

MINI 3D SCANNER

Quick Start Guide

V 1.0.1



MINI 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.

Content

Product Overview	3
Introduction	3
System Requirements	4
Software Installation.....	4
Indicator Legend.....	4
PC: Connect to MINI 3D Scanner.....	4
Windows: Connect to the MINI 3D Scanner via USB Cable	5
Hardware Connection	5
Operation Workflow	5
Confirm distance to be "Excellent"	7
Adjust the brightness in the RGB Camera and Depth Camera.....	8
Start or Pause Scanning	9
Complete/Restart Scanning	10
Mesh	12
Texture.....	12
Export	13
Mac: Connect to the MINI 3D Scanner via Wi-Fi.....	15
Smartphone Connecting to MINI 3D Scanner (Wi-Fi & USB Mode)	17
Android Smartphone Connects MINI Via Wi-Fi.....	17
Android Smartphone Connects MINI Via USB Mode	23
Hardware Connection	23
Scan with Android Device via USB Cable	24
iPhone Connecting to MINI via Wi-Fi	28
Warning	32
Support & Help	33
Contact Us	33

Product Overview

Introduction

The Revopoint MINI uses binocular blue light technology to project ultra-high-resolution structured light. The high-resolution dual-camera system and intelligent algorithm produce an extremely precise and detailed scanned model, helping professionals quickly achieve accurate 3D data reconstruction. The MINI 3D scanner can output models with a point distance of up to 0.05mm and a single-frame precision of up to 0.02mm. All of this is achieved with the industrial-level professional calibration tools.

The MINI is a necessary modeling tool for professionals such as designers, engineers, makers, and medical and scientific research workers, and dramatically lowers the threshold for 3D creative production, allowing you to quickly build a 3D digital world while improving modeling efficiency by more than ten times.



System Requirements



Windows: Win 8 / 10 / 11 (64-bit)
Memory: $\geq 8G$
*The Windows 7 is not supported.



Mac with Intel $\times 86$ chip: Mac OS 10.15 and models after;
Mac with Apple M1 chip: MacOS 11.0 and models after;
Memory: $\geq 8G$



Android: \geq Android 9.0
RAM: $\geq 6GB$
* HarmonyOS is supported.



iPhone: iPhone 8 Plus or models after;
iPad: 6th generation iPad and models after;
System Version: \geq 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 editing scanned 3D models; the Revo Calibration Software uses to adjust parameters of the scanner to ensure good results.



Download the software above at official website:

revopoint3d.com/download-2/

Indicator Legend



Blue Light:
Starting



Green Light:
Working Correctly

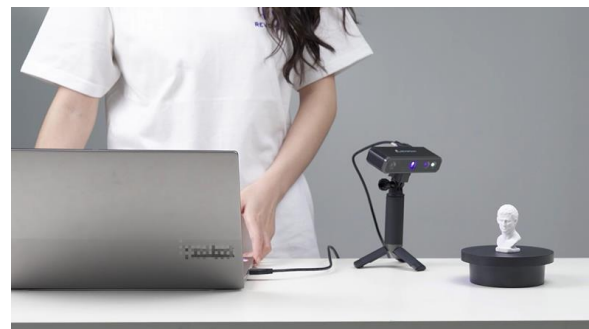
⚠ Do not look at the front light of the projector closely for a long time! Refer to Standards for Class 1 Lasers for details.

PC: Connect to MINI 3D Scanner

Both Mac and Windows PC can be connected to MINI 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 MINI 3D Scanner via USB Cable

Hardware Connection

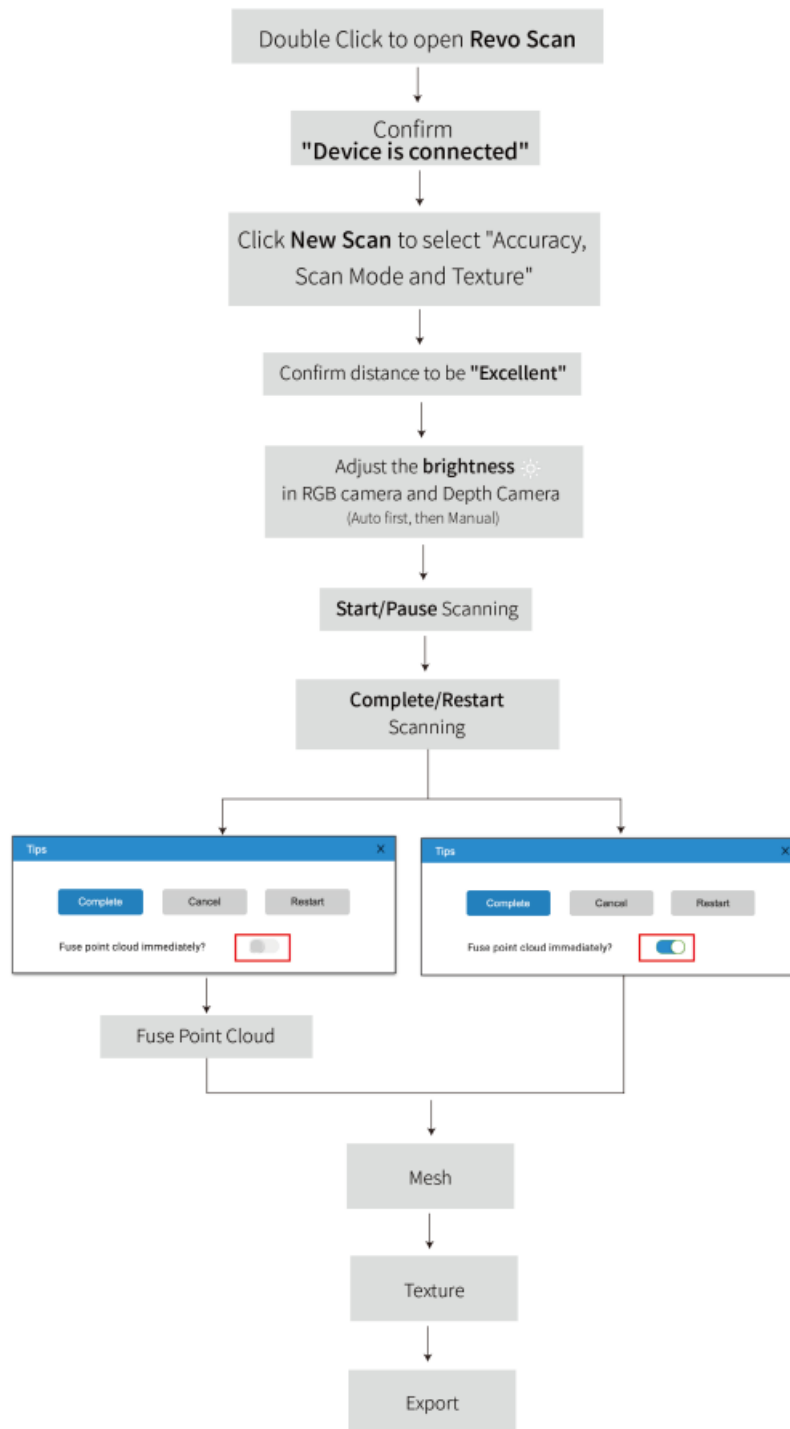


Ensure the MINI scanner is connected to a **USB 3.0 or above** port. USB 2.0 is insufficient at supplying adequate current to the device and will result in repeated power resets and connectivity issues.

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 ---> Start/Pause Scanning ---> Stop to Complete/Restart Scanning ---> Fuse Point Cloud ---> Mesh ---> Texture (only available for **Color** 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"

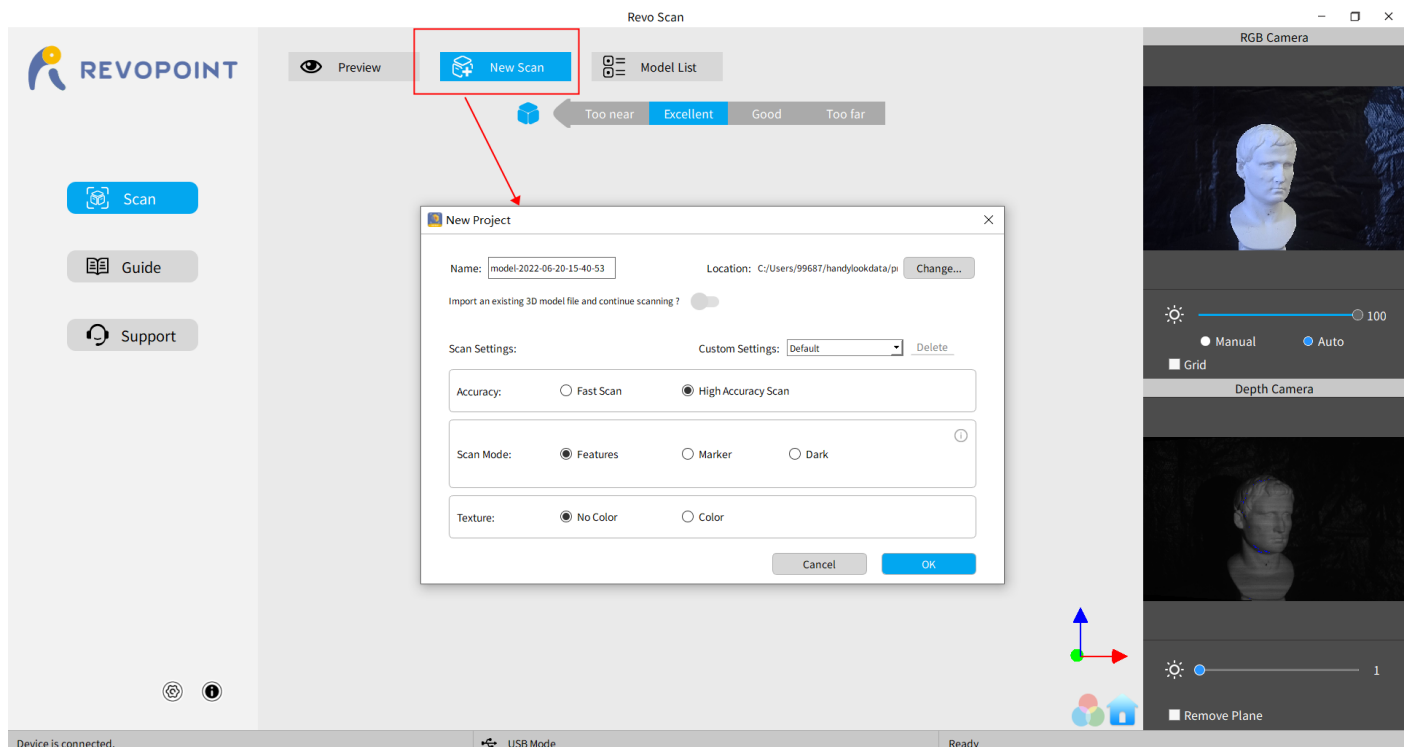
After opening Revo Scan, confirm the device connection status:

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 5-6 seconds after the scanner's status LED on the rear panel turns blue.



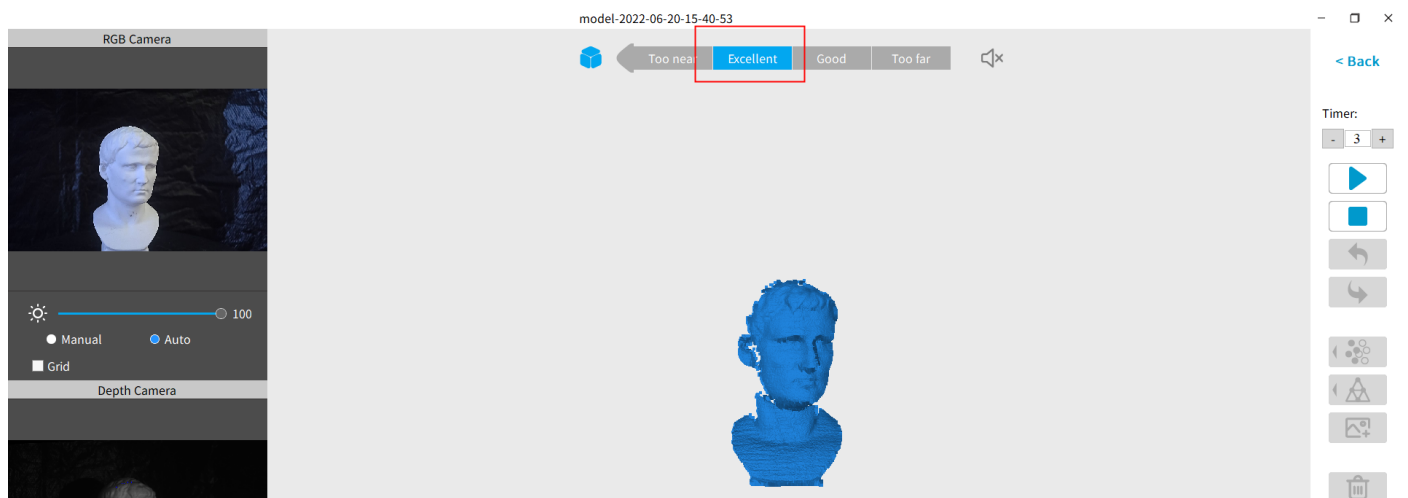
Click New Scan to select Accuracy, Scan Mode and Texture

Once connected successfully, the device is ready to scan. Configure the desired operational characteristics as described in Section 2. *New Scan* (see p. 9-10) of the UI Introduction.




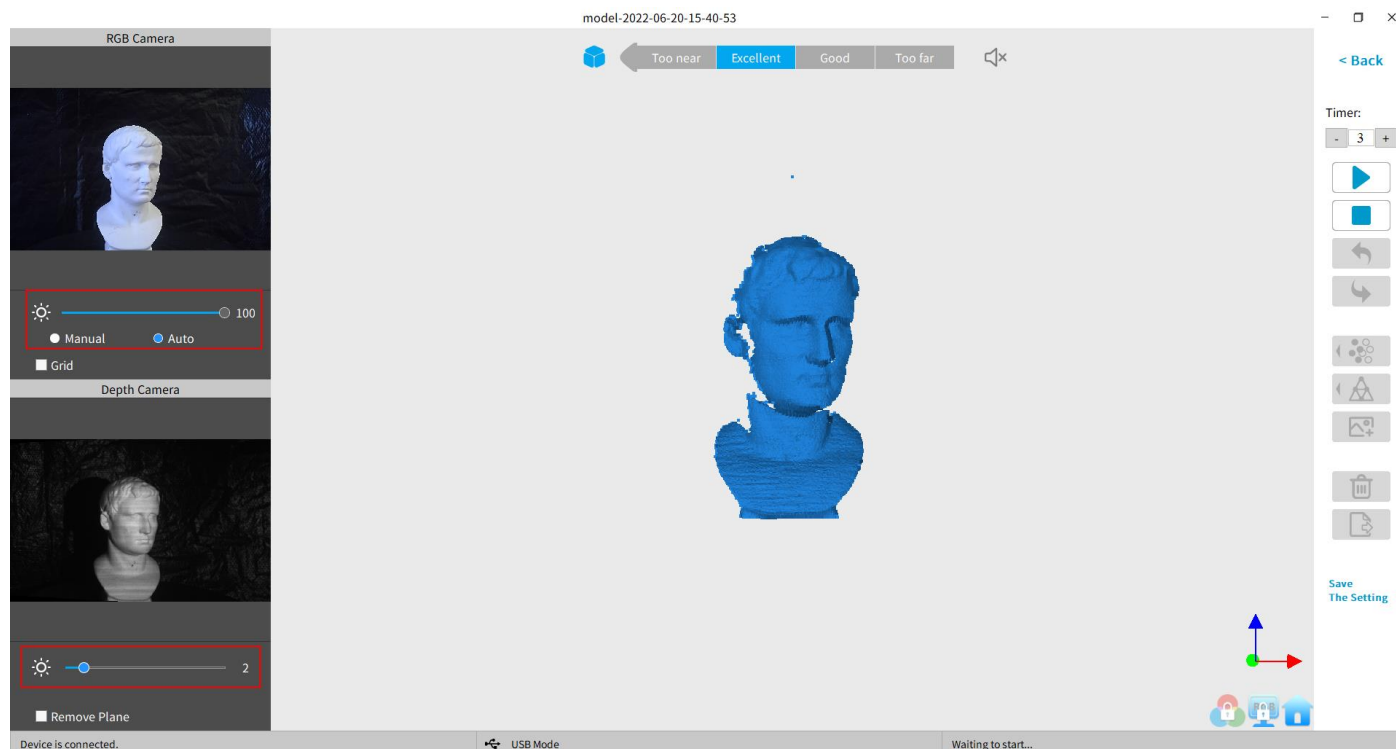
Confirm distance to be "Excellent"

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 MINI 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.



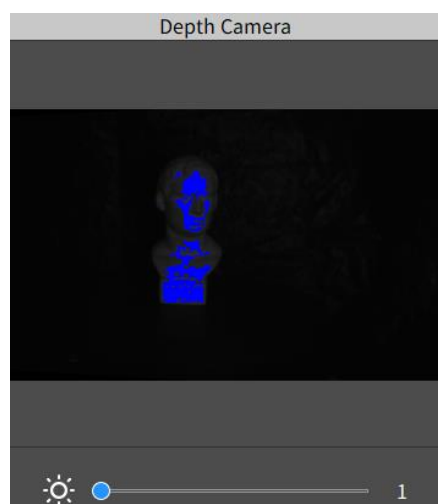
Adjust the brightness in the RGB Camera and Depth Camera

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:

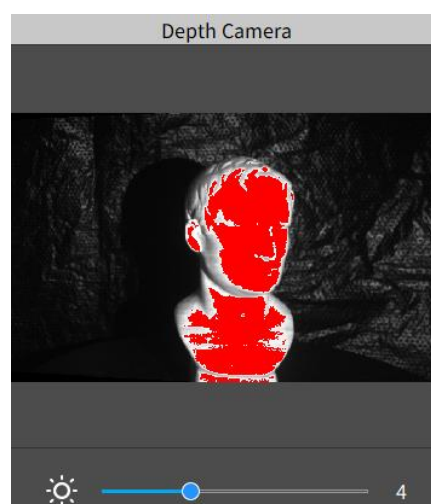
Underexposure (in Blue)



Perfect

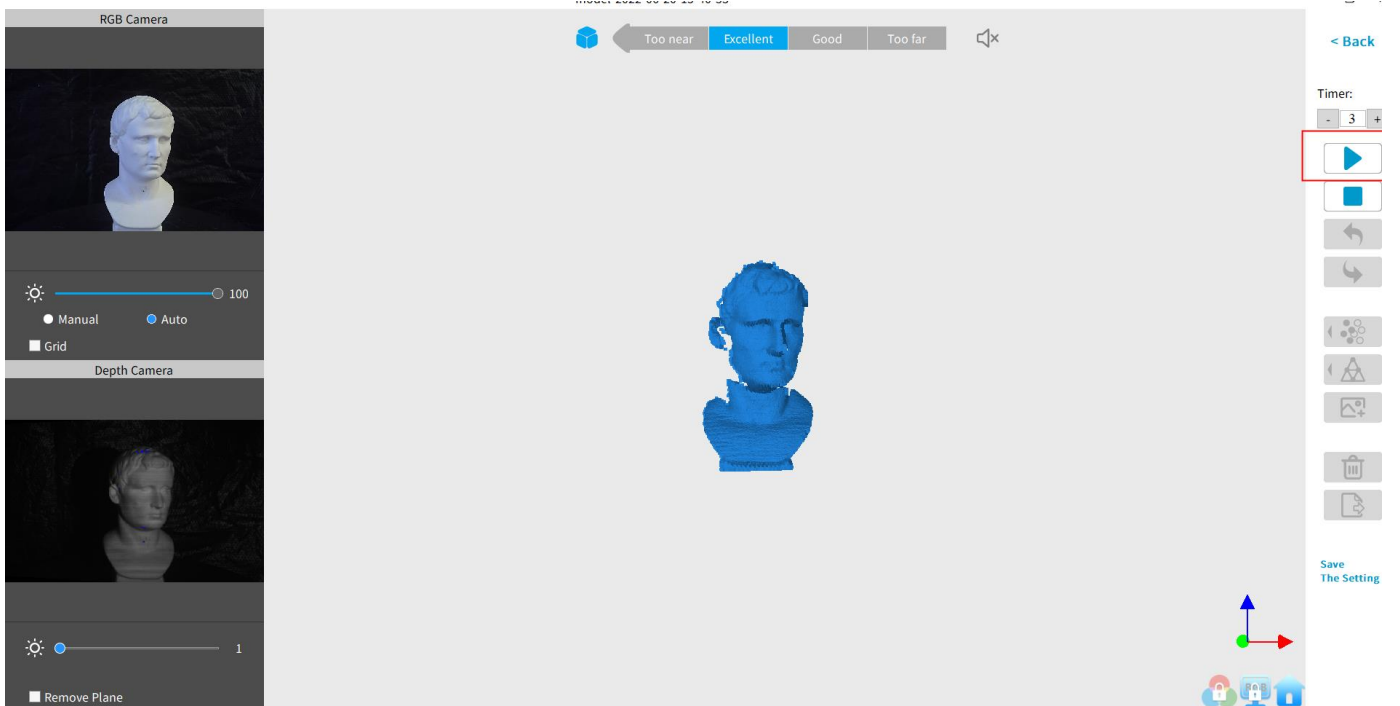


Overexposure (in Red)

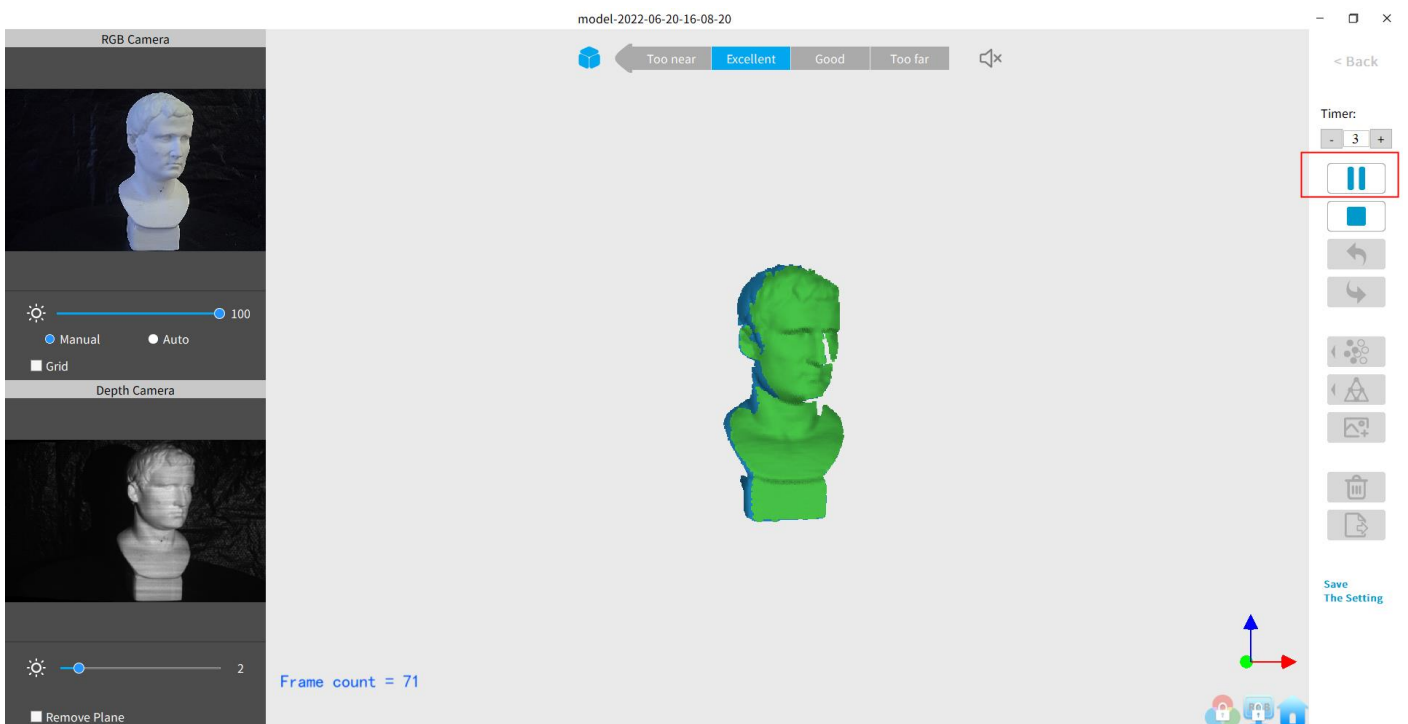


Start or Pause Scanning


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

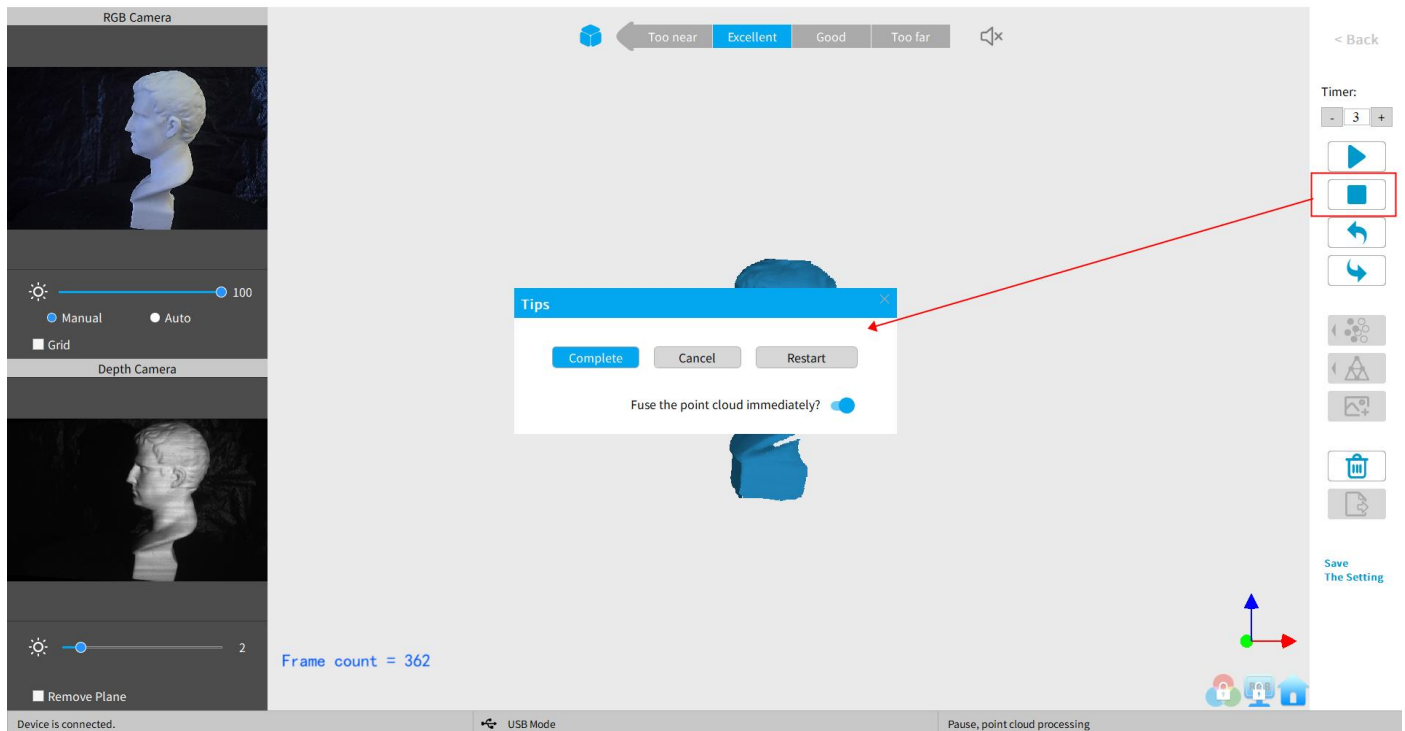


During scanning, please make sure the point cloud in the lower-left window is adequate and the distance remains "Excellent". Move the scanner slowly and deliberately during scanning while keeping a relatively fixed distance. Already-scanned sections of the model are displayed in blue. Unless there are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

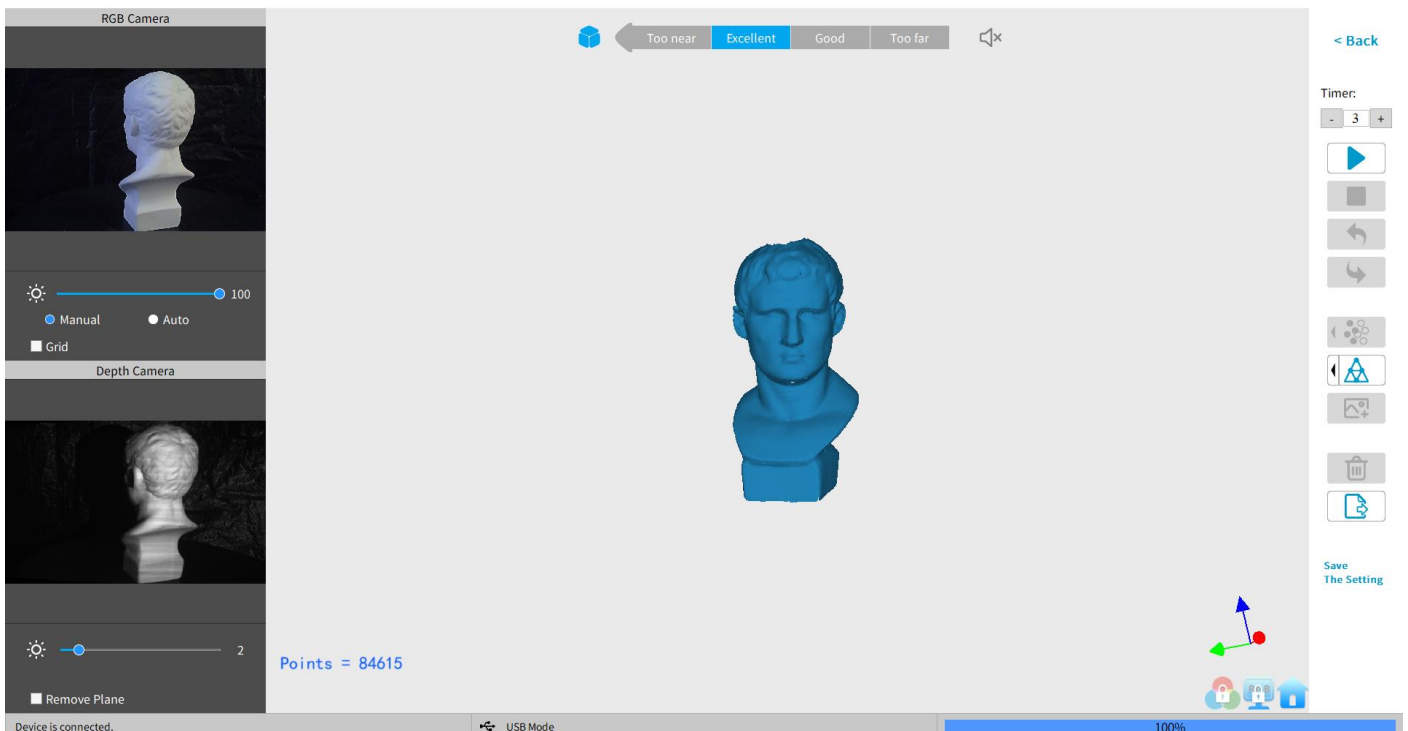


Complete/Restart Scanning

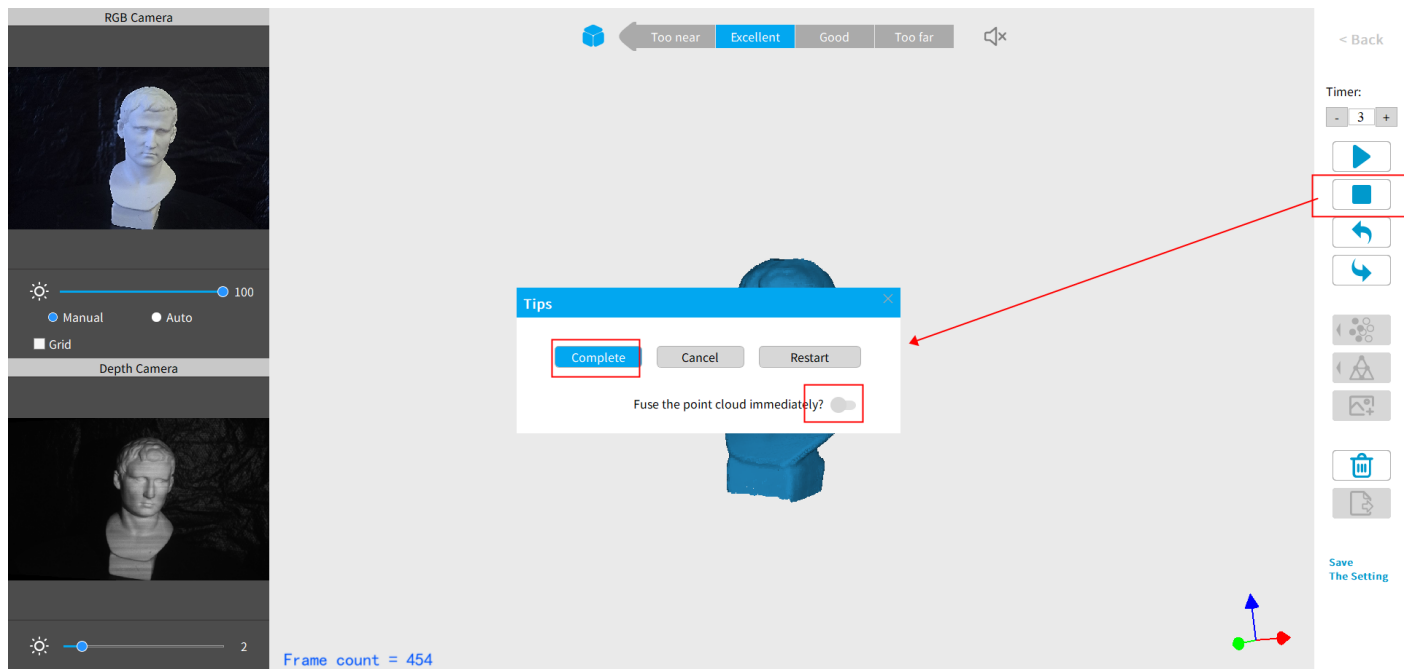
Click  and the "Complete" button in the popup to fuse the point cloud data, or press the "Restart" button to delete the data and return to the Preview section (p. 8).



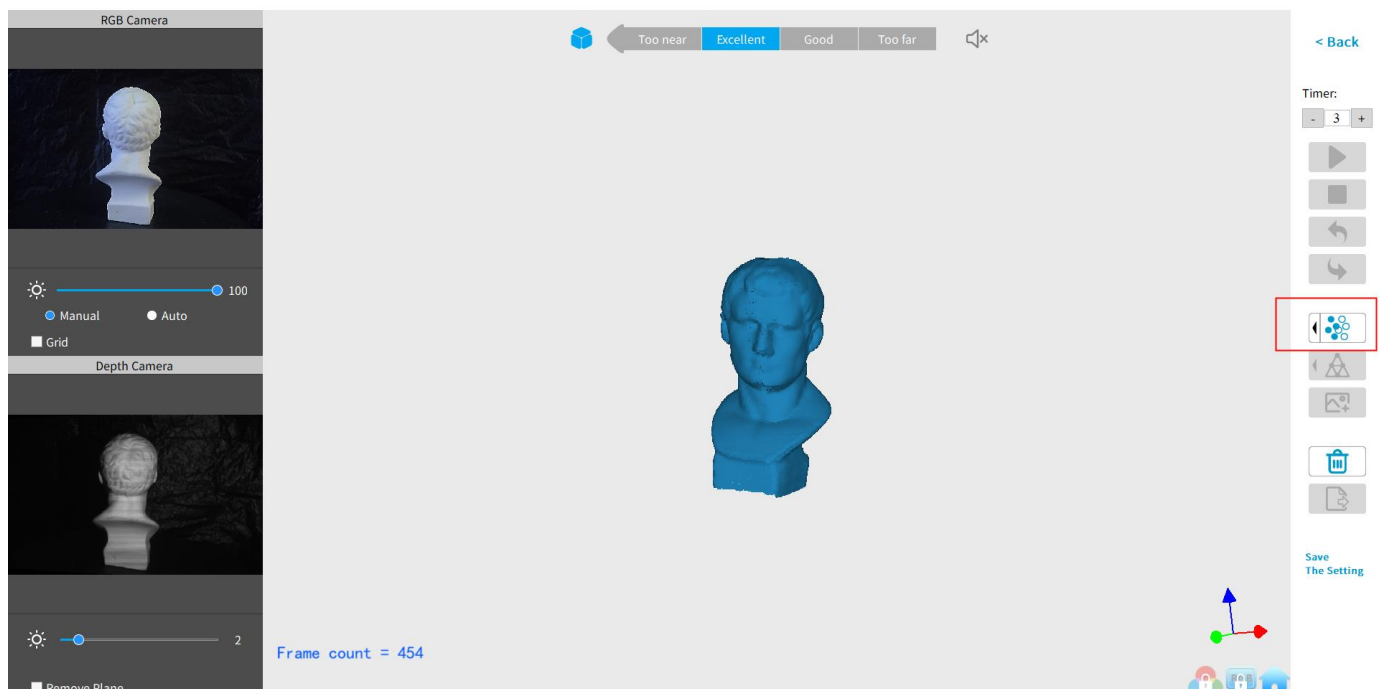
After clicking *Stop*, it is possible to resume scanning (say, after repositioning either the scanner or the object being scanned). If this is desired, then be sure to move the slider switch for “*Fuse point cloud immediately?*” to the right before clicking “*Complete*”. The scan data will be fused into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



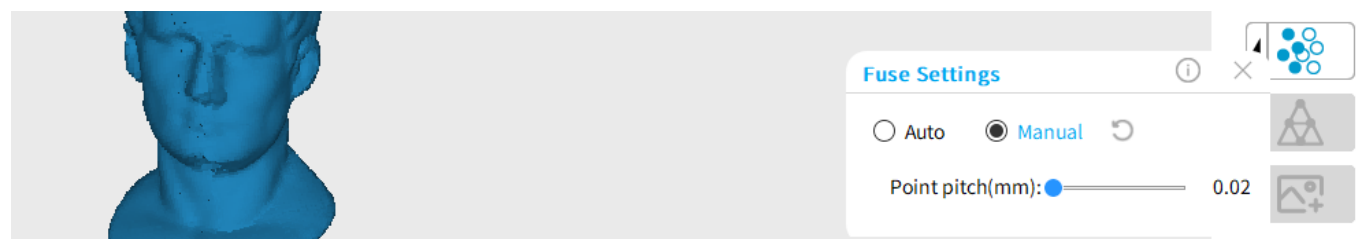
Inactive button in the Stop's popup (so that Fusing is a manual operation, allowing changes in the preset):



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

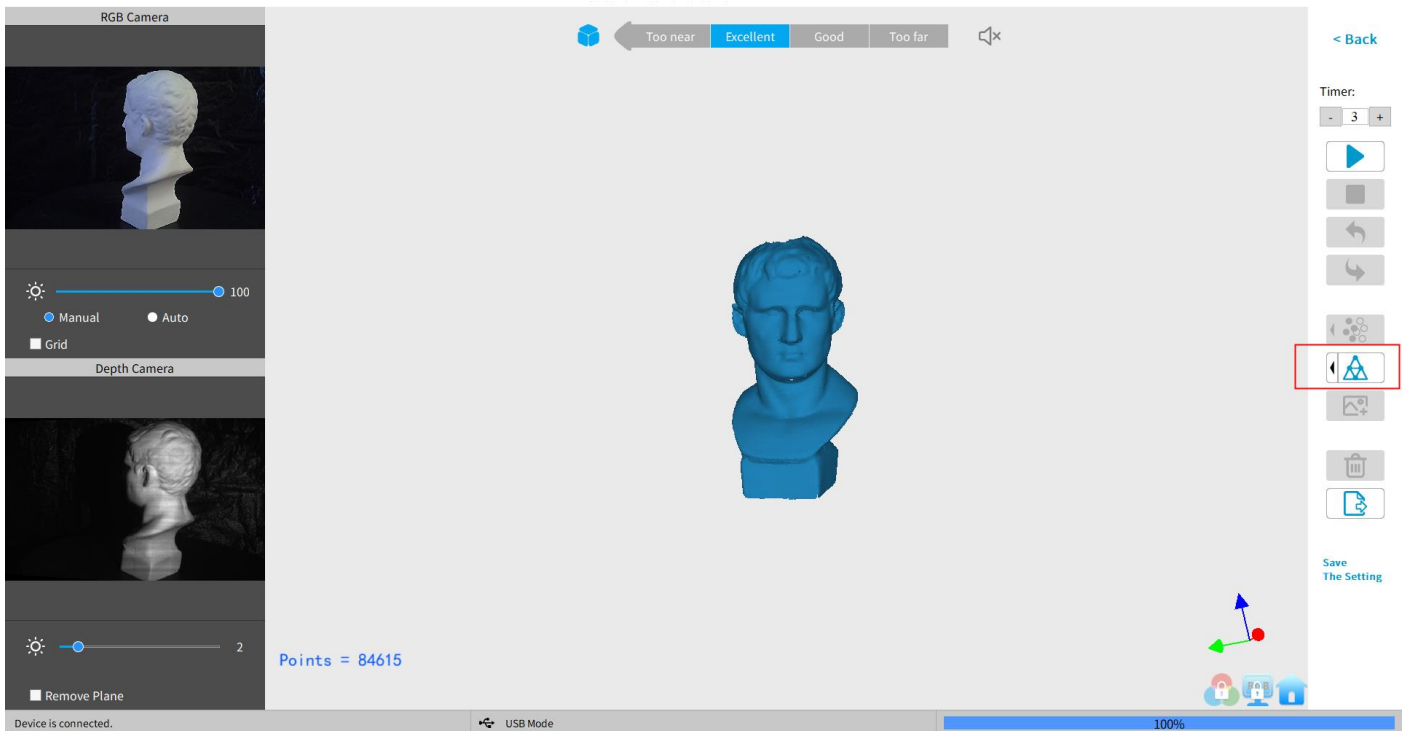


Click the drop-down arrow to display the Fuse setting by Auto and Manual modes. The smaller the point pitch, the better the result. The minimum pitch can be adjusted up to 0.02 mm for the data. Smaller pitch points result in more resolution, but also more processing time.



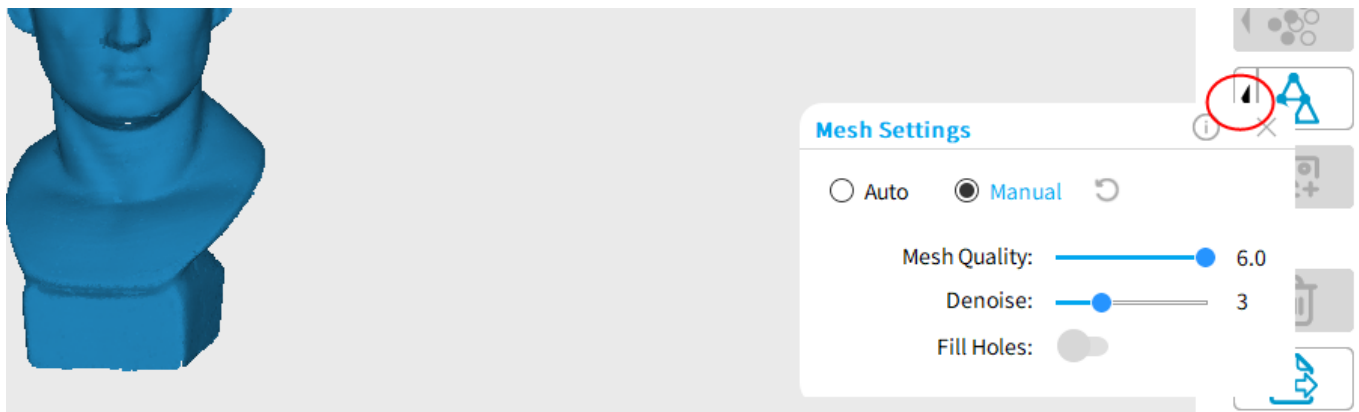
Mesh

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




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

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 "Color" option selected (see New Scan options on p. 9).

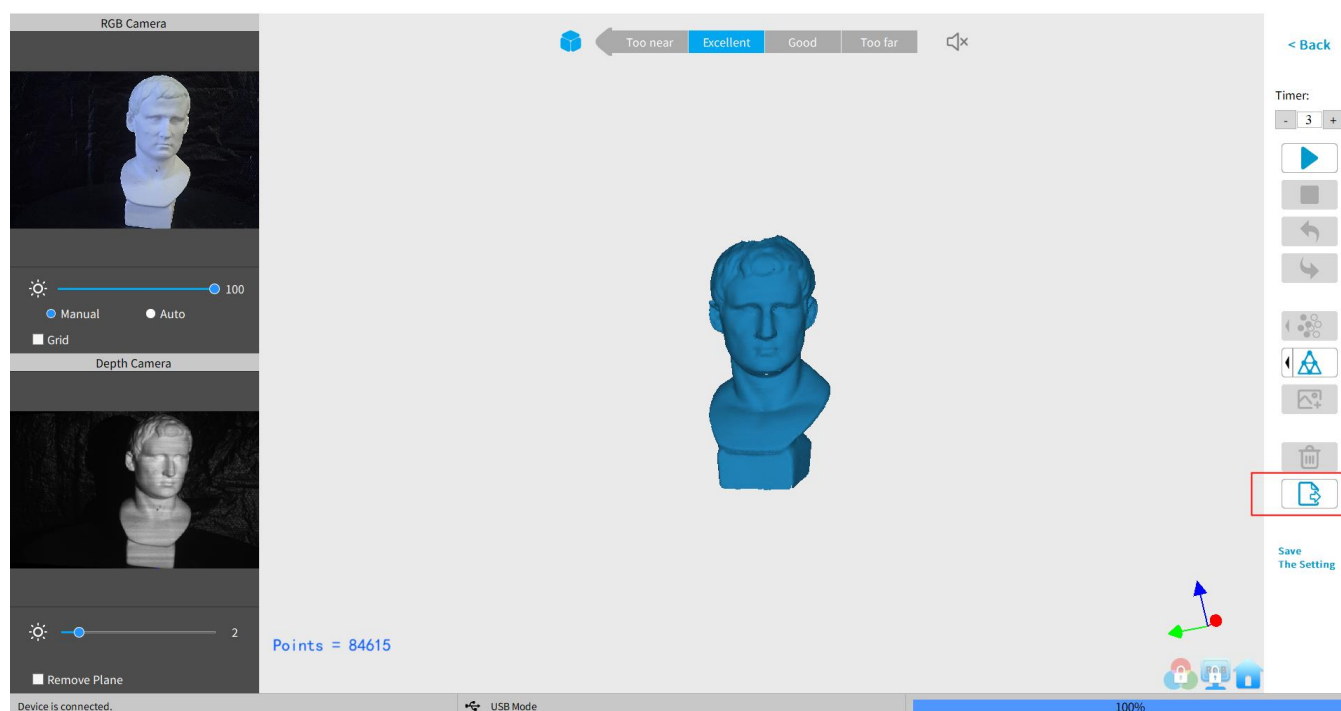
Click  to apply texture to the model.



Export

Click  to export the 3D model.

Select a file name and a file format (.PLY, .OBJ & .STL, are supported).



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 MINI 3D Scanner via Wi-Fi

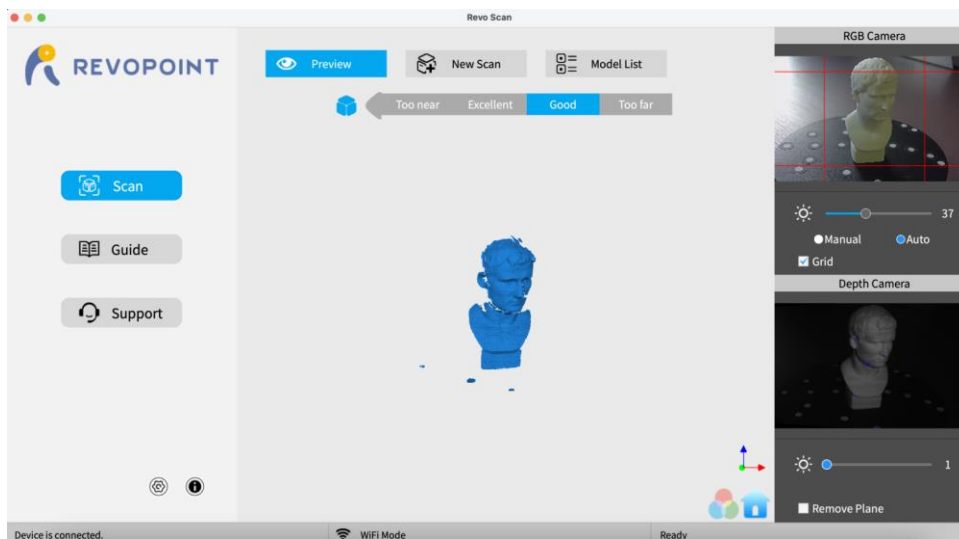
1. Power the MINI 3D scanner with a power bank or an AC adapter.
(Do not plug it into your Mac, or it will be USB mode by default.)



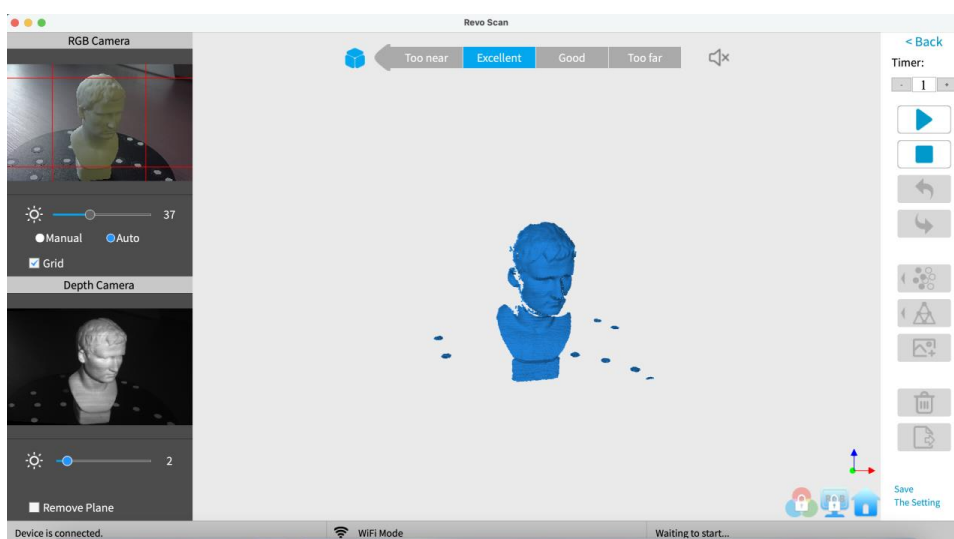
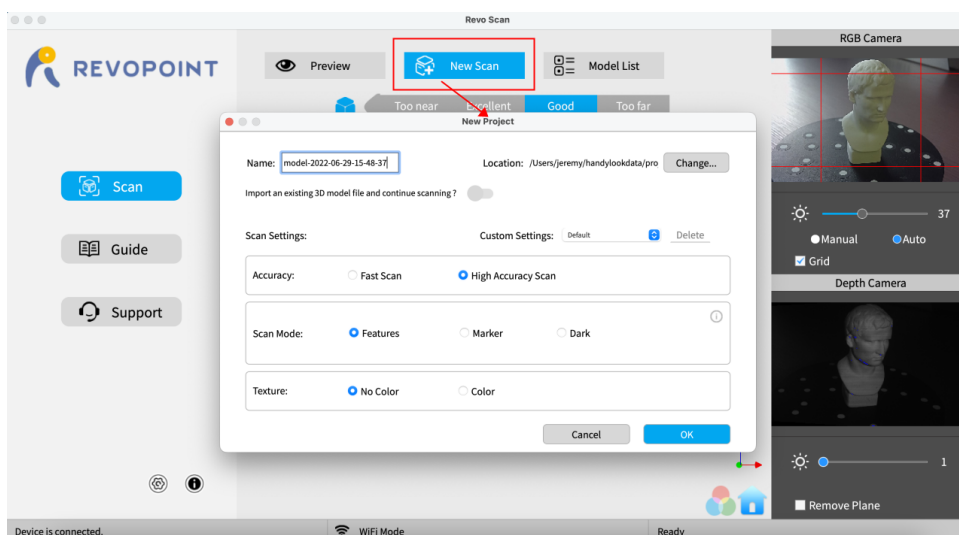
2. Find the Wi-Fi provided by the MINI in your Mac's Wi-Fi list.
Usually, it is **MINI-REVO-XXXXXXXX**. And enter the password - **Revopoint3d**.
For example: If the Serial Number of one MINI 3D scanner is: A22100122A6F00A64.
The Default SSID: MINI-REVO-A2210012
The Default Password: Revopoint3d



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



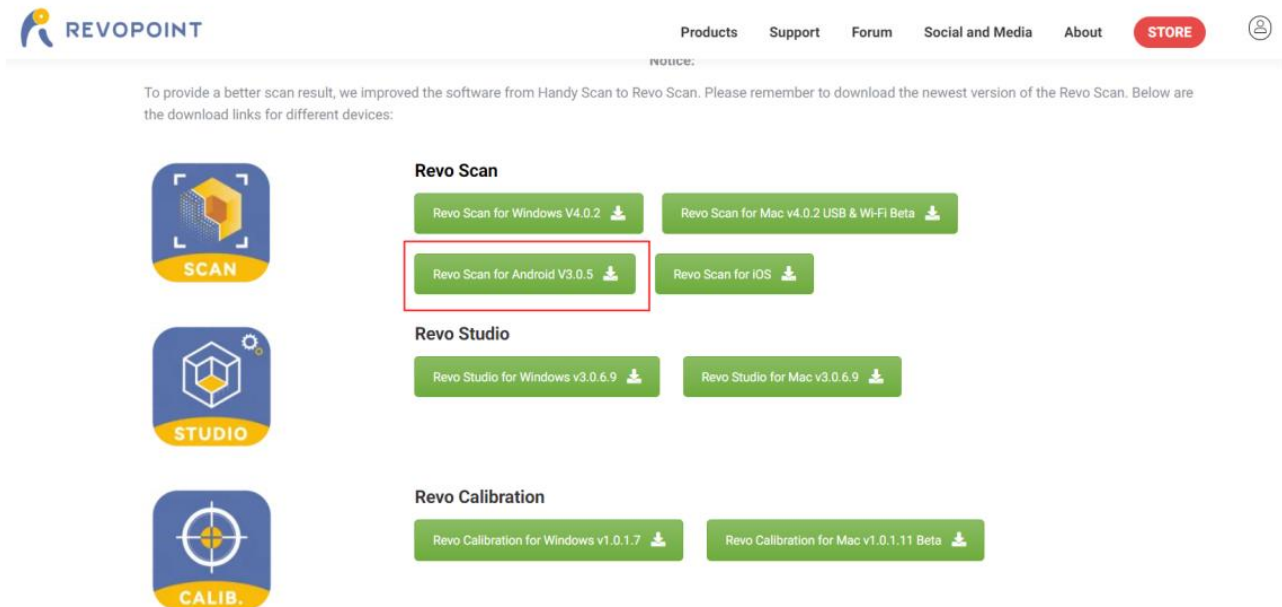
4. Click “New Scan” to scan the object.



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

Android Smartphone Connects MINI Via Wi-Fi

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



2. Power the MINI 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 MINI;

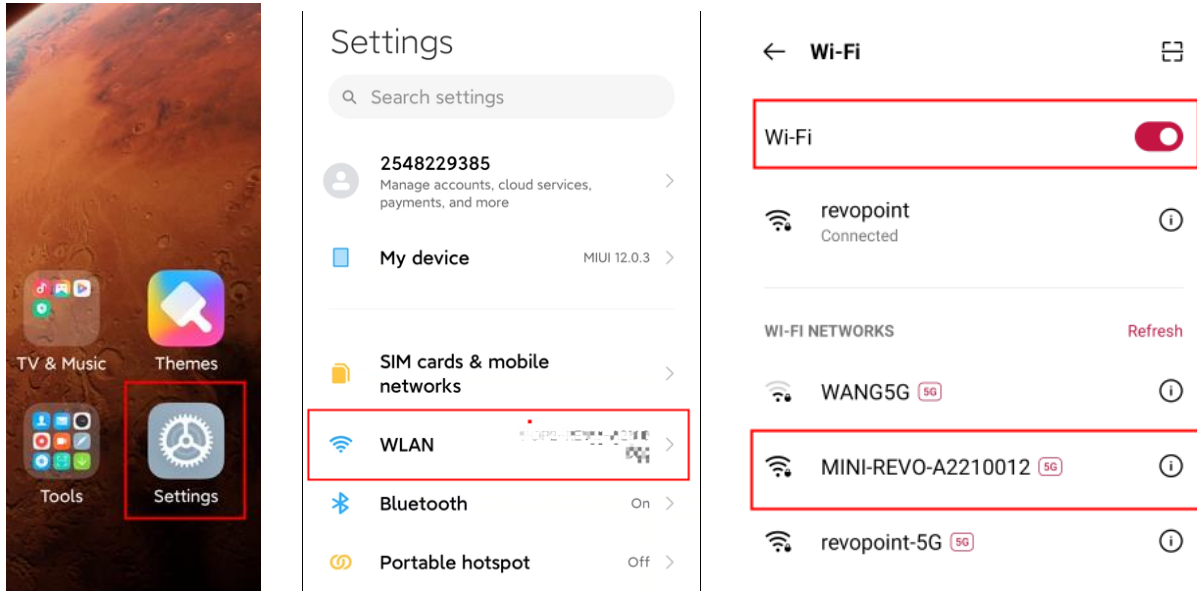
The default SSID is: **MINI-REVO-XXXXXXX**

The default Password is: **Revopoint3d**

For example: If the Serial Number of a MINI 3D scanner is: A22100122A6F00A64.

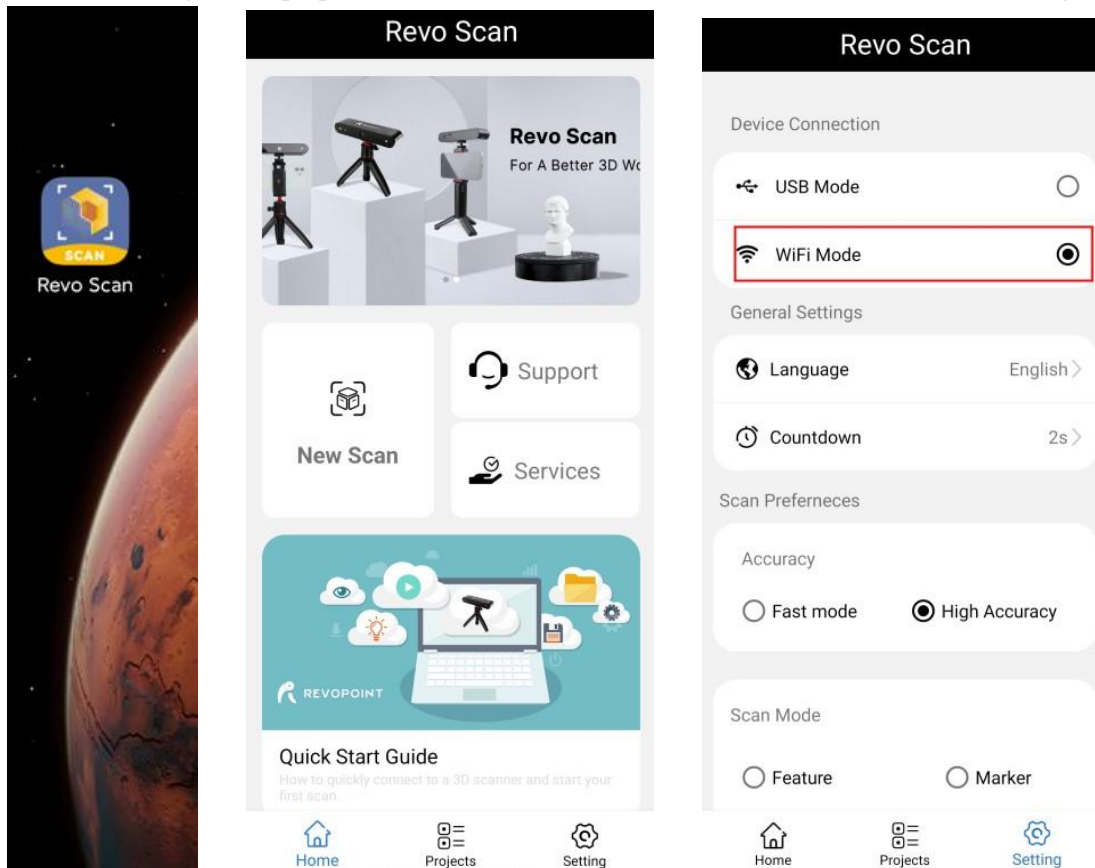
The Default SSID: MINI-REVO-A2210012

The Default Password: Revopoint3d

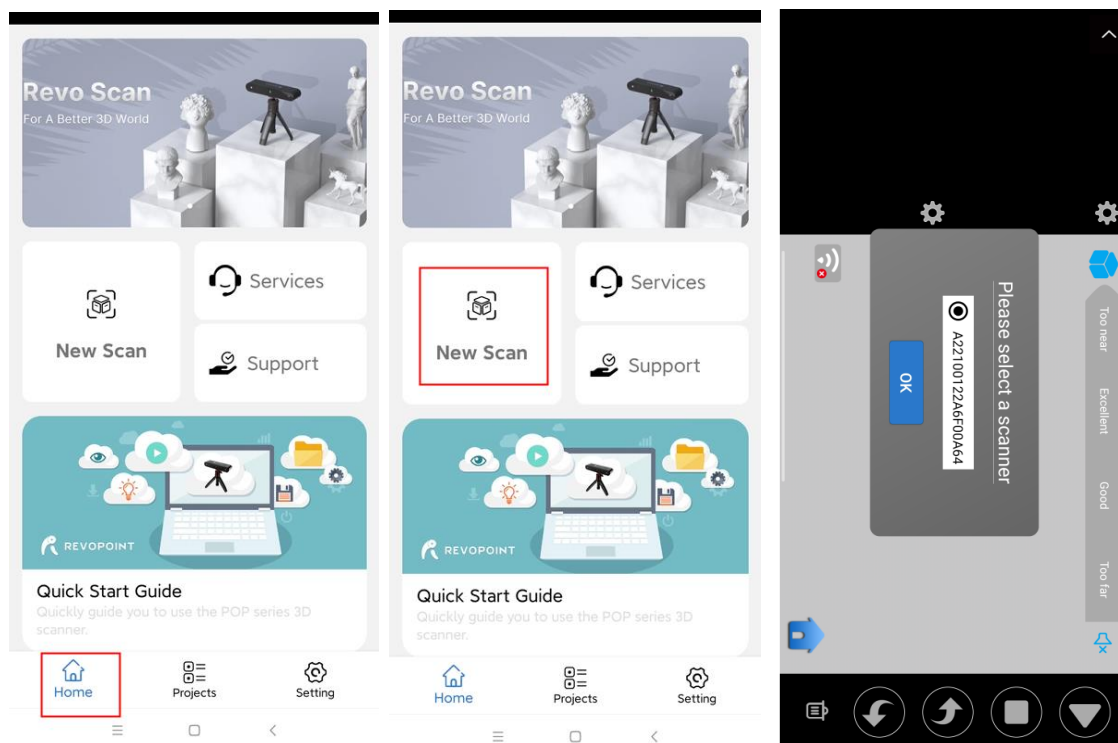


4. Open Revo Scan to confirm **Connection Mode** and **Scan Settings**;

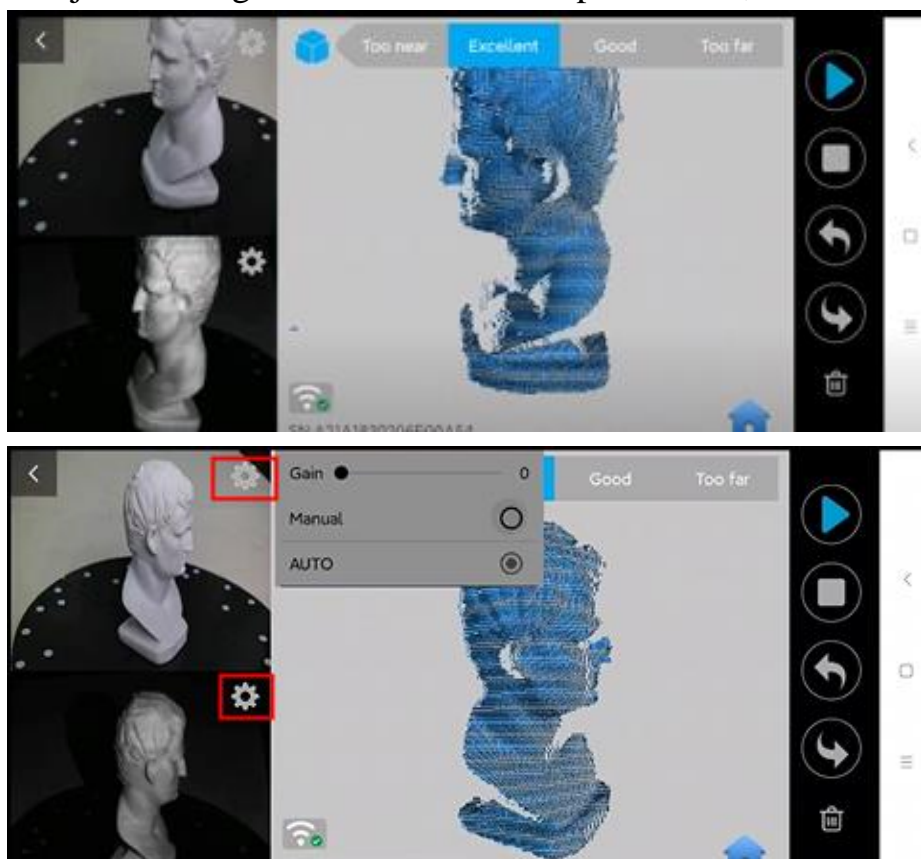
Before scanning, select proper **Accuracy**, **Scan Mode**, **Texture** and **Model Format** according to your demand.

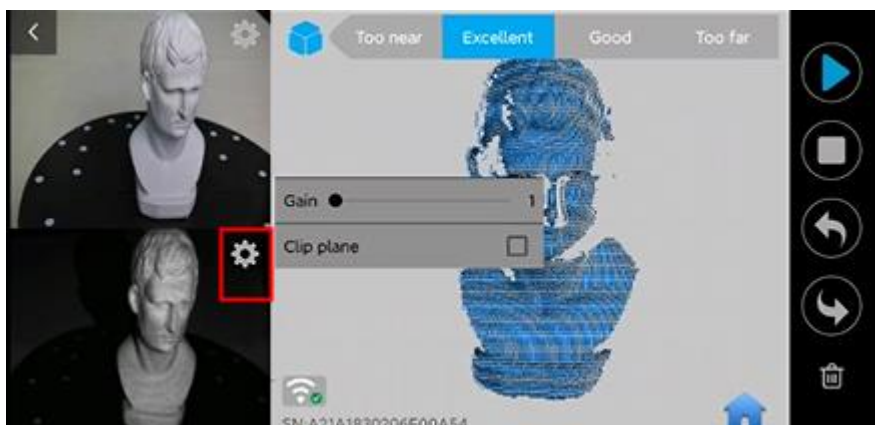


5. Back to **Home** and authorize the camera;



6. Adjust the brightness in RGB and depth camera;



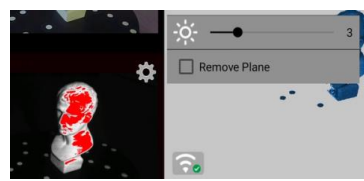
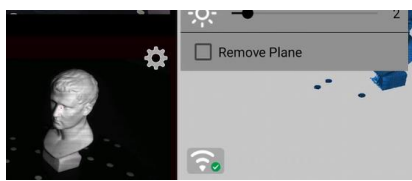
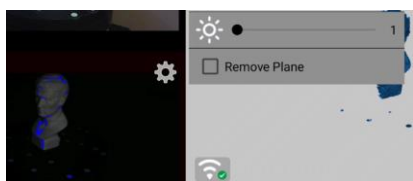


Note:

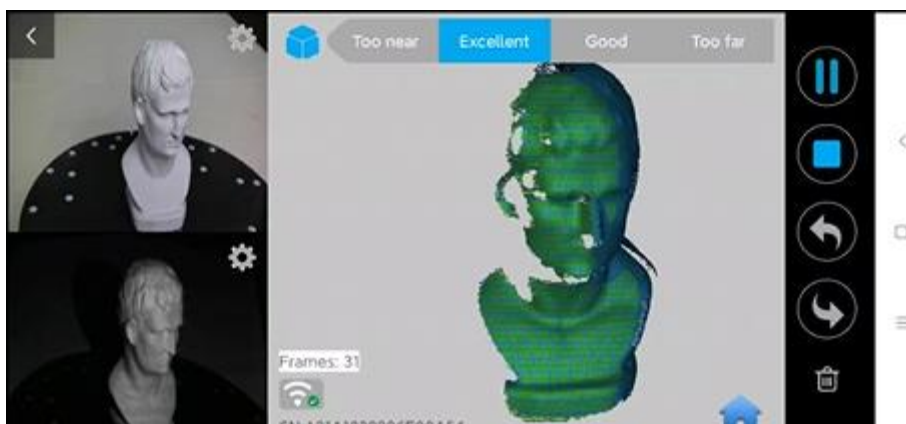
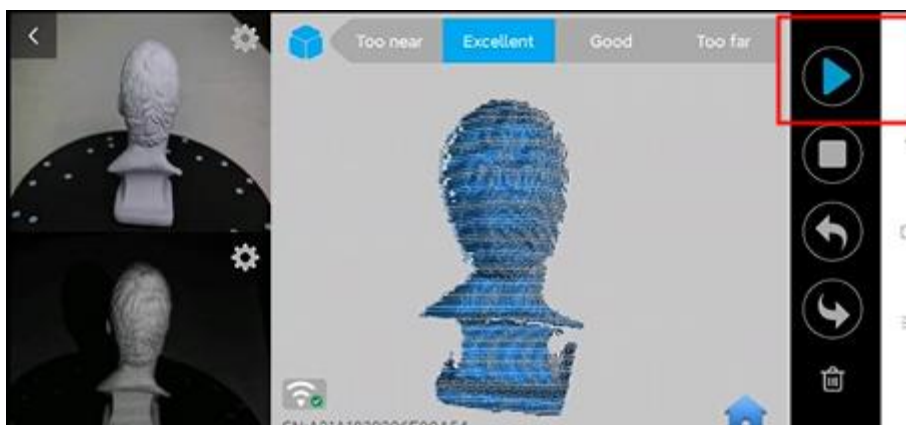
Underexposure (in Blue)

Perfect

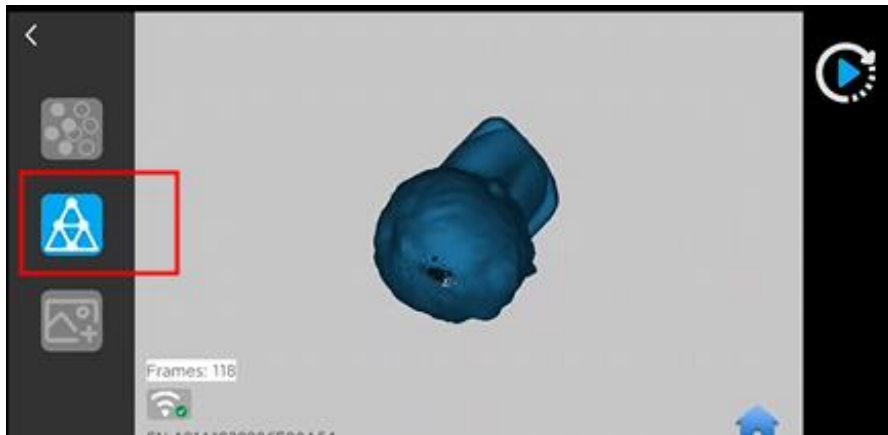
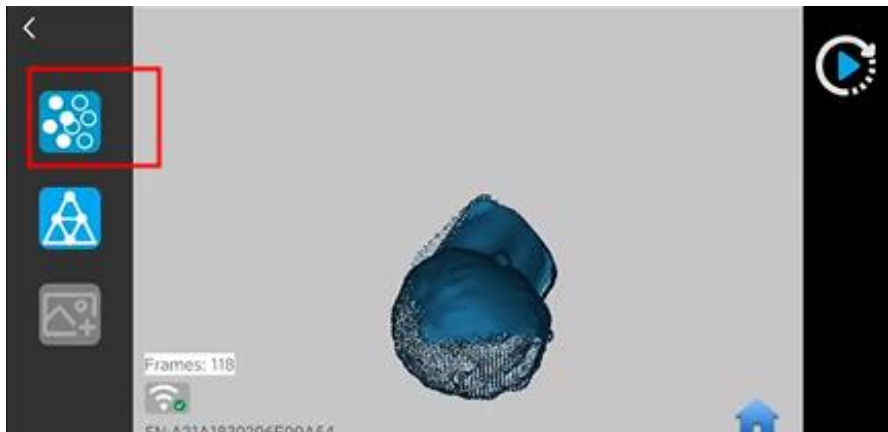
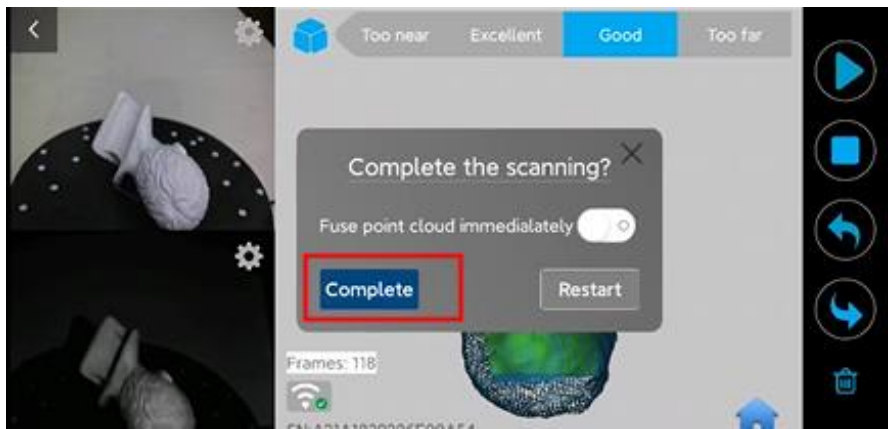
Overexposure (in Red)



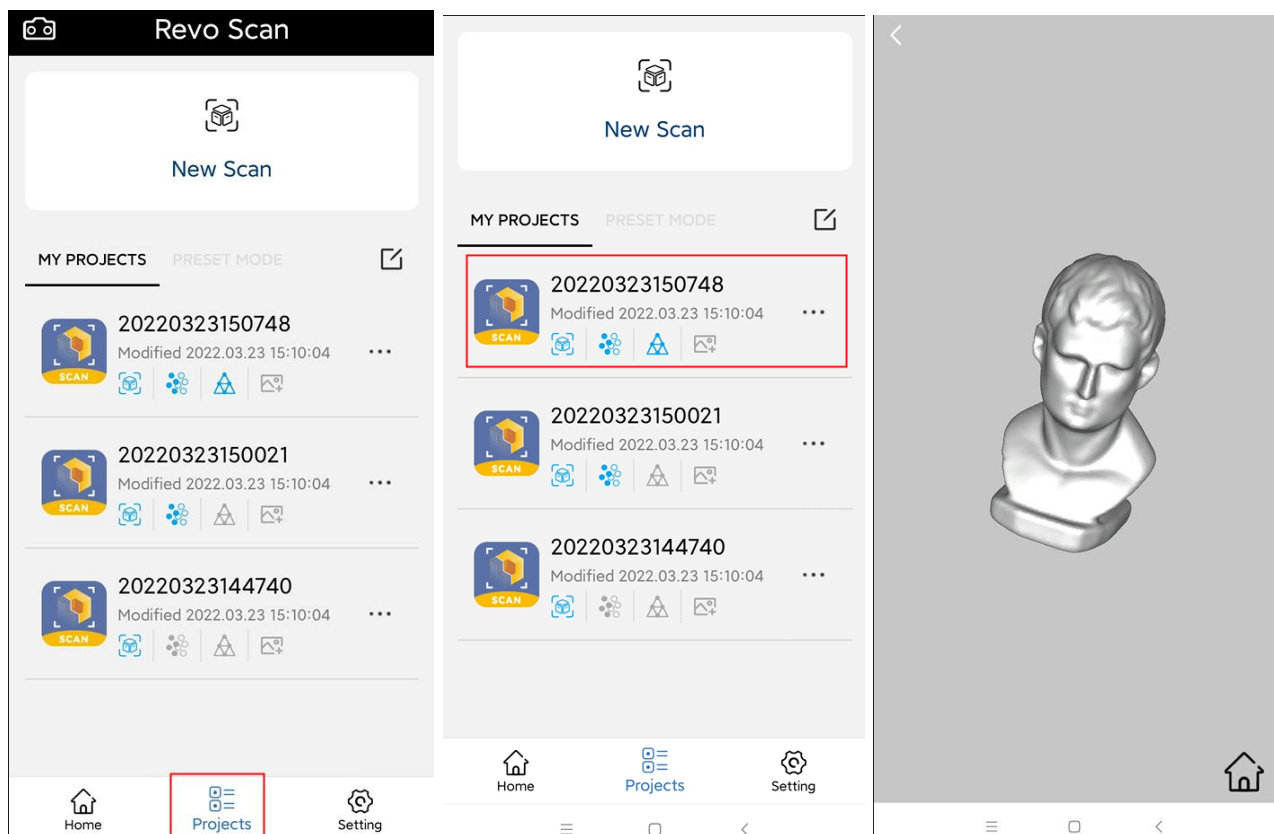
7. Click “Start” to scan;



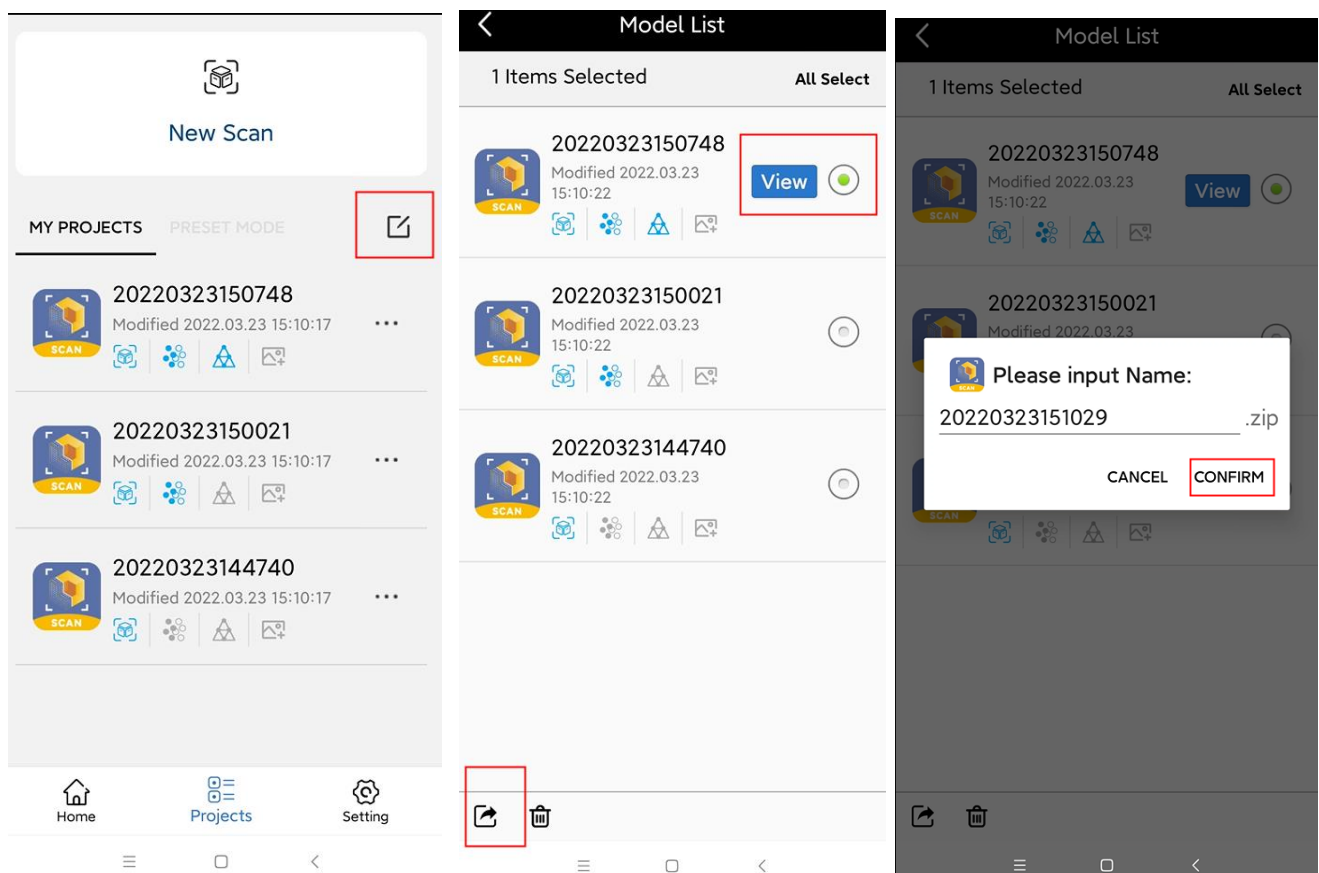
7. After completing scanning, perform Point cloud fusing and Meshing;



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



9. Export the 3D model to another device:



Android Smartphone Connects MINI Via USB Mode

Part List: MINI 3D Scanner, Power Bank, Phone Holder, 2-in-1 Mobile Cable and an Android smartphone.



Hardware Connection

- 1) Screw the phone holder on the power bank;
- 2) Fix the MINI 3D Scanner on the phone holder;



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



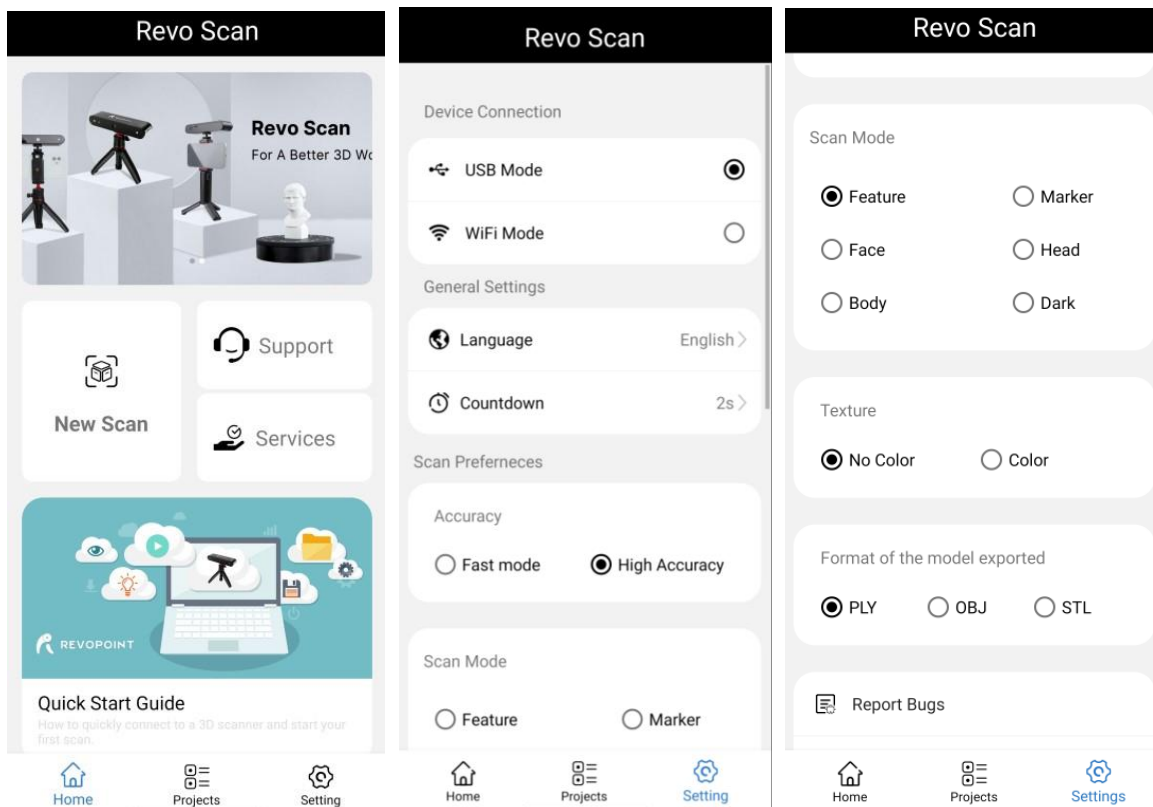
- 4) Fix the Android smartphone in the phone holder;
- 5) Connect the 2-in-1 mobile cable to the power bank (Type A) and the smartphone (Type C) separately;



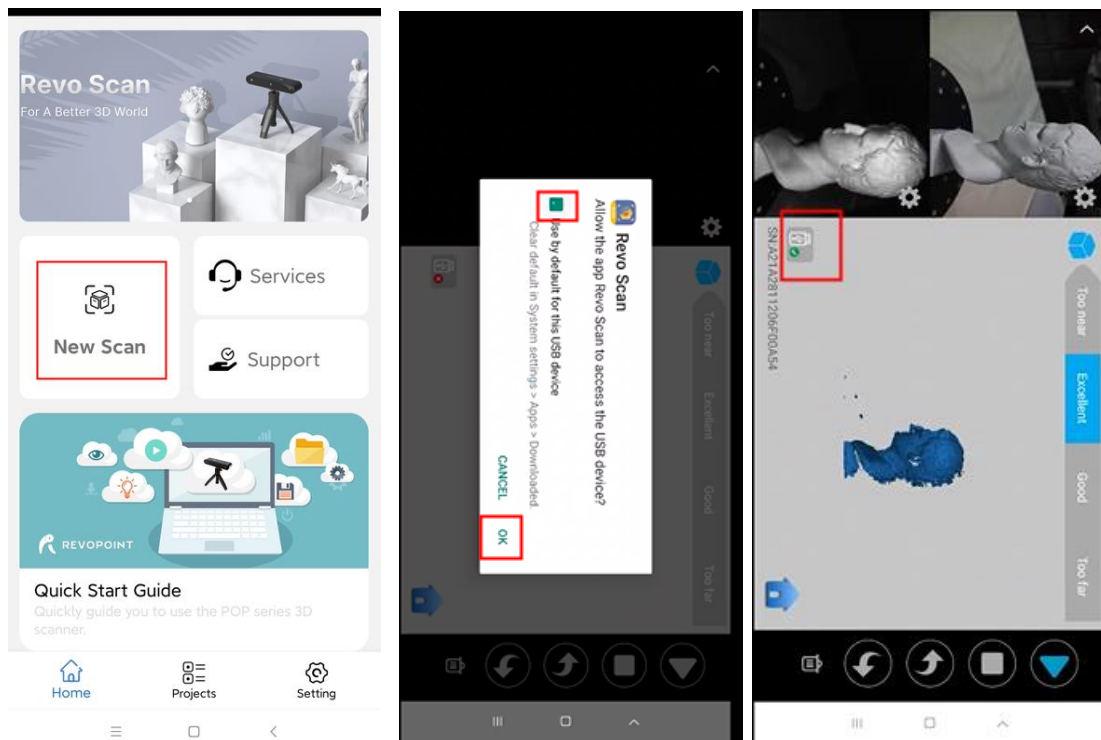
Scan with Android Device via USB Cable

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.

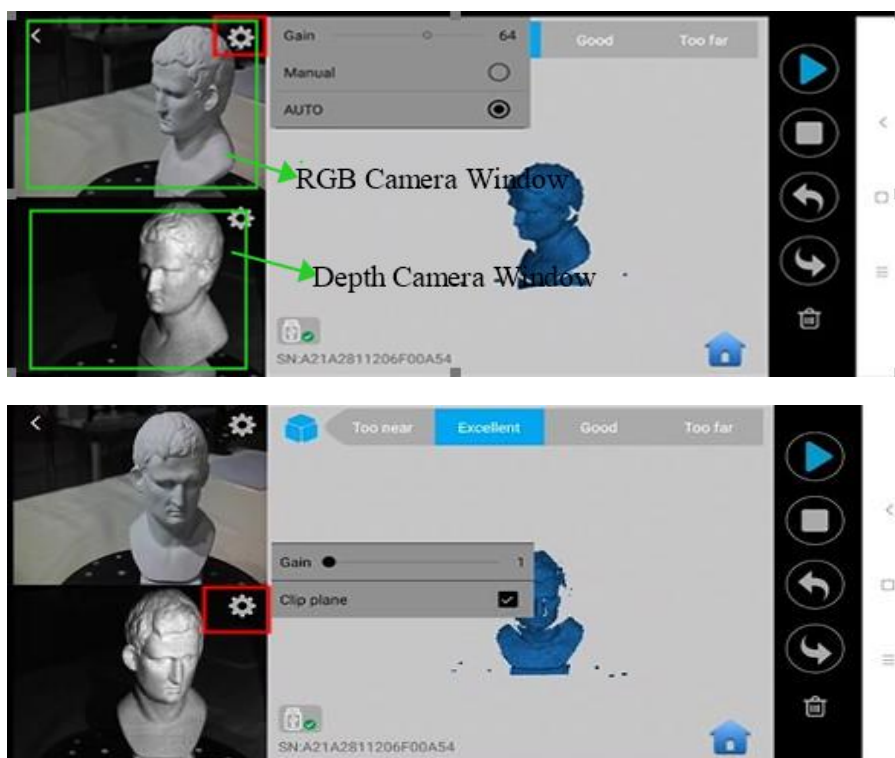


2. Click “New Scan” and authorize the camera;



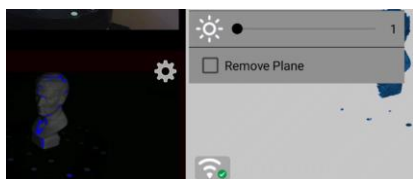
3. Adjust the brightness in RGB and depth camera;

Note: Auto first, then Manual (if it's available);

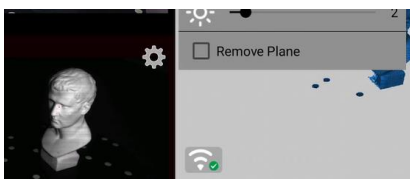


Note:

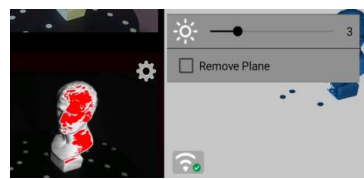
Underexposure (in Blue)



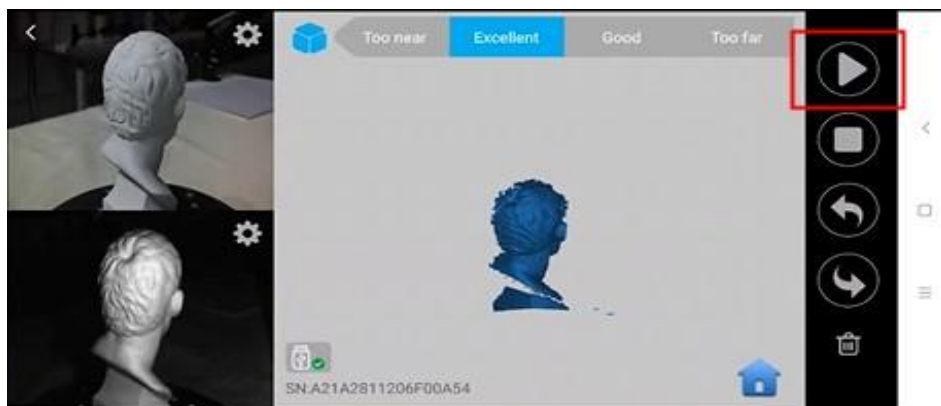
Perfect



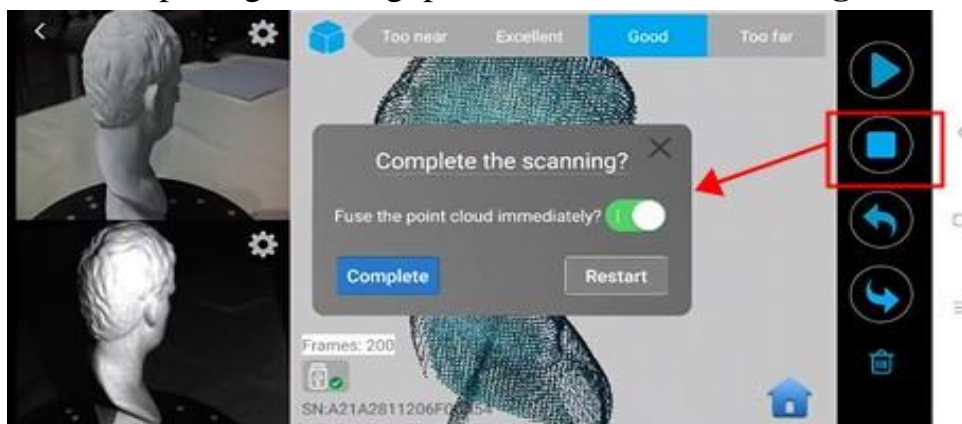
Overexposure (in Red)

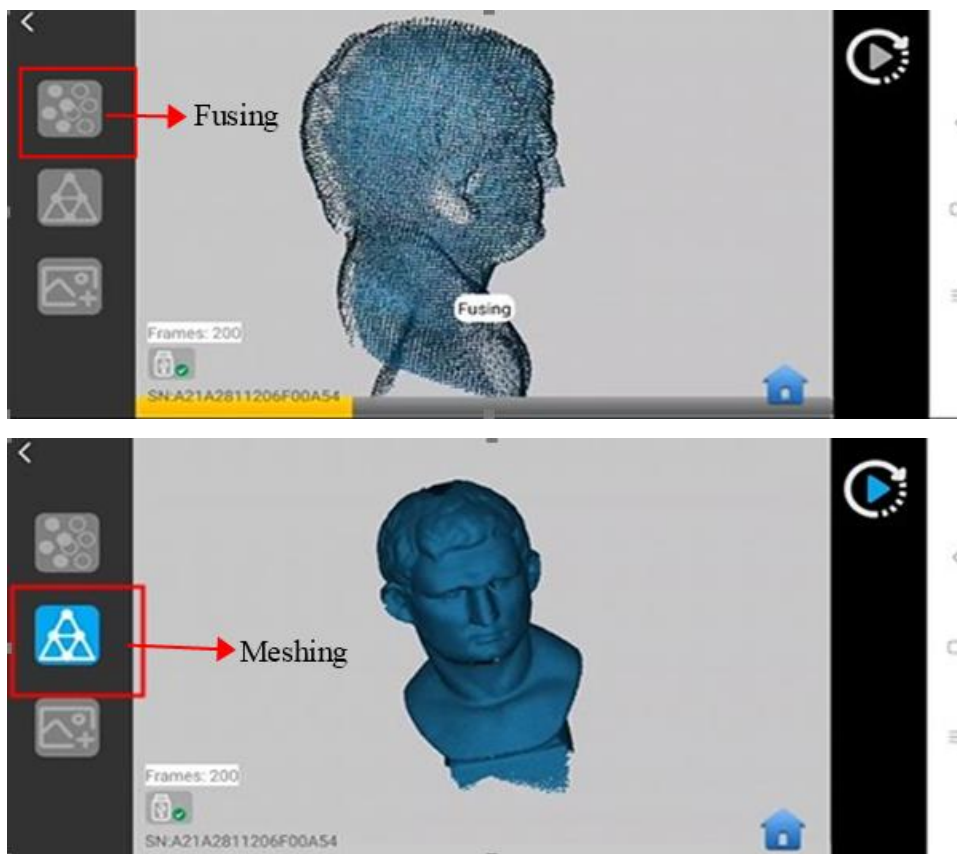


4. Click “Start”  to scan;

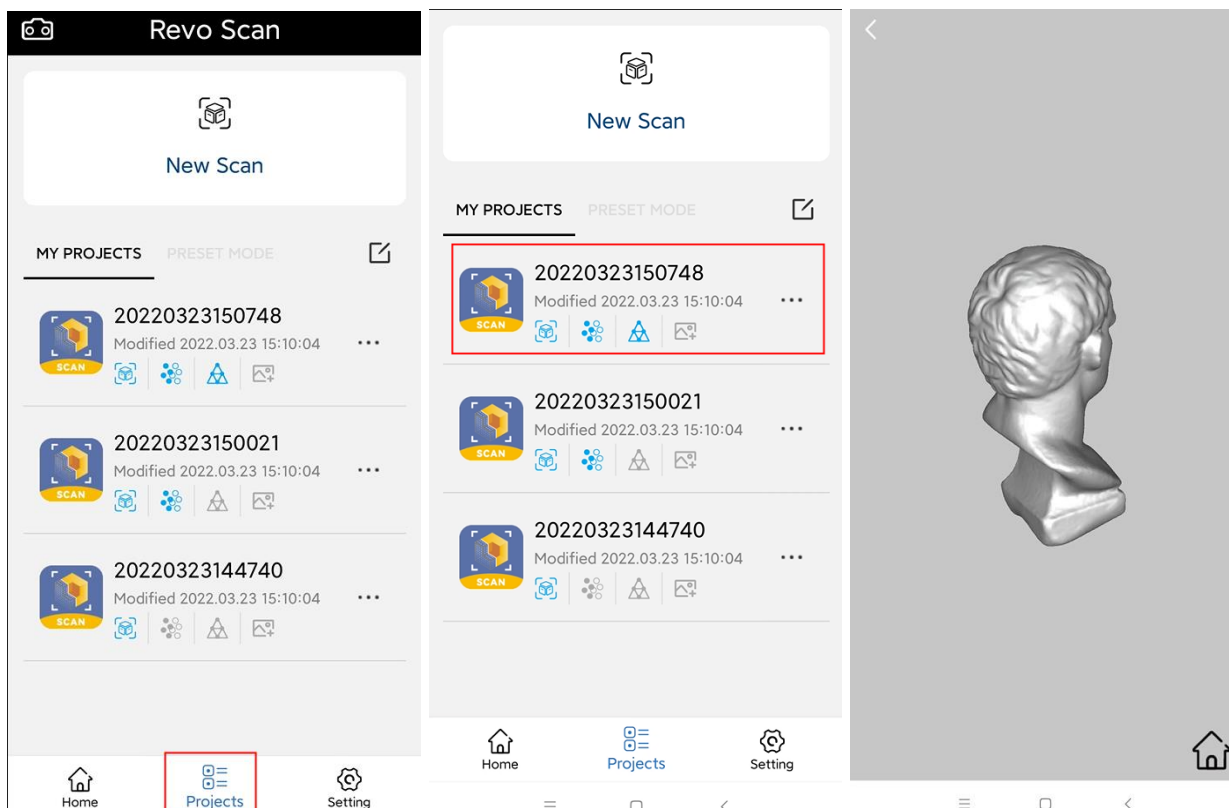


5. After completing scanning, perform Point Cloud **Fusing** and **Meshing**;

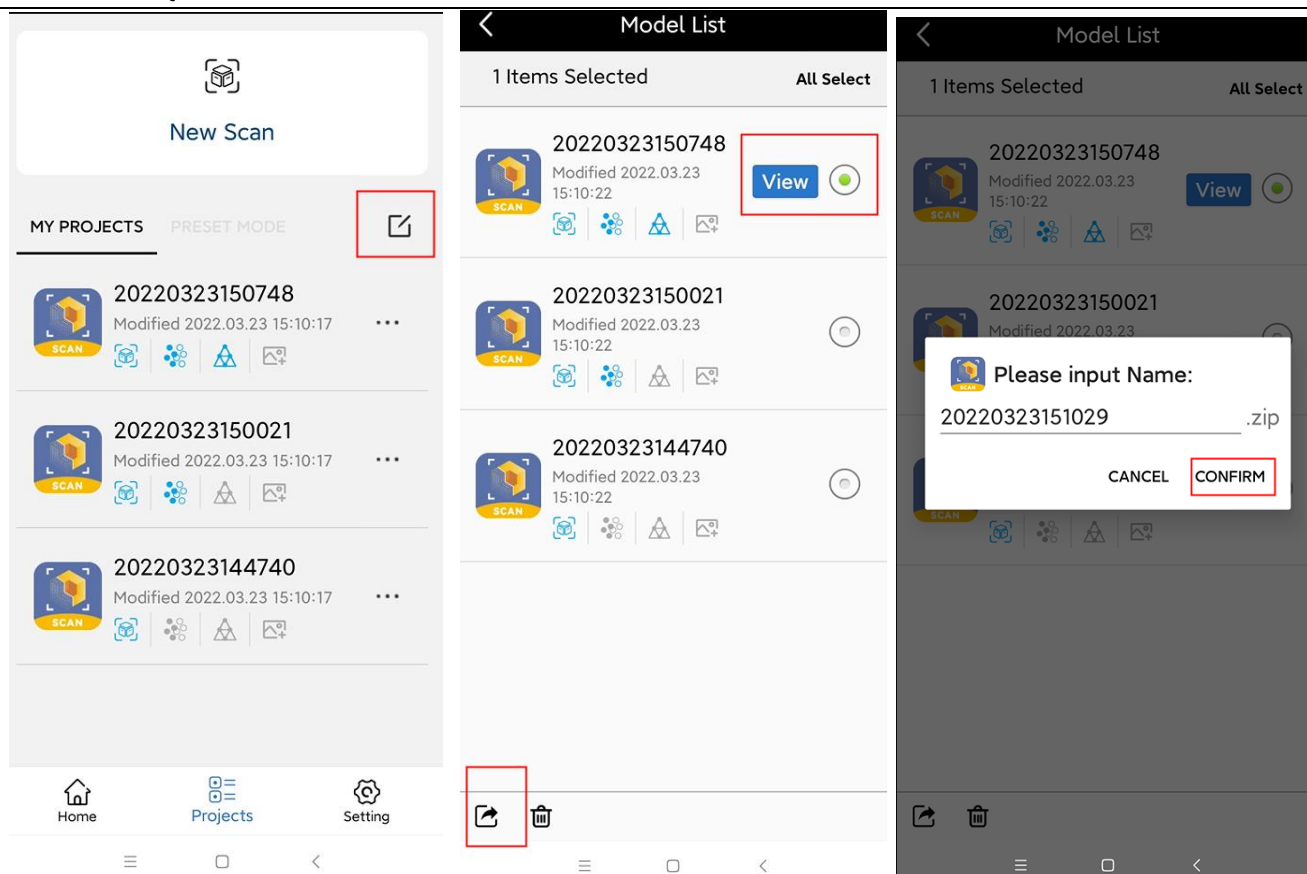




6. Check the 3D mode scanned in **Project**;



7. Export the 3D model to another device:



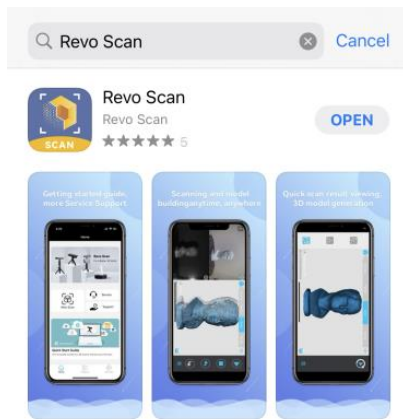
iPhone Connecting to MINI via Wi-Fi

Notice:

Plug the MINI 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 MINI, which is **MINI-REVO_XXXXXXXX**.

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

The default Password is: Revopoint3d

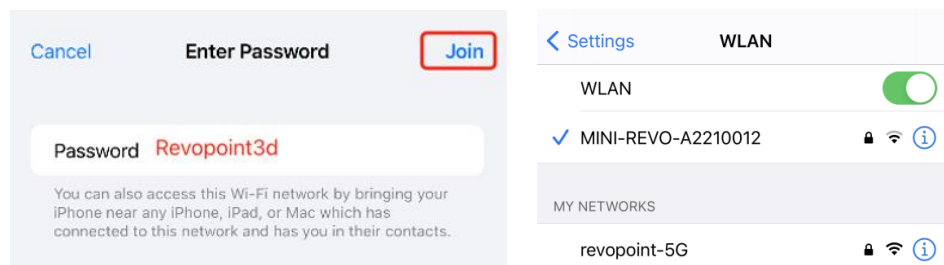
For example: If the Serial Number of one MINI 3D scanner is: A22100122A6F00A64.

The Default SSID: MINI-REVO-A2210012

The Default Password: Revopoint3d

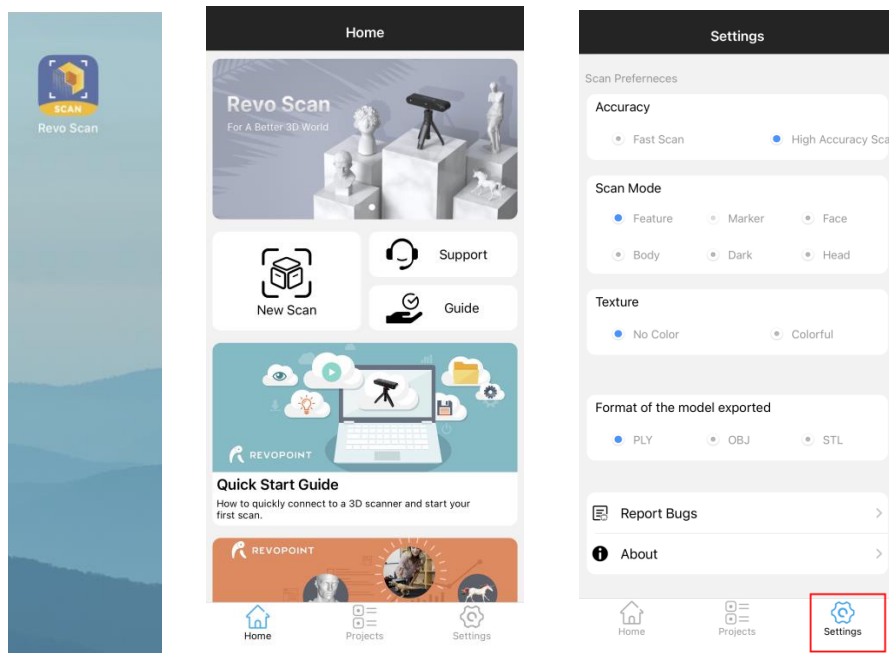


3. Type in the password: Revopoint3d and Confirm it connected successfully;

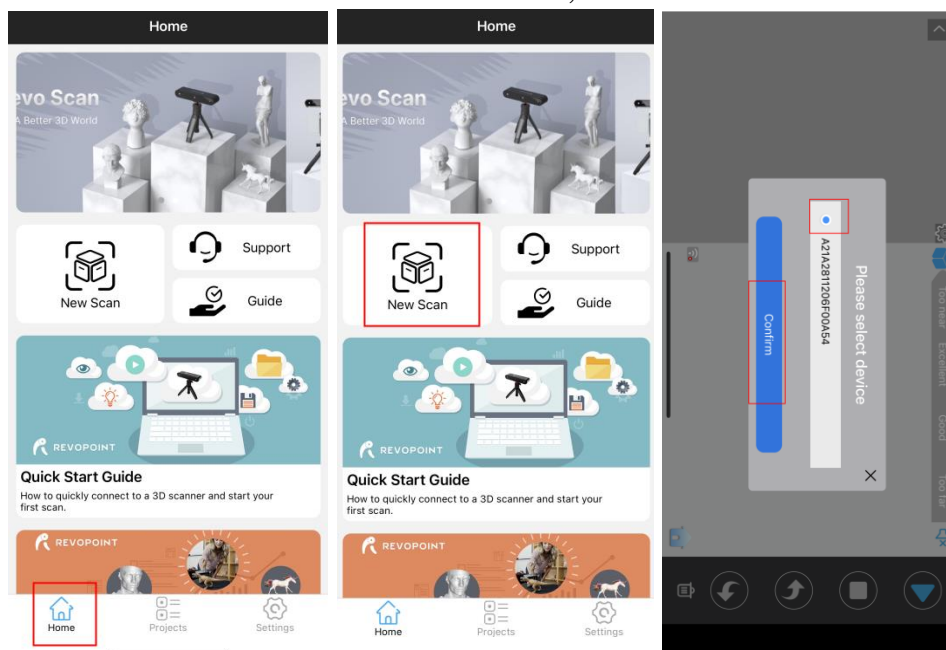


4. Open “Revo Scan” and confirm Settings;

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

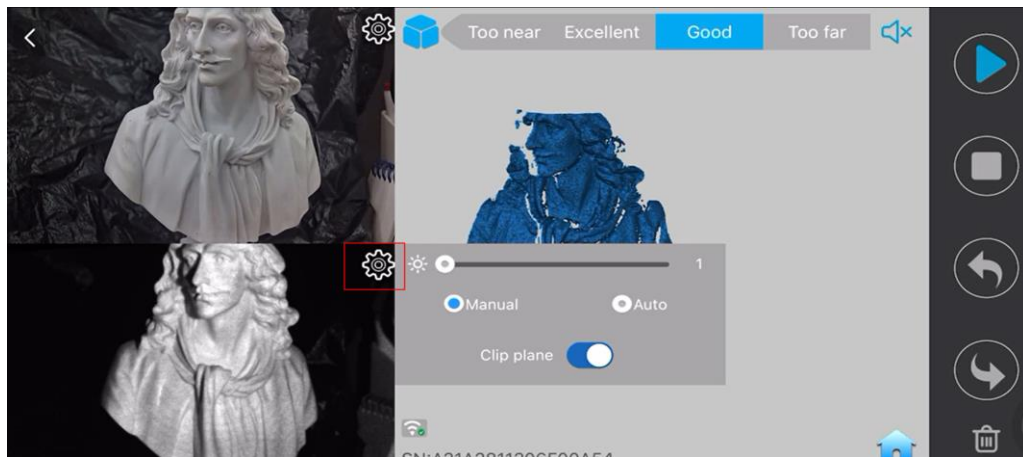
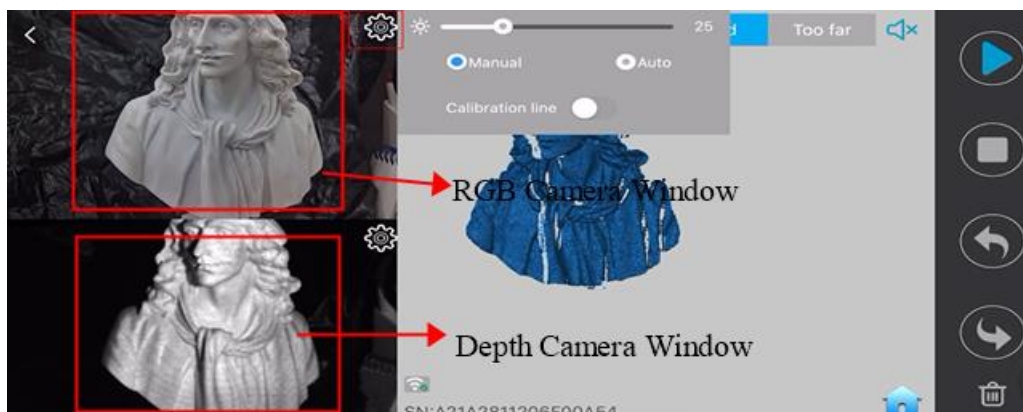


5. Back to Home and authorize the camera;



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.

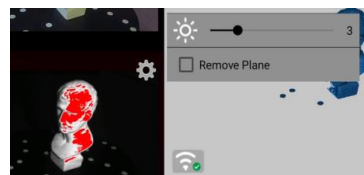
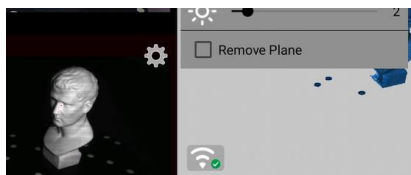
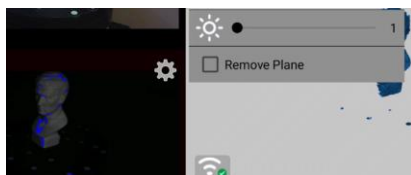


Note:

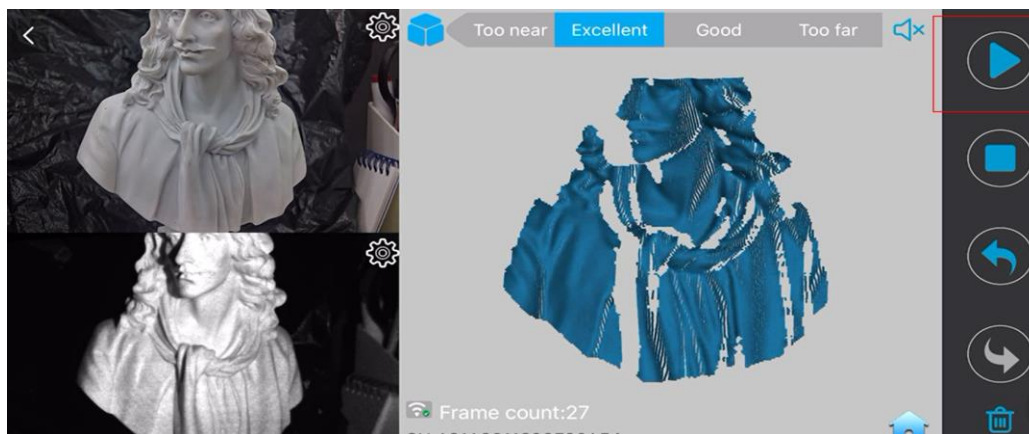
Underexposure (in Blue)

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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