ 4 PCIe 3.0/2.0 ×16 slots (one ×16, one ×16/×16, one ×16/×16/×8, one ×8/×8/×8/×8) ▪ 1 PCIe 2.0 ×16 slot (×1 mode) ▪ 1 PCIe 2.0 ×16 slot (maximum ×4 mode) ▪ 1 PCIe 2.0 ×1
Chipset	Intel® X99
Processor	Intel® Xeon™ E5-1620 V4 @ 3.5 GHz (40 lane CPU)
Heatsink (for CPU)	LGA 2011-V3
System memory	8 GB DDR4
System BIOS version	1902
Power supply	▪ iStarUSA – ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP) ***OR*** ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8)
Power supply bracket	▪ iStarUSA – ▪ Redundant power supply – Use the bracket included with the power supply. ▪ Regular power supply – Use the standard bracket included with the chassis.
Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192.
Chassis	▪ iStarUSA Kit 1 + Kit 2 ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80) ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DDFANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support.
Performance considerations	▪ 1-2 cards → ×16 ▪ 3 cards → 2 ×16 + 1 ×8 ▪ 4 cards → ×8
Notes	▪ You need to change the default BIOS settings. Under **Advance Mode**, select **Tool**, then set the bandwidth of the **PCIEX16_5 slot** (black) to **×8 Modex-AMI**. This enables the slot to run in ×8 mode. ▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ For more information on supported chassis, see “Validated chassis”, page 179.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIEX16_2	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIEX16_3	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIEX16_4	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIEX16_5	MURAIPXI-D4JF	A, F	Mura MPX-4/4	A, B, D, E	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

ASUS® X99-E WS/USB 3.1

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	7
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	7
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	6
Maximum supported C900/C680	2
Motherboard	ASUS® X99-E WS/USB 3.1
PCIe expansion slots	7 PCIe ×16 3.0/2.0 slots
Chipset	Intel® X99
Processor	Intel® Core™ i7-5930K, 3.5 GHz / i7-6850K, 3.60 GHz
System memory	8 GB DDR4, up to 32 GB DDR4
System BIOS version	3601
Power supply	▪ iStarUSA – ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP) ***OR*** ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8)
Power supply bracket	▪ iStarUSA – ▪ Redundant power supply – Use the bracket included with the power supply. ▪ Regular power supply – Use the standard bracket included with the chassis.
Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192.
Chassis	▪ iStarUSA Kit 1 + Kit 2 ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80) ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support.
Performance considerations	▪ 1-4 cards → ×16 ▪ 7 cards → 1 ×16 + 6 ×8
Notes	▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ We recommend updating your system with the ASUS BIOS available from the Matrox FTP site (ftp://asusbios:9lwMwTaD@privftp.matrox.com). ▪ In the system BIOS, go to **Advanced Mode → Boot → Set Above 4G Decoding** to **Disabled**. ▪ For more information on supported chassis, see “Validated chassis”, page 179.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIEX16_2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
PCIEX16_3	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIEX16_4	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIEX16_5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIEX16_6	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
PCIEX16_7	MURAIPXI-D4JF	A, F	Mura MPX-4/4	A, B, D, E	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

ASUS® Z270-WS

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	Yes

Maximum number of cards supported	4
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	4
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	3
Maximum supported C900/C680	2
Motherboard	ASUS Z270-WS
PCIe expansion slots	▪ 4× PCIe® 3.0/2.0 ×16 ▪ 1× PCIe® ×4
Chipset	Intel® Z270
Processor	▪ **C-Series based Controller** – Intel® Core i5-7600K, 3.5 GHz (16 lane CPU) ▪ **Mura MPX Series based controller** – Intel® Core i7-6700K, 3.4 GHz (16 lane CPU)
System memory	8 GB DDR4
System BIOS version	0801
Power supply	550 W (P/N: Corsair CS550M) Optional power supply required for maximum support of third party graphics hardware.
Power supply bracket	Standard bracket included with the chassis.
Fan	▪ Included with chassis: 120 mm × 3 fans (Model: DD-FAN120B) ▪ Included with chassis: 80 mm × 1 fan (Model: DD-FAN80)
Chassis	iStarUSA (P/N: D-400L-7)
Notes	▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ Mura MPX Series based controllers are unsupported with 7th generation desktop processors.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX16_1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCIEX16_2	C680	A, C	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
PCIEX4_1	Empty (unusable)		Empty (unusable)		Empty (unusable)	
PCIEX16_3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
PCIEX16_4	MURAIPXI-D4JF	A, F	MURAIPXI-D4JF	A, B, D, E	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI

Option	Product
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

ASUS® WS Z390 PRO

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	No	No	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	4
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	3 (Only Mura IPX Series)
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	See note for console support
Maximum supported C900/C680	2
Motherboard	ASUS WS Z390 PRO
PCIe expansion slots	▪ 4 PCIe ×16 3.0 slots (×16 mechanical, ×8/×16 electrical) ▪ 1 PCIe ×4 3.0 slot
Chipset	Intel Z390
Processor	Intel Core I5-9600K CPU @3.70 GHz
System memory	8GB DDR4
CPU Heatsink	LGA 1151
System BIOS version	0701
Power supply	Corsair CS5450M Optional power supply required for maximum support of third party graphics hardware.
Chassis	Norco RPC-432 (4U short depth rackmount case)
Notes	▪ The chassis fan speed must be set to full speed. To change the fan speed, go to system BIOS main page (EZ mode), select **QFan Control** → select the header to which the fans are connected, then change from **Standard** to **Full Speed** and apply the changes. ▪ Optional chassis rear fans 2×80mm must be ordered separately. ▪ Only onboard console support with C-Series based controller. ▪ Mura MPX Series based controllers are unsupported with Intel® seventh generation desktop processors onwards.

* Maximum of 1 console per system.

Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
PCIEX16_1	C680	C	—		Third-party graphics hardware	
PCIEX16_2	MURAIPXI-D4JF	A,C	—		MURAIPXI-D4JF	A
PCIEX4_1	Empty		—		Empty	
PCIEX16_3	C680	A	—		Third-party graphics hardware	A
PCIEX16_4	MURAIPXI-D4JF	A	—		MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680

Option	Product
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

GIGABYTE™ MW51-HP0

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	7
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	6
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	6
Maximum supported C900/C680	2
Motherboard	MW51-HP0
PCIe expansion slots	1 PCIe ×16 3.0 slot (×16 mechanical and electrical) 3 PCIe ×16 3.0 slots (×16 mechanical, ×16/×8 electrical) 3 PCIe ×16 3.0 slots (×16 mechanical, ×8 electrical)
Chipset	Intel® C422
Processor	Intel® Xeon W-2123 3.60 GHz
Heatsink (for CPU)	LGA2066
System memory	16GB
System BIOS version	F6
Power supply	860W (iStar USA P/N: TC-860PD8)
Chassis	iStarUSA (P/N: D-400L-7) The center fan at the rear of the chassis must be disconnected.
Notes	▪ System BIOS available at ftp://Gigabyte:Hv9LFYh8@privftp.matrox.com. ▪ In the System BIOS, select **Advanced** → **Hardware Monitor** → **CPU fan speed control**, then set all the system fan speed controls to **Full speed**.

* Maximum of 1 console display per system.

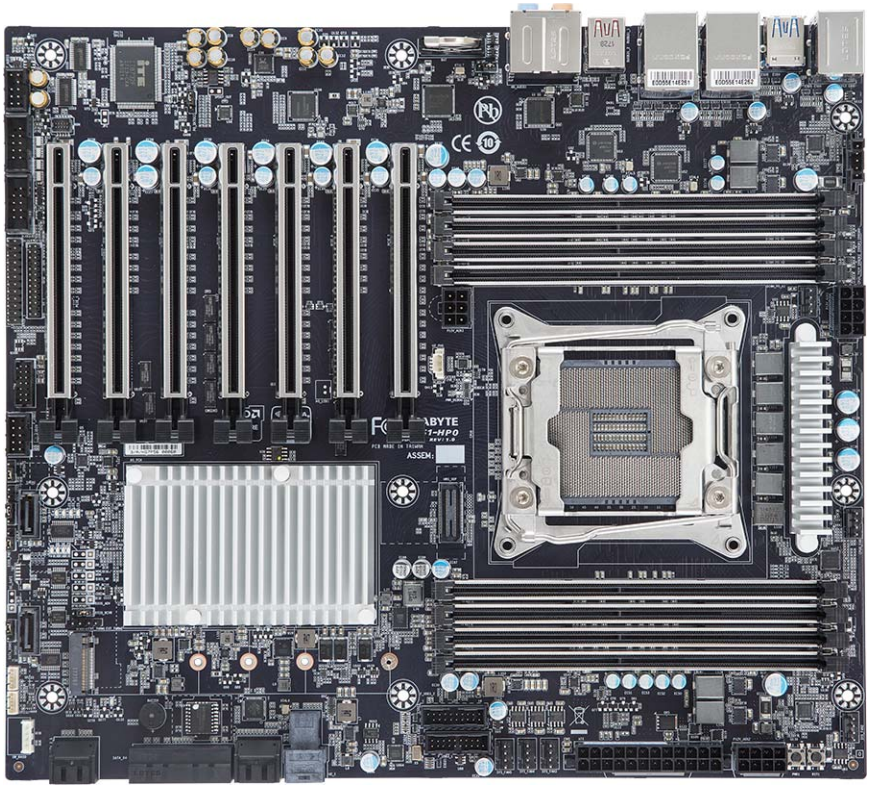
Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCIe ×16 Slot1	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B	Third party graphics hardware	A
PCIe ×8 Slot2	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B	MURAIPXI-D4JF	A
PCIe ×16 Slot3	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B	Third party graphics hardware	A
PCIe ×8 Slot4	C680	A, C	Mura MPX-4/4	B	MURAIPXI-D4JF	A
PCIe ×16 Slot5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B	Third party graphics hardware	A
PCIe ×8 Slot6	MURAIPXI-D4JF	A, F	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A
PCIe ×16_Slot7	C680	C	Mura MPX-4/4	B	Third party graphics hardware	

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI

Option	Product
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



MSI X299 SLI PLUS

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	4
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	3
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	3
Maximum supported C900/C680	2
Motherboard	MSI X299 SLI PLUS
PCIe expansion slots	▪ 2 PCIe x16 3.0 slots (x16 mechanical and electrical) ▪ 1 PCIe x16 3.0 slot (X16 mechanical, x8 electrical) ▪ 1 PCIex16 3.0 slot (x16 mechanical, x4 electrical)
Chipset	Intel X299
Processor	Intel Core i9-7900X @3.30GHz; X-series 44-lane CPU
Heatsink for the CPU	LGA 2066
System memory	32 GB DDR4
System BIOS version	E7A93IMS.170
Power supply	650 W (Part# : Antec EA-650 GREEN)
Chassis	Chenbro RM41300-FS81 (includes fans)
Notes	The chassis must be ordered from Chenbro. Power supply isn't included with the chassis

* Maximum of 1 console per system.

Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
PCI_E1 x16	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
PCI_E2 x1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCI_E3 x4	Console Display	F	Console Display	E	Empty (Unusable)	
PCI_E4 x16	C680	A, C	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
PCI_E5 x1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCI_E6 x8	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8

Option	Product
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

Portwell® M9010A (with ROBO-8110A SHB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	10
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	10
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	9
Maximum supported C900/C680	2
Motherboard	Portwell ROBO-8110A (SHB), PBPE-11A-MT (Backplane)
PCIe expansion slots	10 PCIe ×16 2.0 slots (×16 mechanical and electrical)
Chipset	Intel® C206 (ROBO-8110A SHB)
Processor	Intel® Core™ i3-2120 dual-core processor or Intel® Xeon® E3-1200 Series quad-core processor ()
Heatsink (for CPU)	Low-profile 1U passive heatsink
System memory	8 GB DDR3
System BIOS version	1APBB 0.04 ×64
Power supply	950W redundant PSU (not included – Portwell Part# 02-527050-0002)
Power supply bracket	Standard
Chassis	Industrial 4U rack mount (not included – Portwell Part# 21-M90103-0002)
Expansion slot configuration	Insert the Mura cards in the available PCIe ×16 slots.
Notes	▪ Optional system memory upgrade is available. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
J1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
J2	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
J3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
J4	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
J5	MURAIPXI-D4JF	A	Mura MPX_4/4	A, B, D	Third party graphics hardware	A
J6	C680	A, C	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
J7	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
J8	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
J9	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
J10	MURAIPXI-D4JF	A,F	MURAIPXI-D4JF	A, B, D, E	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Portwell® M9010A (with ROBO-8113-VG2AR SHB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	Yes (Requires Mura driver version 3.01 or later)	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	10
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	10
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	8
Maximum supported C900/C680	2
Motherboard	Portwell ROBO-8113VG2AR (SHB) Portwell PBPE-11A-MT (Backplane)
PCIe expansion slots	10 PCIe ×16 2.0 slots (×16 mechanical and electrical)
Chipset	Intel® C236
Processor	Intel® Core™ i3-6100 @3.7GHz
Heatsink (for CPU)	LGA 1151
System memory	16 GB DDR4
System BIOS version	R1.00.E1
Power supply	950W redundant PSU (not included – Portwell Part# 02-527050-0002)
Power supply bracket	Standard
Chassis	Industrial 4U rack mount (not included – Portwell Part# 21-M90103-0002)
Notes	▪ Optional system memory upgrade is available. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ The system BIOS is available at ftp://PortwellBIOS:RVHdu3GW@privftp.matrox.com.

* Maximum of 1 console display per system.

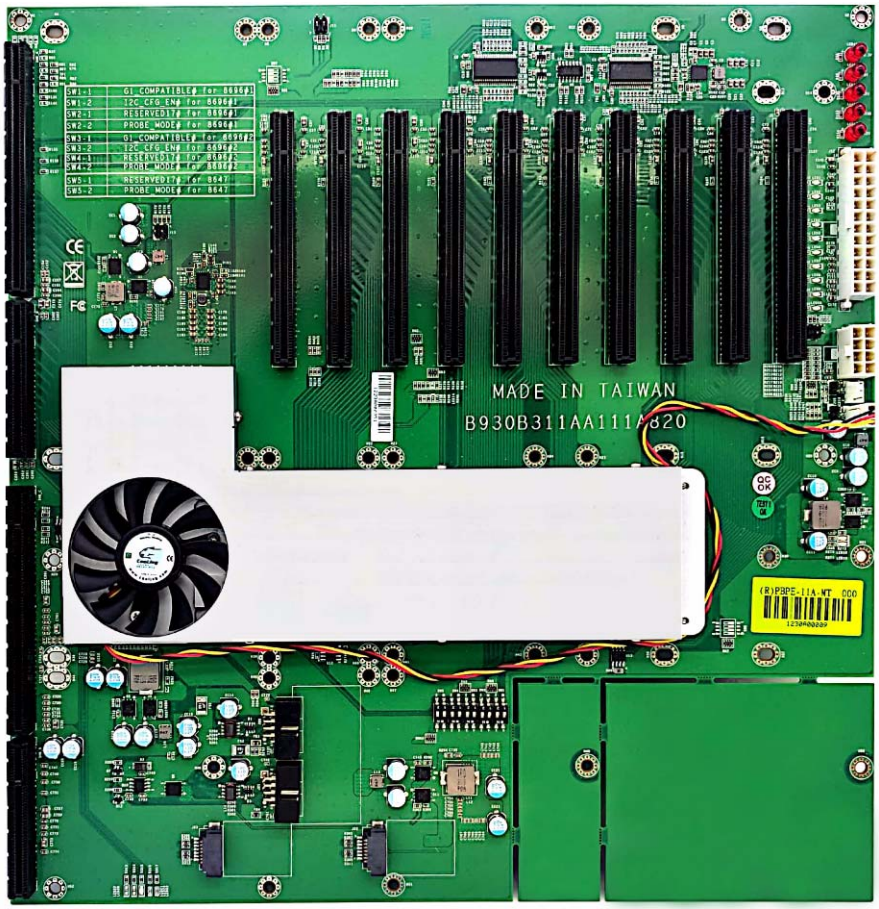
Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
J1	C680	C	Mura MPX-4/4	B	Third party graphics hardware	
J2	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A
J3	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
J4	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
J5	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
J6	C680	A, C	Mura MPX-4/4	A, B, D	MURAIPXI-D4JF	A
J7	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	Third party graphics hardware	A
J8	MURAIPXI-D4JF	A	MURAIPXI-D4JF	A, B, D	MURAIPXI-D4JF	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
J9	MURAIPXI-D4JF	A	Mura MPX-4/4	A, B, D	Third party graphics hardware	A
J10	MURAIPXI-D4JF	A, F	Mura MPX-4/4	A, B, D, E	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



Portwell® M9010A (with ROBO-8113VG2AR-Q170-KBL SHB)

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	No	No	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	10
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	9 (Only Mura IPX Series)
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	See note for console support.
Maximum supported C900/C680	2
Motherboard	Portwell ROBO-8113VG2AR-Q170-KBL-PCIE4 (SHB) Portwell PBPE-11A-MT (Backplane)
PCIe expansion slots	10 PCIe ×16 2.0 slots (×16 mechanical and electrical)
Chipset	Intel® Q170
Processor	Intel® Core™ i7-7700 @3.6GHz
System memory	16 GB
System BIOS version	R1.00.E1 (06/04/2018)
Power supply	950W redundant PSU (not included – Portwell Part# 02-527050-0002)
Power supply bracket	Standard
Chassis	Industrial 4U rack mount (not included – Portwell Part# 21-M90103-0002)
Notes	▪ Optional system memory upgrade is available. ▪ If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on power requirements, see the documentation for your third party graphics hardware. ▪ In the system BIOS → **Advanced** → **Graphics Configuration** → **Internal Graphics** → select **Disabled.** ▪ In the system BIOS → **Advanced** → **Chipset Configuration** → **Above 4G Decoding** → select **Disabled.** ▪ In the system BIOS → **Advanced** → **Chipset Configuration** → **Above 4G MMIO BIOS Assignment** → select **Disabled.** ▪ No console support with C-Series controllers.

* Maximum of 1 console display per system.

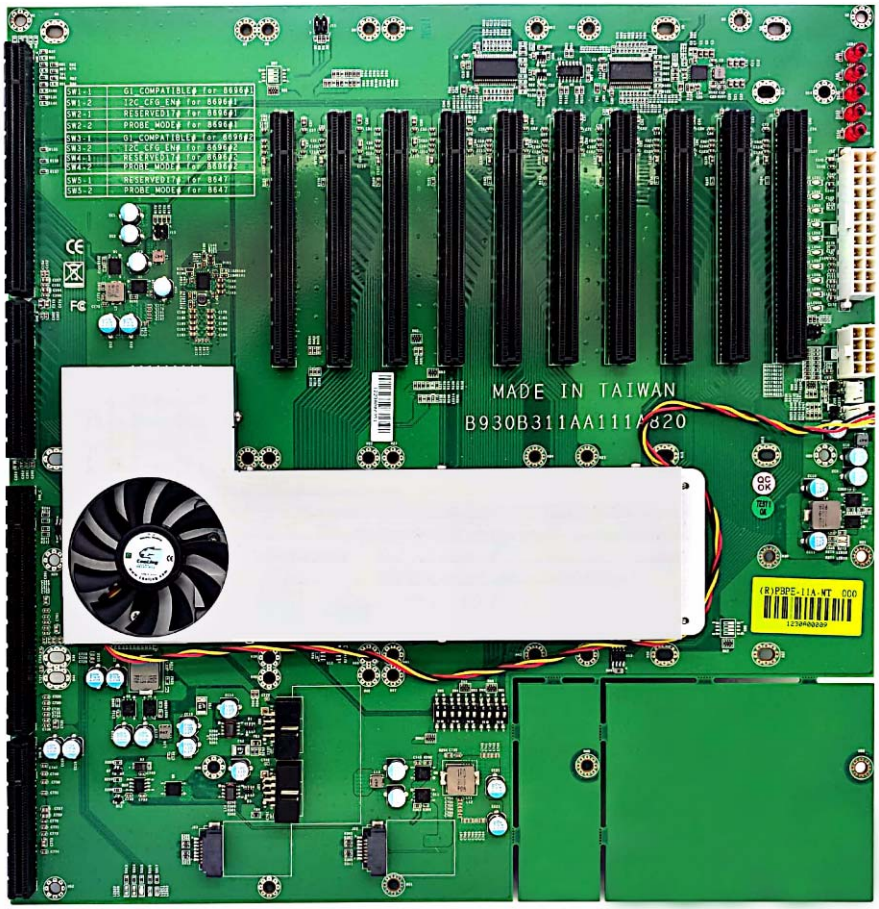
Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
J1	C680	C			Third party graphics hardware	
J2	MURAIPXI-D4JF	A			MURAIPXI-D4JF	A
J3	MURAIPXI-D4JF	A			Third party graphics hardware	A
J4	MURAIPXI-D4JF	A			MURAIPXI-D4JF	A
J5	MURAIPXI-D4JF	A			Third party graphics hardware	A
J6	C680	A, C			MURAIPXI-D4JF	A
J7	MURAIPXI-D4JF	A			Third party graphics hardware	A
J8	MURAIPXI-D4JF	A			MURAIPXI-D4JF	A

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	Options	Main	Options	Main	Options
J9	MURAIPXI-D4JF	A			Third party graphics hardware	A
J10	MURAIPXI-D4JF	A			MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



SUPERMICRO® C9Z390-PWG

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	No	No	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	4
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	3 (Only Mura IPX Series)
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	See note for console support
Maximum supported C900/C680	2
Motherboard	SUPERMICRO® C9Z390-PGW
PCIe expansion slots	4 PCIe ×16 3.0 slots (×16 mechanical, ×8/×16 electrical)
Chipset	Intel® Z390
Processor	Intel® Core I7-9700K CPU @3.60 GHz
System memory	8GB DDR4
CPU Heatsink	LGA 1151
System BIOS version	1.0a, 2018-09-21
Power supply	CORSAIR CS550M Optional power supply required for maximum support of third party graphics hardware.
Chassis	Norco RPC-432 (4U short depth rackmount case)
Notes	▪ The chassis fan speed must be set to full speed. To change the fan speed, go to system BIOS main page (Advanced mode), select **H/W Monitor** → **Fan Control Setting** and change the **Fan Speed Control Mode** to **Full Speed** and apply the changes. ▪ Optional chassis rear fans 2x80mm must be ordered separately. ▪ Only onboard console support with C-Series based controller. ▪ Mura MPX Series based controllers are unsupported with Intel 7th generation desktop processors onwards.

* Maximum of 1 console per system.

Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
CPUSLOT1P CI-E 3.0 X8	MURAIPXI-D4JF	A	—		MURAIPXI-D4JF	A
CPUSLOT3P CI-E 3.0 X16	C680	C	—		Third party graphics hardware	
PCHSLOT4P CI-E 3.0 X1	Empty		—		Empty	
CPUSLOT5P CI-E 3.0X8	MURAIPXI-D4JF	A	—		MURAIPXI-D4JF	A
CPUSLOT7P CI-E 3.0X16	C680	A, C	—		Third party graphics hardware	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI

Option	Product
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout

SUPERMICRO® H11SS-i

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	No	No	Yes	Yes	No foreseeable compatibility issues

Maximum number of cards supported	4
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	3 (Only Mura IPX Series)
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	See note for console support
Maximum supported C900/C680	2
Motherboard	SUPERMICRO® H11SSL-i
PCIe expansion slots	▪ 3 PCIe ×16 3.0 slots ▪ 3 PCIe ×8 3.0 slots
Chipset	System on Chip
Processor	AMD EPYC 7251 8-Core Processor, 2100 Mhz
System memory	32 GB DDR4
CPU heatsink	Socket SP3
System BIOS version	1.0b, 2018-04-27
Power supply	850W (P/N:EVGA Supernova 850G3)
Chassis	Chenbro RM41300-FS81 (includes fans)
Notes	▪ The chassis must be ordered from Chenbro. Power supply isn't included with the chassis. ▪ IIn the system BIOS main page (Advanced mode), select **PCIe/PCI/PnP Configuration → M.2 PCIex4 OPROM → Disable**. ▪ Only onboard console support with C-Series based controller. ▪ Mura MPX Series based controllers are unsupported with AMD EPYC 7000 series processors.

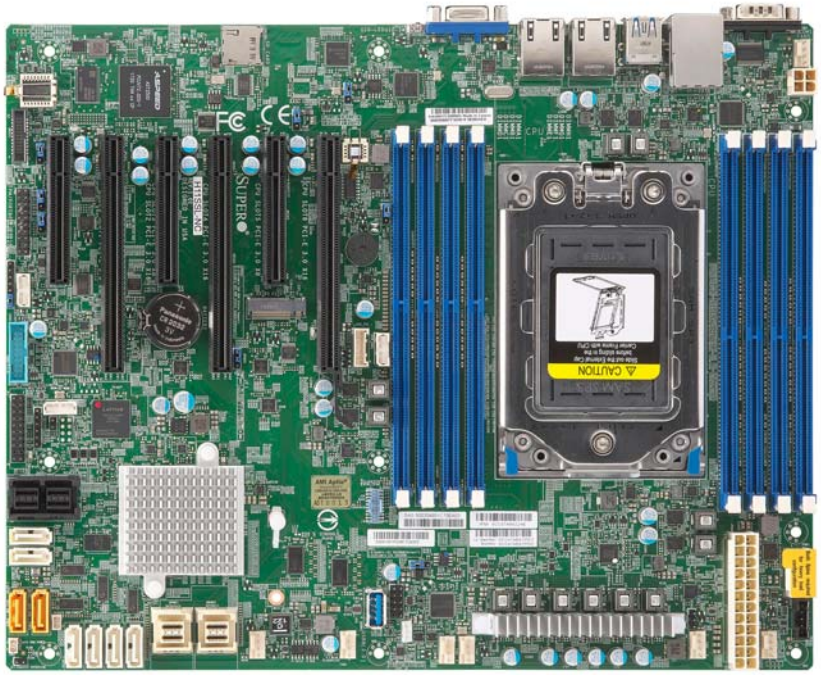
* Maximum of 1 console per system.

Configurations

	C-Series based controller		Mura MPX Series based controller		Third party based controller	
Slot	**Main**	**Options**	**Main**	**Options**	**Main**	**Options**
CPUSLOT1P CI-E 3.0 X8	MURAIPXI-D4J	A	—		MURAIPXI-D4JF	A
CPUSLOT2P CI-E 3.0 X16	MURAIPXI-D4J	A	—		Third party graphics hardware	
CPUSLOT3P CI-E 3.0 X8	Empty (unusable)		—		Empty (unusable)	
CPUSLOT4P CI-E 3.0X16	C680	C	—		Third party graphics hardware	A
CPUSLOT5P CI-E 3.0X8	Empty (unusable)		—		Empty (unusable)	
CPUSLOT6P CI-E 3.0X16	C680	A, C	—		Third party graphics hardware	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Motherboard layout



EOL (End of Life) motherboards

Advantech ASMB-781G4-00A1E

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	3
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	3
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	2
Maximum supported C900/C680	2
Motherboard	Advantech ASMB-781G4-00A1E
PCIe expansion slots	▪ 2 PCIe ×16 2.0 slots ▪ 1 PCIe ×4 2.0 slot ▪ 1 PCIe ×1 2.0 slot
Chipset	Intel® C206
Processor	Intel® Xeon® E3-1275 processor
Heatsink (for CPU)	Advantech LGA1155 CPU Heat Sink (P/N: 1960047669N001)
System memory	8 GB DDR3
System BIOS version	1.10
Chassis	IPC-7130-00XE
Power supply	PS-400ATX-ZE (400W 80 PLUS PS/2 PSU)
Power supply bracket	Standard
Expansion slot configuration	▪ Insert the first Mura card in the blue slot labeled **PCIE6**. ▪ Insert the second Mura card in the blue slot labeled **PCIE4**.

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
PCI1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCI2	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIE3	Console display	F	Mura MPX-V8	D, E	Empty	
PCIE4	C680	C	Mura MPX-4/4	A, B, D	Third party graphics hardware	
PCI5	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
PCIE6	MURAIPXI-D4JF	A, C	Mura MPX-4/4	B	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI

Option	Product
C	C900 or C680
D	Mura MPX-V16 or MPX-V8
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

Advantech ASMB-820I-00A1E

	Mura MPX Series	Mura MPX + IPX Series	C-Series	C-Series + Mura IPX Series	Third party + Mura IPX Series
Validated	Yes	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues	No foreseeable compatibility issues

Maximum number of cards supported	3
Maximum supported Mura MPX-4/4, MPX-4/2, MPX-4/0, and/or IPX Series	2
Maximum supported Mura MPX-V8, MPX-V16 and/or console display*	2
Maximum supported C900/C680	2
Motherboard	Advantech ASMB-820I-00A1E
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots (×16 mechanical, ×16 and ×8 electrical) ▪ 1 PCIe ×4 2.0 slot (×4 mechanical, ×4 electrical) ▪ 1 PCIe ×1 2.0 slot (×1 mechanical, ×1 electrical)
Chipset	Intel® C206J
Processor	Intel® Xeon® E5-2420 processor
Heatsink (for CPU)	Advantech LGA1356 CPU Heat Sink (P/N: 19600555362N011)
System memory	8 GB DDR3
System BIOS version	1.10
Power supply	80 PLUS 500W PSU (PS8-500ATX-ZE)
Chassis	ACP-4000MB-00XE
Power supply bracket	Standard

* Maximum of 1 console display per system.

Configurations

Slot	C-Series based controller		Mura MPX Series based controller		Third party based controller	
	Main	**Options**	**Main**	**Options**	**Main**	**Options**
1 PCI	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
2 PCI	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
3 PCIe x4	Console display	F	Mura MPX-V16	E, D	Empty	
4 PCIe x16	C680	C	Mura MPX-4/4	A, B, D	Third party graphics hardware	
5 PCIe x1	Empty (Unusable)		Empty (Unusable)		Empty (Unusable)	
6 PCIe x16	MURAIPXI-D4JF	A, C	Mura MPX-4/4	B	MURAIPXI-D4JF	A

Option	Product
A	MURAIPXI-E4SF, MURAIPXI-E4SHF, MURAIPXI-D2MF, MURAIPXI-D2MHF, MURAIPXI-E2MF, MURAIPXI-E2MHF, MURAIPXI-D4JF, MURAIPXI-D4JHF, MURAIPXI-E4JF, or MURAIPXI-E4JHF
B	Mura MPX-4/4, MPX-4/2, MPX-4/0, or MPX-SDI
C	C900 or C680
D	Mura MPX-V16 or MPX-V8

Option	Product
E	Matrox P690 PCIe x16, Matrox P690 Plus LP PCIe x16, Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, or Matrox M9120 PCIe x16 (console options)
F	Matrox M9148 LP PCIe x16, Matrox M9140 LP PCIe x16, Matrox M9138 LP PCIe x16, Matrox M9128 LP PCIe x16, Matrox M9125 PCIe x16, Matrox M9120 Plus LP PCIe x16, Matrox M9120 Plus LP PCIe x1, Matrox M9120 PCIe x16, NVIDIA NVS 510, NVIDIA NVS 310, NVIDIA Quadro P400, Intel HD Graphics HD 630, or Intel HD Graphics 530 (console options)

ASRock X79 Extreme 11

Maximum number of cards supported	4
Motherboard	ASRock X79 Extreme 11
PCIe expansion slots	7 PCIe ×16 3.0 slots (PCIE1/PCIE2/PCIE3/PCIE4/PCIE5/PCIE6/PCIE7: x16/0/16/0/16/0/16 mode or x16/8/8/8/8/8/8 mode)
Chipset	Intel® X79
Processor	Intel® Core™ i7 3939K, 3.2 GHz
Heatsink (for CPU)	LGA 2011 fan heatsink
System memory	8 GB DDR3
System BIOS version	1.4
Power supply	▪ iStarUSA – ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP) ***OR*** ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8) ▪ Advantech – Use the 700W power supply included with the chassis.
Power supply bracket	▪ iStarUSA – ▪ Redundant power supply – Use the bracket included with the power supply. ▪ Regular power supply – Use the standard bracket included with the chassis. ▪ Advantech – Use the standard bracket included with the chassis.
Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ Advantech – Included with chassis.
Chassis	▪ iStarUSA Kit 1 + Kit 2 ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80) ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support. ▪ Advantech (P/N: C-MAT1A-ACP4010-01)
Expansion slot configuration	▪ Insert the first Mura card in the slot labeled **PCIE1**. ▪ Insert the second Mura card in the slot labeled **PCIE5**. ▪ Insert the third Mura card in the slot labeled **PCIE3**. ▪ Insert the fourth Mura card in the slot labeled **PCIE7**.
Performance considerations	1-4 cards → ×16
Notes	▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192.

ASUS® P6T7 WS

Maximum number of cards supported	7
Motherboard	ASUS® P6T7 WS
PCIe expansion slots	▪ Slots 1, 3, and 5 – PCIe ×16 2.0 at ×16 or ×8 mode ▪ Slot 7 – PCIe ×16 2.0 at ×16 mode ▪ Slots 2, 4, and 6 – PCIe ×16 2.0 at ×8 mode
Chipset	Intel® X58
Processor	Intel® Core™ i7-950, 3.06 GHz
Heatsink (for CPU)	LGA 1366 fan heatsink for Intel® Core™ i7 processor
System memory	6 GB DDR3
System BIOS version	0904 dated 09/24/2010

Power supply	▪ iStarUSA –
	  ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP)
	  OR
	  ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8)
	▪ Advantech – Use the 700W power supply included with the chassis.

Power supply bracket	▪ iStarUSA –
	  ▪ Redundant power supply – Use the bracket included with the power supply.
	  ▪ Regular power supply – Use the standard bracket included with the chassis.
	▪ Advantech – Use the standard bracket included with the chassis.

Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ Advantech – Included with chassis.

Chassis	▪ iStarUSA Kit 1 + Kit 2
	  ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80)
	  ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support.
	▪ Advantech (P/N: C-MAT1A-ACP4010-01)

Expansion slot configuration	▪ Insert the first four Mura cards in the blue slots labeled **1**, **3**, **5**, and **7**. Insert the next three Mura cards in slots **2**, **4**, or **6**. ▪ Installing more than four cards requires a new bracket and a 120 CFM fan for the front.
Performance considerations	▪ 1-4 cards (in blue connectors) → ×16 ▪ 5 cards → 3 ×16 + 2 ×8 ▪ 6 cards → 2 ×16 + 4 ×8 ▪ 7 cards → 1 ×16 + 6 ×8
Notes	▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ If you install a card in PCIe ×16 slot **7**, the two front USB connectors won’t be functional due to mechanical conflicts. The six USB connectors in the back are functional.

ASUS® P6X58-E WS

Maximum number of cards supported	5
Motherboard	ASUS® P6X58-E WS
PCIe expansion slots	▪ 1 PCIe ×16 2.0 slot at ×16 mode ▪ 2 PCIe ×16 2.0 slots at ×16 or ×8 mode ▪ 2 PCIe ×16 2.0 slots at ×8 mode ▪ 1 PCIe ×16 2.0 slot at ×1 mode
Chipset	Intel® X58
Processor	Intel® Core™ i7-950 Quad, 3.07 GHz
Heatsink (for CPU)	LGA 1366 fan heatsink for the CPU
System memory	12 GB DDR3
System BIOS version	0301 dated 2/22/2011

Power supply	▪ iStarUSA –
	  ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP)
	  OR
	  ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8)
	▪ Advantech – Use the 700W power supply included with the chassis.

Power supply bracket	▪ iStarUSA –
	  ▪ Redundant power supply – Use the bracket included with the power supply.
	  ▪ Regular power supply – Use the standard bracket included with the chassis.
	▪ Advantech – Use the standard bracket included with the chassis.

Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ Advantech – Included with chassis.

Chassis	▪ iStarUSA Kit 1 + Kit 2
	  ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80)
	  ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support.
	▪ Advantech (P/N: C-MAT1A-ACP4010-01)

Expansion slot configuration	▪ Insert the first Mura card in the slot labeled **PCIe2.0×16_1**. ▪ Insert the second and third Mura card in the slots labeled **PCIe2.0×16_3** and **PCIe2.0×16_5**. ▪ Insert the fourth and fifth Mura cards in the slots labeled **PCIe2.0×16_2** and **PCIe2.0×16_4**.
Performance considerations	▪ 1-3 cards → ×16 ▪ 4 cards → 2 ×16 + 2 ×8 ▪ 5 cards → 1 ×16 + 4 ×8
Notes	▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192.

ASUS® P8Z77 WS

Maximum number of cards supported	4
Motherboard	ASUS® P8Z77 WS
PCIe expansion slots	▪ 4 PCIe ×16 3.0/2.0 slots (dual ×16 or ×16/×8/×8, or quad ×8) ▪ 2 PCIe ×1 2.0 slots
Chipset	Intel® Z77 Express
Processor	Intel® Core™ i7-3770K, 3.5 GHz
Heatsink (for CPU)	LGA 1155 fan heatsink for the CPU
System memory	8 GB DDR3
System BIOS version	0502 ×64
Power supply	▪ iStarUSA – ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP) ***OR*** ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8) ▪ Advantech – Use the 700W power supply included with the chassis.
Power supply bracket	▪ iStarUSA – ▪ Redundant power supply – Use the bracket included with the power supply. ▪ Regular power supply – Use the standard bracket included with the chassis. ▪ Advantech – Use the standard bracket included with the chassis.
Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see "Approved fans for iStarUSA® D-400-2F80 chassis", page 192. ▪ Advantech – Included with chassis.
Chassis	▪ iStarUSA Kit 1 + Kit 2 ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80) ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support. ▪ Advantech (P/N: C-MAT1A-ACP4010-01)
Expansion slot configuration	▪ If you're installing one card, insert the Mura card in the slot labeled **PCIe 3.0/2.0 ×16_1**. ▪ If you're installing two cards, insert the Mura cards in the slots labeled **PCIe 3.0/2.0 ×16_1** and **PCIe 3.0/2.0 ×16_3**. ▪ If you're installing up to four cards, insert the third and fourth Mura cards in the slots labeled **PCIe 3.0/2.0 ×16_2** and **PCIe 2.0 ×16_4**.
Performance considerations	▪ 1-2 cards → ×16 ▪ 3 cards → 1 ×16 + 2 ×8 ▪ 4 cards → ×8
Notes	▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see "Approved fans for iStarUSA® D-400-2F80 chassis", page 192. ▪ For two-card configurations, a longer ribbon cable (for framelock) is required (P/N: F16279-00). For more information, contact your Matrox representative.

ASUS® P9X79 Pro

Maximum number of cards supported	3
Motherboard	ASUS® P9X79 Pro
PCIe expansion slots	▪ 3 PCIe ×16 3.0/2.0 slots (dual ×16 or ×16, ×8, ×8) ▪ 1 PCIe ×16 3.0/2.0 slot at ×8 mode ▪ 2 PCIe ×16 3.0/2.0 slots at ×1 mode
Chipset	Intel® X79
Processor	Intel® Core™ i7-3930K, 3.2 GHz
Heatsink (for CPU)	LGA 2011 fan heatsink for the CPU
System memory	16 GB DDR3
System BIOS version	1104 X64 dated 04/10/2012

Power supply	▪ iStarUSA –
	  ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP)
	  OR
	  ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8)
	▪ Advantech – Use the 700W power supply included with the chassis.

Power supply bracket	▪ iStarUSA –
	  ▪ Redundant power supply – Use the bracket included with the power supply.
	  ▪ Regular power supply – Use the standard bracket included with the chassis.
	▪ Advantech – Use the standard bracket included with the chassis.

Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ Advantech – Included with chassis.

Chassis	▪ iStarUSA Kit 1 + Kit 2
	  ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80)
	  ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support.
	▪ Advantech (P/N: C-MAT1A-ACP4010-01)

Expansion slot configuration	▪ If you’re installing one card, insert the Mura card in the slot labeled **PCIe×16_1**. ▪ If you’re installing two cards, insert the Mura cards in the slots labeled **PCIe×16_1** and **PCIe×16_4**. ▪ If you’re installing three cards, insert the Mura cards in the slots labeled **PCIe×16_1**, **PCIe×16_2**, and **PCIe×16_4**.
Performance considerations	▪ 1-2 cards → ×16 ▪ 3 cards → 1 ×16 + 2 ×8
Notes	▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ For two-card configurations, a longer ribbon cable (for framelock) is required (P/N: F16279-00). For more information, contact your Matrox representative.

ASUS® P9X79-E WS

Maximum number of cards supported	6
Motherboard	ASUS® P9X79-E WS
Available PCIe expansion slots	▪ 4 PCIe ×16 3.0 slots at ×16 mode (blue) ▪ 3 PCIe ×16 3.0 slot at ×8 mode (black)
Chipset	Intel® X79
Processor	Intel® Core™ i7-3820, 3.6 GHz
Heatsink (for CPU)	LGA 2011 fan heatsink for the CPU
System memory	4 GB DDR3
System BIOS version	1103 X64
Power supply	▪ iStarUSA – ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP) ***OR*** ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8)
Power supply bracket	▪ iStarUSA – ▪ Redundant power supply – Use the bracket included with the power supply. ▪ Regular power supply – Use the standard bracket included with the chassis.
Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192.
Chassis	▪ iStarUSA Kit 1 + Kit 2 ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80) ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support.
Expansion slot configuration	▪ If you’re installing one card, insert the Mura card in the slot labeled **PCIEX16_1**. ▪ If you’re installing two cards, insert the Mura cards in the slots labeled **PCIEX16_1** and **PCIEX16_5**. ▪ If you’re installing three cards, insert the Mura cards in the slots labeled **PCIEX16_1**, **PCIEX16_3**, and **PCIEX16_5**. ▪ If you’re installing four cards, insert the Mura cards in the slots labeled **PCIEX16_1**, **PCIEX16_3**, **PCIEX16_5**, and **PCIEX16_7**. ▪ If you’re installing up to 6 cards, insert the remaining two cards in the slots labeled **PCIEX16_2** and **PCIEX16_6**.
Performance considerations	▪ 1-4 cards → ×16 ▪ 5 cards → 2 ×16 + 3 ×8 ▪ 6 cards → 2 ×16 + 4 ×8
Notes	▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ Using the onboard USB controller may result in erratic USB behavior if the slot labeled **PCIEX16_4** is populated.

ASUS® P9X79 WS

Maximum number of cards supported	4
Motherboard	ASUS® P9X79 WS
PCIe expansion slots	▪ 4 PCIe ×16 3.0/2.0 slots (dual ×16 or ×16, ×8, or quad ×8, black and blue) ▪ 2 PCIe ×16 3.0/2.0 slots at ×4 mode (white)
Chipset	Intel® X79
Processor	Intel® Core™ i7-3930K, 3.2 GHz
Heatsink (for CPU)	LGA 2011 fan heatsink for the CPU
System memory	8 GB DDR3
System BIOS version	0603 X64 dated 11/11/2011
Power supply	▪ iStarUSA – ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP) ***OR*** ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8) ▪ Advantech – Use the 700W power supply included with the chassis.
Power supply bracket	▪ iStarUSA – ▪ Redundant power supply – Use the bracket included with the power supply. ▪ Regular power supply – Use the standard bracket included with the chassis. ▪ Advantech – Use the standard bracket included with the chassis.
Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ Advantech – Included with chassis.
Chassis	▪ iStarUSA Kit 1 + Kit 2 ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80) ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support. ▪ Advantech (P/N: C-MAT1A-ACP4010-01)
Expansion slot configuration	▪ If you’re installing one card, insert the Mura card in the slot labeled **PCIe2.0×16_1**. ▪ If you’re installing two cards, insert the Mura cards in the slots labeled **PCIe2.0×16_1** and **PCIe2.0×16_4**. ▪ If you’re installing up to four cards, insert the third and fourth Mura cards in the slots labeled **PCIe2.0×16_2** and **PCIe2.0×16_6**.
Performance considerations	▪ 1-2 cards → ×16 ▪ 3 cards → 1 ×16 + 2 ×8 ▪ 4 cards → ×8
Notes	▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ For two-card configurations, a longer ribbon cable (for framelock) is required (P/N: F16279-00). For more information, contact your Matrox representative.

ASUS® X99-A

Maximum number of cards supported	3
Motherboard	ASUS® X99-A

PCIe expansion slots	▪ 40 lane CPU –
	  ▪ 3 PCIe ×16 3.0/2.0 slots (one ×16, two ×16/×16, three ×16/×16/×8)
	  ▪ 1 PCIe ×16 2.0 slot (maximum ×4 mode)
	  ▪ 2 PCIe ×1 2.0 slots
	▪ 28 lane CPU –
	  ▪ 3 PCIe ×16 3.0/2.0 slots (one ×16, two ×16/×8, three ×16/×8/×4)
	  ▪ 1 PCIe ×16 2.0 slot (maximum ×4 mode)
	  ▪ 2 PCIe ×1 2.0 slots

Chipset	Intel® X99
Processor	▪ Intel® Core™ i7-5820K, 3.3 GHz (28 lane CPU) ▪ Intel® Core™ i7-5930K, 3.3 GHz (40 lane CPU)
Heatsink (for CPU)	LGA 2011-V3
System memory	8 GB DDR4, 2133 MHz
System BIOS version	1601

Power supply	▪ iStarUSA –
	  ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP)
	OR
	  ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8)

Power supply bracket	▪ iStarUSA –
	  ▪ Redundant power supply – Use the bracket included with the power supply.
	  ▪ Regular power supply – Use the standard bracket included with the chassis.

Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192.

Chassis	▪ iStarUSA Kit 1 + Kit 2
	  ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80)
	  ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support.

Expansion slot configuration	▪ 40 lane CPU –
	  ▪ If you’re installing one card, insert the Mura card in the slot labeled **PCIEX16_1**.
	  ▪ If you’re installing two cards, insert the Mura cards in the slots labeled **PCIEX16_1** and **PCIEX16_3**.
	  ▪ If you’re installing three cards, insert the Mura cards in the slots labeled **PCIEX16_1**, **PCIEX16_3**, and **PCIEX16_4**.
	▪ 28 lane CPU –
	  ▪ If you’re installing one card, insert the Mura card in the slot labeled **PCIEX16_1**.
	  ▪ If you’re installing two cards, insert the Mura cards in the slots labeled **PCIEX16_1** and **PCIEX16_3**.

Performance considerations	▪ 40 lane CPU –
	  ▪ 1-2 cards → ×16
	  ▪ 3 cards → 2 ×16 + 1 ×8
	▪ 28 lane CPU –
	  ▪ 1 card → ×16
	  ▪ 2 cards → 1 ×16 + 1 ×8

Notes	▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ For more information on supported chassis, see “Validated chassis”, page 179.

ASUS® X99-DELUXE

Maximum number of cards supported	5
Motherboard	ASUS® X99-DELUXE

PCIe expansion slots	▪ 40 lane CPU –
	  ▪ 5 PCIe ×16 3.0/2.0 slots (one ×16, two ×16/×16, three ×16/×16/×8, four ×8/×8/×16/×8, five ×8/×8/×8/×8/×8)
	  ▪ 1 PCIe ×16 2.0 slot (maximum ×4 mode)
	▪ 28 lane CPU –
	  ▪ 3 PCIe ×16 3.0/2.0 slots (one ×16, two ×16/×8, three ×8/×8/×8)
	  ▪ 1 PCIe ×16 2.0 slot (maximum ×4 mode)
	  ▪ 2 PCIe ×1 2.0 slots (×1 mode)

Chipset	Intel® X99
Processor	▪ Intel® Core™ i7-5820K, 3.3 GHz (28 lane CPU) ▪ Intel® Core™ i7-5930K, 3.3 GHz (40 lane CPU)
Heatsink (for CPU)	LGA 2011-V3
System memory	8 GB DDR4, 2133 MHz
System BIOS version	1601

Power supply	▪ iStarUSA –
	  ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP)
	OR
	  ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8)

Power supply bracket	▪ iStarUSA –
	  ▪ Redundant power supply – Use the bracket included with the power supply.
	  ▪ Regular power supply – Use the standard bracket included with the chassis.

Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192.

Chassis	▪ iStarUSA Kit 1 + Kit 2
	  ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80)
	  ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support.

Expansion slot configuration	▪ 40 lane CPU –
	  ▪ If you’re installing one card, insert the Mura card in the slot labeled **PCIEX16_1**.
	  ▪ If you’re installing two cards, insert the Mura cards in the slots labeled **PCIEX16_1** and **PCIEX16_3**.
	  ▪ If you’re installing three cards, insert the Mura cards in the slots labeled **PCIEX16_1**, **PCIEX16_3**, and **PCIEX16_5**.
	  ▪ If you’re installing more than three cards, insert the remaining Mura cards in the slots labeled **PCIEX16_2** and **PCIEX16_4**.
	▪ 28 lane CPU –
	  ▪ If you’re installing one card, insert the Mura card in the slot labeled **PCIEX16_1**.
	  ▪ If you’re installing two cards, insert the Mura cards in the slots labeled **PCIEX16_1** and **PCIEX16_4**.
	  ▪ If you’re installing three cards, insert the Mura cards in the slots labeled **PCIEX16_1**, **PCIEX16_2**, and **PCIEX16_4**.

Performance considerations	▪ 40 lane CPU –
	  ▪ 1-2 cards → ×16
	  ▪ 3 cards → 2 ×16 + 1 ×8
	  ▪ 4 cards → 1 ×16 + 3 ×8
	  ▪ 5 cards → 5 ×8
	▪ 28 lane CPU –
	  ▪ 1 card → ×16
	  ▪ 2 cards → 1 ×16 + 1 ×8
	  ▪ 3 cards → 3 ×8

Notes	▪ If you're using the 40 lane CPU, you need to change the default BIOS settings. Under **Advance Mode**, select **Tool**, then set the bandwidth of the **PCIEX16_5 slot** (black) to **x8 Modex-AMI**. This enables the slot to run in ×8 mode. ▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see "Approved fans for iStarUSA® D-400-2F80 chassis", page 192. ▪ For more information on supported chassis, see "Validated chassis", page 179.

ASUS® X99-E WS

Maximum number of cards supported	7
Motherboard	ASUS® X99-E WS
PCIe expansion slots	7 PCIe ×16 3.0/2.0 slots
Chipset	Intel® X99
Processor	Intel® Core™ i7-5930K, 3.5 GHz
System memory	32 GB DDR4
System BIOS version	0902
Power supply	▪ iStarUSA – ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP) ***OR*** ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8)
Power supply bracket	▪ iStarUSA – ▪ Redundant power supply – Use the bracket included with the power supply. ▪ Regular power supply – Use the standard bracket included with the chassis.
Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see "Approved fans for iStarUSA® D-400-2F80 chassis", page 192.
Chassis	▪ iStarUSA Kit 1 + Kit 2 ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80) ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support.
Expansion slot configuration	▪ If you're installing one card, insert the Mura card in the slot labeled **PCIEX16_1**. ▪ If you're installing two cards, insert the Mura cards in the slots labeled **PCIEX16_1** and **PCIEX16_3**. ▪ If you're installing up to four cards, insert the Mura cards in the slots labeled **PCIEX16_5** and **PCIEX16_7**. ▪ If you're installing more than four cards, use the remaining slots.
Performance considerations	▪ 1-4 cards → ×16 ▪ 7 cards → 1 ×16 + 6 ×8
Notes	▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see "Approved fans for iStarUSA® D-400-2F80 chassis", page 192. ▪ For more information on supported chassis, see "Validated chassis", page 179.

ASUS® Z87 WS

Maximum number of cards supported	4
Motherboard	ASUS® Z87 WS
PCIe expansion slots	▪ 4 PCIe ×16 3.0/2.0 slots (dual ×16 or ×16, ×8, ×8, or quad ×8) ▪ 2 PCIe ×1 2.0 slots
Chipset	Intel® Z87
Processor	Intel® Core™ i7-477K, 3.5 GHz
Heatsink (for CPU)	LGA 1150 fan heatsink for the CPU
System memory	4 GB DDR3
System BIOS version	0904 X64
Power supply	▪ iStarUSA – ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP) ***OR*** ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8)
Power supply bracket	▪ iStarUSA – ▪ Redundant power supply – Use the bracket included with the power supply. ▪ Regular power supply – Use the standard bracket included with the chassis.
Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192.
Chassis	▪ iStarUSA Kit 1 + Kit 2 ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80) ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support.
Expansion slot configuration	▪ If you’re installing one card, insert the Mura card in the slot labeled **PCIEX16_1**. ▪ If you’re installing two cards, insert the Mura cards in the slots labeled **PCIEX16_1** and **PCIEX16_3**. ▪ If you’re installing three cards, insert the Mura cards in the slots labeled **PCIEX16_1**, **PCIEX16_2**, and **PCIEX16_3**. ▪ If you’re installing up to four cards, insert the fourth Mura card in the slot labeled **PCIEX16_4**.
Performance considerations	▪ 1-2 cards → ×16 ▪ 3 cards → 1 ×16 + 2 ×8 ▪ 4 cards → ×8
Notes	▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ For two-card configurations, a longer ribbon cable (for framelock) is required (P/N: F16279-00). For more information, contact your Matrox representative.

GIGABYTE™ G1 Sniper3

Maximum number of cards supported	4
Motherboard	Gigabyte G1 Sniper3
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots at ×16 mode ▪ 2 PCIe ×16 3.0 slots at ×8 mode ▪ 2 PCIe ×16 2.0 slots at ×1 mode
Chipset	Intel® Z77 Express
Processor	Intel® Core™ i7-3770, 3.4 GHz
Heatsink (for CPU)	LGA 1155 fan heatsink for the CPU
System memory	8 GB DDR3
System BIOS version	AMI version F5
Power supply	▪ iStarUSA – ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP) ***OR*** ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8) ▪ Advantech – Use the 700W power supply included with the chassis.
Power supply bracket	▪ iStarUSA – ▪ Redundant power supply – Use the bracket included with the power supply. ▪ Regular power supply – Use the standard bracket included with the chassis. ▪ Advantech – Use the standard bracket included with the chassis.
Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ Advantech – Included with chassis.
Chassis	▪ iStarUSA Kit 1 + Kit 2 ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80) ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support. ▪ Advantech (P/N: C-MAT1A-ACP4010-01)
Expansion slot configuration	▪ If you’re installing one card, insert the Mura card in the slot labeled **PCIEX16_1**. ▪ If you’re installing two cards, insert the Mura cards in the slots labeled **PCIEX16_1** and **PCIEX16_2**. ▪ If you’re installing up to four cards, insert the third and fourth Mura cards in the slots labeled **PCIEX8_1** and **PCIEX8_2**.
Performance considerations	▪ 1-2 cards → ×16 ▪ 3 cards → 1 ×16 + 2 ×8 ▪ 4 cards → ×8
Notes	▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ For multi-card configurations, longer ribbon cables (for framelock) are required (P/N: F16279-00). For more information, contact your Matrox representative.

GIGABYTE™ GA-X79-UD3

Maximum number of cards supported	4
Motherboard	Gigabyte GA-X79-UD3
PCIe expansion slots	▪ 2 PCIe ×16 3.0 slots at ×16 mode ▪ 2 PCIe ×16 3.0 slots at ×8 mode ▪ 2 PCIe ×16 2.0 slots at ×1 mode
Chipset	Intel® X79 Express
Processor	Intel® Core™ i7-3820, 3.7 GHz
Heatsink (for CPU)	LGA 2011 fan heatsink for the CPU
System memory	16 GB DDR3
System BIOS version	AMI version F10 (build date: 03/05/2012)
Power supply	▪ iStarUSA – ▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP) ***OR*** ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8) ▪ Advantech – Use the 700W power supply included with the chassis.
Power supply bracket	▪ iStarUSA – ▪ Redundant power supply – Use the bracket included with the power supply. ▪ Regular power supply – Use the standard bracket included with the chassis. ▪ Advantech – Use the standard bracket included with the chassis.
Fan	▪ iStarUSA – 120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192. ▪ Advantech – Included with chassis.
Chassis	▪ iStarUSA Kit 1 + Kit 2 ▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (P/N: D-400-2F80) ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support. ▪ Advantech (P/N: C-MAT1A-ACP4010-01)
Expansion slot configuration	▪ If you’re installing two cards, insert the Mura cards in the slots labeled **PCIEX16_1** and **PCIEX16_2**. ▪ If you’re installing up to four cards, insert the third and fourth Mura cards in the slots labeled **PCIEX8_1** and **PCIEX8_2**.
Performance considerations	▪ 1-2 cards → ×16 ▪ 3 cards → 2 ×16 + 1×8 ▪ 4 cards → ×8
Notes	▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192.

MSI® Big Bang-XPower

Maximum number of cards supported	4
Motherboard	MSI Big Bang-XPower (MS-7666)

PCIe expansion slots	▪ 6 PCIe x16 2.0 slots:
	  ▪ PCI_E2 and PCI_E5 support up to PCIe x16 speeds
	  ▪ PCI_E4 and PCI_E6 support up to PCIe x8 speeds
	  ▪ PCI_E3 and PCI_E7 support up to PCIe x4 speeds
	▪ 1 PCIe x1 1.1 slot

Chipset	Intel® X58
Processor	Intel® Core™ i7-950 processor, 3.06 GHz
Heatsink (for CPU)	LGA 1366 Heatsink Cooling Fan for Intel® Core™ i7 processor
System memory	6 GB DDR3
System BIOS version	V1.2
Power supply	▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (Part# IS-800R3NP) ***OR*** ▪ 750W iStarUSA single regular power supply (Part# TC-750PD1)
Power supply bracket	▪ Redundant power supply – Use the bracket included with the power supply. ▪ Regular power supply – Use the standard bracket included with the chassis.
Chassis	▪ iStarUSA Kit 1 – 400 chassis with black doors and 2x 80mm fans (Part# D-400-2F80) ***AND*** ▪ iStarUSA Kit 2 – Custom fan bracket + 120cfm fan (front fan assembly) (Part# DD-FANGUARD-12-MAT01)
Expansion slot configuration	▪ Insert the first two Mura cards in the slots labeled **PCI_E2** and **PCI_E5**. ▪ Insert the third Mura card in the slots labeled **PCI_E4** or **PCI_E6**.
Performance considerations	▪ 1-2 cards → x16 ▪ 3 cards → x16 + 2 x8 ▪ 4 cards → x4 x8

Validated PCIe expansion boxes

The following PCIe expansion boxes have been validated by Matrox to work with Matrox Mura MPX Series, Mura IPX Series, C900, and C680 products.

Note: For improved performance, we recommend you avoid using PCIe® ×4 slots or lower.

Currently supported PCIe expansion box

Magma ExpressBox 3T

Maximum number of cards supported	2
Part number	EB3T
Power supply	250W
Available PCIe expansion slots	▪ 1 PCIe x16 2.0 slot (×16 mechanical and ×8 electrical) ▪ 1 PCIe x8 2.0 slot (×8 mechanical and electrical) ▪ 1 PCIe ×8 2.0 slot (×8 mechanical and ×4 electrical)
Expansion slot configuration	▪ Insert the Mura MPX-4/4 or C-Series card in the slot labeled **SLOT3** (PCIe ×8). ▪ Insert the Mura IPX Series capture card in the slot labeled **SLOT2** (PCIe ×8/4).
Notes	▪ The ExpressBox fanspeed must be set to the maximum. For more information, see the “Fan Speed” section of the ExpressBox 3T manual to set the fan jumper setting to F. ▪ Use the Thunderbolt™ 2.0 port on the Express Box for 20 Gbps high speed Thunderbolt connection to the host system. ▪ Requires the host system to power up the Magma ExpressBox 3T.

Validated chassis

The following chassis have been validated by Matrox to work with Matrox Mura MPX Series, Mura IPX Series, C900, and C680 products.

Note: For improved performance, we recommend you avoid using PCIe® ×4 slots or lower.

Note: If graphics hardware is built into the motherboard of your system, you need to disable it in Windows® Device Manager on Mura MPX Series based video wall systems. For more information, see your system manual or Windows help.

Currently supported chassis

Advantech ACP-4000MB-00XE

Cards supported (maximum)	3
Part number	ACP-4000MB-00XE (Includes chassis, 500W power supply, and fans.)
Power supply	500W (included, see part number) Optional Power Supply: 700 W (Advantech Model FSP700-80PSA)
Power supply bracket	Standard
Supported motherboards	▪ Advantech ASMB-815 ▪ Advantech ASMB-820

Advantech HPC-7400

Cards supported (maximum)	6
Part number	HPC-7400MB-14A1E (includes chassis, power supply and fans)
Power supply	1400W 80 plus Redundant power supply
Power supply bracket	Standard
Supported motherboards	▪ Advantech ASMB-813

Advantech IPC-623

Cards supported (maximum)	17
Part number	IPC-623BP-00XBE (for single power supply; includes chassis and fans; power supply not included)
Power supply	850W / 1200W Single Power Supply ▪ Enermax 1200W (Part#: EPF1200EW) ▪ EVGA 850W (Part#: 220-G3-0850-X1)
Power supply bracket	Standard
Supported motherboards	▪ PCE-5B19 (BP)/PCE-5128 (SHB) ▪ PCE-5B12 (BP)/PCE-7127 (SHB) ▪ PCE-5B12 (BP)/PCE-5129 (SHB) ▪ PCE-5B12 (BP)/PCE-7129 (SHB) ▪ PCE-5B19 (BP)/PCE-5129 (SHB) ▪ PCE-5B19 (BP)/PCE-7129 (SHB) ▪ PCE-7B17 (BP)/PCE-7127 (SHB)

Chenbro RM41300-FS81

Cards supported (maximum)	7
Part number	RM41300-FS81 (Includes chassis and fans. Power supply not included.)
Power supply	750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8, or 850W (P/N: EVGA Supernova 850G3)
Power supply bracket	Standard
Supported motherboards	▪ ASUS® P6T7 WS ▪ ASUS® P9X79 Pro ▪ ASUS® P9X79 WS ▪ ASUS® P9X79-E WS ▪ ASUS® P8Z77 WS ▪ ASUS® P6X58-E WS ▪ ASUS® WS C422 PRO/SE ▪ ASUS® WS C422 SAGE/10G ▪ ASUS® WS C621E SAGE ▪ ASUS® WS X299 Sage ▪ ASUS® WS Z390 PRO ▪ ASUS® X99-A ▪ ASUS® X99-A II ▪ ASUS® X99-DELUXE ▪ ASUS® X99-DELUXE II ▪ ASUS® X99-E WS/USB3.1 ▪ ASUS® Z270-WS ▪ ASUS® Z87 WS ▪ GIGABYTE™ MW51-HP0 ▪ MSI X299 SLI PLUS ▪ SUPERMICRO® C9Z390-PGW ▪ SUPERMICRO® H11SSL-i

iStarUSA® D-400-2F80

Cards supported (maximum)	7
Part number (to be ordered from iStarUSA)	▪ iStarUSA Kit 1 – 400 chassis with black doors and 2× 80mm fans (P/N: D-400-2F80) ▪ iStarUSA Kit 2 – Custom fan bracket (P/N: DD-FANGUARD-12-MAT01). For more information on how to properly install the fan bracket, contact Matrox Technical Support.
Power supply (to be ordered from iStarUSA)	▪ 800W iStarUSA redundant power supply with mounting bracket for D-400 (P/N: IS-800R3NP) ***OR*** ▪ 750W iStarUSA single regular power supply (P/N: TC-750PD1 or TC-750PD8)
Power supply bracket	▪ Redundant power supply – Use the bracket included with the power supply. ▪ Regular power supply – Use the standard bracket included with the chassis.

Fan	120 CFM fan (front fan assembly). Fan to be ordered separately from the list of approved vendors. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192.
Supported motherboards	▪ ASRock X79 Extreme 11 ▪ ASUS® P6T7 WS ▪ ASUS® P6X58-E WS ▪ ASUS® P8Z77 WS ▪ ASUS® P9X79 Pro ▪ ASUS® P9X79-E WS ▪ ASUS® P9X79 WS ▪ ASUS® WS C422 PRO/SE ▪ ASUS® WS C422 SAGE/10G ▪ ASUS® WS C621E SAGE ▪ ASUS® WS X299 Sage ▪ ASUS® WS Z390 PRO ▪ ASUS® X99-A ▪ ASUS® X99-A II ▪ ASUS® X99-Deluxe ▪ ASUS® X99-DELUXE II ▪ ASUS® X99-E WS/USB3.1 ▪ ASUS® Z270-WS ▪ ASUS® Z87 WS ▪ GIGABYTE™ G1.Sniper3 ▪ GIGABYTE™ GA-X79-UD3 ▪ GIGABYTE™ MW51-HP0 ▪ MSI X299 SLI PLUS ▪ SUPERMICRO® C9Z390-PGW ▪ SUPERMICRO® H11SSL-i
Notes	▪ iStarUSA – The chassis and power supply must be ordered from iStarUSA. ▪ The fan must be ordered from a separate fan vendor. For more information on approved fans and fan vendors, see “Approved fans for iStarUSA® D-400-2F80 chassis”, page 192.

iStarUSA D-400L-7

Maximum number of cards supported	7
Part number	iStarUSA D-400L-7
Power supply	860W single regular power supply (iStar USA Part Number: TC-860PD8; not included with the chassis)
Power supply bracket	Standard bracket included with the chassis
Fan	Included with the chassis
Supported motherboards	▪ ASUS® Z270-WS ▪ ASUS® WS C422 PRO/SE ▪ ASUS® WS X299 Sage ▪ ASUS® WS C422 SAGE/10G ▪ ASUS® WS C621E SAGE ▪ ASUS® WS Z390 PRO ▪ ASUS® X99-A II ▪ ASUS® X99-DELUXE II ▪ ASUS® X99-E WS/USB3.1 ▪ GIGABYTE™ MW51-HP0 ▪ MSI X299 SLI PLUS ▪ SUPERMICRO® C9Z390-PGW ▪ SUPERMICRO® H11SSL-i
Notes	▪ The center fan at the rear of the chassis must be disconnected. ▪ In the System BIOS, select **Advanced** → **Hardware Monitor** → **CPU Fan Speed Control**, then set all the **System fan speed controls** to **Full speed**.

NORCO RPC-432

Cards supported (maximum)	4
Part number	RPC-432 (includes chassis, 2×120mm front fans)
Power supply	550W (Part# Corsair CS550M); not included with the chassis
Power supply bracket	Standard
Supported motherboards	▪ ASUS® WS C422 PRO/SE ▪ ASUS® WS Z390 Pro ▪ SUPERMICRO® C9Z390-PGW
Notes	▪ Optional 2× 80mm rear fans should be ordered separately ▪ The chassis fans must be set to full speed

Portwell 10 slot chassis

Cards supported (maximum)	10
Part number	21-M90103-0002 (includes chassis and fans. Power supply must be ordered separately.)
Power supply	950W redundant power supply (Portwell Part# 02-527050-0002)
Power supply bracket	Standard
Supported motherboards	▪ PBPE-11A-MT (BP) / ROBO-8110A (SHB) ▪ PBPE-11A-MT (BP) / ROBO-8113VG2AR (SHB) ▪ PBPE-11A-MT (BP) / ROBO-8113VG2AR-Q170-KBL (SHB)

Rackmaster 20 slot chassis

Cards supported (maximum)	17
Part number	▪ 010-0163 (includes chassis, fans and 800W redundant power supply) ▪ 010-0164 (includes chassis, fans, 800W redundant power supply and Motherboard from the supported list) ▪ 010-0165 (includes chassis, fans and 1200W single power supply) ▪ 010-0166 (includes chassis, fans, 1200W single power supply and Motherboard from the supported list)
Power supply	800W redundant power supply /1200W single power supply included with the chassis
Power supply bracket	Standard
Fan	3× 150cfm fans included with the chassis.
Supported motherboards	▪ Advantech PCE-5B19 (BP)/PCE-5128 (SHB) ▪ Advantech PCE-5B19 (BP)/PCE-5129 (SHB) ▪ Advantech PCE-5B19 (BP)/PCE-7129 (SHB) ▪ Advantech PCE-5B12 (BP)/PCE-7127 (SHB) ▪ Advantech PCE-5B12 (BP)/PCE-5129 (SHB) ▪ Advantech PCE-5B12 (BP)/PCE-7129 (SHB)

SUPERMICRO® SuperChassis 842XTQ-R606B

Cards supported (maximum)	7
Part number	CSE-842XTQ-R606B (Includes chassis, 600W redundant power supply, and fans.)
Power supply	600W redundant, model PWS-606P-1R
Power supply bracket	Standard
Supported motherboards	▪ ASUS® P6T7 WS ▪ ASUS® P6X58-E WS ▪ ASUS® P8Z77 WS ▪ ASUS® P9X79 Pro ▪ ASUS® P9X79-E WS ▪ ASUS® P9X79 WS ▪ ASUS® WS C422 PRO/SE ▪ ASUS® WS X299 Sage ▪ ASUS® X99-A ▪ ASUS® X99-A II ▪ ASUS® X99-DELUXE ▪ ASUS® X99-DELUXE II ▪ ASUS® X99-E WS ▪ ASUS® X99-E WS / ASUS® X99-E WS/USB 3.1 ▪ ASUS® Z87 WS

EOL (End of Life) chassis

Advantech C-MAT1A-ACP4010-01

Cards supported (maximum)	7
Part number	C-MAT1A-ACP4010-01 (Includes chassis, 700W power supply, and fans.)
Power supply	700W (included, see part number)
Power supply bracket	Standard
Supported motherboards	▪ ASRock X79 Extreme 11 ▪ ASUS® P6T7 WS ▪ ASUS P6X58-E WS ▪ ASUS P8Z77 WS ▪ ASUS P9X79 Pro ▪ ASUS P9X79 WS ▪ Gigabyte G1.Sniper3 ▪ Gigabyte GA-X79-UD3

Advantech IPC-7130-00XE

Cards supported (maximum)	2
Part number	IPC-7130-00XE
Power supply	PS-400ATX-ZE (400W 80 PLUS PS/2 PSU)
Power supply bracket	Standard
Supported motherboards	Advantech ASMB-781G4-00A1E

Delo Step Multi-View

Cards supported (maximum)	4
Part number	1039268 (Includes chassis, 560W power supply, and fans.)
Power supply	Seasonic X-Series (560W), model SS-560KM
Power supply bracket	Standard
Supported motherboards	▪ ASUS® P9X79 WS ▪ ASUS® P8Z77 WS

Nijkerk NCS-R416A-MB-NOIR

Cards supported (maximum)	7
Part number	NCS-R416A-MB-NOIR
Power supply	Antec HCP-750 (750W)
Power supply bracket	Standard
Supported motherboards	ASUS® P6T7 WS

SUPERMICRO® SuperChassis 836

Cards supported (maximum)	3
Part number	CSE-836 (Includes chassis, 800W redundant power supply, and fans.)
Power supply	ABLECOM (800W redundant), model PWS-801-1R
Power supply bracket	Standard
Supported motherboards	ASUS® P9X79 Pro

System ventilation

Without proper system ventilation, the motherboard and add-in cards will operate at elevated temperatures. Continued operation at elevated temperatures will reduce the life expectancy of the overall system. Mechanical components (such as fans), in particular, experience higher failure rates when exposed to elevated temperatures over long periods of time. The system integrator must verify that the system – and the add-in card area in particular – is properly ventilated. The result is a system that runs cooler, has a longer operating life, and offers higher reliability.

Note: To guarantee the longevity of your system and the installed cards, make sure your system is installed in a properly ventilated location. Running Matrox Mura and C-Series cards above the specified temperatures will lead to permanent damage to the card that won't be covered by the Matrox warranty.

Mura MPX Series – The Mura MPX Series operating temperature is 0 to 40 °C. When the Mura MPX card is installed in a properly ventilated system, the temperature of the Mura MPX card recorded by Matrox PowerDesk software ***must never exceed 100 °C***.

To monitor and record the temperature changes of your graphics hardware, use Matrox PowerDesk software. From the main interface, click **Help and Troubleshooting → Troubleshoot**. Under **Chip temperature data and logging**, you can enable the options to monitor the peak temperatures or log the chip temperatures of your graphics hardware. Systems validated by Matrox have guaranteed thermal and ventilation characteristics.

Mura IPX Series – The Mura IPX Series operating temperature is 0 to 45 °C. When a Mura IPX Series card is installed in a properly ventilated system, the temperature of the Mura IPX Series card recorded by the Matrox IPX Utility tool or APIs ***must never exceed 100 °C***.

To monitor and record the temperature changes of your Mura IPX Series card, use **Matrox IPX utility tool**. From the Mura CD package, install *Network API SDK.msi*. Then, go to system's *Program Files (x86)\Matrox Graphics Inc\Matrox Network API SDK\Applications* and run the *IPX utility.exe*. From the IPX utility tool window, enter **localhost** to get the temperature of your Mura IPX Series card.

C900/C680 – The temperature of your C900 and C680 cards should never exceed 90 °C. To retrieve the temperature of your C-Series card, use Matrox PowerDesk software. From the main interface, click **Help and Troubleshooting → Troubleshoot**. Under **Chip temperature data and logging**, you can enable options to monitor the peak temperatures and log the chip temperatures of your C-Series card.

Third party graphics hardware – Ensure that your third party graphics hardware remains within the maximum allowed temperature. For more information on how to monitor and record the temperature or for temperature requirements of your third party graphics hardware, see your third party graphics hardware documentation.

For more information on ensuring proper system ventilation, see the Matrox Chassis Selection Guide.

Power supply sizing for Matrox Mura MPX Series based, C-Series based, and Third party based systems

When assembling a system based on Mura MPX Series or C-Series products, the power supply must be sized to provide power for the entire system, including the CPU, all add-in cards, and any peripherals connected. To determine the power supply size, you must consider not only the power requirements of all devices but also the power rails from which the current is being drawn.

Each power supply provides different voltages with varying current load capacities, depending on system usage. For example, a -12V supply (still used in some systems) supports less than 1A of load, whereas a +12V supply, which bears the brunt of the load in modern systems, can easily exceed 50A capacity in many mid-sized power supplies. The remaining voltages (typically, +3.3V, +5V, and +5VSB) fall between these extremes in terms of current load capacity.

Matrox cards, being PCI Express based, draw power primarily from the +12V supply. Although a small amount of power (approximately 0.1A) is drawn from the +3.3V supply, the power supply must have sufficient capacity on the +12V supply rail. Since each Matrox SKU has slightly different power supply requirements, using the largest possible current requirement to size the power supply will ensure the power supply is adequate, regardless of the SKUs installed.

To properly size the power supply, the power requirements of all the devices must be added together separately for each supply rail and then the appropriate power supply selected. For example, the Mura MPX-4/4 SKU (4 outputs, 4 inputs) consumes approximately 3.5A from the +12V supply. Seven Mura MPX-4/4 cards would therefore consume approximately 24.5A (or 7 x 3.5A) from this supply. This +12V current requirement is in addition to any pre-existing requirements of the motherboard and/or system (for example, CPU, motherboard, hard disk drives, etc.). In other words, if the base system requires 15A from the +12V supply with no Mura cards installed, once the Mura cards are installed the power supply must provide 15A + 24.5A (or 39.5A) on the +12V rail for adequate power supply.

A merely "adequate" power supply, however, isn't sufficient. Most power supplies operate at optimal efficiency at 50-60% of their rated power load. Continually operating beyond this may cause excessive thermal generation and lead to premature aging of the electronic components. It's common practice to ensure that the power supply can supply additional current beyond what's required for the system configuration in typical use. For maximum efficiency and reliability, make sure to provide a minimum 50% margin on the power supply rating. In the example above, a system requiring 39.5A on the +12V rail would require approximately 475W. Assuming another 50W for the +3.3V rail and 10W for the +5V rail, the total system requirements are approximately 475W + 50W + 10W, for a total of 535W. A 50% margin on the power supply means specifying a supply of 800W that can supply at least 60A on the +12V supply.

By providing less margin than specified above, the power supply will be used under higher load conditions, which may lead to excess heat generation within the power supply and premature wear-out of electronic components. Insufficient margin may also compromise the overall reliability of the product.

> **Note:** The margin provided on the power supply must never be less than 35-40%.

For a common display wall setup that supports up to seven Matrox cards and uses a mid-range Intel CPU, we recommend a minimum power supply of 800W. For larger systems, the power supply must be increased accordingly, taking into account the requirements of the CPU or SHB and backplane/motherboard components.

For third party graphics hardware, an optional power supply may be required for maximum support. If your power supply has an insufficient number of 6-pin connectors to support the maximum number of third party graphics hardware, you can order optional power cables. For more information on the power requirements of systems based on third party graphics hardware, see the documentation for your third party graphics hardware.

Shipping an integrated system

While shipping an integrated system, make sure that add-in cards are properly installed in the expansion slots and the board bracket is screwed securely to the chassis. Most systems have a board retaining clip to protect cards from shock and vibration. If your system has a board retaining clip, use the board retaining clip to securely clamp the boards into place. For more information, see the user guide for your system or chassis. Follow the system/chassis manufacturer's guidelines for proper installation, shipment, and transportation of an integrated system. Failure to do so may cause damage to the cards due to shock and vibration during shipping and transportation.

PCI Express® bandwidth considerations in Matrox Mura MPX Series based or C-Series based systems

System architecture is important in determining overall capture and display performance with Mura MPX Series based and C-Series based systems. Although the input resolutions and formats must be considered, the system bus-level architecture also plays an important role in optimizing the system for the best possible performance. This section will outline some of the issues to consider when implementing Mura MPX Series based and C-Series based display walls.

Input source bandwidth requirements

Any capture architecture receives its data from external sources and transfers it to one or more graphics engines for display. The inputs may take many forms: IP, HDMI, DVI, analog RGB, component video, or even standard TV inputs using either composite or Y/C signals. Each of these inputs places a different load on the system in terms of quantity of data to be transferred.

The bandwidth required to transfer a captured stream within a computer system is dependent on input resolution, format and frame buffer organization. The input format refers to both pixel depth (8- or 10-bits) and pixel format (4:4:4, 4:2:2 or 4:2:0), and frame buffer organization is typically linear or planar. Although a frame buffer may be 24 bits, system transfers are performed in 8-, 16-, or 32-bit "chunks". The formula below provides an approximation of the bandwidth required from a given input stream, and assumes planar frame buffer organization.

In some cases, it may be possible to capture sources and transfer them internally using a 16-bit YUV format. Doing so will reduce the amount of system bandwidth required to transfer the input data, but it will also degrade the capture quality (since less data is being used to represent each pixel). This option should be used only when necessary, and with sources, where the quality of input capture can be sacrificed.

The bandwidth required by any input source can be expressed as follows:

$$BW = res_x \times res_y \times fps \times k_{pixel\_factor}$$

Where ***fps*** and ***kpixel_factor*** represent the number of frames per second and the number of bytes taken by each pixel, respectively. In analog RGB, component and DVI modes each pixel generally requires 4 bytes. In TV modes (or when data is represented as 16-bit YUV data) each pixel requires 2 bytes.

The table below provides a summary of pixel factors for different pixel depths and pixel formats.

	4:4:4	4:2:2	4:2:0
8-bit	4	2	1.5
10-bit	6	4	3

For example, a high-definition source being captured at 1920×1080p60 requires the following bandwidth:

$$BW_{1080p} = 1920 \times 1080 \times 60 \times 4 \approx 500\text{MB/s}$$

An NTSC source at 60 Hz (interlaced) requires the following bandwidth:

$$BW_{NTSC} = 720 \times 480 \times 30 \times 2 \approx 21\text{MB/s}$$

Here are some examples of approximate bandwidths based on resolution/pixel formats:

	4:4:4	4:2:2	4:2:0
3840 x 2160 @ 30 Hz	1000 MB/s	500 MB/s	375 MB/s
1920 x 1080 @ 60 Hz	500 MB/s	250 MB/s	185 MB/s

For more information on video sampling and formats, see the following resources:

- Recommended 8-bit YUV formats for video rendering (msdn.microsoft.com/en-us/library/windows/desktop/dd206750(v=vs.85).aspx)
- 10-bit and 16-bit YUV video formats (msdn.microsoft.com/en-us/library/windows/desktop/bb970578(v=vs.85).aspx)

Regardless of the resolutions and formats of the various inputs, the available system bandwidth shouldn't be exceeded. Doing so will result in reduced system performance and/or instability.

PCI Express architecture overview

To understand how system architecture plays a role in the available bandwidth, a basic understanding of the PCI Express architecture is helpful. This section provides a brief description of the PCI Express architecture to provide enough background to understand the bandwidth calculations provided later in this discussion.

PCI Express is a point-to-point serial transmission interface using high-speed differential signaling to enable high-performance transfer of data within systems. The initial PCIe specification defined a 2.5 Gb/s data transfer rate per lane, while second generation PCIe increased the data rate to 5 Gb/s. The third generation of PCI Express has further increased the data transfer rate to 8 Gb/s per lane of data. The table below summarizes the data transfer capabilities of the PCI Express architecture based on generation and link width (the link width is the ***size*** of the electrical connection between two PCI Express devices).

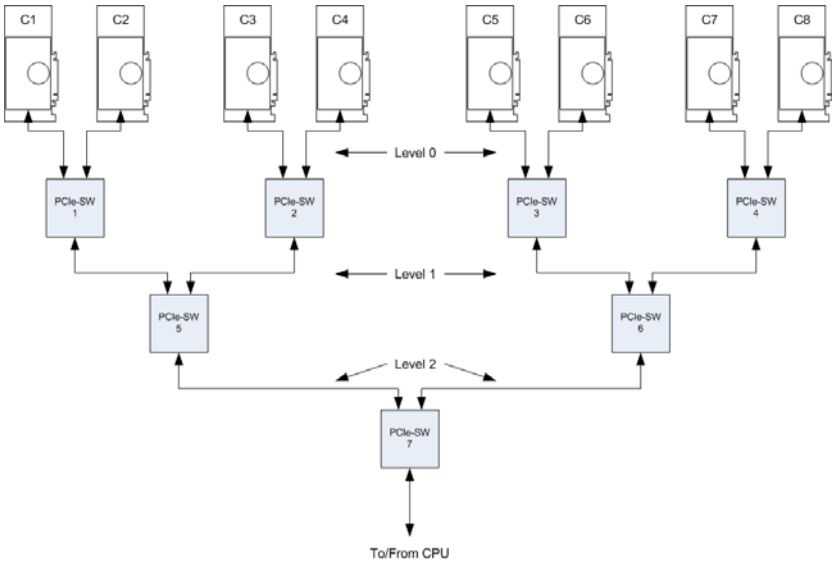
The PCI Express specification also defines backward-compatibility between PCI Express devices. That is, a device designed for Gen-3 PCI Express functions at Gen-2 speeds when connected to a Gen-2 device, a Gen-2 device functions at Gen-1 speeds when connected to a Gen-1 device, and so on.

Link width*	PCIe Gen-1	PCIe Gen-2	PCIe Gen-3†
×1	250 MB/s	500 MB/s	1 GB/s
×4	1 GB/s	2 GB/s	4 GB/s
×8	2 GB/s	4 GB/s	8 GB/s
×16	4 GB/s	8 GB/s	16 GB/s

* The link width provides a measure of the data transfer capabilities of the link in a single direction. Since each PCI Express lane contains both an upstream and a downstream link, the effective bandwidth is doubled. The numbers in this table represent the maximum bandwidth available in each direction.

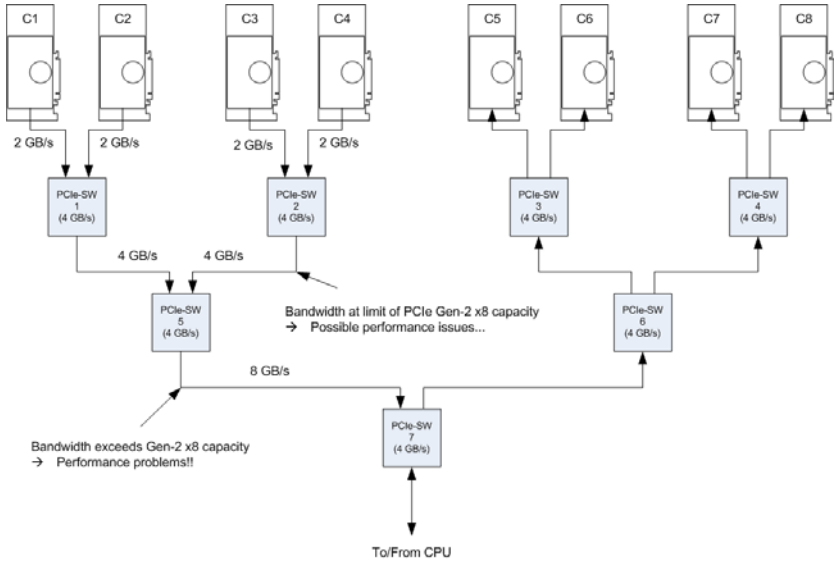
† While the serial data rate has only increased from 5 Gb/s to 8 Gb/s over second generation PCI Express, the encoding of the serial data has changed, providing more efficient transfers and effectively doubling the data transmission rate over Gen-2 PCI Express.

To maximize data transfer capabilities within a system, having the largest lane widths possible throughout the system is preferred. An ideal system for display wall applications provides PCIe ×16 links for all add-in cards, maximizing throughput at each communication link.



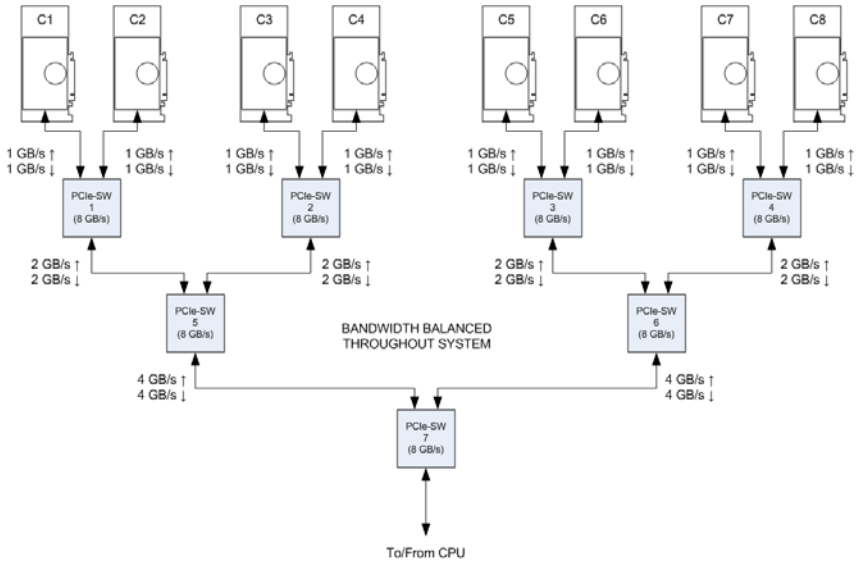
In the diagram above, assume that each PCI Express link is a ×8 connection operating at Gen-2 speeds. Each link thus has a total available throughput of 4 GB/s in each direction. Any combination of input streams being transferred through a given switch that results in the total bandwidth exceeding 4 GB/s will result in reduced system performance (stuttering playback and reduced frame rates).

Consider the following Mura MPX Series example:



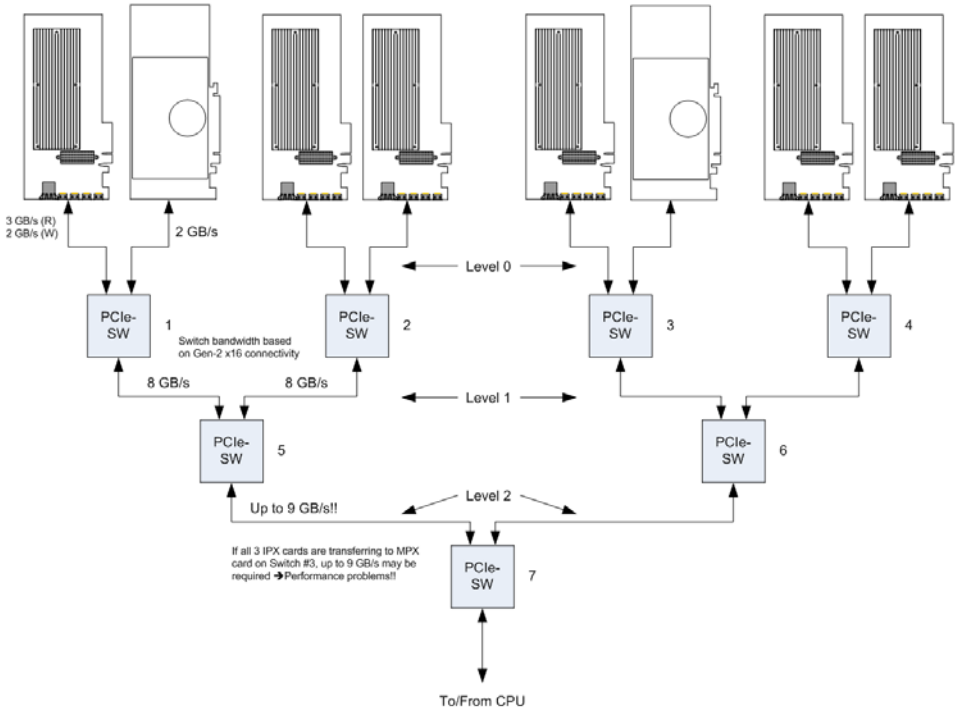
Each GPU transmits two HD streams to a Mura card located at the other "end" of the system (C4-C7). This results in a total bandwidth of approximately 2 GB/s per card (2 GPUs per card, each transmitting two HD stream at approximately 500 MB/s per stream) that has to be transferred through the PCIe fabric. The combined bandwidth of the first two Mura cards connected to the first-level PCIe switches (C1 and C2 → PCIe-SW #1) is 4 GB/s, which is at the very limit of the link's capability (while the burst capability of the link is indeed 4 GB/s, there's a link overhead that must be accounted for. This will reduce the effective limit of data that can be transferred. The amount of the reduction is dependent on the PCIe switch architecture, and may be as high as 25-35%). We can already expect bandwidth-related artifacts on the outputs. If we go a level deeper (PCIe-SW #5), the combined bandwidth of the first four Mura cards is almost 8 GB/s, greater than the capacity of the PCIe switches to handle (these are ×8 links).

Now consider the following scenario:



This configuration is an example of how inputs and outputs should be placed whenever possible. In this case, each card is transferring the equivalent of two HD streams to the other "side" of the system, but because the bandwidth at each link remains below the capacity of the switches, there's no problem and the system will function properly.

The diagram below illustrates a configuration containing Mura MPX Series display adapters and Mura IPX Series capture cards in a system based on a switch-based architecture.



When installing many cards in a system like this, it's important to maximize transfer bandwidth. This is done by ensuring that capture cards are (as much as possible) not all placed on the same bus segments. Placing many capture cards on the same bus segment may create bottlenecks that can hinder performance and lower the overall capture rate. The manner in which inputs are mapped to output boards can also have an impact. When possible, inputs should be captured as close to the display card as possible to minimize system latency and maximize overall system bandwidth. As an example, in the above illustration, if the 3 Mura IPX Series cards on switches 1 and 2 are capturing data to be displayed on the Mura MPX Series card connected to switch 3, up to 9 GB/s of bandwidth may be required (depending on the number of inputs and their resolutions). This is above the maximum bandwidth of the bus segment connecting switches 5 and 7, and will result in performance issues (lower/stuttering frame rate transfer) or will require the data to be pre-scaled before its transfer to the output.

It's impossible to cover all possible configurations of input and output cards in this document – indeed each situation will be different. However, knowledge of the system architecture and judicious placement of the capture and display cards based on the desired input/output mappings will allow virtually any bandwidth requirements to be met.

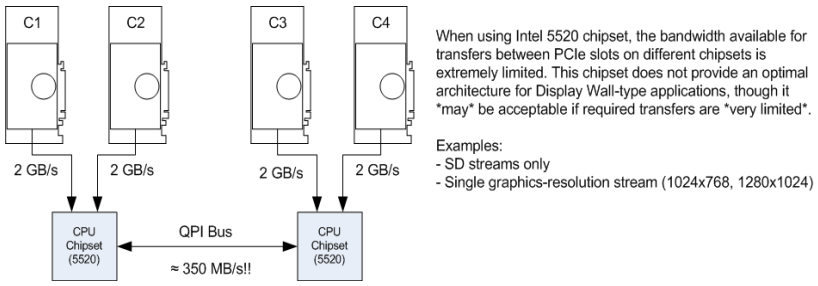
General bandwidth guidelines

Knowledge of the system architecture and the number and types of inputs is required to optimally place capture cards in the system. By carefully calculating the required bandwidth and ensuring that there are no data bottlenecks in the system, the integrator can guarantee the optimal functioning of the Mura MPX Series based and C-Series based display wall.

A word about system architectures

We've assumed up this point that systems used for Mura MPX Series based and C-Series based display walls will be based on a switched architecture (that is, the PCI Express connectors are connected to PCI Express switches that form the backbone of the system architecture) for the purpose of providing multiple PCIe slots for add-in cards. There are, however, system motherboards that provide a small number of slots that don't use a switch-based architecture, but rather use the QPI interface between CPU chipsets to ***bridge*** the gap between groups of PCIe slots (see diagram below). Systems based on this architecture don't perform as well as display wall platforms. The QPI interface itself has

limited bandwidth that makes it unsuitable for transferring large amounts data (as is the case for a display wall system). At best, the system could be suitable for applications requiring very limited streaming of SD only inputs, or a single graphics-type input at a resolution requiring less than the available QPI bandwidth (system dependent).



Any multi-processor system using the QPI bus is likely to see performance issues when used for capture/display of multiple streams. The QPI architecture wasn't designed with high-performance multi-media data transfers in mind, and multi-processor systems based on this architecture should be avoided when possible. Switch-based architectures generally provide a more balanced and efficient backbone for the transfer of multiple video/graphics streams.

Appendix

Approved fans for iStarUSA® D-400-2F80 chassis

Notes	List of approved fan vendors: ▪ Sunon: PMD1212PTB3-A (2).GN ▪ Yen-Sun: FD121225EB ▪ Delta: AFB1212HHE-C ▪ Adda: AG12012XB257100 ▪ NMB: 4715KL-04W-B40 To assemble the fan connectors to the lead wires on the fan, the following parts are needed: ▪ Molex 15-24-4048 (Crimp housings) ▪ Molex 02-08-1201 (Female crimp connectors) Depending on the voltage rating of the fan, the pin placement is the following: ▪ Pin 1: +12V ▪ Pin 2: GND (usually the black lead from the fan) ▪ Pin 3: GND (only one of the two GND pins needs be connected) ▪ Pin 4: +5V (leave unconnected if connecting a 12V fan) **Warning:** The fan may not work properly or may be damaged if the pins aren't properly connected.

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