Manuals+ — User Manuals Simplified.

SHINING 3D RN-113 Multifunctional Handheld 3D Scanner User Guide

**For More Shining Ideas
EinScan Pro HD
Multifunctional Handheld 3D Scanner**
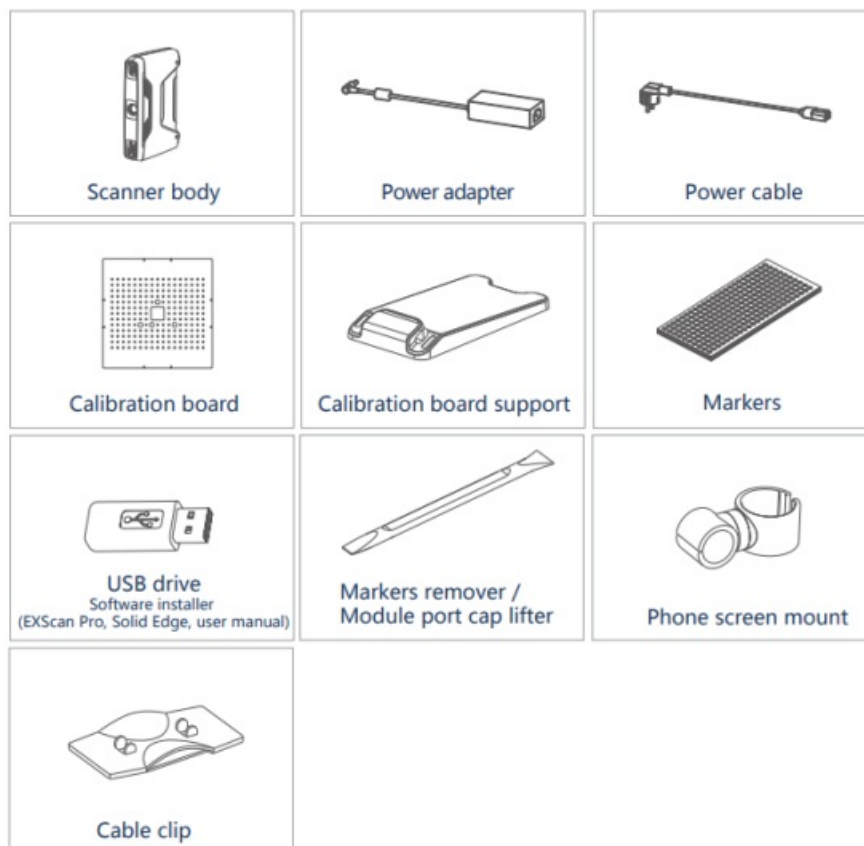

**Quick Start Guide
Getting Started with EinScan Pro HD**

Contents

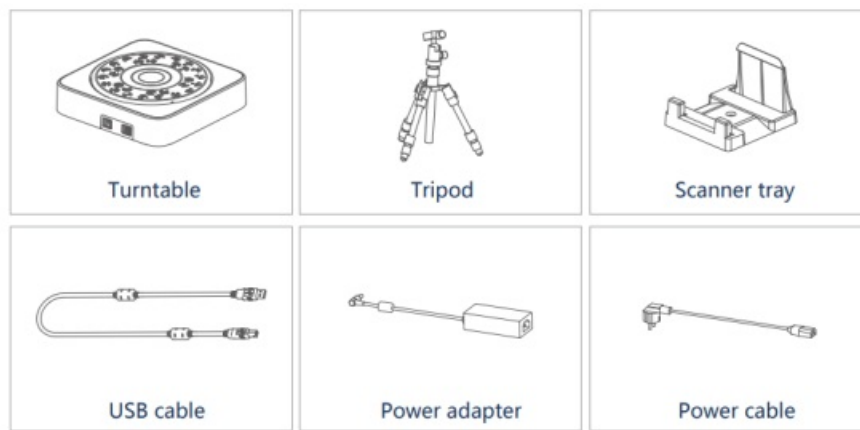## Preparation

Device List
Standard Pack

Note:

1. Plug in dongle before opening Solid Edge software

2. Find the use of phone screen mount in Support-Help at www.einscan.com

Industrial Pack (optional)

Turntable	Tripod	Scanner tray
USB cable	Power adapter	Power cable

Color Pack (optional)

Texture camera

*Please only use water to clean the calibration board, avoid touching any corrosive liquid.

Recommended

OS	Win10, 64bit
Graphics Card	NVIDIA GTX/RTX series cards higher or equal to GTX 1080
Video Memory	>4G
Processor	I7-8700
Memory	64G
Interface	high-speed USB 3.0

Installation

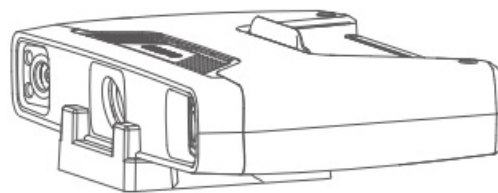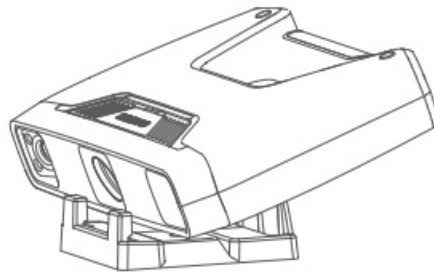### Hardware Installation

1. Standard Pack

   STEP 01 Turn on the device and connect it to the computer through USB 3.0 port.
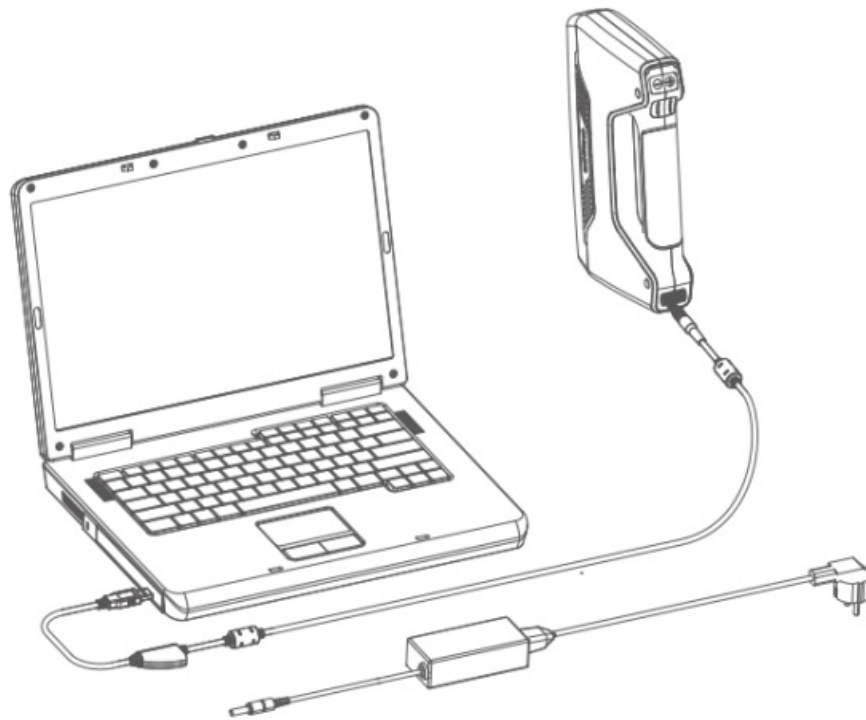
2. Industrial Pack

STEP 01

Fasten the scanner tray onto the tripod and place the scanner on the tray.

STEP 02

Plug the USB cable into the USB port of the turntable and connect it to the computer. Connect the power cable to the turntable.
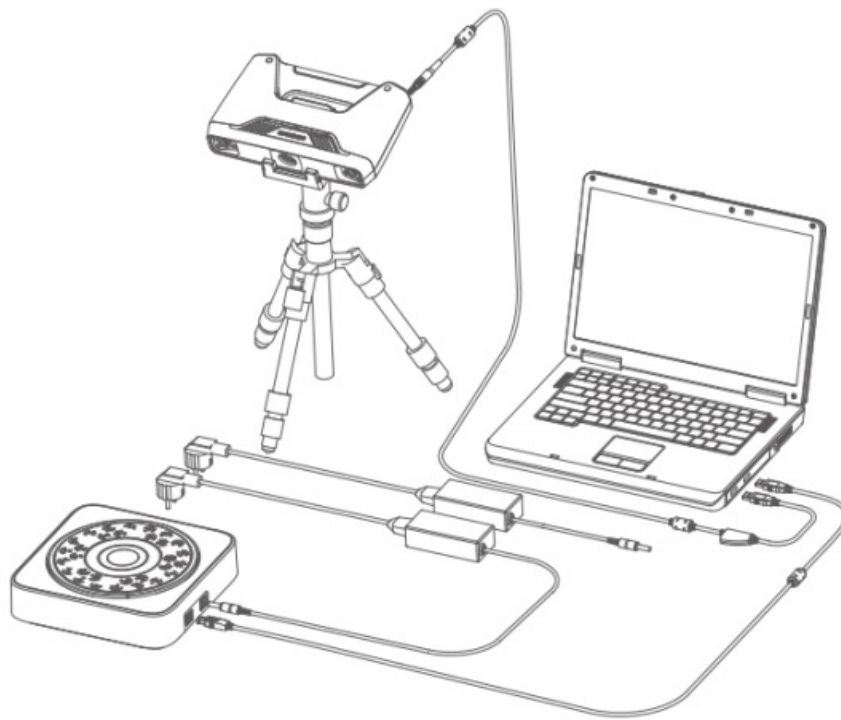
3. **Color Pack**

   STEP 01 Hold the device upright and remove the USB port cover. The cover is located near the logo on the right side of the device.
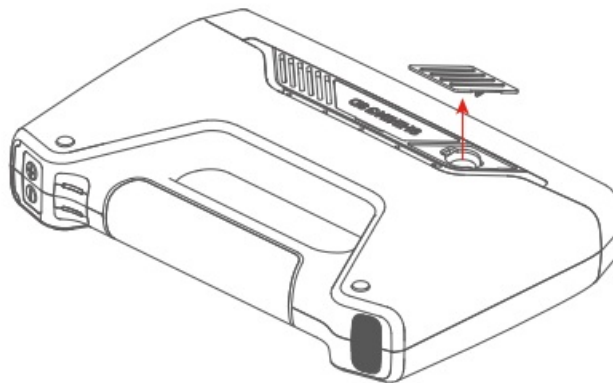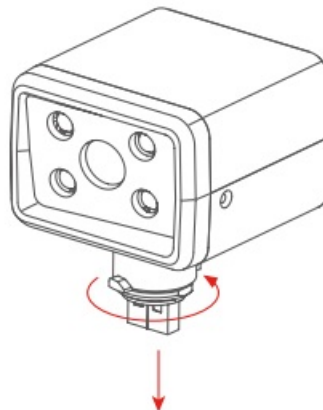
4. **Operation Environment**

   Avoid direct sunlight or too bright of light indoors.

   Make sure the scanned object and table are stable. For Fixed Scan

Software Installation

Software Download

Download the software and user manual from **support.shining3d.com** or **www.einscan.com/software-download**

STEP 01 Run the installer
 Double click software installation icon to install the software.

STEP 02 License Activation
After successful installation, when the device is correctly connected, double-click to open the software and activate the device. The format of activation is "online activation". Make sure your computer is connected to the Internet.


Or do local activation and find the license in the USB drive.
Attention: If you install another device of different serial number, the software will automatically notify users to activate this device.

Calibration

STEP 01 Camera Calibration
Follow the instruction on the software to place the calibration board in 5 different positions. Hold the scanner vertically and cover the screen range.
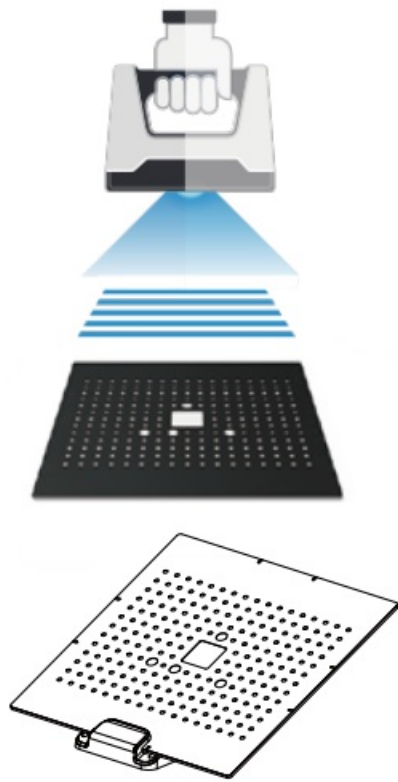
STEP 02
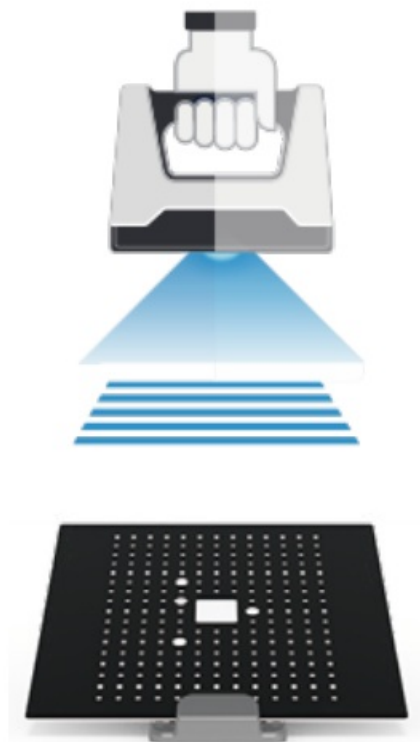
STEP 03
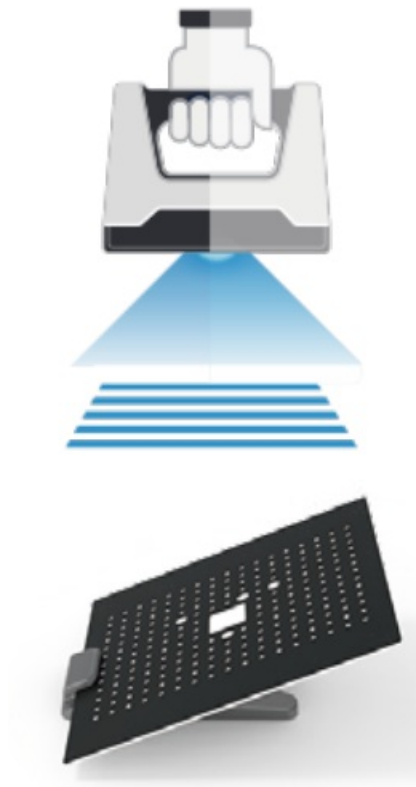
STEP 04

STEP 05

White Balance Calibration
Only required for Color Pack Hold the scanner vertically to the back side of calibration board (white) and adjust the distance until you find the proper distance.

The first time installing the software , calibration is required by default. Calibration is also required for the following:

1. Device Change
2. After device enduring bumpy transportation

3. After device accuracy decreases

4. Device being uncalibrated for a long time, for example, 15 days.

5. When using the Color Pack, the texture camera's position has been changed.

Fixed Scan

Handheld HD Scan

Handheld HD Scan

```
                    Handheld HD Scan
                          |
        +-----------------+-----------------+
        |                                   |
   New Project                        Open Project
        |
  +-----+-----+-----------+------------+
  |           |           |            |
Select     Select     Select       Select
Align Mode Texture  Operation Mode Resolution
  |           |           |            |
  +-----------+-----+-----+------------+
                    |
                 Preview
                    |
                  Scan
                    |
                  Edit
                    |
                 Finish  -------->  Save point cloud (ASC)
                    |
                  Mesh   -------->  Watertight / Unwatertight
                    |
             Post Processing
                    |
               Save Mesh
             (OBJ, STL, PLY, etc.)
```

Tips
Click the start button once to preview
Click the start button once again to start scan;
To adjust the brightness before or during scan, click the start button twice, and using "+" & "-" to highlight or shadow;
Keep the scanner vertically to the object surface;
Optimize the distance by the color range on the screen or on the scanner. Green color shows an appropriate distance.

Tips
Shift + Mouse Left, the selected part turns red, edit the 3D data using buttons on the right. The edit function is only activated after selecting data.

Handheld Rapid Scan

```
                    Handheld Rapid Scan

        ┌──────────────┐              ┌──────────────┐
        │  New Project │              │ Open Project │
        └──────────────┘              └──────────────┘
    ┌─────────┬─────────┬──────────────┬──────────┐
    │ Select  │ Select  │   Select     │  Select  │
    │Align Mode│Texture │Operation Mode│Resolution│
    └─────────┴─────────┴──────────────┴──────────┘
```

	Tips
Preview	Click the start button once to preview; Click the start button once again to start scan; To adjust the brightness before or during scan, click the start button twice, and using "+" & "-" to highlight or shadow; Keep the scanner vertically to the object surface; Optimize the distance by the color range on the screen or on the scanner. Green color shows an appropriate distance.
Scan	

	Tips
Edit	Shift + Mouse Left, the selected part turns red, edit the 3D data using buttons on the right. The edit function is only activated after selecting data.

Finish	Save Point Cloud (ASC)
Mesh	Watertight / Unwatertight
Post Processing	
Save Mesh (OBJ, STL, PLY, etc.)	

Scanning Tips

Scan Mode Selection
Use Handheld Rapid Scan mode when:
A fast scanning experience is needed;
Objects with good geometry for feature alignment;
Objects are hard to move or too big to stay on turntable for scanning.
Use Handheld HD Scan mode when:
High accuracy and high resolution by handheld scanning is required;
Objects are hard to move or too big to stay on turntable for scanning.
Use Fixed Scan with Turntable mode when:
High accuracy and high resolution is required;
Objects' footprint within 150mm which may not cover most coded targets on turntable;
Weight under 5kg;
Objects' footprint above 150mm with rich geometry features can also work in Fixed Scan with Turntable mode through feature alignment.
Use Fixed Scan without Turntable mode when:
High accuracy and high resolution is required;

Objects is too big or heavy to work on turntable.

Summary

Mode	Accuracy mm	Scan Efficiency	Resolution Point distance mm	Align Mode
Fixed Scan with Turntable	Single Shot Accuracy 0.04 ☆☆☆☆☆	Single Scan < 0.5s ☆☆☆☆☆	0.24 ☆☆☆☆	Turntable Coded Targets, Feature, Markers, Manual
Fixed Scan without Turntable	Single Shot Accuracy 0.04 ☆☆☆☆☆	Single Scan < 0.5s ☆☆☆☆☆	0.24 ☆☆☆☆☆	Feature, Markers, Manual
Handheld HD Scan	Up to 0.045 +0.3 mm/m (markers alignment) ☆☆☆☆	10 fps 3,000,000 points/s ☆☆☆	0.2-3 ☆☆☆☆☆	Markers, Feature (with rich geo metrical features on the surface), Hybrid (Markers and Feature)
Handheld Rapid Scan	Up to 0.1 +0.3 mm/m (markers alignment) ☆☆☆	30 fps 1,500,000 points/s ☆☆☆☆☆	0.25-3 ☆☆☆	Markers, Feature (with rich geo metrical features on the surface), Hybrid (Markers and Feature) Texture (with rich texture)

⚠ **Difficult to Scan**

- Transparent objects like glasses
- Shining or highly reflective objects like mirrors

📰 **Solution**

- Spray with white powder

👎 **Not Recommended**

- Moving objects or vibrating objects
- Lattice structure with many small deep holes
- Hairy objects like human hair and fur

SHINING 3D®

APAC Headquarters
SHINING 3D Tech. Co., Ltd.
Hangzhou, China
P: +86-571-82999050
Email: **sales@shining3d.com**
No. 1398, Xiangbin Road, Wenyan,
Xiaoshan,Hangzhou, Zhejiang, China, 311258
Americas Region
SHINING 3D Technology Inc.
San Francisco, United States
P: +1415-259-4787
Email: **sales@shining3d.com**
1740 César Chávez St. Unit D.
San Francisco, CA 94124
www.shining3d.com
EMEA Region
SHINING 3D Technology GmbH.
Stuttgart, Germany
P: +49-711-28444089
Email: **sales@shining3d.com**
Breitwiesenstraße 28, 70565,
Stuttgart, Germany

www.einscan.com

Documents / Resources

SHINING 3D® For More Shining Ideas *EinScan Pro HD* Multifunctional Handheld 3D Scanner **Quick Start Guide** Getting Started with EinScan Pro HD	**SHINING 3D RN-113 Multifunctional Handheld 3D Scanner** [pdf] User Guide RN-113 Multifunctional Handheld 3D Scanner, RN-113, Multifunctional Handheld 3D Scanner, Handheld 3D Scanner, 3D Scanner

References

- **Support : Metrology Support**
- **3d Scanners, Professional 3D Scanners, Software and Support | EinScan**
- **SHINING 3D | High Accuracy 3D Scanning Solutions | Dental 3D Scanners**
- **User Manual**