Specifications

Positioning

Channel：1408
BDS: B1I/B2I/B3I/B1C/B2a/B2b
GPS:L1C/A /L1C/L2P(Y)/L2C/L5
GLONASS:G1/G2/G3
Galileo: E1/E5a/E5b/E6
QZSS: L1/L2C/L5
NAVIC:L5
SBAS:L1C/A
PPP:B2B-PPP | E6-HAS
Update rate: 20Hz standard
Cold start：<12s
Initialization time：＜5s
Initialization reliability：＞99.9%

Measurement accuracy

Static accuracy：H:±（2.5+0.5×10^{-6}D) mm
V:±（5+0.5×10^{-6}D) mm
RTK accuracy:H:±（8+1×10^{-6}D) mm
V:±（15+1×10^{-6}D) mm
Laser measurement accuracy:5m≤2.5cm 10m≤5cm
Tilt measurement accuracy：≤2cm，60°tilt

Laser ranging

Color: green
Laser class:CLASS 3
Laser wavelength:520nm
Ranging frequency: 20Hz(fast mode)
Working distance for laser ranging:0.1-25m
Resolution for laser ranging:1mm
Accuracy for laser ranging:2mm @1σ

Environmental adaptability

Operating temperature:-30°C~+70°C
Storage temperature:-40°C~+80°C
Waterproof and dustproof level:IP67
Shockproof and anti-drop performance: 2m pole drop resistant
Operating humidity:0%~100% anti-condensation

Battery

Battery life：18h+(static mode), 12h+(RTK mode)
Power：3.6V_13400mAh

Physical

Shell material:Magnesium aluminum alloy
Weight:＜900g
Dimension：Φ134mm*70.6mm
Indicator: Satellites, datalink, Bluetooth,battery

Camera

The count of lenses:2
Field of view of front lens:90°
Front sensor pixel:200W
Field of view of bottom lens：72°
Bottom sensor pixel：200W

System

Operating system：Linux
Internal memory:8G
Data transmission:4G/Bluetooth/WIFI/Radio
Bluetooth: backward compatible with BT 5.0 EDR, BLE
WIFI:802.11 a/ac/b/g/n
Network module：4G network,Built-in antenna
Radio：Transceiver-integrated radio Transmission power 2W
Radio frequency：410-470MHZ
Air baudrate：19200，9600，4800
Supported protocol： TrimTalk 450s, PCC-GMSK, PCC-4FSK, Satel, Satel_ADL, TrimMark III, South 9600, South 19200 etc.
Supported language： Simplified chinese,English,Turkish, Polish,Korean,Indonesian,Spanish, Telugu,Russian etc.

Illustrations, descriptions and technical specifications are not binding and may change.

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FOIF®
It's professional since 1958

Remote laser surveying, intelligent dual-camera mapping



A98L

Laser Dual-camera RTK

>>>>>>

Product Introduction

The A98L is a laser dual-camera RTK product that supports full-system and full-frequency high-precision positioning for BDS/GPS/GLONASS/Galileo/QZSS. It integrates a visible laser, visual imaging, and IMU inertial navigation module, with front and bottom high-definition cameras, making surveying worry-free!

Laser ranging
All satellite constellations
AR stakeout
IMU inertial navigation
Waterproof dustproof
Data storage
High-capacity lithium battery
Integrated transceiver
Multifunctional WIFI

Product feature

01 Laser ranging
visible laser, ranging image marking

02 All constellations
all frequency bands, 1408 channels

03 AR stakeout
dual-camera AR view, tilt measurementnt

04 UHF radio
multi-protocol compatible, transceiver-integrated radio

05 Human-computer interaction
Linux OS, WebUI configuration

06 Attractive and durable
lightweight and rugged, magnesium alloy housing

07 Intelligence operation
voice guidance, high-capacity lithium battery

Visible Laser Measurement

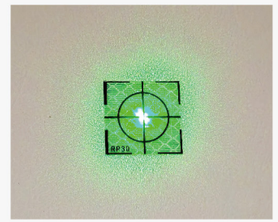
Laser Ranging

Visible laser (CLASS 3 safety), measuring range 0.1-25m, 5-20Hz update rate for laser measurement and stakeout



Extreme Precision with Greenlight

The green laser is obvious and distinguishable, distant markings are clearly visible, it remains clear under strong light, and the measurement results are accurately presented



Precision Tracking

Laser achieves precise distance measurement, images simultaneously provide assisted aiming and live documentation, the work site is fully under control, and data is clear and traceable



Holographic View

Distance measurement values, signal strength, and attitude accuracy are clearly visible, complemented by a freely zoomable display and precise crosshairs, creating an operational view with comprehensive perception





Application Scenarios



Hazardous Areas

For high-risk zones like high-voltage towers or utility poles, laser measurement allows operators to maintain a safe distance while accurately targeting measurement points



Cultural Heritage Sites

For those protected structures (e.g., pavilions, eaves), where physical contact is prohibited, laser measurement enables non-contact data collection, significantly expanding survey capabilities



Piers & Bridges

For inaccessible elevated areas (piers, bridges, or walls), laser technology combined with inertial navigation delivers precise point measurements



Dense Forest

By integrating multiple systems and using precise algorithms, obtain a fixed solution stably in dense forests, achieving all-weather, high-precision measurements



Roadway Infrastructure

For unsafe measurement of central pillars or roadside barriers across traffic lanes, laser technology penetrates obstacles while keeping engineers out of danger zones



Waterway Surveys

When natural barriers (lakes, rivers) prevent access, laser measurement with image marking provides necessary help

Seamless IMU Tilt Measurement System »»

- Auto initialization
- 60° tilt measurement
- 400Hz Ultra-High Update Rate
- Status visual, accuracy consistent and reliable
- No precise centering needed, instant point-and-measure



Dual-Camera AR Smart Reality Stakeout



Long-range guidance



close-range centering

The dual HD cameras can see the distant target point at a glance when stakeout, and dynamically guide the path of travel. When approaching the target point, the camera is intelligently switched to focus on the close-up. The overall efficiency of stakeout is increased by 39%.

P91V Controller

- Android 11 system, 8-core 2.0G, 3GB internal memory + 32GB storage
- Supports WLAN, Bluetooth and Type-C wired communication
- 5.0-inch BlankView high-definition touchscreen, enhanced clarity, brightness and power efficiency
- Over 15 hours of operating time with 6400mAh high-capacity battery
- GSM-certified global mobile communication, 4G worldwide with voice call support
- IP67 dust/water proof, operating temperature from -30°C to 60°C
- Single-frequency GPS/GLONASS/BDS support
- High-strength magnesium alloy frame, 3D curved body design for comfortable grip



SurPad

01 Visual laser ranging



It displays laser ranging status in real time, and the crosshair of assisted aiming system dynamically adjusts to always align with the ranging laser spot. The image window can be zoomed in and out. The accuracy can reach up to 5cm at 20m distances. Besides, laser measurement can automatically support target image saving and marking.

02 Dual-Camera AR Reality Stakeout



It has AR reality measurement and stakeout function, front camera provides long-range target guidance, and bottom camera provides close-range centering. Mountain photovoltaic stakeout can efficiently and precisely measure and mark photovoltaic panel position. Multiple earthwork calculation methods make volume measurement quite a breeze.

03 Advanced CAD features



Real-Time data sync makes field measurements instantly exported to CAD drawings. Slope stakeout guides the operator to select any edge in CAD to realize grade slope measurements. Transparent overlay can superimpose CAD drawings onto maps. External references function can support opening any CAD drawings with external reference objects.

04 Multi-functional Data Service



Online map & satellite image with offline map download support. Direct import of road straight/curve tables, and it supports input methods including element-based, intersection-point, and coordinate-based. Cloud data sharing function makes file transfer to controller easily. Besides, it has QR code sharing for conversion parameters, coordinate systems, and configuration sets, etc.