L1 LASER GNSS RECEIVER
Quick Start Guide

SingularXYZ®

Dear Users,

Thank you for choosing SingularXYZ L1 Laser GNSS Receiver. We recommend that you spend some time reading this Quick Start Guide in order to fully understand this product and get started easily.

Please kindly refer to the following steps to get started, each step has detailed instruction in this guide.

Step 1: Unbox and check the package content.
Step 2: Turn on the receiver and connect to related products.
Step 3: Select and apply the work mode you need.
Step 4: Initialize the IMU and start survey tasks.

If you want to know further operations and details of L1, please refer to the user manual (contact support@singularxyz.com). The latest upgrades and news will also be released on it.

About SingularXYZ®

SingularXYZ Intelligent Technology Ltd. is focused on high precision GNSS PNT (Positioning, Navigation & Timing) technology, extending its coverage to horizontal and vertical industries, which mainly include geospatial information, precision agriculture, machine control, robotics, IoT and etc., providing users with reliable, stable and professional products, solutions and service. We are committed to popularizing precision and intelligence into all aspects of people's lives, contributing to building a digital, smart and efficient open society.

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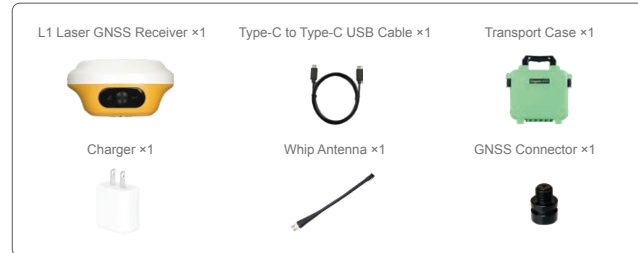📍 Floor 2, Building A, No. 599 Gaojing Road, 201702 Shanghai, China
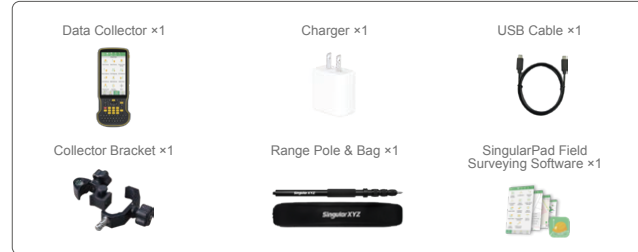
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PACKAGE LIST

In addition to this Quick Start Guide, the following content is also provided with your package. If any of these is missing, please contact your SingularXYZ distribution partner.

Standard

L1 Laser GNSS Receiver ×1	Type-C to Type-C USB Cable ×1	Transport Case ×1
Charger ×1	Whip Antenna ×1	GNSS Connector ×1

Options For Rover

Data Collector ×1	Charger ×1	USB Cable ×1
Collector Bracket ×1	Range Pole & Bag ×1	SingularPad Field Surveying Software ×1

Options For Base

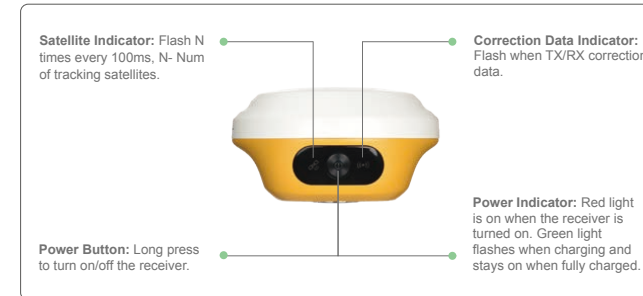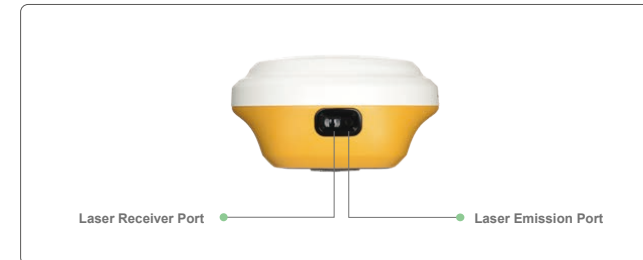|		
20cm Extension Bar ×1	Aluminum Disc ×1	Tape ×1

INTRODUCTION

To make surveying smarter, SingularXYZ has added a precise laser module to the L1 Laser GNSS receiver, achieving deep fusion of multiple sensors.

While shrinking the device to the palm size, L1 provides an advanced GNSS engine, non-contact laser surveying, 60° tilt IMU, 15km enhanced UHF, and rich features to empower your tasks.
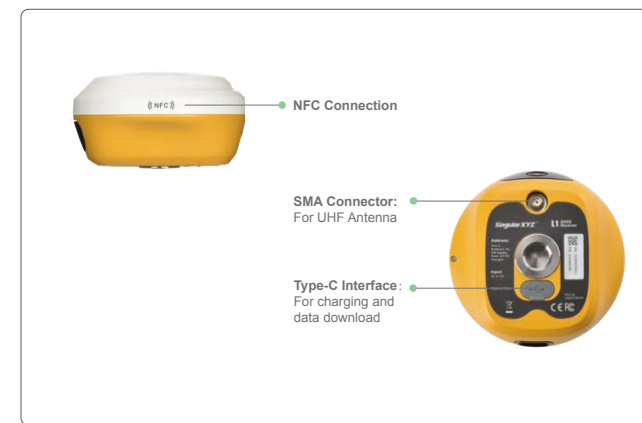
Front Panel

Satellite Indicator: Flash N times every 100ms, N- Num of tracking satellites.

Correction Data Indicator: Flash when TX/RX correction data.

Power Button: Long press to turn on/off the receiver.

Power Indicator: Red light is on when the receiver is turned on. Green light flashes when charging and stays on when fully charged.

Receiver Back

Laser Receiver Port

Laser Emission Port

INTRODUCTION

Receiver Interfaces

NFC Connection

SMA Connector: For UHF Antenna

Type-C Interface: For charging and data download

⚠ **Important Notice:**
If the receiver is not used for an extended period, it is recommended to charge it every three months to prevent potential damage to the lithium battery cells.

WARRANTY CARD

If you meet any issues during usage, please contact SingularXYZ support team or your local SingularXYZ distributor partner for supporting and debugging first.

Product Model: _____

Serial Number: _____

Date of Shipment: _____

Customer Name: _____

Address: _____

Address: _____

To request warranty service, please contact your local SingularXYZ distributor or our support team at:

✉ support@singularxyz.com
🏢 Support.SingularXYZ

RELATED SOFTWARE

SingularPad
Field Surveying Software

○ Full Work Modes Support
○ Various Survey & Stakeout Methods
○ Bluetooth & Wi-Fi Interaction
○ Abundant Data Formats
○ Visual & Laser Survey Support
○ GNSS Receiver & Total Station

SingularConverter
Static Data Covert Software

○ Converting binary XYZ data to standard RINEX data
○ Flexible station and antenna type settings
○ Full-constellation and frequency supported

Post-processing Software

SingularXYZ post-processing software is a desktop software that supports multi-constellation processing and standard data format, delivering high precision positioning results in both static and kinematic post-processing.

To obtain the software installation package, please contact SingularXYZ support team.

✉ support@singularxyz.com
○ Support.SingularXYZ

HOW TO GET STARTED?

In order to start your work fluently, please follow the workflow as below or directly scan the QR codes to watch the field software tutorials.

Method 1 – RTK Surveying

1.1 Create a project   **1.2 Connect the device**

1.3 Setup work modes

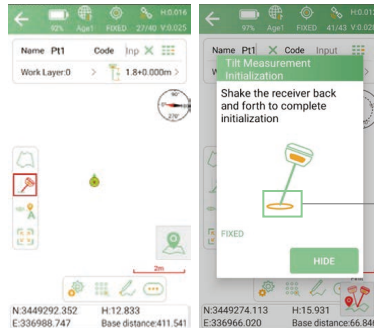PDA CORS Work Mode   Internal Radio Work Mode

1.4 Start Surveying

1.4.1 Tilt Surveying & IMU Initialization

The L1 Laser GNSS Receiver has a built-in IMU module that supports tilt surveying up to 60°. Before start tilt survey, make sure:

○ L1 is in an open area and in a stable fixed status.
○ Enter the actual pole height in the software

Go to **Survey** >> **Point Survey**, click to turn on tilt function, follow the prompt in the software to shake the pole and finish initialization.

Tips:
Please keep the bottom tip of the pole at the same point throughout the whole initialization process.

1.4.2 Laser Surveying

Before start laser surveying, make sure the tilt IMU function is turned on. Go to **Survey** >> **Point Survey**, click to turn on laser function and start surveying.

Aim at the target point via laser and click survey button.

Tips:
It is recommended to use a bipod to assist laser aiming to reduce human hand shaking and improve surveying accuracy.
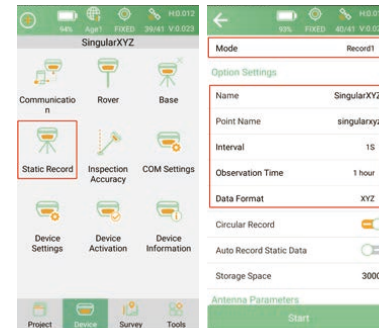
1.4.3 Pole Surveying

Learn more about SingularPad Tutorials

Method 2 - Static Surveying

2.1 Static Data Recording

Refer to 1.2 to connect L1 with SingularPad, then go to **Device** >> **Static Record**. You can set record **Interval**, **Observation Time** and **Data Format** (binary *.xyz or RINEX) according to your needs.

Click **Start** to start static surveying, the data will be recorded in the receiver storage.

LIMITED WARRANTY NOTICE

What is covered by this Warranty

1. SingularXYZ warrants that the Products (GNSS receivers, data collectors & external radios) are free from defects in materials and workmanship under normal use and use in accordance with the respective Product user manual, during the Warranty Period (defined below).
2. The Warranty is provided for a period of: twelve (12) months from the date of the original shipment of the Product ("Warranty Period").

What SingularXYZ will do in the event of a Warranty claim

3. The repaired Product or part or the replacement shall be free from defect in materials and workmanship.
4. The consumer shall not be charged for the repair or replacement of a defective Product during the Warranty Period. All replaced defective Product, parts, boards or equipment shall become the property of SingularXYZ.

What is not covered by the Warranty

5. This Warranty does not cover defects and damage resulting from:
a) Normal wear, tear and scratches of the equipment or otherwise due to the normal aging of the equipment.
b) The Product being used other than in a normal and customary manner or outside of use permitted under the Product's user manual.
c) Any disassembly, repair, alteration or modifications carried out by anyone other than SingularXYZ or an Authorised Service Center.
d) Misuse, abuse, negligence, force majeure or an accident howsoever caused.
e) Improper testing, operation, maintenance, installation, or any alteration or modification of the Product.
f) Spillage of food or liquids, corrosion, rust or the use of wrong voltage.
6. This Warranty will not be available: a) if you are not the first purchaser who legally acquired the Products from SingularXYZ or Authorised distributor partners; or, b) without any proof of purchase.

Your responsibilities

7. The consumer will be required to provide the original purchase receipt or other information requested or required by applicable legislation in respect of the date and place of purchase. In the event that such information is not presented or if it is incomplete or illegible, SingularXYZ reserves the right to refuse providing the above service in respect of the Warranty claim.
8. Before delivering your Product to SingularXYZ or an Authorised Service Center for service under this Warranty, you should make a back up copy of the contents of your Product and remove all personal information and disable all security passwords.

2.2 Static Data Download

2.2.1 - USB download:

Connect Orion ONE to PC via USB Type-C cable, copy the static files to your PC.

2.2.2 - Web UI download:

○ Connect PC or mobile devices to L1's WiFi (Name: SN of L1, Password: 12345678)

○ Open browser and enter the L1 web page via IP 192.168.10.12 (Username: admin, Password: admin)

○ Go to Work Management >> File Download, select the corresponding record name, file type and date to filter and download the static data.

CONTACT US

For more technical questions please refer to the Orion ONE User Manual or contact SingularXYZ support team. You can scan the following QR code to access to SingularXYZ Product User Manual folder and download the Orion ONE User Manual.

🌐 www.singularxyz.com
✉ support@singularxyz.com
○ Support.SingularXYZ

User Manual Folder   Official Website