

## PERFORMANCE SPECIFICATIONS

### Satellite Signals Tracked Simultaneously<sup>1</sup>

Channels.....	1408
GPS.....	L1C/A, L1C, L2P(Y), L2C, L5
BeiDou.....	B1I, B2I, B3I, B1C, B2a, B2b*
GLONASS.....	L1, L2, L3
Galileo.....	E1, E5A, E5, AltBOC, E5B, E6
IRNSS.....	L5
SBAS.....	L1C/A, L5(QZSS, WAAS, MSAS, GAGAN)
QZSS.....	L1, L2, L5, L6*
L-band*.....	B2b-PPP

### POSITIONING PERFORMANCE<sup>2</sup>

#### High-Precision Static

Horizontal.....	2.5 mm + 0.1 ppm RMS
Vertical.....	3.5 mm + 0.4 ppm RMS

#### Static and Fast Static:

Horizontal.....	2.5 mm + 0.5 ppm RMS
Vertical.....	5 mm + 0.5 ppm RMS

#### Post Processing Kinematic (PPK / Stop & Go)

Horizontal.....	8mm+1ppm RMS
Vertical.....	15mm+1ppm RMS

Initialization time..... Typically 10 min for base and 5 min for rover  
 Initialization reliability..... Typically > 99.9%

#### Code Differential GNSS Positioning

Horizontal.....	25cm+1ppm RMS
Vertical.....	50cm+1ppm RMS
SBAS.....	0.5m
PPP.....	H: 10cm V: 20cm

#### Real Time Kinematic (RTK)

##### Single Baseline

Horizontal.....	8mm+1ppm RMS
Vertical.....	15mm+1ppm RMS

##### Network RTK(VRS,FKP,MAC)

Horizontal.....	8mm+0.5ppm RMS
Vertical.....	15mm+0.5ppm RMS
Initialization time.....	Typically 2-10s
Initialization reliability.....	Typically > 99.99%

Provides RTK measurements even during differential signal interruptions

##### Hi-Fix<sup>3</sup>

Horizontal.....	RTK+10mm / minute RMS
Vertical.....	RTK+20mm / minute RMS

##### Time to first Fix

Cold start.....	< 45 s
Hot start.....	< 30 s
Signal re-acquisition.....	< 2 s

##### Image Accuracy

Stakeout.....	Typically 2cm
Image Measurement.....	2cm~4cm

##### Tilt Survey Performance<sup>4</sup>

Additional horizontal pole-tilt uncertainty typically less than 8mm+0.7mm/°tilt(2.5cm accuracy in the inclination of 60°)

## HARDWARE

### Physical

Dimensions (W x H).....	130mm×79mm
Weight.....	lighter than 0.97kg (2.14lb) within internal battery
Operation temperature.....	-40°C~+75°C (-40°F~+167°F)
Storage temperature.....	-55°C~+85°C (-67°F~+185°F)
Temperature control.....	Auto-adjust the working power to maintain the temperature
Humidity.....	100%, non-condensing
Water/dustproof.....	IP68 dustproof, protected from temporary immersion to depth of 1.0m (3.28ft)

Shock and vibration.....	MIL-STD-810G, 514.6
Anti-salt spray.....	MIL-STD-810G, 509.4, 96h
Free fall.....	MIL-STD-810G, 516.6, designed to survive a 2m(6.56ft) natural fall onto concrete

### Charging

Charging:using standard smartphone chargers or external power banks (Support 5V 2.8A Type-C USB external charging)

### Control Panel

Physical button.....	1
LED Lights.....	Satellite lights, signal lights, power lights

### Camera

Pixel.....	2MP & 5MP
Support real scene stakeout, image measurement, working distance 2~15m	

### Internal Battery<sup>5</sup>

7.2V, 6900mAh Built-in lithium-ion battery.  
 RTK rover(UHF/Cellular) for 15 hours.  
 Power indicator embedded.  
 Quick charge within 3.5 hours.

### I/O Interface

Bluetooth 4.0/2.1+ EDR, 2.4 GHz. USB type C interface; SMA interface; Nano SIM card slot  
 Near Field Communication(NFC)

### Communication

#### Network Communication

Full band support for cellular mobile network(LTE, WCDMA, EDGE, GPRS, GSM).  
 2.4GHz Wi-Fi, supports the standard protocol 802.11 b/g/n. Network RTK(in CORS) range is 20-50km.

#### Internal UHF Transceiver Radio

Frequency.....	410~470MHz
Transmitting power.....	0.5W / 1W / 2W adjustable Hi-Target Advanced Radio
Supports protocols: HI-TARGET, TRIMTALK450S, TRIMMARK III, SATEL-3AS, TRANSEOT, etc.	
Working Range.....	Typically 3~5km, optimal 5~8km
Channels.....	116

## SYSTEM CONFIGURATION

### System

Data storage.....	Circulating 8GB Internal storage
	Record GNS and RINEX format simultaneously

### Data Formats

1Hz positioning output, up to 20Hz. RTCM2.X, RTCM3.X .  
 Navigation outputs ASCII: NMEA-0183

[1]GALILEO E6, QZSS L6, IRNSS L5, L-BAND can be provided by firmware upgrade.

[2]The measurement accuracy, precision, reliability and initialization time depend on various factors, including tilt angle, number of satellites, geometric distribution, observation time, atmospheric conditions and multi-path validation, etc. The data are derived under normal conditions.

[3]Accuracies are dependent on GNSS satellite availability. Hi-Fix Positioning ends after 5 minutes without differential data.Hi-Fix is not available in all regions, check with your local sales representative for more information.

[4]Irregular operations such as rapid rotation and high-intensity vibration may affect the inertial navigation accuracy.

[5]The battery operating time is related to the operating environment, operating temperature and battery life

Descriptions and Specifications are subject to change without notice



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# Vision RTK

VENI, VIDI, VICI

