

# ARSync LoRa IMU-RTK RECEIVER

# Q700



# Overall Features

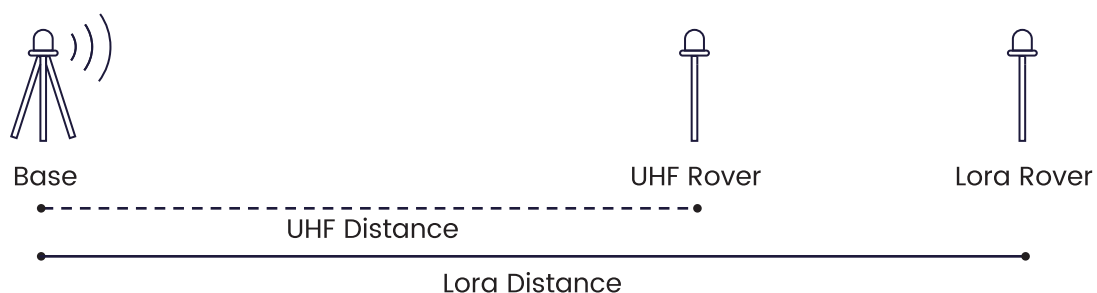
## AR-Guided Single-Step Layout

Combines GNSS positioning with AR technology to display target points directly in the field. Achieves one-step layout without compass alignment, ensuring intuitive and efficient marking of coordinates without manual adjustments.



## LoRa-Enabled Extended Communication

Supports LoRa long-range communication protocols, extending operational range by **150% compared to traditional radios**. Maintains compatibility with standard radio protocols for seamless integration with existing GNSS equipment and field networks.



# Overall Features

## Smart Inertial Navigation System

### Smart INS

- **No-centering alignment:** Enables measurement and layout without instrument leveling or bubble adjustment.
- **Automatic initialization:** Completes system calibration seamlessly during movement post-power-on, eliminating manual shaking or static setup.
- **GNSS/INS fusion:** Integrates real-time satellite positioning with inertial data for robust performance in GNSS-challenged environments (e.g., urban canyons, dense vegetation).

## Worldwide NRTK/SSR Service(Full constellations)

### Spatix: Product introduction

A global satellite-ground integrated space-time service that can provide 7x24 hours of high-precision positioning services worldwide.

#### Ground-based augmentation service

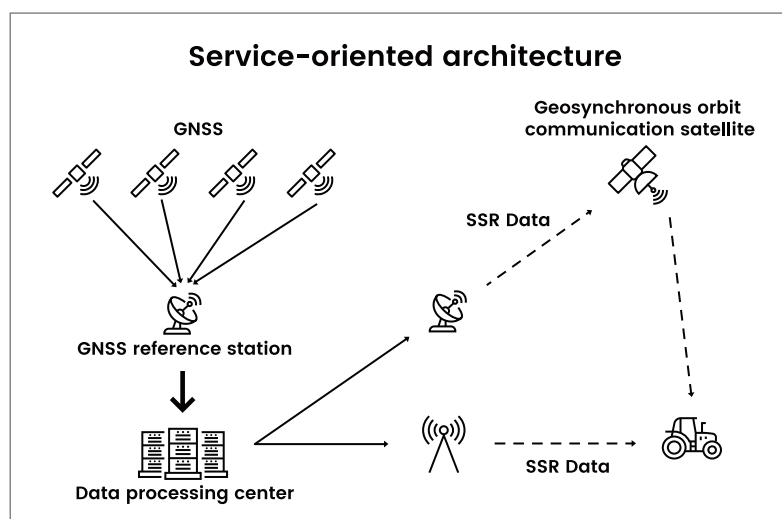
Broadcast OSR data through the ground network, centimeter-level positioning, covers major countries in Europe, Asia and Africa.

#### Satellite-based augmentation service

Broadcast SSR data through the satellite L-band, centimeter-level positioning, covers major countries in Europe, Asia and Africa.

#### Network-based PPP service

Broadcast SSR data through the ground network, centimeter-level positioning, covers the world.



# Handheld Data Controller & APP Features

## HC6

HC6 is an industrial-grade rugged handbook specially designed for the surveying and mapping field.



Thin and large screen  
thinnest to 1.5cm only



Powerful performance  
8-core processor



Full keyboard quick input  
of industrial codes



Reliable quality industrial  
tri-proofing feature and  
low-tem-perature battery

## MetriX APP



More than 2,000 kinds of  
coordinate projections worldwide



Multiple measurement methods  
and commonly used tools



Supports CAD and operations  
with drawings



Supports industry applications  
such as roads and photovoltaics



# Product Specification

## GNSS<sup>①</sup>

Satellite system	
GPS	L1C, L1C/A, L2P, L2C, L5
BDS	B1I, B1C, B2a, B2b, B2I, B3I
GLONASS	L1C/A, L2C/A
Galileo	E1C/A, E5a, E5b, E5AltBoC, E6C
QZSS	L1C, L1C/A, L2C, L5
SBAS	L1C/A, L5
IRNSS	L5
MSS L-Band Channels	QXWZ XStar 1520
Static accuracy	Horizontal: $\pm (2.5+0.5 \times 10^{-6}D)$ mm Vertical: $\pm (5+0.5 \times 10^{-6}D)$ mm
RTK accuracy	Horizontal: $\pm (8+1 \times 10^{-6}D)$ mm Vertical: $\pm (15+1 \times 10^{-6}D)$ mm
XStar accuracy	Horizontal: $\pm 2.5$ cm Vertical: $\pm 10$ cm
Initialization reliability	99.9%

## Spatix Service<sup>②</sup>

NOSR	Time initialization < 5s
NSSR	Time initialization < 6min
LSSR	L-band, Time initialization < 8min

## Wireless Communication

Bluetooth/Wi-Fi	Supported
Radio mode	Built-in Rx/Tx radio
Radio type	Lora
Radio frequency band	410 MHz - 470 MHz
Radio protocol	Satel/PCC-4FSK/PCC-GMSK/TrimTalk-450s/ South-9600/HITARGET-9600/ HATARGET=19200/TrimMark-III/ South-19200/TrimTalk-4800/GEOTALK/ GEOMARK/HZSZ/Satel-ADL/PCCFST/ PCCFST-ADL/PCCEOT_SATEL/LORALINK/ LORA-TRANSPARENT
Number of Lenses	Supported

## GNSS + IMU<sup>③</sup>

Tilt slope	0~60°
Tilt compensation accuracy	8mm+0.3mm/°tilt (accuracy < 2 cm within 30°)
IMU Rate	200Hz

## User Interaction

Operating System	Linux
Buttons	Power switch
Indicators	Battery, satellite/signal integrated
Web UI	Support PC and mobile web pages

## Image Stakeout

Stakeout Accuracy	10mm+(10mm/m) *Distance(m)
Bottom Lens Field of View	83.4°
Bottom Sensor Pixels	200W
Bottom Camera Focal Length	2m

Bottom Sensor Resolution 1920\*1080

## Physical

Size	Φ143 mm × 82 mm (with bottom nuts)
Material	Magnesium aluminum alloy
Ports	1 Type-C, 1 TNC, 1 SIM

## Electrical

Battery	3.6V 13600mAh lithium-ion battery
Battery life	Internal Radio/ 4G RTK Rover: up to 14 h Lora RTK Base: up to 8 h Static: up to 15 h
External power supply	5V DC

## Environmental

Operating temperature	-40°C~+65°C
Storage temperature	-45°C~+70°C
Waterproof and dustproof	IP68
Fall-resistance	Resistant to fall from a height of 2m

## Handheld Data Control

Operating System	Android 9
CPU	8-core 2.0 GHz processor
Memory	3GB RAM + 32GB ROM
Network	4G Full Netcom
LCD	5-inch multi-touch capacitive screen
Battery	5200 mAh removable battery
Camera	13 Million Auto Focus Camera
Waterproof and dustproof	IP67

① Measurements were obtained in an open area with satisfactory distribution of satellites and inactive ionosphere and without radio interference, in strict compliance with the observation and data processing procedures for this kind of devices.

② For coverage of service, please visit our official website. You may choose the available term of service when purchasing the product.

③ Strong vibration may affect the accuracy of IMU.