Digital Slide Scanner

User Manual

(Model IDS6)

This specification applies to model for IDS6 digital Slide Scanner .In order to ensure safety, play the instrument best performance, at the same time make you fully familiar with the use of the scanner, we recommend that you in front of the scanner operation fully read this manual carefully, and put the instructions location near the workbench is easy to get.

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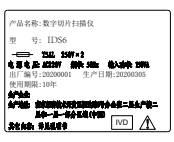
Safety Precautions

The Company provides you with the most safety and reliable instruments, but the incorrect use and neglect of the precautions in the instructions can cause personal injury and property damage. I wish to read this manual carefully to ensure the correctness of the use method before using the product. In addition, please put the instructions in a convenient place to read at any time, for real-time inquiry.

Symbol meanings appearing on this book and the product

In this instruction, safety will be highlighted by the instructions with these signs.

Symbol	Meaning
⚠ Warning	Ignoring the tip instructions could result in serious injury or death
⚠ caution	Ignoring the tip instructions could result in injury or property damage
⏚	**Protective conductor terminals**
⚠	**Careful, dangerous** This sign appears on the electrical nameplate reminding you to confirm that the input voltage is consistent with the supply voltage in your area
IVD	**In vitro diagnostic medical devices**
☣	Biological hazards Can find the symbol on the side before slice scanner mainframes, call your attention to the following items: Spill. Warning: if the sample on this product, this product may have a biological hazards • to avoid exposure to biological hazards, please do not use hands contact with contaminated parts did not wear gloves, according to your factory's standard procedures for decontamination of contaminated parts
✋	**No touch** Ignoring this prompt makes the device unavailable
|	**Connect** Power-On
○	**Break** Power supply is disconnected
OPEN	**Pop-up** Automatic popup parts, only through training to operation
	Electrical designer Before using this product, please read it carefully after electrical nameplate technical information, again.

Warning

- **No Disassembly**

  Removing this product may result in an electric shock or failure. Fault and damage due to removal are not under the warranty. No parts shall be removed unless otherwise specified in this manual. If you have any questions with this product, please contact the manufacturer.

- **Read the instructions carefully**

  For safety, carefully read this instruction manual and instructions for other equipment used with this product. In particular, the warnings and precautions at the beginning of the instructions should be followed.

- **Input voltage, power supply cord**

  The power supply for this product is 220 V AC of 50Hz. Use only the power cables that meet the power parameters in Chapter Technical Specifications. Using other power lines can cause failure or fire.

  Avoid the use of this product in environments where the power supply voltage fluctuates excessively.

  This product is a Class I electric shock protection product. Be sure to connect it to the protective ground terminal.

- **Treatment of flammable solvents**

  The following flammable solvents are used for this product:

  Anhydrous alcohol (ethanol or methanol for cleaning objective mirrors)

  Medical alcohol (for disinfection of a pathological slice scanner) Do not make fire near these solvents. When using the solvent,

  carefully read the instructions provided by the manufacturer and follow the following precautions.

  When the power cord is plugged / pulled out, keep the solvent away from

  the product and its surroundings.

  Note to avoid solvent splashing.

- **Hazardous samples**

  This product is mainly used for digital scanning,labeling and information editing management of the cells and tissues attached to the slide.

  Before handling the specimen, check to confirm whether the specimen is harmful. Handle hazardous specimens following the standard procedures of your laboratory. If the specimen is infectious, wear rubber gloves to avoid infection, and be careful not to touch the specimen.If this sample is in contact with the slice tray, slice scanner host, decontamination the contaminated parts according to the standard procedures of your laboratory

Warning

- ✧ **Assembly of the pathological slice scanner**
  - Assemble the pathological slice scanner if the power cord is not connected.
  - Be careful to avoid hurting your fingers or palms.
- ✧ **Do not wet this product or let foreign bodies enter**

Do not let the product become wet, otherwise it may cause failure, overheating, or electric shock. If water or other liquid accidentally splashes onto this product, remove the power cord immediately. Then, wipe away the liquid with a dry cloth. Entry of foreign bodies can also cause failure. If using a liquid or foreign body enters the product, please stop using the product and contact the manufacturer.

- ✧ **Mobile Pathology Section Scanner**

This product shall not be handled arbitrarily after being installed.

- ✧ **Don't inadvertently push the microscope on the table**

If inadvertently pushing the product, it may move on the installation surface. We recommend that you attach the rope to the safety slot on the back of the product.

- ✧ **Disposal of the pathological slice scanner**

To avoid biological hazard risks, dispose of the pathological slice scanner as contaminated equipment following your factory standard procedures.

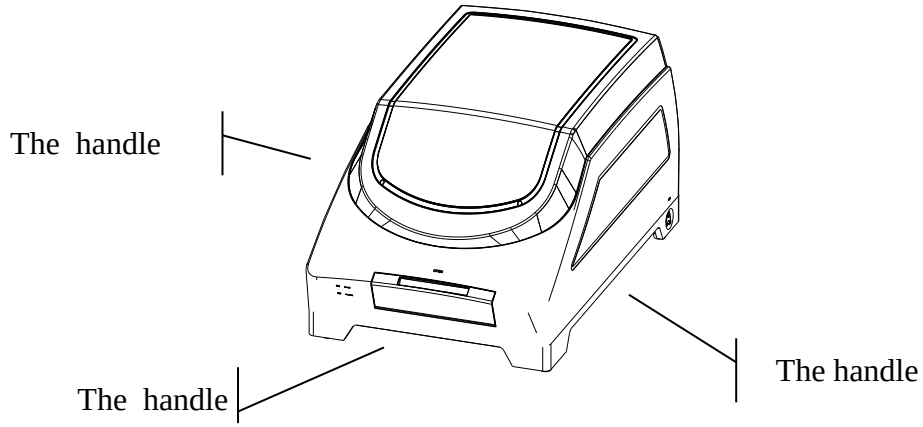
Attention to deal with this product

- only in the case of each index all can use the equipment, if discovery is unusual, please immediately contact the factory for maintenance;
- remove the machine is not allowed while visiting, only under the condition of the factory technical personnel in the open the shell of the machine;
  Ban any changes to this product, extension and improvement;
- all parts must use original accessories;
- without going through the company trained personnel shall not operate the equipment;
- image processing system cannot optional installation work outside of the software include anti-virus software, etc.

Moving、Install、Storage

✓ **Moving**

- This product should be used cover transport to transport;
- After installation of the product and may not arbitrarily handling.
- It must use three handling equipment carry handle, any other local handling may cause damage of the machine.



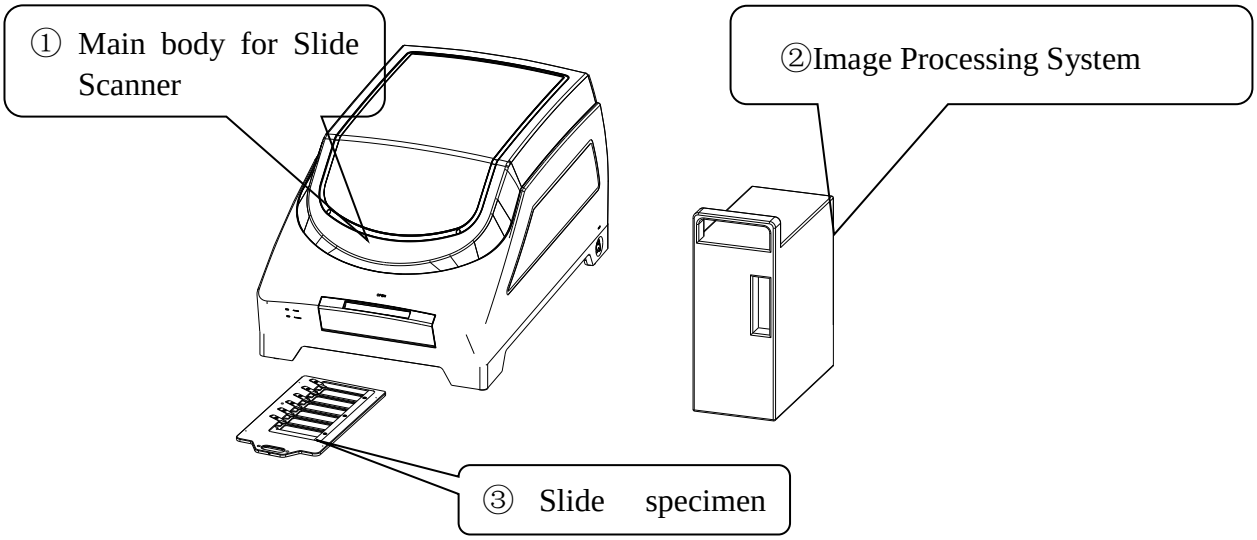
✓ **Install**

- For the sake of safety, the machine is equipped with three feet ground plug, and grounding protection through three feet ground plug. Please do not use any adapter plugs to reduce safety performance;
- Don't put equipment in difficult position to disconnect the current operation;
- instrument should be placed in ≧ 300 mm distance wall place, convenient installation and maintenance;
- Use the environment to keep ventilation.

✓ **Storage**

- place this product in the absence of direct sunlight, high temperature, high humidity or dusty, and vulnerable to strong vibration;
- around the acidic gas, alkali, organic solvents and other harmful substances;
- ensure table flat, horizontal and strong enough.(about 25 kg weight: slice scanner mainframes, image processing system is about 7 kg);
- environmental temperature should be controlled within 5 ℃ ~ 30 ℃.
- control within 80% relative humidity, no condensation;
- control within 80% relative humidity, no condensation;

Ⅰ. Name of Parts



① Slide scanner main body: For digital scan slice

② Image processing system: Manipulate the slice scanner host operation, and process the digital image

③ Slide specimen tray: Provide clip mechanism for slices for slice scanning

II. Installation

✓ **Preparation work before assembly**

- Remove package (package includes slice scanner host, image processing system, etc.)
- Check the product to consistent with your purchase

✓ **Install**

- Image Processing System → Image Processing System Power Cable → 220V Power Supply
- Display → Display Power Cable → 220V Power Supply
- Display（DP port） → DP Cable → Image Processing System（DP port）
- Keyboard → Image Processing System（USB port）
- Mouse → Image Processing System（USB port）
- Slide Scanner Main body → Slide Scanner Main body Power Cable → 220V Power supply
- Slide Scanner Main body（LAN port） → Network Cable →Image Processing System（Network port）
- Slide Scanner Main body（USB port） → USB Square shape of the wire →Image Processing System（USB port）
- Slide Scanner Main body（COM port） → Trigger cable →Image Processing System（IO/STS port）
- Slide Scanner Main body（$^{CONTROL}/_{DATA}$）→The camera Cable→Processing System（CL1 port）

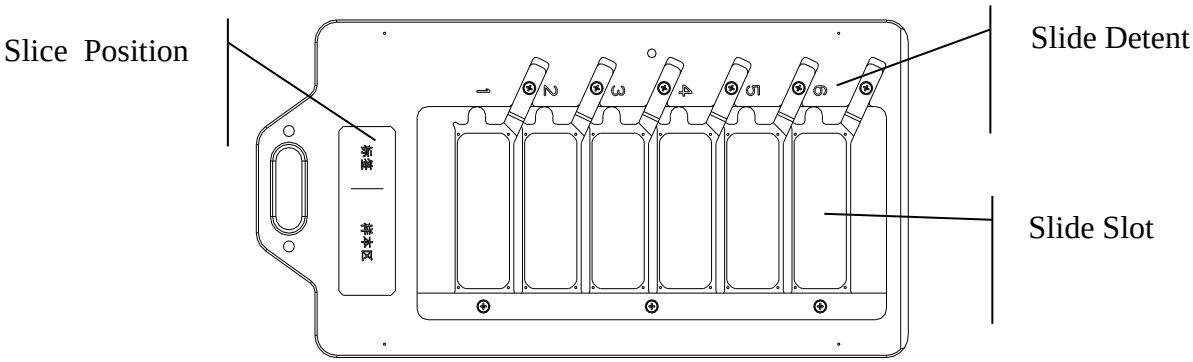
III. Operation instructions

3.1 Place The Slide

1、The slice must be keep clean, no dirt.

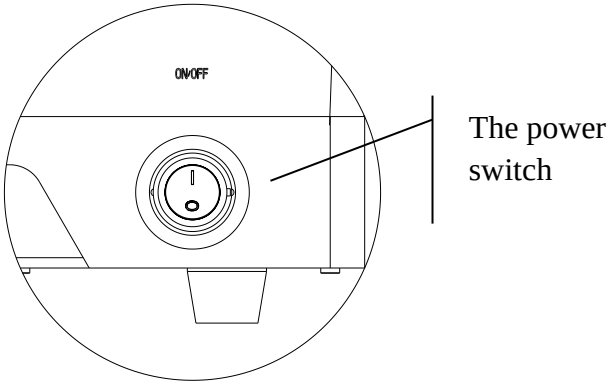
2、Put the slice into the Slide specimen tray

First of all, with the right hand will slice jaw out, with his left hand will slice according to biopsy tray icon direction into the trough, loosen the slice jaw, guarantee the biopsy and tray is stuck prison, otherwise effect the scan images. Slice the tray as shown in the figure below



3.2 Start the Slide Scanner Main Body

1、turns on the power switch on the right side of the slice scanner host. The figure is shown as follows:：



3.3 Turn on the image processing system (the computer)

1, Start Image Processing System

2, Turn on the display

3.4 Turn on the image processing

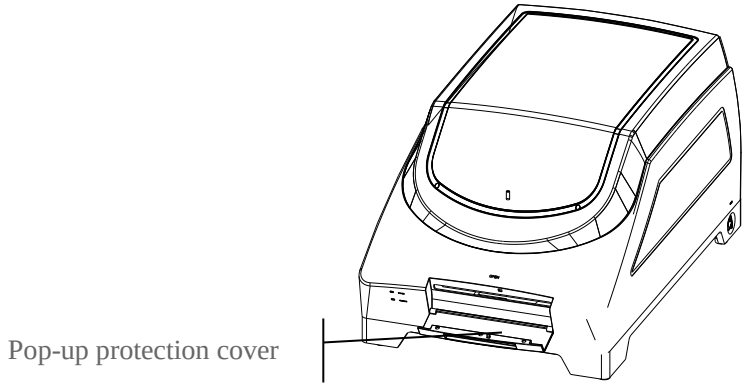
1, Start the slice management system module.

2, Click the slice scanning module.

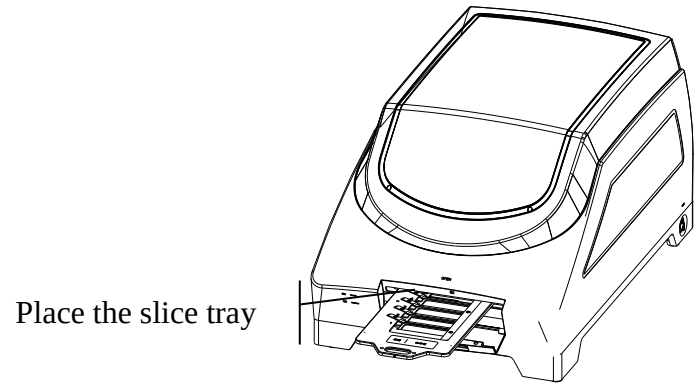
3.5 Place the slice tray

1、Software popped up the protective cover of the slide scanner.

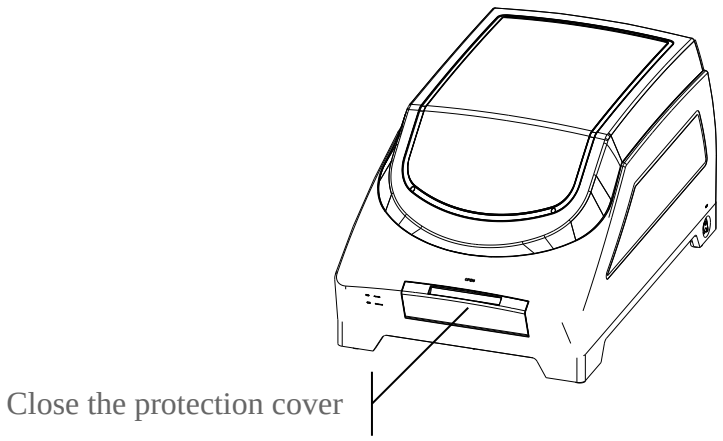
The figure is shown as follows:：



2、Inserts the slice-placed slice tray into the slide scanner.



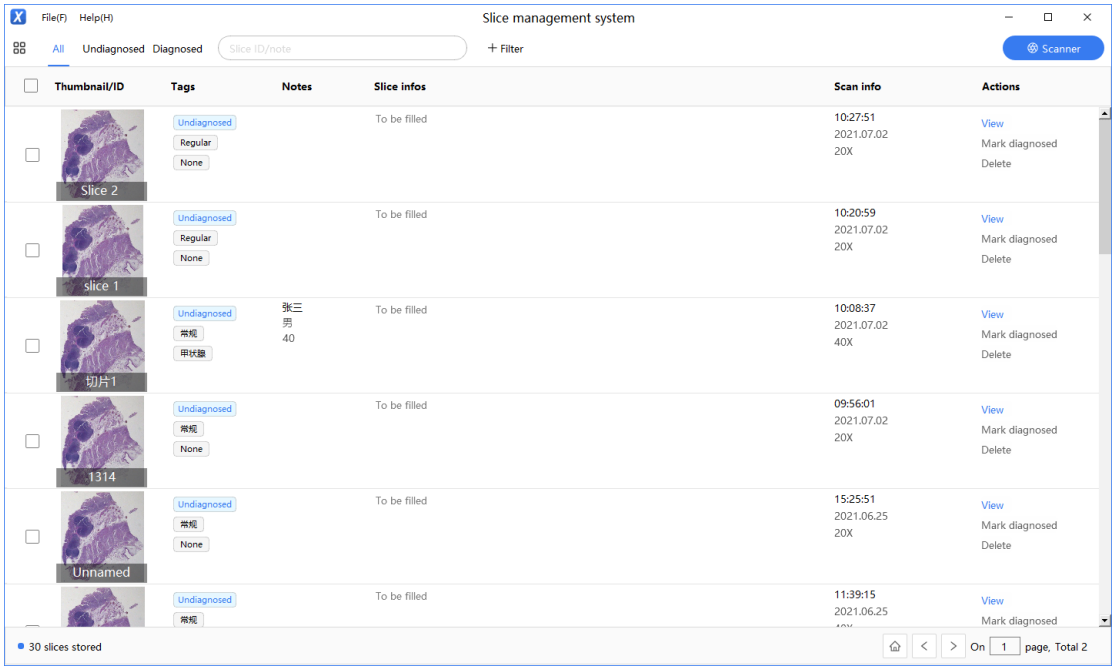
3、Closes the protective cover of the slide scanner upward.



3. 6 Slice digital scanning (software operation)

1、Slice library management module

The software opens the slice library management interface with the following:



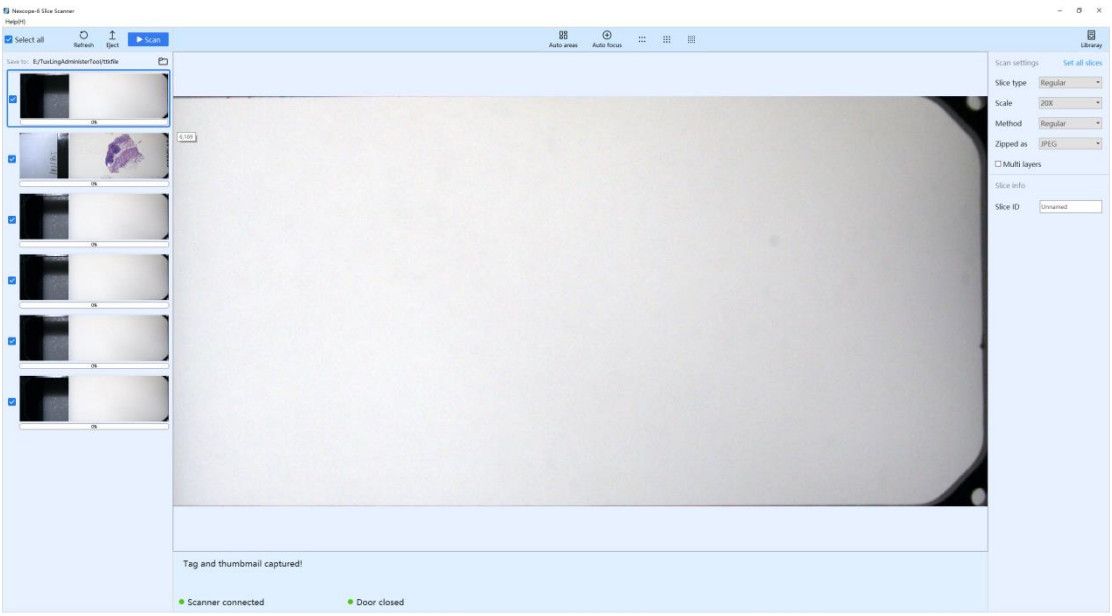
(1) The user can view the overall status of slice including slicing the total number of sheets, thumbnails, labels, note all sliced scanning, slice data, information, etc.

(2) Whether through diagnosis and biopsy number condition such as screening, slice of viewing options are available, can be batch operation to slice (delete, add notes, etc.)

(3) To see the total number of slices, view the paging, refreshes the screen

(4) Can be sliced through the upper right corner of the button to scan module scans

2、Open the scanning module, interface as shown in the figure below, waiting for the prompt device initialization is complete, can be sliced scan, scan slice steps are as follows



（1）Popup, place the slice in the tray

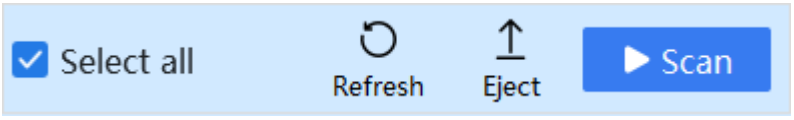
Click the pop-up option on the interface, wait for the platform to move to the door, and put the slices into the tray. When entering the slice, place the slice label on the side of the clip.(After the scan, pop the tray before turning off the scanner)

（2）Install the tray

Raise the tray level, point at the middle of the entrance into the machine, pay attention to the start along the direction, do not work too hard, to avoid triggering the platform overload protection caused by the platform power failure, and restart the software after the platform power off.

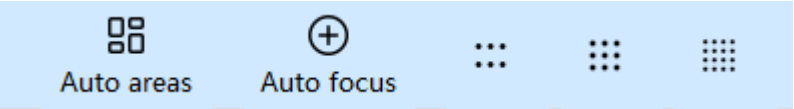
（3） Photo Tab Thumbnails

After finishing the tray, close the small door, and the instrument will automatically start shooting the label and preview map. If you want to remake a thumbnail, clickable interface refresh option in the upper left corner



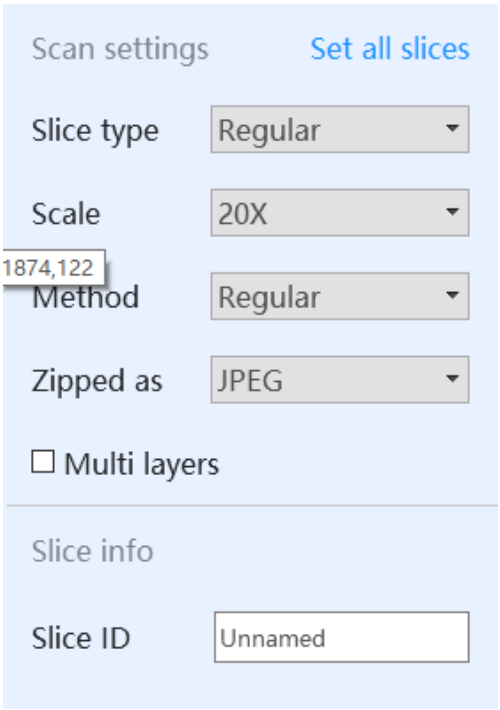
（4）Confirm the scan scope and the focus

Select each section in the left thumbnail area, and the left mouse button shows the corresponding preview map. The software will automatically identify the scanning area and focus, check the scan area and the focus on the preview map, and adjust appropriately when necessary. There is a shortcut button in the upper area of the preview map, and the menu can pop up. It is best to leave a certain space up and down the scanning area, and distribute the focus evenly. Areas of special interest can be appropriate to select the focus



（5）Determine the scan settings and slice information

For scan settings (scan multiple, scan mode, etc.), each piece can be set separately or in batch. If the label is a barcode, the slice number is automatically identified and entered or manually

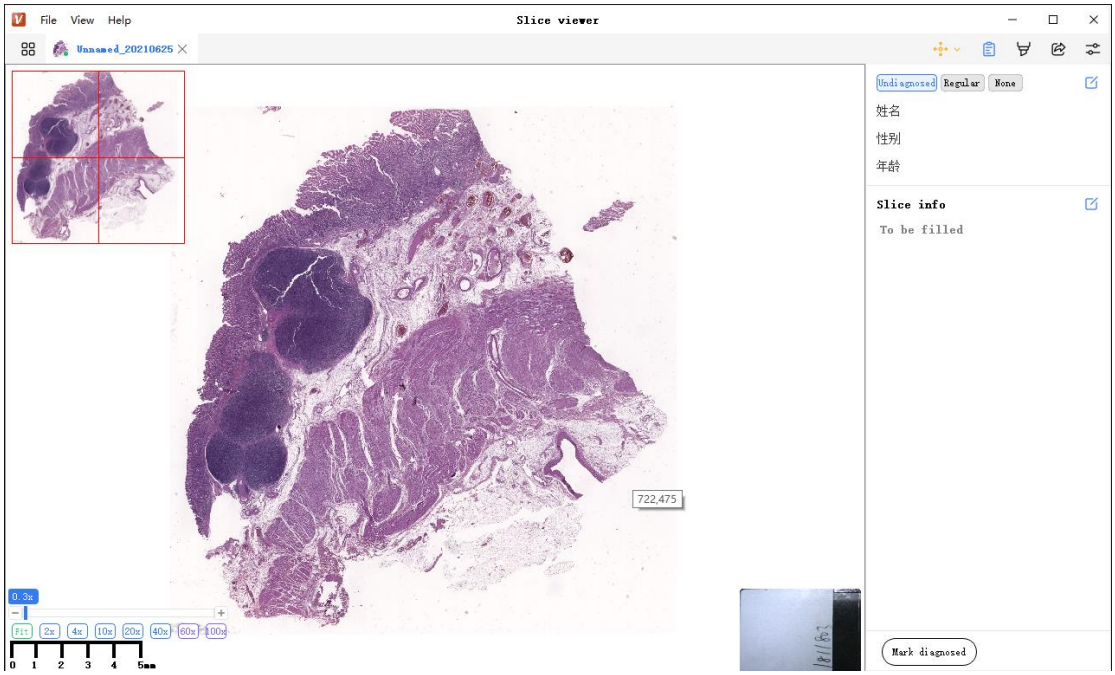


（6）Scan, waiting for the results

Check the slices to scan click Scan and wait for the progress bar to finish. If multiple scans are done, you can be terminated, but click the termination button and wait until the progress of the scan is finished before the next step.

The focus scan progress can be displayed in real time during scanning. After the scan is completed, double-click the left preview map to quickly read the results. The scanned section can be set up whether the cloud section library is uploaded in the setting interface, and the parameters can also be changed according to the thickness of the section.

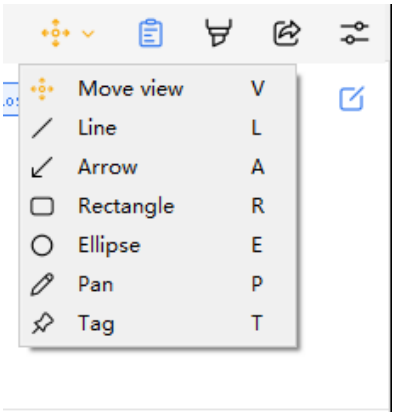
3、Reading module



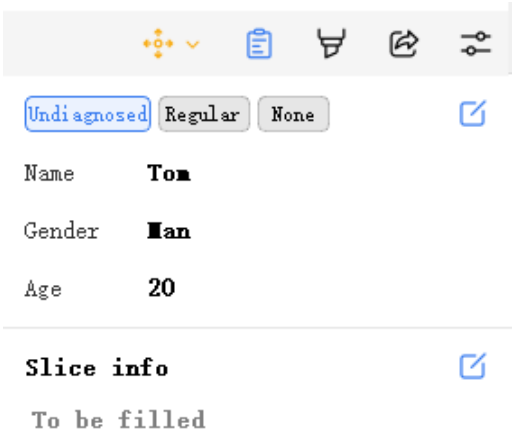
The newly scanned slices can directly double-click on the corresponding preview map on the scanning software, or opened in the slice library. The new scanned slices can only be displayed after refreshing the slice library. The reading software has the following functions.

（1）View by 0.3X-100X at any point on the digital slice

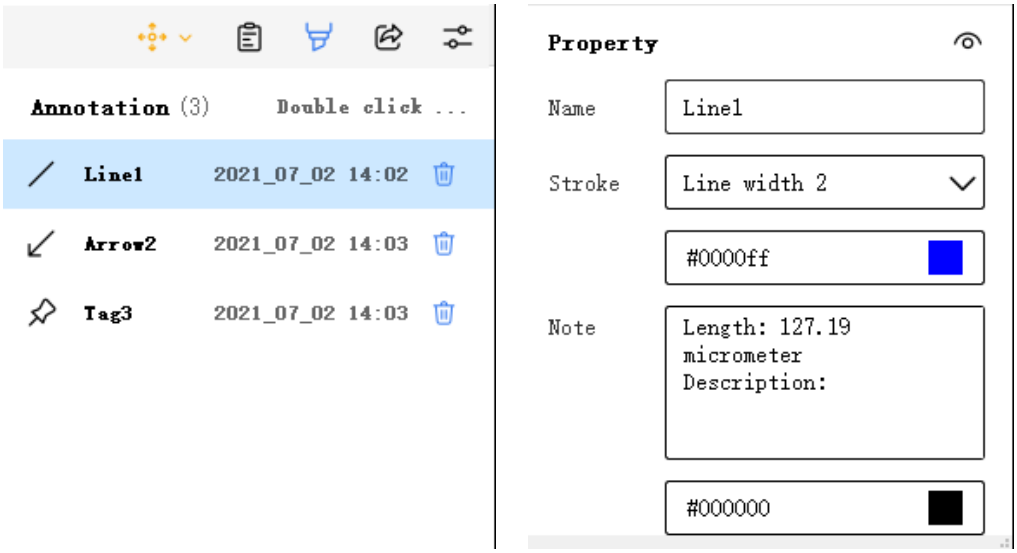
（2）Can be measured, marked, and saved on digital slices



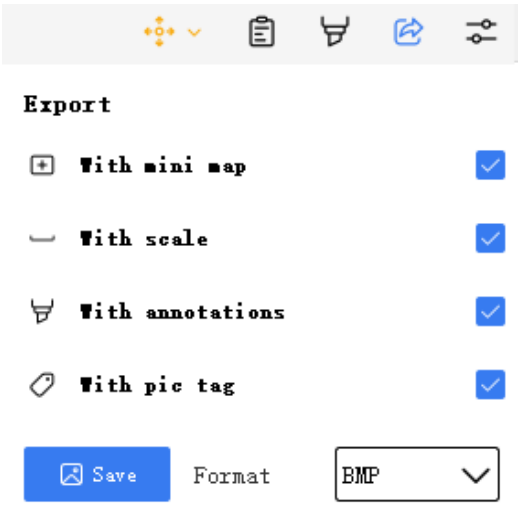
（3）Editable slice note information and pathological data, etc



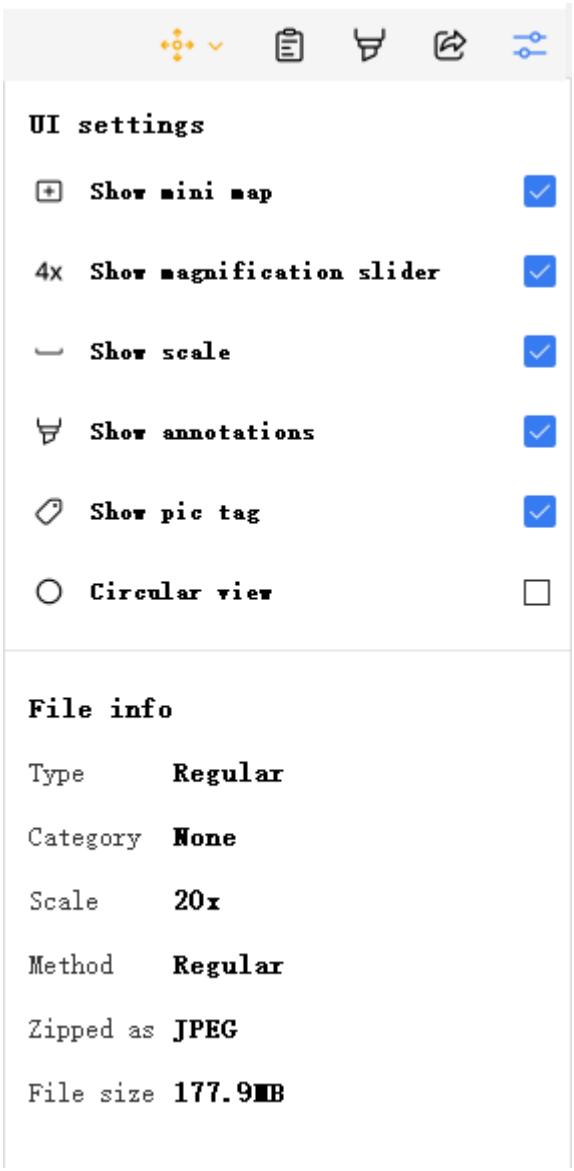
（4）You can manage dimensions, double-click quick positioning, modify note color width parameters and so on



（5）Viewing area can be derived images, images of up to 300 dpi, exported optional with navigation map, mark, mark, etc



（6）You can set up the reading area to display the items, and you can view the basic information of slice etc.



IV. Fault diagnosis

Under certain conditions, the performance of the device can be reversibly affected by the non-defect factors. If a problem occurs, review the table below and take appropriate measures. If the problem is still not solved after checking the full table, please contact our sales department. This product is a precision instrument, and shall not be dismantled and repaired without permission. The operator must be trained by the company to operate the instrument. The operator should wear work clothes and gloves.

Problem	The reasons causing	Problem solving
Slide Scanner Main Body		
Power lamp is not on	Power switch is not turned on	Turn on the power switch
	Power cord is not plugged into the power supply	Insert it into the power supply
	Power cord is not plugged in to the machine	Insert into the machine
	Damage for power lamp	Contact the manufacturer
	Insufficient power supply voltage	Check the power supply voltage
Machine not operative	Front protective cover is not closed	Close the protective cover
	Camera data cable is not connected	Connect the cable
	Trigger line is not connected	Connect the trigger line
	Network cable is not connected	Connecting Internet line
	Main control board failure	Restart as Basic
		Restart is unresolved, and contact the manufacturer
	Software failure	Restart as Basic
		Restart unresolved, feedback error message to manufacturer
Machine abnormal noise	Hardware failure	Cut off the power supply in time, and contact the manufacturer
	Software failure	

Image processing system

Initialization is not complete	**Main control board is not connected**	**Restart the scanner and the software**
	Front protective cover is not closed	**Close the protective cover**
	Camera data cable is not connected	**Connect the cable**
	Trigger line is not connected	**Connect the trigger line**
	Network cable is not connected	**Connecting Internet line**
Progress bar is stuck	**Software conflict**	**Turn off the software and the machine, and restart after 15s**
Failed to focus or image blurred	**Selected focus position**	**Reselect pair focus, increase in fuzzy area** **Focus**
Splice dislocation	**Platform to be calibration**	**One platform calibration**
Image has bright and dark stripes	**Lighting brightness change**	**Contact the manufacturer**
Inconsistent image clarity	**Slice is not flat, or the focus position is wrong**	
The slice tray does not fully open the small door	**Platform position is offset**	
The range and the actual is not in conformity with the scanning range **The range and the actual is not in conformity with the scanning range**	**Platform position is offset**	

V Maintenance

5.1 Clean Objective

- You had better use soft brush or cloth to remove dust.
- can clean the lens of the paper (or soft cotton, gauze), dip in with anhydrous alcohol (ethanol or methanol) erase more lasting dirt gently, such as fingerprints, grease and oil.

5.2 pathological scanner clean

- we recommend the use of silicon cloth clean microscope.
- for lasting dirt, dip in with neutral detergent wet gauze, wipe gently.
- do not use organic solvents (alcohol, ether or thinner).To do so may result in coating and plastic parts fade or printed text has been removed.

5.3 pathological scanner disinfection

- we suggest use 70% of medical alcohol to normal microscope disinfection.
- if sample splash into the microscope, to determine whether the sample is bad.Harmful if samples, the standard procedures according to your lab.
- use organic solvent may lead to plastic parts fade

5.4 pathological store scanners

- product when not in use, applied on the dust cap.
- product transportation, disabled, the sample and biopsy tray pop-up scanner mainframe, and cleaning and disinfection equipment (see 5.1 to 5.3 of this chapter for detailed methods).

5.5 Periodic Maintenance

- To maintain the performance of the equipment, it is recommended to conduct regular inspection and maintenance.(Contact the manufacturer for more details)

VI. Technical specifications

IDS6 Slide Scanner is used for digitize and feed of tissue slices and liquid smear Line digital compression and storage processing for retrieval and research by subsequent researchers.

✓ **Main technical specifications**

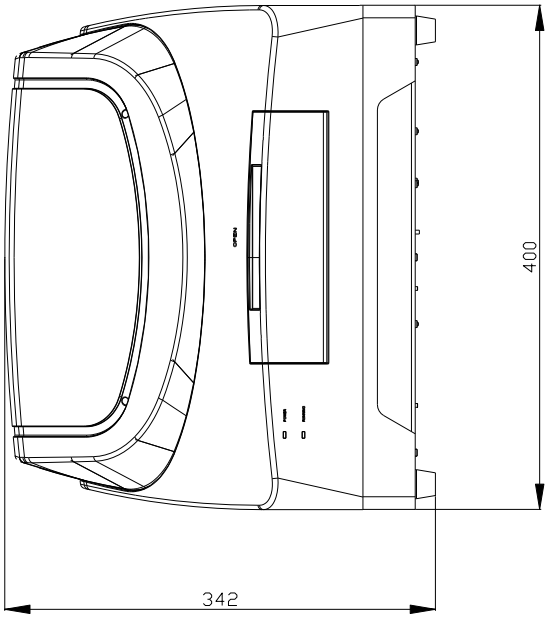
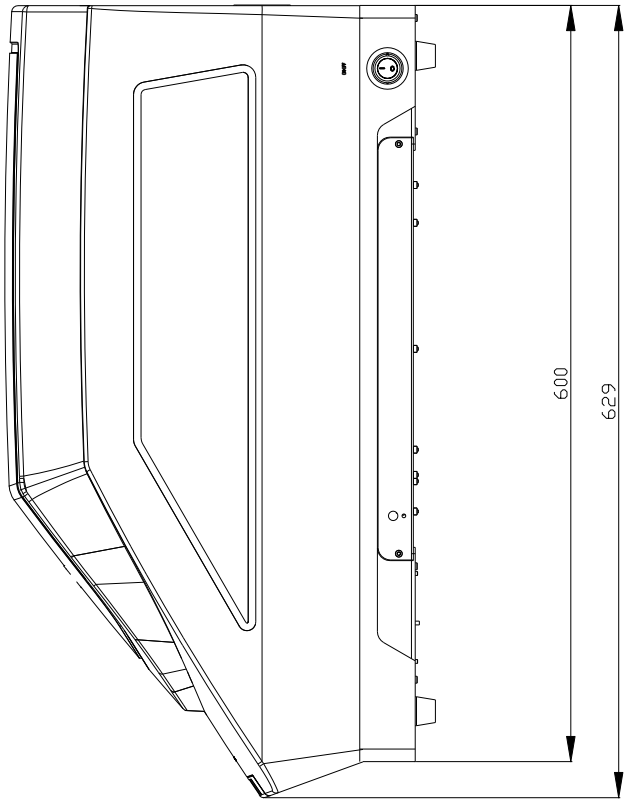
Model Number	IDS6
Max. flux	6 Pieces
Scan-doubling rate	20X 40X
Scan resolution	0.25 um/pixel at40X 0.5um /pixel at20X
Scan speed	60 sec (15 mm x 15 mm area at 20X)
Bose Size	26 mm x 76 mm
Field of view range (FOV)	1.3 mm
Barcode identification	1D and 2D
Dimensions	Slicer scanner host: 629 mm x 400 mm x 342 mm Image processing system: 356 mm x 169 mm x 435 mm
Weight:	Slicer scanner host: approximately 25 Kg Image processing system: about 7 Kg
Intermediate ratio	2X

Environmental conditions	Indoor use only Operation: Temperature: + 5 ℃ ~ + 40 ℃ Humidity: ≤ 80% RH(+ 40 ℃) (No condensation) Transportation and storage: Temperature: -40 ℃ ~ + 40 ℃ Humidity: ≤ 93% RH(+ 40 ℃) (no condensation) elevation: ≤ 2000 m Overpressure category: Class Pollution: 2 °

✓ **Objective Parameter**

category	Magnificaiton	Numerical aperture（N.A）	WD (mm)	Com-mon Rail W.D. (mm)	parfocal distance (mm)	Cover-glass thickness (mm)
Infinity Plan Apochromatic objective	20X	0.75	0.6	∞	45	0.17

✓ **Equipment Rating Value**

Name:	Slicer scanner host
Voltage:	AC220V
Frequency	50Hz
Power:	250VA
Electric shock protection level	Level I
Voltage fluctuation	AC220V ±10%
Transient overvoltage	Level II
Name:	Image processing system
Voltage:	AC220V
Frequency	50Hz
Power:	400VA
Electric shock protection level	Level I
Voltage fluctuation	AC220V ±10%
Transient overvoltage	Level II

✓ Configuration Drawing