# Dutputs











Laser Scanner 16-channel<sup>①</sup>

Measurement Rate Laser Safety Class

Laser Wavelength

Echo Mode Measuring Range Scanning Rate

Scanning FOV Horizontal Angle Resolution 0.18° (10 Hz)

Vertical Angle Resolution

Range Noise Relative Accuracy GNSS Differential<sup>②</sup>

Signal Tracking@

RTK Positioning Accuracy<sup>②</sup> CORS Access®

Positioning Data Refresh Rate<sup>②</sup> Absolute Accuracy<sup>②</sup>

Scanning Principle

Accumulated Mileage Error **Housing Material** 

Weight Dimension

**System Consumption** 

**Power Supply Battery Unit** Endurance

**IP Protection** Temperature **Device Connection** 

Data Storage Data Download

Panoramic Camera Software Package

Processing Method Process Time

RobotSLAM basic, RobotSLAM standard, RobotSLAM professional,

RobotSLAM Plus standard, RobotSLAM Plus professional

Max. 320,000 points/sec<sup>①</sup>

Class 1(IEC 60825-1:2014) eye-safe

10 Hz 360°x 285°

±2mm to ±4mm for measuring distance below 25m and target reflection above 78%

GPS+Glonass+Beidou+Galileo multi-constellation tracking

555 channels

RMS 1 cm+1 ppm nano SIM card slot built in

max. 100 Hz best up to 3-5 cm

laser sensor 360° mechanical rotation

0.1%-0.2% (under the condition without loop closure)

aviation-grade aluminum, with high protection level and anti-inference capability 1.5 kg (handheld only)

262x230x146 mm

dual external Li-ion battery, hot swappable

DC 14.4V, 6875mAh, 99 Wh (old model); DC 14.4V, 6900mAh, 99 Wh (new model)

single battery ≥2 hours, dual batteries ≥4 hours

-20~65°C (operating), -40~85°C (storage)

Wi-Fi or Ethernet cable

built-in SSD, 512GB (extendable upon request); SD card (removable), 128GB

via Ethernet cable, WiFi or SD card

2-lens, fisheye, 360°, image pixels 18 MP, video pixels 5.7k RobotSLAM Palm (smartphone APP), RobotSLAM Engine (PC)

post-processing on PC approx. 1-2 times of data acquisition

① to expect higher point rate like 640,000 points/sec max., 32-channel laser sensor is also available upon request, and that's RobotSLAM Plus series.
② GNSS differential performance is only applicable to the standard and professional versions. In outdoor scenes with moderate satellite signals coverage, it is recommended to activate GNSS RTK for positioning, which may help much to eliminate control points record and measurement.

# **Options**

Model	RobotSLAM basic	RobotSLAM standard	RobotSLAM professional
Handheld Components	<b>√</b>	√	<b>√</b>
Control Point Record Button	√	√	√
Built-in GNSS Module		√	√
GNSS Antenna		√	√
LED Screen	$\checkmark$	$\checkmark$	√
Smartphone Holder	√	√	√
Smartphone APP	$\checkmark$	$\checkmark$	√
Pano Camera	option	option	option
Fill-in Light <sup>①</sup>	option	option	option
Backpack Kit			√∅
Al Robot Dog Mount Kit <sup>③</sup>		option	option
USV-based Mount Kit <sup>③</sup>		option	option
SUV-based Mount Kit <sup>③</sup>		option	option
UAV-based Mount Kit <sup>③</sup>		option	option

① fill-in light and 360°pano camera are bundled as a visual module.

② the backpack kit includes a white plate antenna and a longer GNSS antenna cable; the backpack 3-in-1 magic tactically provides two working modes in one package: handheld and backpack, plus the storage function. No carrying case or trolley suitcase needec

3 Al Robot Dog Mount kit, USV-based Mount kit, SUV-based Mount kit and UAV-based Mount kit are all optional accessories, available upon request.



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dealer info



**RO30T** SLAM

A Survey-grade SLAM **Ha**ndhe**l**d

direct geo-referencing amazing cm-level accuracy backpack 3-in-1 magic abundant software functions

(V. 202305)

# Illustration

#### **GCP** record buttor

helps to record control point directly when not connected to APP

#### nain control butt to start/stop scans

and initialize, status identified by LED

### fill-in light (option

supplements lighting when working in the dark or recording pano

## ano camera (opt

2-lens fisheye and 18MP, captures left&right for less

#### collaborates with onboard GNSS to provide centimeter level positioning

**GNSS** antenna

# LED screen device status and

commands to display, interactive and practical

# target base plate

fill-in light kit

helps to record GCPs

and ready for fitting

128GB default, extendable to 512GB max., ready for direct

SD card slot

## SIM card slot Nano SIM card to

# fit, supports CORS network access

enables one hand free when another is occupied in peration

range 120m and

points/sec max.

point rate 640,000

### handheld grip

left and right to fit smartphone holder for checking at ease

# **Platforms**



## Handheld

ready to work in indoor, outdoor and underground environments



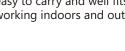
**USV-based** 

to scan shoreside and integrate with underwater topography



# **Backpack**

easy to carry and well fits long-time working indoors and outdoors





**SUV-based** 

mounted onto a car for entry-level automobile mapping



# Al Robot Dog

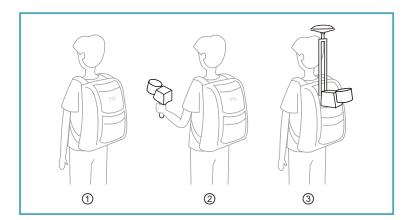
wireless remote scanning of potentially hazardous zones



# **UAV-based**

aerial perspective to scan building top which handheld mode cannot

# Backpack 3-in-1





- no hand carry no pulling on the ground  $\rightarrow$ 

#### when 3 becomes 1

- ① storage packing
- ② handheld mode
- 3 backpack mode

# APP&Software



### Smartphone APP-RobotSLAM Palm

- CORS settings
- status display
- fieldwork control

- task timer
- storage info
- device registration

# Post Processing Software-RobotSLAM Engine

- coordinate system transformation
- auto/manual optimization
- instant loading of mass data
- H.&V. accuracy verification loop closure review
- enable RTK for adjustment
- point cloud classification
- processing replay

- point rendering
- 3D measurement
- pano overlay display
- global registration
- auto denoising
- sectional view
- X-ray rendering

# **Computer Configuration**

Requirement	Minimum	Recommended	
OS	Windows10/Windows11 64-bit		
Graphics Card	GTX-3060/RX6600M or above (NVIDIA series recommended)		
CPU	Intel i7-11800H/AMD R7-5800H or above	Intel i7-12700H/AMD R7-6800H or above	
Internal Memory	16GB or above	32GB or above	
SSD	1TB or above	2TB or above	

Note: for faster data loading, it's recommended to process the data directly with SSD instead of HDD.

# Unboxing



- B GNSS antenna & cable A handheld (handle, base plate)
- smartphone holder
- **(E)** main cable
- **G** rechargeable battery
- Ethernet cable
- R micro SD card
- M cleaning cloth pano camera (option)
- shoulder strap
- **battery** compartment 🕕 battery charger & cable
- USB flash drive SD card reader

1 P fill-in light & charging cable 1

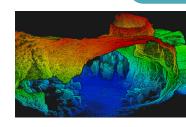
N hand-carry case

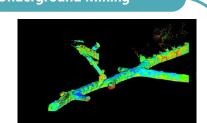
**Note:** the above is applicable for RobotSLAM standard only. Please refer to the configuration list for more details of different models.

# **Applications**

## **Underground Mining**



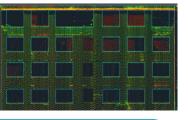




# **Building Elevational Surveying**

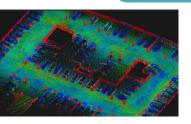






## **Basement Parking Digitization**



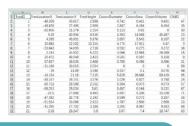




## **Forestry Investigation**



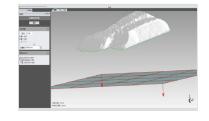




## **Stockpile Volume Calculation**







## Shoreside Survey + USV Bathymetry



