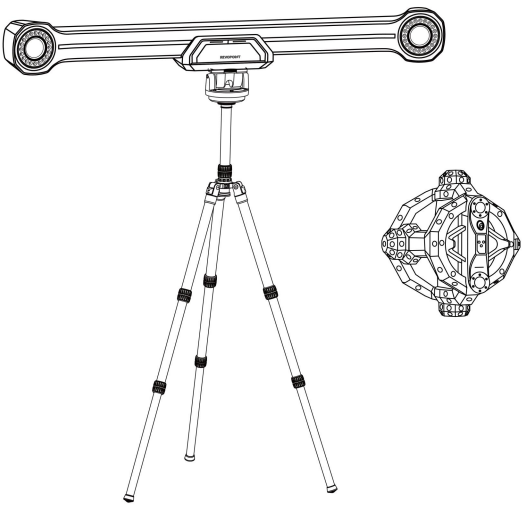
Trackit Optical Tracking 3D Scanner

Quick Start Guide

V1.0



REVOPOINT

Thank you for choosing a Revopoint 3D scanner! Please carefully read this Quick Start Guide before your first scan.

Begin by downloading the Revo Trackit software for your PC from the Support - Download section on Revopoint's website at global.revopoint3d.com for your Trackit 3D scanner.

Go to the bottom of the Download page to get the latest Quick Start Guide.

Visit Revopedia for more details on our products and usage.

Follow our YouTube account, Revopoint 3D, for tutorial videos.

This content is subject to change. Please refer to the latest version.

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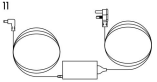
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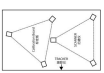
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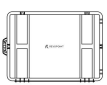
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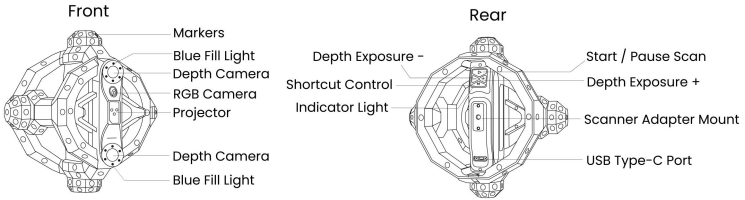
Certificate & Warranty

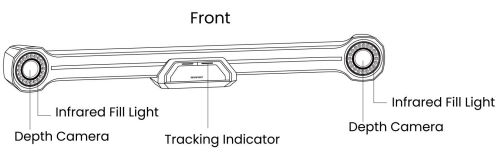
Note: The Power Adapter may vary depending on the country or region.
Please store the product and all the accessories properly. Damaged components need to be sent back to Revopoint for repair.

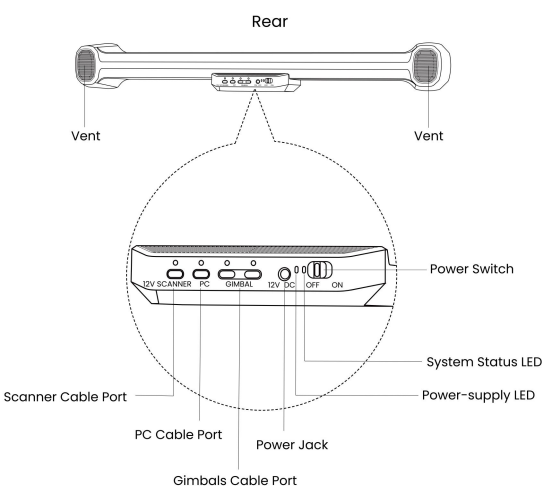
Product Profile

Scanner



Tracker





System Requirements

Minimum PC Requirements	Recommended PC Requirements
System Version: Windows 10/11 (64-bit) **RAM:** ≥ 32 GB **CPU:** Intel i7 13th Gen or better/AMD Ryzen 7 above the 7000 series **GPU:** NVIDIA GeForce RTX 3050 (8 GB)	**System Version:** Windows 10/11 (64-bit) **RAM:** ≥ 64 GB **CPU:** Intel i9 12th Gen or better **GPU:** NVIDIA RTX 4060 (8 GB) or better

Note: The software is only compatible with x86_64 architecture. If you're unsure about the CPU configuration, please ensure that the CPU has cores ≥ 8, threads ≥ 16, and a base frequency ≥ 2.4GHz. Please ensure the USB port on your PC is USB 3.0 or above.

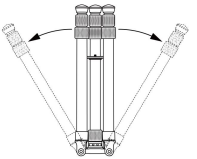
Warnings

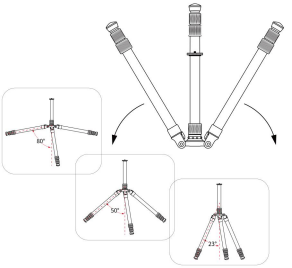
- This product has a Class 1 laser projector. Avoid looking directly at the laser up close, and do not use magnifying tools like telescopes or cameras to view the beam, as it can damage your retina. Keep reflective surfaces such as mirrors and glass away from the laser beam's path.
- Please keep the scanner away from water and other liquids. Use the product in a dry and dust-free environment.
- To ensure accuracy, it's recommended to use the product within an environmental temperature range of 20 ℃ to 25 ℃ (68 ℉ to 77 ℉). The accuracy deviations may occur beyond this range.
- Don't disassemble the product or its components.
- The Scanner Tripod and the Calibration Board Tripod are non-adjustable in height.
- Avoid holding or rubbing the markers on the scanner when using the product.
- Ensure the computer is connected to a power supply when using the product.
- Be sure to place the product and accessories in the case when transporting them. It's recommended that all unused products and accessories be stored in their case.

Installation and Connection

Set Up Tracker's Tripod

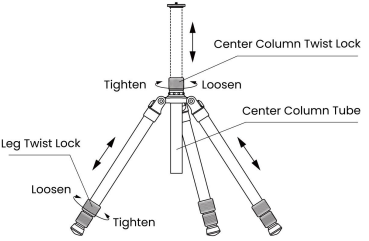
Step 1: Pull the legs outwards to unfold the tripod.



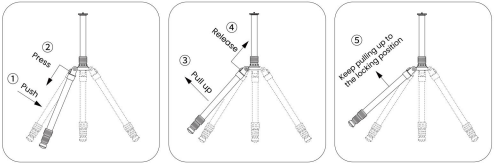


Step 2: Continue pulling the legs down until they lock into place. (A click sound indicates it has locked into one of the three preset positions shown in descending order.)

Step 3: Adjust the center column and the legs to your required height as shown in the diagram.

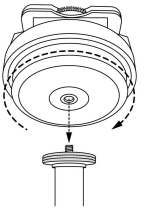


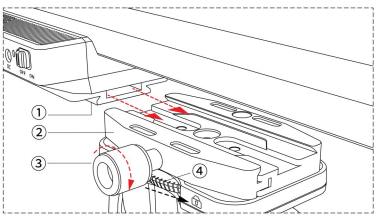
Note: If you need a wider leg spread, follow the steps in the diagram.



Install Tracker

Step 1: Align the Tracker Gimbal's screw hole with the tripod screw, then rotate the gimbal until securely attached to the tripod.



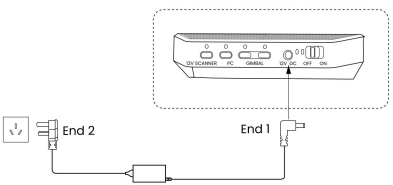


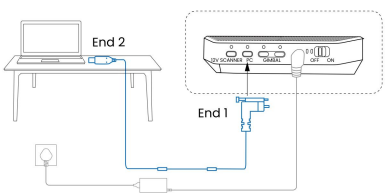
Step 2: Slide the Quick Release Plate① on the bottom of the Tracker into the groove of the Quick Release Clamp②, and ensure the white lines on the front are aligned. Then, tighten the locking knob③ clockwise.

Note: If the Quick Release Clamp is loose, tighten it by sliding the gimbal's latch④ in the direction shown.

Connect Tracker

Step 1: Connect the Power Adapter's end 1 to Tracker's "12V DC" port, and end 2 to a power supply.

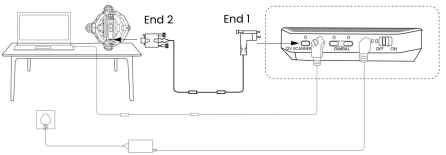




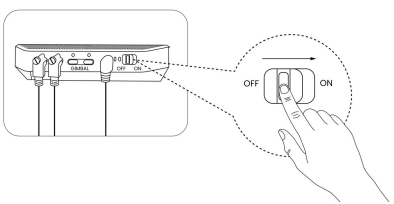
Step 2: Connect the PC Cable's end 1 to Tracker's "PC" port and tighten the screws. Insert the end 2 into a USB Type-C port on your PC.

Connect Scanner

Connect the Scanner Cable's end 1 to Tracker's "12 V SCANNER" port and tighten the screws. Connect the end 2 to the USB Type-C port on the Scanner and tighten the screws.



Power Trackit



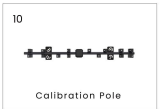
Turn on the power switch on the Tracker's back. When the right LED turns green and the software interface shows "Scanner connected," it's ready.

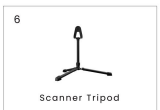
Calibration

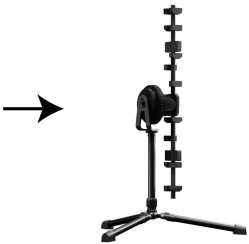
Calibrate your Trackit before your first use, after scanning environment/temperature changes, or when high-accuracy scan is required.

Calibration Installation and Connection

1) **Install and Connect Tracker and Scanner:** Refer to the last chapter.
2) **Connect Tracker Gimbal:** Connect Tracker and its gimbal with the Tracker Gimbal Cable (short yellow cable).
3) **Install and Connect Scanner Gimbal:** Install the Scanner Gimbal onto the Scanner Tripod with its bolt. Connect the Tracker and the Scanner Gimbal using the Scanner Gimbal Cable (long yellow cable). Attach the cable to the Scanner Tripod using cable ties to prevent tangling with the Calibration Pole during calibration.
4) **Install the Calibration Pole:** Mount the Calibration Pole onto the Scanner Gimbal. Keep the Calibration Pole upright with the inclined surfaces facing the table.







5) **Prepare other accessories:** Get the Calibration Board Tripod and the Positioning Pad for following hand-eye calibration process.

Start to Calibrate

Open the software, and click the "Scanner Calibration" in the bottom left corner to enter the calibration program.

Follow the on-screen prompts to insert the USB Flash Drive into your PC. Then, scan the QR codes on the Calibration Pole and the Calibration Board to import their SN info.

Once imported, follow the three steps below to start the calibration:

Calibration Cautions:

- Ensure the Tracker and Scanner's cameras are not blocked during the whole process.
- To get accurate calibration results, ensure that only the markers on the Calibration Pole and Board are captured.
- Don't move the device while it indicates "Calibration in progress".

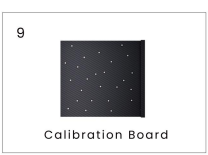
1) **Scanner Calibration:** Place the Calibration Board flat on the table with the white side facing up. Hold the Scanner, and follow the on-screen calibration prompts.

2) **Tracker Calibration:** Position the Scanner Tripod with the Calibration Pole facing the Tracker. Adjust the Tracker Tripod's height to ensure the Tracker captures the Calibration Pole. Then, following the software prompts, calibrate the Tracker at different distances.

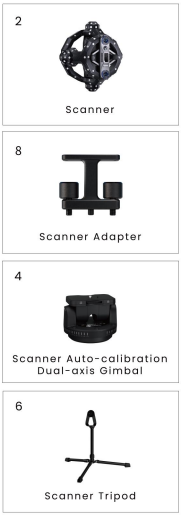
3) **Hand-Eye Calibration:**

① **Place the Positioning Pad:** Unfold the Positioning Pad on the table. Position the Scanner and Calibration Board Tripods as shown on the Positioning Pad.

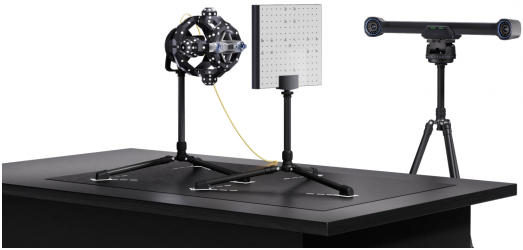
② **Install the Calibration Board:** Place the Calibration Board into its tripod with the black side facing the Scanner and the markers side facing the Tracker. Ensure no markers are blocked during the placement.



③ **Install the Scanner:** Remove the Calibration Pole from the Scanner Gimbal. Then, connect the Scanner to the gimbal using the Scanner Adapter.



Once completed, place the Tracker and do the Hand-Eye Calibration following the on-screen prompts.



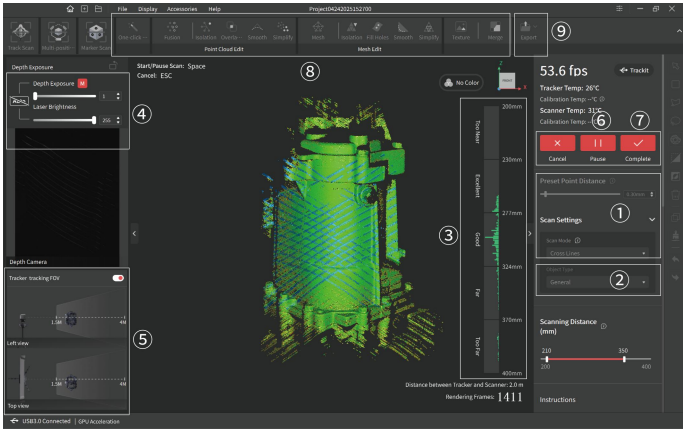
Watch the Tutorial Video in the software for detailed calibration steps.

Your First Scan

Track Scan

Scan without markers by tracking the Scanner's position and angle in real time. The Tracker and object must stay still during the scan, making it suitable for quickly scanning small and medium-sized objects.

After connecting the scanner, click the New Project button on Revo Trackit's Home page to enter the project interface. Select "Track Scan" and perform your scan using the following steps:



※ Please refer to the actual interface in Revo Trackit.

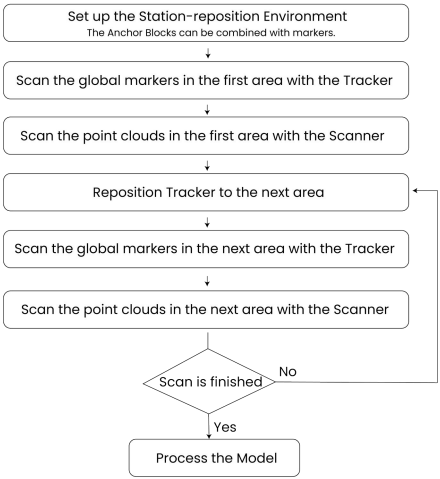
① In Scan Settings, select Cross Lines or Single Lines mode, and the point distance as required.
② Select the Object Type according to your requirements.
③ Move the Scanner closer or further away from the object until the scanning distance indicator bar shows Excellent or Good.
④ Click the Auto button to automatically set the Depth Cameras' exposure. Or turn off the auto exposure and adjust it by dragging the slider until the laser lines are clearly visible in the depth camera's preview window.
⑤ Adjust the distance between the Scanner and the Tracker to ensure the Scanner stays within the Tracker's FOV.
⑥ Click the ▷ button to start the scan. During the scan, aim the Scanner at the object. Refer to the distance indicator bar to ensure an excellent distance. Hold the Scanner steadily over one area for a few seconds until the model surface is entirely green. Then, move to the next area slowly and steadily.

Note: Don't block the Tracker's cameras during scanning, and ensure that the Tracker can clearly see the markers on the Scanner and the object.
Try to ensure only the object is captured by the Scanner.
The point cloud changes from red to green during the scanning process as more data is captured. A totally green point cloud indicates higher point cloud quality.

⑦ Click the ❙❙ button to pause and check your model anytime during the scan. If the model is incomplete, click the ▷ button to continue your scan. Click the ✓ button to finish the scan when the model is complete.
⑧ Click **One-click Edit** to process the model automatically, or manually edit the model using the Fusion and Mesh settings, and other tools if you need a more detailed model. When manually processing for point cloud fusion, it is suggested that the system's recommended point distance be used. Setting a very small point distance will lead to a long calculation time. For details, please refer to the User Manual on Revo Trackit's learning page.
⑨ After post-processing, export the model in formats such as PLY, OBJ, or STL.

Multi-position Scan

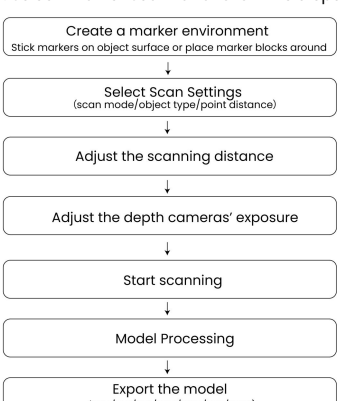
Ideal for scanning large objects like cars and industrial parts. Before scanning, divide surfaces into distinct areas. During each area scan, capture global markers after moving the Tracker, then capture the point cloud. Ensure at least five markers or Anchor Blocks are always seen when moving the Tracker.
After the scanner is connected, click the New Project button on Revo Trackit's Home page to enter the project interface. Select "Multi-position Scan" and follow the steps below to start your scan:
Refer to the Trackit User Manual for detailed instructions.
Manual Location: Visit global.revopoint3d.com and navigate to Support > Download > Revopedia.



Marker Scan

The Scanner also functions as a standalone 3D scanner, but it requires markers to be placed on the objects for the scan to be performed successfully. It's suitable for scanning small and medium-sized objects.

After the scanner is connected, click the New Project button on Revo Trackit's Home page to enter the project interface. Select "Marker Scan" and follow the steps below to start your scan:



IC Warning

This device complies with Industry Canada's license-exempt RSS standard (s). Operation is subject to the following two conditions:
(1) this device may not cause interference, and
(2) this device must accept any interference, including interference that may cause undesired operation of the device.
This Class B digital apparatus complies with Canadian ICES-003.
IC RF Statement:
When using the product, maintain a distance of 20cm from the body to ensure compliance with RF exposure requirements.

FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the 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 to 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.
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body.

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