

ART1

Robotic Total Station

From Team To Solo.



UNLOCK YOUR MOBILITY

ART1 Robotic Total Station

ART1 Robotic Total Station revolutionizes engineering measurement with its innovative, user-focused design. It smoothly switches between robotic and conventional modes. In robotic mode, its pole control system enables single-operator workflows effortlessly. For traditional needs, manual operation remains intuitive.

Its advanced full-automatic tracking capabilities guarantee precision while drastically reducing the likelihood of human error. Designed for engineering measurement and monitoring, this versatile system excels in diverse settings, from construction sites to machinery operations, providing reliable high-accuracy solutions.



5.5-Inch Touch Screen



Wireless Connection



2MP Camera



Qualcomm CPU



3GB RAM, 32GB ROM



STR



Android System



Guiding Light



Features



Faster Station Setup

Eliminate the complexity of conventional station setup with Image-based Instrument Height Measurement and Free Station Setup. By automatically measuring instrument height and supporting setup without nearby control points, ART1 significantly reduces setup time while improving accuracy and consistency. Surveyors can establish their first station faster, minimize repetitive adjustments, and begin productive fieldwork with greater confidence, even in unfamiliar environments.



AI Visual Tracking

ART1 combines AI-powered visual recognition, live video search, and GNSS-assisted positioning to create a smarter tracking experience. The system rapidly identifies the prism, automatically locks onto the target, and maintains stable tracking even when temporary obstructions occur. This intelligent workflow minimizes manual aiming, shortens search time, and allows a single surveyor to work more efficiently across large job sites.



Intelligent Control Point Recognition

Control point identification becomes faster and more intuitive through ART1's intelligent visual workflow. Surveyors can quickly recognize control points, backsight points, and prism targets directly on the screen, reducing unnecessary searching and repeated observations. The optimized workflow improves operational continuity, helping users complete station setup, control establishment, and measurement tasks with greater speed and reliability.



Dual Tilt Technology

Measure challenging points with greater flexibility and confidence. Powered by the SP10 Pro GNSS Controller with an integrated GNSS receiver and IMU module, the system combines GNSS Tilt Compensation and Optical Tilt Measurement in one seamless workflow. Whether working beside walls, under building overhangs, inside confined spaces, or around other obstructed areas, surveyors can switch intelligently between the two methods to maintain high accuracy, uninterrupted workflows, and outstanding field efficiency.



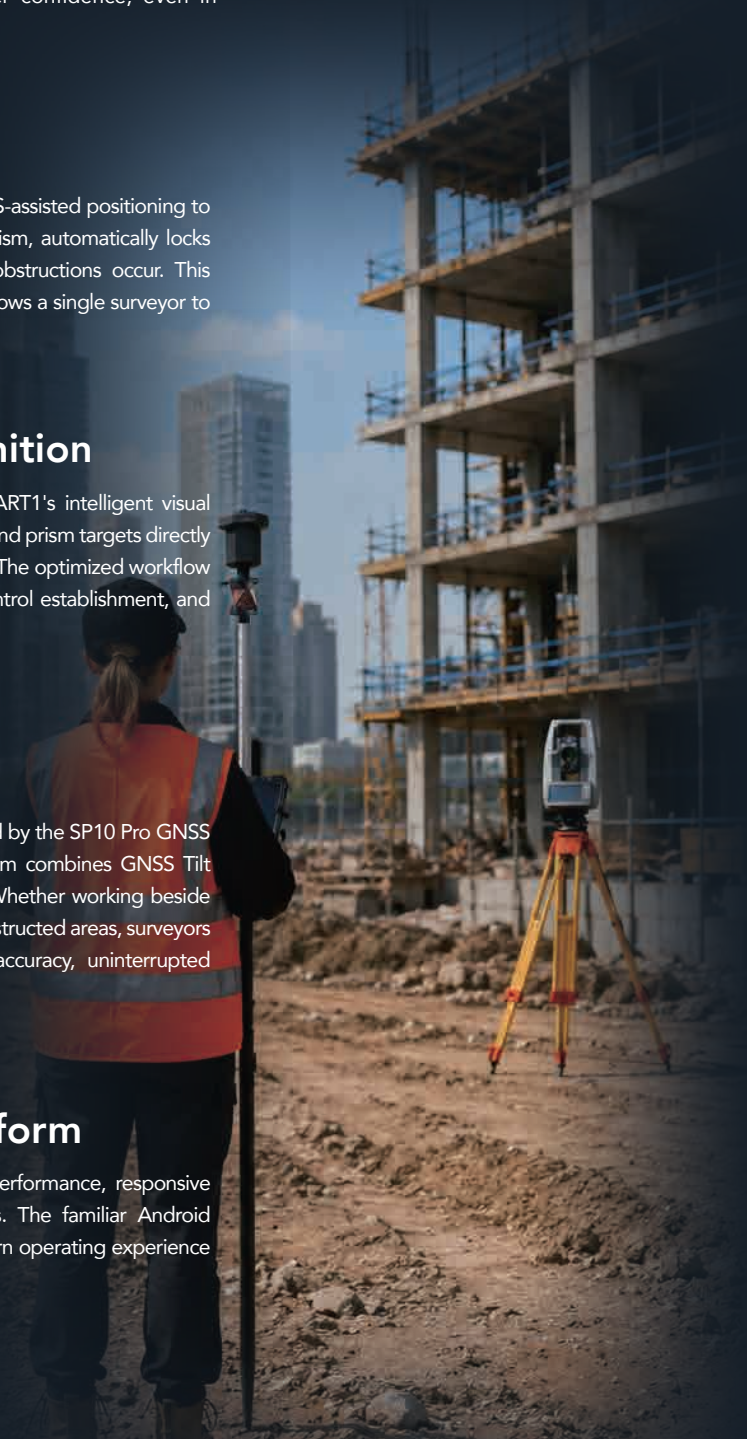
High-Performance Android Platform

Built on a powerful Android operating system, ART1 delivers smooth performance, responsive interaction, and reliable stability throughout demanding surveying tasks. The familiar Android interface shortens the learning curve for new users while providing a modern operating experience that supports efficient multitasking and future software expansion.



Lower Total Cost of Ownership

ART1 is designed to maximize long-term return on investment. With a one-time purchase, no recurring subscription fees, and continuous software upgrades, users gain access to advanced surveying capabilities without worrying about additional licensing costs. Lower operating expenses, combined with long-term software support, make ART1 an economical solution for professionals and organizations alike.



Pole Control System

GNSS + TS Hybrid Surveying System

Powered by advanced GNSS + Total Station hybrid technology, the ART1 One-Person Surveying System seamlessly combines the rapid positioning capability of GNSS with the millimeter-level accuracy of a robotic total station. This hybrid approach provides efficient long-range guidance for fast point location while ensuring precise measurements in complex and GNSS-challenged environments. By leveraging the strengths of both technologies, ART1 delivers a continuous, efficient, and highly accurate surveying workflow.



SP10 Pro Communication Box

PHYSICAL

Dimension	102*95*128mm
Weight	406g

SYSTEM CONFIGURATION

Operating System	LINUX
Processor	Dual-core 1.2 GHz
Memory	RAM: 128MB ROM: 8GB

COMMUNICATION

Interface	Type-C
Bluetooth	2.4G
WIFI	2.4G
Radio	900MHz~920MHz; 26dB

ENVIRONMENTAL

Operation Temperature	-25°C~+65°C
Storage Temperature	-40°C~+65°C

ACCURACY

RTK	H:8mm+1ppm RMS V:15mm+1ppm RMS
RTK Tilt Survey	±3cm(≤30°)
Optical Tilt Survey	3mm+0.6mm/° (2σ, 0°~60°)

POWER SUPPLY

Power Consumption	≤35.28Wh(Measurement mode)
Duration	≥10h (Measurement mode)

SP10 Pro



(UHF+GNSS+IMU)

SL87 Tablet



Android 13



Multi-Costellation Tracking



8200 mAh Battery



Professional RTK Engine



Touchable Screen



IP67



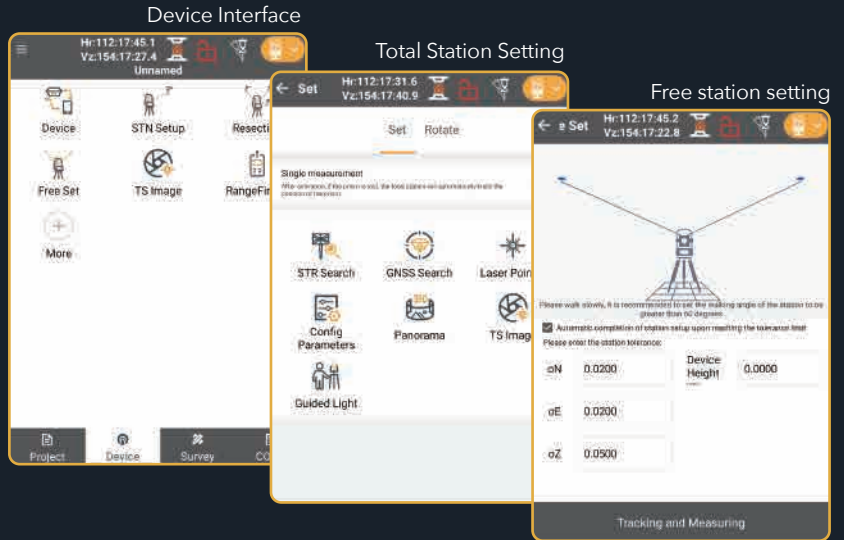
NFC



Software Control

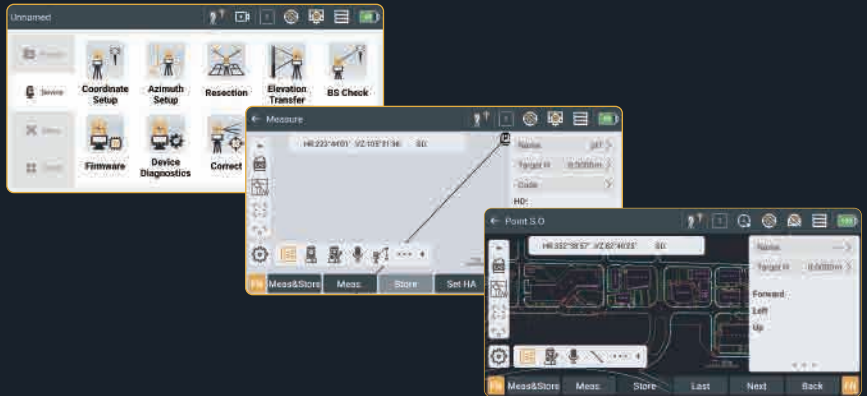
Satsurv — Powerful Field Surveying Software

Satsurv is a customized and easy-to-use Android software for field surveying tasks.



ST-Surv — Android Total Station Software

Effortlessly configures a range of scenarios with swift convenience and supports online updates.



Applications



Single-person Surveying



Bridge



Dam Measurement



Machine Control

SPECIFICATIONS

Angle Measurement¹

Angle Measuring Principle	Rotary absolute encoder
Accuracy	2"

Distance Measurement²

Prism	1.5m to 3500m
Reflective Sheet	1.5m to 500m

Distance Accuracy³

Prism	2mm+2ppm
Reflective Sheet	3mm+2ppm

Physical

Dimension	226*227*423mm
Weight	8000g
Keyboard	Full keyboard (with backlighting, key beeps)
Display	5.5-inch (with touch function), braid rate: 720 * 1440, brightness $\geq 500\text{cd/m}^2$

Telescope

Magnification	30X
Field View	1°30'
Minimum Focus	1.5m

Tilt Angle Compensation

System	Dual-axis
Range of Compensation	$\geq 6'$
Accuracy of Compensation	$\leq 1''$

Rotation

Max Revolving Speed	$\geq 180^\circ/\text{sec}$
Max Change Direction Time	3.5 sec
Searching Time	Precise rotation to point to any target position time $\leq 3.5\text{s}$

Guide Light

Visible Distance	5 to 150m
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Communication

Interface	Type-C, TF Card
Network	LTE, TD-SCDMA, CDMA200, GSM
Bluetooth	BT2.1+EDR/3.0/4.2 LE
WIFI	2.4G Hz Dual-Band, support AP mode and WIFI

Power Supply

Power Consumption	70.56Wh (Measurement mode)
Duration ⁴	$\geq 4.5\text{h}$ (Measurement mode)
Power Source	Rechargeable battery

System Configuration

Operating System	Android
Processor	Qualcomm CPU@ octa-core 1.8 GHz
Memory	RAM: 3GB ROM: 32GB

Environmental

Operation Temperature	-30°C~+50°C
Storage Temperature	-40°C~+70°C
IP Rating	IP65

Reminders:

1. Good Conditions: good visibility of about 20km, the overcast sky without scintillation.
2. Under Kodak white board(90%), measuring distance may vary according to targets and the conditions.
3. Measuring time may vary with measuring distance and conditions. For the initial measurement, it may take a longer time.
4. Battery life performs best at 25 C . It might be shorter in low temperature or if the battery is old.



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