

APERIO GT 180 DX

DIGITAL PATHOLOGY SLIDE SCANNER

SPECIFICATIONS



CE

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Aperio GT 180 DX Specifications

MAN-0559 | Revision A | October 2025

This manual applies to the Aperio GT 180 DX scanner and Aperio SAM DX Software version 1.5.

Original Instructions.


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- This product is protected by registered patents. For a list of patents, contact Leica Biosystems.

Customer Resources


- For the latest information on Leica Biosystems Aperio products and services, please visit [LeicaBiosystems.com/Aperio](https://www.leicabiosystems.com/Aperio).

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23GT180DXIVD, 23APERIOSAMSWDX1

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Notices

Important message

Service personnel and distributors who have access to protected patients' information must treat all such information as confidential in accordance with professional ethics, accreditation standards, and legal requirements.

Revision Record

Rev.	Issued	Sections Affected	Detail
A	October 2025	All	Initial release

Cautions and Notes

- **Serious Incidents Reporting** – Any serious incident that has occurred in relation to the Aperio GT 180 DX scanner shall be reported to the manufacturer and the competent authority of the member state in which the user and/or the patient is established.
- **Specifications and Performance** – For device specifications and performance characteristics, see this document.
- **Installation** – Aperio GT 180 DX scanner must be installed by a trained Leica Biosystems Technical Services representative.
- **Repair** – Repairs may be done only by a trained Leica Biosystems Technical Services representative. After repairs are done, ask the Leica Biosystems technician to perform operation checks to determine the product is in good operating condition.
- **Accessories** – For information on using Aperio GT 180 DX scanner with third-party accessories such as a Laboratory Information System (LIS) not provided by Leica Biosystems, contact your Leica Biosystems Technical Services representative.
- **Quality Control** – For information on image quality checks, see the *Aperio GT 180 DX User's Guide*.

- **Maintenance and Troubleshooting** – For information on maintenance and troubleshooting, see the *Aperio GT 180 DX scanner User's Guide*.

Cybersecurity – Be aware that workstations are susceptible to malware, viruses, data corruption, and privacy breaches. Work with your IT administrators to protect workstations by following your institution's password and security policies.

To protect workstations and servers from malware intrusion, use caution when inserting USB drives and other removable devices. Consider disabling USB ports that are not in use. If you plug in a USB drive or other removable device, you should scan the devices with an anti-malware utility. For Aperio recommendations on protecting your workstations and servers, see the *Aperio SAM DX IT Manager and Lab Administrator Guide*.

If a suspected Aperio GT 180 DX scanner cybersecurity vulnerability or incident is detected, contact Leica Biosystems Technical Services for assistance.

As a system security measure, Leica Biosystems products capture and log external attempts to access system data. For more information, contact your Leica Biosystems representative.














- **Training** – This manual is not a substitute for the detailed operator training provided by Leica Biosystems or for other advanced instruction.
- **Safety** – This device is intended for indoor use only. Safety protection may be impaired if this device is used in a manner not specified by the manufacturer.






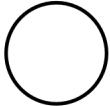



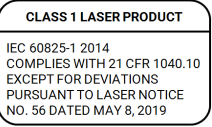




For additional information on this product, including intended use, see the primary instructions for use, *Aperio GT 180 DX User's Guide*.

Symbols

The following symbols appear on your product label or in this user guide:

Symbol	Regulation/Standard	Description
	ISO 15223-1 - 5.4.3	Consult Instructions for Use
	ISO 15223-1 - 5.1.1	Manufacturer
	ISO 15223-1 - 5.1.3	Date of manufacture
	ISO 15223-1 - 5.1.2	European Union Authorized Representative
	IvDO; SR 812.219 Section 2 Article 44	Switzerland Representative
	ISO 15223-1 - 5.1.8	Importer
	AS/NZS 4417.1	Device is in compliance with with the Australian Communications Media Authority (ACMA) requirements (safety and EMC) for Australia and New Zealand.
	ISO 15223-1 - 5.1.7	Serial number
	ISO 15223-1 – 5.5.1	In Vitro Diagnostic medical device
	ISO 15223-1 – 5.1.6	Catalog number
	ISO 15223-1 – 5.7.10	Unique Device Identifier
	EU 2017/746 Article 18	Device carries the CE (Conformité Européenne) Mark and fulfils the requirements of EU Regulation 2017/746.
	Medical Devices Regulations 2002	Device is in compliance with UK Conformity Assessment requirements.

Symbol	Regulation/Standard	Description
	ISO 15223-1 - 5.4.4	Caution
	ISO 7010 – W001	General warning
	IEC 61010-1	TÜV Product Services have certified that the listed products comply with both U.S. and Canadian safety requirements.
	IEC 60417 - 5031	This device is suitable for direct current only.
	IEC 60417 - 5007	On. To indicate connection to the mains, at least for mains switches or their positions, and those cases where safety is involved.
	IEC 60417 - 5008	Off. To indicate disconnection from the mains, at least for mains switches, and all those cases where safety is involved.
	ISO 15523-1 5.7.3	Temperature limitation
	ISO 15223-1 5.3.8	Humidity limitation
	2012/19/EU	Device is regulated under 2012/19/EU (WEEE Directive) for Electrical and Electronic Equipment Waste and must be discarded under special conditions.
	IEC 60825-1	Device is a Class 1 Laser Product that is in compliance with international standards and US requirements.
	IEC 60825-1:2014	Warning label/Hazard label: Laser
	ISO 60417-5017 (2006.9)	Earth (ground) terminal To identify an earth (ground) terminal in cases where neither the symbol 5018 nor 5019 is explicitly required.

Introduction

The Aperio GT 180 DX scanner is a high performance, brightfield whole slide scanner that includes continuous loading with 180-slide capacity across 6 racks, priority rack scanning, automated image quality check and a scan speed of ~32 seconds at 40x scanning magnification for a 15 mm x 15 mm area.

The Aperio GT 180 DX scanner is intended for use by trained clinical pathology histotechnicians, while the Aperio SAM DX software is intended for use by IT professionals and laboratory administrators.

The Aperio GT 180 DX scanner is intended for use in medium- to high-volume clinical pathology laboratories that support the pathology services of a hospital, reference laboratory or other clinical facility.

It is the responsibility of a qualified pathologist to employ appropriate procedures and safeguards to assure the validity of the interpretation of images obtained using the Aperio GT 180 DX scanner. Pathologists should exercise professional judgment in each clinical situation and examine the glass slides by conventional microscopy if there is doubt about the ability to accurately render an interpretation using this device alone.

Ensure you follow appropriate good laboratory practices and the policies and procedures required by your institution for slide preparation, processing, storage, and disposal. Use this equipment only for this purpose and in the manner described in the *Aperio GT 180 DX User's Guide*.



See the manuals for your digital slide viewer for specifications for monitors and workstations.

Aperio GT 180 DX scanner components

The Aperio GT 180 DX scanner requires these components for administering the scanner:

Component	Description
Aperio SAM DX Server	The Aperio SAM DX Client Application Software resides on a server, which is referred to in this document as the Aperio SAM DX server. The Aperio SAM DX server connects to multiple Aperio GT scanners. For requirements for this server, see Aperio SAM DX server minimum specifications (on page 15) .
Aperio SAM DX Client Application Software	The Aperio SAM DX client application software enables IT implementation, PIN configuration, and service access of multiple scanners from a single desktop client location for IT professionals.
Workstation, monitor and keyboard	A workstation, monitor and keyboard must be connected to your local area network with access to the Aperio SAM DX server to administer the Aperio GT scanners.

Aperio GT 180 DX scanner specifications

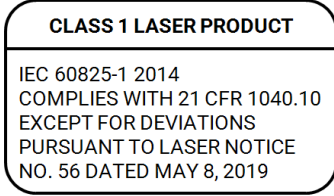
The following sections contain specifications for the Aperio GT 180 DX scanner.

Routine setup and functional verification is required by a Leica Biosystems Service representative after shipping.

General scanner specifications

Feature	Details
Part number	23GT180DXIVD
Scanner on/off switch	Located on the right side, near the back of the scanner.
Scanning region	≤ 23.6 mm x 58 mm
Objective lens	Custom optics by Leica Microsystems for native 40x scanning with 1 mm FOV (Field of View).
Brightfield imaging	4k Trilinear camera
Scan output	SVS and DICOM ¹
Overview image resolution	13 μm/pixel for label, barcode, and tissue macro (overview image).
Label/barcode imaging	High resolution main imaging camera used to capture the label/barcode region.
Focusing system	Real-time automatic focusing (U.S. patent 9841590B2) Optional Z-Stack Scanning, optional Extended Focus, and optional Manual Scan: Automatic point focusing.
Digital slide file format	Standard pyramid tiled TIFF with JPEG image compression.
Illumination	White LED
Operating system	Linux
Connections	The Aperio GT 180 DX scanner has two connectors on the back panel: <ul style="list-style-type: none"> Power. The appropriate power cord for your geographical region is shipped with the scanner. The power cord plugs into the AC/DC adapter that connects to the back panel. Only use the approved power cord supplied by the manufacturer. Network. You will need to supply your own network cable.

¹To use the DICOM file format, this feature must be enabled for your scanner. See *Aperio SAM DX IT Manager and Lab Administrator's Guide* for details. Also, your IT environment must meet the requirements detailed in the *Aperio DICOM Conformance Statement*.

Feature	Details
Class 1 laser	<p>Laser Compliance. This symbol indicates that the product is a Class 1 Laser Product and is in compliance with international standards and US requirements.</p>  <p>CLASS 1 LASER PRODUCT</p> <p>IEC 60825-1 2014 COMPLIES WITH 21 CFR 1040.10 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO. 56 DATED MAY 8, 2019</p>

Aperio GT 180 DX scanner features

Feature	Details
Scanning priority	By rack, up to 3 racks at a time.
Continuous loading	Continuous rack loading without interrupting scanning.
Slide loading	Automatic: up to 180 1-inch x 3-in (2.54 cm x 7.62 cm) slides.
Slide calibration	Each slide scan is automatically calibrated.
Automated image quality check	Each scan image is automatically checked for image quality during scanning.
Tissue finding	Automatic
Touch-screen	<ul style="list-style-type: none"> • 10.1" diagonal, IPS, 16:10, 1280 x 800 resolution • Viewing angles: 89/89/89/89 • Contrast ratio: 800:1
Embedded Vision Processing Unit (VPU)	The VPU is an embedded processor that runs the Aperio GT 180 DX scanner controller software. For instructions on determining the version of the software included on this unit, see the <i>Aperio SAM DX IT Manager and Lab Administrator's Guide</i> .

Performance specifications

Feature	Details
Scan speed	< 32 sec/slide, 15 mm x 15 mm at 40x.
Throughput	Sustained throughput 81 slides per hour 15 mm x 15 mm (40x).
Scanning resolution	0.26 μm /pixel at 40x. 0.52 μm /pixel at 20x.

Power specifications

Feature	Details
Input Power	External AC/DC adapter (Power Supply Unit): 100-240V, 50/60Hz, 5A max; Instrument: 24V --- 10.5A.
Power consumption	+24VDC @ 10.5 amps
Uninterruptible Power Supply (UPS)	To protect the scanner, Leica Biosystems recommends using a UPS rated at 1500VA with power conditioning that protects connected loads from electrical surges and spikes, lightning, and other power disturbances. The UPS allows the scanner to run for an additional 20 minutes (no longer than 30 minutes), giving you time to safely shut it down.

Slides and rack specifications

Feature	Details
Slides accepted	<p>The Aperio GT 180 DX scanner is optimized for scanning glass slides with coverslips affixed with mounting media.</p> <ul style="list-style-type: none"> • 1-inch x 3-inch (2.54 cm x 7.62 cm) glass slides. Measurements comply with ISO 8037/1. • Minimum slide size: 25 mm (wide) x 75 mm (long) • Maximum slide size: 26 mm (wide) x 76 mm (long) • Thickness: Optimized for range of 0.9 mm to 1.1 mm, excluding coverslip <p>The coverslip/label shall not protrude beyond the edge of the glass slide. The entire coverslip and label must be adhered to the glass slide. There must be no lifted edges or parts of the coverslip/label. The outer surface of the slide must be dry.</p> <p>Slides are typically prepared using:</p> <ul style="list-style-type: none"> • Glass coverslip with mounting media such as Eukitt • Film coverslip with integrated glue <p>Maximum tissue thickness (including mounting media) optimized for 3–5 µm.</p>
Coverslips accepted	Optimized for coverslip with thickness of 0.17 mm, made of typical coverslip material: Standard microscope cover glass or Cellulose Tri-Acetate film (microscope cover film).
Racks accepted	Optimized and recommended for use with Leica HistoCore Spectra workstation racks (stainer and coverslipper), which include the Leica Universal Rack 30-slide capacity. Sakura Prisma Stainer and Coverslipper Rack 20-slide capacity racks also accepted.

Feature	Details
Racks provided	6 Leica Universal racks, 30-slide capacity (part number 23RACKGT450) are provided with the Aperio GT 180 DX scanner.
Label area	<p>25 mm x 25 mm. Handwritten/printed non-transparent, matte (paper-like reflecting) sticker.</p> <p>Labels shall not protrude beyond the edge of the slides nor be lifted.</p> <p>Labels shall not be attached to the bottom of the slide, but only attached to the coverslip-side of the slide.</p> <p>Maximum label thickness 200 microns</p> <p>Minimum label size 12 mm x 25 mm</p> <p>There must be a minimum of 0.5 mm between each side of the barcode and the edge of the label.</p>

Barcode specifications

The Aperio GT 180 DX scanner supports the following barcodes:

- NW7
- QR Code
- DataMatrix*
- Interleaved 2 of 5
- Code 39
- Code 128
- PDF417
- MicroPDF417
- Aztec

*DataMatrix ECC 000-140 is not supported.

Barcode characters supported

- Follow the guidelines for supported characters based on the type of barcode you are using.
- For QR codes that contain language sets other than ISO-8859-1, Leica Biosystems recommends encoding the QR code in UTF-8.
- For DataMatrix barcodes that contain language sets other than ISO-8859-1, Leica Biosystems recommends encoding the barcode strings in UTF-8.

Barcode string length specifications

Barcode type	Minimum barcode string length (characters)	Maximum barcode string length (characters)
Code 39, Code 128, Interleaved 2 of 5	4	64
CODABAR (NW7)	5	64
QRCODE, PDF417, Micro PDF417, DataMatrix	1	64
Aztec	1	64

Environmental specifications

Feature	Details
Dimensions	52.8 cm (20.8") Width x 65.0 cm (25.6") Depth x 49.5 cm (19.5") Height
Weight	126 lbs (57.0 kg)
Work surface specifications and required clearances	Standard laboratory grade work bench with at least 61 cm (24") Width x 71.12–81.28 cm (28" to 32") Depth x 74.3 cm (29.25") Height, open area leveled to ± 1.0 degrees. Ensure you leave 33 cm (13") clearance on the left side of each scanner to provide access for maintenance activities, and leave 8–10 cm (3"–4") on the right side of each scanner for access to the power switch.
Operating conditions	The Aperio GT 180 DX scanner is designed to be operated under the following environmental conditions: <ul style="list-style-type: none"> • Indoor use • Overvoltage Category II • 20% to 80% relative humidity (RH), non-condensing • Operating temperature: 15°C to 30°C (59°F to 86°F)
Storage conditions	0°C to 50°C, 25% to 95% RH, non-condensing
Transport conditions	-30°C to 50°C, 25% to 95% RH, non-condensing
System heat dissipation	Maximum 870 BTU/hr.
Maximum elevation	10,000 ft 3048 m
Degree of pollution	2
Environmental	Compliant with RoHS (Restriction of Hazardous Substances) as per Directives 2011/65/EU and 2015/863

Network specifications

Feature	Details
Network interface	1 gigabit per second Ethernet
Bandwidth requirements	For the connection between the Aperio GT 180 DX scanner and the Aperio SAM DX server, the required minimum bandwidth is a gigabit ethernet with a speed equal to or greater than 1 gigabit per second (Gbps). For the connection between the Aperio SAM DX server and the image repository (DSR), the required minimum bandwidth is 10 gigabits per second.

Routine setup and functional verification is required by a Leica Biosystems Service representative after shipping.

Aperio SAM DX server minimum specifications

This section provides the minimum specifications for the server that hosts the Aperio SAM DX application software. Your Aperio SAM DX server must meet or exceed these requirements.



The Aperio SAM (Scanner Administration Manager) DX (Aperio SAM DX) supports multiple Aperio GT Platform scanners, which include models from the GT 180 and GT 450 families. Multiple Aperio SAM DX servers can be added to your network.

For information on recommended network configuration and data flow for the Aperio GT 180 DX scanner, see [Overview of recommended network configurations \(on page 17\)](#) and the *Aperio SAM DX IT Manager and Lab Administrator's Guide*.

Feature	Details
CPU	Intel Xeon Silver 4114 2.2G, 10C/20T, 9.6GT/s, 14M Cache, Turbo, HT (85W) DDR4-2400
Hard disk space	(2) 800GB SSD SATA Mix Use 6Gbps 512n 2.5in Hot-plug Drive, Hawk-M4E, 3 DWPD, 4380 TBW
Memory	Memory DIMM Type and Speed Quantity: (2) 16GB 2666MT/s RDIMMs
Network card	Intel Ethernet Converged Network Adapter X550-T2 2-port 1/10Gb Base-T network adapter - PCIe 3
Operating system	Microsoft Windows Server 2022 (recommended) Microsoft Windows Server 2019 (minimum)

Aperio GT 180 DX scanner compliance specifications

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- this device may not cause harmful interference, and;
- this device must accept any interference received, including interference that may cause undesired operation.

This device has been evaluated against and conforms to the following standards:

Feature	Details
Safety	 <p>IEC 60601-1-2:2014 IEC 61010-1:2010 IEC 61010-1: 2010/AMD1:2016 IEC 61010-2-101: 2018 CAN/CSA C22.2 No. 61010-1:2012/A1:2018 CAN/CSA C22.2 No. 61010-2-101:2019 UL 61010-1:2012/R2019-07 UL 61010-2-101:2019 EN 61010-1:2010/A1:2019 EN 61010-2-101:2017</p>
EMC	<p>EMC Directive (Directive 2014/30/EU) EN 61326-1:2013 CISPR 11: 2015 FCC Part 15 Subpart B ICES-003 Issue 6: 2016</p>

Overview of recommended network configurations

The following network configuration diagrams and port list describe the most common configuration scenarios for the Aperio GT 180 DX scanner, Aperio SAM DX hosting server, Aperio eSlide Manager hosting server, image share, and third-party Picture and Archiving Communications System (PACS) with and without DICOM C-STORE image transfer support.

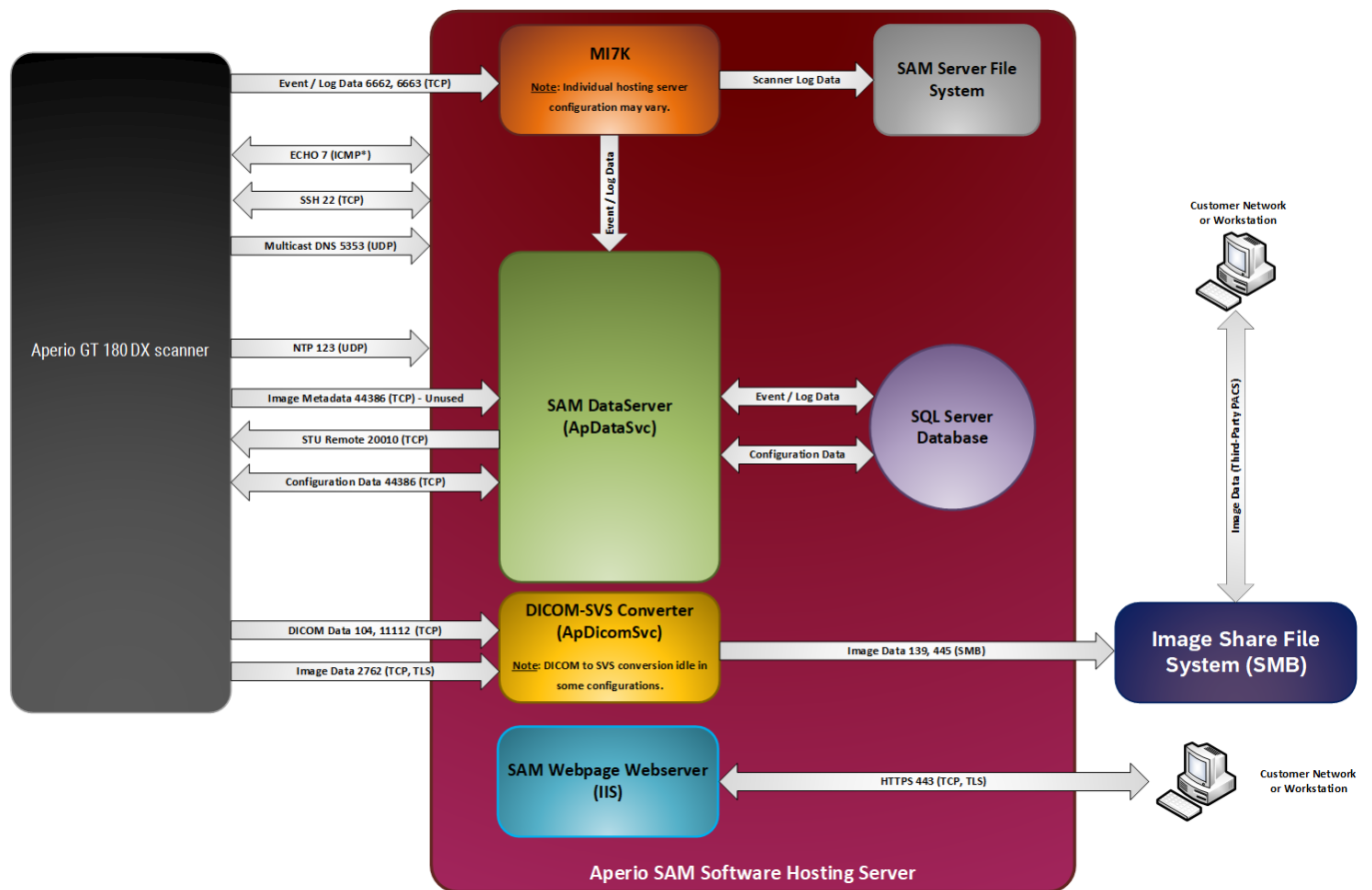
This section provides the most common configurations, and your site's configuration may differ. Work with your Leica Biosystems representative to address any questions or concerns.

Aperio GT 180 DX scanner with DICOM C-STORE and third-party PACS support

The configuration shown in this section represents a typical configuration and use case where the Aperio GT 180 DX scanner and Aperio SAM DX software configuration transmits DICOM images direct to a customer's Vendor Neutral Archive (VNA) or third-party Picture and Archiving Communication System (PACS) using the DICOM C-STORE protocol.

This configuration is applicable only to those organizations who are using the optional DICOM upgrade. This configuration does not produce ScanScope Virtual Slide (SVS) images by default. The DICOM-SVS conversion service (ApDicomSvc) on the Aperio SAM DX hosting server is idle. Image metadata is not transmitted to Aperio SAM DX.

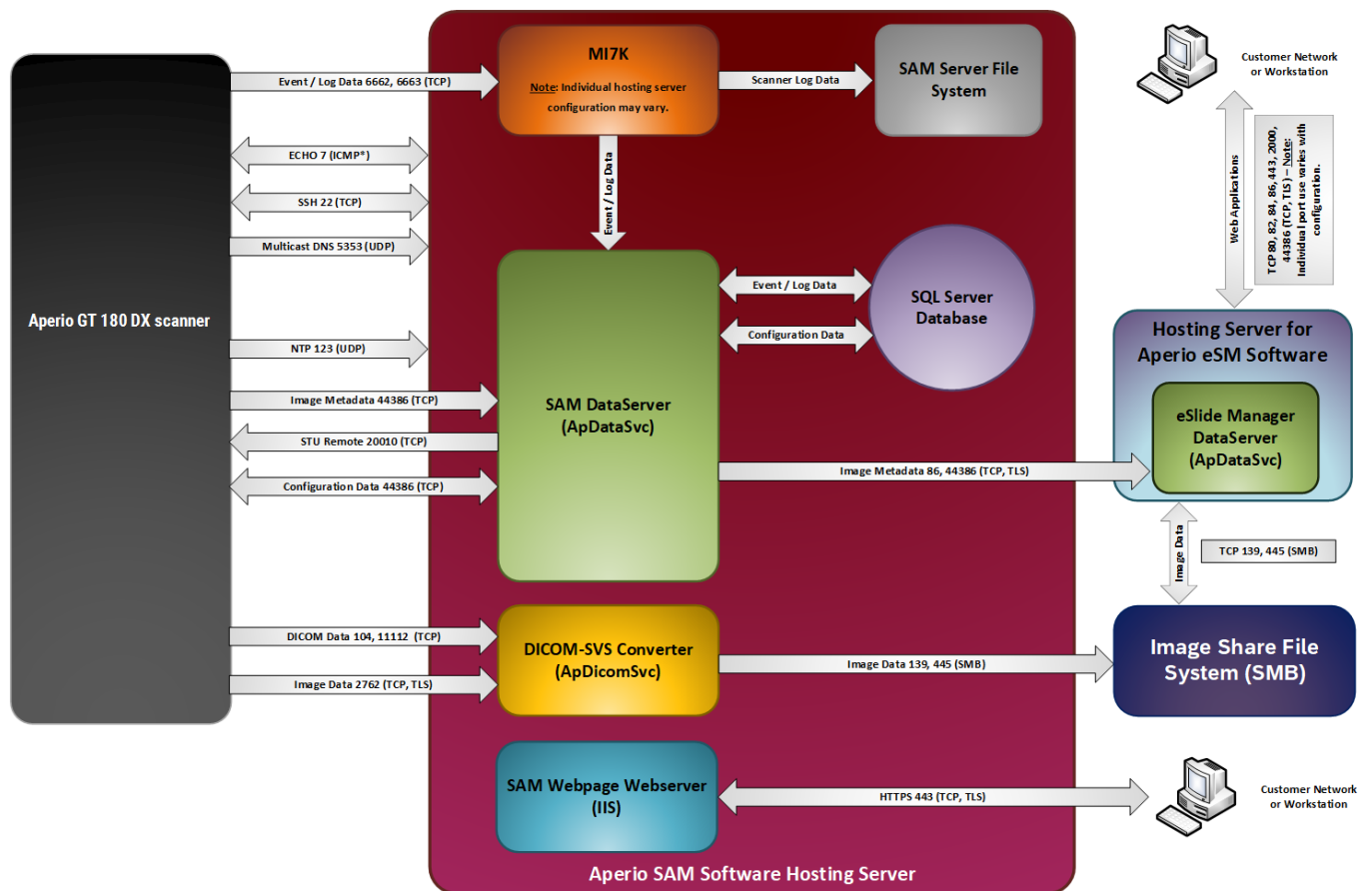
The scanner must be licensed and configured with the optional DICOM upgrade. Contact your Leica Biosystems representative with any specific questions.



Aperio GT 180 DX scanner with Aperio eSlide Manager integration from image file share

The configuration shown in this section represents a typical configuration and use case where the Aperio GT 180 DX scanner interfaces with an image share that provides data to an instance of Aperio eSlide Manager running on a physical or virtualized hosting server separate from the device with Aperio SAM DX installed. There are multiple configurations of Aperio eSlide Manager (such as Hub and Spoke) that are not described in this guide.

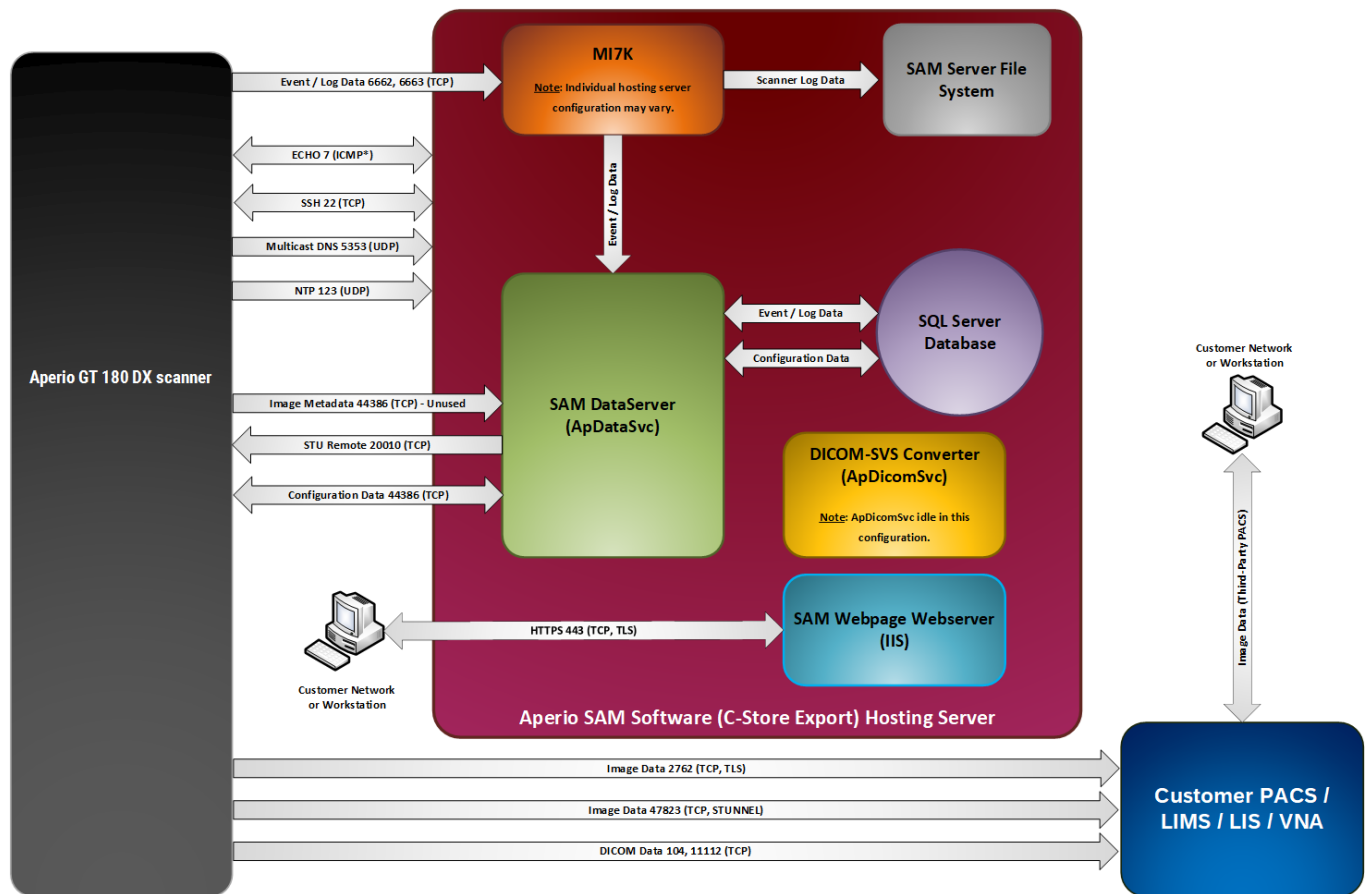
This configuration produces only SVS images, as other image formats are not compatible with Aperio eSlide Manager.



Aperio GT 180 DX scanner with third-party PACS support from image share

The configuration shown in this section represents a typical configuration and use case where the Aperio GT 180 DX scanner interfaces with an image share monitored by a third-party PACS, LIS, or LIMS using an instance of Aperio SAM DX with no Aperio eSlide Manager.

This configuration exports SVS or DICOM images to the image share, depending on your Aperio SAM DX hosting server configuration. Enabling DICOM export is applicable only to those organizations that are using the optional DICOM upgrade. Image metadata is not transmitted to Aperio SAM DX.



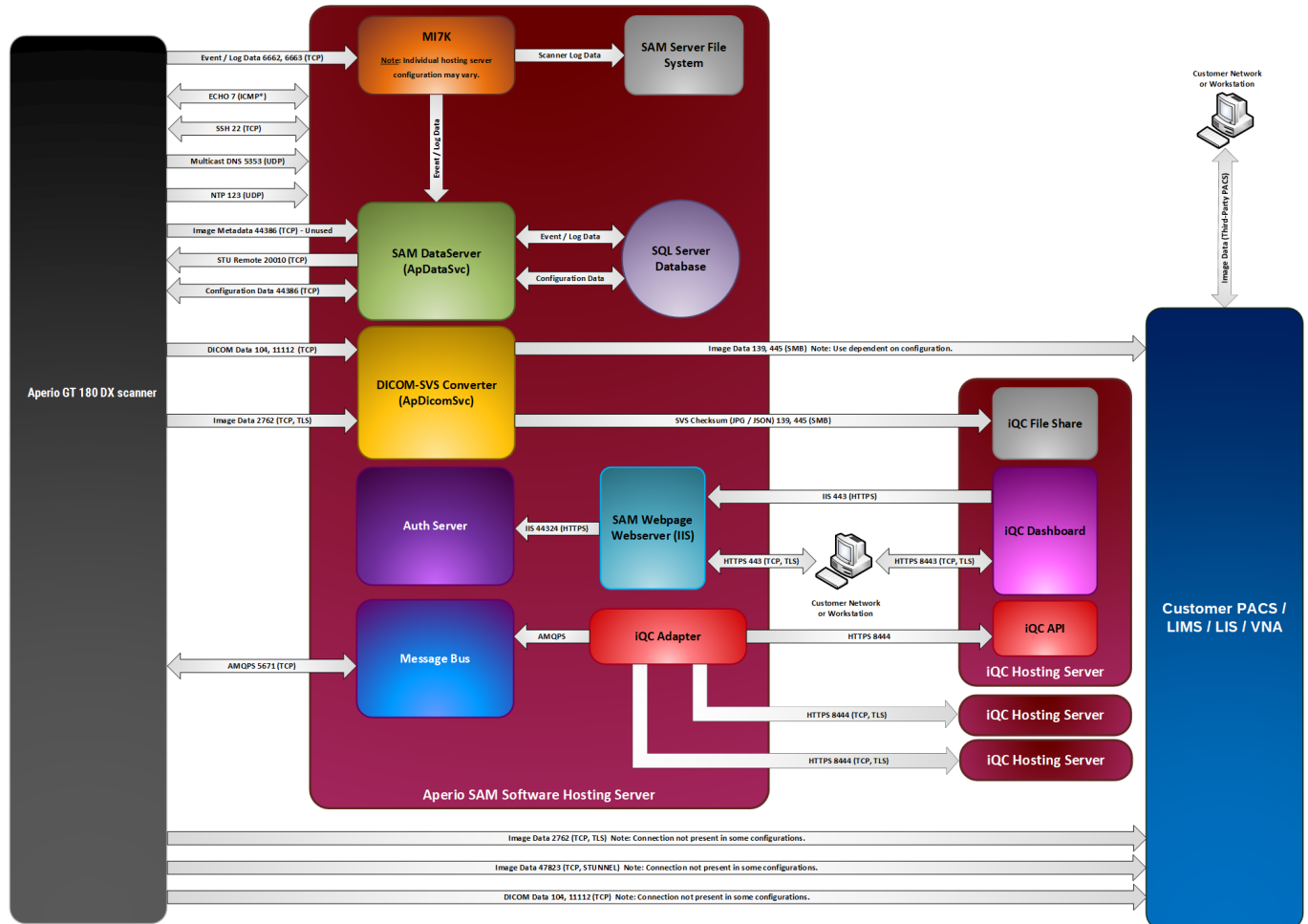
Aperio GT 180 DX scanner with Aperio iQC DX Software

This section shows how the Aperio GT 180 DX interfaces with the Aperio iQC DX Software. The Aperio iQC DX Software resides on a separate server, but it requires connections to the SAM server and a dedicated file system.

To integrate with the Aperio iQC DX Software, the Aperio GT 180 DX uses an iQC Support Package, which is installed on a SAM hosting server to facilitate communication with the scanner. The scanner console displays artifact information provided by the Aperio iQC DX Software.

User authentication for the Aperio iQC DX Software is through the SAM authentication server. The Aperio iQC DX Software user logs in with their SAM credentials.

The DICOM-SVS converter sends a copy of image data both to a dedicated Aperio iQC file system and to the IMS file system. The data stream to the dedicated Aperio iQC DX Software includes metadata and other files used by iQC. IMS integration is achieved by leveraging one of the configurations described previously.



Aperio GT 180 DX scanner network configuration ports

The table below provides a list and description of the ports used with the Aperio GT 180 DX scanner configurations.

Port Number	Protocol	Use by SAM DX / Aperio GT 180 DX / DSR	Source	Destination	Description
7	ICMP	Internet Control Message Protocol (ICMP)	SAM DX	GT 180 DX	ICMP echo requests from SAM to the Aperio GT 180 DX (when configured).
7	ICMP	Internet Control Message Protocol (ICMP)	Any	SAM DX	ICMP echo requests from external systems to SAM (when configured).
22	TCP	Secure Shell Connections	SAM DX	GT 180 DX	SSH service provides remote command and file transfer services on the Aperio GT 180 DX. The Aperio GT 180 DX firewall only permits SSH traffic from SAM (when configured).
80	TCP	Hypertext Transfer Protocol (HTTP)	Any	DSR / Image Share	Display of unencrypted web pages. Only in use in certain configurations.
82	TCP	ImageServer service used for image viewing.	Any	DSR / Image Share	Only in use with instances of Electronic Slide Manager (eSM).
84	TCP	Digital slide conferencing.	Any	DSR / Image Share	Only in use with instances of Electronic Slide Manager (eSM).
86	TCP	DICOM Data Tool (Image Metadata)	Any	DSR / Image Share	DataServer API. SAM DataServer sends image metadata to eSlide Manager DataServer. Connections encrypted via TLS.

Port Number	Protocol	Use by SAM DX / Aperio GT 180 DX / DSR	Source	Destination	Description
86	TCP	DICOM Data Tool (Image Metadata)	GT 180 DX	SAM DX	Heartbeat verification from Aperio GT 180 DX to SAM.
104	TCP	DICOM Data Tool	GT 180 DX	SAM DX	DICOM TLS SCP for receiving image data from the Aperio GT 180 DX.
123	UDP	Network Time Protocol (NTP) synchronization.	GT 180 DX	SAM DX	Aperio GT 180 DX Network Time Protocol Daemon (NTPD) synchronization.
137	UDP	SAM requires UDP access to this port for image data transmission.	Any	DSR / Image Share	NETBIOS service discovery.
138	UDP	SAM requires UDP access to this port for image data transmission.	Any	DSR / Image Share	NETBIOS service discovery.
139	TCP	SAM requires TCP access to this port for image data transmission.	Any	DSR / Image Share	TCP image transmission, encrypted using TLS 1.2 or greater for transmission from the scanner to the hosting server and SMB3 from the hosting server to image share.
443	TCP	Secure Hypertext Transfer Protocol (HTTPS)	Any	DSR / Image Share	HTTPS access to eSlide Manager (eSM) hosting server webpage webserver (IIS). Connections encrypted via TLS.
443	TCP	Secure Hypertext Transfer Protocol (HTTPS)	SAM DX	GT 180 DX	HTTPS access to Aperio GT 180 DX console from SAM DX used to collect logs and Saved Scan. Data (SSD) Connections encrypted via TLS.
443	TCP	Secure Hypertext Transfer Protocol (HTTPS)	Any	SAM DX	HTTPS access to Scanner Administration Manager (SAM) hosting server webpage webserver (IIS). Connections encrypted via TLS.

Port Number	Protocol	Use by SAM DX / Aperio GT 180 DX / DSR	Source	Destination	Description
445	TCP	Used by SAM for image data transfer.	Any	DSR / Image Share	TCP image transmission, encrypted using TLS 1.2 or greater for transmission from the scanner to the hosting server and SMB3 from the hosting server to image share.
1433	TCP	Microsoft SQL services.	GT 180 DX	SAM DX	SQL server data traffic.
2762	TCP	Digital Imaging and Communications in Medicine (DICOM) Transport Layer Security (TLS). Used by SAM for image data transfer.	GT 180 DX	SAM DX	DICOM TLS SCP for receiving image data from the Aperio GT 180 DX.
5353	UDP	Multicast DNS	GT 180 DX	SAM DX	Resolves hostnames on networks without dedicated domain name services (DNS).
5671	AMQPS	Events from Aperio iQC Services	Aperio iQC	SAM DX	Message bus installation for receiving event data from Aperio iQC.
6662	TCP	Used by Mi7k for status logging and messaging between the SAM server and connected Aperio GT 180 DX scanners.	GT 180 DX	SAM DX	Aperio GT 180 DX sends device logging data to SAM DX. No sensitive data transferred via this port.
6663	TCP	Used by Mi7k for status logging and messaging between the SAM server and connected Aperio GT 180 DX scanners.	GT 180 DX	SAM DX	Aperio GT 180 DX sends device logging data to SAM DX. No sensitive data transferred via this port.
10000	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.
10001	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.

Port Number	Protocol	Use by SAM DX / Aperio GT 180 DX / DSR	Source	Destination	Description
10002	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.
10003	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.
10004	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.
10005	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.
10006	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.
10010	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.
11112	TCP	DICOM Data Tool II	GT 180 DX	SAM DX	DICOM TLS SCP for receiving image data from the Aperio GT 180 DX.
20000	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.
20001	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.
20002	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.
20003	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.

Port Number	Protocol	Use by SAM DX / Aperio GT 180 DX / DSR	Source	Destination	Description
20004	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.
20005	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.
20006	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.
20010	TCP	Interactive Connectivity Establishment (ICE)	SAM DX	GT 180 DX	Remote troubleshooting utility (Scanner Test Utility, STU) log collection tool.
44386	TCP	Used by SAM for image metadata and Aperio GT 180 DX configuration data transfer.	Any	DSR	DataServer API. SAM DXDataServer sends image metadata to eSlide Manager DataServer. Connections encrypted via TLS.
44386	TCP	Used by SAM for image metadata and Aperio GT 180 DX configuration data transfer.	GT 180 DX	SAM DX	Aperio GT 180 DX sends a call to the SAM DXDataServer to request configuration data. The SAM DXDataServer returns the configuration data to the Aperio GT 180 DX. Connections encrypted via TLS.
47823	TCP	STUNNEL default port for image transmission. (Use dependent on device and hosting server software configuration).	GT 180 DX	SAM DX	Used for third-party secure image transmission. (Requires specific version and configuration of SAM DX and device software.) (This configuration requires the optional DICOM upgrade package.)