



Easy Scan T05

3D Terrestrial Laser Scanner

User Manual

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1 Product Introduction

1.1 Product Overview

T05 is a portable 3D terrestrial laser measurement system independently developed by Wuhan Eleph-Print Tech Co., Ltd. It is designed with lightweight and user-friendly concept. It integrates multi-line liDAR, image acquisition, angle measuring and other sensors. Supported by time synchronization technology with independent intellectual property rights and integrated multi-sensor integration technology, scanning and acquisition of 3D data can be completed simply and efficiently

The main applications of the T05 laser measurement system include but are not limited to house facade measurement, accident site investigation, cubic volume calculation, interior decoration, planing drawing, digital park and other fields.

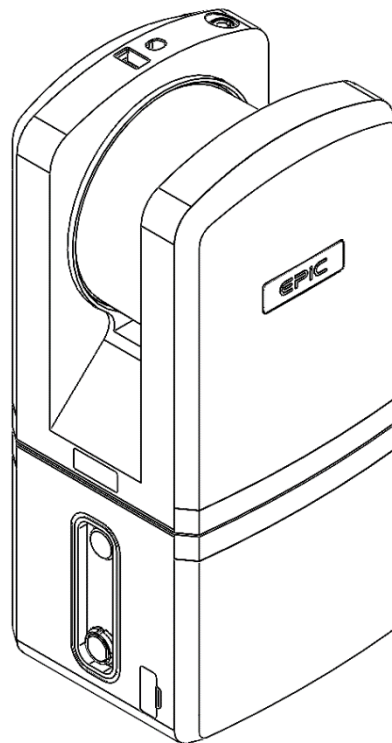


Figure 1-1 T10 system

1.2 Main Technical Parameter

The main technical parameters of T05 are shown in the following table:

Table 1-1 Main Technical Parameter of T05

	Index	Parameter
T05 System Parameter	Weight	3.46kg
	System Consumption	20W
	Battery Life	2hrs
	Data Storage	U-Disk 64GB
	Operating Temperature	-10°C to 50°C
	Storage Temperature	-20°C to 60°C
Laser Scanning Unit	Scan Principle	ToF
	Laser Class	Class I
	Laser Wavelength	905nm
	Maximum Range	0.5~120 m @20% reflectivity
	Horizontal FoV	360°
	Vertical FoV	268°
	Point Frequency	320000pts/sec
Panoramic Camera(Built-in)	Camera number	3
	FoV	360°x174°
	Image Resolution	48MP for each

Remark:

- ① The test temperature is within the range of 25°~27°.
- ② Ranging accuracy may be affected by the distance to the target, the ambient temperature and the reflectivity of the target. The typical value is the average value measured by each channel within the range of 0.5 ~ 70m, when the outdoor

ambient temperature is 30°C and the reflectivity of target is 50%.

2 Product System Composition

T10 system is mainly composed of mainbody, power cord, U-Disk, battery, panoramic camera component, tripod, etc.

2.1 Mainbody

The mainbody and interface of T05 are shown in the figure below.

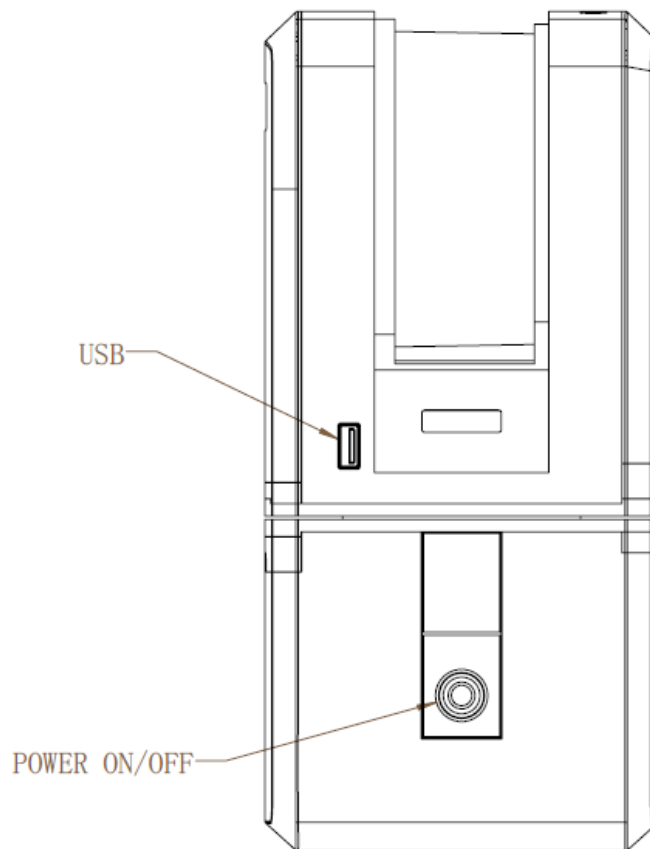


Figure 2-1 Mainbody and interface diagram

2.2 Tripod

T05 is come with tripod with leveling bubble, as shown below:

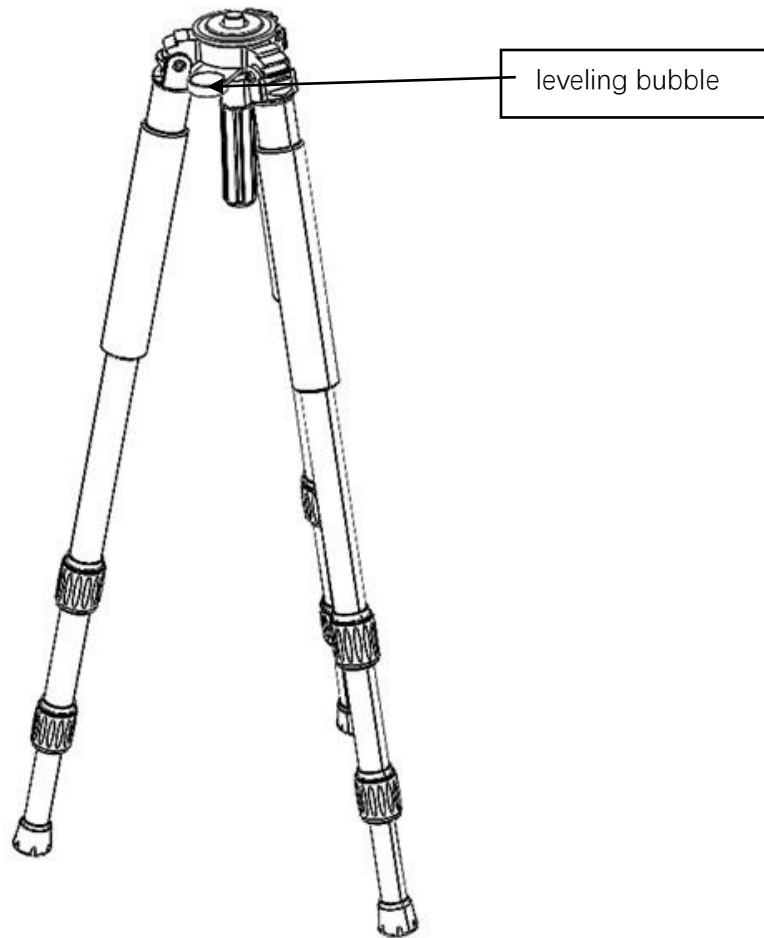


Figure 2-2 T05 Tripod

2.3 Battery

T05 adopts intelligent power supply as shown in the figure below.

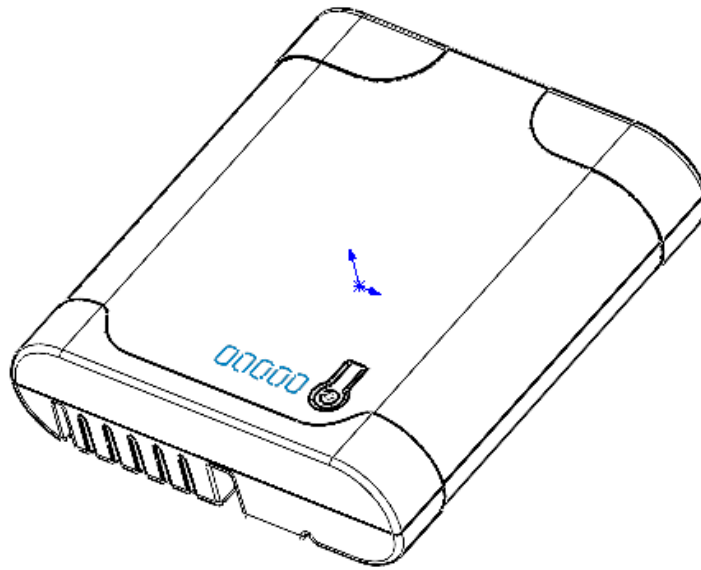


Figure 2-2 T05 lithium battery



Warning:

- It is forbidden to immerse the battery in liquid (such as water, seawater, etc.), and the battery should be placed in a cool and dry environment when not in use;
- It is forbidden to keep and use the battery near high-temperature sources (such as fire, heater, etc.);
- It is forbidden to knock, press, throw or step the battery;
- If the battery is bulging or deformed, do not continue to use it;
- The battery is equipped with a special battery charger. Do not replace other models of chargers.
- The normal operating temperature range of the battery: 0° ~ 40°.

3 Equipment Installing and Disassembly

3.1 Preparation before Installation


Before install T05, please check if the equipment is complete according to the packing list.

Table 3-1 Equipment List

No.	Part Name	Unit	Quantity
1	T05 Mainbody	PCS	1
2	Battery	PCS	2
3	Tripod component	PCS	1
4	Power adapter component	PCS	1
5	Dongle	PCS	1
6	U-Disk	PCS	1
7	Transport case	PCS	1
8	Certification	PCS	1
9	Warranty card	PCS	1
10	Product manual	PCS	1
11	Packing list	PCS	1

Note: the preceding list is only an example. For details, please refer to the packing list attached with the equipment.

3.2 Installation and Disassembly



Warning:

- When installing T05, please handle it carefully to protect the equipment;
- When installing and disassembling the power supply equipment, please ensure that the power supply equipment is turned off to avoid damaging the equipment by live operation;
- After disassembling the equipment, please put all the parts of the equipment back into the transportation case according to their positions and check whether the parts are complete.

3.2.1 Installation for battery

Connect the battery to the main unit in the direction shown by the arrow in the picture below, and gently push it inward to the bottom.

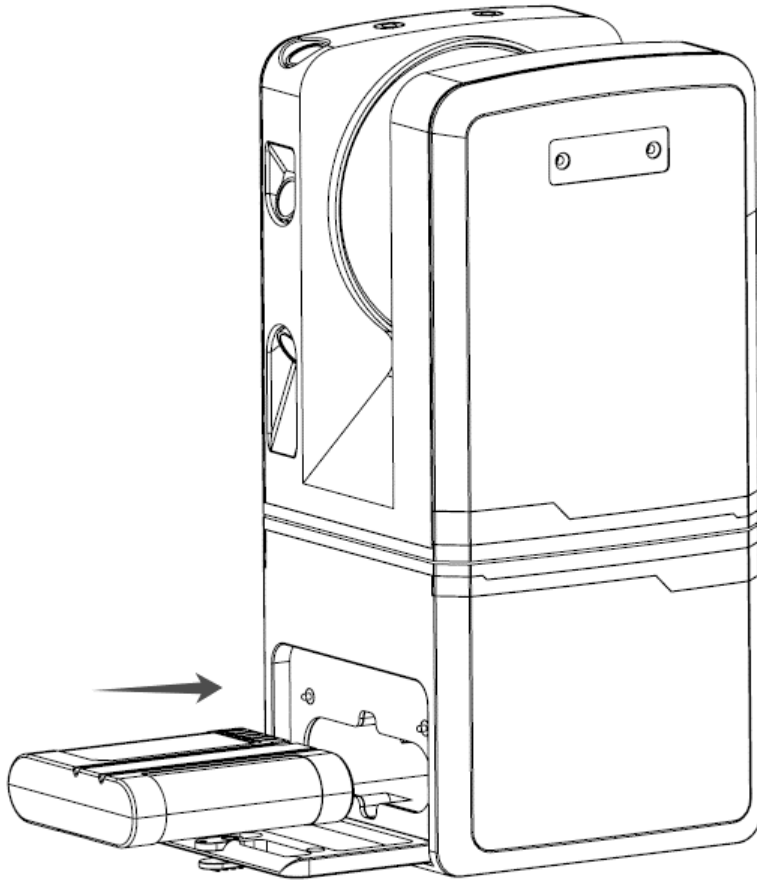


Figure 3-1 installation for battery

Note:

1. The handle battery used in the T05 has an installation direction. Please pay attention to the installation direction of the battery when installing the handle battery;

2. Please be gentle when installing the handle battery to avoid excessive force that may cause damage to the device.

3.2.2 Disassembly for battery

Make sure the T05 mainbody are turned off, push the buckle open, and separate the battery and mainbody in the direction of the battery.

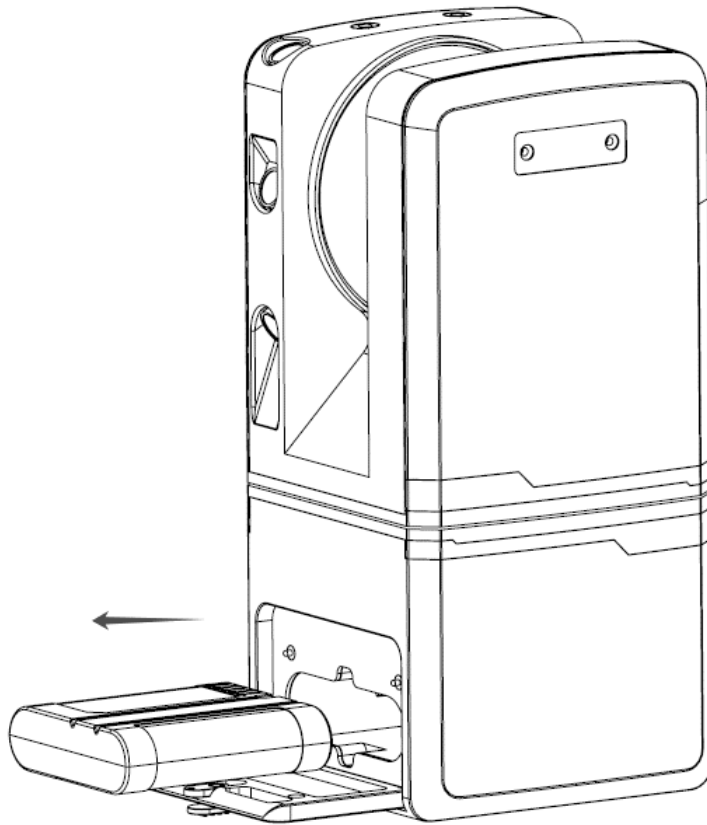


Figure 3-2 disassembly for battery

Note: before installing T10 equipment, please check if the tripod is placed stably and reliably to avoid affecting the safety of the equipment.

3.2.3 Installation for Tripod

Make sure the T05 mainbody is turned off. To place the mainbody on the top of the tripod, you need to roughly align the center hole at the bottom of the mainbody with the center hole of the tripod fixing platform, and then tighten the hand-tight nut at the bottom of the tripod fixing platform to secure the mainbody to the tripod.

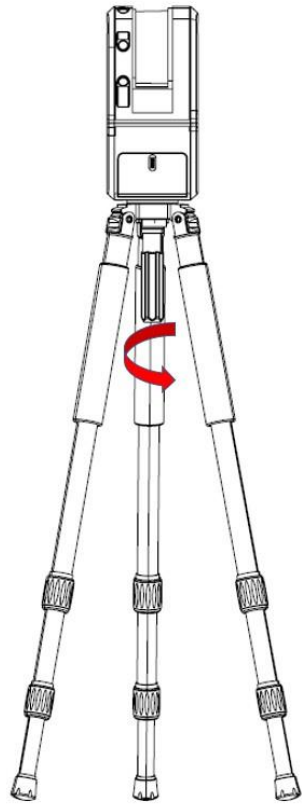


Figure 3-3 Installation for Tripod

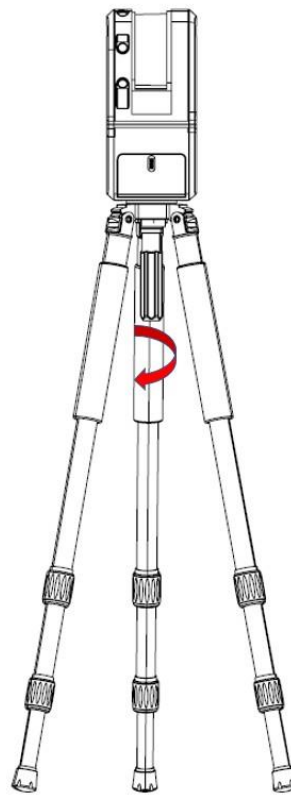


Figure 3-4 Disassembly for Tripod

3.2.4 Disassembly for Tripod

Make sure the T05 mainbody is turned off. Loosen the thumb nut at the bottom of the tripod fixed platform with your hands, remove the mainbody with both hands and place it in the packaging box or other safe location.

4 Equipment Operation

4.1 Equipment Startup

After the equipment installation is completed according to the steps described in Section 3.2.1, T05 can be used;

Press and hold the power button of the T05 for more than 3 seconds, the device indicator light will light up and the device starts.

When the indicator light is on, search for WiFi hotspots using a smart phone or a computer. When the WiFi access point named “T05” is searched, the system will start normally.

Note: Since it takes time(usually less than 1min) to initialize after the equipment is started, please wait patiently during the equipment system initialization.

4.2 Mainbody Connection

T05 supports the wireless connection mode:

1. Search for WiFi hotspots using a smart phone or a computer, find a WiFi access point named “T05-xxxxxx”;
2. Join the “T05” hotspot by entering the password “12345678”, and set the wireless network IP obtaining mode to obtain IP automatically.

Note: IP address of T10 system is 192.168.0.110.


4.3 Mainbody Shutdown

After the system stops collecting data and completes the data transmission, click the “POWER OFF” button through the operation software client to turn off the equipment, as shown in Figure 4-1.



Figure 4-1 Turn off the equipment

After the status indicator of T05 mainbody is off, turn off the battery to complete the shutdown of the equipment mainbody.

 **Warning:**

- To prevent the equipment damage, don't power off the mainbody before it is completely shut down.
- When the device needs to be packed and transported after it is turned off, please remove the handle battery from the device and place it in a special battery box or battery slot in the device packaging box.

4.4 Battery Charging

The lithium battery of T05 system is charged with a special 65W charger, as shown in Figure 4-2.



Figure 4-2 T05 charger



Warning:

- If you don't use the battery for more than 10 days, please discharge the battery to about 50% for storage.
- If the battery is idle for a long time, it is required to charge and discharge every 3 months to maintain the battery activity.

5 Data Collection

5.1 Client Installation

Step 1: Insert the U-disk of the product accessory to PC, copy the Easy Point Access T-05 xxxx.apk installation package to PC. Copy the installation package to “Download” folder of smart phone through a USB connection cable.

Step 2: Visit the “Download” folder of smart phone, select the installation package and click to install.

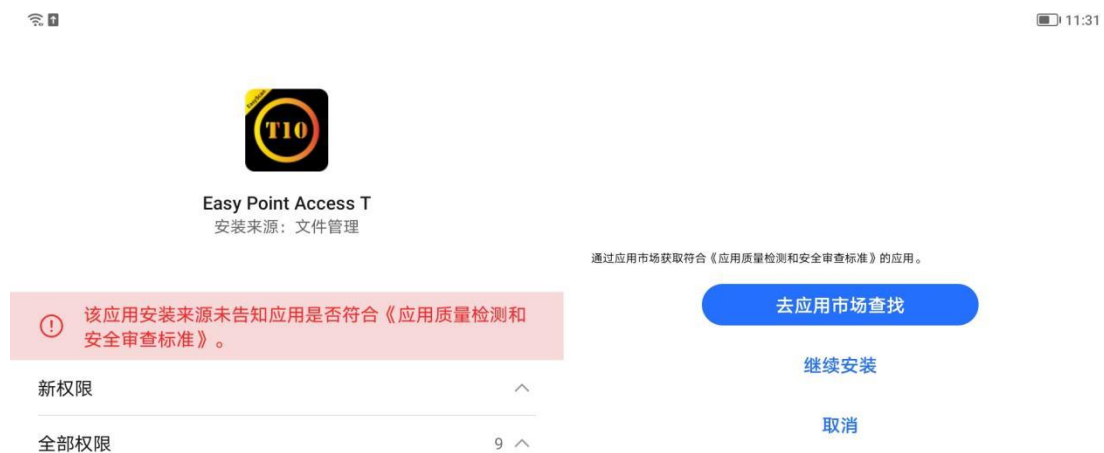


Figure 5-1

Step 3: Authorize required software permission in the pop-up permission dialog, otherwise, some software functions can't be used.

Step 4: Click “Continue to install” and wait until the software installation is completed.

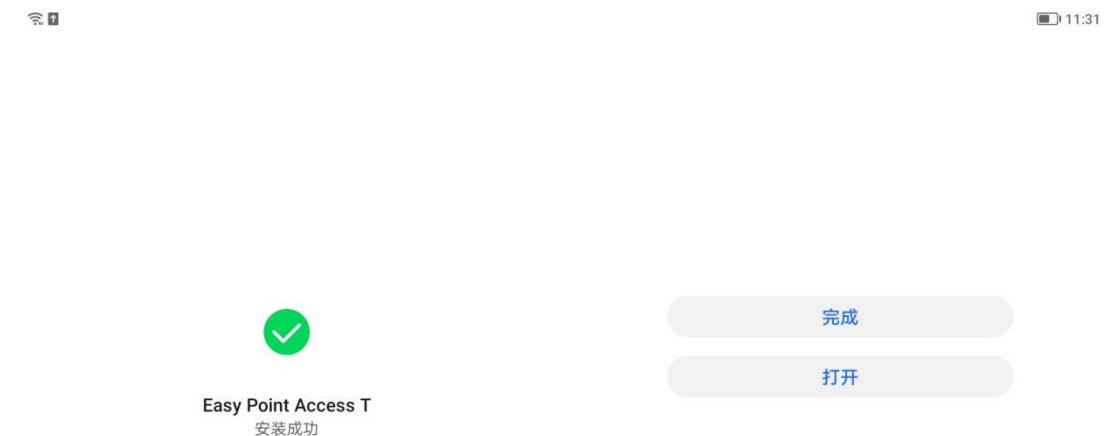


Figure 5-2

Note: The software only supports android system in current stage.

5.2 Software Startup

- Wait 30 seconds after startup, connect the WiFi signal named T05xxxx(xxxx is the equipment number)
- The initial password of WiFi is 12345678.
- Start the Apps installed in the mobile terminal device.

5.3 Software Interface

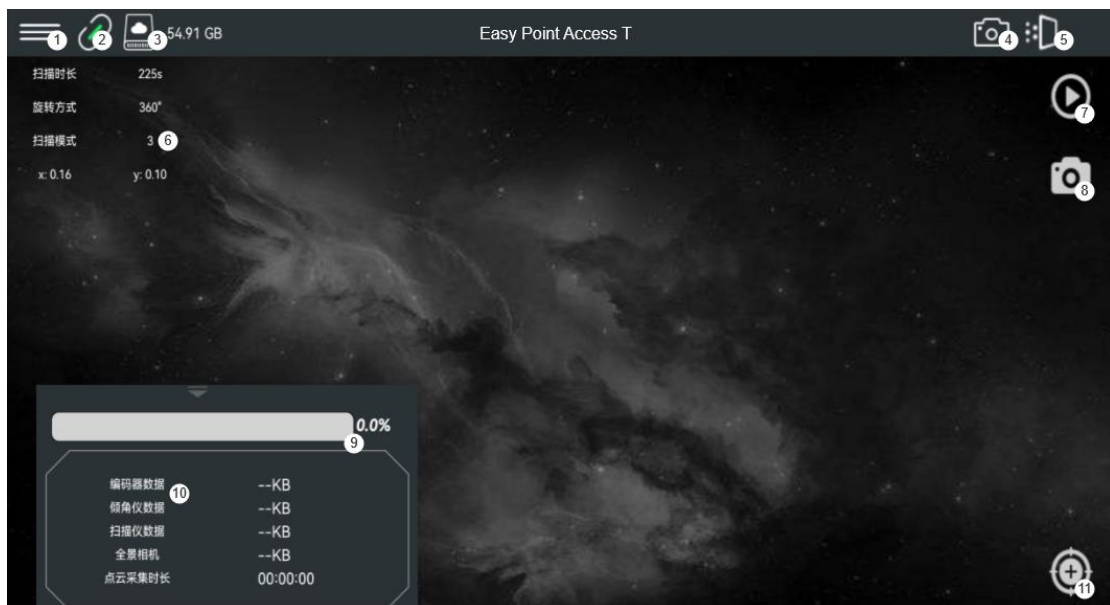


Figure 5-3

- ① Setting button: click it to enter the setting interface.
- ② Equipment connection status shows the equipment status changes of disconnected and connected.
- ③ Display the remaining storage space of U-disk.
- ④ Camera connection status shows the camera status changes of disconnected and connected.
- ⑤ The point cloud collection status is displayed, and the animation effect during the collection indicates that the collection is in progress.
- ⑥ Temperature display bar: real-time monitoring of the internal temperature of

the device

- ⑦ Battery display bar, real-time detection of the remaining power of the device
- ⑧ Parameter setting display bar, indicating the current parameter setting gear.
- ⑨ Start collection button: click the button and the equipment begins to collect point cloud.
- ⑩ Camera trial shot button: click the button to take a trial photo which will be displayed, but not be stored in the memory.
- ⑪ Regional precision scanning button: choose the region that needs to be scanned, and the device will collect data according to the set range.
- ⑫ Horizontal bubble button, click the button to enter the horizontal bubble leveling interface.
- ⑬ Collection progress display bar: the collection progress will be displayed in the bar
- ⑭ Status for all data growth during the data collection process

5.4 Parameters Setting

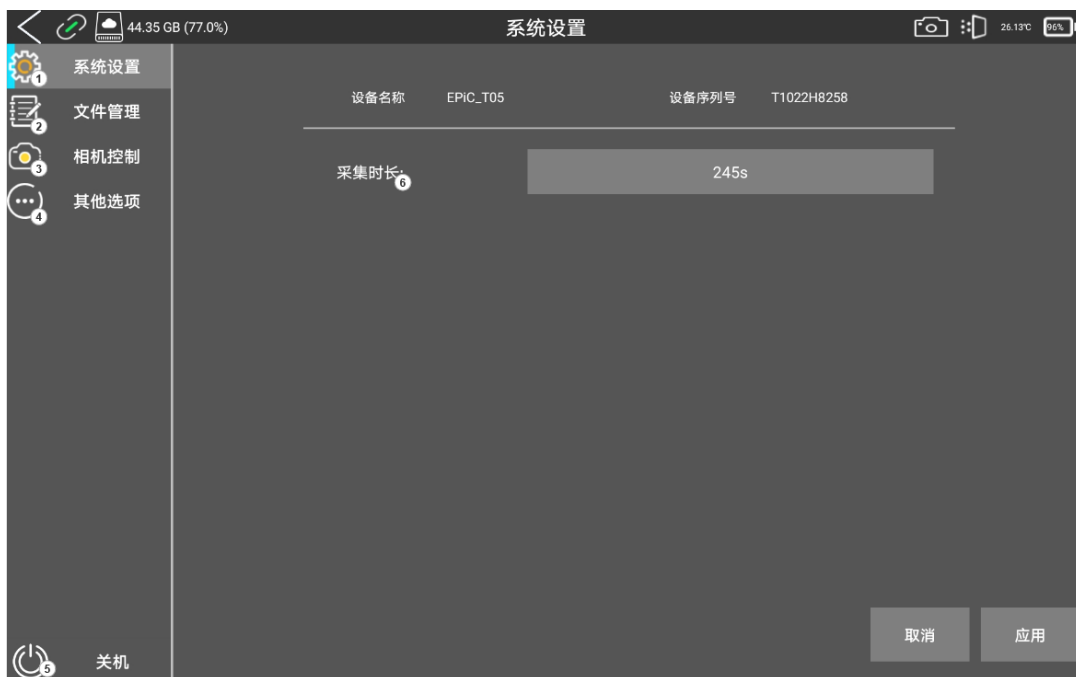


Figure 5-4

- ① Set the equipment collection mode.
- ② Storage management of the collected data.
- ③ Camera setting: can set three camera separately

- ④ Other optional: can reset lidar and USB flash drive
- ⑤ Power off button: can shutdown the device
- ⑥ Scanning duration: set the time required for the scanner to collect one circle of data

5.5 Data Collection

After setting the collection parameters, return to the main interface, click the start collection button, the equipment begins to collect point cloud data automatically. After the collection of point cloud data is completed, the image data will be collected automatically and all the data will be stored in the corresponding folders according to the specified format.

When the data of all survey stations are collected, unplug the U-disk to copy the collected data to computer, use post-processing software for data calculation.

6. Using attention

To ensure the service life of the equipment and the accuracy of data collection, you need to pay attention to the following matters when using the equipment.

- At the beginning and end of each collection work, the equipment should be wiped to keep it clean.
- During long-distance transportation, the equipment must be disassembled and put into the packaging box.
- The equipment cannot implement collection work in harsh environments such as rain, fog, haze, snow, high temperature, etc.
- You are not allowed to disassembly the device without the consent of the manufacturer.
- When installing and disassembling equipment, it sure be handled gently.
- When the equipment is not used for a long time, put the equipment

into the packaging box with a desiccant.

FCC Caution.

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 into 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 minimum distance 20cm between the radiator & your body.