

POP 2 3D SCANNER

Quick Start Guide

V 3.0.1



POP 2 3D Scanner

Visit our official website www.revopoint3d.com for the latest software and documents.

⚠ The operating temperature range of this product is 0°C to 40°C (32°F to 104°F). It does not meet military, industrial or even the full commercial operating temperature range. Operate the product appropriately and only in situations limited to this temperature range.

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Product Overview

Introduction

The newly developed POP 2 3D scanner has gathered functions of a handheld 3D scanner and a desktop 3D scanner, bringing together the company's latest scientific research results. It adopts self-developed 3D camera hardware technology and high-speed intelligent chip, which contributes to a higher performance and directly outputs accurate depth information of an object.

The core hardware of POP 2 applies the principle of binocular & Micro-structured light, and with the help of the proprietary micro projecting chip, POP 2 ensures fast acquiring high-accuracy (up to 0.05mm) 3D point cloud data. And it supports texture scanning to directly generate vivid 3D models for color 3D printing. As of intelligent algorithms, POP 2's built-in high-performance 3D calculation chip can effectively ensure smoothly scanning without stalling even if it is used with an ordinary computer.



System Requirements



Windows: Win 8 / 10 / 11 (64-bit)
Memory: ≥ 8G
*The Windows 7 is out of support.



Mac with Intel×86 chip: Mac OS 10.15 and models after;
Mac with Apple M1 chip: MacOS 11.0 and models after;
Memory: ≥ 8G



Android: ≥ Android 9.0
Memory: ≥ 6G
*HarmonyOS is supported.



iPhone, iPad Pro, iPad & iPad Air with Apple M1 chip;
iPad: 6th generation iPad and models after;
System Version: ≥ iOS 13.0

USB mode or Wi-Fi Mode Support

	Windows	Android	iOS/iPad	Mac
USB Mode	YES	YES	Not Supported	YES
Wi-Fi Mode	YES	YES	YES	YES

Software Installation

Three softwares are provided: Revo Scan, Revo Studio and Revo Calibration.

The Revo Scan is a scan software that assists in scanning objects and obtaining 3D models; the Revo Studio is a post-process software for postprocessing the scanned 3D models; the Revo Calibration is a Calibration Software that adjusts the parameters of POP 2 for ensuring good results.



Download the software above at our website: revopoint3d.com/download-2/

Indicator Legend



Blue Light:
Starting



Green Light:
Working Correctly

⚠ Do not look at the front light of the projector closely for a long time! Refer to Standards for Class 1 Lasers for details.

PC: Connect to POP 2 3D Scanner

Both Mac and Windows PC can be connected to POP 2 3D scanner via USB cable and Wi-Fi. In the following chapter, we are going to introduce the USB mode and Wi-Fi mode connections: for USB mode, we will take the Windows device

connection as the example, and for the Wi-Fi mode, take the Mac device connection as the example.

Windows: Connect to the POP 2 3D Scanner via USB Cable

Hardware Connection

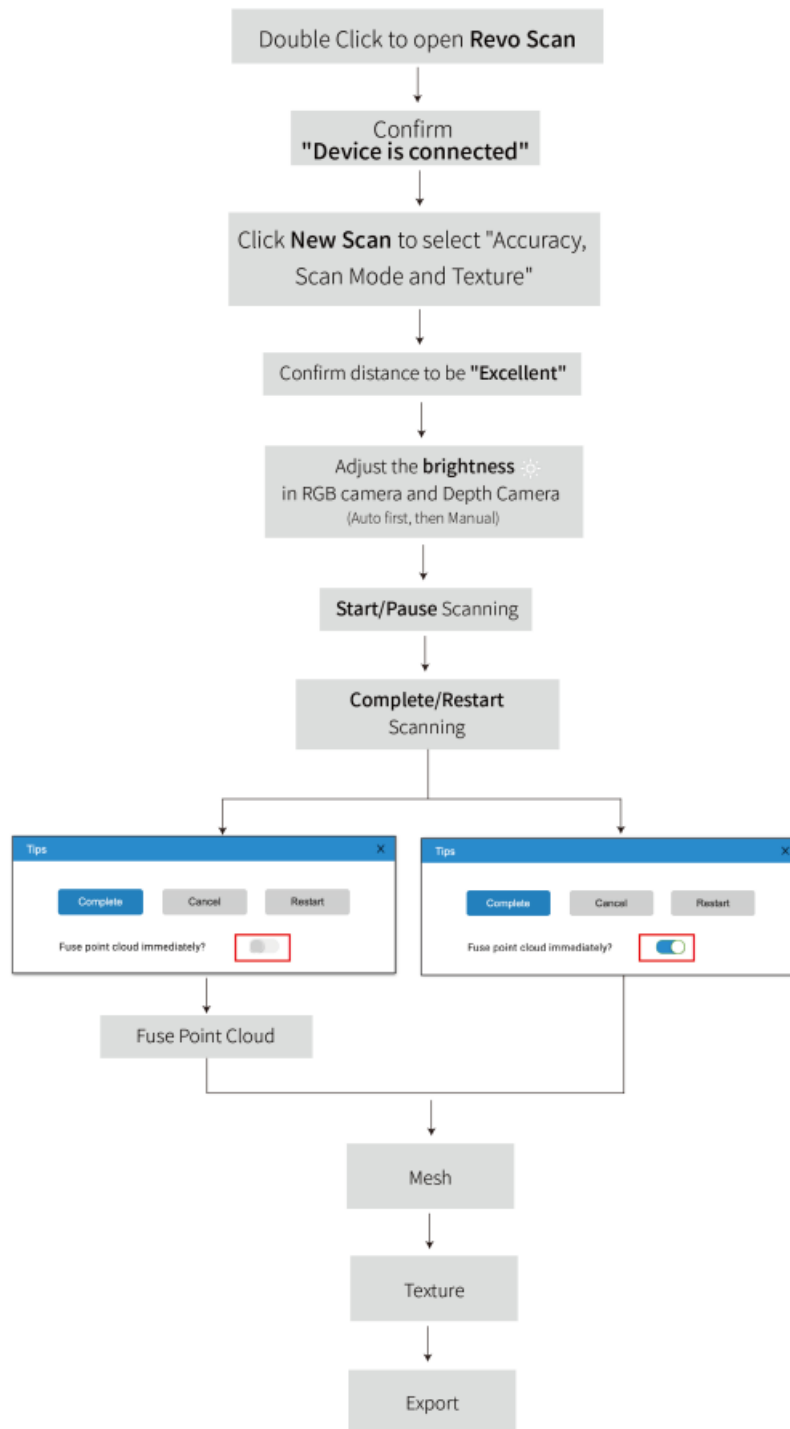


Make sure the POP 2 scanner is connected to a **USB 3.0 or above** port, because USB 2.0 will not supply sufficient operating current. An indicator of this is repeated power resets and lost connections.

Operation Workflow

OVERVIEW (details on following pages): Double Click to open Revo Scan---> Confirm "Device is connected" (displays after several seconds) ---> Click *New Scan* to select Accuracy, Scan Mode and Texture ---> Confirm distance to be "Excellent" ---> Adjust the brightness in RGB camera and Depth Camera (Auto first, if available, then Manual) ---> Start/Pause Scanning ---> Stop to Complete/Restart Scanning ---> Fuse Point Cloud ---> Mesh ---> Texture (only available for Colorful scans) ---> Export the 3D model

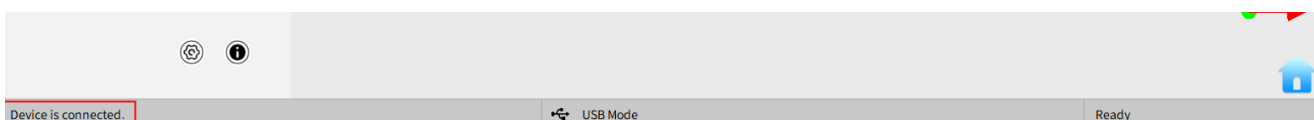
NOTE: The screenshots in this tutorial are from the Windows version of Revo Scan. There will be slight differences in each of the four device versions.



Confirm "Device is connected"

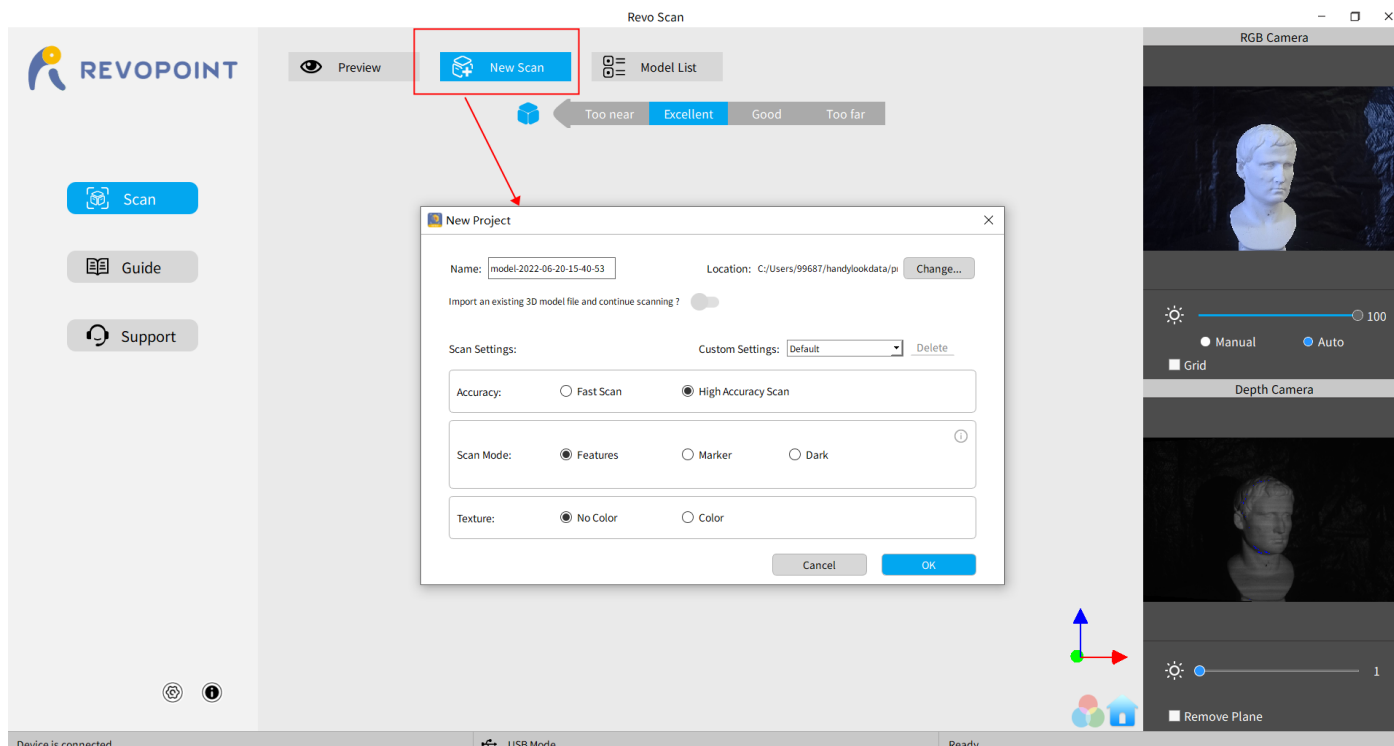
After opening Revo Scan, confirm the device connection status:

If the device is connected successfully, the left end of the status bar displays: Device is connected. Otherwise, please check the connection. This happens typically 8-10 seconds after the POP/POP 2's status LED on the rear panel turns blue.



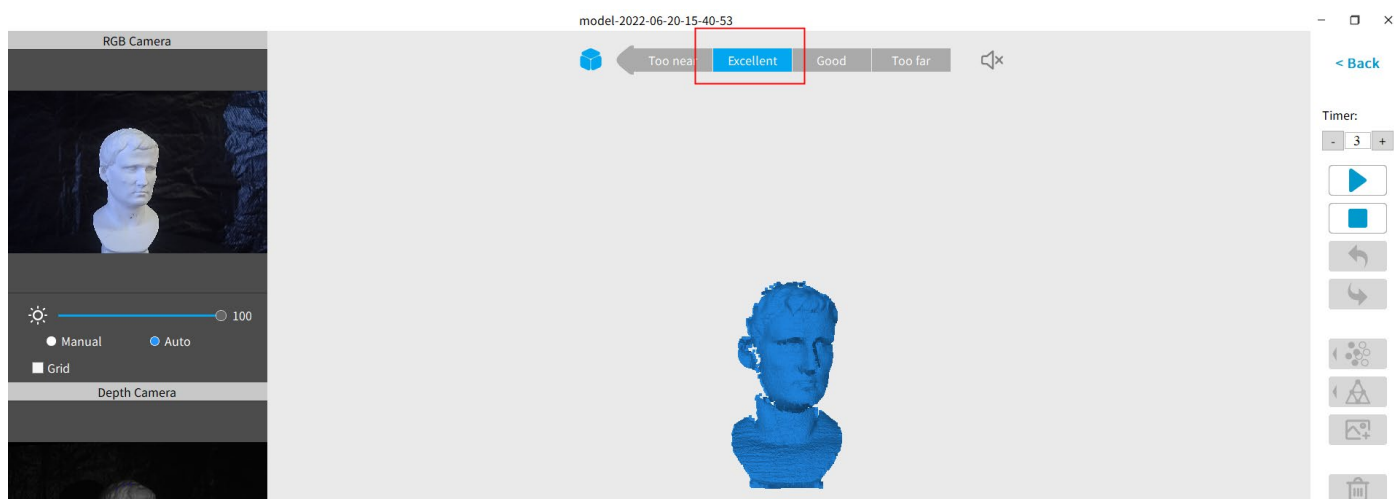
Click New Scan to select Accuracy, Scan Mode and Texture

Once connected successfully, the device is ready to scan.



Confirm distance to be "Excellent"

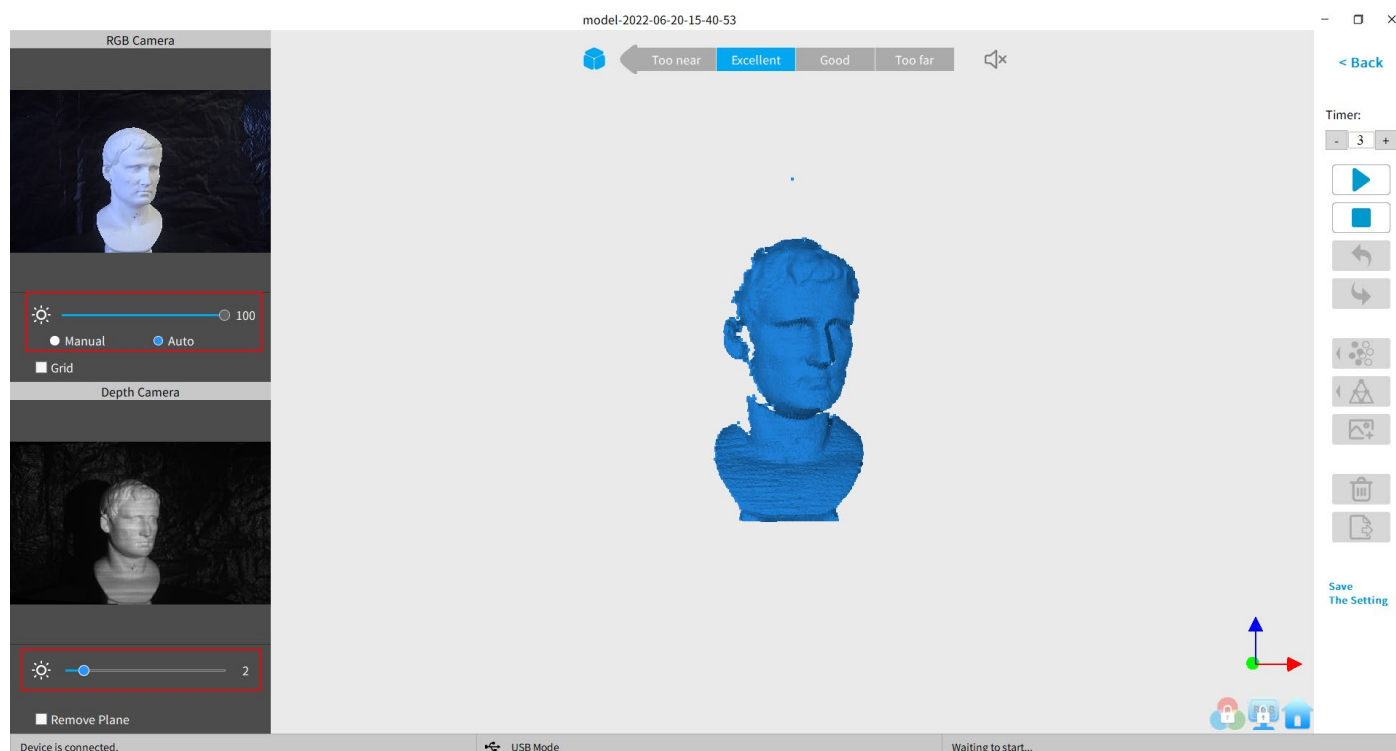
After specifying the Accuracy, Scan Mode and Texture options, press "OK" to enter the scanning page. The top area of the 3D Model Preview window shows the distance. Position the POP 2 scanner or the object to confirm an **"Excellent"** distance and keep it during scanning. Higher-resolution scans are possible in the "Too near" range, but tracking is more likely to be lost.



Adjust the brightness in the RGB Camera and Depth Camera

Adjust the Sun Icon  on both of the smaller displays (for Android and iPhone smartphones, click on the Gear icon in the

upper right of each small window to make the controls visible). If available, try *Auto* first, but switch back to *Manual* before capturing data to prevent lockups.

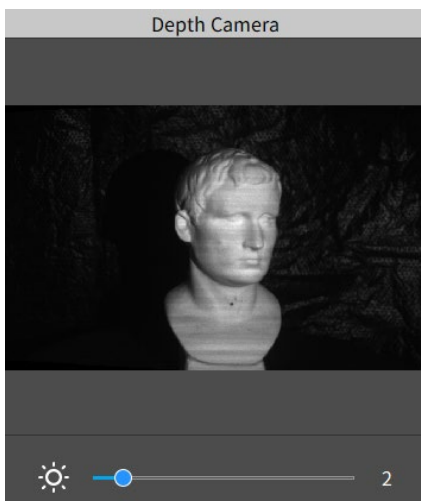


Note:

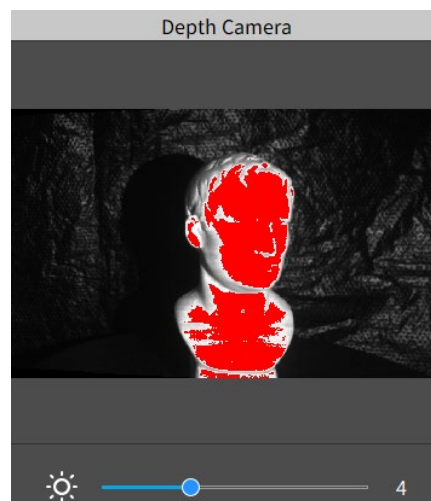
Underexposure (in Blue)



Perfect

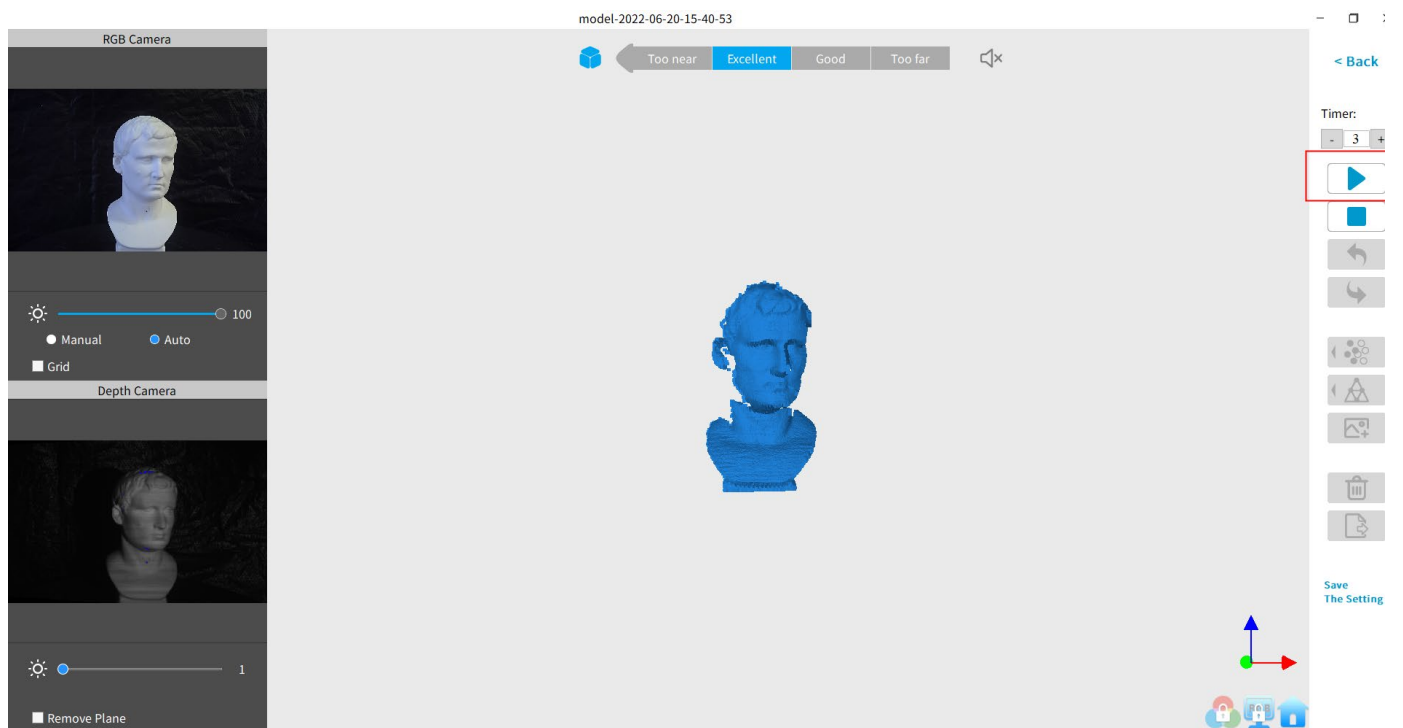


Overexposure (in Red)

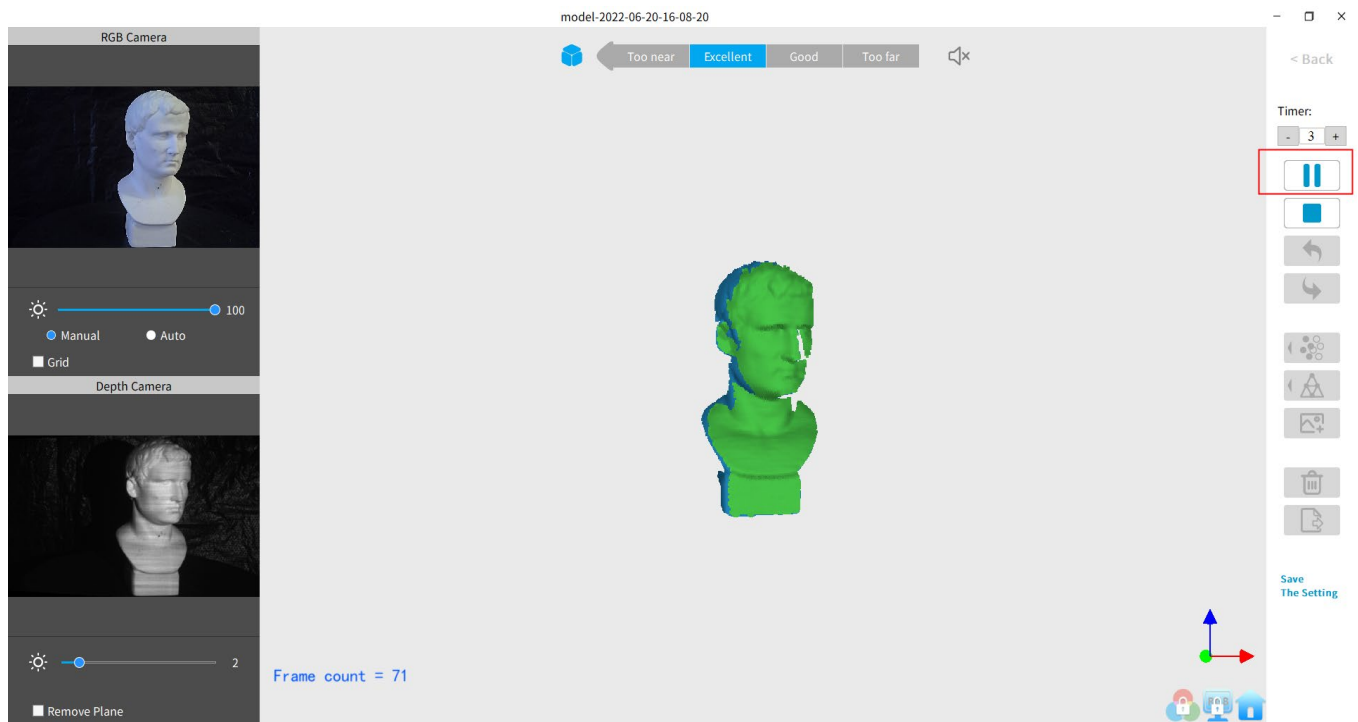


Start or Pause Scanning


Click ▶/|| to Start/Pause scan. The number above the Start button is the countdown before scanning starts.

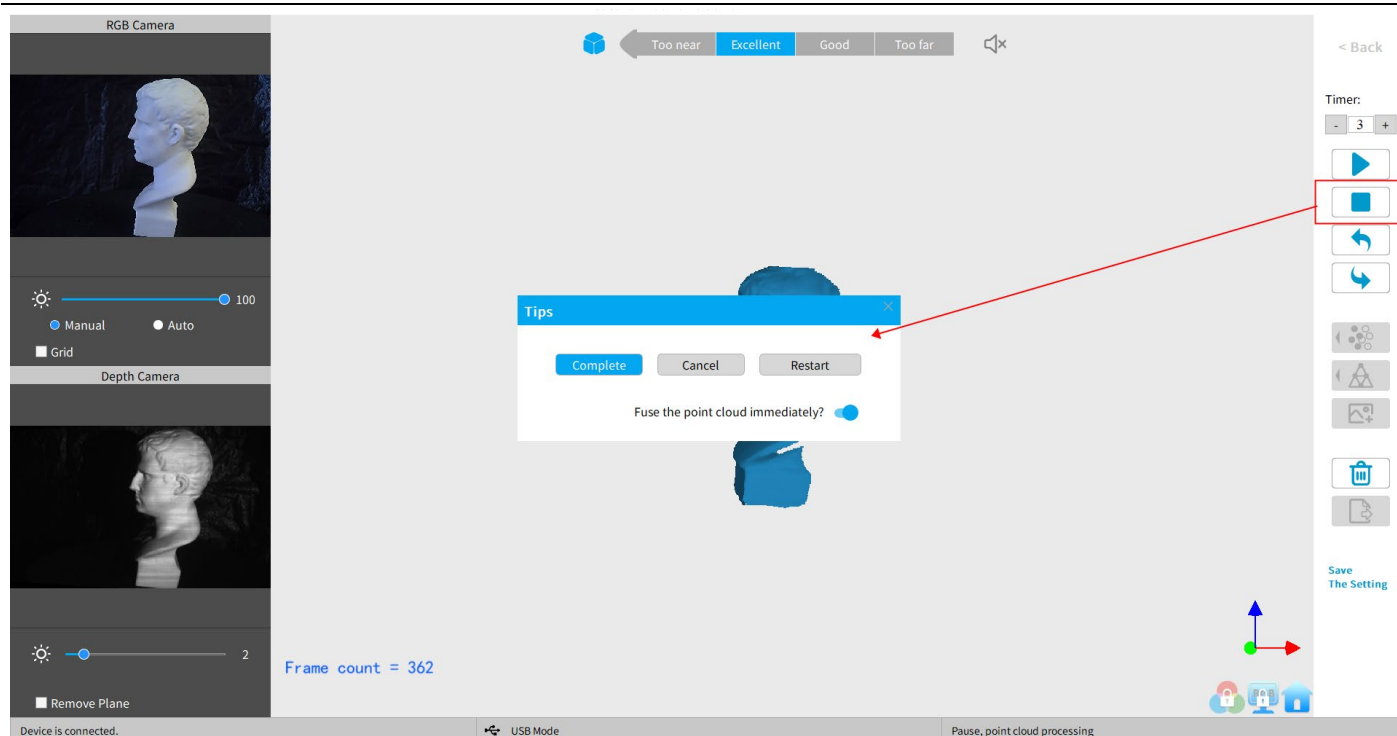



During scanning, please make sure the point cloud in the lower-left window is adequate and the distance remains "Excellent". Move the scanner slowly and deliberately during scanning while keeping a relatively fixed distance. Already-scanned areas of the model are displayed in blue. And the current capturing frames are in green. Unless there are holes in the scan, there is no advantage to continuing to scan the blue area (and it will waste memory and processing time).

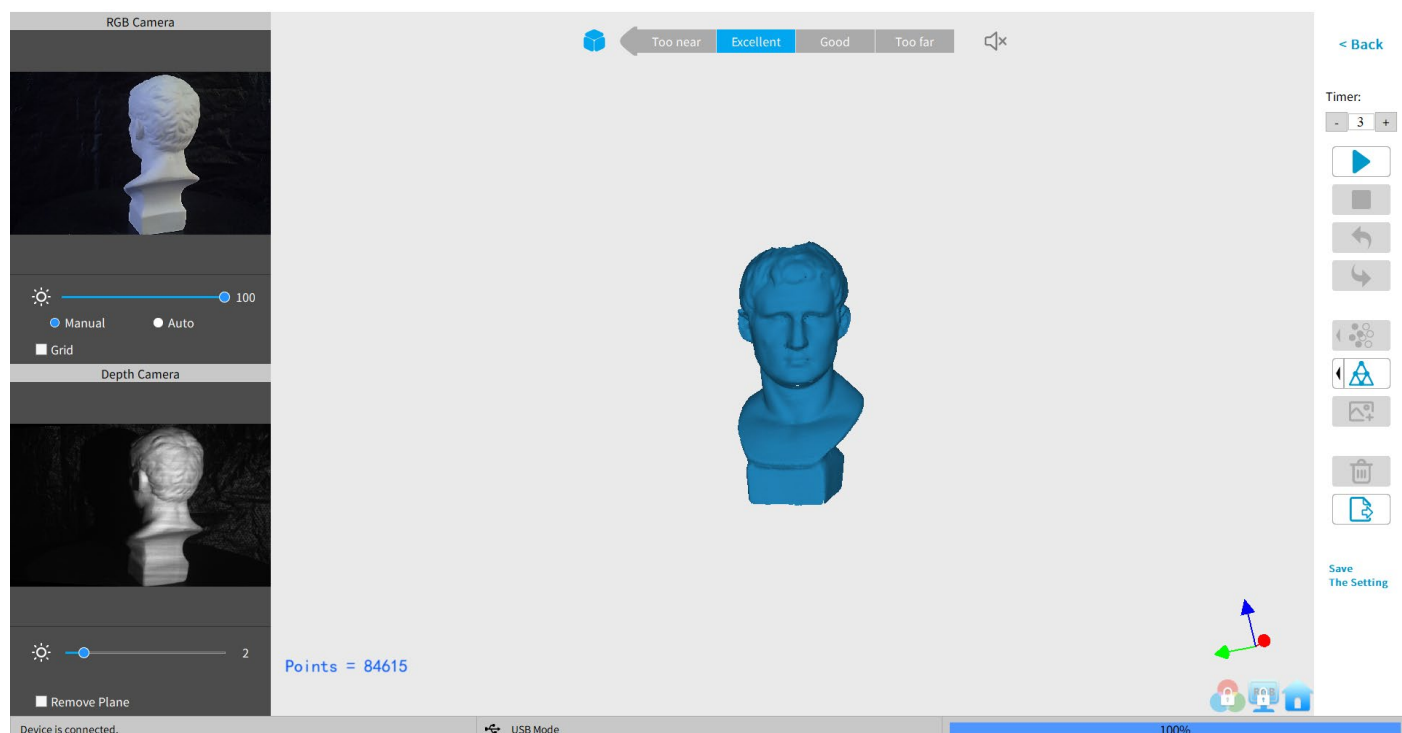


Complete/Restart Scanning

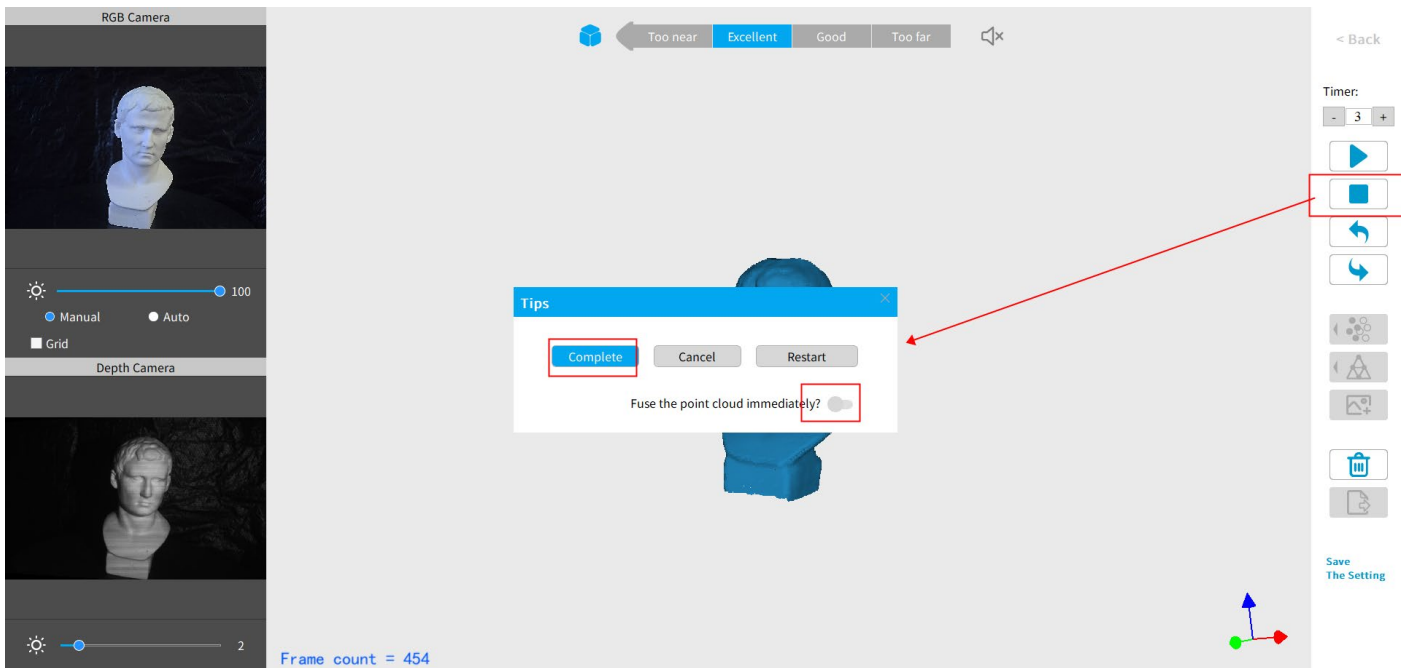
Click  and the "Complete" button in the popup to fuse the point cloud data, or press the "Restart" button to delete the data and return to the Preview section (p. 8).



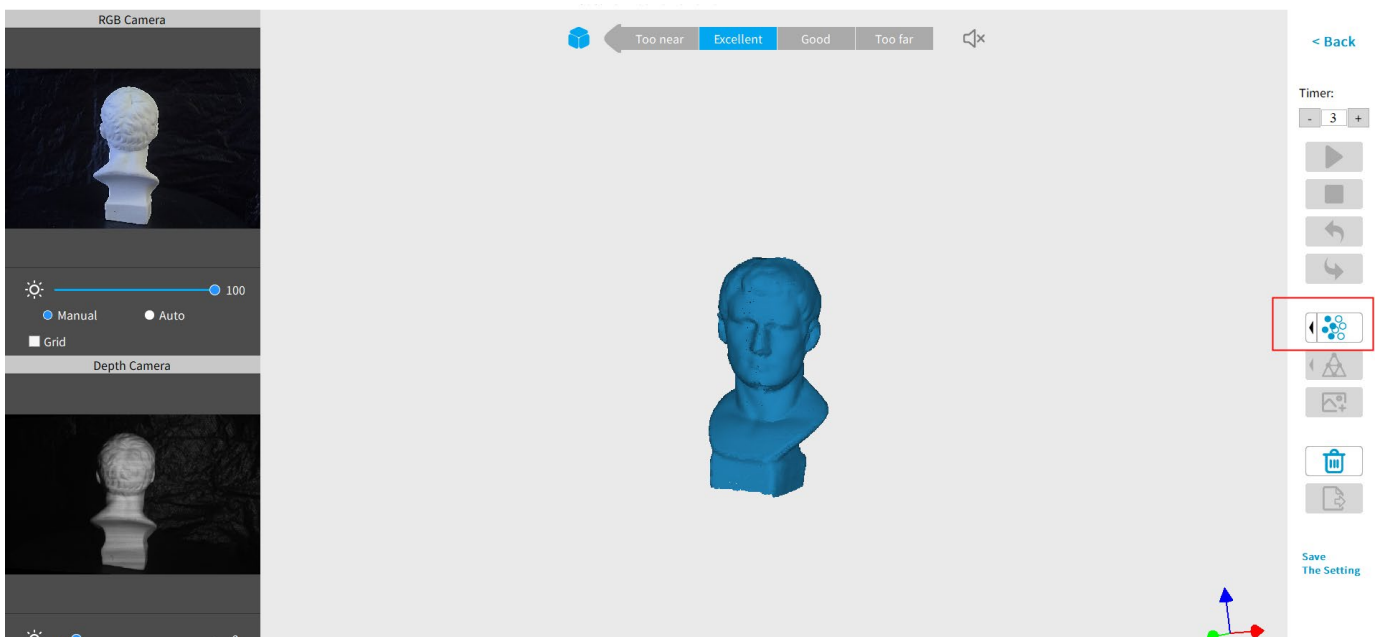
After clicking *Stop*  , it is possible to resume scanning (say, after repositioning either the POP/POP 2 or the object being scanned). If this is desired, then be sure to move the slider switch for “*Fuse point cloud immediately?*” to the right before clicking “*Complete*”. The scan data will be fused into a point cloud immediately. After this, meshing the point cloud data or resume scanning are available.



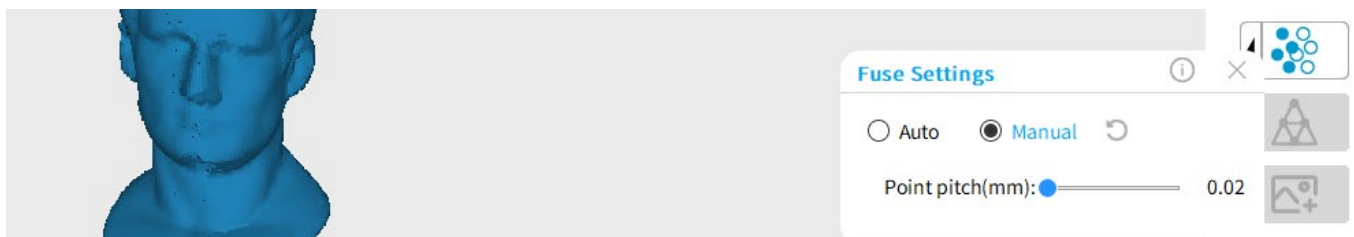
Inactive button in the  Stop's popup (so that Point Cloud Fusing is a manual operation, allowing changes in the preset):




After clicking “Complete”, the next step is to fuse the point cloud data, as shown below:

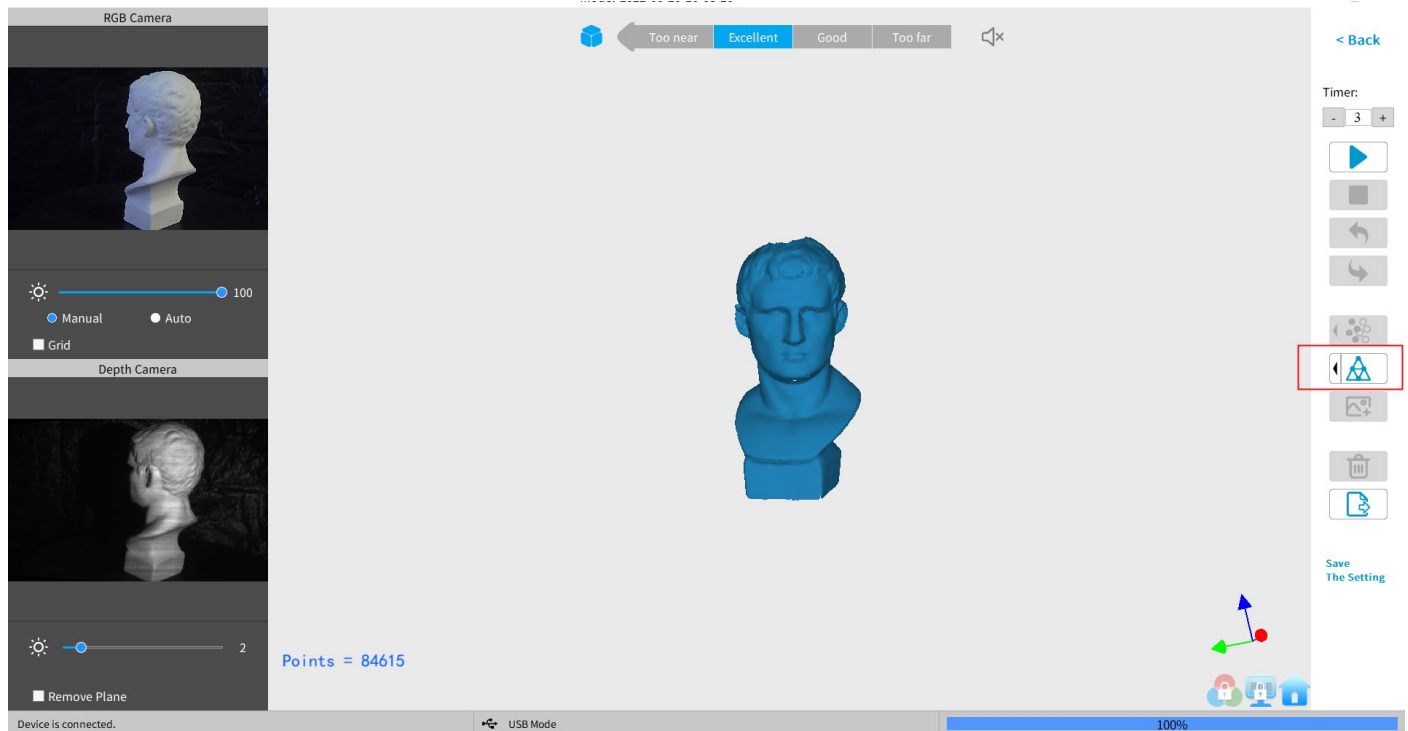


Click the drop-down arrow to display the Fuse setting. The smaller the point pitch, the better the result. But the point pitch of the fused object cannot be smaller than the point pitch of the original scan. The pitch point is at a minimum of 0.1 mm for the POP 2. Smaller pitch points result in more resolution, but also more processing time.



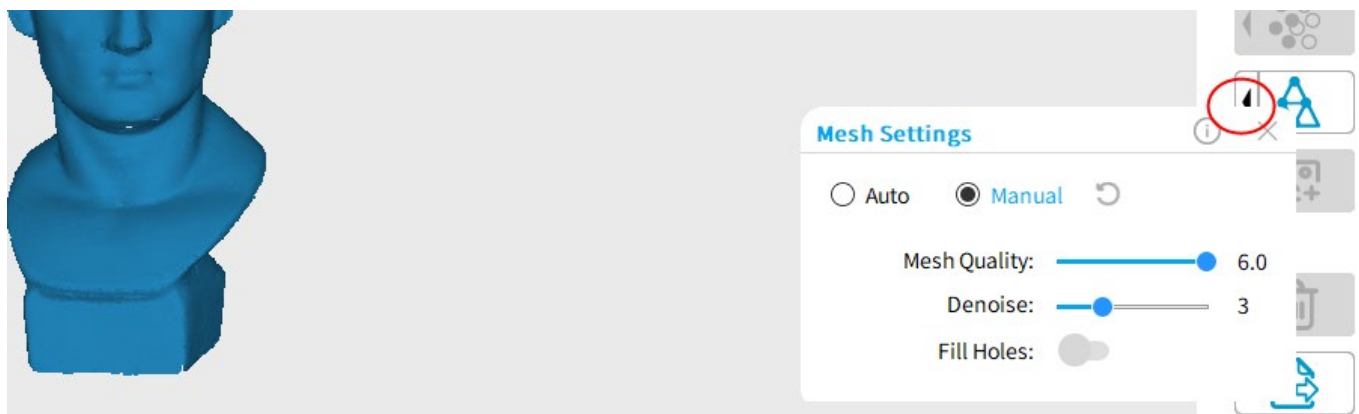
Mesh

Click *Mesh*  to start converting the scanned point cloud data into a mesh.




In the drop-down box, settings for Mesh Quality and Denoise are provided:

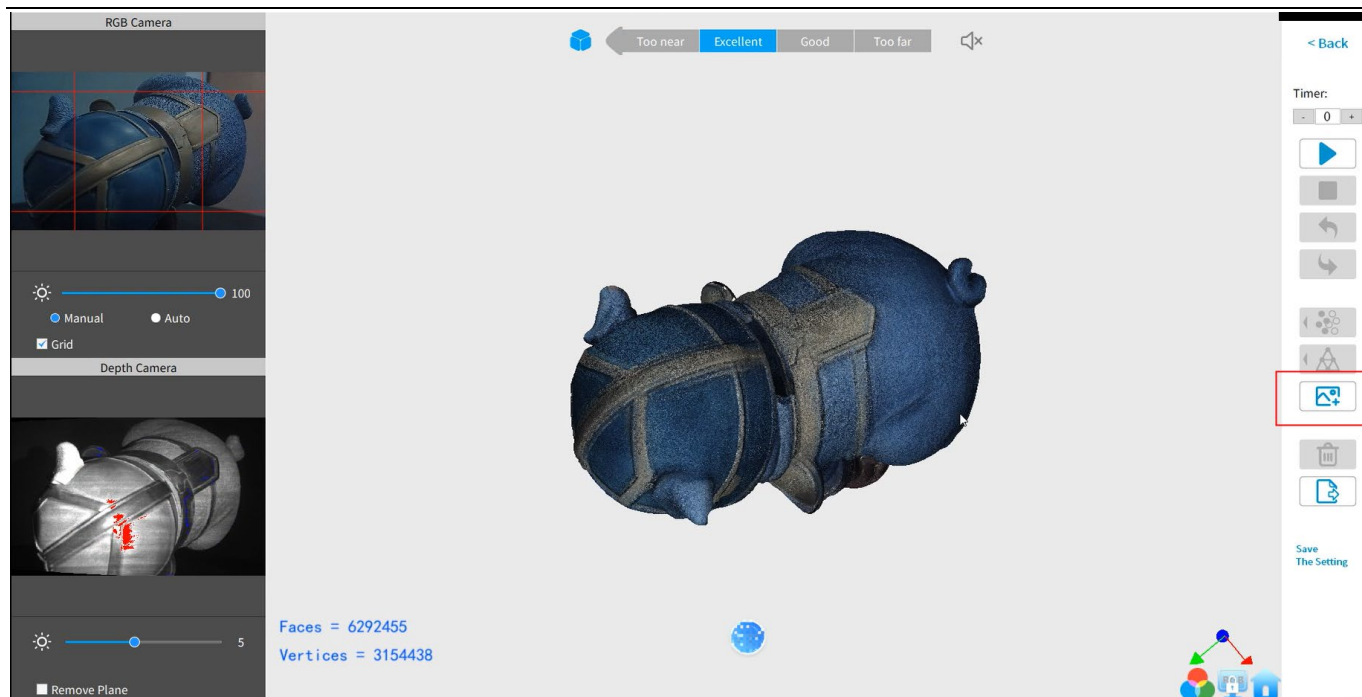
With higher Mesh Quality settings, more details are captured in the resulting model, at the expense of longer processing times. The higher the Denoise setting, the smoother the result. Depending on the object, high levels of noise reduction may result in lost detail. The results of the Fill Hole switch may be undesirable if the holes are too large.




Texture

The Texture function only applies to scans made with the "Colorful" option selected.

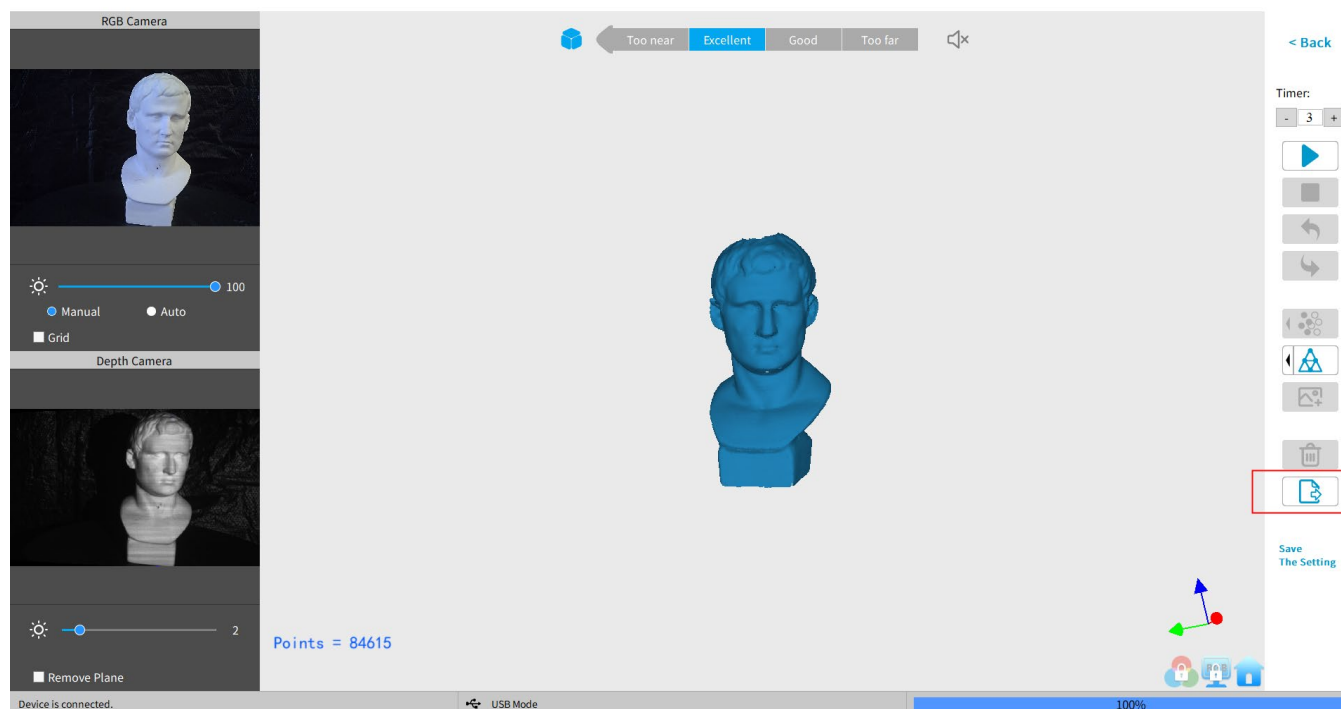
Click *Texture Mapping*  to apply color information of the scanned object to the model.



Export

Click *Export*  to export the 3D model. Select a file name and a file format (.PLY, .OBJ & .STL, are supported).

Note: If you scan the model for 3D print, please mesh the model and save it as a STL. file.



File Naming Conventions

Save the 3D model as a .PLY file

NAME.ply (Point Cloud)

NAME_mesh.ply (Mesh no color)

NAME_mesh_tex.ply (Mesh with color)

NAME_mesh_tex.jpg (Texture color image)

Save the 3D model (no Color/Texture) as an .STL file:

NAME.ply (Point Cloud) *

NAME_mesh.stl (Mesh no color) **

*Point clouds are saved in the PLY file format, because STL does not support point clouds

**Color models are not saved in the STL file format

Save the 3D model (with Color/Texture) as an .STL file:

Revo Scan does not support color scans in the .STL file format, so they are saved as .PLY.

Save the 3D model as an .OBJ file:

NAME.obj (Point Cloud)

NAME_mesh.obj (Mesh no color)

NAME_mesh_tex.obj (Mesh with color)

NAME_mesh_tex.mtl

NAME_mesh_tex.jpg (Texture color image)

NOTE:

NAME_mesh_tex.obj, NAME_mesh_tex.mtl & NAME_mesh_tex.jpg are the three components of a color 3D model in the OBJ file format.

Mac: Connect to the POP 2 3D Scanner via Wi-Fi

1. Power the POP 2 3D scanner with a power bank or an AC adapter.
(Do not plug it into your Mac, or it will be USB mode by default.)

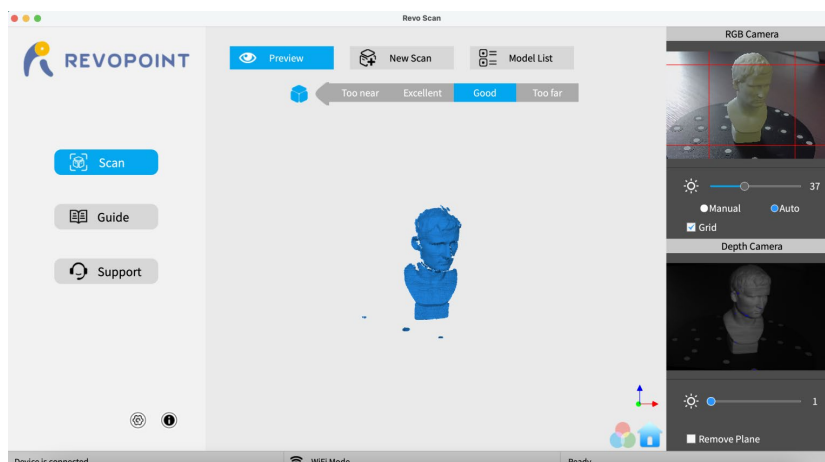


2. Find the Wi-Fi provided by the POP 2 in your Mac's Wi-Fi list.

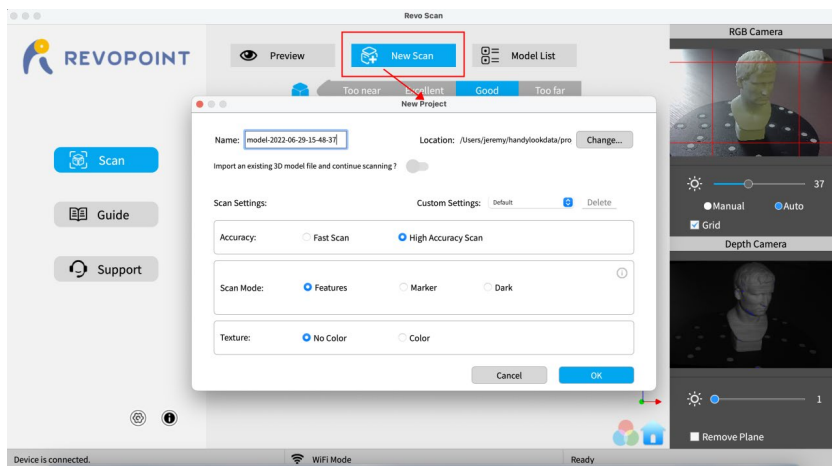
Usually, it is **POP2-REVO-A21AXXXX**. And enter the password - **Revopoint3d**.



3. Open “Revo Scan” software and wait for a while for device connection after the Wi-Fi is connected successfully.



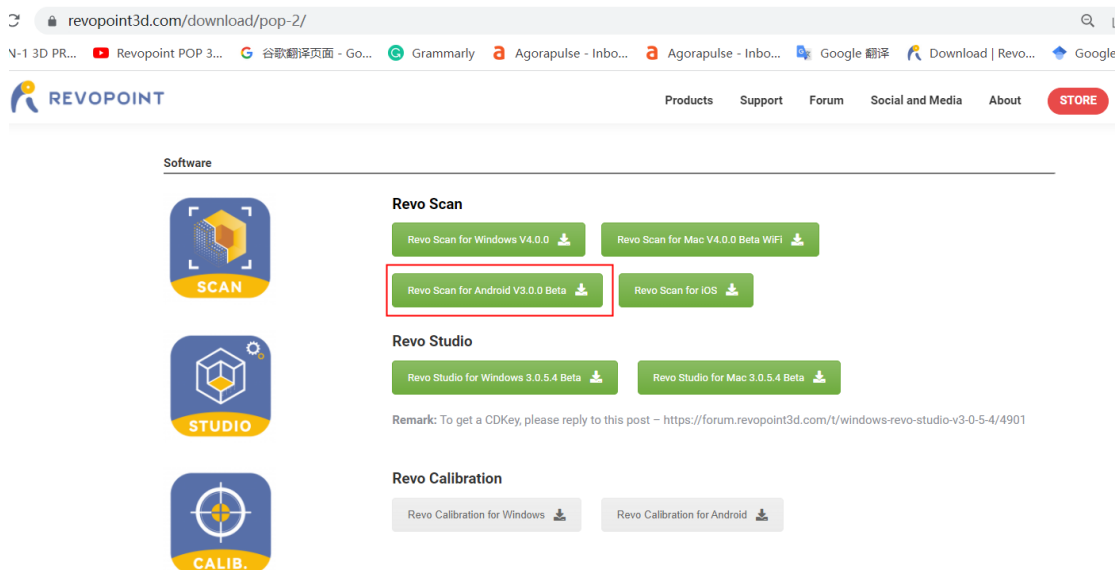
4. Click “New Scan” to scan the object.



Smartphone Connecting to POP 2 3D Scanner (Wi-Fi & USB Mode)

Android Smartphone Connects POP 2 Via Wi-Fi

1. Download the Software-Revopoint Scan at Revopoint official website:
<https://www.revopoint3d.com/download-2/>



2. Power the POP 2 3D scanner on with a power bank or other power supply;

Note: Don't take your PC as the power supply when scanning via Wi-Fi.



3. Connect to the Wi-Fi Provided by the POP 2;

The default SSID is: **POP2-REVO-XXXXXXXX**

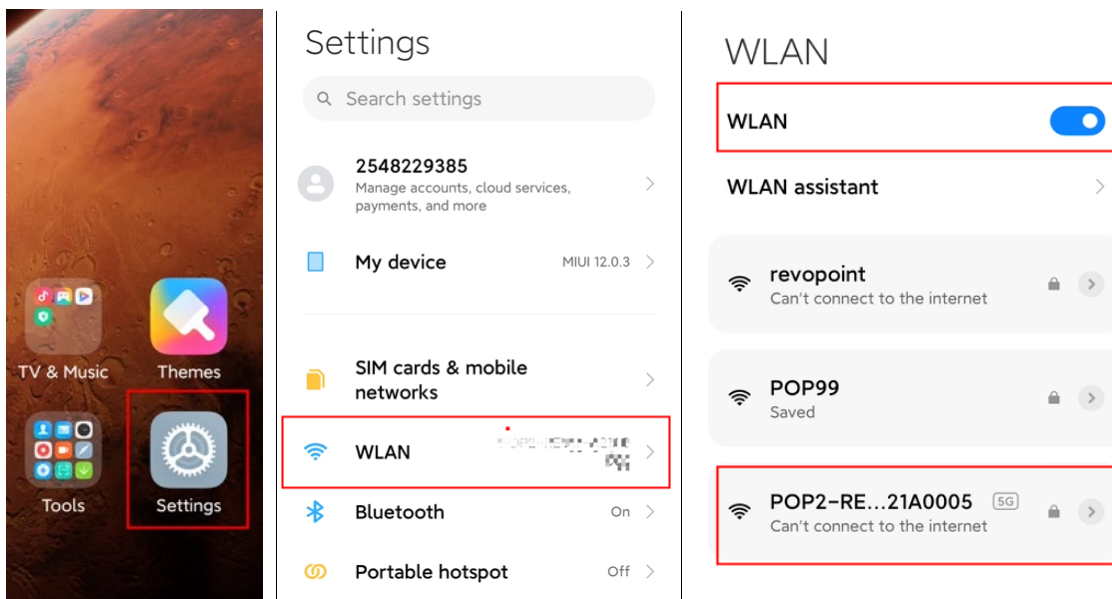
The default Password is: **Revopoint3d**

For example:

If the Serial Number of a POP 2 3D scanner is: A21A0005206F00A54.

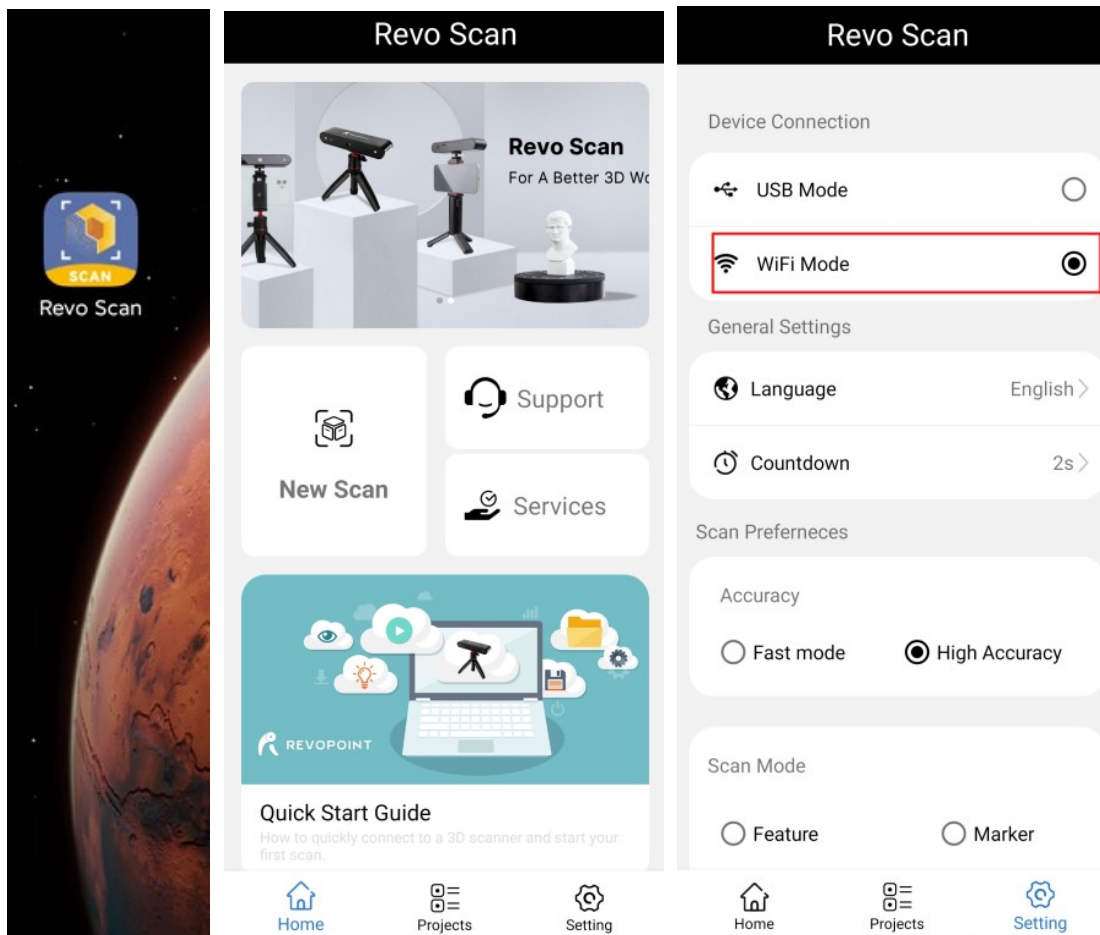
The Default SSID: POP2-REVO-A21A0005

The Default Password: Revopoint3d

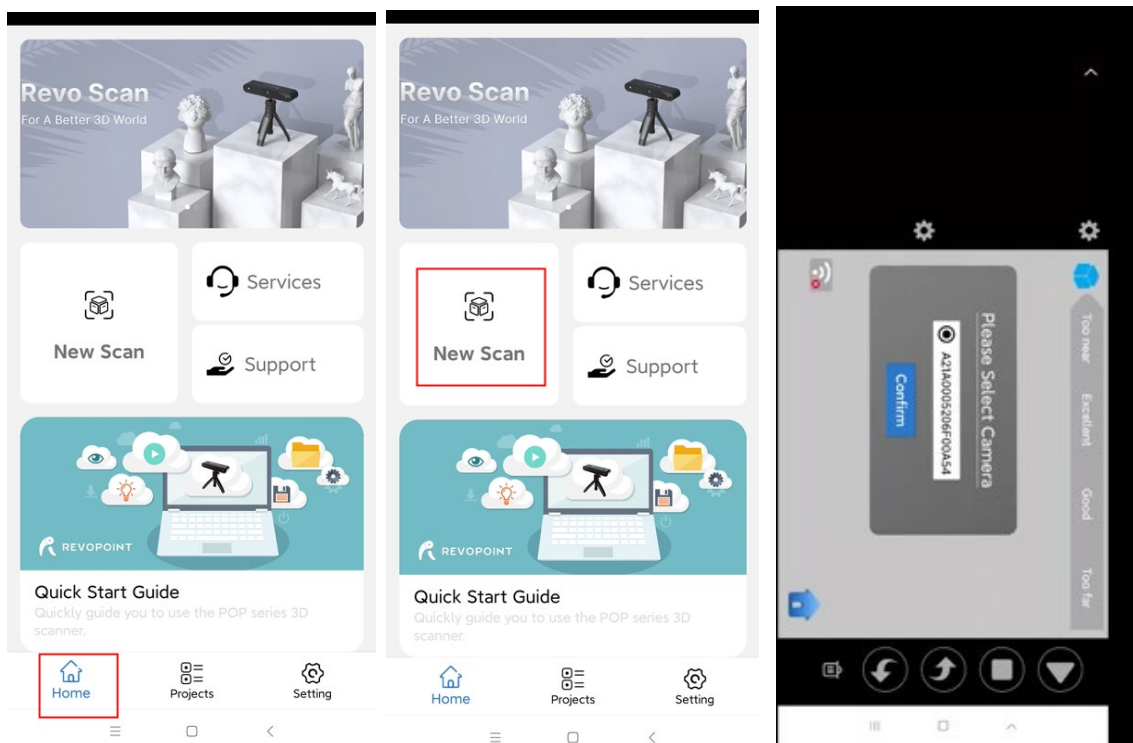


4. Open Revo Scan to confirm **Connection Mode** and **Scan Settings**;

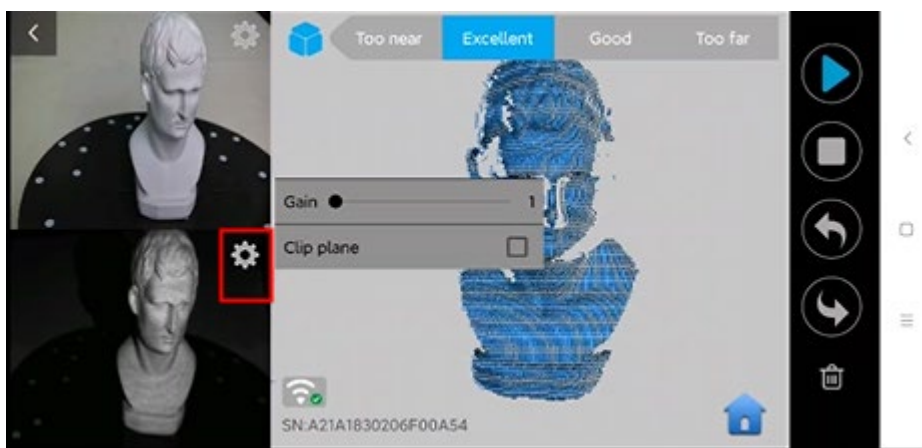
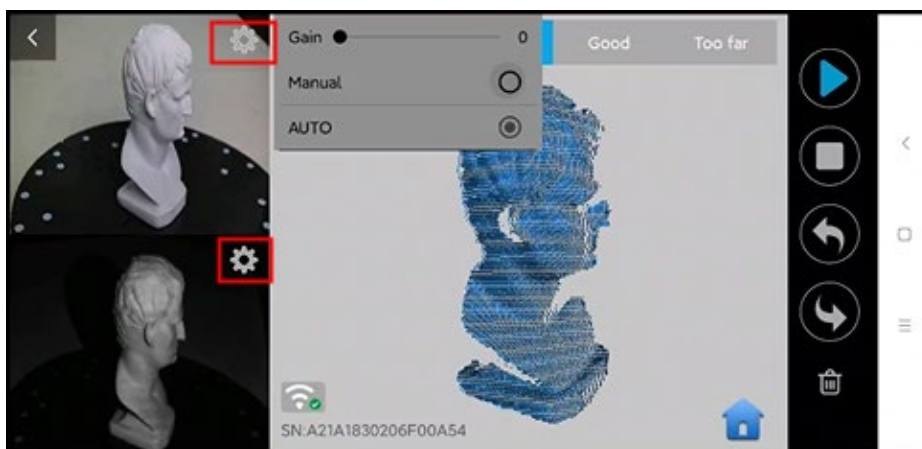
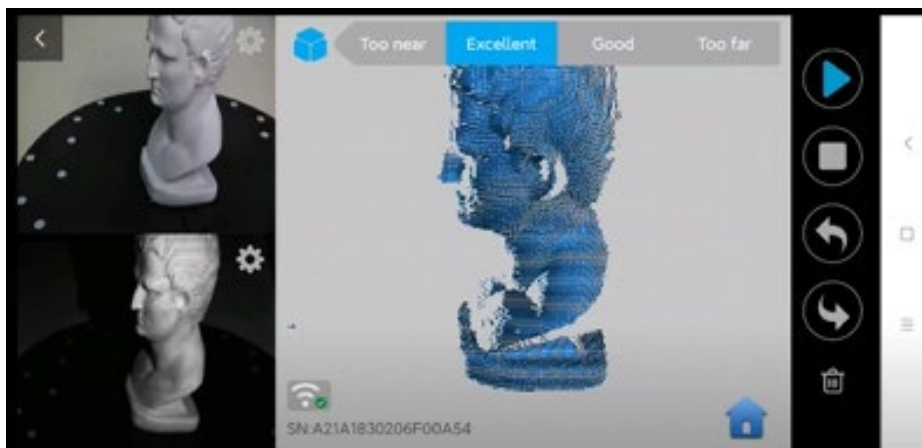
Before scanning, select proper **Accuracy**, **Scan Mode**, **Texture** and **Model Format** according to your demand.



5. Back to Home and authorize the camera;



6. Adjust the brightness in RGB and depth camera;

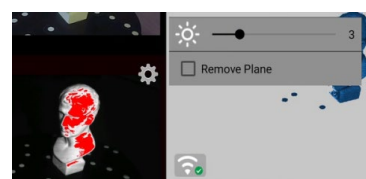
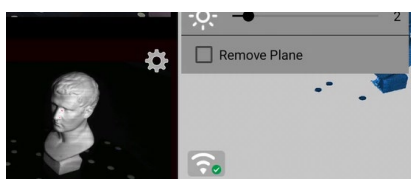
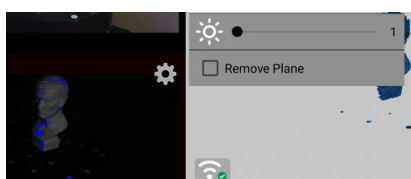


Note:

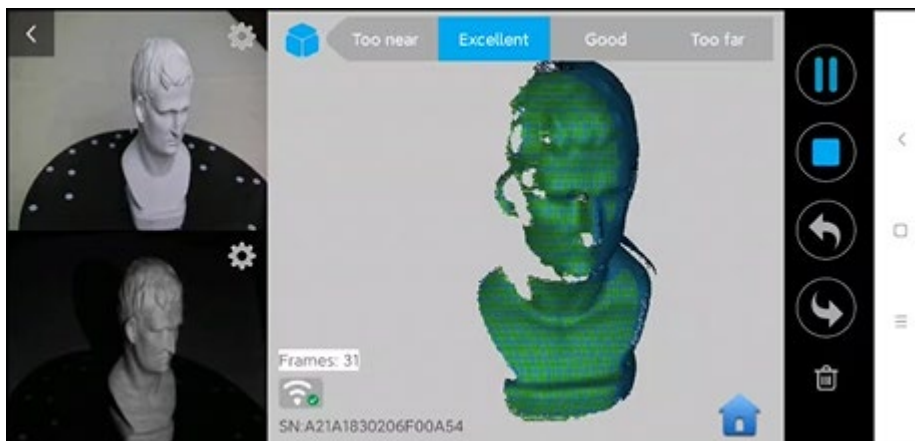
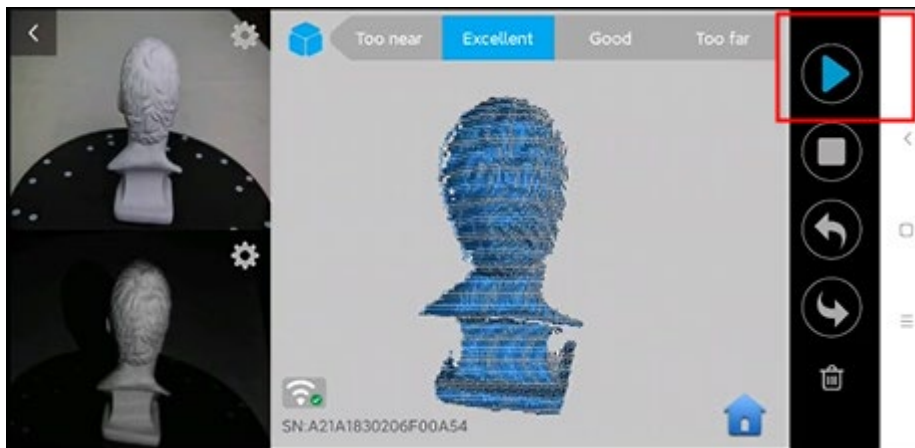
Underexposure (in Blue)

Perfect

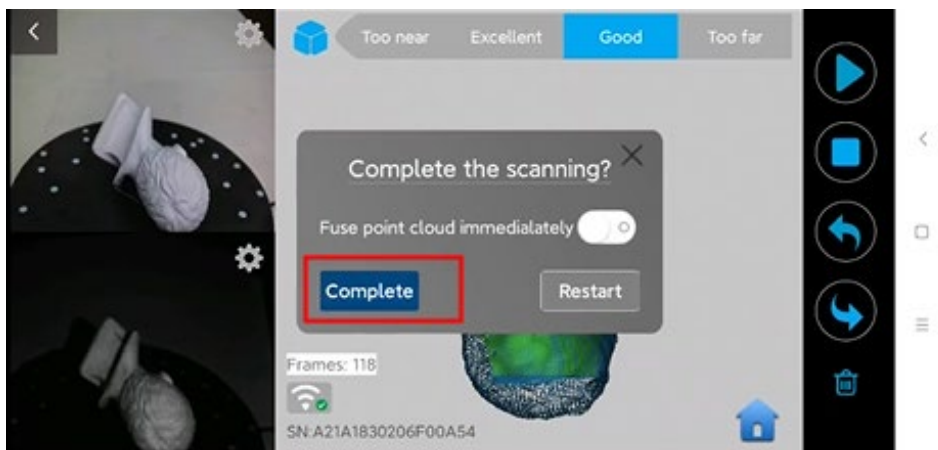
Overexposure (in Red)

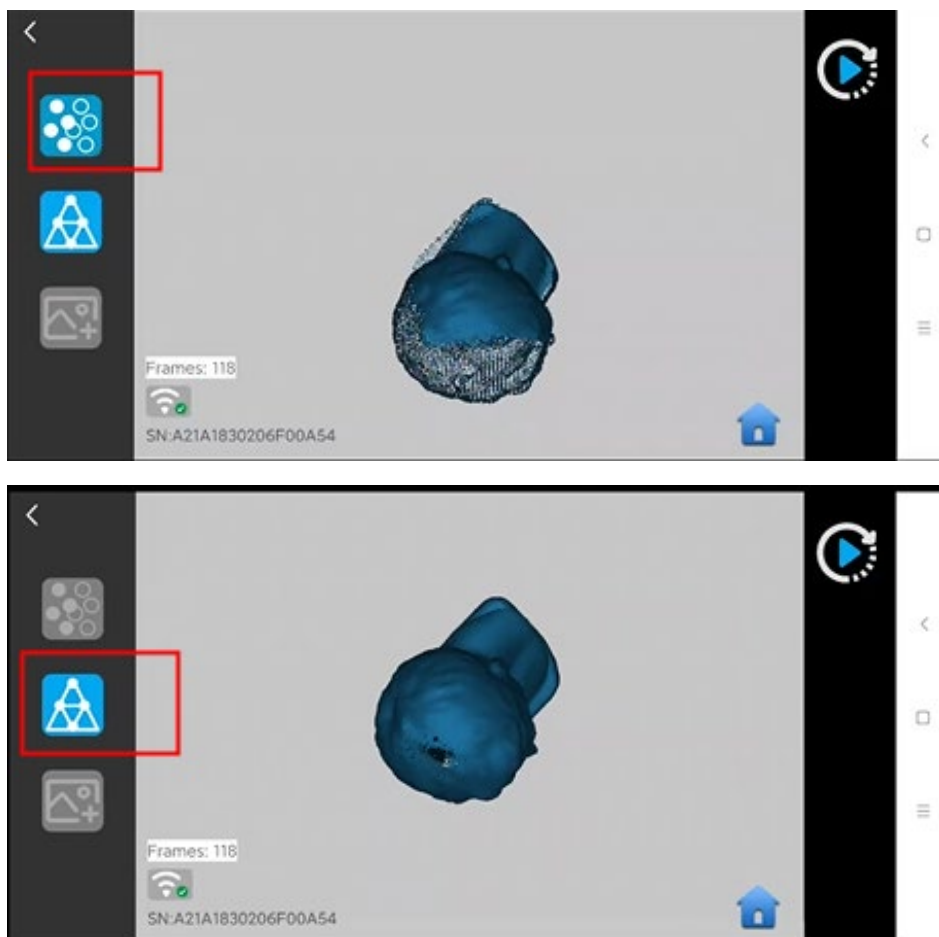


7. Click “Start” to scan;

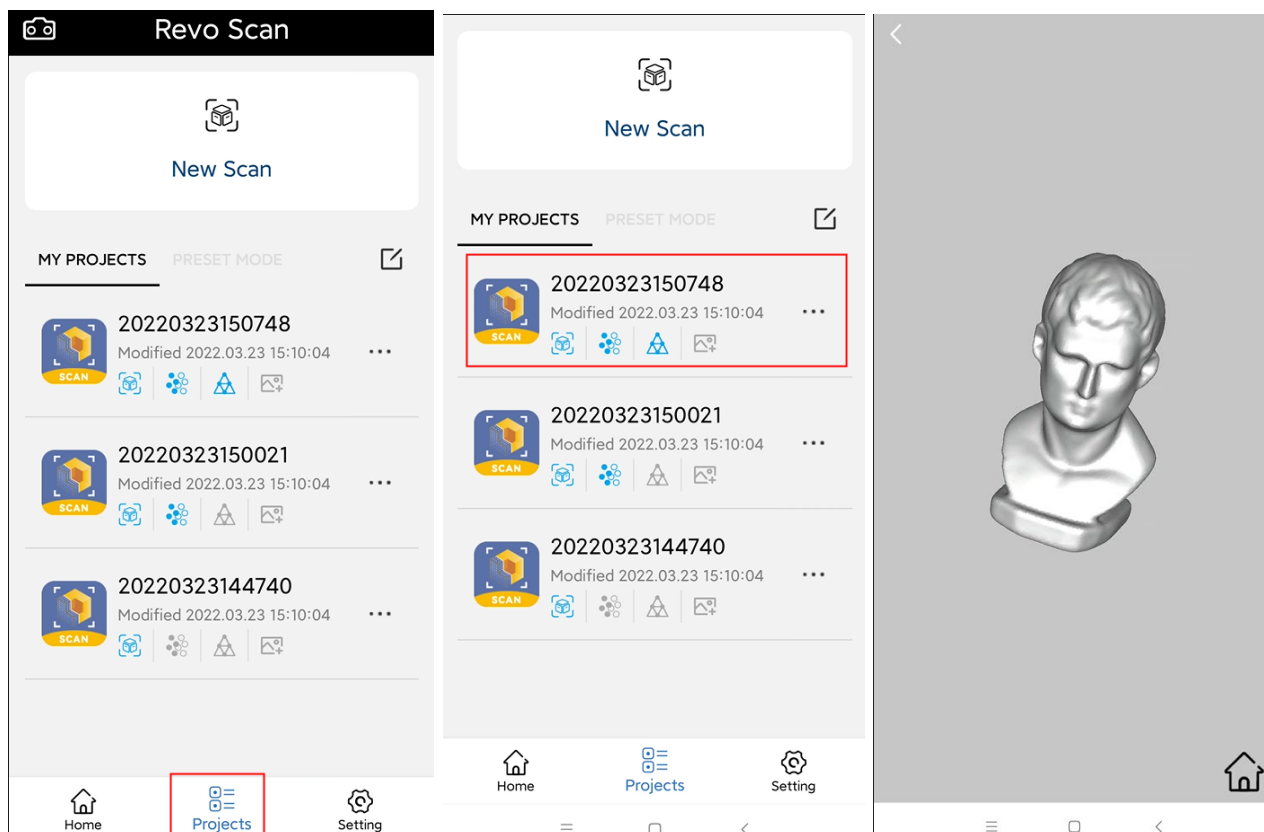


7. After completing scanning, perform Point cloud fusing and Meshing;

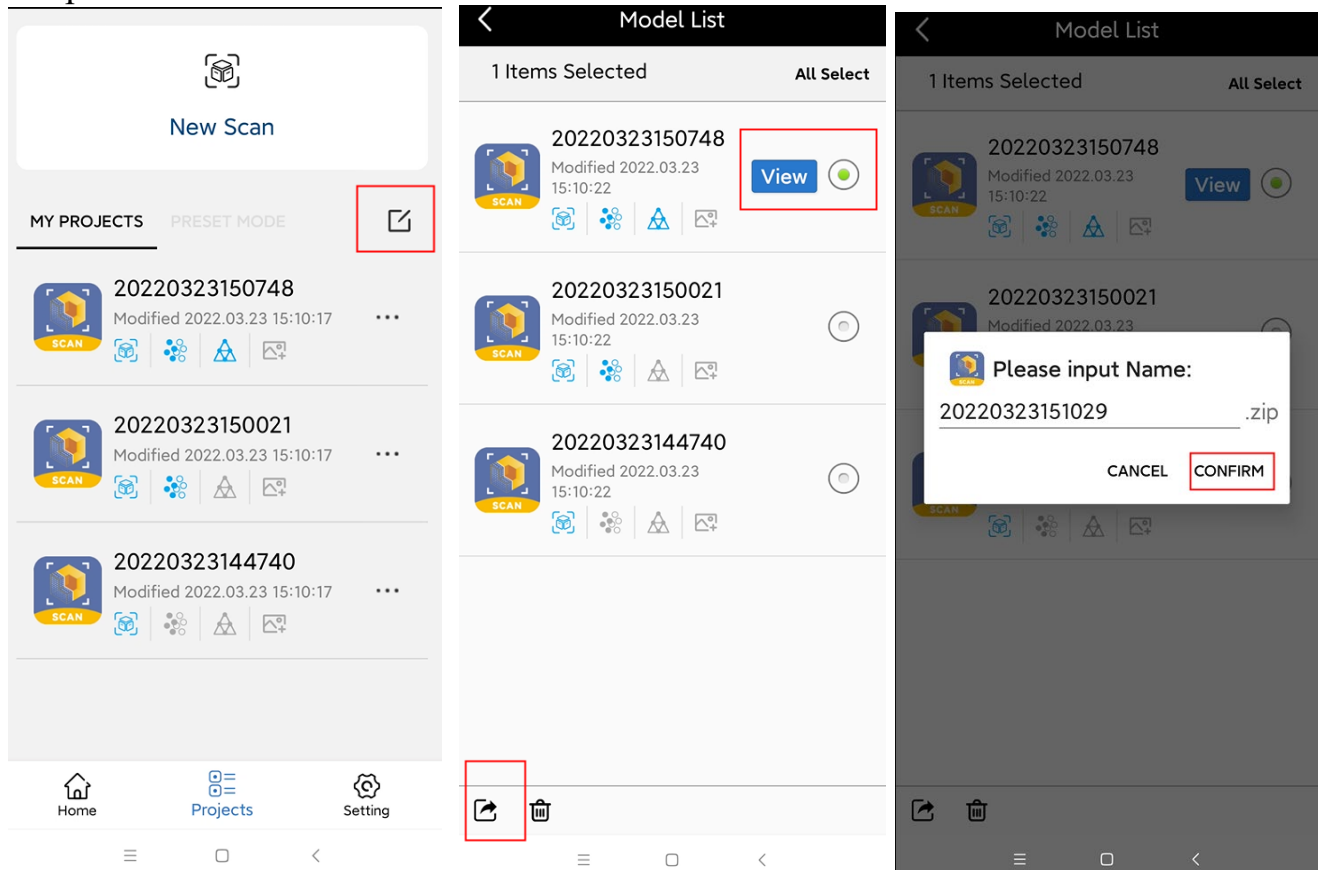




8. Check the 3D model scanned in the **Project**;



9. Export the 3D model to another device:



Android Smartphone Connects POP 2 Via USB Mode

Part List: POP 2, Power Bank, Phone Holder, 2-in-1 Mobile Cable, Sample Statue and Portable Turntable.



Hardware Connection

Part List: An Android Smartphone, a 2-in-1 Mobile Cable, A Phone Holder, a Power Bank and A POP 2 3D Scanner



Connection

- 1) Screw the phone holder on the power bank;
- 2) Fix the POP 2 on the phone holder;



- 3) Connect the 2-in-1 mobile cable on the rear of the POP 2 3D scanner, and tighten screws at both sides;



- 4) Fix the Android smartphone in the phone holder;
- 5) Connect the 2-in-1 mobile cable to the power bank (Type A) and the smartphone (Type C) separately;



Connection of the Portable Turntable

Part List: 2 pieces of extended table, USB cable, Detachable glue and the mini turntable.



Connection:



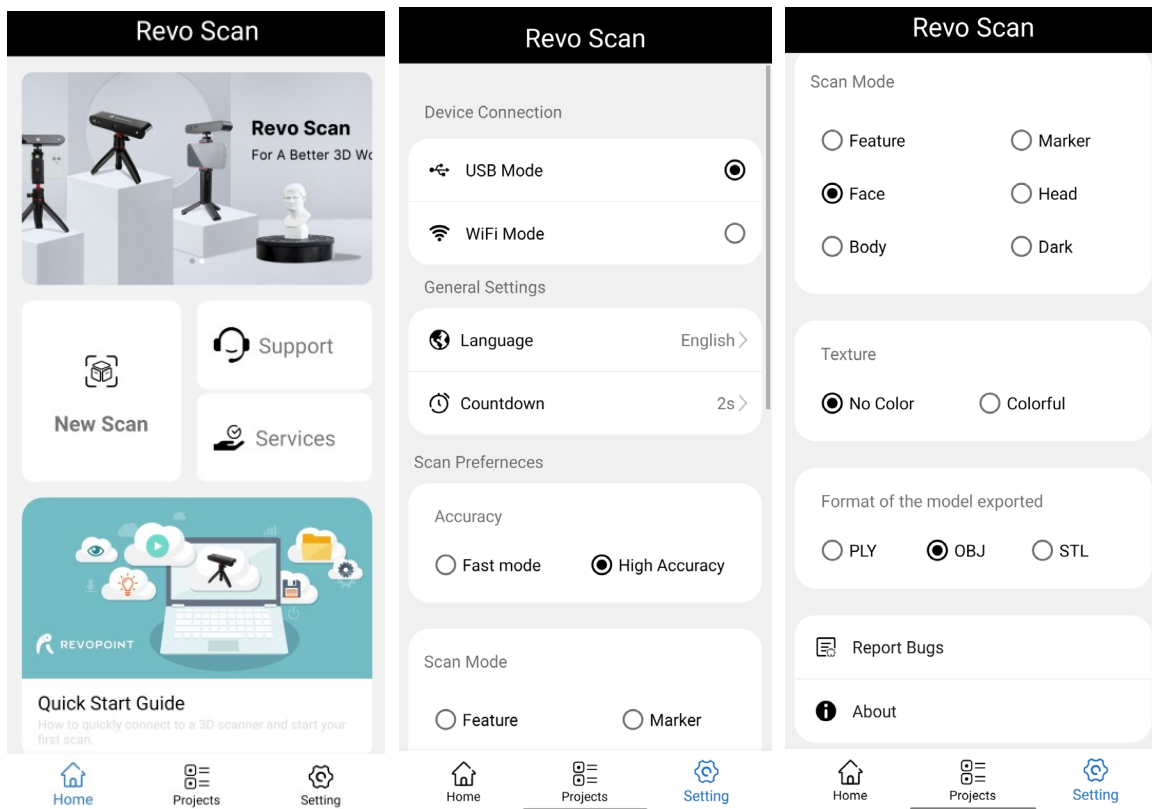
- 1) Power the mini turntable via the USB cable;
- 2) Splice the 2 pieces of extended table into one plate;
- 3) Stick the detachable glue on the mini electric turntable;
- 4) Then Put the 2-in-1 plate on the glue.

A new turntable is obtained.

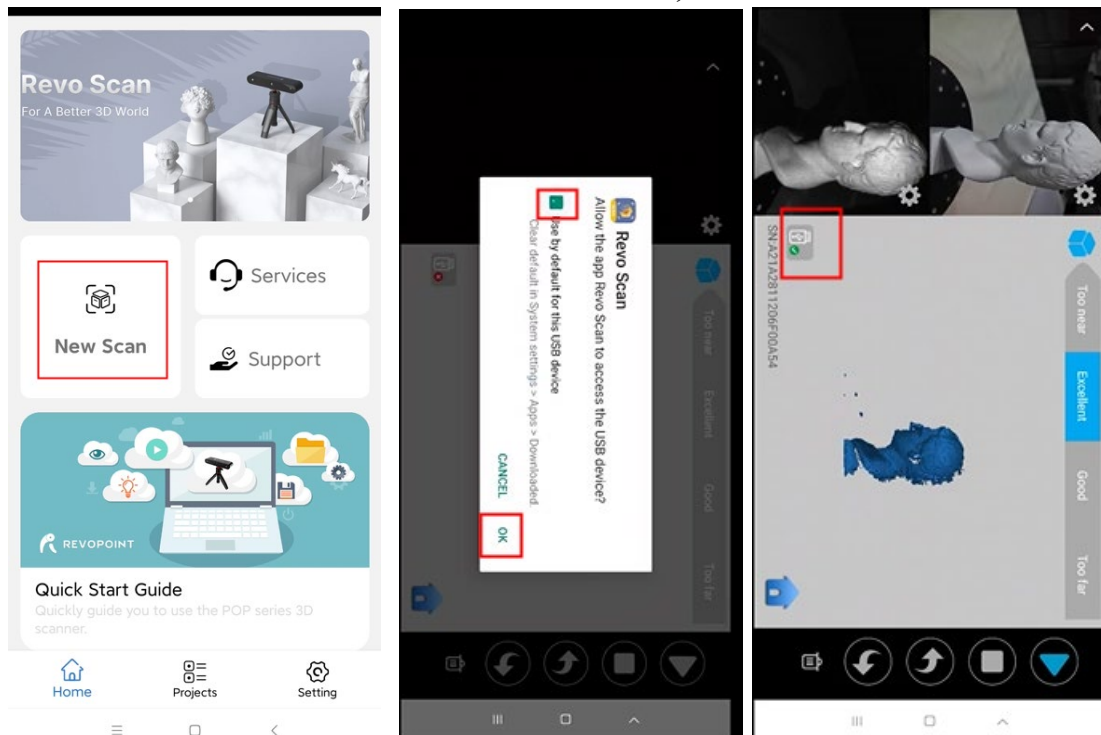
Scan with Android Device via USB Cable

1. Open Revo Scan and confirm **Settings**;

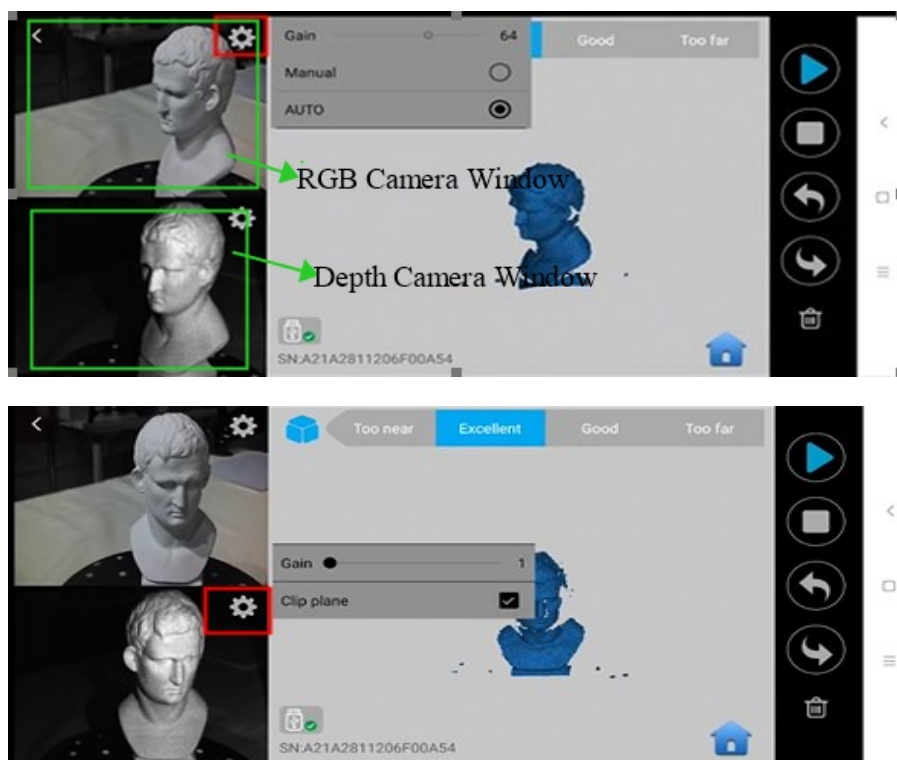
Before scanning, confirm the Connect Mode to be **USB Mode**; and select proper **Accuracy**, **Scan Mode**, **Texture** and **Model Format** according to your demand.



2. Click “New Scan” and authorize the camera;



3. Adjust the brightness in RGB and depth camera;
Note: Auto first, then Manual;

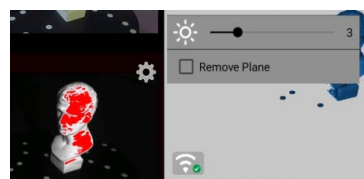
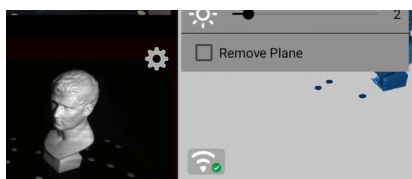
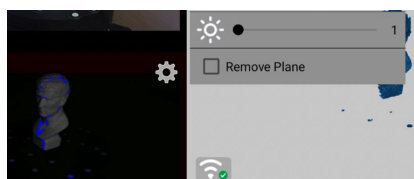


Note:

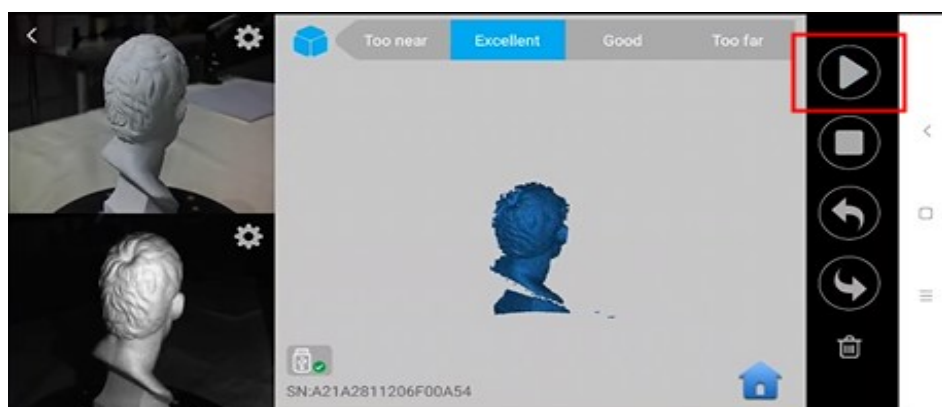
Underexposure (in Blue)

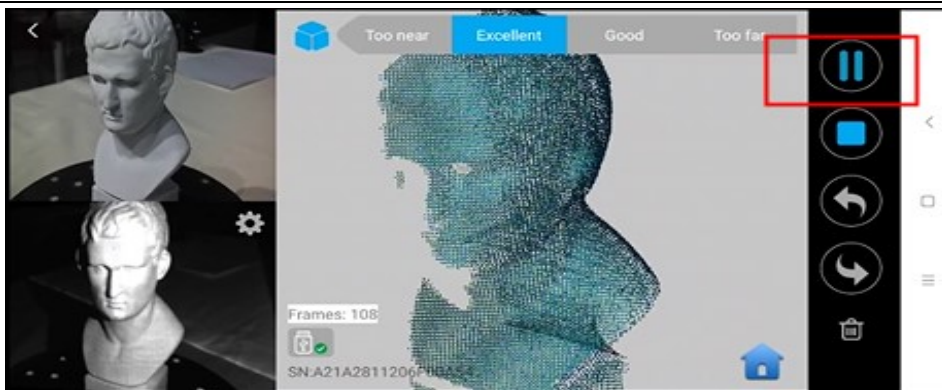
Perfect

Overexposure (in Red)

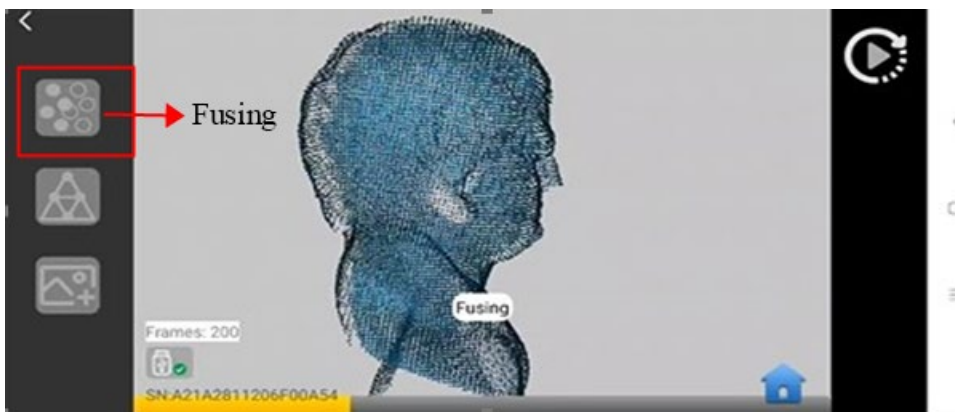
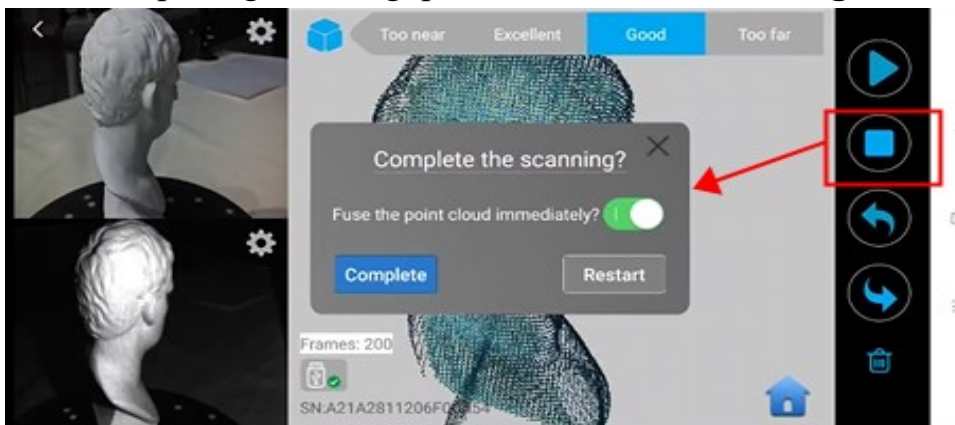


4. Click “Start”  to scan;

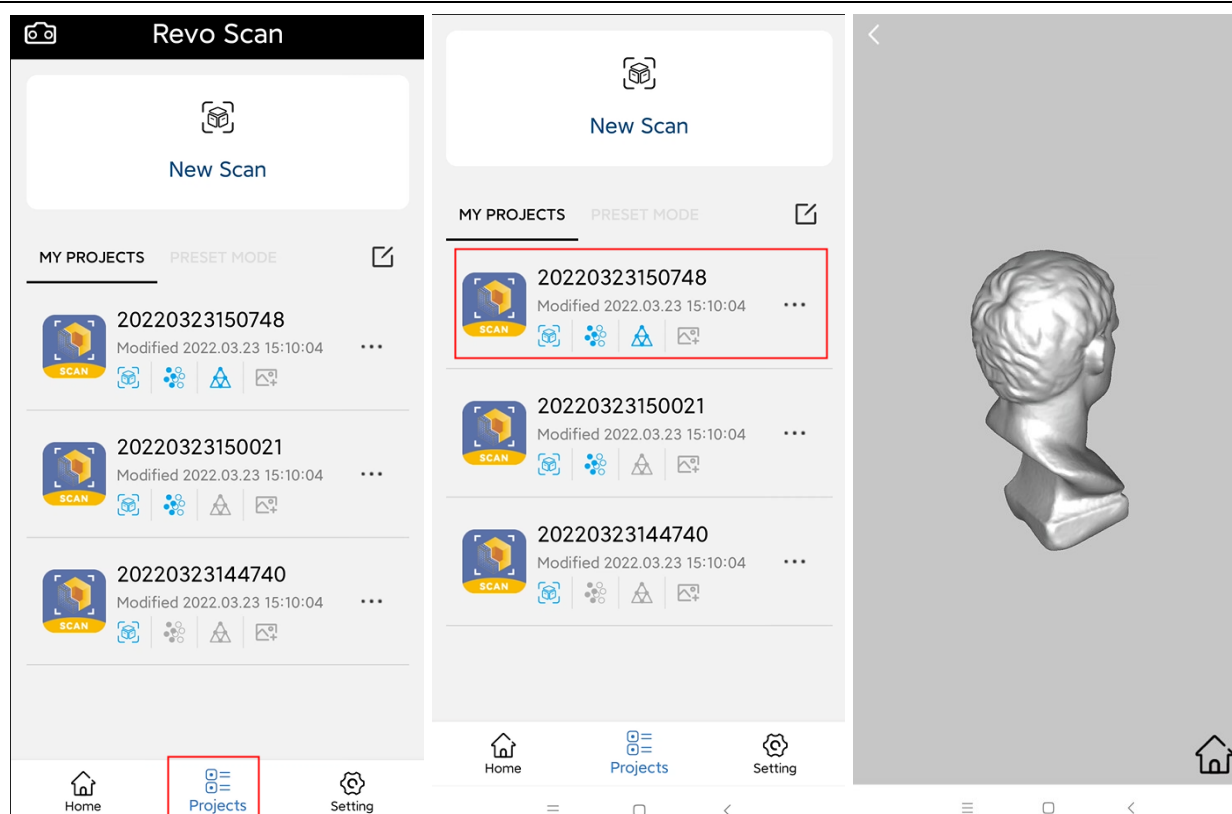




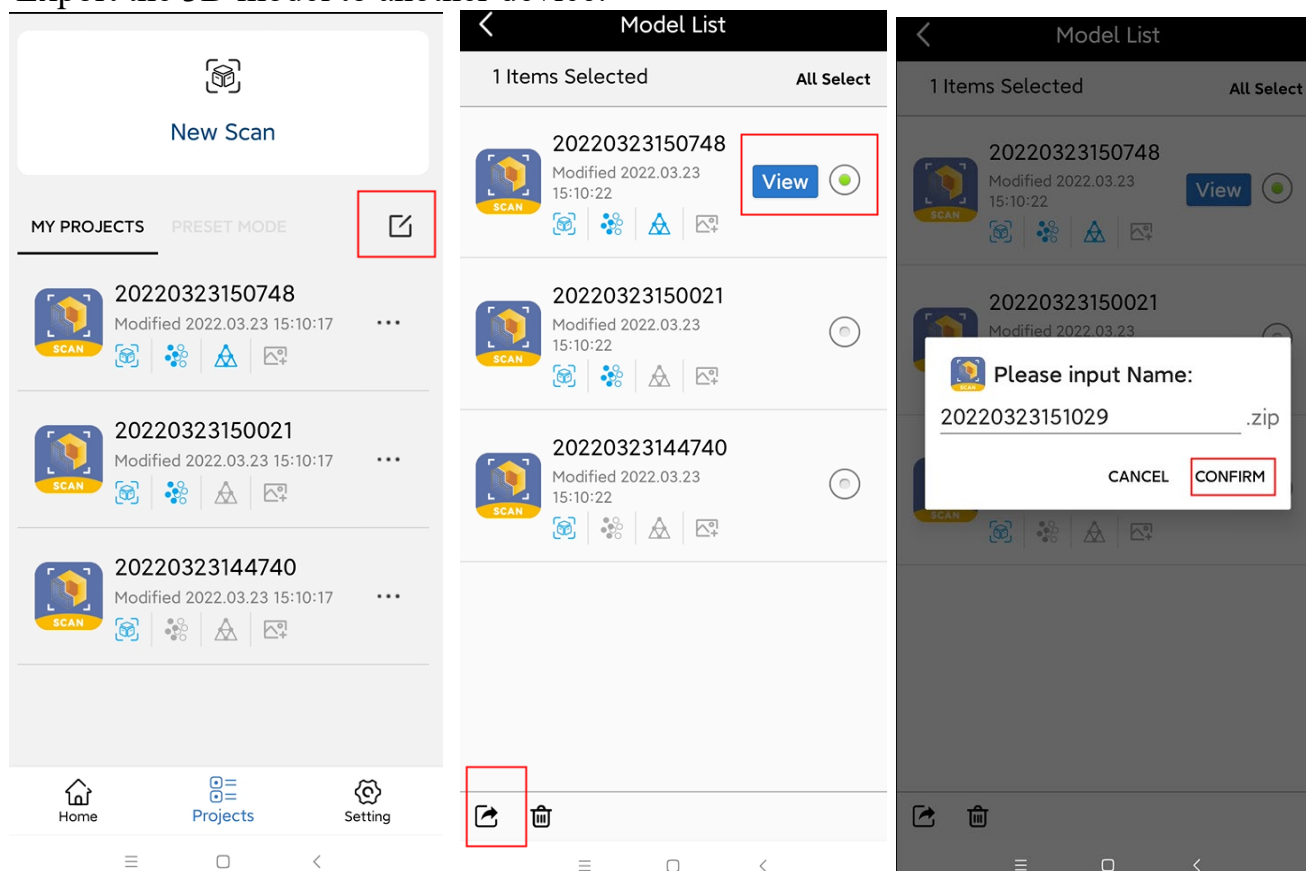
5. After completing scanning, perform Point Cloud **Fusing** and **Meshing**;



6. Check the 3D mode scanned in **Project**;



7. Export the 3D model to another device:



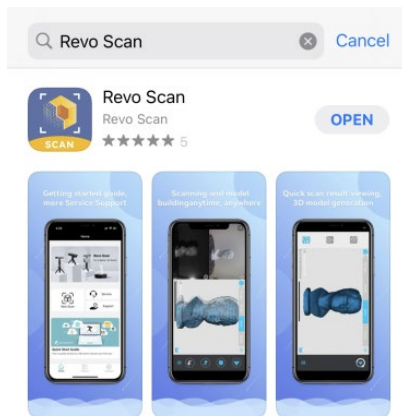
iPhone Connecting to POP 2 via Wi-Fi

Notice:

Plug the POP 2 into a power bank or AC adapter. (Do not plug it into your phone)



1. Download the Software-Revo Scan at APP Store;



2. Find the Wi-Fi provided by the POP 2, which is **POP2-REVO-A21AXXXX**.

Note: The default SSID is: POP2-REVO-XXXXXXXX

The default Password is: Revopoint3d

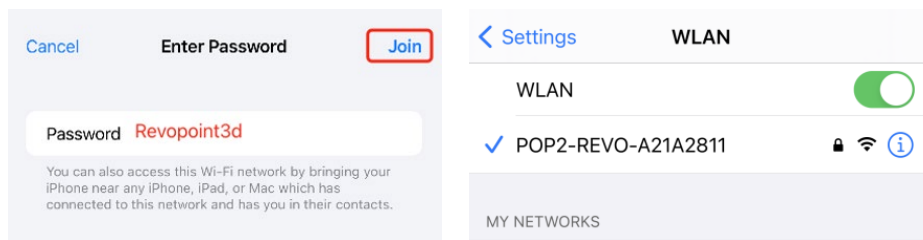
For example: If the Serial Number of one POP 2 3D scanner is: A21A2811206F00A54.

The Default SSID: POP2-REVO-A21A2811

The Default Password: Revopoint3d

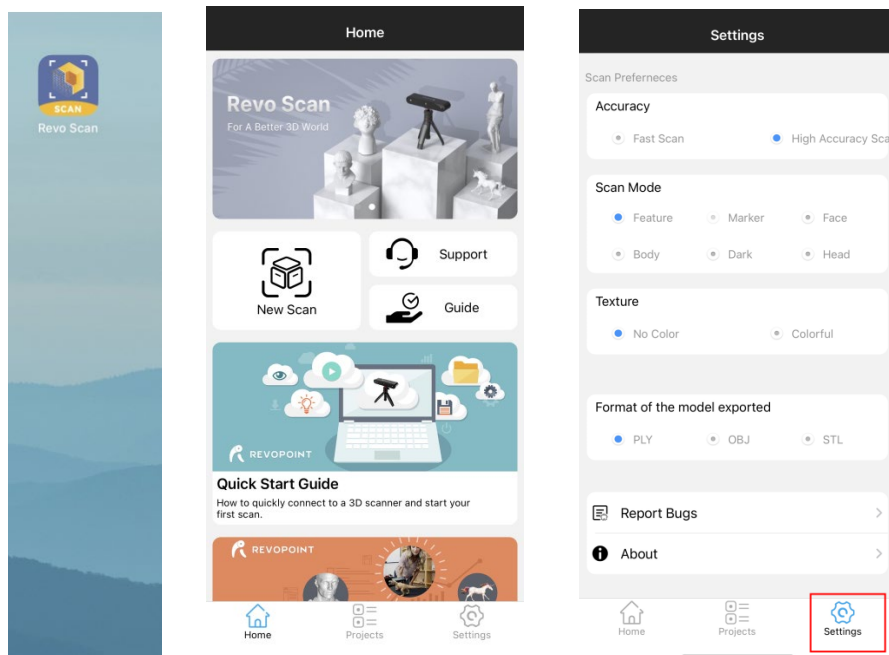


3. Type in the password: Revopoint3d and Confirm it connected successfully;

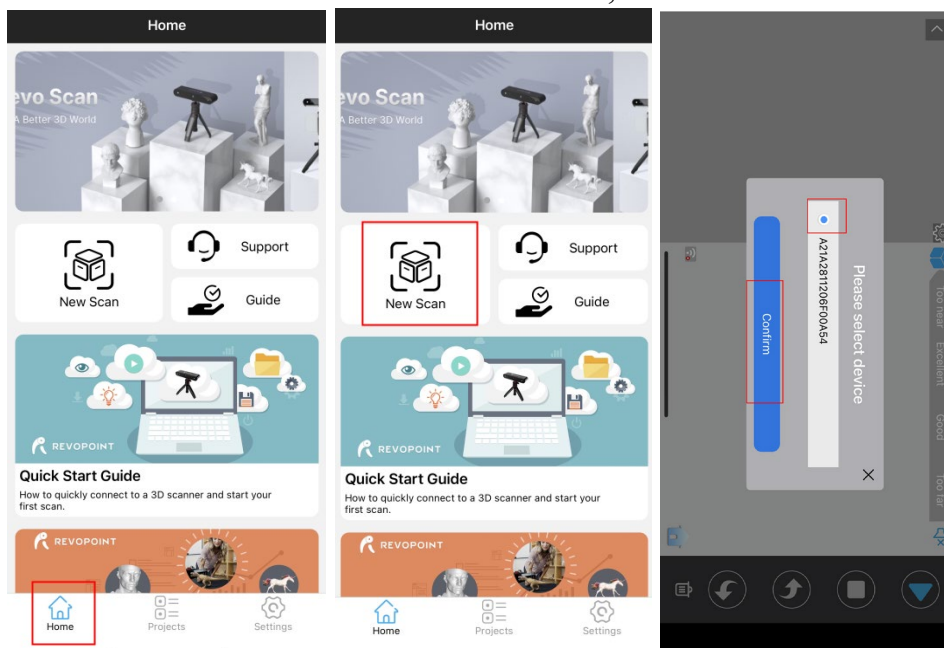


4. Open “Revo Scan” and confirm Settings;

Before scanning, select proper **Accuracy**, **Scan Mode**, **Texture** and **Model Format** according to your scan demand.

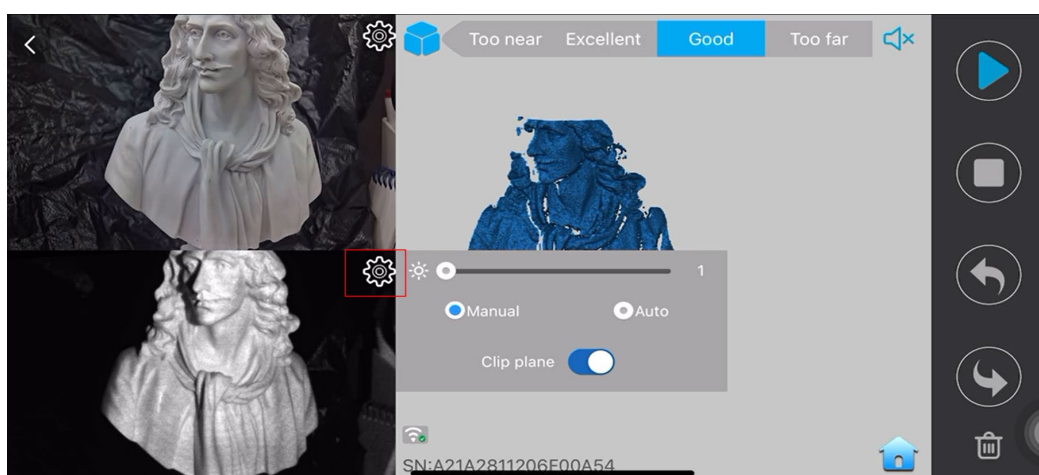
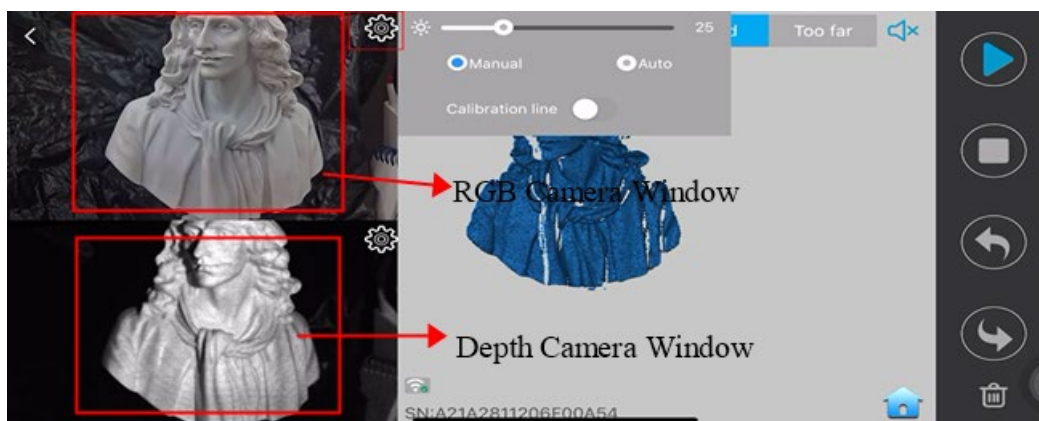


5. Back to Home and authorize the camera;



6. Adjust the brightness in the RGB camera and depth camera.

Note: Auto first, then Manual; If necessary, turn on the “Remove Plane” to eliminate the excessive pointclouds.

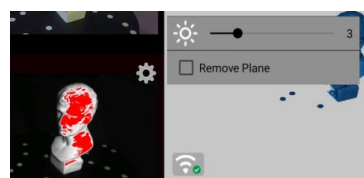
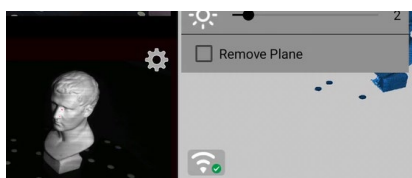
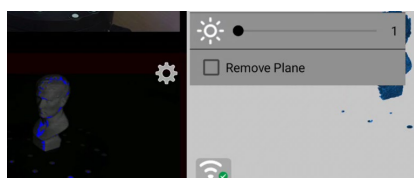


Note:

Underexposure (in Blue)

Perfect

Overexposure (in Red)



7. Start to scan.



Warning

The product cannot be returned if the "**Warranty Void If Seal Is Broken**" label is damaged or removed.

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