



Digital Slide Scanner

MT5000/DSS 1

User manual

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1 Introduction



Fig. 1. Digital Slide Scanner 1

1.1 MT5000/DSS 1 components

1. Scanning microscope.
2. Personal computer.
3. Monitor.
4. Vision software.



Working with mouse and keyboard might harm the operator and cause body impairment (carpal tunnel syndrome and other medical conditions).

1.2 About the user manual

This manual is intended for doctors and laboratory assistants performing scanning on the Digital Slide Scanner 1. The manual contains general information about the system's intended use and its components. The manual will be useful for general work with the adjusted system.

If you have any questions regarding the assembly or disassembly of the system, adjustment of equipment, installation, management or maintenance of the software, please contact your support services or the supplier.

1.3 Intended use

Digital Slide Scanner 1 is an optic unit consisting of a scanning microscope with a camera and a computer system containing software for automated scanning of different samples.

Digital Slide Scanner 1 is intended for in-vitro diagnostics.

1.4 Specifications

General specifications	
Working modes	— Random access — 24/7
Capacity	One slide in a microscope
Slide handling	Manual via slide replacement
Immersion oil dispensing ¹	Manual
Slide identification	Manual
System components	
Contents	— Scanning microscope — Personal computer — Monitor — Vision software
Technical specifications	
Simultaneous loading	1 slide
Optical system ¹	10x, 20x, 40x, 50x Oil, 100x Oil
Microscopy method	Bright field
Illumination	Koehler, LED
Communication	Bidirectional LIS, LIS2-A2 (ASTM), HL7, Ethernet
Throughput ²	~1.5 min (15x15 mm, 20x)
Multiple user access	4 preset types of users: Administrator, Doctor, Technician, Receptionist; new types of users can be added; adjustable access rights for users.
Database	Multiple systems can share one database. Possibility to archive analysis results via transfer to external storage media
Power supply	110–240 V/50–60 Hz
Work temperature	15–30 °C
Acceptable relative humidity	20–80 %
Options	
Analysis modules ¹	— Cyto — cytologic examination — Histo — histological examination
Remote access	Vision Remote — remote work with analysis results
Additional	
Equipment and accessories	— Immersion oil

¹ Depends on delivery package

² Depends on the scanning method (magnification, focus mode, ...)

	— Microscopic slides — External barcode reader — Printer for barcode label printing — Barcode labels — Automatic stainer
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**Attention!**

Using MS SQL Server Express limits the number of stored samples.

1.5 System requirements

- Generation Intel Core i7 processor, quality processor cooling, providing cooling down to no more than 80 % of max temperature;
- 16 GB RAM;
- NVIDIA GTX x50 or better video card with at least 4 GB video memory;
- NVIDIA graphics driver 381.65 or higher;
- 1 TB hard drive;
- Windows 7 64-bit or Windows 10;
- DVD drive;
- USB interfaces for external equipment and a protection dongle;
- Full HD monitor [1920x1080];
- Mouse, keyboard.

2 System Operation

2.1 Starting the system



Fig. 2. Power supply

1. Turn on the computer.
2. Turn on the microscope power supply and the light of the microscope. The button is on the right side of the microscope.

2.2 Preparing for sample scanning

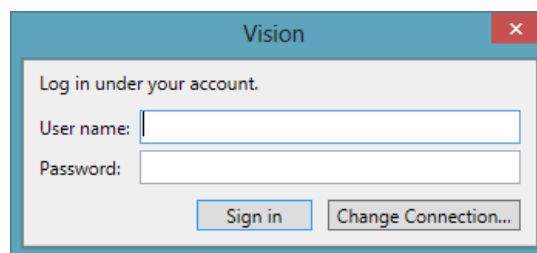


Fig. 3. Logging in to your account

Double-click on the Vision icon. Enter your user name and password in the corresponding fields and click the “Sign in” button to start the application.

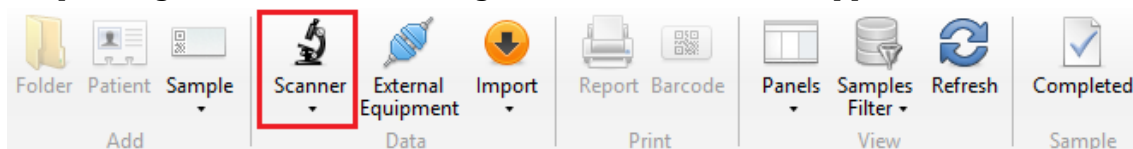


Fig. 4. “Scanner” button

Click the “Scanner” button and choose the sample.

2.3 Scanning slides



Fig. 5. Placing a slide on the microscope stage

Place a slide on the microscope stage as shown above. Make sure that the slide is placed correctly.

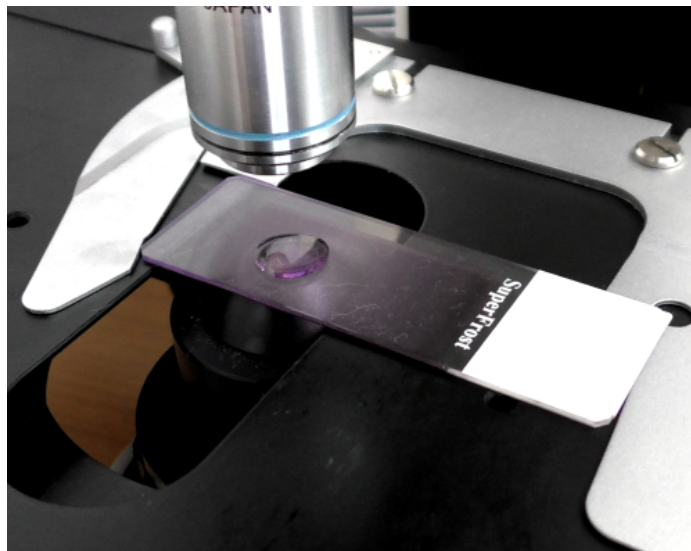


Fig. 6. Immersion oil on a slide

If you are using an immersion objective, immersion oil should be manually applied to the slide prior to scanning.



Please wear protective gloves to prevent irritation of skin when working with immersion oil.

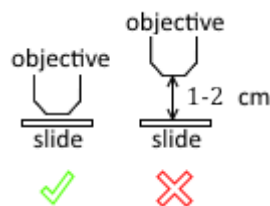


Fig. 7. Position of the stage

Check the position of the stage prior to the first scanning. If necessary, move the stage to the correct position.

Prior to the first scanning, make sure that the objective is in the middle of the slide and the monitor displays the image of the sample.

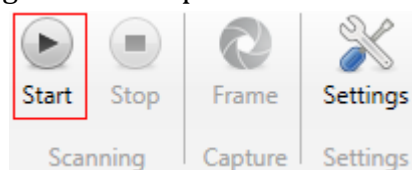


Fig. 8. “Start” button

Click the “Start” button to begin the scanning process.

2.4 Validation

Wait until the end of scanning (“Scanned” status).

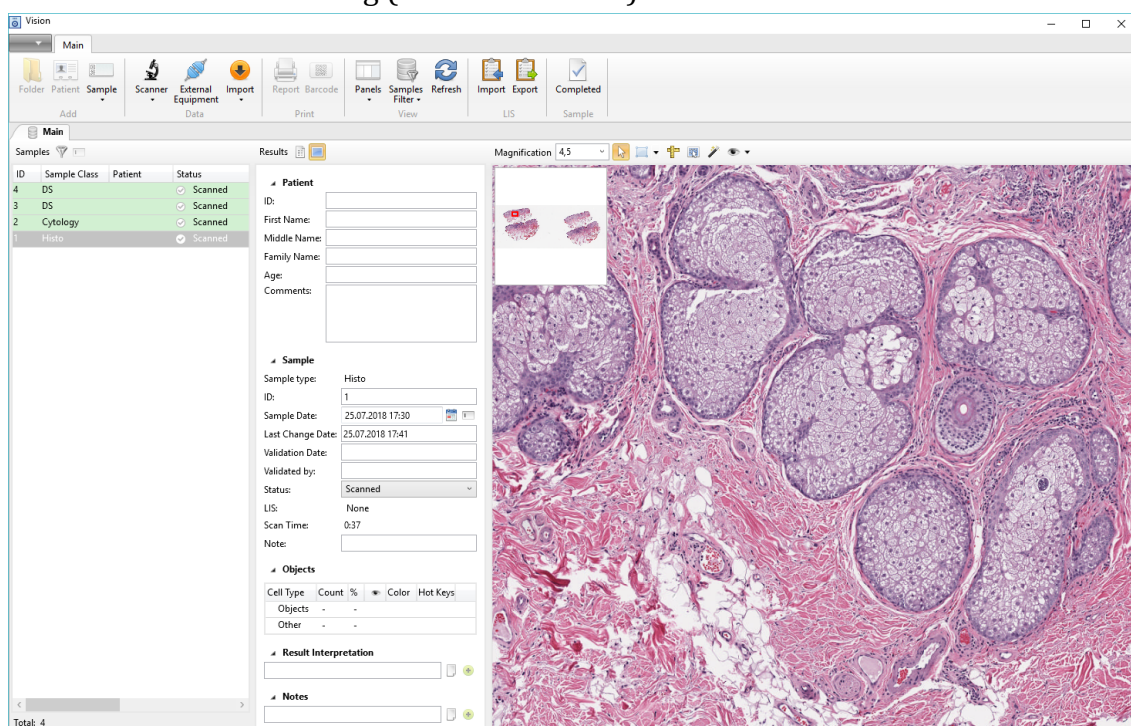


Fig. 9. Sample results

Validate the pre-classification.

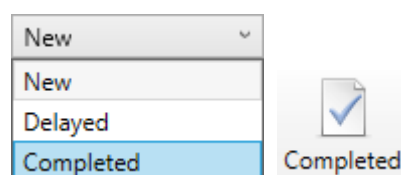


Fig. 10. Changing the status of a sample

Change the status to “Completed”.

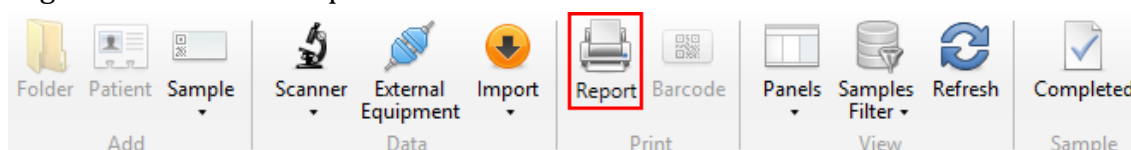


Fig. 11. “Report” button

Click the “Report” button once the status is set to “Completed”. Print a report or save it in PDF.

2.5 Finishing operation

1. Stop the scanning. Close the Vision application.



Please wear protective gloves to prevent irritation of skin when working with immersion oil.

2. Turn off the microscope. The button is on the right side of the microscope.
3. Clean the objectives and the stage, cover the system with a protective sheet.



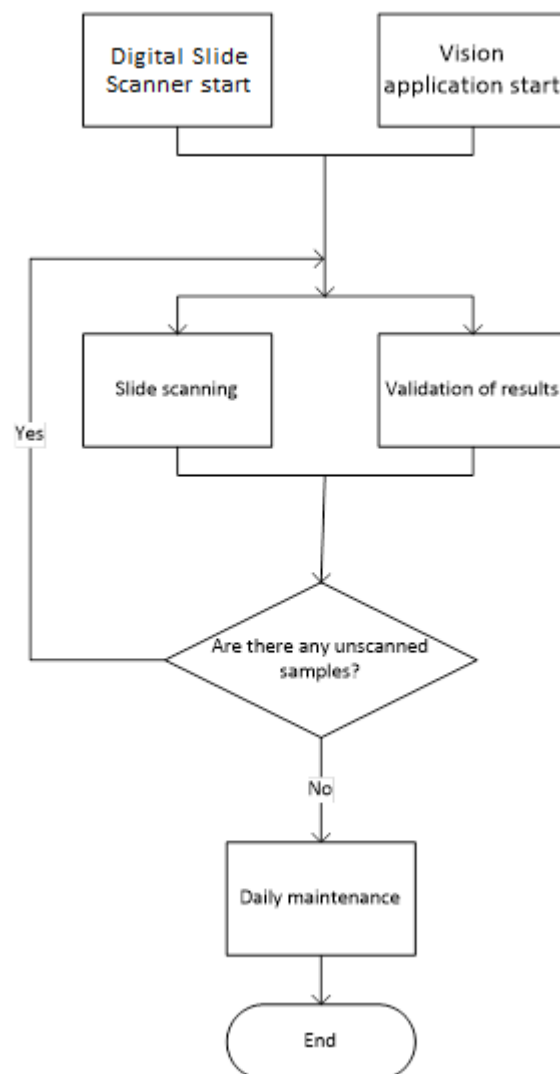
Attention!

Use alcohol for cleaning no more than once a week. Use diluted alcohol solution for daily cleaning.

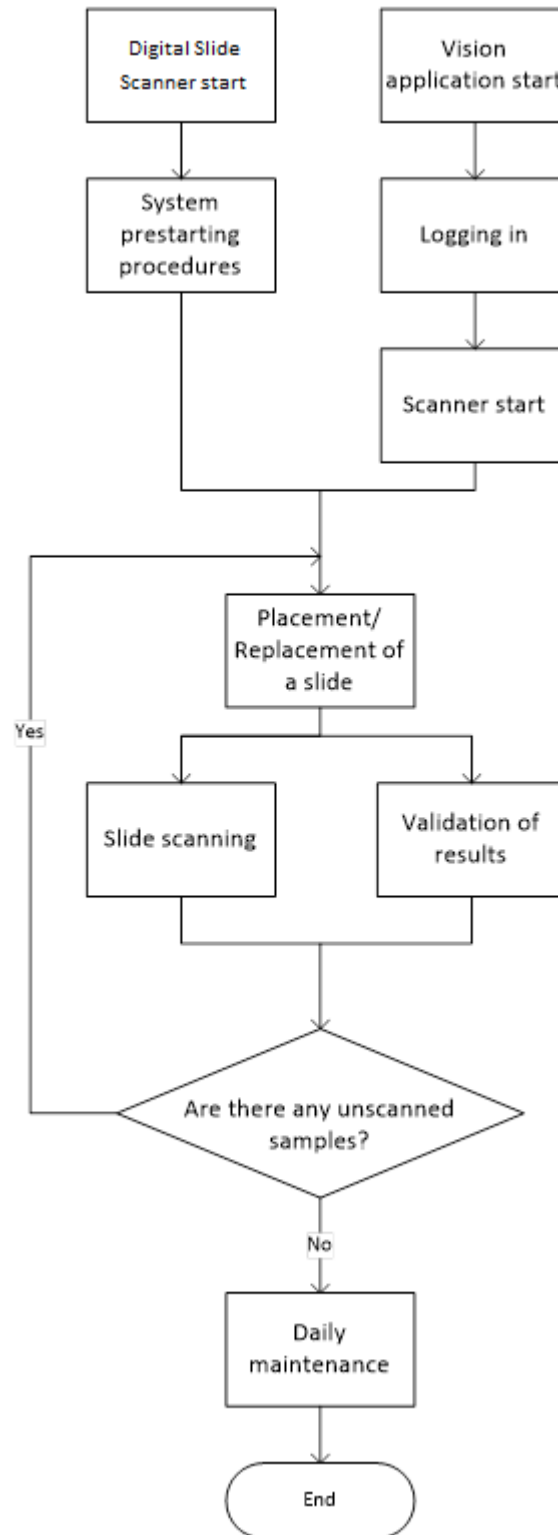
4. Turn off the computer.

3 Recommended Workflow

3.1 Simplified view



3.2 Detailed workflow



4 System Maintenance



Attention!

Do not update the OS.

4.1 Daily maintenance

1. Cleaning should be performed on shut down equipment.
2. Clean the objectives and the stage.



Attention!

Use alcohol for cleaning no more than once a week. Use diluted alcohol solution for daily cleaning.

3. Do not touch the centering screws of the condenser during cleaning.
4. Check the condenser, the diaphragm setting value should not be higher than 1.

4.2 Service maintenance

An engineer should come at least once a year for service maintenance of the system: cleaning, mechanical check-up, software and settings checks.

5 Notation



Attention!

Notice that defines a condition or an action that may result in damage to the system or its functions.



Warning about actions or conditions that may result in health risk or life hazard.

6 Contact Information



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