# Alpha 4i

## Alpha 4i Ultra RTK

98×53mm | 380g | Leading professional RTK into ultra small era



ALPHA

ISO ISO9001   CE

# Alpha 4i

With the latest system framework, and the latest generation positioning engine SoC, Alpha 4i goes beyond the design limitation, and it unloads 50% of the burden for global surveyors successfully. It's with excellent performance and ultra small size.



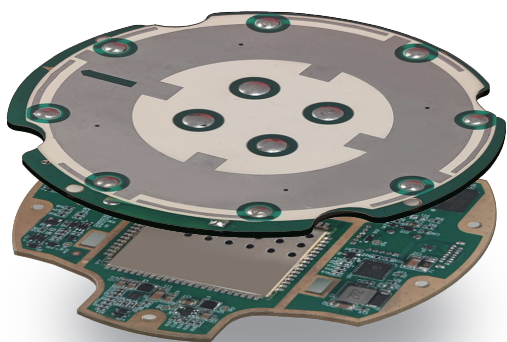## Ideally made, lightly weight



9.8cm

5.3cm

**380g**

Material of the Shell:
Made with nano material and wave-transparent top cover, Alpha4i is with aluminum alloy enforced housing. It's with 316 molybdenum steel threaded connector and 5/8 pin interface.

# 3 Outstanding Technologies

## All-satellites full-frequency 8cm positioning antenna

Alpha 4i carries all-satellites full-frequency positioning antenna, which, for the first time, shortens the traditional 11cm antenna diameter to 8cm, without losing any signal. With High frequency microwave radiation carrier and electromagnetic band gap Technology, combined four feed points phase center design and high-gain wide beam, Alpha 4i can get instant fixed solution in low elevation and complicated situations.

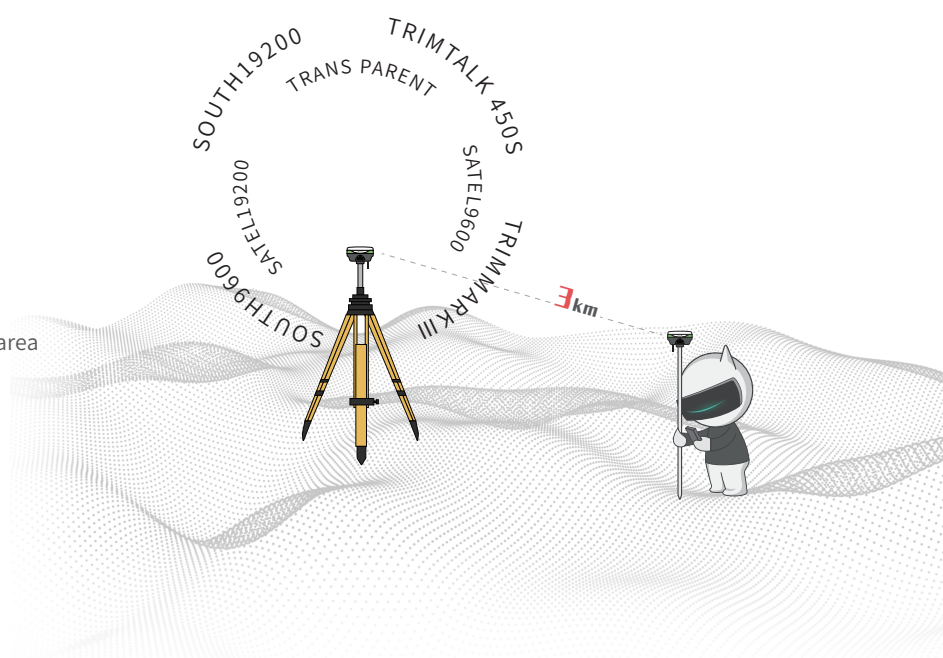## The latest generation of global positioning SoC chip

Integrated with the latest generation NebulasIV radio frequency baseband and high-precision algorithm, the latest SoC chip supports all-satellites full-frequency computation algorithms. Independent frequency point tracking and 60 dB narrow band anti-interference, make it continue to positioning even lose satellite signal.

## Embedded real-time operating system RTOS

Embedded military class real-time operating system RTOS for the first time, Alpha 4i can fully satisfy RTK development requirement and is more compatible with IoT application scenario.RTOS system is widely used in spacecrafts, missiles, robots, Tmall Elf and other IoT devices for its lower power consumption, smaller volume and real-time instant response.

# Remarkable performance and experience

Anti-block    Instant fix    high precision

# Globally supports 7 statellites
## 24 frequencies of the 7 major satellites

| Satellite System | Frequency point/signal |
|---|---|
| GPS | L1C/A, L1C, L2C, L2P, L5 |
| BDS | B1I, B2I, B3I, B1C, B2a, B2b |
| GLONASS | G1, G2, G3 |
| Galileo | E1, E5a, E5b, E6 |
| QZSS | L1C/A, L1C, L2C, L5 |
| SBAS | L1 |
| NAVIC | L5 |

# Long battery life

**18h**
Lte
CORS Mode

**15h**
Radio Receiving Mode

**8h**
Radio Transmitting Mode

# Fully Compatible Transceiver Internal UHF Radio

Supports various working modes in global regions

Support 410-470MHz full frequency band

Compatible with various mainstream RTK protocols

Output stable solution to 3KM base station surveying area

Compatible with 35W external radio

SOUTH19200  TRANS PARENT  TRIMTALK 450S  SATEL9600  SATEL19200  SOUTH9600  TRIMMARK III  TRIMMARK III

3km

# 90° Inertial Navigation

| Covered Place | Jungle | Underground | Dangerous Point | Buildings | Hiding Point | Level Point | Hang Point |
|---|---|---|---|---|---|---|---|
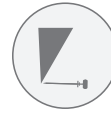
30°
60°
90°
120°

**2cm**  60° tilt
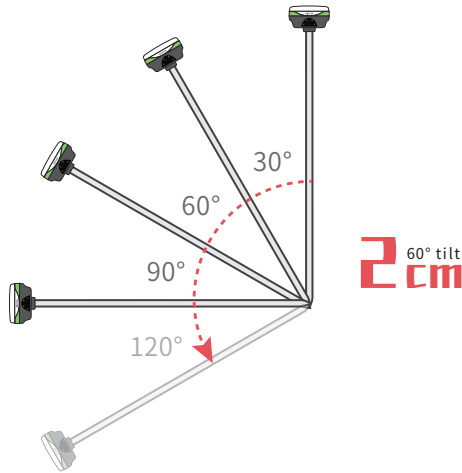
Fast initialization IMU, support tilt measurement with 2CM accuracy when tilt angle 60°. IMU can still work in tilt angle 90° even 120°

# Greater Convenience

**Hard Plastic Box**

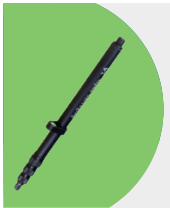Industrial-grade small hard plastic box, 27*23*11cm.

**Fast Charging**

Power delivery, supports operation with external power banks.
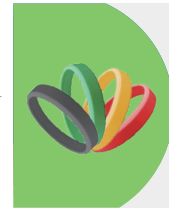
**IP67**

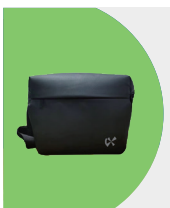IP67 dustproof and waterproof, comes with protective rubber gasket, drop-resistant up to 1.5 meters with the pole.

**Centering Rod**

1.5m portable centering rod,collapses to 50cm.

**Colorful Protection Ring (Optional)**

Various colorful Protection ring can be selected to make surveying a interesting jobmeters with the pole.

**Carrying Bag (Optional)**

Optional carrying bag is with ergonomic design, you can use it take 5i RTK or bottled water
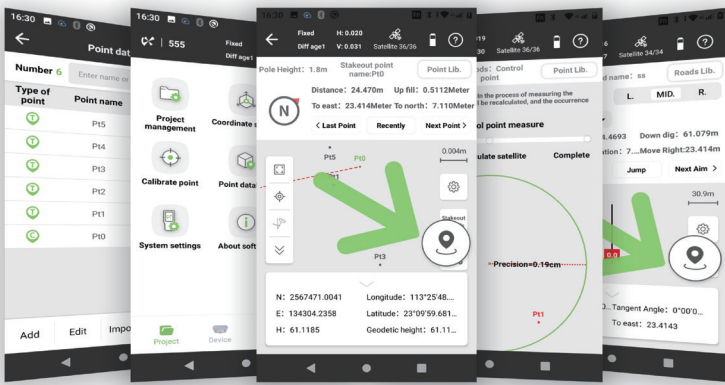
**Controller Holder**

capable of holding a mobile phone

**Satellite Differential Service (Upgrading)**

Support PPP service for free, can finish convergence in 15mins to get 10cm accuracy
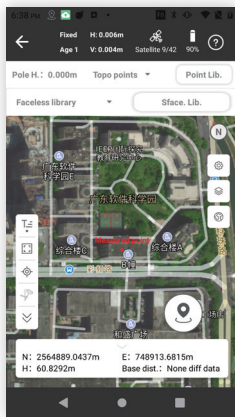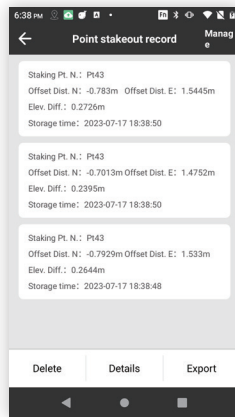
# Dimap (surveying software)



DiMap has gone through deep iterations and gained a deep understanding of user survey habits. With built-in rich surveying modules and cloud integration, DiMap is professional, intelligent and easy-to-use.
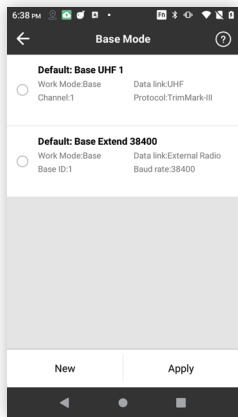


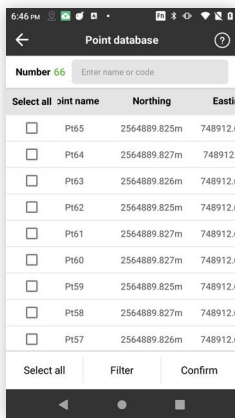Base station and rover station configuration linkage



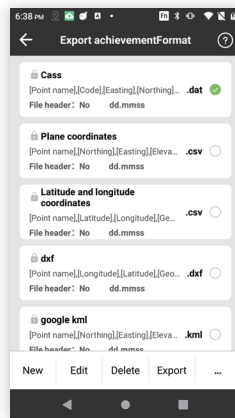Large scale basemap import and full display for survey and stakeout



Separate management of stakeout records, one click export of record reports



CAD drawing recognition, high efficiency in editing and stakeout



Select multiple points you want to use from points database



Various data formats available to export, such as csv, dxf, kml, etc

# Controller

**Professional Kit**



## Alpha Bi Technical Indicators

| | |
|---|---|
| **OS** | Android 10.0 (supports OTA upgrade) |
| **CPU** | 8 cores 2.0Ghz |
| **RAM** | 4G DDR4 + 64G |
| **SIM Card Type** | NanoSIM 4G |
| **Screen** | 5-inch, high-brightness, touchable |
| **Bluetooth** | BT 5.0 BLE |
| **Battery** | 5200mAh Up to 20 hours |
| **Keyboard** | 12 buttons, backlight keyboard |
| **Weight** | 335g |

# Android Phones

**Install Dimap, bluetooth access operation**

| Alpha 4i | ×1 |
|---|---|
| Radio antenna | ×1 |
| Adapter | ×1 |
| Data cable | ×1 |
| Controller | ×1 |
| Controller bracket | ×1 |
| Controller data cable | ×1 |
| Centering rob | ×1 |
| Instructions | ×1 |
| Carrying Case | ×1 |

## Technical Specification

| Category | Parameter | | Value |
|---|---|---|---|
| **GNSS** | Channels | | 1408 |
| | Signal Tracking | | GPS: L1C/A, L1C, L2C, L2P, L5 |
| | | | BDS: B1I, B2I, B3I, B1C, B2a, B2b |
| | | | GLONASS: G1, G2, G3 |
| | | | Galileo: E1, E5a, E5b, E6 |
| | | | QZSS: L1C/A, L1C, L2C, L5 |
| | | | SBAS: L1 |
| | | | NAVIC: L5 |
| | *1 High Precision Static | | H: $\pm$（2.5+0.5×10$^{-6}$D）mm |
| | | | V: $\pm$（5+0.5×10$^{-6}$D）mm |
| | RTK | | H: $\pm$（8+1×10$^{-6}$D）mm |
| | | | V: $\pm$（15+1×10$^{-6}$D）mm |
| **Tilt Compensation** | Accuracy | | $\pm$（8+0.3TILT）mm |
| | *2 Angle | | 0~120° |
| | Update Rate | | 100Hz |
| **System Parameters** | Operating System | | RTOS |
| | Data Record | | DAT |
| | Bluetooth | | BT5.0 Backward compatibility |
| **Radio** | Power | | 1w |
| | Frequency | | 410-470MHz |
| | Global Communication Protocol | | TRIMTALK 450S、TRIMMARKIII、SOUTH9600、SOUTH19200、SATEL9600、SATEL19200、TRANS PARENT |
| | Operation Mode | | Transceiver |
| **Power** | Voltage | | 5-12V Power Delivery |
| | Working Time | | 18h（Network Mode）、15h（Radio Reception）、8h（Radio Transmission） |
| **Port Indicator** | SMA | | Connecting the radio antenna |
| | Type-C | | For charging & Data connection |
| | Indicator Lights | | satellite, datalink, bluetooth, battery light |
| **Physical** | Dimension | | 98mm*53mm(Excluding 5/8 pin interface) |
| | Weight | | 380g |
| **Environmental** | Operating Temperature | | -30℃ ～ +70℃ |
| | Storage Temperature | | -40℃ ～ +80℃ |
| | Water/Dust Proof | | IP67 |
| | Shock | | Normal temperature resistance of 1.5 m drop (hard ground) |
| | Humidity | | Up to 100% |

*1 Will support by upgrading firmware soon
*2 The above technical parameters are for your reference.The company reserves the right to change the design and planning of the product based on the actual product.