

## Software

### Survey Master

Compatible with most of Android devices

Easier survey workflow via Wizard function

Support up to 60° IMU tilt compensation

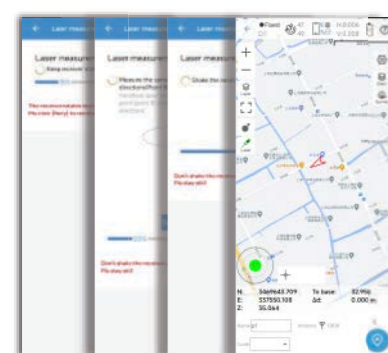
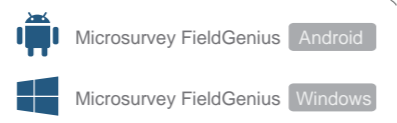
Support all survey modes, including Static, PPK and RTK

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

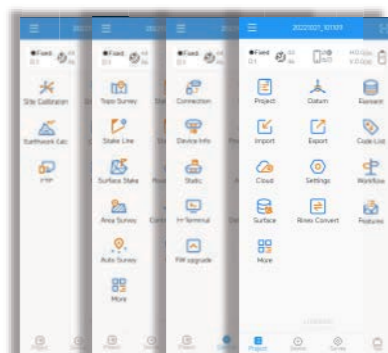
Support CAD import and directly use for stake out operations

Support Convert function from ComNavBinary raw file to RINEX

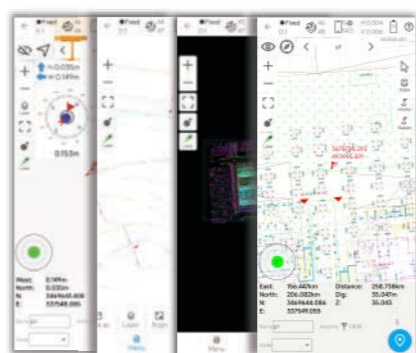
Optional



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

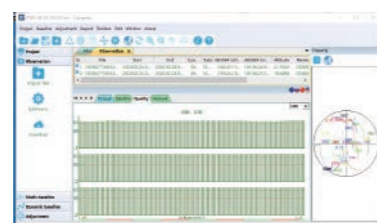
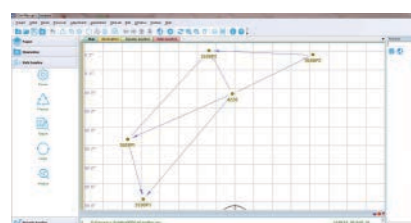
Support GNSS observation data in RINEX and ComNav Raw Binary Data format

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 Laser RTK

GNSS Surveying System

Ver.2023.07.13

### Signal Tracking

Channel: 1590  
 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: ≤15s  
 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	Horizontal 3.0 mm + 0.1 ppm RMS Vertical 3.5 mm + 0.4 ppm RMS
Signal Baseline RTK	Horizontal 8mm + 1ppm RMS Vertical 15mm + 1ppm RMS
DGPS	<0.4m RMS
SBAS	Horizontal 0.5m RMS Vertical 0.8m 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, ZDA, VTG, GST; PTNL, PJK; PTNL, AVR; PTNL, GGK  
 -ComNav Binary update to 20 Hz

### Electrical and Battery

Voltage: 7-28VDC  
 Power Consumption: 1.7W<sup>4</sup>  
 Li-ion battery capacity: 2 x 3400 mAh  
 Working Time: ≥20h  
 Memory: 8GB

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.
3. Working distance of internal UHF varies in different environments, the maximum distance is 15 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  
 Enhanced UHF modem<sup>1</sup>  
 : Tx/Rx with full frequency range from 410-470 MHz<sup>2</sup>  
 - Transmit power: 0.5-2 W adjustable  
 - Range: 15 km<sup>3</sup>  
 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  
 5 LEDs (indicating Satellites Tracking, RTK Corrections data, GPRS Status and Power)  
 2 Function buttons for Power and Static Data Record  
 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 ~+65 C  
 Storage Temperature: -40 C ~+85 C  
 Humidity: 100% non-condensing  
 Water- & Dustproof: IP67  
 Shock: Survive a 2m drop onto the concrete  
 Vibration: MIL-STD-810G Method 514.6 procedure I

### Physical Specification

Dimension: Φ 15.5cm x 7.3cm  
 Weight: 1.2kg 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



## Mars Laser RTK

### Universe Series GNSS Receiver

LASER RTK - INNOVATION MAKES THE DIFFERENCE

### ComNav Technology Ltd.

Building 2, No. 618 Chengliu Middle Road,  
 201801 Shanghai, China








Tel : +86 21 64056796  
 Fax: +86 21 54309582  
 Email: sales@comnavtech.com  
 www.comnavtech.com



## Features

### DISCOVER A NEW ERA OF SURVEY WITH MARS LASER RTK RECEIVER

With cutting-edge laser technology, Mars Laser RTK revolutionizes your measurements, enabling you to tackle diverse surveying scenarios with ease. Explore new horizons, simplify your workflow, and embrace innovation with Mars Laser RTK.

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.



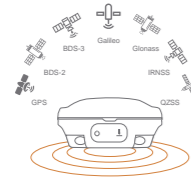
#### Longer Working Range

The built-in transceiver datalink module has a super long working distance of up to 15KM. Mars can be switched as a rover or base at will.



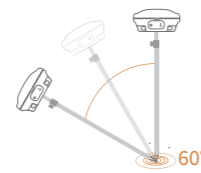
#### Full-Constellation Multi-Frequency

With 1590 channels and 60+ satellite tracking capabilities, Mars also supports PPP service. Getting fixed in seconds boosts your productivity.



#### Third Generation IMU Improves 30% Efficiency

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



#### Robust Design

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

IP67



## Mars Laser RTK

The Mars Laser RTK is an innovative GNSS receiver that integrates the latest GNSS, IMU, and laser technologies, resulting in a stunning experience. In previously hard-to-reach, signal-obstructed, and dangerous fields, the millimeter-level laser distance meter on Mars's back makes surveying and stakeout easier and more stable. Mars is equipped with the latest K8 platform, and tracks 1590 channels for all running and existing satellite constellations. The built-in IMU sensor supports up to 60° tilt compensation, ensuring high-precision results.





LASER TECHNOLOGY



K8 MODULE



FULL-CONSTELLATION MULTI-FREQUENCY

IMU

Up to 60° Tilt

PPP

IP67



LONGER WORKING RANGE

## R60 Data Collector





Qualcomm



1080P Resolution



5.5" Display



Full QWERTY



Android 12



LARGE CAPACITY

IP67