SPECIFICATIONS

GNSS Features

Channels	1698
GPS	L1C, L1C/A, L2C, L2P(Y), L5
GLONASS	G1, G2, G3
BDS	B1I, B2I, B3I, B1C, B2a, B2b
GALILEOS	E1, E5a, E5b, E6, AltBOC*
SBAS	L1*
IRNSS	L5*
QZSS	L1, L2C, L5*
MSS L-Band	Reserve
Positioning Output Rate	1Hz~20Hz
Initialization Time	< 10s
Initialization Reliability	> 99.99%

Positioning Precision

Code differential GNSS positioning	Horizontal: 0.25 m + 1 ppm RMS Vertical: 0.50 m + 1 ppm RMS
GNSS Static	Horizontal: 2.5 mm + 0.5 ppm RMS Vertical: 3.5 mm + 0.5 ppm RMS
Static (Long Observation)	Horizontal: 2.5 mm + 0.1 ppm RMS Vertical: 3 mm + 0.4 ppm RMS
Rapid Static	Horizontal: 2.5 mm + 0.5 ppm RMS Vertical: 5 mm + 0.5 ppm RMS
PPK	Horizontal: 3 mm + 1 ppm RMS Vertical: 5 mm + 1 ppm RMS
RTK(UHF)	Horizontal: 8 mm + 1 ppm RMS Vertical: 15 mm + 1 ppm RMS
RTK(NTRIP)	Horizontal: 8 mm + 0.5 ppm RMS Vertical: 15 mm + 0.5 ppm RMS
SBAS Positioning	Typically<5m 3DRMS
RTK Initialization Time	2~8s
IMU Accuracy	8mm+0.7 mm/°tilt
IMU Tilt Angle	Optimal accuracy within 60°

Hardware Performance

Dimension	134mm(φ)×79mm(H)
Weight	860g (battery included)
Material	Magnesium aluminum alloy shell
Operating Temperature	-45℃~+75℃
Storage Temperature	-55℃~+85℃
Humidity	100% Non-condensing
Waterproof/Dustproof	IP68 standard
Shock/Vibration	Withstand 2 meters pole drop onto the cement ground naturally
Power Supply	6-28V DC, overvoltage protection
Battery	Inbuilt 7.4v 6800mAh rechargeable Lithium-ion battery
Battery Life	25h (static) 20h (rover mode, optimal condition)

Communications

I/O Port	5-PIN LEMO interface (external power port + RS232) Type-C interface (charge+OTG+Ethernet) UHF antenna interface
Internal UHF	2W Radio Tx&Rx
Frequency Range	410-470MHz
Communication Protocol	Farlink, Trimtalk, SOUTH
Communication Range	Typically 8-10km with Farlink protocol, (12-15km in optimal condition)
Bluetooth	Bluetooth 5.0, Bluetooth 3.0/4.2 standard, Bluetooth 2.1 + EDR
NFC Communication	Support
Modem	802.11 b/g/n standard

Data Storage/Transmission

Storage	16GB SSD internal storage Support automatic cycling storage Support external USB storage (OTG) The customizable sample interval is up to 20Hz
Data Transmission	Plug and play mode of USB data transmission Supports FTP/HTTP data download
Data Format	Static data format: STH, Rinex2.01, Rinex3.02, etc. Differential data format: RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1, RTCM 3.2 GPS output data format: NMEA 0183, PJK plane coordinate, Binary code Support: VRS, FKP, MAC, fully support NTRIP protocol

Sensors

IMU	Built-in IMU, calibration-free, 60 Degrees
Camera	Front Camera: 8MP, Bottom Camera: 2MP, (Live View AR stakeout)
Laser	3R green laser, 30m working range
Electronic Bubble	Controller software can display electronic bubble, checking leveling status of the carbon pole in real-time
Thermometer	Built-in thermometer sensor, intelligent temperature control technology, monitoring and adjusting the receiver temperature

User Interaction

Operating System	Linux
Buttons	Single button
Indicators	Data and power indicators
Web Interaction	With access to Web UI via WiFi or USB connection, users can monitor the receiver status and change the configurations
Voice Guidance	Chinese/English/Korean/Spanish/Arabic/ Portuguese/Russian/Turkish/French/Italian/
Secondary Development	Provides secondary development package, and opens the OpenSIC observation data format and interaction interface definition
Cloud Service	The powerful cloud platform provides online services like remote management, firmware updates, online registers, etc.

*Reserve for future upgrade.

Remarks: *Measurement accuracy and operation range might vary due to atmospheric conditions, signal multipath, obstructions, observation time, temperature, signal geometry and number of tracked satellites. Specifications subject to change without prior notice*

SOUTH
Target your success

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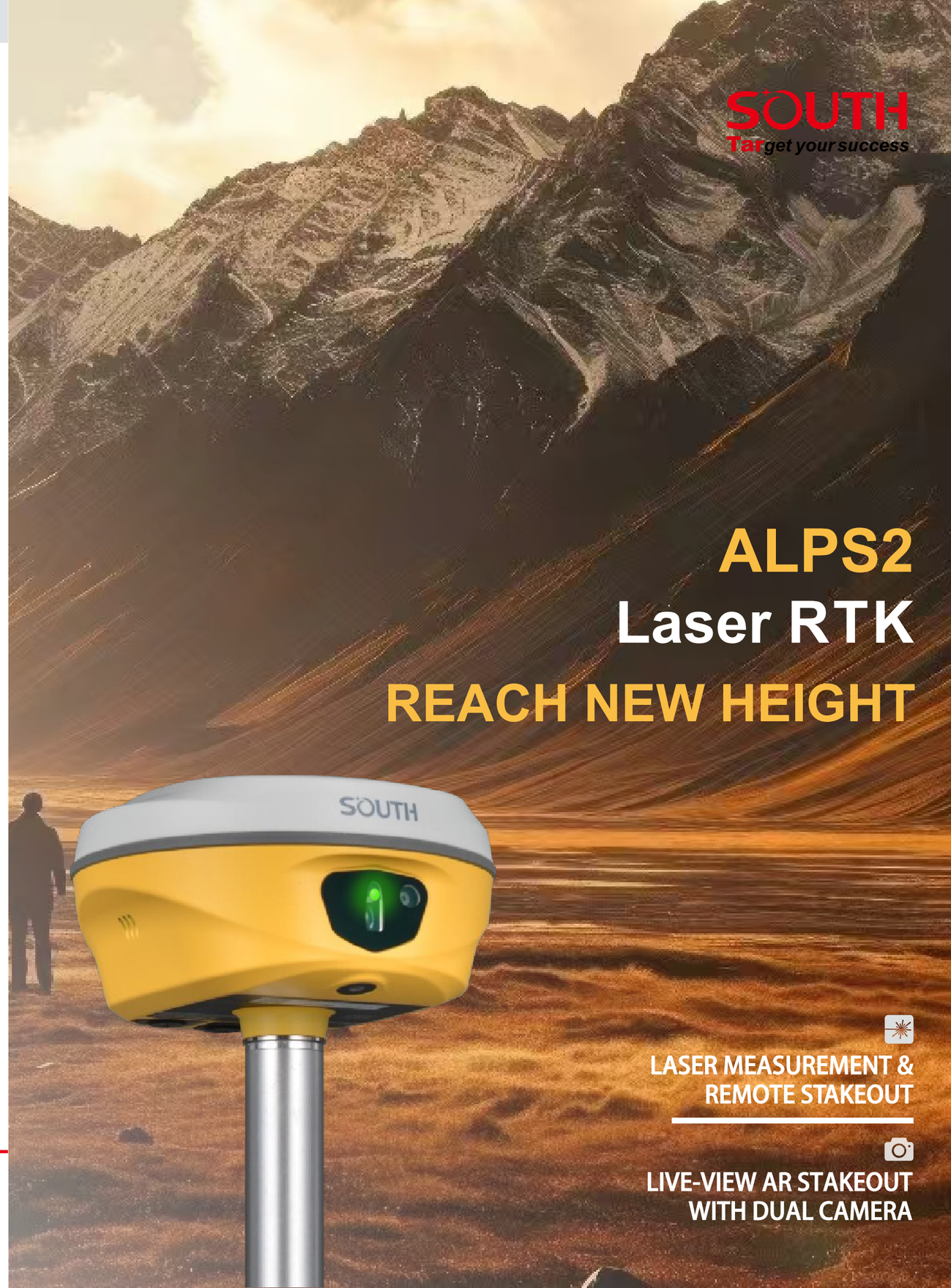
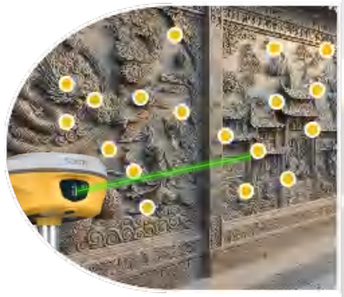


Laser Measurement
— Four Advantages to Add Your Productivity

Measure More & Farther, in shorter time

With laser measurement, ALPS2 has a broader working range and fewer blind spots, enabling remote measurements in areas with poor GNSS signal quality. Previously challenging spots, like spaces under rooftops and areas with obstacles, are now easily measurable.



Measure at Day or Night, by Your Need

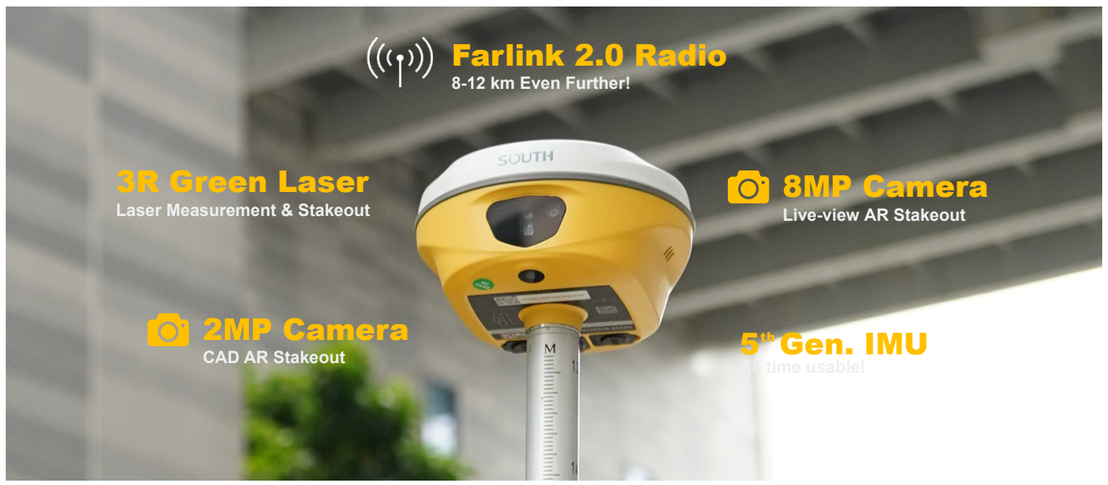
Laser measurement allows surveyors to collect target point at a dark environment such as night or semi-indoor environment. It also can measure distance indoor.

Measure the Unreachable, break the limit

Laser measurement allows surveyors to collect target point at a position that traditional RTK can not reach directly, such as point on the surface of a wall, a tree, or sill of window, and the small space that surveyors can not step in.

Keep You Away from Dangers, Safe than Ever

Laser Measurement help users mitigate risks when surveying near hazardous areas, such as busy roads and sea or lakes, ensuring surveyors' safety. A secure working approach is not only a personal requirement but also essential for the well-being of your family.



Laser Stakeout & CAD AR Stakeout
— Lift Your Efficiency to A New Level

LASER STAKEOUT

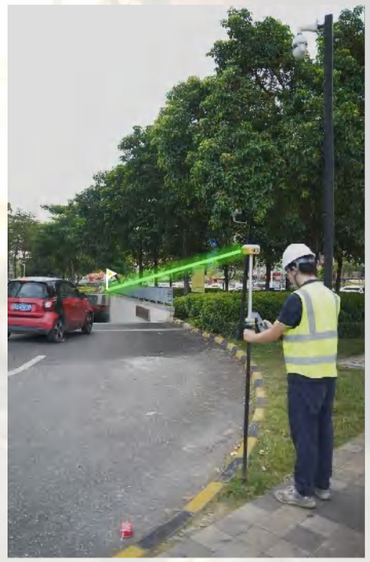
To Overcome the Difficulty

Lasers bring more possibilities to staking out.

Now, when you encounter tall obstructions near the target point in the field that block satellite signals, you will no longer be helpless.

Please just enable laser and continue the work.

Additionally, when it is inconvenient to carry instruments to the target point, you can also choose to stake out by laser from a distance of several meters away.



CAD AR STAKEOUT

Simplify Your Workflow with CAD

ALPS2 can integrate the content of CAD drawings with real-world scenes, helping you stakeout targets more quickly.

The front camera assists surveyors in finding a general direction from a distance and understanding the distribution of surrounding features. The bottom camera enables precise stakeout as you approach the target.

With dual camera's help, your stakeout will be easier and more intuitive.