## PARTNERED PRODUCTS

### 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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Point Survey | Point Stakeout | CAD Mapping | DSM Stakeout | Stake Road | Volume Calculation | Perimeter and Area | Localization | Survey Range Settings |

## SC300 DATA COLLECTOR

**Android**
Powered by Android **12** OS

**IP67**
IP67 & **1.5m** anti-drop

**4G**
**4G/WiFi/Bluetooth** communication

08:08

**6** inch
**6"** sunlight-readable touch screen

**12h**
**7700mAh** battery for **16h** operating

**TF**
**4GB** RAM + **64GB** ROM + **Extend TF**

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## Orion ONE Series GNSS RECEIVER
Version 02-27-2025

### SATELLITES TRACKING

| | |
|---|---|
| Channels | 1408 |
| BDS | B1I, B2I, B3I, B1C, B2a, B2b |
| GPS | L1C/A, L1C, L2C, L2P(Y), L5 |
| GLONASS | G1, G2, G3 |
| Galileo | E1, E5a, E5b, E6 |
| QZSS | L1C/A, L1C, L2C, L5 |
| NavIC | L5 |
| SBAS | WAAS, EGNOS, SDCM, BDSBAS, GAGAN |
| L-Band | Support |
| Cold start | <30s |
| RTK Initialization Time | <5s(typical) |
| RTK initialization reliability | >99.9% |
| Re-acquisition | <1s |

### ACCURACY

| | |
|---|---|
| Standalone | 1.5m Horizontally / 2.5m Vertically |
| DGPS | 0.4m Horizontally / 0.8m Vertically |
| Static Post-processing | 2.5mm+0.5ppm Horizontally / 5mm+0.5ppm Vertically |
| RTK | 8mm+1ppm Horizontally / 15mm+1ppm Vertically |
| PPP | 5cm Horizontally / 10cm Vertically |
| SBAS | < 1.0 m 3D RMS |
| Time Accuracy | 20ns |
| Tilt Surveying | < ±2.5cm, within 60° Tilt Range |

### DATA FORMAT

| | |
|---|---|
| Data Output Format | - NMEA-0183 / - RINEX 3.02/3.04 / - Binary Format *.xyz |
| Data Update Rate | 1～50Hz Selectable |
| Correction Data Format | - RTCM v3.3/3.2/3.1/3.0 |
| Supported Protocols | Ntrip client, Ntrip Server, Ntrip Caster, TCP, UDP |

### COMMUNICATION

| | |
|---|---|
| UHF Modem[1] | - Working Range: Up to 15km with optimal conditions / - Frequency Range: 410-470MHz / - Protocol (TX & RX): LoRa / - Protocol (RX): TRIMATLK, SATEL, TRANSEOT, TRIMMARK3, etc. / - Channel Spacing: 25KHz / - Transmit Power: 0.5W~2W Selectable |
| Bluetooth | BT4.0 Dual Mode |

All specifications are subject to change without notice.

1. The enhanced UHF base is not compatible with normal UHF rovers on the market. For different user needs, SingularXYZ also provides normal UHF as an option compatible with UHF of other brands. Please clarify your requirements when placing the order.
2. The power consumption varies with the different work modes.
3. Storage can be expanded to 32GB according to user demands.

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| | |
|---|---|
| NFC | Support NFC Connection |
| WiFi | 802.11 a/b/g/n/ac |
| Interface | - 1 Type-C Interface for Data Transmission and Charging / - 1 SMA Connector for UHF Antenna |

### VISUAL SENSOR
**(Available for Orion ONE & Orion ONE-AR)**

| | |
|---|---|
| Sensor Type | Camera |
| Pixel | Global Shutter with 2 MP |
| Frame | 30 fps |
| FOV | 75° |
| Feature | Starlight-grade Camera, HD Capture in Weak Light Environment |
| AR Stakeout | 8mm+1ppm Horizontally / 15mm+1ppm Vertically |

### LASER SENSOR
**(Available for Orion ONE & Orion ONE-Laser)**

| | |
|---|---|
| Range | 10m |
| Accuracy | (3-5)mm + 1ppm |
| Measuring Frequency | 2Hz |
| Laser Injection Power | 2mW~3mW |
| Laser Tilt Measurement | ≤5.5cm (5m Range, ≤60°Tilt in Laser Mode) |

### USER INTERACTION

| | |
|---|---|
| Front panel | - 3 LED indicators indicating satellite tracking, differential data transmission and power / - 1 button for power on/off |
| WebUI | - Accessible via Wi-Fi / - Support Configuration, Status Checking, Data Transfer, Data Storage and System Upgrade |

### ELECTRICAL

| | |
|---|---|
| Power Consumption | 1.8 W[2] |
| Input Voltage | DC 5-15V |
| Battery | - 4200 mAh, up to 12 Hours Working Time / - Fast Charge of 3 Hours Charging Time |

### PHYSICAL

| | |
|---|---|
| Size | Φ107 mm × 58.7 mm |
| Weight | 547 g |
| Storage | 8 GB[3] |
| Housing Material | Magnesium-aluminum Alloy |

### ENVIRONMENTAL

| | |
|---|---|
| Working Temperature | -40℃ to + 65℃ |
| Storage Temperature | -55℃ to + 85℃ |
| Humidity | 100% Non-condensing |
| Waterproof & Dustproof | IP67 |
| Drop | Designed to Survive a 2m Drop onto Concrete |

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# Orion ONE Series
## VISUAL & LASER GNSS RECEIVERS

Visual, Laser, IMU – Never Just Surveying

**SingularXYZ** ®

# ORION ONE SERIES VISUAL & LASER RTK

To make surveying smarter, SingularXYZ has added a starlight-grade camera and a precise laser module to the Orion ONE Series GNSS receiver, achieving deep fusion of multiple sensors.

While shrinking the device to the palm size, Orion ONE Series provides an advanced GNSS engine, immersive AR stakeout, non-contact laser surveying, 60° tilt IMU, 15km enhanced UHF, and rich features to empower your tasks.

### MODEL COMPARISON

| | | Orion ONE | Orion ONE-Laser | Orion ONE-AR |
|---|---|:---:|:---:|:---:|
| | Basic Functionality | ✓ | ✓ | ✓ |
| | Laser Surveying | ✓ | ✓ | ✗ |
| | AR Stakeout (Camera) | ✓ | ✗ | ✓ |

- Full-Constellation
- Φ107mm × 58.7mm
- Web UI Access
- 60° Tilt IMU
- Multi-Sensor
- IP67 Protection
- 12h 12Hrs Battery Life
- NFC/Bluetooth/WiFi
- Large UHF Coverage

**DEEP FUSION OF GNSS, VISUAL, LASER & IMU**

# INTUITIVE AR VISUAL STAKEOUT

### Immersive AR Stakeout
Seamlessly integrates visual AR technology for an immersive experience.

### Starlight-Grade Camera
Captures high-quality visuals in low-light or challenging conditions.

### Over 50% Efficiency Up
Precise and effortless compared to traditional stakeout methods.

### Intuitive & Precise Visual Guidance
Advanced algorithms ensure clear & accurate visual guidance for stakeout.

# NON-CONTACT LASER SURVEY
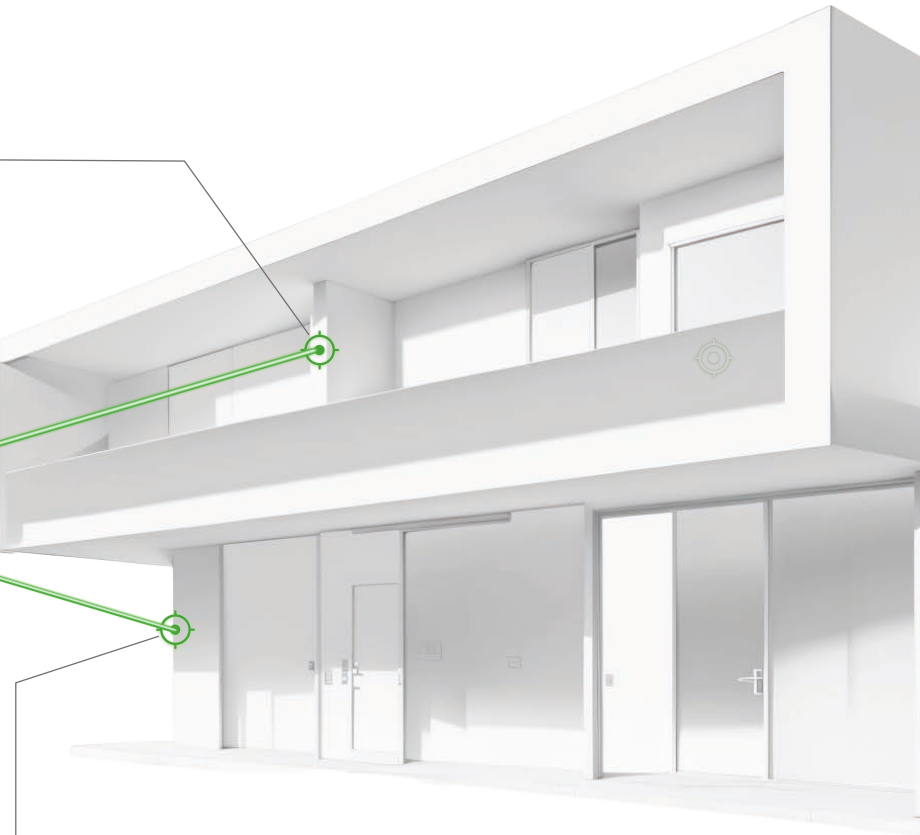## Stay in Place and Measure with Ease

**For Difficult-to-Access Points**
Enables secure and effective surveying, overcoming physical barriers.

**10m** Measure Range

**60°** Tilt Range
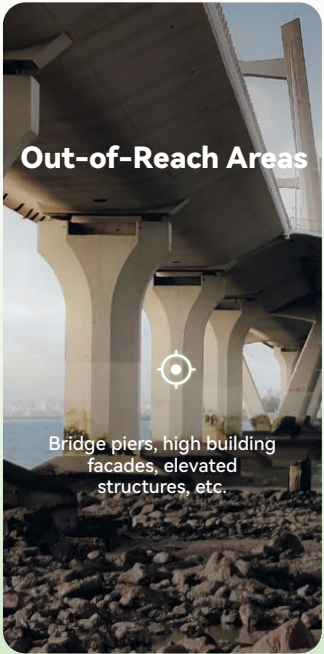
**For Areas Lack of Satellite Signals**
Extends GNSS measurement range using laser in signal-blocked areas.

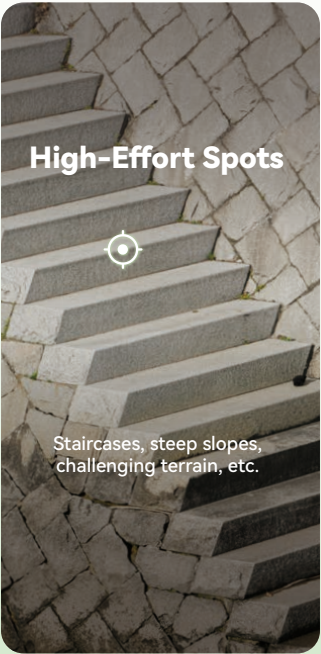## MORE SURVEYING POSSIBILITIES

**Hazardous Points**
Busy roadways, hazardous water bodies, construction zones, etc.

**Out-of-Reach Areas**
Bridge piers, high building facades, elevated structures, etc.

**High-Effort Spots**
Staircases, steep slopes, challenging terrain, etc.

**Signal-blocked Zones**
Under eaves, inside buildings, dense foliage, etc.