

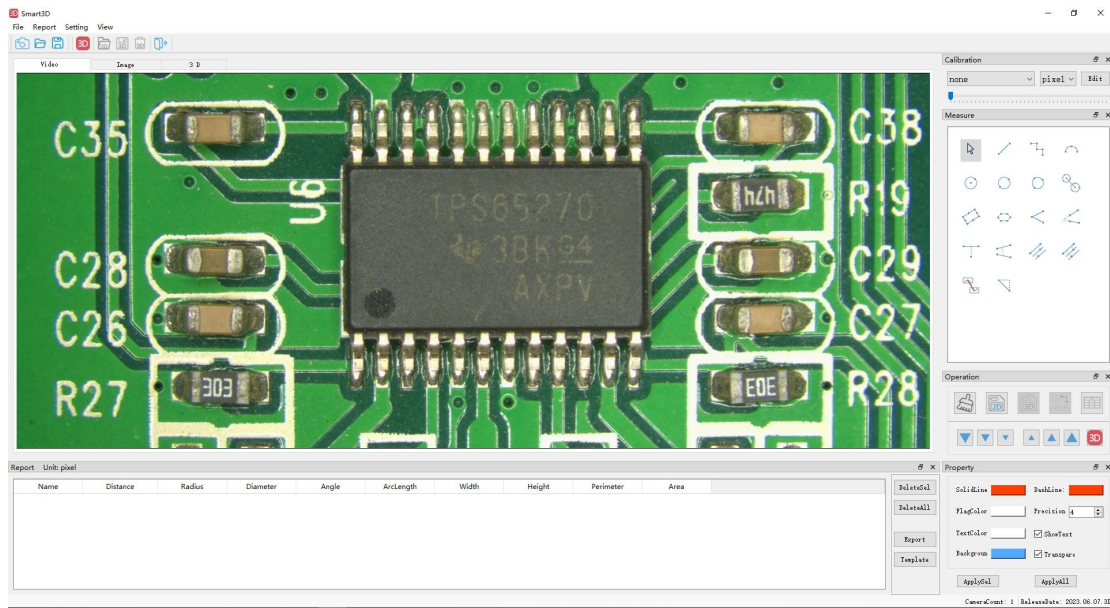


Shen Zhen Troy Intelligent Trading Ltd.

TVN-3D9000
3D Camera PC User Guide

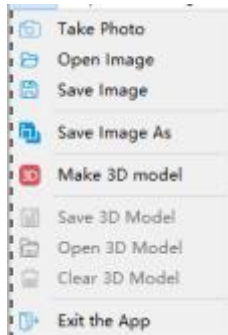


一. Software boot screen



Introduction to the primary menu

1.1 Documents



- ① Video screenshot: Take a screenshot of the live motion picture and save it See Fig. 1.1
- ② Open the original image: open the image on the USB stick for viewing See Fig. 1.2
- ③ Save the original image: save the original 3D image after 3D generation
- ④ Save the image as: Save the 3D image in the format of your choice
- ⑤ Generate 3D model: enter 3D super depth of field mode and carry out 3D modelling
- ⑥ Exit: Exit the PC operating program



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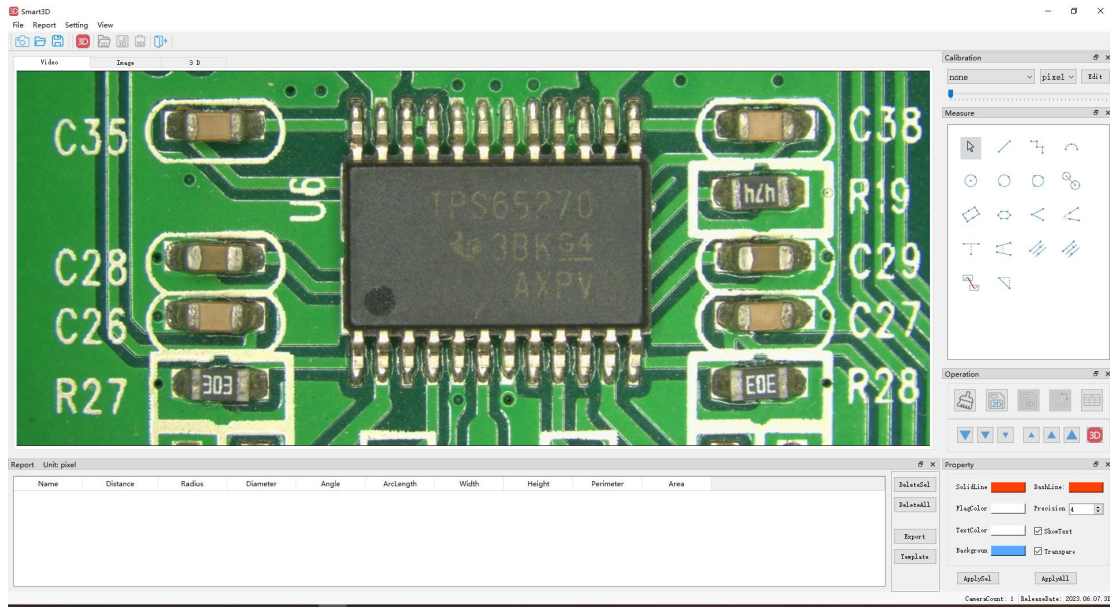


Figure 1.1 Screenshot of the video



Fig. 1.2 Opening the graphic elements

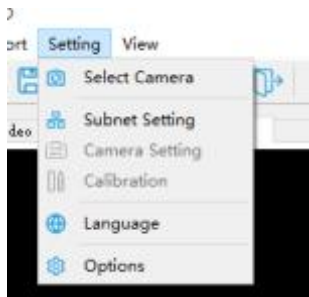
1.2 Statements



The data, such as measurements taken on the product, is exported to a USB stick and generated in EXC format for subsequent operations such as editing and storage.



1.3 Settings



① Camera selection: Select the camera connected to the PC, see Figure 1.31 for details

② Network segment setting: select the network segment of the PC

③ Camera settings: Set the parameters of the camera, such as white balance, exposure, contrast and other parameters, see Figure 1.32 for details

Note: Because it takes time for the PC and the camera to transmit, the camera settings cannot be adjusted too quickly! It needs to be done slowly to give a certain reaction time

④ Camera calibration: depending on the lens and objective lens, the camera needs to be calibrated in advance.

⑤ Switching language: available in Simplified Chinese, Traditional Chinese and English

⑥ Configuration options: debug window for debugging

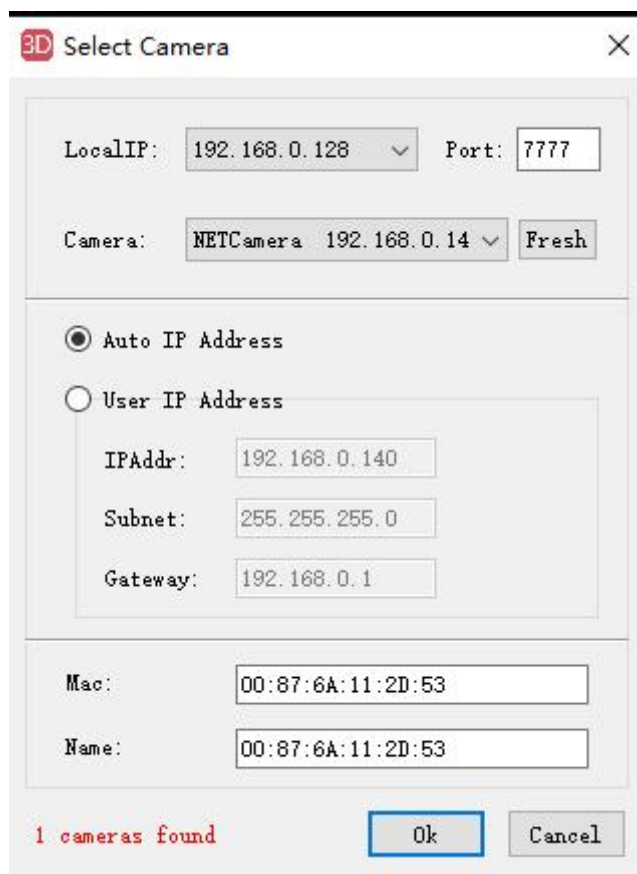


Fig. 1.31 Camera selection



3D Camera setting -- 网络相机192.168.0.140 ×

AE

Brightness 255

ISO 100

AWB

Red 79

Green 30

Blue 73

Contrast 26

HDR 209

NR 51

EdgeU 51

DetailU 51

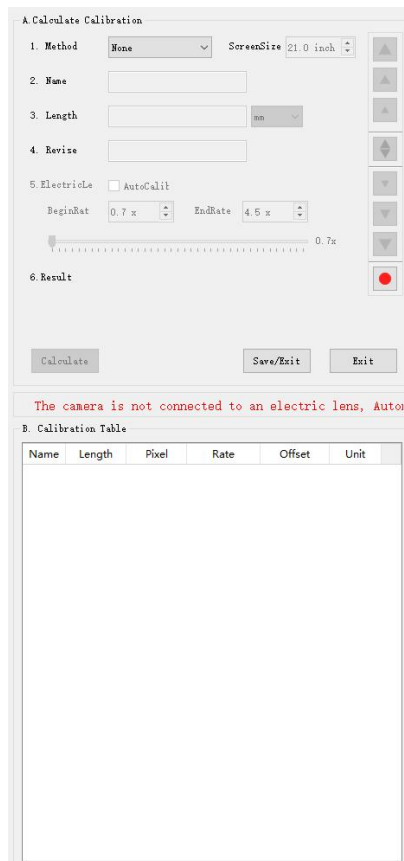
EdgeO 51

DetailO 51

GrayImg Freeze Mirror Flip

FPS:

Figure 1.32 Camera settings



① Choose the calibration method: according to the style of calibration plate, choose two-point line segment calibration or three-point circle for calibration

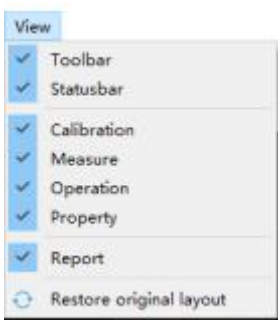
② Monitor selection: the size of the basic monitor to choose the size of the monitor, the default 21 inch

③ Calibration name: the fundamental magnification and objective lens to the calibration magnification to name

④ Calibration size: according to the actual size of the calibration plate for calibration

⑤ Correction value: If there is a difference between the product and the actual calibration, you can add a correction

1.4 Tools



① **Toolbar:** display and hide the tools under the submenu, see Fig. 1.41 for details

② **Status bar:** display of the number of connected cameras and version models, see Fig. 1.42

③ **Calibration bar:** Calibration window with direct magnification selection, see Fig. 1.43

④ **Measurement bar:** the location of the measurement tool, you can select the tool for measurement, see Fig.



1.44

⑤ Operation bar: operation window, where the 3D master diagram can be displayed, see Fig. 1.45

⑥ Properties bar: the parameters of the measurement tool such as line width and blue colour can be set, see Fig. 1.46

(vii) Report bar: the position of the measurement results is displayed. See Fig. 1.47 for details

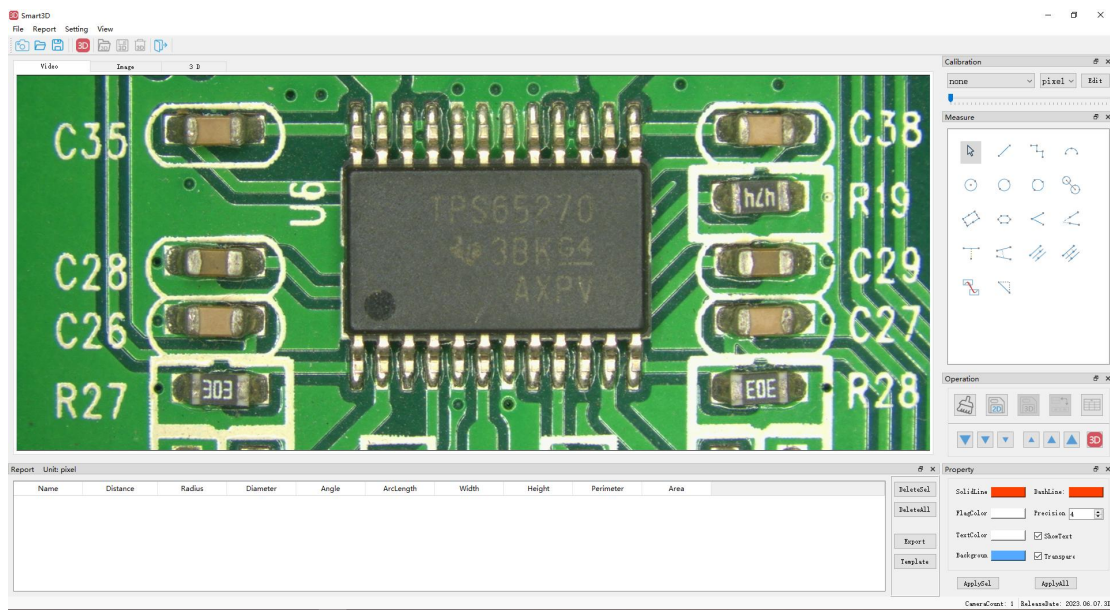


Figure 1.41 Toolba

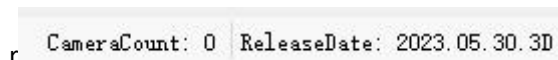


图 1.42 状态栏



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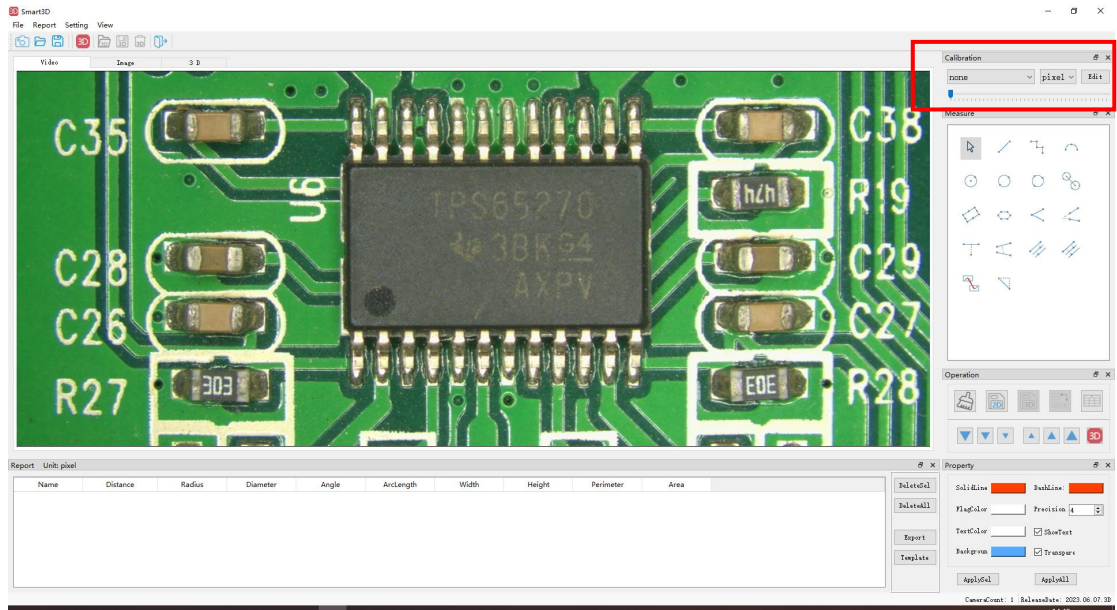


Fig. 1.43 Calibration bar

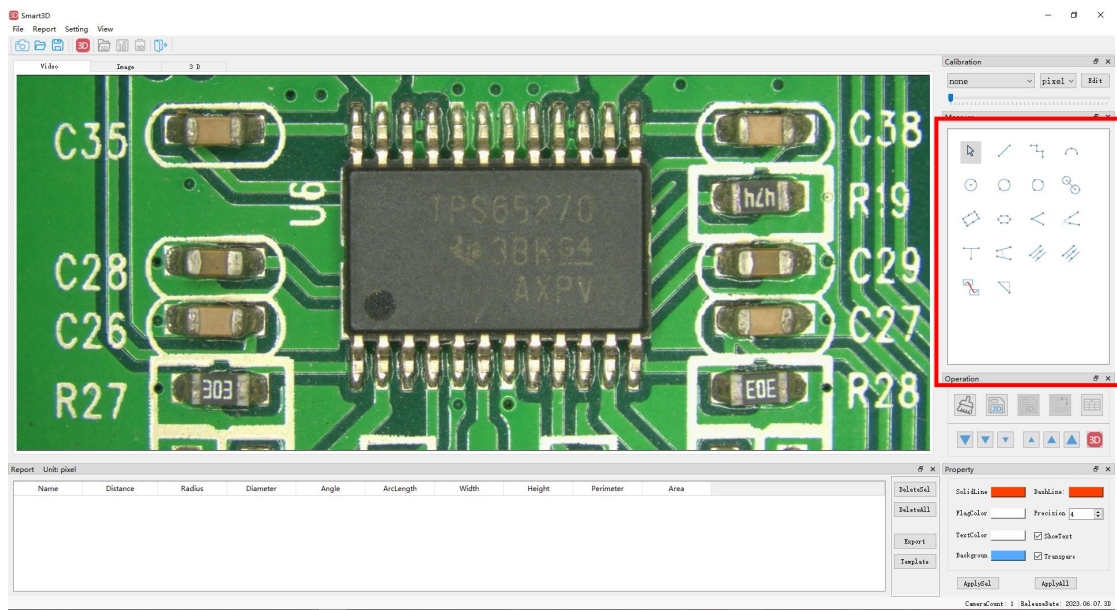


Figure 1.44 Measurement column



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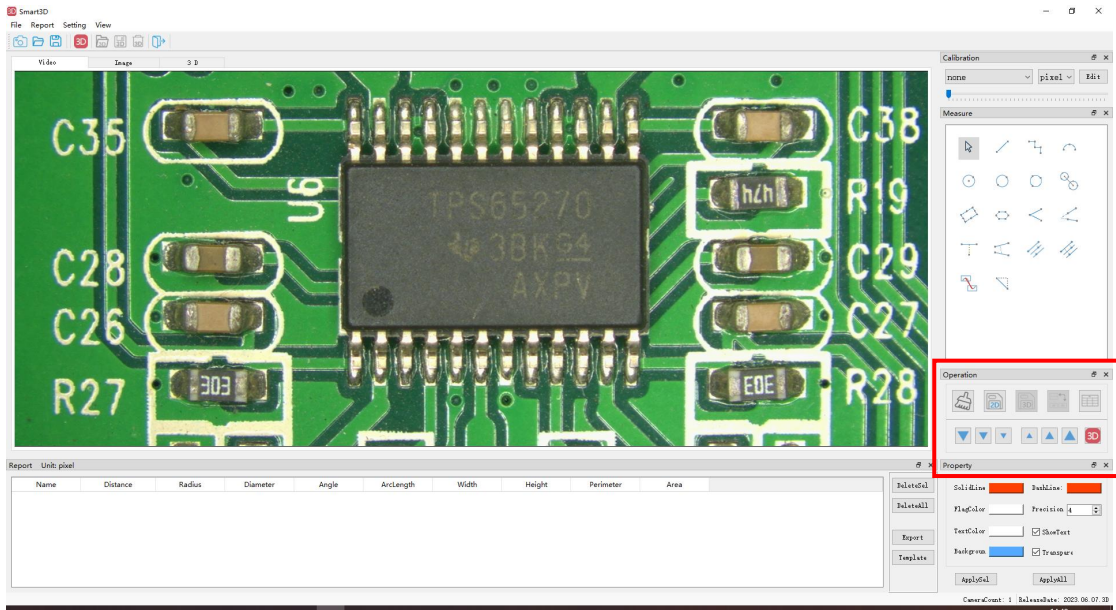


Fig. 1.45 Operation bar

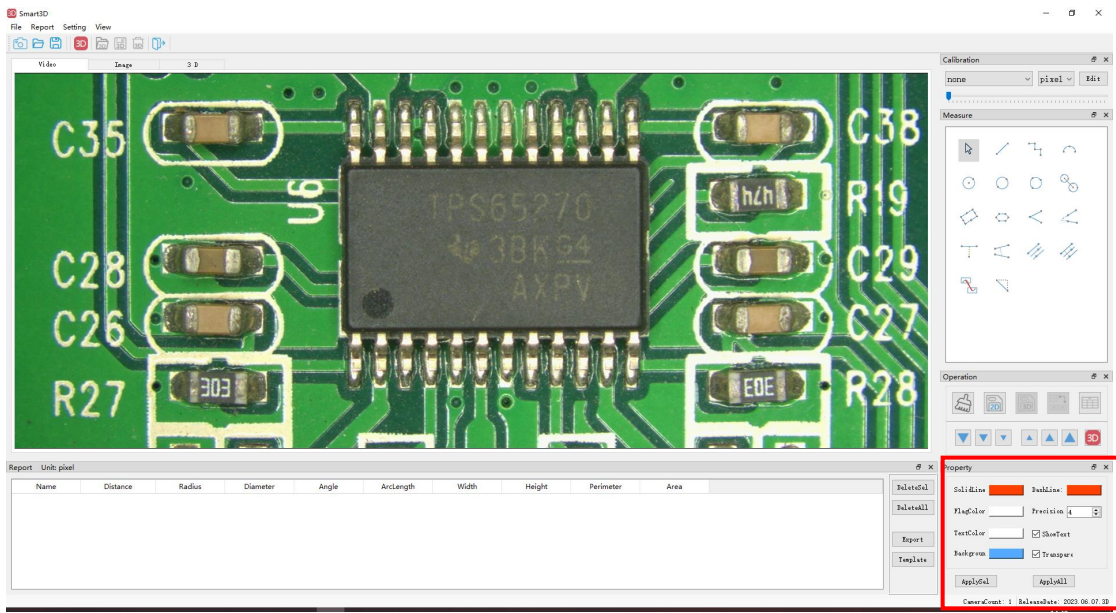


Figure 1.46 Property column

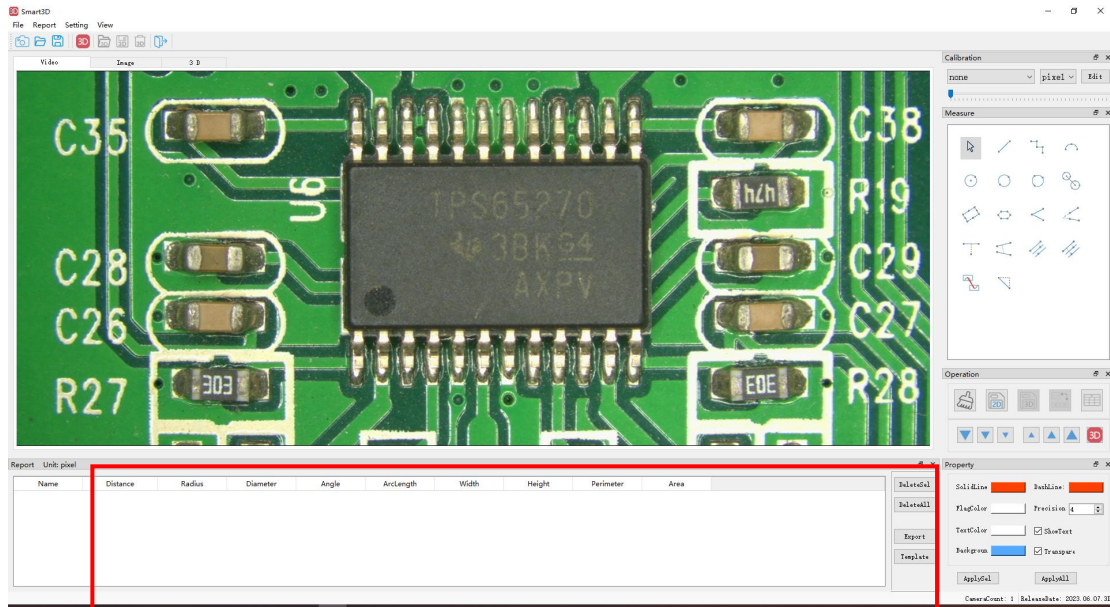


Figure 1.47 Report column

二.3D modelling

2.1 Perform 3D modelling

In the toolbar or action bar, select the icon to enter 3D modelling mode, as shown in Figure 2.1



Figure 2.1 3D modelling



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1. Firstly, make the object to be measured clear by adjusting the height so that it is imaged clearly, and after it is clear, select the reset button to reset the zero point.
2. After the reset, select move up or down to make it move to a clear position on the other side and continue to move a little beyond the clear position. After moving in place, perform up or down point positioning. (T is the marker point for upward movement, B is the marker point for downward movement)
3. Reverse the operation with the second step, e.g. if you move up the first time, reverse the second time and move down, and vice versa. Again over the clear position for another point position.
4. select the number of samples, it is recommended that the greater the depth of field of the product, the greater the number of samples, with more samples, the running time will grow. After selecting the number of samples, the sampling spacing will be calculated automatically according to the spacing without manual selection.
5. Sampling direction setting, set from top to bottom or from bottom to top. The default is from top to bottom.
6. Filtering method, filtering of impurities at the edge of the product to eliminate interference, default bilateral filtering.
7. Process display and the image displayed on the monitor during operation, choose between depth-of-field composite image and real-time dynamic video, default depth-of-field composite image.
8. Select start, you can

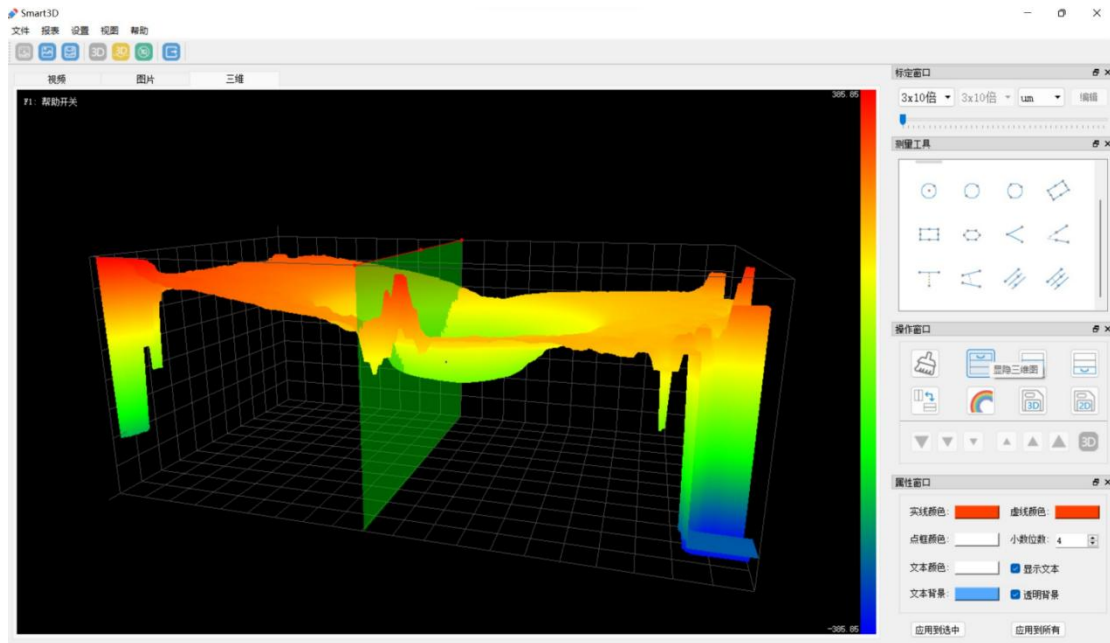


Fig. 2.2 3D synthesis in progress



This time you can see that the operation window has changed
Clear measurement data Show only 3D image Show fluctuation
curves Show measurement table Up and down view Convert left
and right view Pseudo colour chart 3D image save 2D image save

2.2 False colour chart:



Generates a pseudo-colour map based on the distribution of colours, so that it is possible to know the distribution of colours and whether the material is homogeneous.