

Matrox Supersight Solo >>

Entry-level high-performance computing (HPC) platform for industrial imaging



Matrox Supersight Solo at a glance

Harness the full power of today's multi-core CPU, GPU, and FPGA technology for image processing

Interface to any camera type by adding appropriate Matrox Imaging frame grabber board(s)

Eliminate I/O bottlenecks with a PCIe 2.0 switched fabric backplane architecture

Maximize density in a 4U chassis with up to 13 full-length full-height PCIe 2.0 slots

Increase host data transfer bandwidth through PCIe 2.0 x16 and x4 interfaces¹

Interface directly to external process equipment via integrated Gigabit Ethernet and USB 3.0/2.0 connectivity

Minimize the need for revalidation by utilizing a lifecycle-managed platform with consistent long term availability

Simplify system integration by using an integrated platform from a single vendor

Solve applications rather than develop underlying tools by leveraging standard Microsoft® development tools and MIL software

HPC for imaging

Matrox® Supersight Solo accommodates a broad range of image-acquisition interfaces into a single, pre-validated high-performance computing (HPC) platform; this allows OEMs to focus on developing applications with cutting-edge performance instead of working to integrate components together. Matrox Supersight Solo is fully supported by the [Matrox Imaging Library \(MIL\)](#), an established collection of software tools for developing industrial imaging applications that helps developers deliver a complete solution in a timely manner. Backed by a carefully managed lifecycle and long-term availability, Matrox Supersight Solo provides a solid foundation for demanding machine vision applications.

Flexible development platform

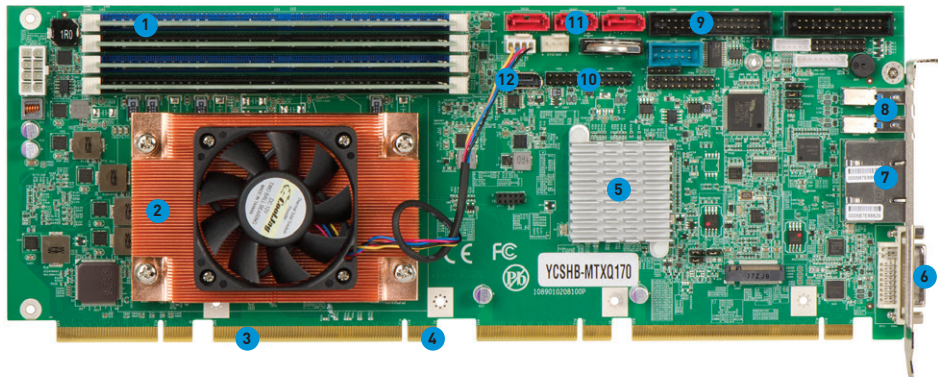
The Matrox Supersight Solo system delivers a high degree of image-acquisition flexibility and performance. It readily accepts up to 13 full-length full-height PCIe® 2.0 cards to suit a wide range of image-acquisition requirements. Matrox Supersight Solo supports image-acquisition boards for the major interfaces—whether analog, Camera Link®, Camera Link HST™, CoaXPress®, Camera Link®, DisplayPort™, DVI, GigE Vision®, HDMI, and SDI—as well as FPGA-based image processing. Combine any and all to build a robust, flexible platform for intensive image capture and processing tasks.

Consistent long-term availability

Carefully selected components are coupled with strict change control to ensure consistent long-term supply of the Matrox Supersight Solo. This lets OEMs maximize return on the original investment without incurring the additional costs associated with repeated validation of constantly changing mainstream commercial platforms.



Matrox Supersight Solo system host board (SHB)-Q170



- | | | |
|-----------------------------------|------------------------------------|-------------------------------|
| 1. Four DDR4-2133 DIMM | 6. DVI-I port | 10. Two USB 2.0 headers |
| 2. Intel® Core™ i7-6700 processor | 7. Two 10/100/1,000 Ethernet ports | 11. Three SATA III interfaces |
| 3. Two SATA III interfaces | 8. Two USB 3.0 ports | 12. DisplayPort 1.2 connector |
| 4. One USB 2.0 port | 9. Two serial ports | |
| 5. Intel Q170 chipset | | |

Matrox Supersight Solo chassis

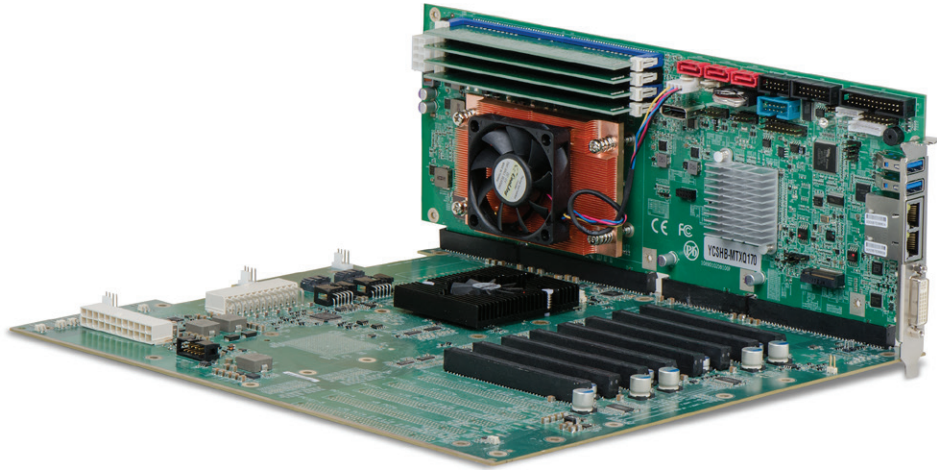


Front view

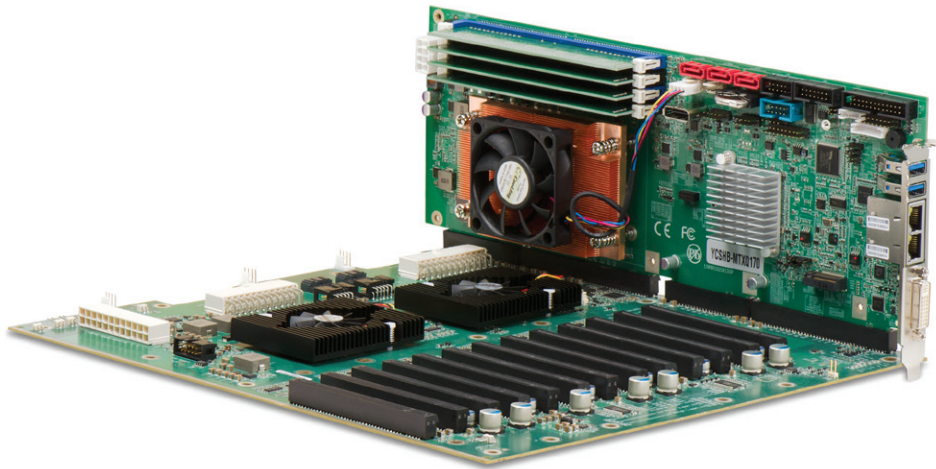


Rear view

Matrox Supersight Solo backplane configurations



Matrox SHB-Q170 in 8-slot PCIe backplane



Matrox SHB-Q170 in 13-slot PCIe backplane

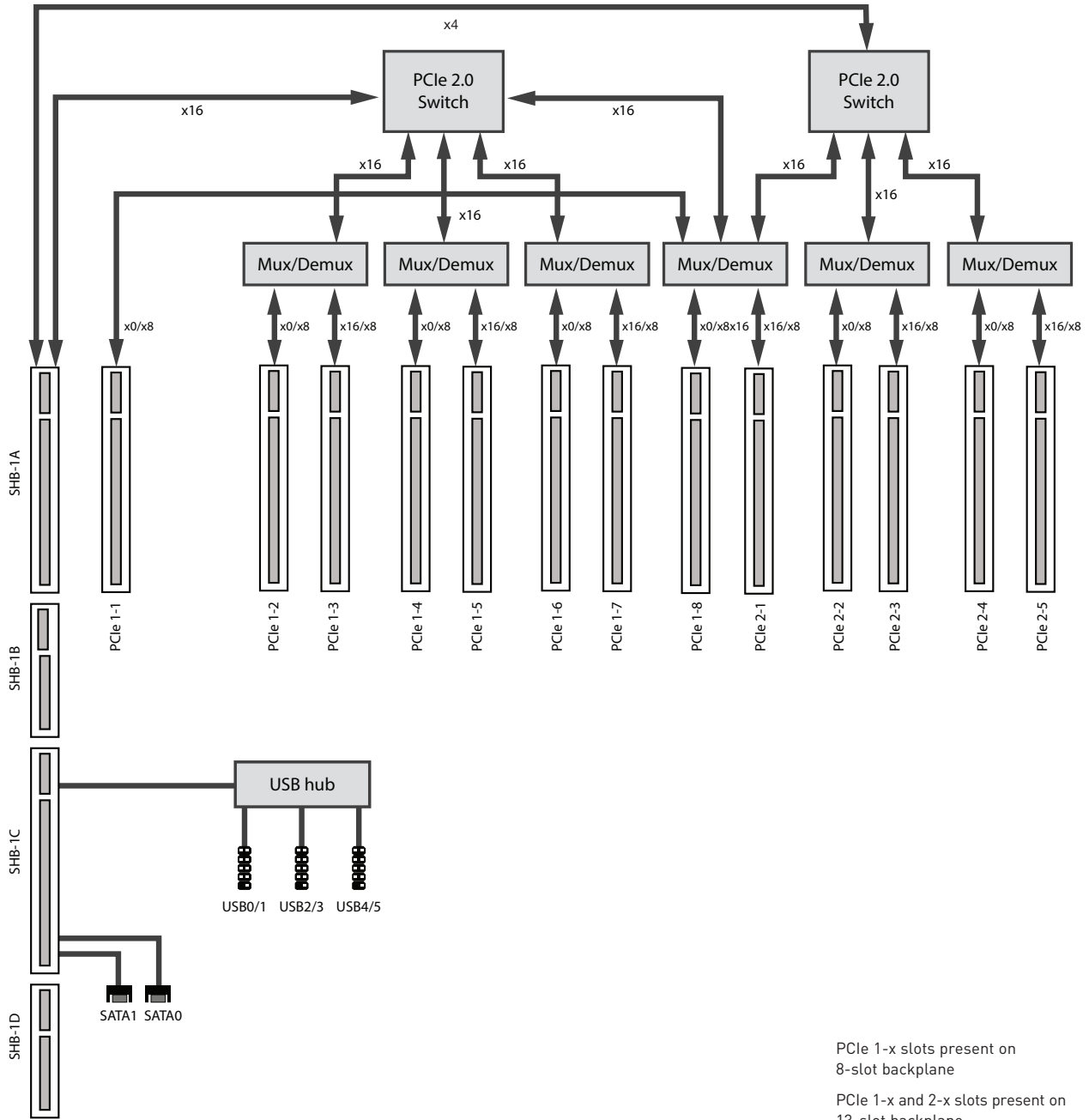
Backplane

An 8-slot PCIe 2.0 backplane provides good expansion opportunities for Matrox and third-party video capture, accelerator/coprocessor, graphics and general I/O boards to fulfill the demands of many imaging applications. An optional 13-slot backplane supports more add-in boards divided in two segments, with a PCIe 2.0 x16 and a PCIe 2.0 x4 pathway to the SHB, for added data throughput capability.

Power and storage

A 1,000 W power supply lets the system accommodate multiple frame grabber, accelerator/co-processor, and graphics boards. Integrated 2.5 in hard drives provide a greater level of shock and vibration resistance over standard desktop models. Quick-release, hot-swappable drive bays with RAID support increase system reliability and facilitate maintenance.

PCIe 2.0 backplane



PCIe 1-x slots present on 8-slot backplane
PCIe 1-x and 2-x slots present on 13-slot backplane

Image acquisition

Matrox Imaging offers the industry's most comprehensive line of image acquisition boards for all major interfaces including Camera Link, Camera Link HS, CoaXPress, DisplayPort, DVI, GigE Vision, HDMI, and SDI as well as standard and non-standard analog. Refer to the individual [Matrox Imaging frame grabber datasheets](#) for more information.

Processing offload

FPGA-based image processing is a powerful addition to an image acquisition board, providing substantial offload of the host processor for image processing primitives without consuming additional slots. Refer to the individual [Matrox Imaging frame grabber datasheets](#) for more information.

Software environment

Operating system

Matrox Supersight Solo comes pre-loaded with Microsoft Windows® 7 Professional for embedded systems, which provides all the features of the standard operating system with an extended life cycle needed to ensure longevity of supply. Native 64-bit support enables the handling of large amounts of system memory.

MIL software

A complete imaging platform must include not only hardware but also robust software tools. MIL is a high-level programming library with an extensive set of optimized functions for image capture, processing, analysis, display, and archiving. Refer to the [MIL datasheet](#) for more information.

MIL is licensed for the Matrox Supersight Solo on a per-chassis basis. Matrox Supersight Solo automatically grants access to [MIL-Lite](#) and [distributed MIL](#) functionality.

Specifications

SHB

- PCIe 2.0 x16 and x4 host interfaces¹
- Intel® Q170 chipset
- Single LGA1151 socket
- Intel Core i7-6700 processor
- Integrated Intel HD graphics 530
 - One (1) DVI-I on I/O bracket
 - One DisplayPort 1.2 via PCB edge connector
- Four (4) 240-pin DDR4 long-DIMM sockets
 - Up to 64 GB DDR4-2133 SDRAM
- Six (6) SATA III 6.0 Gbps ports with raid 0, 1, 5, and 10 support
 - Three (3) ports via PCB edge connector
 - Two (2) ports via backplane through slot connector
 - One (1) port on M.2 connector
- One (1) M.2 socket-M connector
- Two (2) Gigabit Ethernet ports (10/100/1,000)
- Five (5) USB ports
 - Two (2) USB 3.0/2.0 on I/O bracket
 - Two (2) USB 2.0 via PCB edge connector
 - One (1) USB 2.0 via backplane through slot connector
- One (1) RS-232 plus one (1) RS-232/RS-422/RS-485 serial ports via PCB header connector

8- or 13-slot PCIe 2.0 backplane

- One (1) host slot
 - PCIe 2.0 x16 interface with 8-slot backplane
 - PCIe 2.0 x16 and PCIe 2.0 x4 interfaces with 13-slot backplane
- Eight (8) or thirteen (13) PCIe 2.0 x16 75 W slots²
- Two (2) SATA III connectors
- Three (3) USB 2.0 connectors
 - Two (2) ports per connector

Specifications (cont.)

Memory

- 16 GB DDR4-2133

Hard disk

- Up to four (4) hard disks
 - Up to 500 GB
 - SATA III
 - 7,200 RPM
 - 32 MB cache

Optical drive

- One (1) slim optical disk drive
 - 24x CD R/W
 - 8x DVD-ROM
 - SATA I

Chassis

Dimensions

- Length: 52.4 cm (20.6 in)
- Width: 48.2 cm (19.0 in)
- Height: 4U, 17.8 cm (7.0 in)

Mounting

- 19 in rackmount
- Removable rack ears
- Removable rack handles

Drive bays

- Front-accessible
- Four (4) 2.5 in, hot-swappable hard disk bays
- One (1) slim CD/DVD bay

I/O interfaces

- Six (6) USB 2.0 ports
 - Two (2) front accessible
 - Four (4) internal³

Additional features

- Hinged front panel
- Push-button power switch
- Recessed reset button
- Power and HDD notification LEDs
- Fifteen (15) slots

Specifications (cont.)

Power supply

- 1,000 W power supply
- AC input
 - 100-240 VAC
 - 47-63 Hz
 - 14 A / 7 A at any low/high range input voltage
 - 80 Plus Bronze rated
 - Power-factor corrected
- DC output
 - +3.3VDC @ 25 A
 - +5 VDC @ 25 A
 - +12V1DC @ 50 A
 - +12V2DC @ 50 A
 - -12VDC @ 0.8 A
 - +5VSB @ 3.5 A
- Supplemental power connectors
 - Six (6) 4-pin peripheral (12 V DC & 5 V DC)
 - One (1) 8-pin EPS CPU
 - Five (5) 6-pin PCIe power 75 W (12 V DC) or 8-pin PCIe power 150 W (12 V DC)⁴

Specifications (cont.)

Certifications

- FCC class A
- CE class A
- RoHS-compliant

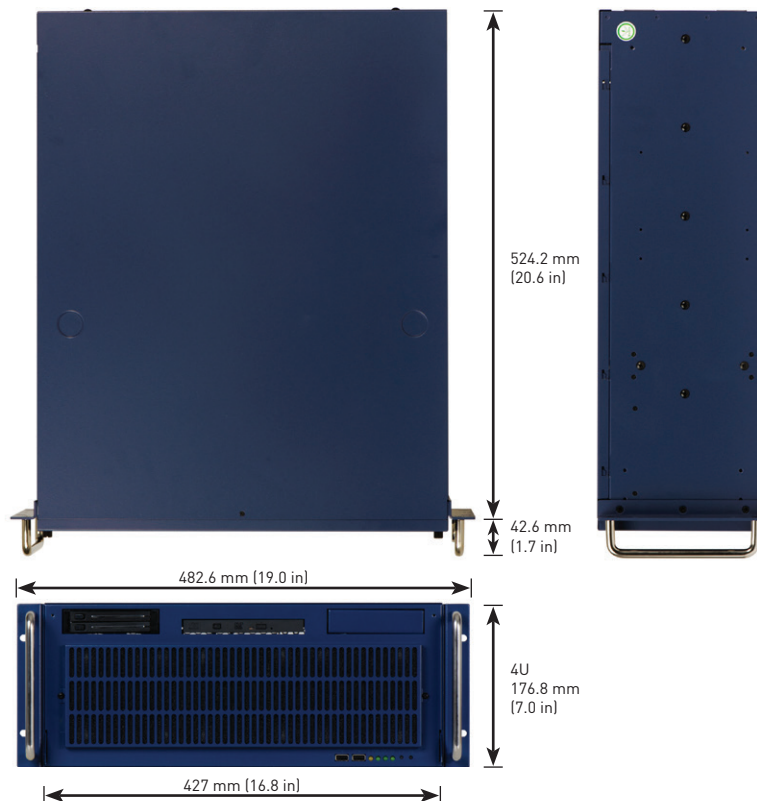
Operating system

- Pre-loaded with Microsoft Windows 7 Professional 64-bit for embedded systems

Environmental

- Operating temperature: 10°C (50°F) to 35°C (95°F)
- Storage temperature: -40°C (-40°F) to 85°C (185°F)
- Up to 90% (non-condensing) relative humidity

Dimensions



Ordering Information

Hardware

Part number	Description
SL-MTRX-02*	Matrox Supersight with single SHB featuring a single Intel Core i7-6700, 16 GB DDR4 SDRAM, 500 GB HDD, and Microsoft Windows 7 Professional 64-bit for embedded systems. Includes 13-slot single-segment PCIe 2.0 backplane and 1,000 W power supply. Prelicensed for MIL interface and distributed MIL packages.
SL-MTRX-03*	Matrox Supersight with single SHB featuring a single Intel Core i7-6700, 16 GB DDR4 SDRAM, 500 GB HDD, and Microsoft Windows 7 Professional 64-bit for embedded systems. Includes 8-slot single-segment PCIe 2.0 backplane and 1,000 W power supply. Prelicensed for MIL interface and distributed MIL packages.

Software

Refer to the [MIL datasheet](#).

Endnotes:

1. Using the 13-slot backplane. The 8-slot backplane provides only a PCIe 2.0 x16 interface.
2. PCIe connectors are all x16 mechanical but not electrical; not all 13 slots can draw 75 W at the same time.
3. Unit ships with two dual-port I/O brackets.
4. With the 75 W available from the slot, then a total of 150 W and 225 W is available to the board, respectively.



Corporate headquarters

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About Matrox Imaging

Founded in 1976, Matrox is a privately held company based in Montreal, Canada. Imaging, Graphics, and Video divisions provide leading component-level solutions, leveraging the others' expertise and industry relations to provide innovative, timely products.

Matrox Imaging is an established and trusted supplier to top OEMs and integrators involved in machine vision, image analysis, and medical imaging industries. The components consist of smart cameras, vision controllers, I/O cards, and frame grabbers, all designed to provide optimum price-performance within a common software environment.

For more information, please contact us at 1-800-804-6243 (toll free in North America), (514) 822-6020, imaging.info@matrox.com, or www.matrox.com/imaging.

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