

## Specifications

### GNSS characteristics

#### ■ 965 GNSS channels

- GPS L1C/A, L2P, L1C, L2C, L5
- GLONASS G1, G2, G3
- BeiDou B1I, B2I, B3I, B1C, B2a, B2b
- Galileo E1, E5b, E5a, E6, E5AltBoc\*
- QZSS L1C/A, L5, L1C, L2
- SBAS L1, L5
- IRNSS L5\*
- L-band\*

- **Initialization:**  
time <10s, reliability >99.99%

- **Supported data formats:**  
RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1, RTCM 3.2, CMR CMR+

- **Output data formats:**  
NMEA 0183, PJK plane coordinates, Binary code, Trimble GSO

### Inertial Measurement (Model K20s IMU)

- Tilt Angle: up to 60 degrees
- Accuracy: down to 2cm

### Positioning Accuracy

#### Code differential GNSS positioning

- Horizontal:  $\pm 0.25\text{m} + 1\text{ppm}$
- Vertical:  $\pm 0.50\text{m} + 1\text{ppm}$
- SBAS positioning accuracy:  
typically <5m 3DRMS

#### Static

- Horizontal:  $\pm 2.5\text{mm} + 0.5\text{ppm}$
- Vertical:  $\pm 5\text{mm} + 0.5\text{ppm}$

#### Real-time kinematic (RTK)

- Horizontal:  $\pm 8\text{mm} + 1\text{ppm}$
- Vertical:  $\pm 15\text{mm} + 1\text{ppm}$

#### Network RTK

- Horizontal:  $\pm 8\text{mm} + 0.5\text{ppm}$
- Vertical:  $\pm 15\text{mm} + 0.5\text{ppm}$

#### RTK initialization time

- 2~8s

### Physical characteristics

#### Size

- 16.3 x 16.3 x 9.6 cm

#### Weight

- 1.33 kg (with built-in battery)

### User interface

- Five Indicator lights, Two buttons
- OLED color screen, 1 inch, 128x64 res.
- Linux System

### I/O interface

- 5PIN LEMO external power port+RS232
- 7PIN external USB(OTG)+Ethernet
- Bluetooth 2.1+EDR standard
- Bluetooth 4.0 standard, support android, ios connection

### Memory

- 8GB SSD internal storage
- Support external USB storage (up to 32 GB)
- Automatic cycle storage
- Changeable record interval
- Up to 50Hz raw data collection

### Operation

- RTK rover & base
- RTK network rover: VRS, FKP, MAC
- NTRIP, Direct IP
- Post-processing

### Environmental characteristics

- Operating temperature:  $-45^{\circ}$  to  $+75^{\circ}\text{C}$
- Storage temperature:  $-55^{\circ}$  to  $+85^{\circ}\text{C}$
- Humidity: 100% condensing
- IP68 waterproof, sealed against sand and dust
- Drop: 2m pole drop on concrete

### Power characteristics

- Two Li-Ion batteries, 7.4 V, 10,000 mAh
- Battery life: >14h (static mode)  
>7h (internal UHF base mode)  
>8 to 14h (rover mode)
- External DC power: 9-28 V

### UHF Radio characteristics

- Built-in radio, 120 channels
- Frequency Range 410-470MHz
- Protocol: TrimTalk450s, TrimMark3, SOUTH (KOLIDA), Hi-target, CHC, Satel
- 1W/2W/3W switchable
- Typically working range 7-8km, in good environment 10-12km
- "Barrier-Free" Measurement Technology: Repeater/ Router

### Cellular module characteristics

- WCDMA/ CDMA2000/ TDD-LTE/ FDD-LTE 4G
- Compatible with 3G GPRS/ EDGE

### WebUI

- Configure and monitor receiver by web server via Wi-Fi or USB cable

### NFC

- Close range (shorter than 10cm) automatic pair between receiver and controller (need NFC chip in controller)

### Wifi

- 802.11 b/g standard
- Hotspot: allow device to access in
- data link: broadcast differential data

### Voice Guide

- intelligent voice technology provides status indication and operation guide
- Chinese, English, Korean, Russian, Portuguese, Spanish, Turkish and user define

### Standard system components

- K20s GNSS Receiver & built-in battery
- Charger and adapter
- All-direction antenna
- 30 cm pole extension (with base only)
- 7-pin to OTG cable
- Engineering Star (Windows)
- 1 year warranty

### Optional system components

- External Radio (410-470 MHz, 5-35W)
- Battery Case SA-6003
- Data collectors
  - H3 plus (Android), H5 (Android)
  - T17N (Windows mobile)
  - S50 (Android)
- Field software
  - Field Genius (Windows)
  - SurvX (Android)
  - Engineering Star 5.0 (Android)
- 1-2 year warranty extension

**KOLIDA**  
Professional's Choice

# K20s

## A High Performance and Innovative Surveying GNSS Solution

YouTube K20s

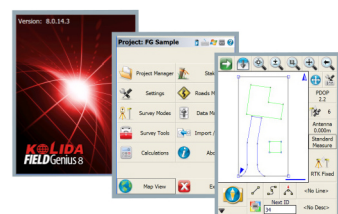


- 965 channels GNSS Mainboard, All Constellations Supported
- Inertial Measurement + GNSS Positioning, More Accurate and Faster
- Up to 60° Tilt Angle, More Convenient to Measure in Difficult Terrain
- True-Color Screen, Simplified Operation Flow
- 10,000 mAh battery, A Whole-day Working With only One Recharge

## Field Software



Engineering Star



Field Genius



Surv X

**KOLIDA**  
Professional's Choice

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# K20s

## A High Performance and Innovative Surveying GNSS Solution



### The More Advanced GNSS Positioning Engine

Featuring a powerful 965 channels GNSS mainboard inside, K20s can track and process all the existed satellite constellations. With the utility of BEIDOU (COMPASS) signal, the data acquisition speed and GNSS signal stability are greatly improved from old generation technology.

### Inertial Measurement, a technology that greatly improves efficiency.

The latest inertial measurement technology is onboard with K20s IMU. The tilt survey is no more affected by the earth's magnetic field and requires no correction. It can be activated and start working within only few seconds. With a maximum tilt angle of 60 °, there is no need for centering, this fast positioning will increase measurement speed by over 30%. The combination algorithm of IMU + GNSS can get fixed solution faster and keep measurement results more stable.

### New Radio Link, Improved Functions and Higher Performance

SDL-400 built-in radio can send signal as far as 7km in urban area and 8km in suburb, in good environment 10-12km. The maximum coverage area is up to 200 sq.km. It also features anti-interference capability, so K20s can work close to interference source. The next upgrade will increase the communication channels from 8 to 200, to improve the signal transmission quality to a new level. Meanwhile, K20s will support more radio protocol such as Satel, CHC, ZHD, user will have more flexibility to organize the working team and equipment according to mission demand.

### Other Features

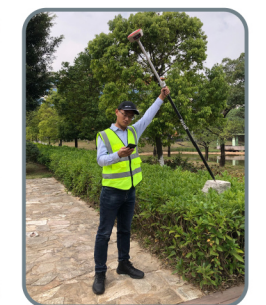


## How can Inertial Measurement transform the way we work?

Bring More Safety to Your Work

Conveniently Measure Inaccessible Points

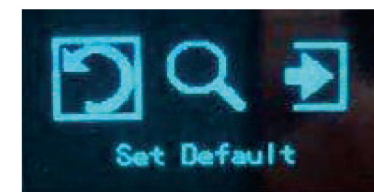
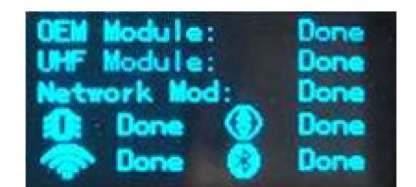
Measure Non-signaled Points



## Increase Your Efficiency with 10 Innovative Designs!

### Make your workflow simpler and Smoother

- Quickly switch working mode & data link, without handheld controller and mobile phone.
- Quickly check system information on receiver screen, no need of other device.
- Quickly launch PPK measurement program, without handheld controller.
- Precisely display self-check status on receiver screen, save time, never miss information.



### Make you work easier and comfortable

- Re-designed self-check program, only one press to activate it.
- Two steps to restore factory default setting, operation in WebUI is not needed.
- Menu display and voice guide in 8 languages, no problem to work in foreign countries.

### Make you working result more reliable

- Newly designed GNSS /Network / wifi / BT all-in-one antenna, enhances signal strength and stability.
- Static data recording status, data size, time can be viewed on screen in real time, to prevent data loss and rework.
- PPK data recording status can be viewed on screen, to prevent data loss and rework.



## Post-processing SW. Free of Charge



### KOLIDA GEO Office

Integrates static data processing and kinematic data adjustment

#### Intelligent

- Antenna manager with popular receiver types.
- Fast processing and clear display
- Manually edit and filter satellite data for best result
- Update online.

#### Versatile

- Compatible with numerous data format.
- Export abundant types of report.
- Transformable to RINEX format