

## Software

### Survey Master

Compatible with most of Android devices

Easier survey workflow via Wizard function

Support up to 60° IMU tilt compensation

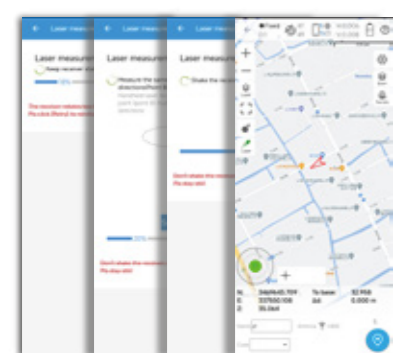
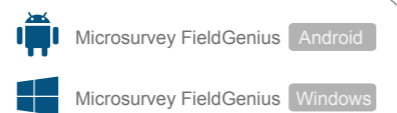
Support all survey modes, including Static, PPK and RTK

Support Surface Stake, Mapping Survey and etc. to serve various survey tasks

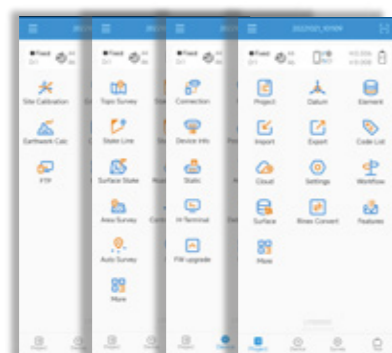
Support CAD import and directly use for stake out operations

Support Convert function from ComNavBinary raw file to RINEX

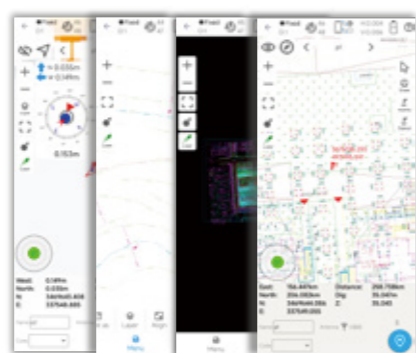
Optional



IMU Tilt Survey



New Interface



CAD Basemap and Stake

### Post-processing Software

## SinoGNSS Compass solution software

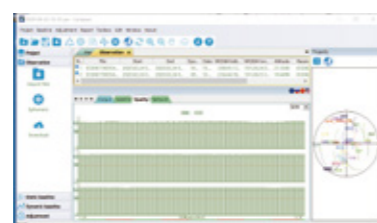
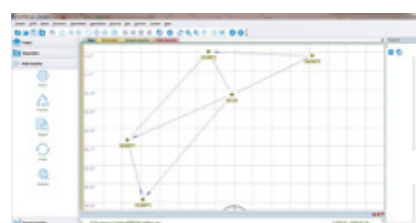
Provide the complete GPS/GLONASS/BeiDou/GALILEO post-processing solution

Support GNSS observation data in RINEX and ComNav Raw Binary Data format

Support different post-processing in static and kinematic modes

Output analysis reports in various formats (web format, DXF, TXT, KML)

Supports DJI's P4R data format. Processing results can be imported into photogrammetry and 3D modeling software directly



## Mars Pro Laser RTK

GNSS Surveying System

Ver.2023.07.18

### Signal Tracking

Channel: 1668  
 GPS: L1C/A, L1C, L2P, L2C, L5  
 BDS: B1I, B2I, B3I, B1C, B2a, B2b  
 GLONASS: G1, G2, G3  
 Galileo: E1, E5a, E5b, E6c, E5 AltBOC  
 QZSS: L1C/A, L2C, L5, L1C  
 IRNSS: L5  
 SBAS: L1C/A

### Performance Specification

Signal Re-acquisition: ≤1s  
 Cold Start: ≤45s  
 Hot start: ≤15 s  
 RTK Initialization Time: <10s(Baseline≤10km)  
 Initialization reliability: ≥99.9%  
 Data Update Rate: 1Hz, 2Hz, 5Hz, 10Hz, 20Hz

Mode	Accuracy
Static and Fast Static	Horizontal 2.5 mm + 0.5 ppm RMS Vertical 5 mm + 0.5 ppm RMS
Long Observations Static	3 mm + 0.1 ppm Horizontal 3.5 mm + 0.4 ppm Vertical
Signal Baseline RTK	Horizontal 8mm + 1ppm RMS Vertical 15mm + 1ppm RMS
DGPS	<0.4m RMS
SBAS	Horizontal 0.5 RMS Vertical 0.8 RMS
Standalone	1.5m 3D RMS
Laser Tilt Measurement	≤5.5cm (5m range, ≤60°Tilt in Laser mode)

### Data Format

Correction data I/O: RTCM2.X, 3.X,CMR(GPSonly),CMR+(GPSonly)  
 Position data output: - ASCII: NMEA-0183 GSV, RMC, HDT, GGA, GSA, ZDA, VTG, GST; PTNL, PJK; PTNL, AVR; PTNL, GGK  
 -ComNav Binary update to 20 Hz

### Electrical and Battery

Voltage: 7-28 VDC  
 Power Consumption: 1.8W<sup>4</sup>  
 Li-ion battery capacity: 2 x 3400 mAh  
 Working time: 20h  
 Memory: 16 GB

1. UHF modem is default configuration and it can be removed according to your specific needs.
2. Integrated UHF ranges from 410 to 470 MHz with 12.5 KHz channel spacing.
3. Working distance of internal UHF varies in different environments, the maximum distance is 5 Km in ideal situation.
4. Power consumption will increase if transmitting corrections via internal UHF.

### Communication

1 Serial port (7 pin Lemo)  
 - Baud rates up to 921,600 bps  
 Datalink!:  
 - Tx/Rx with full frequency range from 410-470MHz  
 - Transmit power: 0.5W, 1W, 2W adjustable  
 - Air Baud Rate: 9600 / 19200 adjustable  
 - Range<sup>2</sup>: 3-5 km  
 - Protocol type: Transparent/TT450S/South/Mac/SATEL  
 WIFI/4G modem  
 - LTE-FDD:  
 B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28  
 - LTE-TDD: B38/B39/B40/B41  
 - WCDMA: B1/B2/B4/B5/B6/B8/B19  
 - GSM: B2/B3/B5/B8  
 Position data output rates: 1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz  
 2 LEDs (indicating Satellites Tracking and RTK Corrections data)  
 1 OLED Display and 2 Function buttons  
 Bluetooth® : V 4.0 protocol, compatible with Windows OS and Android OS  
 Calibration-free IMU integrated for Tilt Survey  
 Up to 60°tilt with 2.5 cm accuracy

### Environmental Specification

Working Temperature: -40 C to +65 C (-40°F to 149°F)  
 Storage Temperature:-40 C to +85 C (-40°F to 185°F)  
 Humidity: 100% non-condensing  
 Water- & Dustproof: IP67  
 Shock: Survive a 2m drop onto the concrete  
 Vibration: MIL-STD-810G Method 514.6 procedure

### Physical Specification

Housing Material: Aluminium magnesium alloy  
 Dimension: Φ 15.5 cm x 7.3 cm  
 Weight: 1.2 kg with two batteries

### Laser Specification

Range: 10m  
 Accuracy(room temperature): (3-5)mm + 1ppm  
 Measuring Frequency: Classic Value: 3Hz  
 Maximum Value: 5Hz  
 Laser Injection Power: 0.9mW~1.5mW  
 Working Temperature: -20 C ~+50 C  
 Storage Temperature: -30 C ~+60 C

**SinoGNSS**  
 By ComNav Technology Ltd.



# Mars Pro Laser RTK

## Universe Series GNSS Receiver

LASER RTK - INNOVATION MAKES THE DIFFERENCE



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# Features

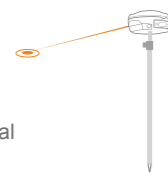
## Laser distance meter solves complex surveying tasks

Innovatively combining laser modules with high-performance GNSS receivers, Mars Pro offers a more diverse range of surveying operations, and is able to solve problems in a variety of demanding condition.

SATELLITE TRACKING			SATELLITE TRACKING		
	GPS	L1C/A, L1C, L2P, L2C, L5		QZSS	L1C/A, L2C, L5, L1C
	BDS	B1I, B2I, B3I, B1C, B2a, B2b		IRNSS	L5
	GLONASS	G1, G2, G3		SBAS	L1C/A
	Galileo	E1, E5a, E5b, E6c, E5 AltBOC			

### Laser Technology

The combination of the conventional GNSS receiver and the laser module reduces the difficulty of working in special cases, and fit the usage habits of surveyors.



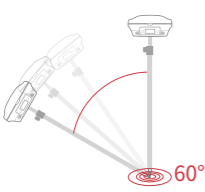
### OLED color screen

The OLED color screen visually displays the number of satellites searched, fixed state, on-off state, power and other information, which is convenient for surveyors to control.



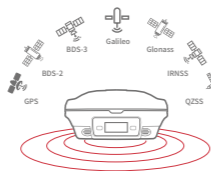
### Third Generation IMU Improves 30% Efficiency

Mars Pro features a 3rd generation IMU, which eliminates manual initialization and simplifies surveying operations in the field. It can still support 60° compensation in the laser mode.



### Full-Constellation Multi-Frequency

With 1668 channels and 60+ satellite tracking capabilities, Mars Pro also supports SBAS PPP service. Getting fixed in seconds boosts your productivity.



### Robust Design

A shock-resistant, dustproof, and waterproof aluminium magnesium alloy body ensures uninterrupted performance wherever you are.



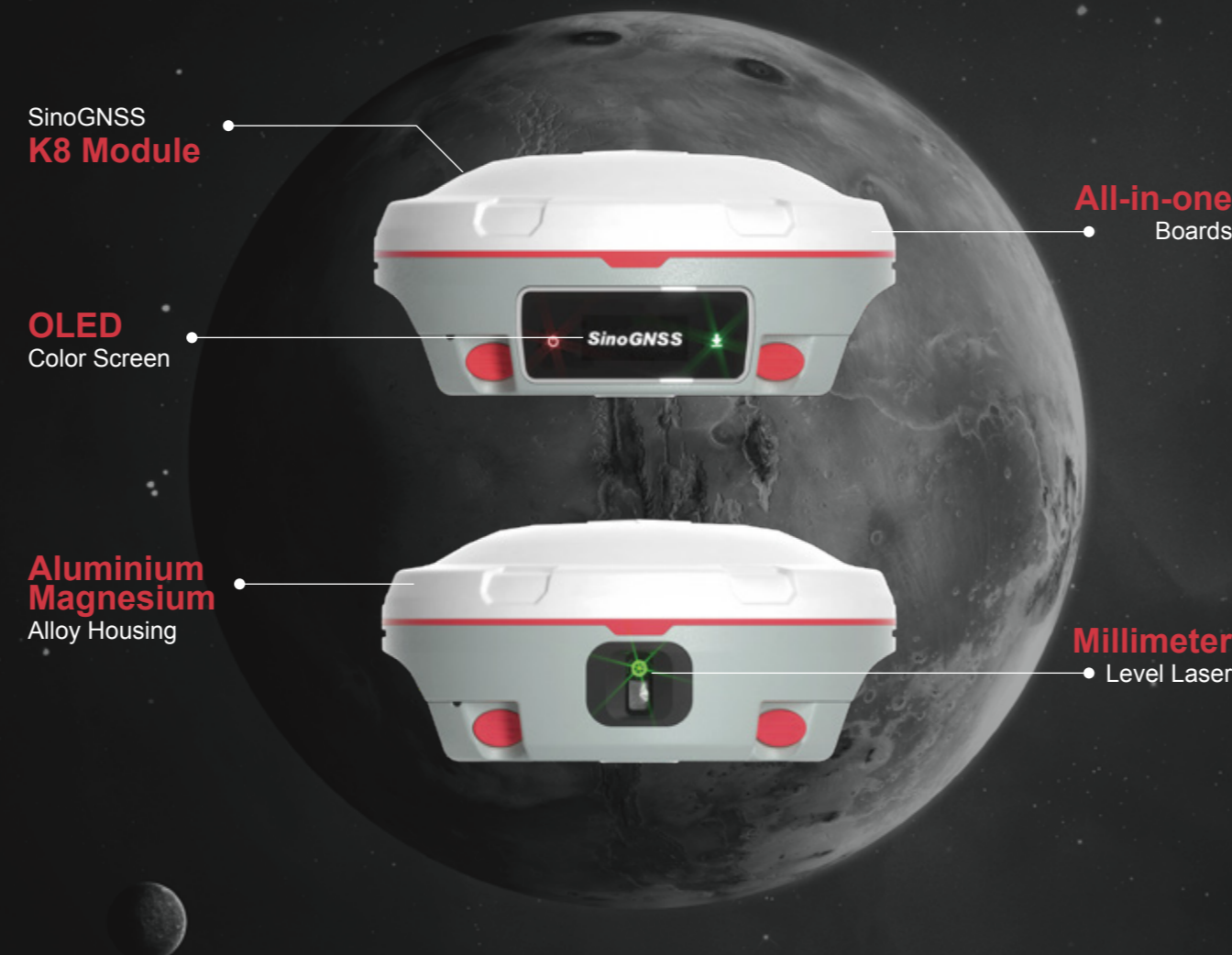
### Strong Compatibility

As the compatibility of datalink, it is compatible with mainstream brands, support various protocols, including Transparent/TT450S/South/Mac/SATEL, so as to reach wider users.



# Mars Pro Laser RTK

Mars Pro Laser RTK is an innovative GNSS receiver that integrates the latest GNSS, IMU, and laser technologies. In hard-to-reach, signal-obstructed, and dangerous fields, the millimeter-level laser distance meter on Mars Pro's back makes surveying and stakeout easier and more stable. Equipped with the latest K8 platform, Mars Pro tracks 1668 channels for all running and existing constellations. The built-in IMU sensor supports up to 60° tilt compensation, ensuring high-precision results. Its OLED color display with excellent sunlight readability is an interactive interface, providing more high-end operations.



# R60 Data Collector

