

# AI 20 AR

Real-Site AR Stakeout Instantly



1408 channels



Up to 120°IMU



AR stakeout



OLED color screen



Physical buttons



**AP20** AR



0.96" OLED color screen



Dual LED physical buttons

The AP20AR GNSS redefines precision with AR stakeout and powerful connectivity. Its built-in 2W UHF modem extends operation up to 15km, while a 120° tilt IMU increases efficiency by up to 50%. Combined with advanced AR stakeout capabilities—including visual positioning, design overlay, and seamless 360° AR switching—it delivers immersive, centimeter-accurate stakeout in real-world environments.

## AR STAKEOUT

Integrates a wide angle camera that seamlessly switches with the handheld controller, overlaying design guidance onto the live scene. Simply follow the on screen arrows in real time to walk directly to each point with clarity and precision—enabling faster, more intuitive stakeout.



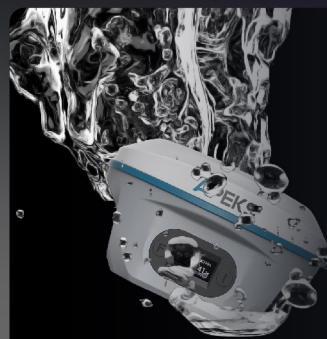
## 1408 CHANNELS

Featuring 1408-channel GNSS technology, AP20 seamlessly connects to GPS, GLONASS, Galileo, BeiDou, QZSS, and SBAS constellations, PPP and HAS services delivering precise centimeter-level positioning even in challenging terrains.



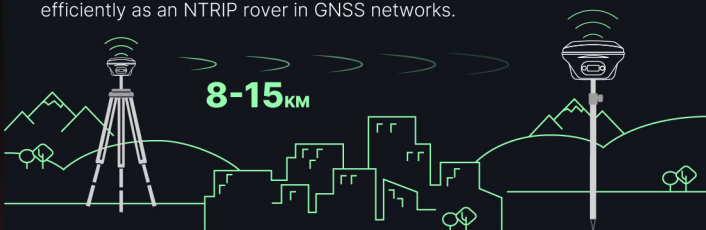
## RUGGED AND DURABLE DESIGN

IP68 and IK08 ratings provide dust, water, shock, and vibration resistance. The alloy body ensures durability and reliable performance in tough field conditions, allowing you to survey with confidence even in harsh environments.



## 2W UHF RX/TX RADIO

AP20's built-in UHF radio supports LoRa with an 8–15 km range, matching external stations. It serves as both base and rover, and works efficiently as an NTRIP rover in GNSS networks.



## UP TO 120° IMU

AP20's calibration-free IMU 4.0 ensures precise, interference-free orientation with 120° tilt capability, boosting efficiency by 50% in complex environments.



# DATA CONTROLLER

# CS3i

  
**SUPPORT**  
Google System, Google Maps

  
5.45" inch large screen sunlight readable

  
**9000mAh**  
9000mAh battery for all day operating

  
**IP68**

  
**Android 11 OS**

  
**SIM CARD**

**4G WiFi Bluetooth**  
Communication

**4GB RAM + 64GB ROM + Extend TF** 



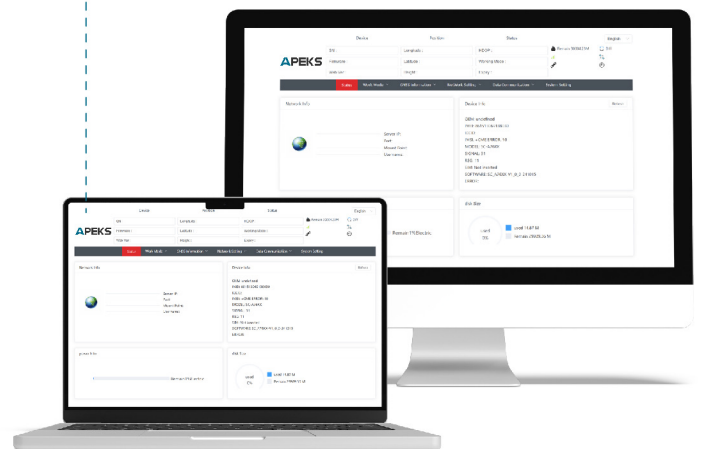
## ApekSurv Field Software

- Compatible Android controller, phone and tablet.
- Support all kinds of language from the world.
- Support multiple base map, Googlemap, WMS map.
- Support all survey modes, including Static, PPK and RTK.
- Support CAD import and directly use for stake out.
- Support TXT, CSV, AutoCAD DXF DWG SHP data formats.
- Support GNSS, GIS and Total Station



## Web UI Management

By connection through WiFi, APEKS gnss can be managed on your PC browser or smartphone easily. You can monitor check the status, configure, register, upgrade firmware, download data, etc.



## SATELLITES TRACKING

Channels	1408
GPS	L1C/A, L1C, L2C, L2P(Y), L5
GLONASS	L1,L2,L3*
Galileo	E1, E5a, E5b, E6
BDS	B1I, B2I, B3I, B1C, B2a, B2b
QZSS	L1C/A, L1C, L2C, L5, L6
NavIC/IRNSS	L5
SBAS	L1C/A
L-Band	B2B-PPP & E6-HAS

## ACCURACY

Real time kinematics (RTK)	H: 8mm + 1 ppm RMS V: 15mm+ 1 ppm RMS Initialization time:<5s(typical) Initialization reliability:>99.9%
Post-processing kinematics (PPK)	H: 3 mm + 0.5 ppm RMS V: 5 mm + 0.5 ppm RMS
Static	H:2.5 mm+ 0.5 ppm RMS V:5mm+ 0.5 ppm RMS
PPP	H: 10cm RMS V: 20cm RMS
DGPS	H: 0.4m RMS V: 0.8m RMS
Single Point	H: 1.5m RMS V: 2.5m RMS
Position Frequency	1Hz 2Hz 5Hz 10Hz 20Hz 50Hz
Time to first fix	Cold start<45s Hot start<10s Signal re-acquisition<1s
IMU tilt angle	0-120°
IMU tilt survey accuracy	≤2cm within 60° tilt angle

## ELECTRICAL

Battery	Internal Li-ion Battery 7.4V 7000mAh
Charging specs	USB Type-C fast charging
Operation time	Rover mode:18 hours Base mode:7 hours Static mode:20 hours

## HARDWARE

Size	125mm(W) 88mm (H) 4.92inch(W) 3.46inch(H)
Weight	<800g(1.76lb)
Front panel	0.96" OLED color screen display 2LED physical buttons (switchable mode, data link)

## CAMERA

Number of cameras	1
Pixel	Global shutter with 5MP
Frame rate	30fps
Field of view	84°
Features	Achieve AR stakeout

## COMMUNICATION

UHF radio	2W Tx/Rx, 410-470 MHz Working range is 8-15km in ideal environments
Protocol	TT450,TRIMMARK3,SOUTH,LORA Link rate :9600bps to 19200bps
Wifi	802.11b/g/n/ac Hotspot/Data Link
Bluetooth	Bluetooth 5.2 classical/ BLE proprietary dual-mode
NFC	NFC touch pairing
WebUI	Accessible via Wi-Fi
4G Cellular	• Integrated full frequency multi band 4G modem • Supports LTE-TDD/LTEFDD/WCDMA/CDMA2000/UMTS/HSPA+/GSM/GPRS/EDGE
I/O port	• 1xUSB Type-C port (Data download / Charging) • 1xAntenna port (UHF antenna interface) • 1xSim card slot (Supports Nano-sim) • 1x5-pin Lemo port (RS-232)
Data formats	RTCM 2.X, RTCM 3.X, RINEX, NMEA 0183 output,VRS,NTRIP
Data storage	32GB high speed memory

## ENVIRONMENTS

Working temperature	-45°C to +75°C
Storage temperature	-55°C to +85°C
Humidity	100% Non-condensing
Waterproof & Dustproof	IP67
Drop	Survive a 2-meter pole-drop
Vibration	IK08



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