

Einstar Vega

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Contact Us

Overview

About the User Manual

This user manual (hereinafter referred to as "the Manual") introduces the device appearance and operation procedure of Einstar Vega, and the usage process of the desktop post-processing software StarVision.

Symbol Convention

Symbol	Description
	Note: This symbol is used to inform you of the additional information of the product.
	Caution: This symbol is used to inform you of incorrect operations that may damage the device or result in data loss. Any damages resulting from misuse are not covered by the warranty.
	Warning: This symbol is used to inform you of the potential risks that may result in serious personal injury and other safety incidents.

Compliance

Symbol	Description
	LVD / EMC Directive This symbol complies with the European Low Voltage Directive 2014/35/EU and EMC Directive 2014/30/EU.
	WEEE Directive - 2012/19/EU The product this manual refers to is covered by the Waste Electrical & Electronic Equipment (WEEE) Directive and must be disposed of in a responsible manner.
	This device complies with "IEC 60825-1:2014 Safety of laser products". 940 nm
	Federal Communications Commission Certified.
RoHS	Restriction of Hazardous Substances Certified.
	Korea Certification Certified.

The Declaration of Intellectual Property and Disclaimer

Thank you for using the products of SHINING 3D TECH CO.,LTD.(hereinafter referred to as the "SHINING 3D"). Before you use the products, please carefully read and understand this declaration. Once you use this product, it means that you fully accept this statement and promise to comply with the relevant regulations.

- 1.The contents of the Product Instruction and User Manual (hereinafter collectively referred to as the "Product Usage Documentation")are critical to your personal safety,legal rights,and liabilities.Before you use the products,Please ensure that you have carefully read the Product Usage Documentation,and use the product correctly in accordance with the requirements of the Product Usage Documentation.We also recommend that the products be operated by trained professional technicians.
- 2.Please inspect and/or maintain the product before use.If the product is damaged,deformed or in any other abnormal condition,stop using it immediately and contact the after-sales service personnel for maintenance. SHINING 3D will not be responsible for any problems caused by your failure to inspect or maintain the product in a timely manner.
- 3.SHINING 3D does not guarantee the applicability of the outcomes of your use of the products,and you are responsible for verifying the quality and functionality of the outcomes.You should check and verify thoroughly that any outcomes meet your requirements before using them,for which you bear full responsibility.If any damage arising from using the outcomes of any products,you shall bear the corresponding risk,and SHINING 3D shall not bear any responsibility.
- 4.SHINING 3D owns complete intellectual property rights for the contents of the for which you bear full responsibility.Without the written consent of SHINING 3D,it is not allowed to copy,transmit,publish,adapt, compile or translate any contents of the Product Usage Documentation in any form for any purpose.
- 5.The Product Usage Documentation is a guidance for installing,operating,and maintaining the product instead of serving as the quality guaranty for the products.SHINING 3D makes all efforts to ensure the applicability of the Product Usage Documentation,but reserves the right of final interpretation.Images and diagrams in the product documentation are presented to provide convenience to user understanding.In the event that any images or diagrams are inconsistent with the physical products,the later shall prevail.In addition to the mandatory provisions of laws and regulations,the contents of the Product Usage Documentation are subject to changes without further notice.
- 6.SHINING 3D shall not be held responsible for any damages and/or losses caused by human factors, environmental factors,improper storage and use,or any other factors other than due to the quality of the product.SHINING 3D also shall not be held responsible for any indirect anticipated profit loss,loss of reputation and other indirect economic losses.Except as otherwise expressly provided by laws and regulations,the total liability assumed by SHINING 3D (regardless of cause)shall not exceed the purchase price of the products you paid to SHINING 3D.
- 7.Disputes arising from this Declaration and the Product Usage Documentation thereof shall be governed by the laws of the People's Republic of China,excluding its conflict of law rules.In the event that certain provisions are in conflict with the applicable law,these provisions will be reinterpreted in full accordance with the law,while other valid provisions will remain in force.
- 8.All disputes between you and SHINING 3D that arise from,shall first be resolved amicably through negotiation.If a dispute cannot be resolved through friendly negotiation,any party may submit the dispute to the Court of Xiaoshan District, Hangzhou City, Zhejiang Province, People's Republic of China for litigation and settlement.
- 9.In the event of any questions about the contents of this Declaration and application of Product Usage Documentation,please contact us by the contact information provided in the User Manual.Thank you for your cooperation and support!We hope that our products can bring you a great experience of using.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device,pursuant to Part 15 of the Federal Communications Commission (FCC)rules.These limits are designed to provide reasonable protection against harmful interference in a residential installation.This equipment generates,uses and can radiate radio frequency energy and,if not installed and used in accordance with the instructions,may cause

harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help. Changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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;
- This device must accept any interference received, including interference that may cause undesired operation. Privacy of communications may not be ensured when using this device.

This Class B digital apparatus complies with Canadian ICES-003. CAN ICES-3(B)/NMB-3(B).

IC Statement

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- This device may not cause interference;
- This device must accept any interference, including interference that may cause undesired operation of the device.

French version:

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
L'appareil ne doit pas produire de brouillage;
L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Restrictions in the 5 GHz Band

Within the 5.15 to 5.25 GHz band, UNII devices will be restricted to indoor operations to reduce any potential for harmful interference to co-channel Mobile Satellite System (MSS) operations.

Canadian version:

Restrictions dans la bande de 5 GHz

Dans la bande de 5,15 à 5,25 GHz, les appareils UNII seront restreints aux opérations intérieures pour réduire toute possibilité d'interférence pouvant nuire aux opérations du Système satellite mobile dans le même canal (MSS).

EU Statement

This device is restricted to indoor use when operating in the 5150-5250MHz frequency range.



BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR
HR	IT	CY	LV	LT	LU	HU	MT	NL	AT
PL	PT	RO	SI	SK	FI	SE	UK(NI)	TR	NO
CH	IS	LI							

RF Exposure Information and Statement

The SAR limit of USA is 1.6 W/kg averaged over one gram of tissue, this device has also been tested against this SAR limit. To maintain compliance with RF exposure requirements, use accessories that maintain at least 5mm separation distance between the user's body. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with RF exposure requirements, and should be avoided.

French version:

La limite de SAR des États-Unis est de 1,6 W/kg en moyenne sur un gramme de tissu, ce dispositif a également été testé par rapport à cette limite de SAR. Pour maintenir la conformité aux exigences d'exposition aux RF, utilisez des accessoires qui maintiennent une distance de séparation d'au moins 5mm entre le corps de l'utilisateur. L'utilisation de clips de ceinture, de étuis et d'accessoires similaires ne doit pas contenir de composants métalliques dans son assemblage. L'utilisation d'accessoires qui ne satisfont pas à ces exigences peut ne pas être conforme aux exigences d'exposition aux RF et devrait être évitée.

Getting Started

This chapter provides an overview guide for **EinstarVega** handheld 3D scanner and its accompanying desktop post-processing software:  **StarVision**, making it easy for you to find the corresponding instructions.

About Einstar Vega

You can learn about the scanner here, including the appearance & specification of the scanner and its activation process.

→ [Introduction to the scanner](#)

→ [Specification of the scanner](#)

→ [How to activate the scanner?](#)

After activation, follow the steps below to use the scanner.

1 Calibrate the Scanner	2 Prepare for the Scan
Calibration ensures the accuracy of the scanner and improves the scanning quality. →How to prepare for calibration? →How to operate calibration?	You can do some preparation before scanning to enhance your scanning. →How to prepare for the scan?
3 Pre-set for the Scan	4 Scan and Generate a Point Cloud
After the necessary preparation for the scan is done, you can adjust relevant scanning settings to get a better scan result. Some of those settings can also be adjusted during the scan. →How to adjust scanning settings?	After you set scanning parameters, scan the object and generate a point cloud →How to scan a model?
5 Edit the Point Cloud	6 Post-process
You can edit the scanned data after completing the scan to clip the redundant data. →How to edit the point cloud?	You can mesh the model and share it. →How to generate and optimize a mesh? →How to edit the mesh data? →How to share the model?

About StarVision

You can learn about the desktop software here, including its function list and interface overview. →Introduction to the software →Introduction to the interface

After installation, follow the steps below to use the software.

Create a Workspace	Edit the Point Cloud
--------------------	----------------------

Before operating data or meshedits,you need to create a workspace and import the model into it.

→[How to create a workspace?](#)

→[Introduction to the interface](#)

You can choose a point cloud project and clip the redundant data.

→[How to edit the point cloud?](#)

③ Post-process and Measure

You can mesh the model and measure it.

→[How to generate a mesh?](#)

→[How to edit the mesh data?](#)

→[How to measure the model?](#)

Export and Share

You can export the project or upload the model to SHINING 3D Digital Cloud.

→[How to export or share a model?](#)

Device Introduction

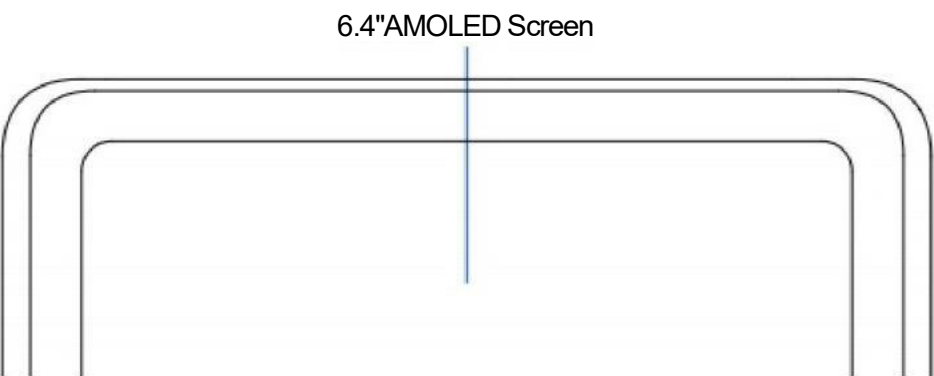
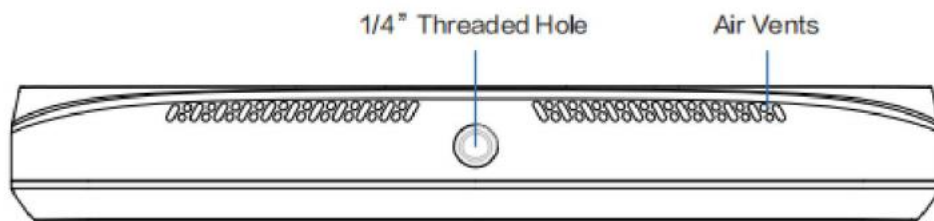
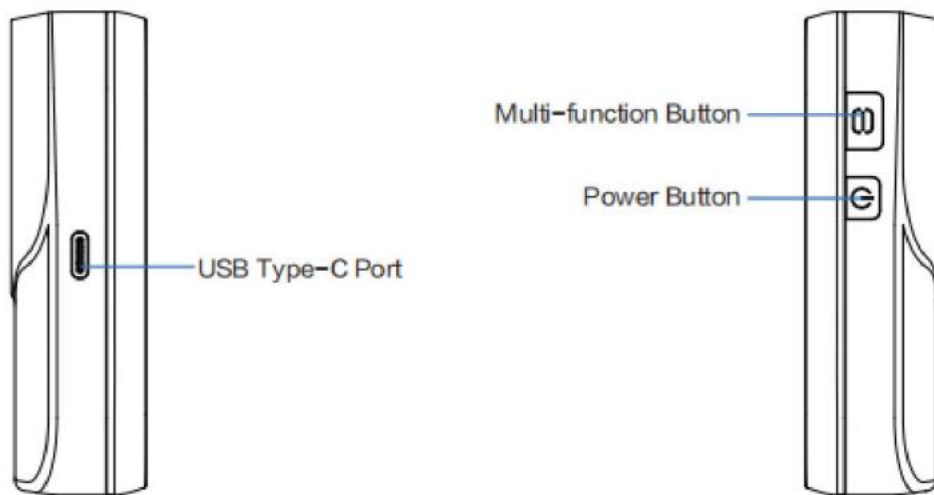
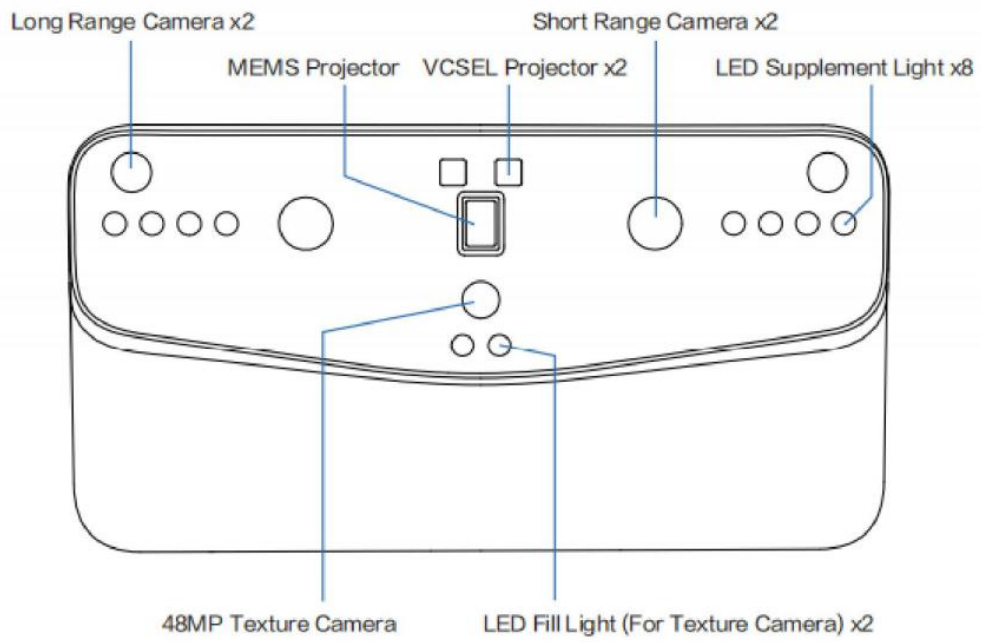
About the Device

Einstar Vega is a popular handheld wireless 3D scanner developed independently by SHINING 3D based on years of accumulated 3D visual technology and market demand. It features a high-definition 3D imaging camera and a 48-megapixel texture camera, along with multiple white light and infrared LED lights, ensuring excellent data quality and accurate color reproduction.

It offers a fast and smooth 3D scanning experience with a user-friendly and efficient workflow, and strikes a balance between detail and efficiency, making it suitable for various scanning scenarios such as art creation and cultural heritage preservation, thus truly achieving the digitalization of all things.

Besides, we also provide a desktop post-processing software [A StarVision](#), which supports file transfer and one-click data processing.

Appearance





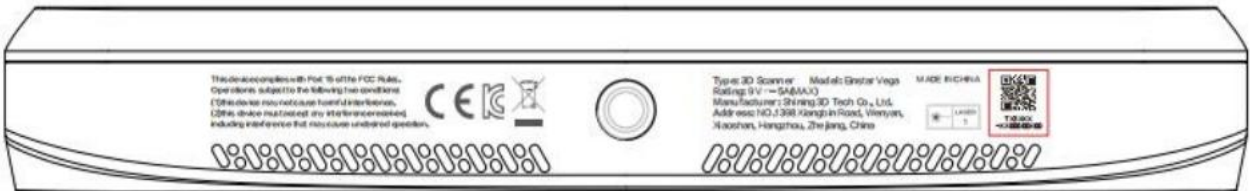
Package List



Index	Description
A	Einstar Vega Scanner (with Silicone Case)
B	USB Type-C to C cable
C	Tripod with Head
D	Wrist Strap &Ring Screw
E	Calibration Board
F	Markers
G	Quick Start Guide
H	Packing List
	Carrying Case
J	Figurefor scan
K	Power adapter
L	Calibration Board Holder

自 **Note**

·Serial number can be found on the back of the scanner after the silicon case is removed or on the back of the calibration board,which is like "TX3XXX-XX00000X00".



·It is recommended that you use a charging adapter that supports the PD 3.0 PPS protocol fora betterfast charging experience.

Specification

Hardware Parameters

Parameter	Description
Device dimensions	180 mm x95 mm x26.5 mm
Device weight	643 g
Working temperature	-10℃~40℃
Working humidity	0%~90 %RH(no coagulation)
Screen	6.4-inch 2K OLED screen
Light source	Class I
RGB fill light	White flash LED*2
Markers fill light	Infrared fill light*8
3D camera resolution	• HD:1.3 mega-pixel • Fast:2 mega-pixel
Texture camera resolution	8064 pxx6048 px(48 mega-pixel)
Battery type	Lithium polymer battery (5000 mAh)
Data format	OBJ/STL/PLY/ASC
Interface	USB 2.0 or 3.0;BT;Wi-Fi6
RAM	32 GB
ROM	32 GB eMMC+(512 GB)
Compatible system	Windows 10or Windows 11(64-bit);macOS

Scanning Parameters

Parameter	Description
Working distance	• HD scan mode: 100 mm ~ 250 mm • Fast scan mode: 300 mm ~ 1000 mm
Scan area	• HD scan mode (100 mm): 26 mm (H¹) * 29 mm (V²) • Fast scan mode (1000 mm): 1028 mm (H) x 997 mm (V)
Scan speed	• HD scan mode: 13 fps ~ 14 fps • Fast scan mode: 15 fps
Resolution	Accurate to the minimum of 0.05 mm
Minimum scan dimensions	10 mm * 10 mm * 10 mm
Supported alignment modes	Features alignment / Markers alignment / Texture alignment/ Hybrid alignment

Frequency Range (RF)

- BT: 2400 - 2483.5 MHz (TX / RX)
 - Wi-Fi (2.4G): 2400 - 2483.5 MHz (TX / RX)
 - Wi-Fi (5G):
 - Band 1: 5150 - 5250 MHz (TX / RX)
 - Band 4: 5725 - 5850 MHz (TX / RX)
- BT: < 10dBm (max.e.i.r.p)
 - 2.4G Wi-Fi: < 20dBm (max.e.i.r.p)
 - 5G Wi-Fi: < 23dBm (max.e.i.r.p)

1.The size or range of the image or data in the left-right direction. ⇄

2.The size or range of the image or data in the vertical direction.

Activation

Before using the device, please activate it by logging into your SHINING 3D passport account first: [power on](#)> [connect to the network](#)> [register](#) /[login](#).

Power On

To power on the device successfully, press and hold the power button for 2 seconds until the screen displays the startup animation.

Note

- If the device remains black screen or displays a charging prompt , please promptly charge the device until it reaches the minimum battery level:
 - : Charging.
 - : Charging completes.
- After powering on, please make sure to check the *End User License Agreement* first, or you will not be allowed to enter the **Next Step**.

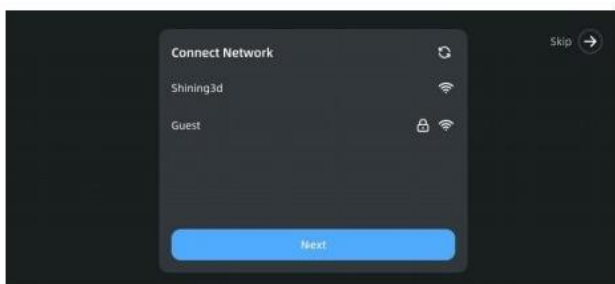
Power Off

Press and hold the power button for 6 seconds to power the device off.

Connect Network

After entering the **Connect Network** interface, the device will automatically search for available wireless networks nearby every 10 seconds.

-  indicates that the W-LAN is encrypted.
-  indicates the signal strength of the W-LAN.



- Tap  to manually search for nearby W-LANs.
- Tap or long press an unconnected W-LAN to enter the connection process.
- Long press a connected W-LAN to delete it from the list.
- Tap **Next** to [register or log into SHINING 3D passport account](#).
- Tap **Skip**  to directly enter the [scan](#) process.

Note

- When no network connected, you are not allowed to enter the **Next** step.
- If you choose to **Skip** the network connection to directly enter the **scan** process, the scanned data can not be uploaded to SHINING 3D Digital Cloud or transferred to your computer.

Register/Login

After entering the **Log in to SHINING 3D passport** interface, you can choose to log in with **verification code** or **password**.

- Tap **Log in** and you will be prompted with "✔ Login successful", then you will be directed to the **scan** interface.
- Tap ⬅ to return to the **Connect Network** interface.
- Tap **Skip** ➡ to directly enter the **scan** process.



Note

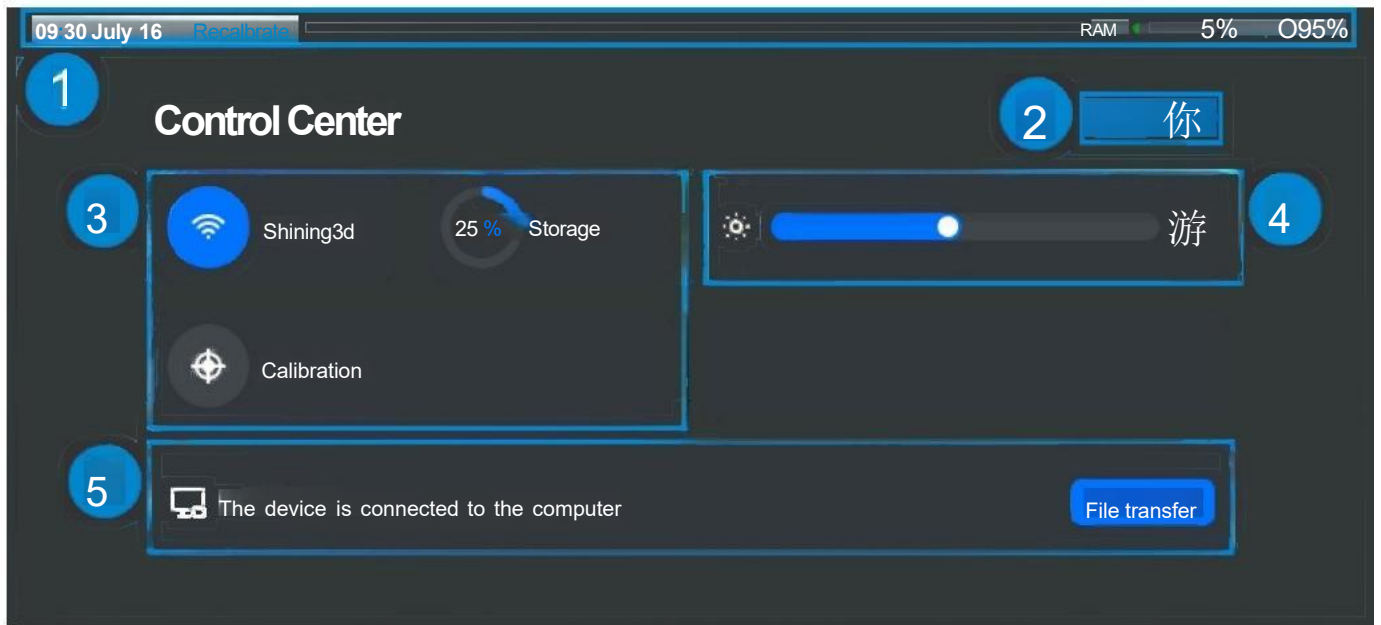
- If this is your first login, it is recommended that you choose to log in with a verification code. If your phone number or email is not registered, it will be automatically registered after verification.
- If you choose to **Skip** the network connection to directly enter the **scan** process, the scanned data can not be uploaded to SHINING 3D Digital Cloud or transferred to your computer.

Interface

Control Center

To invoke the Control Center module, simply swipe down from the top of the screen.

Interface Overview



Note

- To close the Control Center, you can either tap on the empty space in the Control Center or use the upward swipe gesture.
- If you invoke the Control Center during the scan or calibration process, you will not be allowed to use the navigation buttons for jumping to different functions.

① Status Bar

Status	Description	Icons
Time	The format is hh:mm, and it is displayed in a 24-hour format by default. You can disable the 24-hour format and switch to a 12-hour format in the Setting > Date and Time .	/
Version number	Display the current software version of the device.	/
Calibration prompt	Tap to enter the calibration process; if this is your first calibration, you will be directed to the Help interface.	 : It has been 14 days since the last calibration.  : It has been 21 days since the last calibration.
RAM	It indicates the device's used memory space.	 : Used memory ≤ 50%.  : 50% < used memory ≤ 70%.  : 70% < used memory ≤ 100%.
Wi-Fi	It indicates the current status of network connection .	 : The network connection is disabled.  : The network connection is enabled but there is no network connection.  : The network connection is good.  : The network connection is not bad.  : The network connection is not good.  : The network connection is poor.
Battery	It indicates the current battery level.	 : 50% < battery level ≤ 100%.  : 10% < battery level ≤ 50%.  : 0% < battery level ≤ 10%.  : The battery level is 0%.

 : Charging.

Note

- If the battery level is below 20%, 10%, and 5%, a charging pop-up window will appear in the interface to remind you to charge the device.
- If the battery level is below the minimum value, a "Low battery, shutting Down Soon" message will appear in the interface; and if there is no device operation, the device will automatically save data and shut down after 10 seconds.
- If the device's disk space is insufficient, an "Insufficient storage space" message will appear in the interface, and it is recommended that you transfer files to a computer or delete them.

② Widget Bar

 : Light mode.

 : Dark mode (default).

Note

After switching modes, the device will continue to use the selected mode after the next boot.

 : The entrance to **Setting**.

Note

This entrance is not available during the process of scan or calibration.

Setting

Tap  button in the ② widget bar to enter the **Setting** interface.

Setting	Description
Account	• Not logged in: - o Tap Log in to enter the interface of Log in to SHINING 3D passport. - o Tap Device name to modify the device name in the pop-up window;when using USB connection,you will see this name in the Connect Scanner list in StarVision ● Logged in: - o The account and name will be displayed after login. - o Tap Device name to modify the device name in the pop-up window;when using USB connection,you will see this name in the Connect Scanner list in StarVision. - o Tap Switch account to enter the interface of Log in to SHINING 3D passport. - o TapLog out and a second confrmation window will pop up. 自 Note Account switch does not affect the fles already inthe device.
Software Update	Tap Check for Update to automatically check ifthe current software is the latest version. 1.If an update is detected,tap Download the update file will initiate the download process; youcan tap0 button on the right side of the process bar to cancel the download. 2.After the download is completed,tap Install Now will proceed with the software installation. 3.Once the update (download and installation)is completed,the device will automatically restart. 自 Note • During the download process,you can leave the curent interface,and the process will continue in the background.The update progress will be displayed at the top of the interface as progress bar;but please do not operate the device during the installation process. • If you receive an "Insufficient storage space"prompt,please cean the disk space. • If you receive a"download update interrupted"prompt,please follow the instructions provided. • If you receive a "the remaining battery power is less than XX"prompt,please charge the device before proceeding with the installation. • If you receive a "Software update failed"prompt,please retry or connect the device to a computer and try updating again using the StarVision software.
Calibration	Tap Start calibration to enter the calibration process;ifthis is your first calibration,you will be directed tothe Help interface.

WLAN	Enabled by default, and the switched status will remain after the next boot. For the use of Available WLAN , please see connect network .
Date and Time	• Automatically set time zone and time: Enabled by default, and you can manually set Date, Time and Time zone (Q search is supported). • 24-hour system: Enabled by default, and can be disabled to switch to 12-hour system, and the time status will be updated in the status bar.
Language	The software language can be set as simplified Chinese or English.
Display	Support adjusting Screen brightness and switching Theme to dark mode (default) or light mode.
Storage	Display the usage of device disk space, including the amount used, total storage capacity and the percentage occupied.
About	Display the device name, serial number, calibration board, RAM, storage, software version, system version and privacy policy. 自 Note You can modify the device name, check and update the calibration board file, and view the privacy policy.

③Function Panel

Function	Description	Icons
Wireless network	The entrance to wireless network settings. Tap the icon area to quickly enable or disable the wireless network connection.	 : The wireless network connection is enabled.  : The wireless network connection is disabled.
Storage	Display the percentage of device's used memory space. Tap to enter Setting>Storage .	 : The used memory is no more than 75%.  : The used memory is more than 75%.
Calibration	The entrance to calibration.	 : Tap to enter the calibration process; if this is your first calibration, you will be directed to the Help interface.  : Indicates that the entrance to calibration is not available, and it is probably because the device is in the process of scan or calibration.

④Screen Brightness

Drag the slider to adjust the screen brightness of the device:

← 调低: Brighten down.

→ 调高: Brighten up.

⑤Device Connection

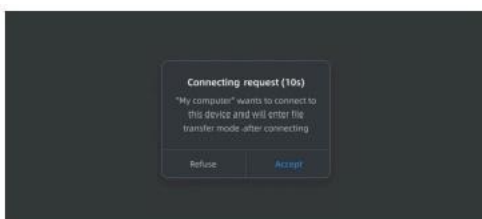
Note

- If the device is locked and can not be connected to your computer to transfer files,please contact support according to the information provided in the interface.
- Before activating the device,it can not be connected to your computerto transfer files.
- If the device is connected to your computer through a cable,but the StarVision software is not started,this connection prompt will not pop up,and the device will be charged only.

- Wired connection:Use a cable to connect the device to your computer,a pop-up window will appear (as shown in the right figure):
 - o If you choose Charging only, 仅充电 The device is connected to the computer prompt will display in the control center.
 - o If you choose File transfer, 传输文件 indicates that the device is ready for file transfer.



- Wireless connection:After initiating a wireless connection requestthrough the StarVision software on the computer,a pop-up window will appear (asshown in the right figure);after choosing Accept, 接受 indicates that the device is ready for fle transfer.



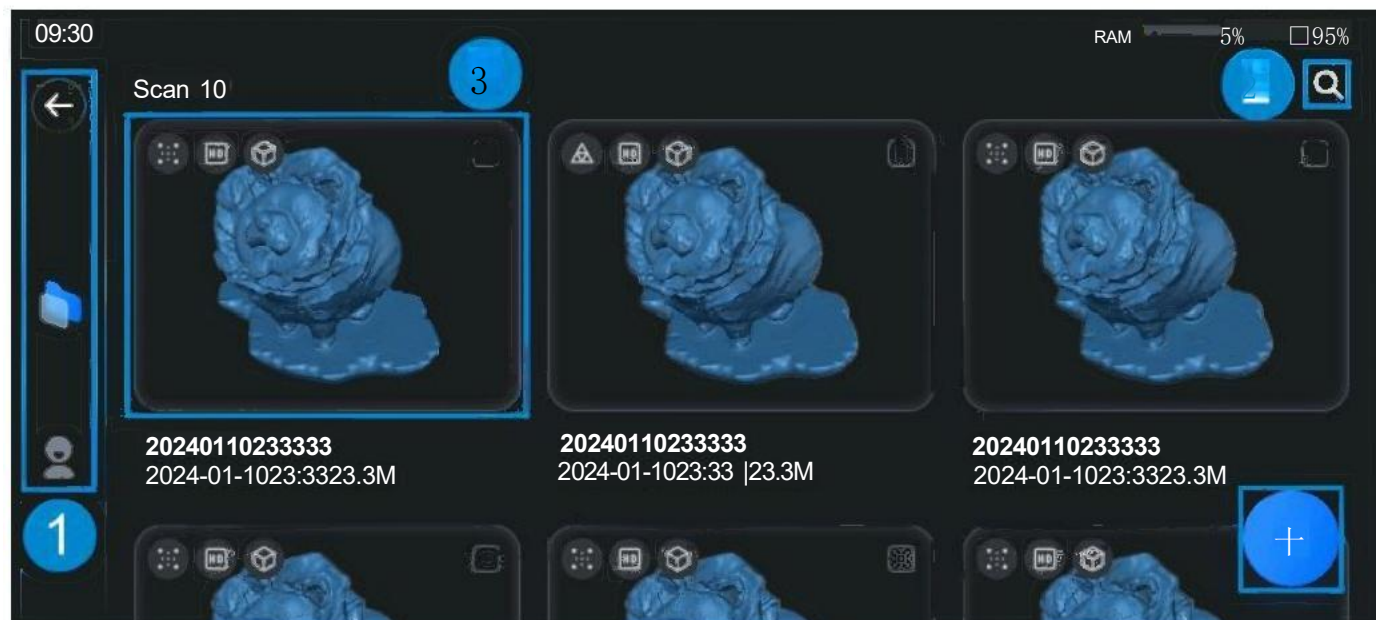
自 Note

- When the device is in the status of "Charging only",you can operate the device as normal.
- When the device is in the status of "名二File transfer",any operation but s **Disconnect** can not be performed.
- After choosing **File transfer**,if the device is in the scan process,the process will be automatically paused;if the device is in the process of calibration or others,please follow the prompts.

All Files

In the [scan interface](#) ,tap 品 in the right-sidefunction bar,you can enter the [h](#) interface to view all model files on the device.

Interface Overview



①Left Navigation Bar

 :Tap this button to return to the [scan preview](#) interface.

 :Tap this button to return to the main interface.

 :Tap this button to enter the [personal center](#) interface .

Personal Center

:Tap to enter the interface of **Log in to SHINING 3D passport**.

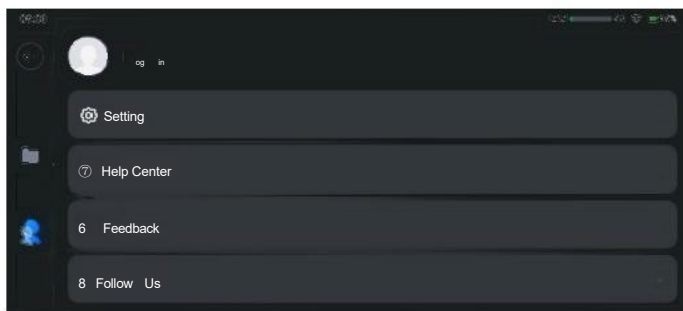
:Tap to enter **Settings>Calibration** interface.

:Tap to enter the **Setting** interface.

② :Tap to enter the **Help Center** interface,where you can view 白 functions introduction, noticeand g tips for scan,and you can view the user manual, tutorials and demo videos by scanning the displayed QR codes.

60:Tap to enter the **Support** interface,where you can check our official email address and website.

t:Tap to view related QR codes,and you can follow us.



② Interface Buttons

.Q:Search button,and a search window will pop up ater tapping this button.

-  : The button for creating a new project,and you can tap this button to enter the **scan** interface.

自 Note

- If there is no file in the file list,Q button is not visible.
- If it is in the status offileselection, + button is not visible.

③ File List

All saved model files are displayed in the format of file card,which are sorted by file update time in descending order.

📖 Note

- Tap one file card to enter the post-processing process of that project.
- After swiping down, you can tap 不 button in the right to return to the top of the interface.



① Tags

- 年 : Indicates that the model file is the point cloud data.
- A: Indicates that the model file is the mesh data.
- 回 : Indicates that the model is scanned using the **HD** scan mode.
- 4: Indicates that the model is scanned using the **Fast** scan mode.
- : Indicates that the model is scanned using the **Object** mode.
- 8: Indicates that the model is scanned using the **Portrait** mode.

② Checkbox

Check ☒ to select the card and enter the file selection mode, where you can delete some or all files, and rename files.

📖 Note

Cards can also be selected by long pressing them.

③ Preview Image

The model files that display colored thumbnails include point cloud models with textures enabled and mesh models with mapped textures.The rest of the model files will be displayed in black and white.

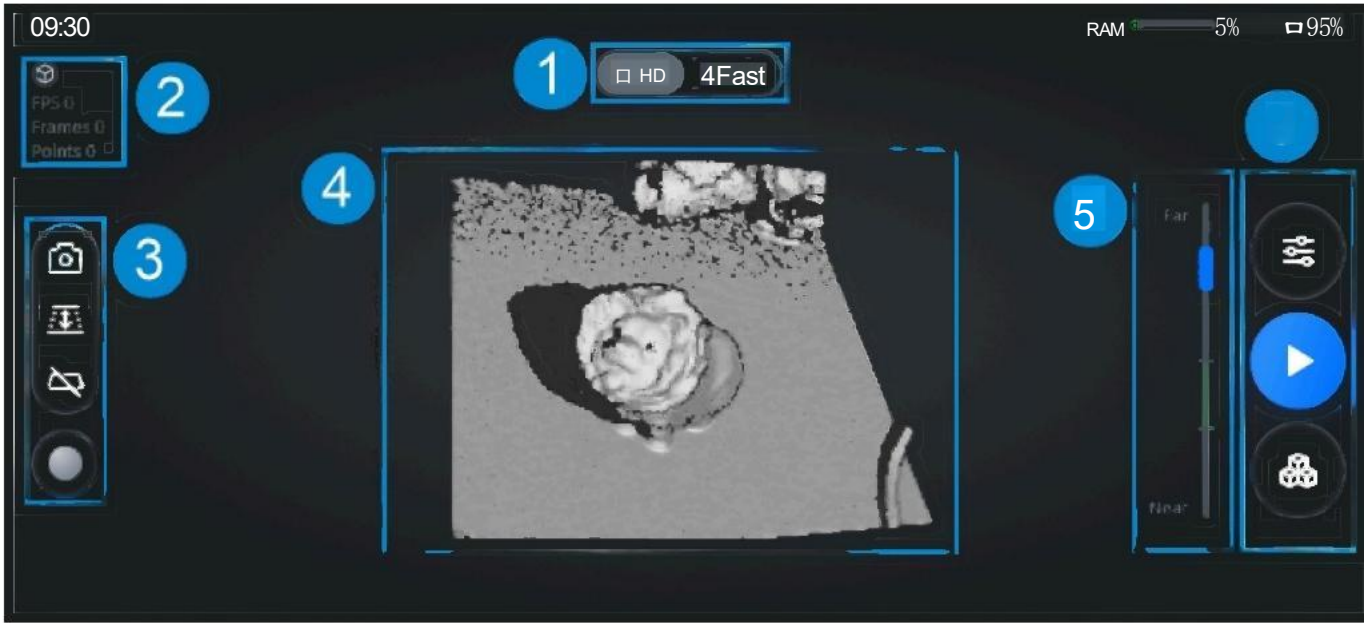
④Name &Other Information

Display the name,latest update time and size of the model file.

Scan Preview

After [powering on the device](#),you can enter the interface ofscan preview.

Interface Overview



Note

Forthe introduction to the top status bar,see [status bar](#).

① Scan Mode

Tap buttons to switch the scan mode of the current project:

. : HD scan(default).

·4:Fast scan.

② Project Information

Display the data information (fps,frames and points)and parameter settings of the current project

-  1 4 :HD/Fast scan mode
-  18:Object/Portrait scan mode
-  88:Markers alignment mode.
-  : Texture alignment mode.

Tap  **Advanced Settings** button in the right-side function bar to adjust parameter settings of the project.

③ Scan Settings

Set camera view,  scanning distance,  quality chromatograph and  texture. For more, see [scan settings](#).

④ Model Preview

Display the mode's pre-scanning effect if **88 Markers alignment mode** is enabled, the identified markers  will appear on the model.

Note

In the scan preview state, operations such as scaling, translating, and rotating the model are not supported.

⑤ Distance Indication

Green indicates that the distance is appropriate, red indicates that the distance is too near, blue indicates that the distance is too far.

Note

If it prompts that "OThe distance is too close /too far" or "OUnable to collect data", please adjust the distance.

⑥ Function Buttons

 :The entrance to [Advanced Settings](#).



:The button to [start scanning](#).

:The entrance to [file list](#).

Beginner's Guide

When you first enter the interface of [scan preview](#), the beginner's tutorial will automatically open. Please follow the instructions to proceed.

Note

Before starting the tutorial, you can tap the **Skip Tutorial** button in the top right corner to exit tutorial mode. Once you start the tutorial, you can also tap the End Tutorial button in the bottom right corner at any time to stop the tutorial.

1 Scanning Settings >

Click the **Start** button to enter the tutorial. Follow the instructions to adjust advanced settings such as texture alignment, enable the camera view to adjust the white balance, adjust the distance to the optimal level based on the distance indicator, etc.

2 Start Scanning >

(1) Tap the  button to start scanning, and you can zoom in or out of the model according to prompts.

(2) Tap the  button to pause the scan, and you can view the model from different perspectives according to

gesture instructions.

3 Data Clipping >

After completing the scan, tap the  button to enable the data clipping function, when you can follow the instructions to clip the redundant data.

4 One-click Processing >

Tap the  button to proceed with one-click mesh generation, and save the mesh model.

5 Other Instructions

Tap the 島 button to check the saved model; tap the _button to enter the individual center, where you can 串 calibrate camera if you are not satisfied with the scan result.

Calibration

Calibration Notice

With **calibration**, the scanner parameters are recalculated, which not only ensures the accuracy of the scanner, but also improves the quality of scanning.

Calibration is required under the following conditions:

- When the scanner is used for the first time.
- The scanner was severely shaken or shocked, such as shocked during transportation.
- Severe accuracy reduction, such as frequent errors in alignment or unrecognized markers.
- Incomplete data is acquired during the scanning or serious deterioration of the quality of scanned data.

Note

- If the current device has not been calibrated for more than 14 days, ●Recalbrate will appear in the status bar at the top of the screen; if it has not been calibrated for more than 21 days, ①Recalbate will appear.
- After exceeding the calibration period mentioned above, if it prompts that "OPlease calibrate for better scanning experience", you can tap the Start button to enter the **Setting>Calibration** interface.

Warning

- The calibration board is matched to the device.Doingthe calibration with an incorect calibration board willfail to generate good scan data or optimum accuracy.
- Always make sure that both sides ofthe calibration board are clean and free of scratches.
- Do not place heavy objects or sundries on the calibration board.
- Keep the calibration board away from corrosives,metals and sharp objects to avoid corosion or damage.
- It is not recommended that you wipe the calibration board.When cleaning the board becomes very necessary, gently wipe it with a piece of a cean damp doth.Do not use a cloth with chemicals or alcohols to wipe the calibration board.
- After using the calibration board,put it safely in a box or flannel bag.

Calibration Process

Two ways to enter the calibration process are introduced as follows.

- Tap **Calibration** in the **control center** module to enter the **Setting>Calibration** interface,where you can tap **Start calibration** to enter the calibration process.
- In the **status bar** on the top of the interface,tapthe calibration prompt (ifthere is)to enter the **Setting>Calibration** interface,where you can tap **Start calibration** to enter the calibration process.

Note

- If this is your first calibration,you will be automatically directed to the calibration **Help** interface:
Tap >button to enter the next step of the guide,tap <button to return to the previous step of the guide;in the final step,tap **Start calibration** to enter the actual calibration process.
- During the calibration process,tap ②button to re-enter the calibration **Help** interface;tap ×button to exit the calibration process.
- During the calibration process,the device will not automatically turn off the screen;if you manually turn off the screen by pressing the power button,the curent calibration resultswill not be saved and you will exit the calibration process

During the calibration process,you need to change the position of the calibration board for 5 times to complete the entire calibration process.

Specifically,calibration includes  HD scan calibration and Fast scan calibration.

Note

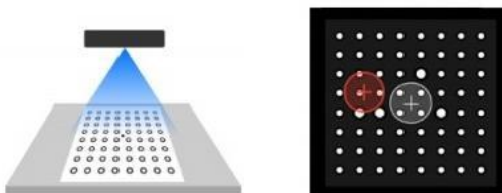
The calibration process for two scan modes is the same, and **for the first calibration**, you need to do the **HD** scan calibration.

Take HD scan calibration as an example, the operation steps for device calibration are as follows:

1. Please place the calibration board on a flat surface as shown in the figure, and get the bracket.



2. Align the board to make the board match with the figure; when matched, the markers will turn green.



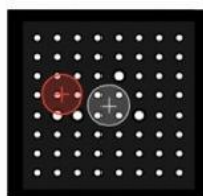
3. Move the scanner vertically to remove all blue areas.



Caution

- When moving the scanner up and down, please make sure:
 - o The center of the scanner is aligned with the center of the calibration board.
 - o The scanner remains parallel to the plane where the calibration board is placed.Otherwise, you will be prompted with "②Keep the scanner level and align the center" and you will need to redo the step 2 to reposition.
- When moving the scanner up and down, if it prompts that "O Please move closer to the board" or "●Please move away from the board", please adjust the distance between the device and the calibration board accordingly.

4. Use the bracket to lift the four sides of the board in turn and repeat the step 2 and step 3.



5. After completing the 回 HD scan calibration, you will be automatically directed to the 4Fast scan calibration; and a calibration file will be generated after all calibration steps are completed.

自 Note

- During the 回 HD scan calibration, you can tap **Skip** in the bottom right corner to skip the calibration, and enter the 回 Fast scan calibration process.
- After calibration succeeds, it will prompt that "O calibration completed"; if calibration fails for several times, please [contact technical supports](#).

Scan

Preparation

If the object to be scanned has rich geometric or textural features, the scanning speed and quality can be better guaranteed;

On the contrary, if the object to be scanned has fewer geometric or textural features or a high degree of feature repetition, you need to do some preparation work before scanning to enhance your scanning experience.

For Portrait Scan



Wrong example



Correct example

Specific requirements:

- 1.Hairstyle:Please keep it as neat as possible and avoid hairstyles with loose strands or bangs.
- 2.Clothing:Avoid wearing dark or reflective clothing (such as black leather shoes);do not wear accessories or glasses that may cause reflections.
- 3.Posture:Since the scanned object should remain as still as possible during the scanning process,a comfortable and easy-to-maintain posture is suggested before the scan begins.

For Object Scan

Note

Not recommend to scan following objects:

- Soft material object that cannot be hung.
- Lattice structures with many small deep holes.
- Moving or shaking objects.Frequent coordinate changes will lead to a poor scanning quality.

Object	Preparation	Notes while scanning
Transparent, shiny, reflective or black objects	Use washable or vanishing scanning spray.	Scan as normal after spraying
Objects with less features or repetitive features	- Place markers on the object and enable Markers alignment in the Advanced Settings. - Mark/draw on the surface to add features and enable Acquire Texture.	Scan as normal after preparations.

Pre-Scan Settings

After entering the [scan preview](#) interface,you can adjust scanning settings for the current project.


Note

After start scanning,you can adjust the camera view or the switch for quality chromatograph & texture,but you will not be allowed to readjust the scanning distance or advanced settings.

Camera View

Tap  to enable camera view,it will show the black-and-white camera view and texture camera view (only shown when [Acquire Texture](#) is enabled).



- Black-and-white camera-
 -  **Auto-brightness** is enabled by default,and you can tap that button in the upper right corner to switch to **A** manual mode,when you can drag the slider on the left side of the camera view to manually adjust the camera brightness(1~8).
 -  the camera view indicates over-exposure points;it is recommended that you adjust the camera brightness according to the display of over-exposure points to improve scan quality.
- Texture camera:

- LED light is off by default, and you can tap that button in the upper right corner to turn the LED light on. When you can drag the slider on the left side of the camera view to manually adjust the brightness (1~5).
- Tap the icon to enable auto white balance and enter the calibration process automatically, and it will prompt that "White balance calculation completed".

Note

If it prompts that "Unable to collect data", please adjust the height of the camera.

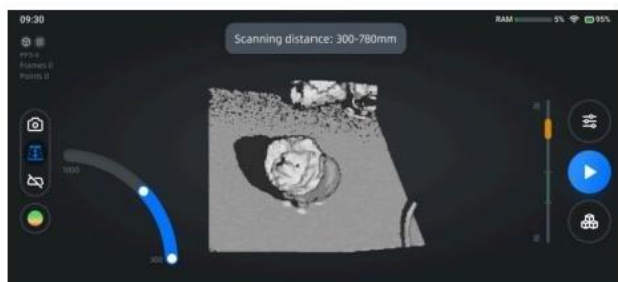
Scanning Distance

Note

Only S Fastscan mode supports adjusting the scanning distance.

Tap the icon to enable the function for adjusting the scanning distance, and a fan-shaped slider and scan distance numerical prompt will appear.

- Drag the slider to adjust the scanning distance.
- Tap the icon on the left side to exit this function.



Model Overlay

Tap the icon to expand the list on the right, and you can choose a model overlay mode:

-  : Quality Chromatograph, enabled by default for non-texture projects.
-  : Texture; only the project with acquired texture supports this switch, and is enabled by default.

≡ Note

- Go to ≡ **Advanced Settings** > [Acquire Texture](#) to set the project in the texture-alignment mode.
- You can enable only one of these two overlay modes.

Advanced Settings

Tap  in the right-side function bar to open the **Advanced Settings** window, where you can preset the scanned model as **Object** or **Portrait**, and the corresponding **Scan Configuration** and **Align Mode**:

Object

- **Scan Configuration > Acquire Texture**: Enabled by default, and **Texture alignment** mode will be automatically enabled; if disabled, the texture alignment mode can not be used, and [番 Texture](#) overlay mode as well as texture mapping are also not available.
- **Align Mode**:
 - o **Texture alignment**¹: Enabled by default when **Acquire Texture** function is enabled, and [縦](#) will appear in the [project information](#) area in the upperleft corner.
 - o **Markers alignment**²: Disabled by default; if enabled, 88 will ppear in the [project information](#) area in the upper left corner.

自 Note

Only HD scan mode supports markers alignment mode.

8 Portrait

· Scan Configuration

- o **Acquire Texture**: Enabled by default, and **Texture alignment** mode will be automatically enabled; if disabled, the texture alignment mode can not be used, and [* Texture](#) overlay mode as well as [texture mapping](#) are also not available.
- **Align Mode > Texture alignment**¹: Enabled by default when **Acquire Texture** function is enabled, and [丝](#) will appear in the [project information](#) area in the upper left corner.

- 1.Texture alignment is a technique that utilizes the surface texture features of the scanned object to automatically complete the alignment and merging process. It is suitable for objects with rich surface patterns but lacking intricate and varied geometric features. ⇄
2. Automatic stitching can be achieved by using markers attached to the surface of the scanned object, suitable for objects with limited geometric features or for scenarios that require high accuracy. ⇄

Scanning

After entering the interface of [scan preview](#), tap  in the right-side function bar or short press the [scan button](#) on the right side of the device to start scanning.

Note

- During the scanning process, you can only perform scaling operations on the model using pinch or spread gestures; you can also use the [\[可\]Reset View](#) function to reset the model to its original position.
- If it prompts "Insufficient memory" or "Insufficient storage space", continue the scan may result in data loss; it is recommended that you tap "Complete Scan" in the pop-up window, to save the project into the [file list](#).
- If it prompts "●Tracking lost", please move the scanner back to the scanned area.

In-Scan Settings

After start scanning, you can still adjust part of scanning parameters for the current project.

自 Note

- After start scanning, you can adjust the camera view or the switch for quality chromatograph & texture, but you will not be allowed to readjust the scanning distance or advanced settings.
- If you need to adjust scanning distance or change the scanned model, please set them in the [scan preview](#) status in advance.

Icon	Function	Description
	Camera View	For more, see scan settings .
	Model Overlay	For more, see scan settings .
	Reset View	Reset the model to its original position If it prompts that "View reset", it indicates all operations (including translation, rotation and scaling) have been reset.

Pause Scan

After start scanning, you can tap  in the right-side function bar or short press the [scan button](#) on the right side of the device to pause the scan.

Note

- After the scan is paused, operations such as scaling, translating, and rotating the model are supported ( **Reset View** function to reset the model to its original position):
 - o Scaling: Using pinch or spread gestures.
 - o Translation: Swipe with two fingers.
 - o Rotation: Swipe with one finger.
- During the scanning process, when the current frame count has reached 5000, the scan will pause automatically, and please tap "Complete Scan" in the pop-up window to save the project into the file list.

After the scan is paused, you can tap  to clear the scanned data, or tap  to continue scanning.

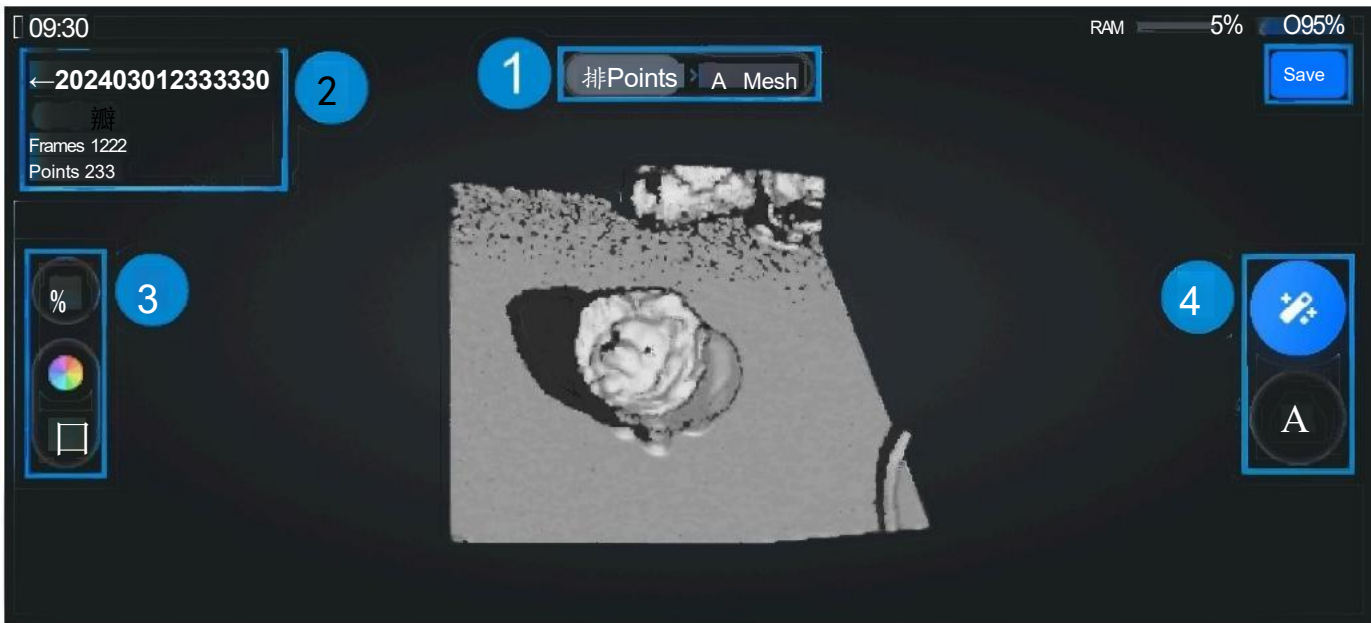
Complete Scan

After the scan is paused, tap  in the right-side function bar to complete the scan, and enter the interface of [editing point cloud edit](#).

Data Edit

After completing [scanning](#), you can edit the point cloud data.

Interface Overview



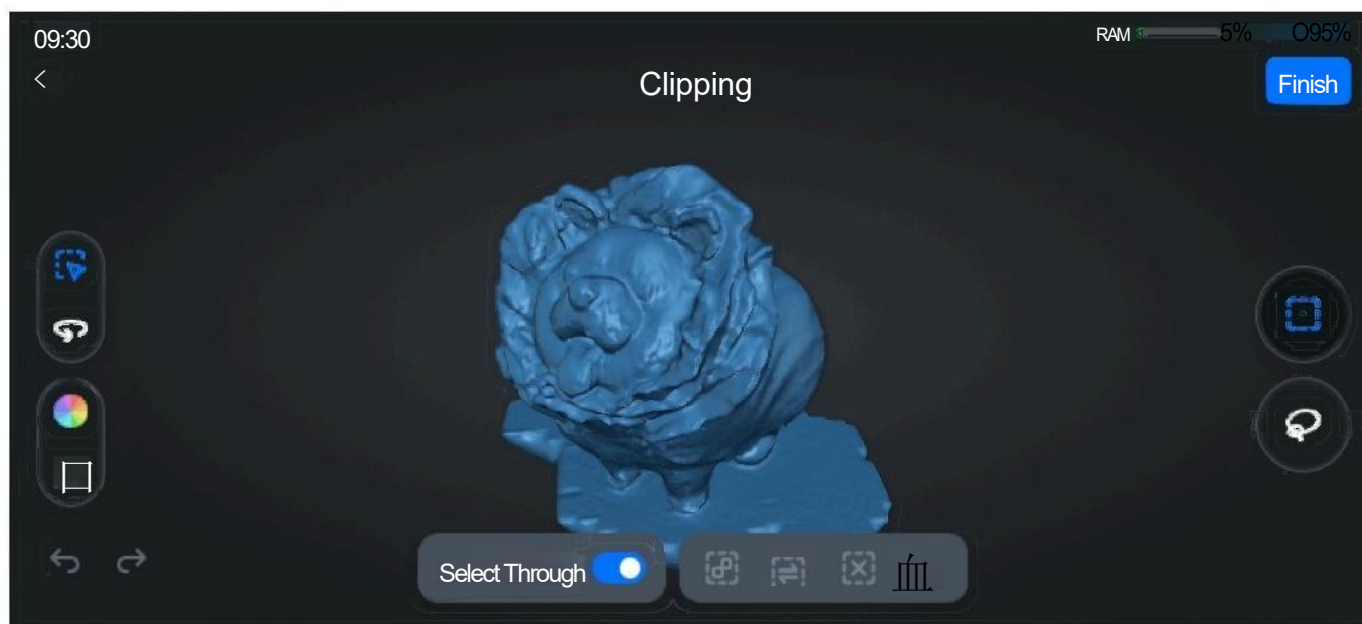
Note

- Tap< in the upper left corner to return, the mesh data will be cleared.
- Operations such as scaling, translating, and rotating the model are supported (□ **Reset View** function can be used to reset the model to its original position).

Index	Function	Description
①	Switch data	Tap to switch the displayed data of the model to Points or AMesh (if generated).
②	Project information	Tap OL to rename the current project; for more, see project information . Tap Save button to save the current project to file list and return to the interface of scan preview .
③	Point cloud edit tools	• Clipping Model overlay. • : Reset view.
④	Function buttons	• One-click processing. ● A :Generate mesh. 自 Note ● Please use these function buttons where there exists the scanned data, or it will prompt that “Othere is no point cloud data”. • When the scan completes, you can tap ID in the right-side function bar to return to the interface of scan preview to continue scanning.

Data Clipping

On the [EPoint](#) interface, tap  in the left-side toolbar to enable the data clipping function.



Note

In the  selection mode, you can hold down on the blank area to activate the magnifying glass function, and you can drag the magnifying glass to the model area to zoom in and display a specific part of the model.



Icon	Function	Description
	Selection mode (by default)	Use one-finger swipe to select the area. 自 Note In this mode, the model can not be rotated.
	Rotation mode	Use one-finger swipe to rotate the model.
	Model overlay	For more, see scan settings .
	Reset view	For more, see scan settings .
	Rectangle lasso	 In the V selection mode, rectangle lasso is chosen by default, and you can drag with a single finger in the model area to draw a rectangular selection area. 
	Free lasso	In the V selection mode, tap this button to switch the selection tool to free lasso, and you can drag with a single finger in the model area to draw a selection area in irregular shape.

自 Note

In the  selection mode, using the rectangle lasso tool, you can select common areas by making consecutive selections.

For selected areas, you can use tools as follows:

Icon /Function	Description
Select through	Enabled by default, and can be disabled after mesh, when only visible data can be selected.
Connected domain	After selecting the area, tap this button to automatically select connected areas. Note If there is no connected domain, it will prompt that "The selected area has no connected domain".
 Invert	After selecting the area, tap this button to select the invert area according to the selected area.
 Unselect	After selecting the area, tap this button to deselect all selected areas.
 Delete	After selecting the area, tap this button to delete all selected areas. After deleting, you can undo or redo the last operation. Note Only operations in the current data clipping can be undone or redone.

Note

If all scanned data is deleted, then you will not be allowed to operate one-click processing or other functions.

Post-processing (EinstarVega)

Mesh

In the interface of point cloud edit, tap A in the right-side function bar to enter the process of Generate

Mesh.

You can tap  to perform one-click processing (including SFast and Δ High detail), and mesh & texture map will be automatically generated using recommended parameters

自 Note

- The mesh data can be subsequently used for rendering or 3D printing.
- Only the project with [acquired data](#) supports one-click texture mapping;if **Acquire Texture** is not enabled,then only mesh will be automatically generated.
- If the current project has already generated the mesh,it will be overwritten after one-click processing.
- Operations such as scaling,translating,and rotating the model are supported(☐ **Reset View** function can be used to reset the model to its original position).

Mesh Settings

Setting	Description
Watertight	Disabled by default,and all holes will be retained. 自 Note If a watertight model needs to be generated,then the Fill Markers function can not be disabled.
Resolution	Provide 8 adjustable levels (including☆ultra-low resolution);after manually dragging the slider 0 to adjust the resolution,you can check on VUse recommend value to use the default resolution. Besides,you can tap≡button to enter the high-detail mode,where you can tap-1+ buttons to adjust the resolution. 自 Note If you need to use lower resolution,it is recommended that you use StarVision to acquire higher resolution;for information about the recommended computer configuration,please the Details button in the pop-up window.
Mesh Optimization	Provide 4 adjustable levels:none,low ¹ (by default),middle ² and high ³
Fill Markers	Enabled by default,and can not be disabled when Watertight function is enabled. 自 Note If Markers alignment mode is not enabled,this setting will be invisible.
Texture Mapping	Disabled by default,and can be enabled manually. 自 Note This setting can not be applied to the project without acquired texture .

Tap the **Preview** button,the [mesh](#) will be automatically generated according to the mesh settings.

Note

- After generating the mesh,all settings can not be adjusted;you can tap G to reset all settings.
- If it prompt that "Amesh already exists",you can tap **Replace** to regenerate the mesh.

- 1.Fast denoising.↔
- 2.Standard denoising.↔
- 3.Strong denoising,but sharp features.↔

Mesh Edit

Mesh Edit

After [mesh](#),in the $\triangle$ Mesh interface,you can [clip the mesh](#) and  map the texture.

Interface Overview



Note

For the introduction to other information in this interface,please see [interface overview](#).

Index	Function	Description
①	Switch data	Tap to switch the displayed data of the model to Points or Mesh .
②	Project information	Display the data information (resolution, vertex and triangles) of the current project, for more, see project information .
③	 Texture mapping	Only the project with acquired texture supports texture mapping; if the Acquire Texture function is not enabled, it will prompt that "Non-texture scan, can not generate texture map". After tapping this button, you will be prompted with a second confirmation window, which shows the predicted time needed for texture mapping.
④	Share	Share the mesh model to SHINING3D Digital Cloud; for more, see save and share .

Save and Share

In the EPoint/△Mesh interface, you can tap Save button in the upper right corner to save or update the current project into the file list.

In the △Mesh interface, you can tap % button in the upper right corner to share the mesh model to SHINING3D Digital Cloud, and you can edit the name of the shared model and select a space to be uploaded into in the Share window.

自 Note

- If the Shining 3D passport has not been logged in, a login window will pop up.
- If the selected space is less than 500 MB, it will prompt that "Mesh is too large", please simplify it before uploading.
- If the model file has already been uploaded, the corresponding QR code for downloading the model will be displayed.

Post-processing (StarVision)

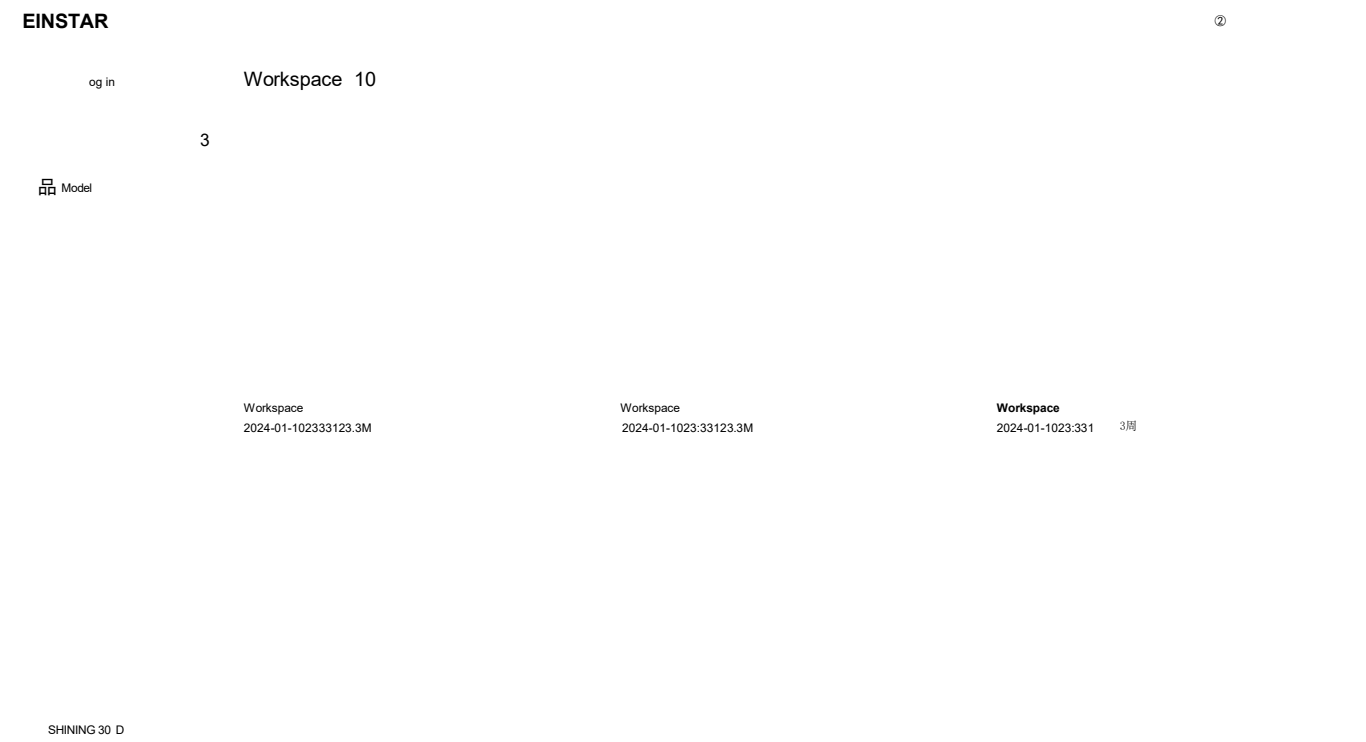
Post-processing(StarVision)

To improve the flexibility and convenience of EinStar Vega Handheld Scanner, SHINING 3D has developed a desktop post-processing software A StarVision, supporting importing model files in the device by one click and processing the imported models.

Function List

Function	Description
Device management	Connect/Disconnect the scanner。
File management	• Create /Import /Save /Share projects. • Manage model files in the model library.
Post-processing	● Edit point coud data ● Align point cloud data. ● Generate and edit mesh. - o Process mesh. - o Map texture. ● Measure model

Interface Overview



自 Note

This illustration is for the workspace;and for the introduction to the difference between the file card list in the workspace and that in the model library,please refer to [file card](#).

① Help and Settings

② Feedback

Click to expand the drop-down list,which provides the entrance to **User Manual** and the ways to **Contact Support**.

Settings

- **Account:** Login /view account,switch account,and log out.
- **Preference:** Edit the data storage path (the default path is "C:/Program Files/TX3Editor/Project")and switch the language (Chinese /English)of the software.

自 Note

- o MacOS system does not support editing the storage path.
- o If it prompts that "Insufficient storage space",it means that the storage space in the new path is not enough to accommodate the current model library file,and please change the path.

- **Software Update:**Manual check for update,download and install the update file.

自 Note

- o Generally,after launching the software,it will automatically check for updates and display a pop-up window if available.
- o When installing the update file,the current software will automatically exit.Please ensure that any necessary data is saved.
- o If it prompts that "①The current version is the latest",it means there is no need to update.
- o If it prompts that "●Insufficient storage space",please clean the disk space and download again.

- **About:** Check the privacy policy and user license agreement.

自 Note

When logging in, the new privacy policy/user license agreement window will also pop up (if available).

②Account

- Not logged in:Click **Log in** and the **SHINING 3D passport** login window will pop up.
- Logged in:Display the information of the logged account,click to enter **Setting >Account**.

③ Switch Workspace/Model Library

- QWorkspace** :Search,create,import/export projects,and perform post-processing on models.
- **品Model Library**: Search,preview,import/export model files,and import model files into the workspace.

④Connect Scanner

The Way of Connection

Click **+** and the **ConnectScanner** window will pop up,and you can perform  **Wired Connection**.

Please use the **cable** to connect the scanner to your computer,and **select the File Transfer mode**.

自 Note

- In the **Nearby devices** column,devices that are listed closer to the top indicate a stronger and more stable signal strength.
- Click **C** button to manually search for nearby devices.

Caution

If it prompts that " Connection failed",please check the connection status of the cable.

After Connection(including update the scanner)

AI 出 ~~wire-connected devices~~ and  有线设备和 ~~wireless-connected devices~~ are displayed in the left device list (arranged from far to near based on the order of connection):

自 Note

When hovering the cursor over a device bar and it changes to , click ① button in the right side to display the device information, and you can click  to update the device or  to disconnect.

- The right file card list displays all model files in the device, and supports searching, previewing models, as well as importing model files into the model library or the workspace.
- Update the device:
 - C Auto Update: Auto-check for update > download the update file > install.
 - Manual Update: Select the local update package > confirm update.

自 Note

- Only wire-connected devices can be updated.
- During the process of updating the device software, the top of the computer software interface will display the  icon, indicating that the software is being downloaded. When hovering the cursor over a device bar and it changes to , it can provide information about the download progress.

!Caution

During the process of updating the device software, please ensure that the device remains connected and do not exit the computer software.

⑤ Entrance to SHINING 3D Digital Cloud

- Not logged in: Click  and the SHINING 3D passport login window will pop up.
- Logged in: Click to open [SHINING 3D Digital Cloud](#).

自 Note

The mesh model can be [uploaded to SHINING 3D Digital Cloud](#).

⑥ Project Management

- Click the Qsearch box and enter keywords to view search results.
- Click the  Create button to create a new workspace.

- Click the **C Import local file** button to open the file selection window and import project files (.proj); in the model library, you can also click the **Import from scanner** button to select the scanner and open the scanner model file dialog to import model files.

⑦ File Card



2024-01-10 23:33 123.3M

Display the model's thumbnail, project information (point/Amesh, object/8 portrait, 88 markers alignment/丝 texture alignment), the name, size, and the latest update time for projects or model files.

Check ☒ in the upper right corner of the card to select the card; left-click on the card to open the workspace (for point cloud data edit and post-processor preview the model); right-click on the card to open the menu, where you can rename/export/delete the file, as well as import the file into workspace or model library.

自 Note

- The supported operations on file cards may vary slightly between the workspace, model library, and device file list. Please refer to the actual page for accurate information.
- After scrolling down the file card list, you can click the (不 button on the right side to return to the top of the list.

Create /Import Files

The post-processing workflow on the computer is mainly done in the **Q.Workspace**, where you can choose to create a new workspace or import existing project files for post-processing.

Create a Workspace

- Open the file card list of **QWorkspace** in the [main interface](#), click the  **Create** button in the top right corner or the **+Create workspace** button in the center of the interface (when the file card list is empty), you can create a new workspace and enter it directly.
- After entering **QWorkspace**, click **File>Create workspace** in the top navigation bar, you can create a new workspace and enter it directly.

Import a Workspace/Model File

- Open the file card list of **QWorkspace** in the [main interface](#), click **QImport local file** to open the file selection dialog, where you can import project files (.proj); click on the newly added project file card to enter the corresponding workspace.
- Open the file card list of  **Model Library** in the [main interface](#), select the model file that needs to be imported, click **Import workspace** in the pop-up window to create a new workspace and enter it.

Note

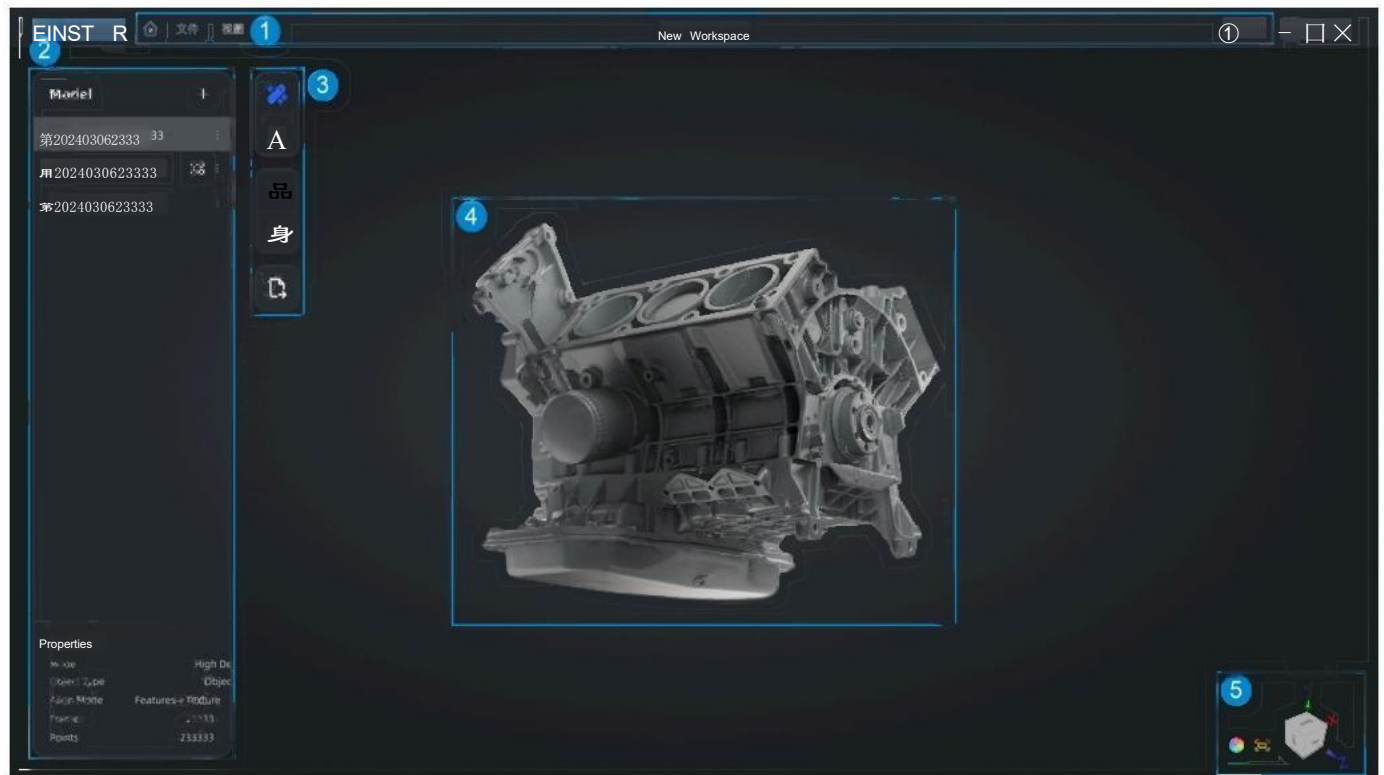
You can choose to add model files by clicking **QImport local file** or  **import from scanner**; or you can open the device file list to import the model files on the device into the model library.

- After entering **Q Workspace**, click **File>Open Workspace** in the top navigation bar, you can select a workspace in the pop-up window and enter it; or click **File>Import Model** in the top navigation bar, and choose **Import from scanner**, **Import from Model Library** or **Import local file**.
- After entering **Q Workspace**, click  in the top right corner of the left-side model list, and you can choose **Import from scanner**, **Import from Model Library** or **Import local file**.

Note

- o Model files imported from the scanner or locally imported files will be added to the model library automatically.
- o About how to connect the scanner, please refer to [connect the scanner](#).

Workspace Interface



①Top Navigation Bar

- Click  to return to the [main interface](#).
- Click the **File** button to expand the drop-down list, where you can choose to create /open/export the workspace and import models.
- Click the **View** button to expand the drop-down list, where you can choose to hide /show texture or reset the view.
- Click  on the right side of the workspace name to expand the drop-down list, where you can rename or export the workspace.

Note

For the introduction to ② and buttons in the right side of the navigation bar, please refer to [help and settings](#).

②Model List

Display all the model projects that have been imported into the current workspace in the order of creation, from the nearest to the farthest.

For the projects with generated mesh, you can click  to expand the A mesh sub-level column, click on  which will take you to the interface of [mesh editing](#) interface.

Note

- For the introduction toE and other icons about the project infomation,please refer to file card.
- You can rght-dick on one column to rename/export/delete the prject;besides,you can also double-dick on one column to rename the project.

The bottom displays the properties of the currently selected project,including the scanning mode,frames and points.

③Tool Bar

Display the corresponding toolbar for point cloud /mesh editing tools based on the data display status of the current project

④Model Preview

You can manipulate the model using the mouse or trackpad.

Operation	Gestures on the mouse	Gestures on the trackpad
Translation	Hold down the middle mouse button or right-dick and drag	Two-finger swipe
Rotation	Hold down the left mouse button and drag	Press and swipe with one finger
Scaling	Use the scroll wheel	Pinch or spread with two fingers

You can also use the ⑤view controller in the bottom right corner to quickly switch between different mode perspectives.

Note

-  indicates the texture is shown,Oindicates the texture is hidden.
- Click to reset the view to the original status.

Data Edit

Atter entering theworkspace,selecta:point cloud projectin the left-side [model list](#)to edit the point dloud.
The supported tools include:

- : One-click processing.

·A: [Generate mesh](#).

· : [Clipping](#).

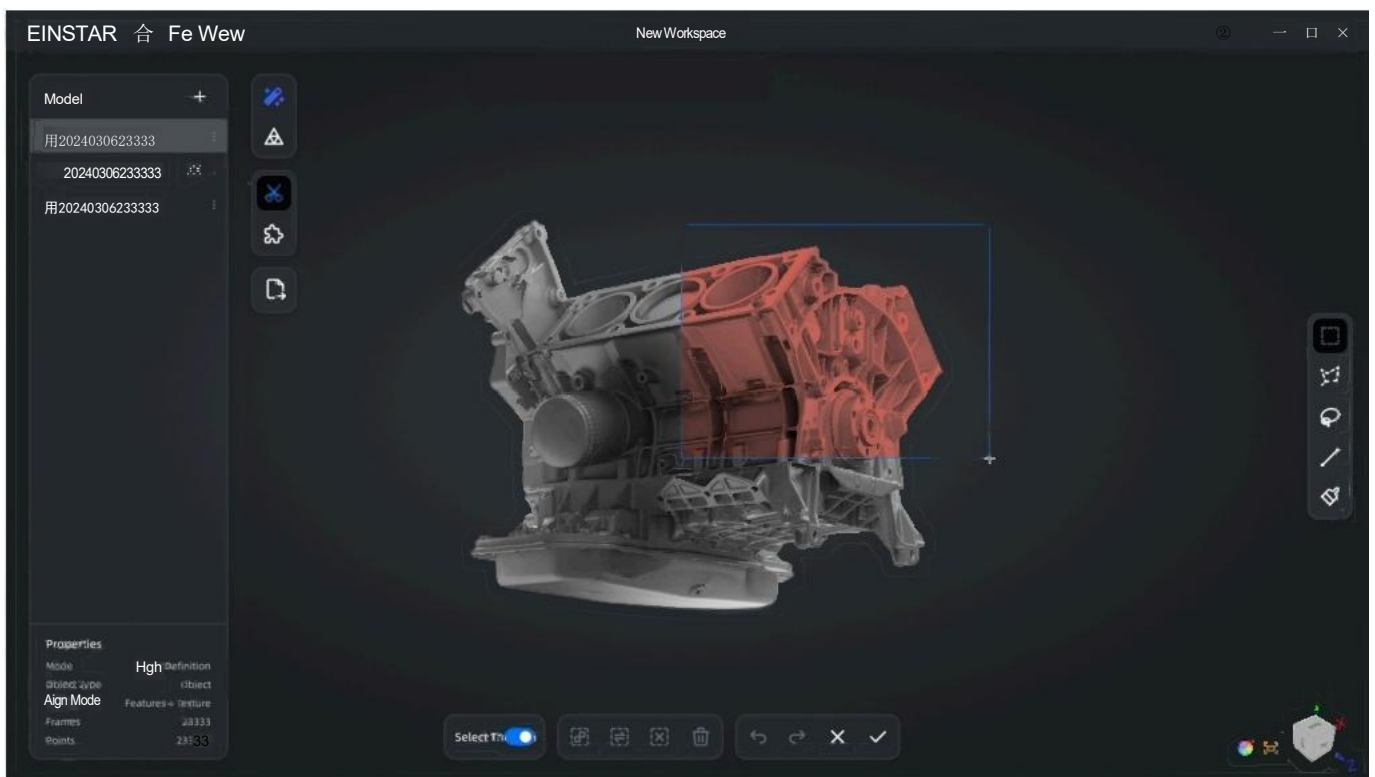
·C: [Export the point cloud project](#).

Clipping

Click  in the left-side point cloud data editing toolbar to clip the point cloud data.

Note

When clipping the data, you can use mouse or trackpad to operate the model.



① Selection Tools

Icon	Function	Description
	Rectangle selection	In the model area,press <u>t Shift_J+[left-button</u> (the cursor changes to+) and drag to draw arectangulareselection area. 
	Polygon selection	In the model area,press <u>t Shift +left-button</u> (the cursor changes to+) andclick consecutively to select several points to draw a polygon area.
	Free selection	In the model area,press <u>û Shift_J+[left-button</u> (the cursor changes to+) and drag to draw a selection area by moving the cursor along a path. 
	Straight line selection	In the model area,press <u>û Shift +[left-button</u> (the cursor changes to+) and drag to draw a line,and the area below will be selected.
	Brush selection	In the model area,press <u>û Shift_J+[left-button</u> (the cursor changes to+) and brush,and the brushed area will be selected;you can either drag the slider0 or presst <u>Shift_J</u>and use the scroll wheel to adjust the size ofthe brush. 

Note

Press ^Ctrl1|+|left-button or 98 cmd |+|left-button, and when the cursor changes to + or (+), you can drag to delete the selected area.

② Data Editing Toolbar

For the selected areas, you can use tools as follows:

Note

Support using the right-click menu to use the connected domain, invert, unselect and delete function.

con /Function	Description
Select through	Enabled by default, and can be disabled after mesh, when only visible data can be selected.
Connected domain	After selecting the area, click this button to automatically select connected areas. 自 Note If there is no connected domain, it will prompt that "The selected area has no connected domain".
 Invert	After selecting the area, click this button to select the invert area according to the selected area.
 Unselect	After selecting the area, click this button to deselect all selected areas.
 Delete	After selecting the area, click this button to delete all selected areas. After deleting, you can undo or redo the last operation. 自 Note Only operations in the current data clipping can be undone or redone.
 Undo	When there exists deletion, click this button to undo the last operation. 自 Note You can use the shortcut <u>Ctrl</u> + <u>Z</u> or <u>Cmd</u> + <u>Z</u> .
 Redo	When there exists deletion, click this button to redo the last operation 自 Note You can use the shortcut <u>Ctrl</u> + <u>Shift</u> + <u>Z</u> or <u>Cmd</u> + <u>Shift</u> + <u>Z</u> .
 Cancel	Cancel all edits and exit the clipping function. 自 Note You can use the shortcut <u>Esc</u> .
 Finish	Save all edits and exit the clipping function. 自 Note You can use the <u>shortcut</u> <u>Del</u> .

Alignment

In the interface of point cloud editing,click  in the left-side toolbar to enter the alignment process.

Click to select two point cloud projects in the left-side model list,select the alignment mode as Feature (default) or Marker,and choose to enable Auto alignment or not (enabled by default).

自 Note

- Only the point cloud data of two models can be selected to be aligned.
- After clicking to select models,you can click×in the top right corner of that model area to deselect;after alignment,you can click C in the top right corner to clear the alignment result.
- Click the Exit button in the top right corner to exit the alignment function.

The introduction to alignment modes is as follows:

Alignment mode	Description	Note
Auto feature alignment	1. Choose the Feature alignment mode and enable Auto. 2. Select two point cloud projects from the model list on the left side of the interface, so as to fill them into the respective model areas on the right side. 3. Click Preview and the software will align two models automatically based on their common features.	Please ensure there at least exist three pairs of common feature points, or it will prompt that "●The number of common feature points between the two models is less than 3".
Manual feature alignment	1. Choose the Feature alignment mode and disable Auto 2. Select two point cloud projects from the model list on the left side of the interface, so as to fill them into the respective model areas on the right side, and add at least three pairs of common features individually. 3. Click Preview and the software will align two models based on the added feature points.	● Please ensure there at least exist three pairs of common feature points, or it will prompt that "●The number of feature points is not sufficient". ● The manual chosen feature points can not be in a line, or it will prompt that "●Feature points can not be in a line".
Auto marker alignment	1. Choose the Marker alignment mode and enable Auto. 2. Select two point cloud projects from the model list on the left side of the interface, so as to fill them into the respective model areas on the right side. 3. Click Preview and the software will align two models automatically based on their common markers.	Please ensure there at least exist three pairs of common markers, or it will prompt that "●The number of common markers between the two models is less than 3"
Manual marker alignment	1. Choose the Marker alignment mode and disable Auto. 2. Select two point cloud projects from the model list on the left side of the interface, so as to fill them into the respective model areas on the right side, and add at least three pairs of common markers individually. 3. Click Preview and the software will align two models based on the added markers.	Please ensure there at least exist three pairs of common markers, or it will prompt that "●The number of markers is not sufficient". The manual chosen feature points can not be in a line, or it will prompt that "●Markers can not be in a line".

Note

- Manual alignment serves as an auxiliary method of auto alignment. You can choose it when auto alignment fails.
- For the manual alignment mode, after adding feature points or markers, you can click  in the bottom left corner of the model area, and G in the top right corner to perform corresponding operations.
- For the manual alignment mode, the number of added feature points or markers can not exceed 9, or it will prompt that "O The number of feature points /markers has reached the maximum".

After alignment, click Apply to add the aligned project into the left-side model list, and the added aligned project will be automatically named as "Alignment result(X)".

Mesh

In the interface of point cloud edit, click A in the left-side point cloud editing toolbar to enter the process of function bar to enter the process of Generate Mesh.

You can click  to perform one-click processing (including SFast and $\triangle$ High detail), and mesh & texture map will be automatically generated using recommended parameters.

Note

- The mesh data can be subsequently used for rendering, measurement or 3D printing.
- Only the project with acquired data supports one-click texture mapping, or only mesh will be automatically generated.
- If the current project has already generated the mesh, it will be overwritten after one-click processing.

Mesh Settings

Setting	Description
Watertight	Disabled by default, and all holes will be retained. Note If a watertight model needs to be generated, then the Fill Markers function can not be disabled.
Resolution	The recommended resolution is set by default; after dragging the slider 0 to adjust the resolution manually, you can check Use recommend value to use the default resolution.
Fill Markers	Enabled by default, and can not be disabled when Watertight function is enabled. Note If Markers alignment mode is not enabled, this setting will be invisible.

By clicking **Generate**, you can preview the mesh generated according to the mesh settings; and click **Finish**, you can enter the interface of [meshedit](#).

Note

- After generating the mesh, all settings can not be adjusted; you can tap  to reset all settings.
- If it prompts that "A mesh already exists", you can tap **Replace** to regenerate the mesh.

Mesh Edit

Mesh Edit

After [generating the mesh](#), in the interface of  mesh editing, you can use tools as follows:

·A:  [Mesh Process](#).

·  : Texture Mapping.

•  : [Clipping](#) .

·  : [Measure](#).

·C:  [Export](#) .

·o8:  [Share](#) .

自 Note

- In the left-side [model list](#),you can select a project with A generated mesh to edit the mesh.
- Onlythe projectwith texture supports texture mapping,or itwill prompt that"**ONon** -texture scan,can not generate texture map".

Mesh Process

In the interface of △mesh editing,click **Ax**in the left-side mesh editing toolbar to open the **Mesh Edit** panel, where you can click +to edit all setings, including✂ **Texture Adjustment**, **XSimplification**, **ZMesh Optimization**,**ORemove Foating Parts** and **FillHoles**.

Setting	Description
0 Texture Adjustment	Drag the slider 0 to adjust the brightness, contrast, color temperature and saturation of the model texture. The default value is 0, and the range is -100~100. 自 Note • Only the model with mapped texture supports texture adjustment. • After enabling the settings for this function, texture is always shown and can not be hidden • Support preview the adjustment effect in real time; click Apply to save settings.
X Simplification	Drag the slider 0 to adjust the proportion of simplification: The default value is 0, and the range is 0~99. 自 Note Click Preview to preview the simplification effect, and check the size change of the file in both STL and OBJ format as well as the change of triangle; click Apply to save settings.
0 Mesh Optimization	Perform denoising on the data to make the mesh data smoother and improve data quality. Drag the slider 0 to adjust the proportion of mesh optimization: The default value is 1, and the range is 0~100. 自 Note Click Preview to preview the mesh optimization effect; click Apply to save settings.
0 Remove Floating Parts	Delete any small parts of data that are not connected to the main data. Drag the slider 0 to adjust the proportion of simplification: The default value is 0, and the range is 0~100 自 Note Support previewing the effect in real time; click Apply to save settings.
0 Fill Holes	Fill in the holes within the specified perimeter based on the set hole circumference. Drag the slider 0 to adjust the perimeter (mm). Besides, it also supports setting Hole filling type as Curvature (by default), Tangent and Plane 自 Note • Only the model with holes supports hole filling function. ● The identified hole edges are marked in red, while the hole edges that meet the criteria are marked in green; the selected status of holes can be updated in real time. • Click Preview to preview the hole filling effect; click Apply to save settings.

自 Note

- Click G to reset settings.
- Click×to close the setting.
- After applying one setting,the project with mapped texture will prompt that "The mesh has changed",and you can click **Generate** to remap the texture.

Measure

In the interface of △mesh editing,click in the left-side mesh editing toolbar to open the **Measure** panel, where you can choose to measure **Surrounding Box**(by default),**SurfaceArea** and **Distance**.

Measure Surrounding Box

Select **Measurement Data** as **Surrounding Box** to display the surrounding box as well as its length,width,height (mm) and volume (mm³).



Measure Surface Area

Select Measurement Data as Surface Area to enable the function for measuring the surface area,and after using the [selectiontools](#),the measurement result(mm²)will be shown.

For the selected areas,you can use tools as follows:

Icon	/Function	Description
Select through		Enabled by default,and can be disabled,when only visible data can be selected.
0		Click to select the whole model area.
Select all		

自 Note

For the introduction to other data editing tools, please refer to [data editing toolbar](#).

Measure Distance

Select **Measurement Data as Distance** to enable the function for measuring the distance.

The steps for measuring the distance is as follows:

1. Tap any position on the model to add 2 points.
2. After adding 2 points, they will be automatically connected, and the straight line distance (mm) will be displayed; if you add another point, the previous connection will be removed, and a new line will start from the new point.

Note

You can drag the points to adjust their position, and the distance value will be updated in realtime.

The steps for measuring the distance is as follows:

1. Click on any position on the model to add 2 points.
2. After adding 2 points, they will be automatically connected, and the straight line distance & geodesic distance (mm) will be displayed; if you add another point, the previous connection will be removed, and a new line will start from the new point.



自 Note

You can drag the points to adjust their position, and the distance value will be updated in realtime.

Export and Share

In the interface of **Point Cloud**:

Click **C**, in the left-side point cloud editing toolbar to open the **Export** window, where you can choose **Export project to Model Library** (by default), or **Export to local** (PROJ/ASC).

In the interface of **AMesh** :

- Click **C3** in the left-side mesh editing toolbar to export the mesh project, and it supports exporting mesh objects in the format of OBJ, STL or PLY.
- Click **%** in the left-side mesh editing toolbar to upload the model file to SHINING 3D Digital Cloud:
 - a. Edit the model name in the **Share** panel and select space.
 - b. Click **Upload** and the QR code for downloading the model will be automatically generated, which can be saved or duplicated.

Note

- o If the Shining 3D passport has not been logged in, a login window will pop up.
- o If the remaining storage of the chosen space is less than 500 MB, it will prompt that "🟡 The mesh is too large", please simplify it before uploading.
- o If the model file has already been uploaded, the corresponding QR code for downloading the model will be displayed.

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