

3D Ear Impression Scanner

User Manual

(S2 V1.2)



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1、 General

Fitshape 3D ear impression scanner is a scanning device specially developed by Soundlink Co., Ltd. for earmolds and hearing aid shells. The fully automated calibration and scanning process combines accurate 3D scanning and effective order management to provide users with simple and intuitive operations and improve production efficiency.

2、 Technical Parameters

1. Working area:

- 1.1 Temperature: 0°C ~ 40°C
- 1.2 Humidity: Below 80RH %(25°C)
- 1.3 Atmospheric pressure: 86kPa-106kPa
- 1.4 There should be no flammable corrosive gas or conductive dust in the working area

2. Power:

- 2.1 Voltage: DC24V ± 10%
- 2.2 Elec.Current: 4A ± 10%

3. Resolution: 1,300,000 pixels

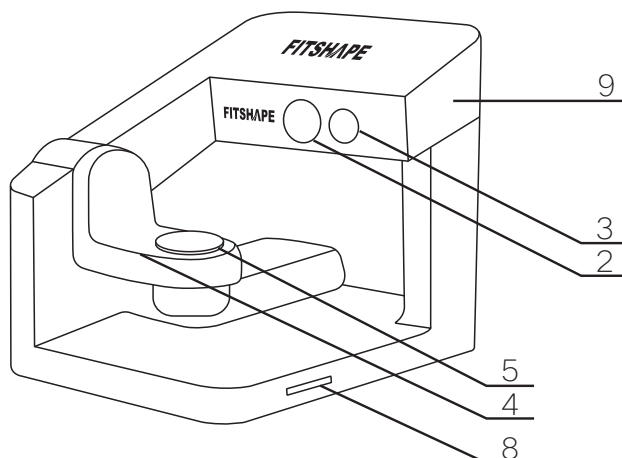
4. Scanning performance:

- 4.1 Scanning accuracy: $\leq 20\mu\text{m}$
- 4.2 Scanning range: 50(L)x50(W)x50mm(H)
- 4.3 Scanning time: $\leq 45\text{s}$

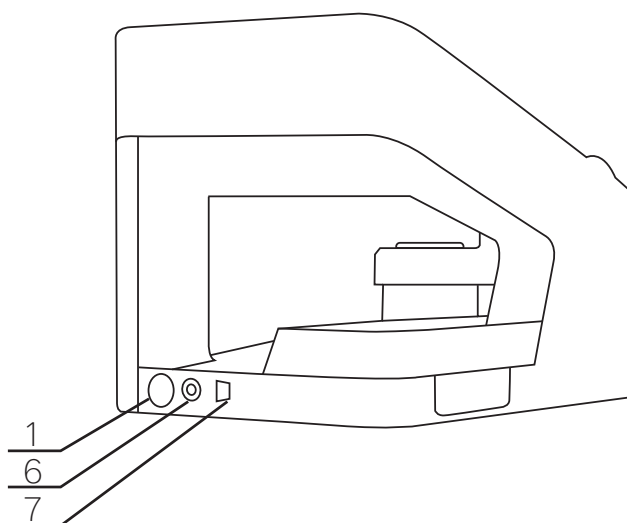
5. Dimensions: 305(L) x 240(W) x 250mm(H)

6. Weight: 5Kg

3、 Structure



- 1. Power switch
- 2. Projector
- 3. Camera
- 4. Swing arm
- 5. Turn-table



- 6. DC 24V interface
- 7. USB interface
- 8. Work indicator light
- 9. Scanning integration

4、Attachment

Item	Model specifications	Qty	Picture	Function
3D Ear Impression Scanner	S2	1 pcs		To scan the ear impression
Calibrate plate		1 pcs		Calibrate plate
Impression holder		1 pcs		To fix the ear impression
USB 3.0 cable	Type A—>Type B, square shape, 2m	1 pcs		To connect scanner and computer
Power adaptor	24V/4A	1 pcs		To provide power
USB Flash Disk	16G	1 pcs		Store the software installation file and the instruction manual
Cylinder object (Optional)		1 pcs		Verify the accuracy of the scanner
Testing report		1 pcs		Mark the factory inspection data
Product qualification certificate, warranty card		1 pcs		

5、 Configuration requirements

CPU: Intel® Core™ i5 (or higher)

System: Operation system Windows10 or Windows11

Graphic card: Graphic card Independent, NVIDIA GTX750 or higher

Memory: 8GB or higher

Connector: One USB 3.0 for the scanner

Attention: Turn off all firewalls

6、 Operation

6.1 Software Installation

Take out the USB flash Disk from the package and insert it into the USB port of the computer. There is a FitShapeScan.exe in the root directory of the USB flash Disk. Copy FitShapeScan.exe to the computer desktop. Double-click FitShapeScan.exe and install it with the default settings. Eject the USB flash Disk after completion.

If you have a cylinder object, please follow the steps below. If not, please ignore. (Take out the USB flash Disk from the same box of the cylinder object and insert it into the USB port of the computer. There are two files, FSSxxxxx.xxx and validation.json, in the root directory of the USB flash Disk. Copy FSSxxxxx.xxx to the C:\Users\Public\Documents\FitShapeScan directory of the computer, and copy validation.json to the C:\Program Files (x86)\FitShapeScan\configs directory. After completion, eject the USB flash Disk).

6.2 Device connection

- (1) Take out the scanner and connect the power adapter.
- (2) Take out the data cable, plug one end into the scanner and the other end into the USB 3.0 port on the computer.
- (3) Turn on the power switch, the working indicator light will flash 3 times, and the self-test is completed.

6.3 Open the software

(1) Double-click the icon on the desktop to display Figure 1-1. After initialization is complete, you can enter the main interface.



Figure 1-1

(2) The main interface is divided into several areas, namely ① menu, ② left and right ear switching, ③ impression model display, ④ operation function, ⑤ view switching, ⑥ editing function, ⑦ display mode switching. See Figure 1-2.

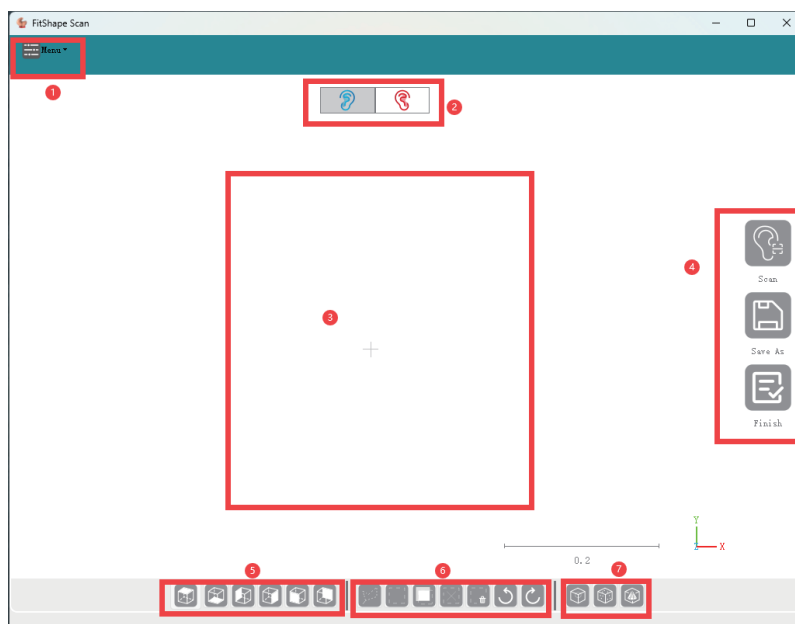


Figure 1-2

6.4 Calibration operation

(1) Take out the calibration plate, align the positioning pin of the calibration plate with the notch of the turntable, suck them together, Check whether the placement is horizontal, and confirm that they are assembled in place.

(2) Find calibrate in the Menu and click calibrate to enter the calibration page. See Figure 2-1.



Figure 2-1

(3) On the calibration page, follow the sequence of operations. If the calibration is successful, it will prompt success. If the calibration fails, it will prompt failed. See Figure 2-2.



Figure 2-2

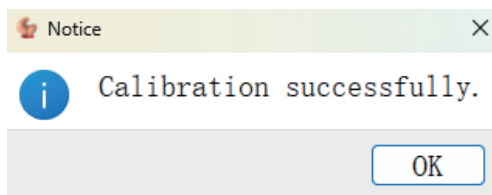


Figure 2-3

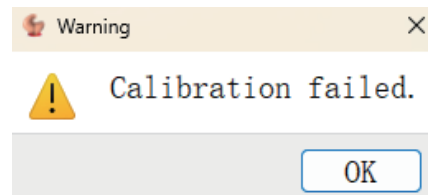


Figure 2-4

6.5 Scanning operation

(1) Take out the ear impression holder, Align the positioning pins of the ear impression holder with the notches on the turntable suck them together, check whether the placement is horizontal, and confirm that they are assembled in place.

(2) Fix the ear impression on the ear impression socket, try to fix it in the center.

(3) Find New in the Menu and click New. On the New Order Page, an order number will be automatically generated. Fill in some necessary information and click Create to create a new order. See Figure 3-1.

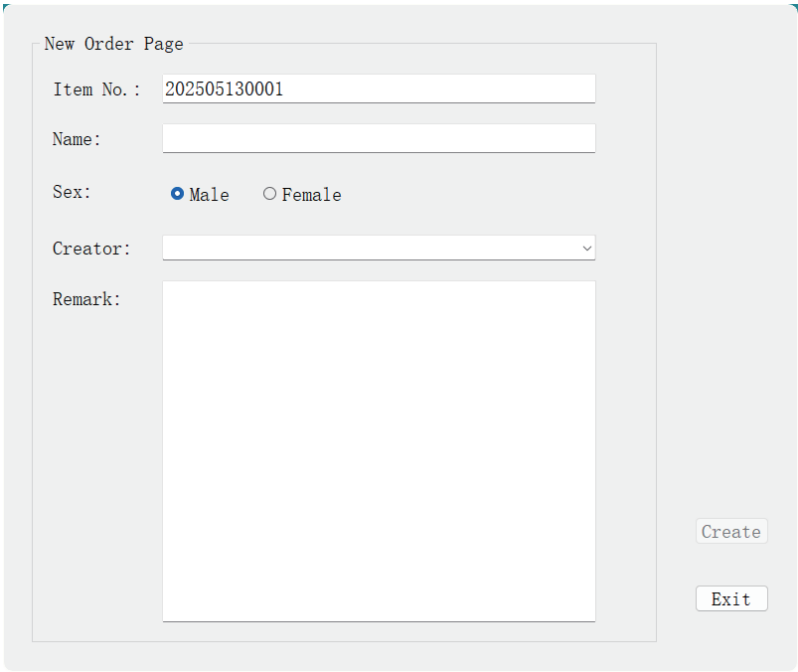
A screenshot of a web form titled "New Order Page". The form contains several input fields: "Item No.:" with the value "202505130001", "Name:" (empty), "Sex:" with radio buttons for "Male" (selected) and "Female", "Creator:" (empty dropdown), and "Remark:" (empty text area). At the bottom right of the form are two buttons: "Create" and "Exit".

Figure 3-1

(4) The main interface will display the order name, including the number, customer name, and left and right ear information. See Figure 3-2 and Figure 3-3.



Figure 3-2



Figure 3-3

(5) Then click Scan on the right to start scanning the ear impression. After the scanning is completed, click Finish to complete the scanning. The generated ear impression file is in the default path, which can be changed in the settings.

6.6 Accuracy verification operation(If you have a cylinder object, please refer to the following steps. If not, please ignore it).

(1) Take out the cylinder object, align the locating pin of the cylinder object with the notch of the turntable, suck them together, check whether the placement is horizontal and confirm that they are assembled in place.

(2) Find Calibrate in Menu, click Calibrate, follow the sequence, select the standard part model, and after confirmation, click Measure, as shown in Figure 4-1. The accuracy verification result will pop up in a window, as shown in Figure 4-2 and Figure 4-3. In the C:\Users\Public\Documents\FitShapeScan path, the FSSxxxxx_Record.csv file will be automatically generated, where you can view the specific values of the accuracy verification, as shown in Figure 4-4.

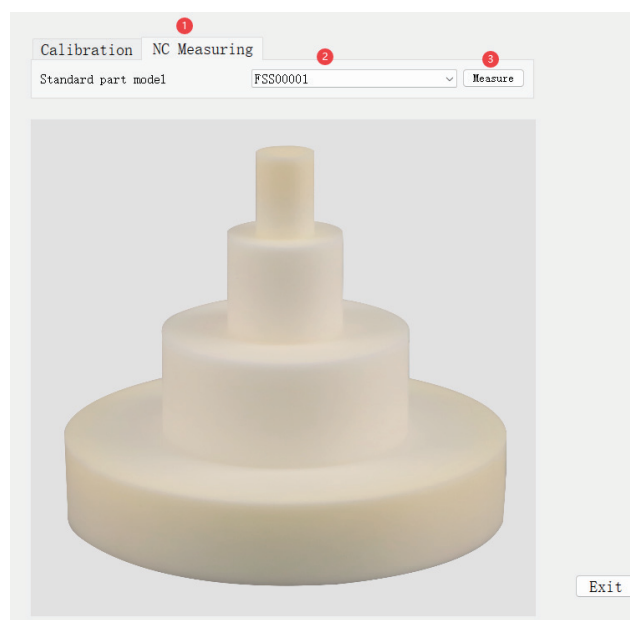


Figure 4-1

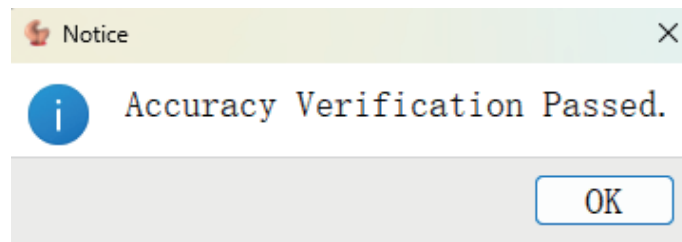


Figure 4-2

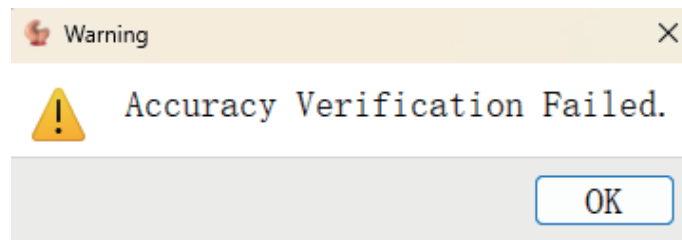


Figure 4-3

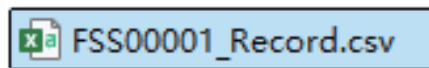


Figure 4-4

6.7 Operation function introduction

(1) Scan

(2) Save as: Save the order information and ear impression model data file to the specified folder.

(3) Finish: The ear impression model data file is automatically saved to the default path location, and folders are automatically generated by date to store the data.

6.8 Introduction to setting functions

(1) Find Setup in the Menu and click Setup to switch the language version. In General-- Setting --Save Path, you can change the default path for saving scanned data. See Figure 5-1.

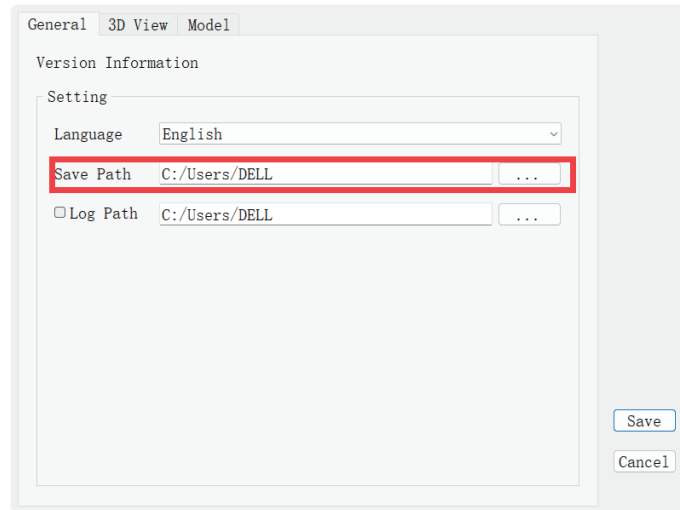


Figure 5-1

(2) In 3D View--Setting, you can change the color of the ear impression model during scanning. The default is blue on the left and red on the right. See Figure 5-2.

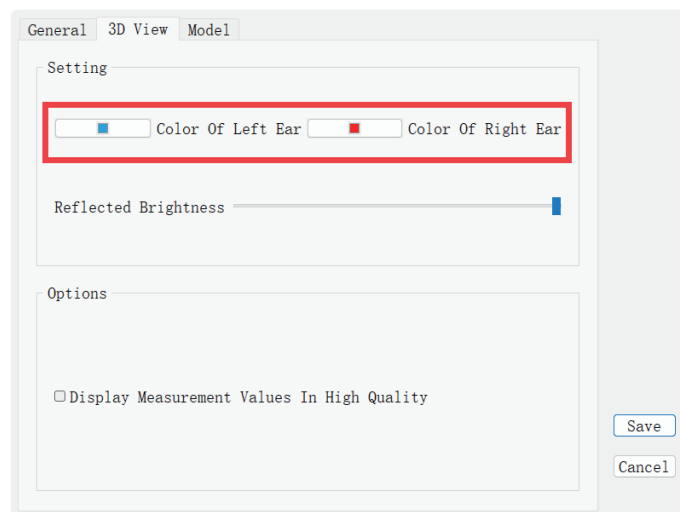


Figure 5-2

(3) In Model--Performance, the larger the Smooth Factor value, the smoother the scanned model will be. See Figure 5-3.

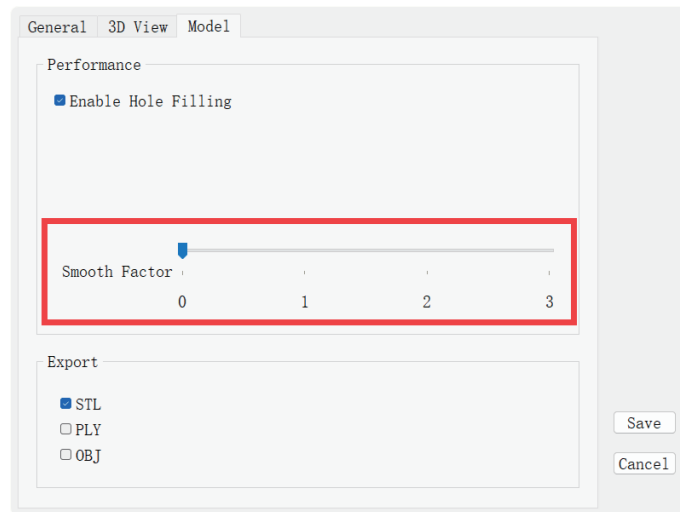


Figure 5-3

(4) In Model--Export, STL is checked by default. If you need to generate files in other formats, you can change it here. See Figure 5-4.

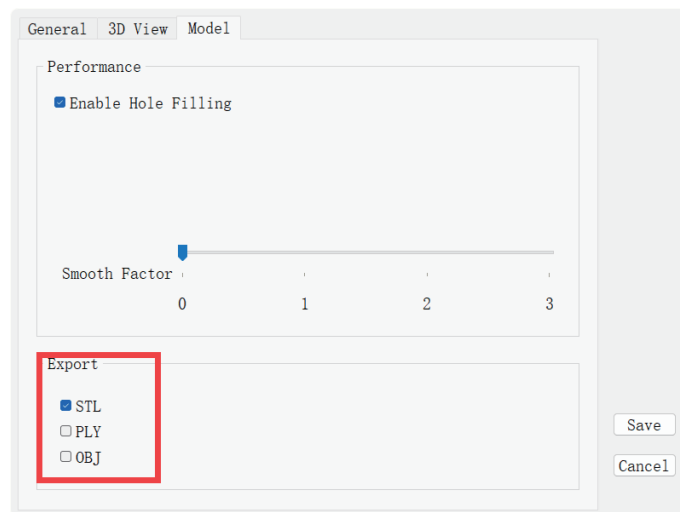


Figure 5-4

7、 Notes

- 7.1 Do not plug the scanner USB data cable into the USB Hub.
Please connect it directly to the USB 3.0 port of the computer.
- 7.2 Each software will be bundled with a calibration plate. Please do not confuse the calibration plate model with the software.
- 7.3 Please do not move the device during the scanning process.
- 7.4 Please keep the device clean.
- 7.5 Do not start the program directly from the USB flash drive.
- 7.6 If the software prompts "Failed to initialize the scanner", please close the scanner and the software, and reconnect the USB ports of the scanner and the computer.

8、 Safety Notices

- 8.1 Please use it in a dry room or similar environment with good ventilation and no flammable or corrosive gases in the air.
- 8.2 Be careful to hold and place it gently, put it in the right place, do not squeeze it, and take protective measures such as sun protection, rain protection, and shock protection.
- 8.3 When the machine itself fails and cannot be used normally, it is strictly forbidden to disassemble and repair it privately. It must be inspected or guided by professionals.
- 8.4 Pay attention to the safety label to avoid getting pricked.
- 8.5 This product is not allowed to be used by children.
- 8.6 Scrapped products should be handed over to qualified units for recycling and should not be thrown into household trash cans at will.

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