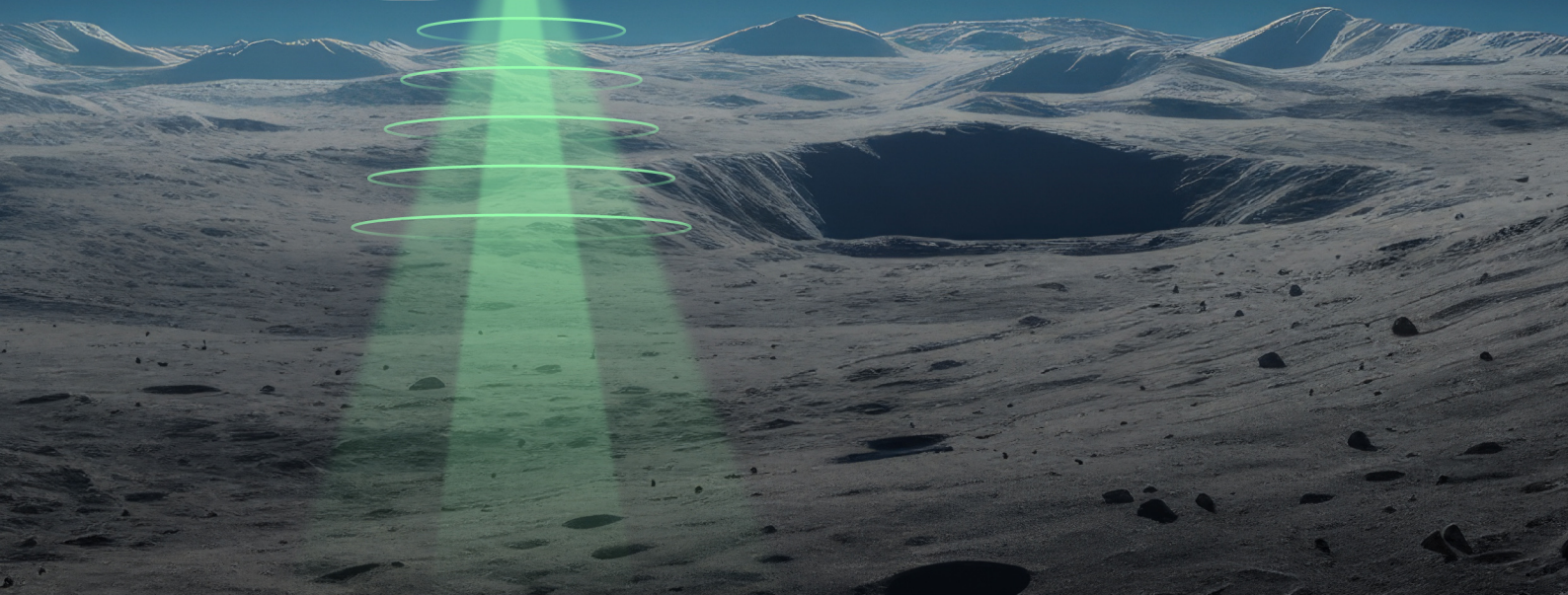


AI **50** *Vision*

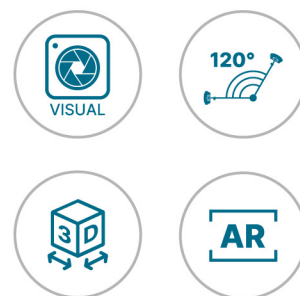


From Vision to Location
RTK Imaging Technology at Your Fingertips

AP50 Vision

AP50 Vision IMU-RTK GNSS receiver integrates the advanced GNSS, IMU, and dual-camera technologies.

- The front camera has video-photogrammetry to deliver a superior user experience.
- Visual survey with video-photogrammetry technology enables accurate point measurements and access to previously hard-to-reach, signal obstructed, and hazardous points.
- The bottom camera has AR visual navigation and stakeout features can cut the operators' workload by half.
- The AP50Vision GNSS can be used to complement aerial surveys generated from oblique imagery since its data is compatible with the most popular 3D modeling software.



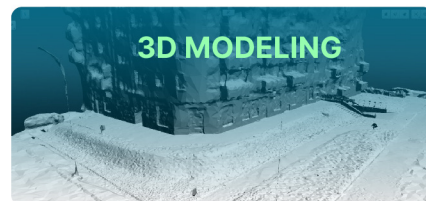
PRODUCT FEATURES



Apeks advanced photogrammetry technology, AP50 Vision can easily acquiring 3D coordinates for hundreds of points within minutes, by using the front camera to shoot a video or some photos. making it easy to survey hard-to-reach, signal-obstructed, or hazardous points in the field—such as areas under overpasses, eaves, or near power poles.

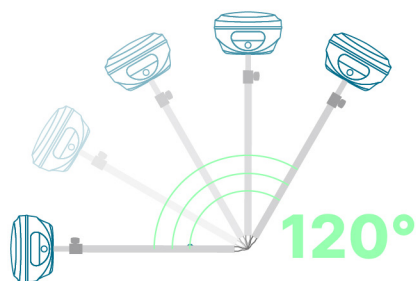


The AP50 Vision dual cameras provide an immersive 3D visual stakeout experience, ApekSurv software will call upon both the GNSS front and bottom camera to capture the real time directional arrow and real-time distance to the stakeout point and lines marked directly on the ground.



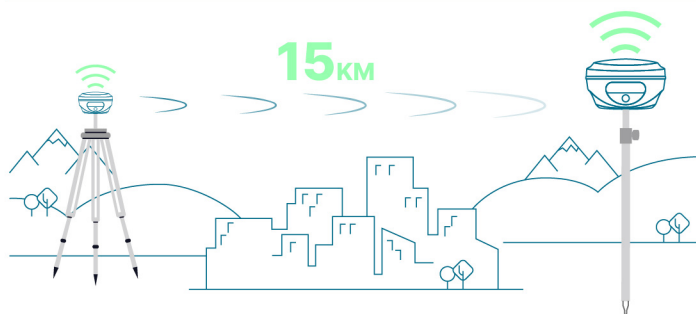
Surveyors can use AP50 Vision get 3D coordinates easily. The data output can be used with standard 3D modeling software (ContextCapture or Agisoft) provides flexibility and convenience. By merging Drone (UAV) data and GNSS data, you can get 3D joint modeling of buildings and facades.

Up to 120° IMU



Satellite navigation + IMU + visual fusion algorithm make AP50 Vision is free from magnetic interference and accurate direction, no need for calibration, no need for initialization and improves by 30% in its measurement accuracy. Using the 4.0 IMU can get fixed up to 120° to meet more complex environments.

2W UHF Rx/Tx radio



The built-in integrated radio transceiver can cover a range of 8-15km, It performs as well as the external large radio station. When AP50 Vision connects to a GNSS RTK network, It is an efficient NTRIP rover.

DATA CONTROLLER

CS5i



SUPPORT

Google System, Google Maps



SIM CARD

SIM card can be inserted

Android 12 OS

Powered by Android 12 OS

5.5 inch

5.5 inch large screen
sunlight readable

IP68

IP68 waterproof and
dustproof

4G/WiFi/Bluetooth

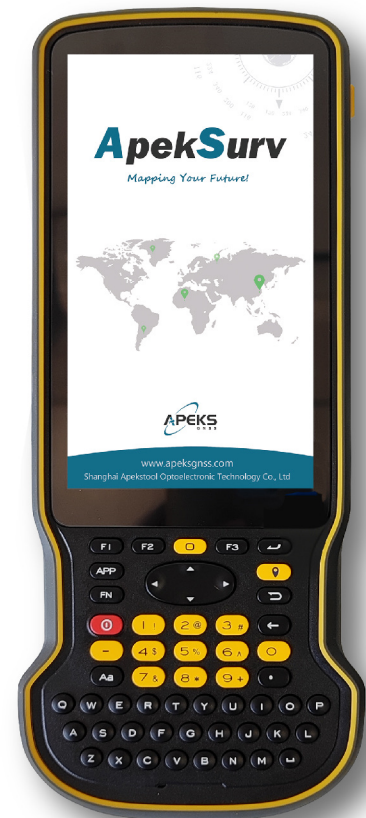
Communication

9000mAh

9000mAh battery for all
day operating

4GB + 64GB

4GB RAM + 64GB ROM
+ Extend TF



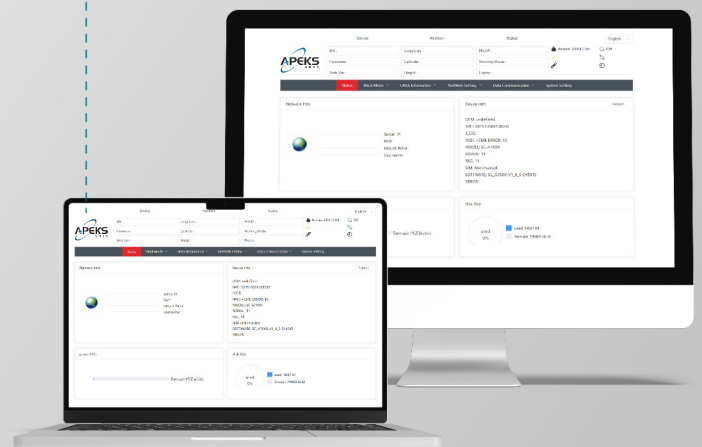
ApekSurv Field Software

- 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, 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
NavIC/IRNSS	L5
SABAS	L1, L5*
PPP	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: 2.5mm + 0.5ppm RMS V: 5mm + 0.5ppm 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
Visual stakeout	H: 8 mm + 1 ppm RMS V: 15 mm + 1 ppm RMS
Visual survey	Typical 2~4 cm, range 2~15 m (normal lighting conditions)
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	129mm(W) 77mm (H) 5inch(W) 3inch(H)
Weight	<800g(1.76lb)
Front panel	1x Data Link, 1x Satellite, 1x Bluetooth, 1x Power

COMMUNICATION

UHF radio	2W Tx/Rx, 410-470 MHz Working range is 8-15km in ideal environments
Protocol	TT450, TRIMARK3, SOUTH, SATEL 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	• 1x USB Type-C port (Data download / Charging) • 1x Antenna port (UHF antenna interface) • 1x Sim card slot (Supports Nano-sim)
Data formats	RTCM 2.X, RTCM 3.X, RINEX, NMEA 0183 output, NTRIP
Data storage	32GB high speed memory

CAMERA

Number of cameras	2
Pixel	Global shutter 2MP & 5MP
Frame rate	30fps
Field of view	84°
Features	• 2MP front camera achieve visual measurements • 5MP bottom camera achieve AR stakeout

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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