Performance specification	
Satellite signals tracked simultaneously	GPS: L1C/A, L1C, L2P(Y), L2C, L5 GLONASS: L1, L2, L3 BEIDOU: B1, B2, B3, B1C, B2a, B2b GALILEO: E1, E5a, E5b,E6 QZSS: L1, L2, L5, L6 SBAS: L1, L5 IRNSS: L5
Channels	1408 tracking Channels
Cold start	<60 s
Hot start	<15 s
Positioning output rate	1Hz - 20Hz
Signal Reacquisition	<1 s
RTK Initialization time	<10s
Initialization Reliability	>99.99%
Time accuracy	20 ns
Positioning	
Code differential GNSS positioning	Horizontal: 0.25 m + 1 ppm RMS Vertical: 0.50 m + 1 ppm RMS
Static GNSS surveying	SBAS differential positioning accuracy2: Typically <5m 3DRMS Horizontal: 2.5 mm + 0.5 ppm RMS Vertical: 5 mm + 0.5 ppm RMS
Real Time Kinematic Surveying	
Single Baseline < 30 KM	Horizontal: 8 mm + 1 ppm RMS Vertical: 15 mm + 1ppm RMS
Network RTK[3]	Horizontal: 8 mm + 0.5 ppm RMS Vertical: 15 mm + 0.5 ppm RMS
Laser survey	≤ 5cm + 5mm/m (Tilt height less than 30 °)
HARDWARE	
PHYSICAL	
Material	Magnesium alloy
Dimension	18cm*18cm (with / without bottom connector,10mm)
weight	0.78kg
Operating temperature	-40℃ to + 75℃
Storage temperature	-55℃ to + 85℃
Protection IP	IP67 dust proof, protected from 30min immersion to depth of 1m
Shock	Survive 2m pole drop onto concrete
Vibration	MIL-STD-810G
Humidity	100%, condensing

ELECTRICAL	
Power	9~24 V DC external power input on 5-pin LEMO port
Battery Life	Support USB Type-C fast charging Internal 7000mAh 7.4V lithium-ion battery Rover Mode: 12 hours Base Mode: 7 hours Static Mode: 15 hours
Communication & Data Storage	
I/O interface	
LEMO port (5pin)	Supports power input, serial port control, and external radio communication
USB Type-C port	Data download / Charging
Sim card slot	Supports Nano-SIM
Antenna port	SMF antenna interface
Radio modem	
Transmit power	1/2.5w switchable
Frequency band	410MHz-470MHz, supports to set the frequency
Protocols	TrimTalk450s, SOUTH, Satel,FCC 607
Cellular	
Integrated full frequency multi band 4G modem, supports WCDMA/CDMA/2000/TD/LTE/FDD LTE	
WIFI	
802.11 b/g standard, access point & client mode, supports access to hotspot for connection transmission	
Bluetooth	
Bluetooth 5.2 Classic/BLE Proprietary, Double mode	
Data format	
RTCM2X, RTCM3X, CMR & CMR+, u-blox	
RINEX, NMEA outputs	
Storage	
64GB internal memory, supports cyclic storage, with ability to collect over one year raw observation based on 1 seconds interval	
Camera	
AR	Dual high-resolution camera with large viewing angle and support for live scene rolling
Laser assisted	5M high-definition camera, large viewing angle, auxiliary laser measurement and aiming
Others	
System Integration	
OS system	Intelligent LINUX operating system
Tilt Compensation	Tilt-free use in 120°(Calibration free)
Supported controllers	All android devices with supported software
Design	
button	Power key
Indicator	Power indicator, data link indicator, satellite indicator, Bluetooth indicator
Voice	Intelligent voice prompts
WEBUI	Support WEBUI configuration

1- Precision and reliability may be subject to anomalies due to multipath, obstructions, satellite geometry, and atmospheric conditions. The specifications stated recommend the use of stable mounts in an open sky view, EMI and multipath clean environments and optimum satellite configurations. Base lines longer than 30 km require precise ephemeris and occupations up to 24 hours may be required to achieve the high precision static specification.
2- Depends on SBAS system performance
3- Network RTK FIXM values are referenced to the closest physical base station and depends on network performances.

AR

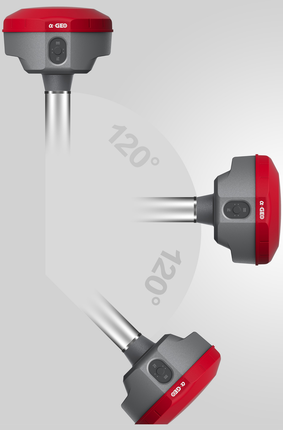
Right to the point with AR real scene stakeout

When the stakeout points are marked directly on the ground, surveyors can easily find the exact location of the stakeout points. By following the arrows on the real-life map, you can stake out points in one go, without having to move the pole back and forth, making the stakeout work more accurate and efficient.

LASER

Laser survey opens a new mode of measurement

The world's exclusive patented laser coordinate measurement quick calibration technology can easily achieve centimeter-level measurement accuracy, making measurement more accurate and user-friendly. Besides the camera used in the equipment overcomes the difficulty of aiming under sunlight, making field measurement operations faster and more efficient.



SUPER IMU

Super IMU, say goodbye to repeated initialization

Matrix II is equipped with a fast initialization, calibration free and immune to magnetic interference inertial Measurement Unit (IMU). All users can use this technology to collect or stakeout topo points up to 120°

MULTI CONSTELLATION

Matrix II with its 1408 channels new generation full GNSS chipset ability to support multiple satellite constellation including GPS, GLONASS, BEIDOU, GALILEO, QZSS, SBAS and IRNSS provides precise and accurate spatial data for all users around the world.

64GB SSD

worry-free storage

Built-in 64GB memory, which can meet most needs of field work. And the feature of cyclic storage helps receiver to automatically remove the previous observation data while there is not enough space in the memory, with this excellent performance, data storage can last almost 4 years based on 5s sampling interval. And the design of embedded memory chip can ensure the safety of observation data.