T100
PRODUCT USER MANUAL

CONTENT

TIPS

Symbol description

⚠	💡	📖
Important notes	Operation and using tips	Vocabulary explanation

Install GoSLAM LidarWorks

◆ To view the point cloud data,you need to install GoSLAM LidarWorks.

◆GoSLAM LidarWorks requires Windows 7 or Windows 10 or Windows 11.

Install GoSLAM Manager

◆ For collecting the data,you need to install the GoSLAM Manager on your Android phone.

◆ Connected the device via WIFI to observe the collection situation in real time.

Warning

◆ To avoid the risk of fire and electric shock and ensure long-term stable operation of the product.Please store the product in dry and cool place,avoid exposure to sunlight,high temperature and humid environment.

◆ As the laser head and sensor are sensitive devices,dry the device after operation under rainy or humid environment to avoid electronic components and laser head get mildewed.

Overall Unit

◆ To ensure acquiring quality point cloud data,keep the laser head clean and use the laser head carefully.

◆ Since internal wiring connection is complicated,do not disassemble scanner system without authorization to avoid failure,short circuit and other problems.

◆ Please avoid using the instrument rudely which including decomposition,transformation,physical impact,hammering,falling or trampling.

INTRODUCTION

Product Overview

The operation of T100 is very simple and is using laser SLAM technology.It relies on its own attitude data and laser point cloud to restore three-dimensional data through algorithm.It does not need GPS and other external auxiliary positioning equipment to present complete and accurate data with easy operation.

Functions

1. High precision
2. Real-time display of point cloud
3. Indoor and outdoor scanning
4. Performance gurantee in large-scale scenario
5. Real-time processing

TECHNICAL SPECIFICATIONS

Specifications	
T Series	T100
Laser Class	Class I Eye Safety
Relative Accuracy	1cm（Peak）
Operation Mode	Color Touchable Screen、APP
Scanning Range	120 m
FOV	360°X285°
Scanning Speed	320,000 Points Per Second
Storage	500GB(Capacity Expandable)
Lidar Lines	16-Lines
Data Processing Method	Device End/ PC End
Working Temperature	-35℃~60℃
Running Time	1.5h(Standard Battery) 2.5h(High Capacity Battery)
Weight	1.7kg

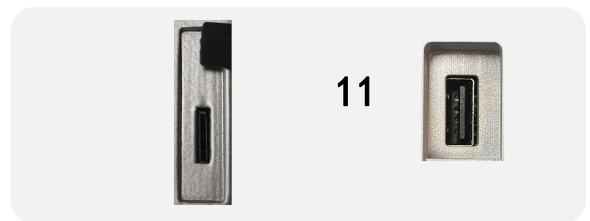| External battery	
Type	Lithium Battery
Capacity	50. 32Wh/3. 4Ah
Voltage	14. 8V
Charging Temperature	0℃～40℃

WORKING PRINCIPLE

●T100 consists of a multi-lines LiDAR and an inertial Measurement unit (IMU).Field of view(FOV) can be expanded by rotating the LiDAR.

●T100 integrates data from LiDAR and IMU to generate accurate 3D point clouds by using SLAM algorithm but without relying on GNSS receiver.

COMPONENT LIST
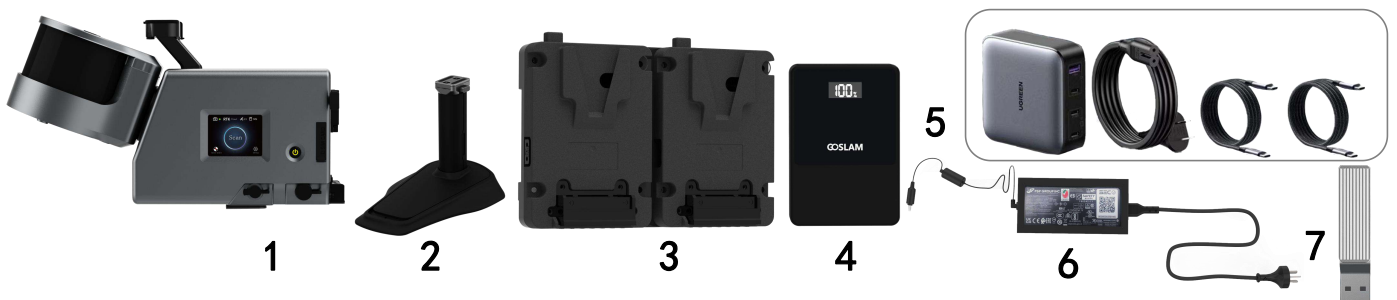
1	Scanner Host	2	Handle	3	Bi-battery Board	4	Battery
5	Battery Charger	6	Host Adaptor	7	USB Drive		

STRUCTURE DESCRIPTION
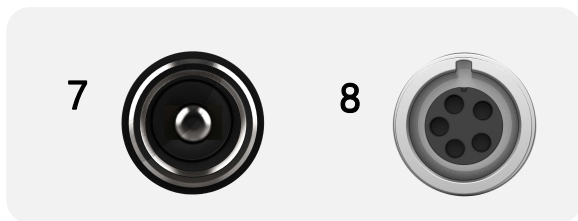
1	Laser Sensor	2	Color Module Base	3	Touchable Screen	4	Power Button
5	Button To Remove Battery	6	Visual Compensation Lense	7	External Power Socket	8	GNSS Socket
9	SIM Card Socket	10	Remained Battery Display	11	USB Socket	12	Host Heating Vent
13	Battery	14	Handle				

INSTALLATION AND CONNECTION

Simple Assembling Parts		
Battery	Without battery on the handheld end	With a battery on the handheld end
Scanner host	Handle	Handheld

Installation method of power adapter

It is only used for data processing,not for scanning.

BATTERY & CHARGING

1	DC8V Power Supply Port	**2**	DC12V Power Supply Port
3	USB-A Power Supply Port	**4**	USB-C/Type-C Fast Charging Power Supply Port
5	Battery Check Button	**6**	Charging Port

Battery Charging Method

Two batteries can be charged by the cable at the same time.

Installation Details
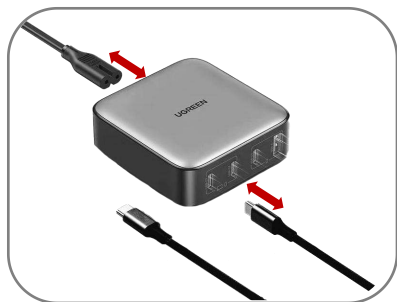
COLOR STATUS SCREEN AND VISUAL SLAM

Color Touchable Screen

● The brand new touchable screen supports displaying device status information and operation instructions,making it easier to use and get started.

Visual SLAM

● The built-in high-resolution visual SLAM component records visual images synchronously and carries out high-precision visual SLAM technology mapping.

POST PROCESSING SOFTWARE

1

GoSLAM Mobile APP

The GoSLAM mobile app allows it to browse point cloud data in real time during scanning, support multiple browsing interaction methods and more human-machine interaction content.

Please use the Android system mobile device to scan the QR code

To download and install the GoSLAM mobile app

2

GoSLAM LidarWorks

GoSLAM LidarWorks   is a corresponding software designed for GoSLAM series scanners.It can process point cloud data from third-party devices with high compatibility and flexibility.
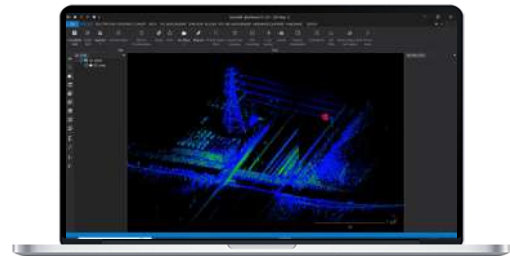
3

GoSLAM Mapping Master

It is a desktop processing software.Users can choose to process data either in the device or desktop software.It can significantly improve the overall operation efficiency and meet various demands.
(This software is charged separately.)
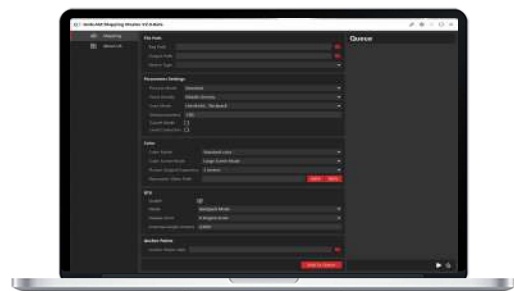
SAFETY INSTRUCTIONS

Safety Instructions

1. In order to avoid the danger of fire and electric shock,and to ensure the long-term stable operation of the product,please store the product in a dry and cool place.Avoid exposure to sunlight,high temperature and humidity.

2. Since the laser head and sensors are sensitive, dry the devices after being used in a wet environment.It can prevent electronic componets and laser head from getting mildewed.

■ Safety tips

Please read and follow the instructions carefully before using the product and refer to any relevant national and international safety regulations in the meantime.

■ Attention

To reduce the risk of electric shock and avoid violating warranty regulations, do not disassemble or modify the radar without permission.This product does not include user-repairable parts,please consult the maintenance personnel of GoSLAM about the warranty and maintenance matters.

⚠ **Attention** ⚠

Use of controls, adjustment methods or working procedures other than those specified in this product may result in harmful radiation leakage

CLASS 1 laser products

The laser safety level of this product meets the following standards:
- IEC 60825-1:14
- 21 CFR 1040.10 and 1040.11 standards, with the exception of deviations as described in Laser Notice No.56 dated 8 May 2019 (IEC 60825-1 Third edition)

Laser safety class

The laser safety class of this product meets the following standards:
IEC 60825-1:2014
21 CFR 1040.10 and 1040.11 standards,in any case,other than the deviation matters (IEC 60825-1 third edition) as described in Laser Notice No.56 issued on 8th May 2019,do not look directly at the laser in transit via amplifying devices such as a microscope head mounted magnmifier or any kind of magnifiers.

Safety warning

In any case, if you suspect that the Product is faulty or damaged, please stop using the product immediately to prevent injuries to the user or further damage to the product.Please contact GoSLAM or its authorized agencies to deal with the damaged product.

Operation

This product is made of metal, glass and plastic, and contains sensitive electronic components.Improper operations such as falling,burning, puncturing,or squeezing may cause damage to product.Once the product drops,please stop using it immediately and contact GoSLAM for technical support.

The appearance

The product contains high-speed rotating components.Do not operate the scanner without fastening it.Do not use products with damaged appearance to avoid injury.
To avoid performance degradation,do not touch the light cover with your hands. If the hood is stained,clean it as described in the "Equipment Storage" section of the manual.

Eye Protection class

Although the product is designed to meet Class 1 eye safety standards,do not look directly at the laser in transit via amplifying devices,such as a microscope head mounted magnmifier or any kind of magnifiers.Besides,to maximize self-protection,users should still avoid looking directly at the product in running.

Maintenance

Do not open or repair the product yourself without official guidance. Dismantling the product may result in product damage,waterproof failure or personal injury.

Power supply

Please use the batteries provided by GoSLAM to supply power.Otherwise,if cables or adapters that do not meet the power supply requirements or have been damaged,or if power is supplied in a humid environment,fire,electric shock,personal injury,product damage or other property losses may occur.

Vibration

Strong vibration should be avoided to cause any damage to device.If you need the mechanical shock and vibration performance parameters of the product, please contact GoSLAM for technical support.

Radio frequency interference

Although the product is being designed,tested and manufactured under the relevant regulations of RF energy radiation,radiation from the product may still cause malfunction to other eletronic equipment.

Interference of medical equipment

Some components and radio devices contained in the product can emit electromagnetic fields which may interfere with medical devices,such as cochlear implants,pacemakers,and defibrillators.Please consult your physician and medical device manufacturer for specific information about your medical device,such as keeping a safe distance from the product.If you suspect the product is interfering with your medical device,stop using it immediately.

Deflagrability and other air environments

Do not use the product in any area where there is a potentially explosive atmosphere,such as the air containing high concentrations of flammable chemicals,vapors,or particulates (such as particles,dust,or metal powder).Do not expose the product to high concentrations of industrial chemicals,including liquefied gases such as helium to avoid damaging or weakening the product's functionality.Please follow all tips and instructions.

Light interference

Certain precise optical instruments might be interfered by laser light emitted from the product.Please be careful when using it.

Safety Instructions For Operating The Device

1. In order to ensure the quality of point cloud acquisition,please keep the laser head clean and use the laser head with extra care.
2. When the lidar is rotating,avoid blocking or interrupting it.
3. Use the device at normal ambient temperature and avoid exposing it to extreme temperatures.Failure to do so may shorten battery life or create unpredictable risks.
4. The internal wiring connection is complicated,please do not disassemble and assemble the scanner system without authorization,so as to avoid problems such as failure and short circuit,which will affect the use.
5. Please avoid rough use,disassembly,modification,physical impact on this product,or impact on this product due to hammering,dropping,or stepping on.
6. Keep the device out of the reach of children.

Battery Power Supply Safety Instructions

1. Do not submerge the battery in water.Store the battery in a cool and dry environment when not in use.
2. Please isolate the heat source when using and storing the battery.
3. Do not connect the positive and negative poles of the battery with metal objects to avoid short circuits.
4. Do not hit, drop,or step on the battery.
5. Do not solder the battery or puncture the battery with a sharp object.

Connection of hardware

•The top of the handle is equipped with a quick-release lock.
•By pressing the latch,the handle can be removed and connected to other devices.
•A handle is installed through the quick detachable connector at the bottom of the device.
•The target base of the handheld device is installed at the bottom of the handle and is accessed through the slot at the bottom of the handle.After that,just install the fixing screws.
•Do not press the quick-release lock on the top of the handle when using the device to prevent the handheld device from falling off.

OPERATION PROCESSING

1   Plug in the power supply battery＆Start

○ The battery is equipped with an anti-reverse slot,which can supply power to the device after connecting to the slot.

○ The handheld end can supply power to the device after installing the battery.the color screen lights up,press the power button for three seconds and the color screen displays the status as "POWER ON".

2   The device automatically turns on and waits for connection

○ The device starts up and the main display opens the system page and selects the mode.

○ At the same time,the device status display prompts   click "SLAM Scanning",to

Enter "Connecting"   interface.

3   The device is being initialized automatically

○ At this moment,the device starts up and the main display opens the system page and starts initialization automatically.

○ At the same time, the device status display prompts: "Initializing"   This means the device is in the process of initialization.

4   The device is ready automatically

○ After automatic initialization is completed,the device will enter into ready status immediately.

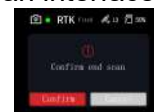○ At the same time,the device status display prompts:"Ready"   This indicates the readiness of the device.

5   The device starts manually

○ After completing the above process automatically,it enters into device ready status,when it is ready to scan,hold the device horizontally to maintain basic level,When the scan interface
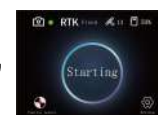
appears,click "Scan"   ,The interface appears "Confirm end Scan"

○ After clicking Confirm, the device status display prompts:"Starting"   to be ready for scanning.

6   The device starts calibration and enters into scanning status

○ After the device starts up,it will enter into start calibration status automatically.

○ At the same time,the device status display prompts:Equipment "Being Calibrated Keep

still"　　,　At this time,still keep the device level and the point cloud data

appears on the mobile APP which means the start of the device collection.

○ At the same time,the device status display prompts:"Scanning"　　means the device has started scanning.

💡Wait for the laser head to rotate for 5 seconds before you start normal mobile mapping.

○During the scanning process,the device status display prompts:"Scanning"　

When "STOP"　　appears on the interface,the workflow time is continuously displayed.

7   Control point function

○ During scanning,the front cross of the control point marking plate at the bottom of the device is placed on the control point,The position of the control point is not limited to the ground,the top surface of the facade can be arranged,For non-ground points,the bottom marking plate and the control point can be placed closely together.

○ Once placed,click the "Control Points"　

○ The words "Start recording"　　appears on the device status display,and wait for the

device status display to display "Pt1 Complete"　　means that the control point was successfully recorded.

○ At this time,you can move the device away from the control point and continue to scan normally, please lift it to the normal scanning posture at a constant speed when moving away,if you need to use the control point for coordinate conversion,you must set at least 3 control points.

8、End the scan

○ When you see the device status screen showing "Stop"　　click Stop and the

"Confirm end scan"　　interface will appear.

Click "Confirm" to finish,and when the interface displays "End Scan",it means that the device has completed the scan.

If you use the app to start the scan,use the app to end the scan.

9   Wait for saving

○ After ending the scanning,it will enter into storage status automatically.

○ At the same time,the device status display prompts:"Saving data" means the data is being stored.

○ When the device status display prompts:"Data saved" , it means the data is successfully saved.

☼After the data is stored,it will directly enter the "Ready" status,and "Scan"

 status will appear on the interface to proceed with the second job.

10   Turn off the device

○ At the same time,the device status display prompts:"Shutting down" ,which means the device is shutting down.

11   Remove the battery

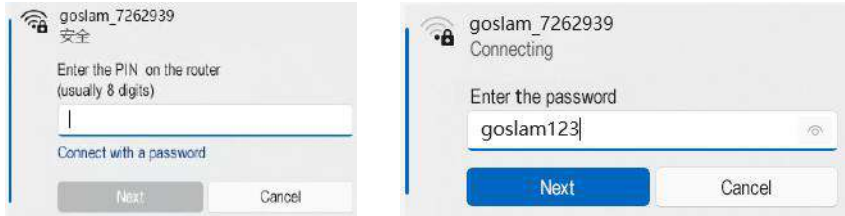○ When the device status display prompts:"Device is off.Cut off power now."

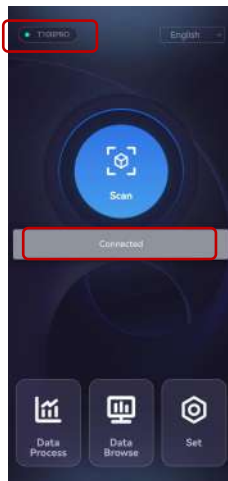means the device has been turned off,and the battery can be removed after it is completely turned off.

DATA   PROCESS

1.Connecting Device

▷ After the device is power on,connect the phone to the device's WIFI.
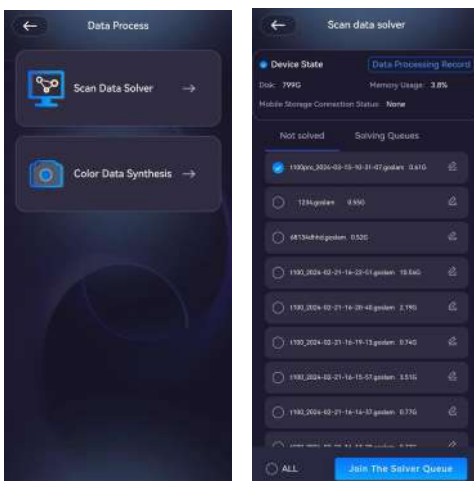

▷ After successful connection,the main interface of the application displays Connected.

2.Go to the data process menu

▷ In the Data Process,select Scan Data Solver →Data Process.

▷ The default process mode is standard.Select the data on the left and add it to the process queue.Settings can be modified by clicking the right side modify button.
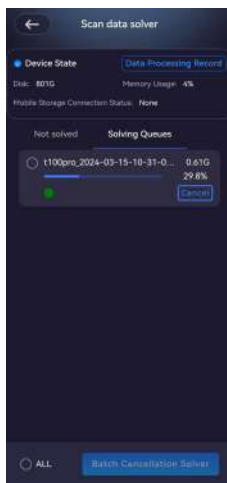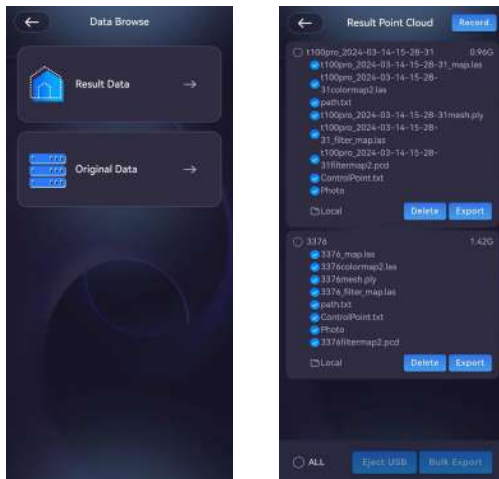
3.Process

▷ General scenarios:Standard

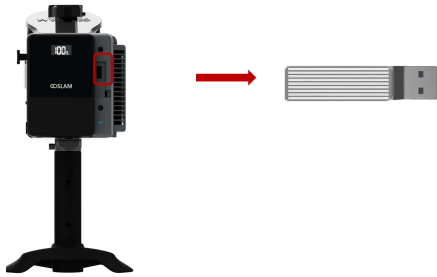▷ Click to join the process and wait for it to be 100% before automatically completing and saving.

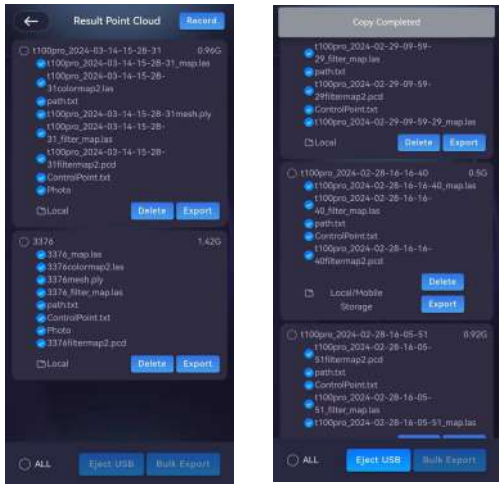▷ To view the Result, please go to the Result Point Cloud List.

4.Export data

▷ Insert the USB drive into the USB port of the device.

▷ Click the export button to output the processed data and wait for the copying to complete. The data storage status will change from local storage to local/mobile storage.

▷ Click to eject the USB storage and remove the USB drive after it shows successful,then connect USB drive to the PC for reading.
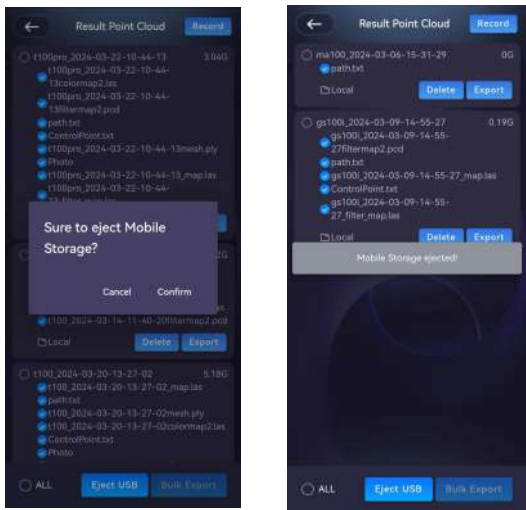
Device Storage

1. Wipe the device with a clean cotton cloth and put it in the box.

2. Avoid impact,bumping and disassembly of the equipment.

3. Do not disassemble the device yourself.In case of malfunction, please contact your local dealer.

4. After a period of time,gently shake the lidar component to check whether there is any abnormal noise.If you hear any abnormal noises,check the screws of the lidar assembly.All equipment screws are protected from loosening to make them less likely to loosen.To ensure safety,contact your local dealer if any screws are loose.

COMMON FAULTS AND SOLUTIONS

Problems	Solutions
The scanner host cannot be powered on.	Check that the battery is properly installed. Make sure the battery is fully charged.
The phone cannot detect the Wi-Fi signal of the device.	Check whether the scanner host is power on.
Mobile APP cannot display real-time point cloud.	Check whether the phone is connected to the device's Wi-Fi. Please restart the APP to try again.
The handheld end cannot rotate normally or the rotation speed is abnormal.	Check whether the hand-held rotation area is blocked.
Initialization failed.	Power off the scanner host and remove the battery,reconnect the battery,and restart the device to check the device status.
The device shuts down during operation.	Check the battery level. Check whether the battery is fully inserted into the battery holder.