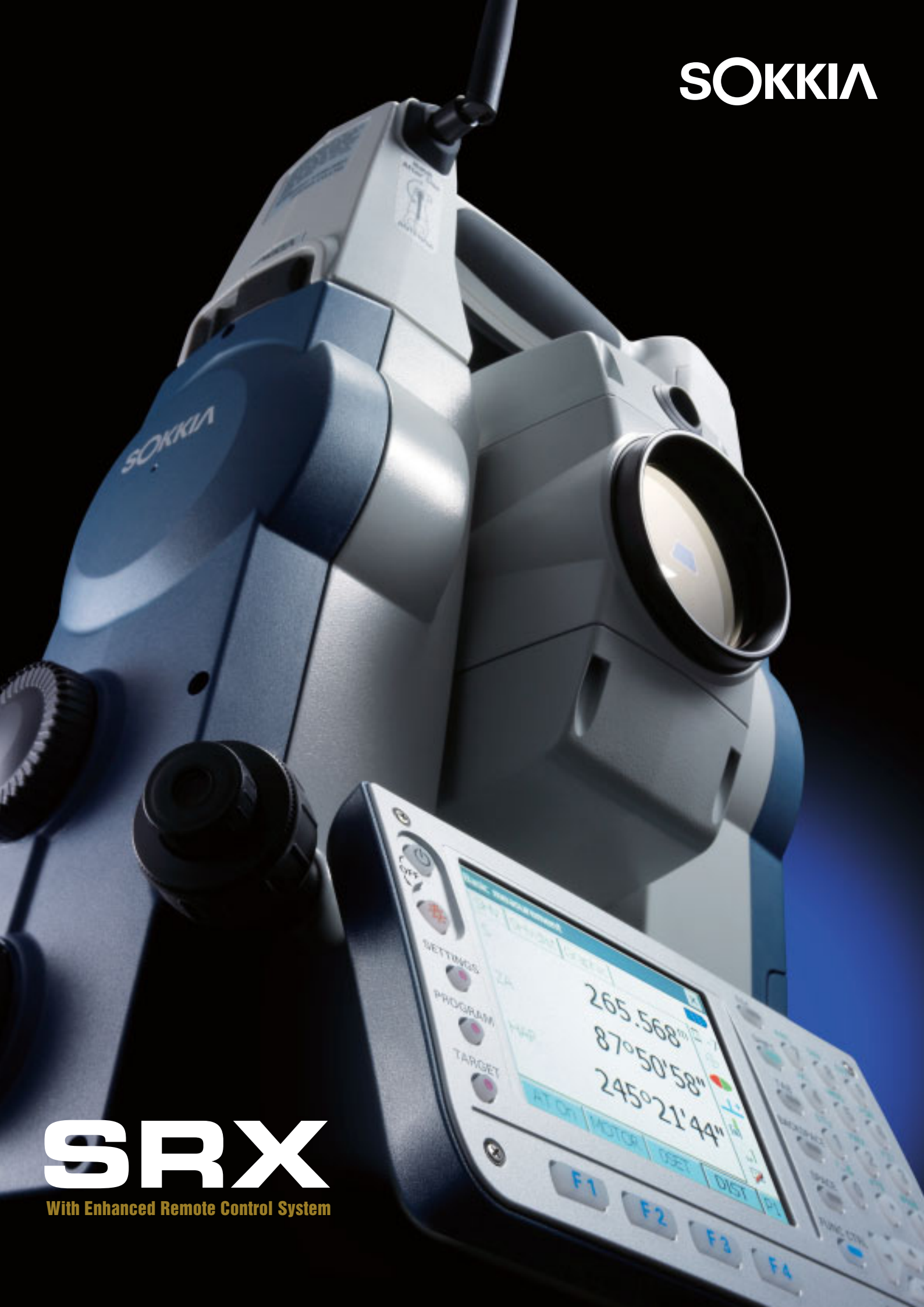
SOKKIA



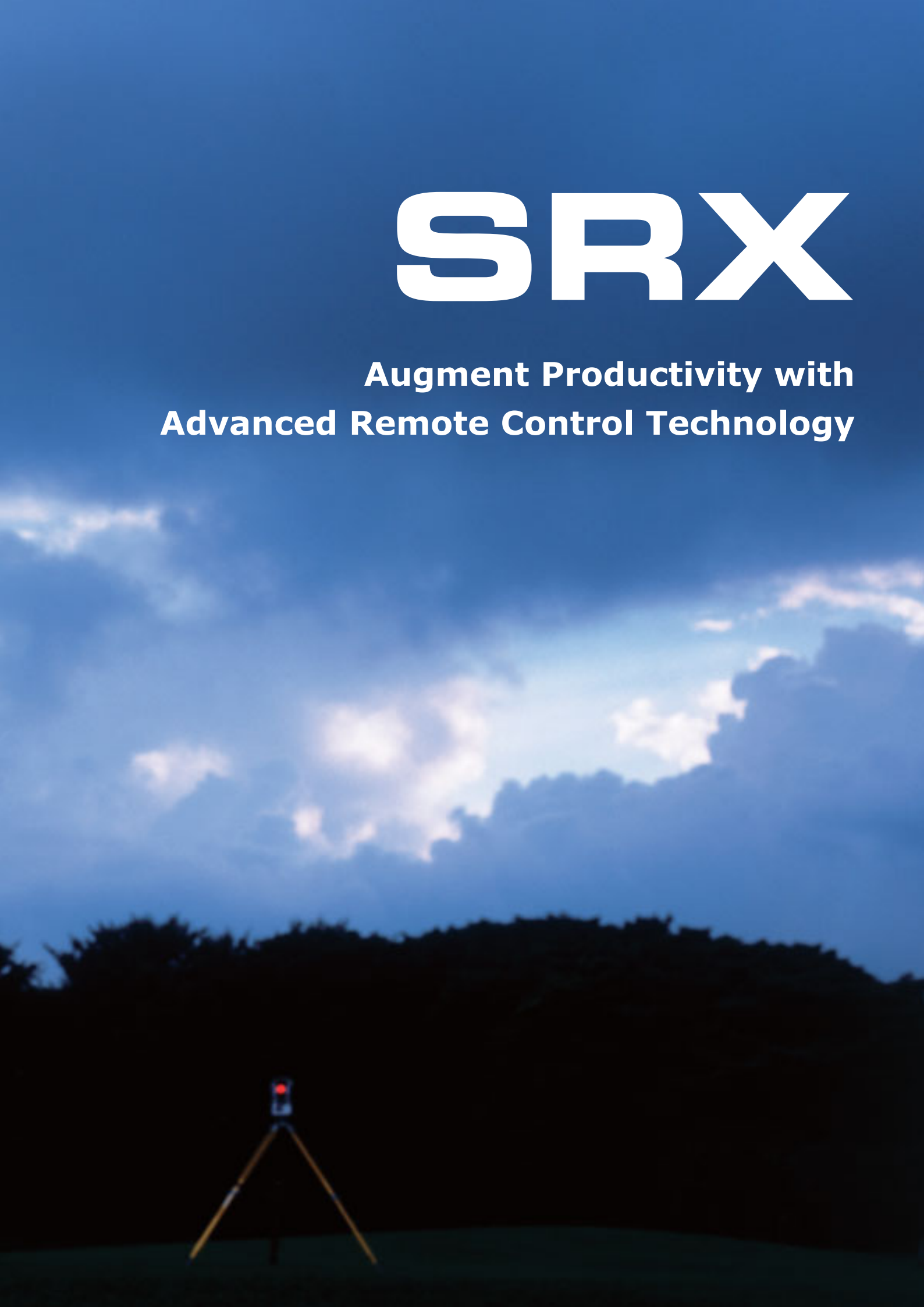
SRX

With Enhanced Remote Control System


SOKKIA

SRX

Augment Productivity with Advanced Remote Control Technology



SRX

Powered by Your Imagination

Revolutionary Remote Control Concept

The unique SRX On-Demand Remote Control System revolutionizes the way you survey with total stations.

Intelligent target search and robust Auto-Tracking capability minimize downtime due to the loss of target lock or an undesired sighting of reflective objects.

Unique prism systems can be optimally configured to obtain the highest work efficiency.

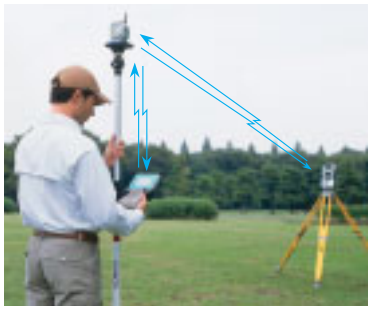
SRX is fast, dependable, and gives you unheralded surveying freedom.

On-Demand Remote Control System

The System comprises the prism-side RC-Controller, a data collector and an RC-Detector in the SRX handle. As the RC-Controller projects a vertical laser fan beam, the SRX rotates horizontally until it perceives the fan beam to initiate Auto-Pointing.

** Red fan beam image is for explanation purposes only. The actual search beam is an eye-safe Class 1 invisible laser.*

Completely Cable-Free



The RC-Controller incorporates a license-free Class 1 *Bluetooth*® modem that enables fully wireless communication for up to 300m (980ft.) between the SRX, RC-Controller and data collector.

* When using SRX handles RC-TS3 or H-BT1.

Bluetooth®

SDR Data Collection Software

SDR is a versatile data collection software package for prism-side SRX control. SDR provides full support for all total station measurements and calculations from as-built surveys to setting-out.

Offers Unprecedented Freedom and Productivity

Fast Search and Lock

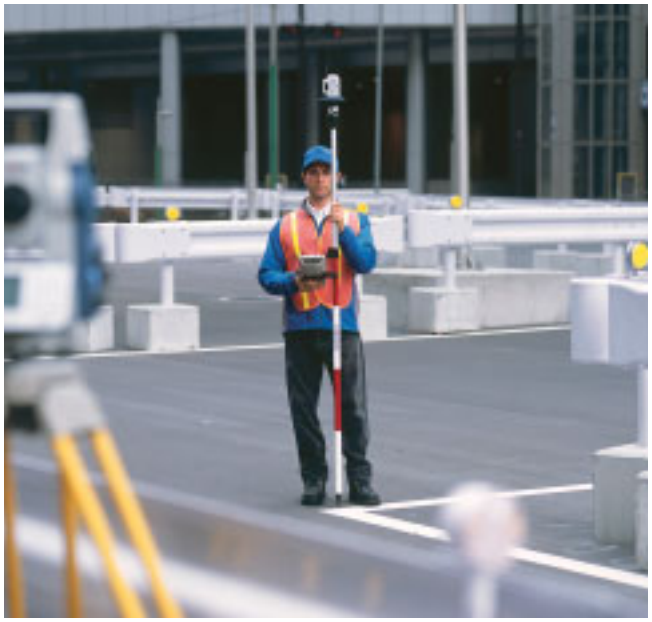
Simply press a key on the prism-side data collector. Using a built-in directional sensor, the RC-Controller detects the direction in which the prism is moving, and commands the SRX to rotate in the shortest direction to the prism. The combination of a laser fan beam, directional sensor and 360° prism dramatically reduces the time to acquire prism lock.

Focus on Where You're Going

With SRX, you can smoothly continue measurement even if buildings, trees or passing traffic interrupt the line of sight. Even the roughest terrain poses no problem for SRX. Just pay attention to your footing and SRX will do the rest. If prism lock should be lost, press the measurement key and the RC-Controller automatically calls the SRX and it recovers the target lock without missing a beat.

False Sighting Recovery

If SRX gets caught sighting another reflective object, the on-demand remote control system quickly returns it to the prism. Recovery and measurement are accomplished at the push of a button.



Dramatically Improve Setting-Out Efficiency

- Using SRX Auto-Tracking, directions and distances are graphically and numerically displayed on the prism-side data collector for real-time point navigation.
- Speed up operation using the Guide Light for rough lateral positioning. Setting-out efficiency can also be improved using the SRX Auto-Pointing function.

Range Pole Sytem

Pin Pole System

SRX

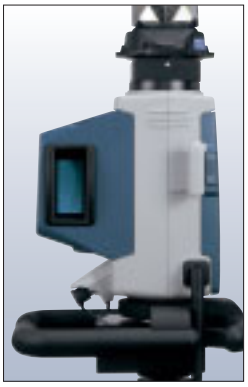
Powered by Your Imagination

Tailor the Prism System to Your Speci

Fully wireless *Bluetooth* link, accurate and versatile 360° prisms, and a wide variety of poles, attachments and accessories make it possible to create a unique survey style ideally suited to your specific needs.

RC-PR3

The original RC-Controller for use with the ATP1 standard 360° prism.



Unique Styles for Unprecedented Versatility

Both top- and bottom-mount range pole systems and low-height pin pole systems can be configured. The lower prism height makes it easier to achieve highly accurate measurement by reducing error from wobbling poles.

Bluetooth Modem and Serial Port

A long-range *Bluetooth* modem enables simultaneous wireless communication with the SRX and a data collector. A Class 1 specification allows data transmission of up to 300m (980ft.). In addition, the serial RS-232C port is equipped for cable connection.

fic Applications

RC-PR4

An extremely compact and lightweight RC-Controller.

Mobility and Versatility

The drastically downsized body weighs only 420g (0.93 lb. / 14.8 oz.) including detachable battery. Together with the ATP1S Sliding Prism and a pin pole, an extremely handy prism system can be configured.

Full Functionality

The RC-PR4 incorporates a search fan beam emitter, a built-in directional sensor and Class 1 long-range *Bluetooth* wireless modem.

Extended Operating Time

One standard rechargeable battery powers the RC-PR4 for up to 40 hours with constant *Bluetooth* links and 10 seconds of operation per minute.

ATP1 and ATP1S 360° Prisms

SOKKIA's advanced optical technology realizes an ideal 6-prism configuration with a minimum offset of each prism center, providing exceptional measurement accuracy.

ATP1

A standard 360° prism compatible with both RC-PR3 and RC-PR4 controllers.

ATP1S

Exclusively designed for the RC-PR4 pin pole system, the ATP1S slides along the "PP2" pin pole. The prism height can be quickly adjusted from 10cm (4 in.) to 40cm (15.7 in.). Equipped with a built-in circular level.

SRX

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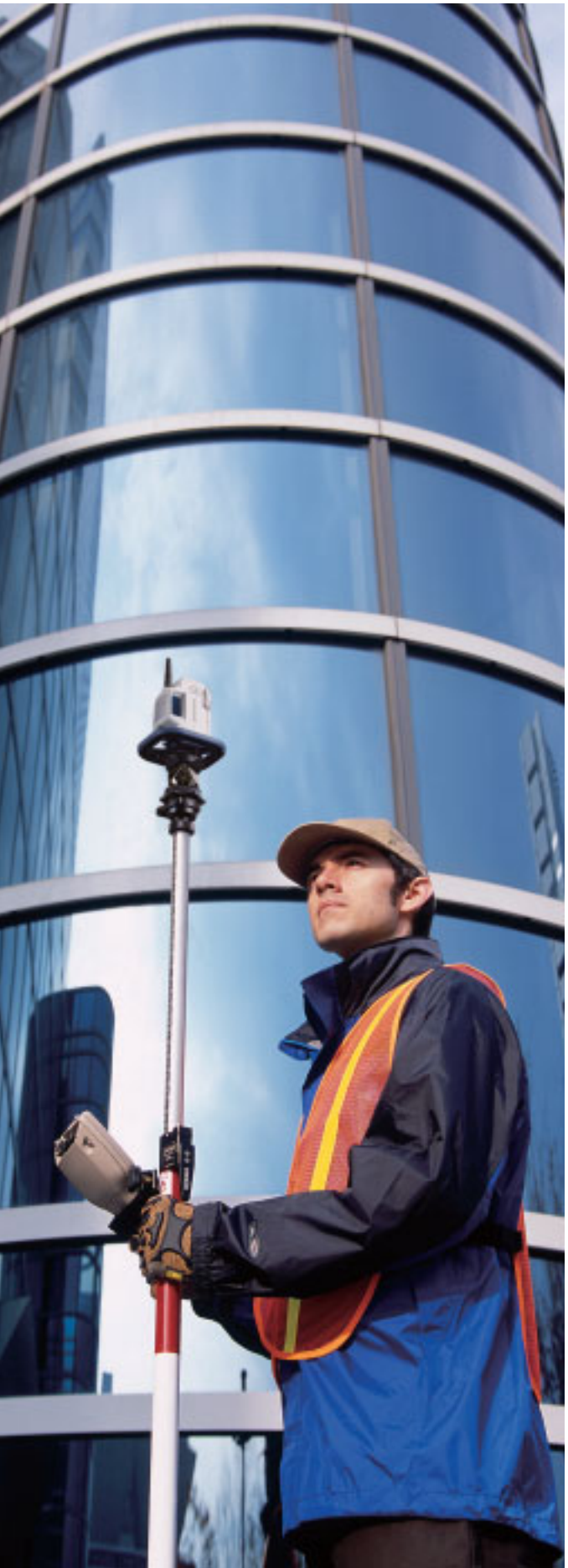


State-of-the-Art Technology Provides

RED-tech EX – High-precision Reflectorless EDM

RED-tech EX EDM provides pinpoint accuracy using an ultra-narrow red laser beam. It performs fast and stable reflectorless measurements up to 500m (1,640ft.) from the industry's shortest 30cm (1ft.) distance. Advanced digital signal processing technology offers greater reliability even under harsh environmental conditions. Using prisms, RED-tech EX measures up to 10,000m (32,800ft.), and with convenient reflective sheet targets up to 500m (1,640ft.).

Distance	2m (6.6ft.)	10m (33ft.)	40m (131ft.)	100m (328ft.)	300m (984ft.)	500m (1,640ft.)
Beam spot size (height x width)	5 x 7mm (0.2 x 0.28in.)	7 x 9mm (0.28 x 0.35in.)	14 x 14mm (0.55 x 0.55in.)	29 x 24mm (1.14 x 0.95in.)	76 x 56mm (2.99 x 2.2in.)	123 x 89mm (4.84 x 3.5in.)

Measuring beam spot size (Reflectorless mode)

Single Optimized Beam

RED-tech EX utilizes a single laser beam both for distance measurement and for pointing, measuring precisely where the red laser points.
The laser beam diameter and output level are automatically optimized according to the target types, providing measurement stability and eye safety.

Advanced Angle Measurement System

All models are equipped with market-proven absolute encoders. Advanced coding and digital processing technologies provide long-term reliability in any work-site conditions.
The 1" and 2" high-precision models incorporate IACS (Independent Angle Calibration System) to further enhance measurement reliability.

Auto-Tracking and Auto-Pointing Models

SRX is available in Auto-Tracking and Auto-Pointing models. An Auto-Pointing model can be upgraded to a fully functional Auto-Tracking model.

Fast, Accurate Tracking and Pointing

An intelligent signal and image processing technology provides quick and accurate auto-pointing and robust auto-tracking.

Select from "Fine" and "Rapid" modes according to your priorities.
Fine mode displays the results as soon as it confirms the prism is still, ensuring highly accurate measurement.

The SRX also auto-points reflective sheet targets at up to 50m (160ft.).

Handle Variations

Function \ Handle	RC-TS3	RC-TS3A	H-BT1	H-BC1
Bluetooth modem	Yes	—	Yes	—
RC-Detector	Yes	Yes	—	—

Unmatched Reliability and Versatility

High Performance Telescope

The superior telescope provides unparalleled brightness and sharpness, as well as the highest resolving power* 2.5" among automated total stations.

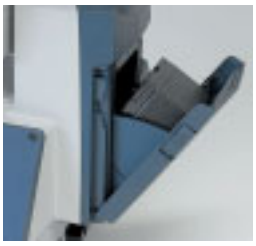
* As of March 1, 2009

Guide Light Unit for Setting-out

The original guide light unit consists of two LEDs. Red and Green lights are emitted from a single aperture. The lateral position of a prism can be easily determined at both long and short ranges. A special flashing pattern is also included to assist users with color perception disability.
Operating range:
1.3 to 150m (4.3 to 490ft.)

Rechargeable Li-ion Battery

With two standard Li-ion batteries, the SRX operates up to 7 hours in Auto-Pointing use and 5 hours in Auto-Tracking. Larger-capacity external batteries are available as optional accessories.



Jog Dials / Trigger Key

Fine-tuned variable-speed jog dials enable faster and more precise sighting than manual fine-motion screws.
A perfectly located trigger key lets you take a measurement without taking your eye from the telescope.

Color Display / Illuminated Keyboard

SRX features a color LCD touch screen display with a wide viewing angle. The full alphanumeric keyboard has concave keys that can be easily pressed by gloved fingertips or with the stylus. Fully illuminated display and keyboard facilitate operation in dim or dark conditions.

Dust and Water Protection

Featuring advanced protection against dust and water, SRX is able to withstand harsh environmental conditions. The IP64 rating is the highest among automated total stations*.

* As of March 1, 2009

The International Electrotechnical Commission standard IEC 60529 describes a system for classifying degrees of protection provided by enclosures of electrical equipment.
The IP Code consists of the letters IP and two numerals. Larger numbers represent greater levels of protection.

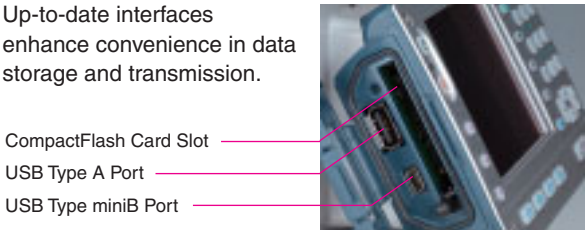
Protection against ingress of solid foreign objects
Highest level: 6
7 levels: 0 to 6.
X: unspecified.

IP 64

Protection against ingress of water
Highest level: 8
9 levels: 0 to 8.
X: unspecified.

Multiple Data Interfaces

Up-to-date interfaces enhance convenience in data storage and transmission.



CompactFlash Card Slot

CF cards (Type II, 3.3V, max.4GB), SD cards (with CF adapter, max.1GB) and CF type modems are supported.

USB Port

Up to 4GB USB flash memory (FAT32 format) is supported. A USB card reader can be used to further broaden media usability.

Weatherproof Multi Port

A single port accepts a serial RS-232C data cable and an external power cable. Both cables can be connected simultaneously via optional Y-type cables.
The port maintains IP64 dust- and water-protection while a cable connected.

SFX

SFX technology enables data transfer via e-mail to and from anywhere in the world using an Internet-capable mobile phone or a CompactFlash modem.

SRX

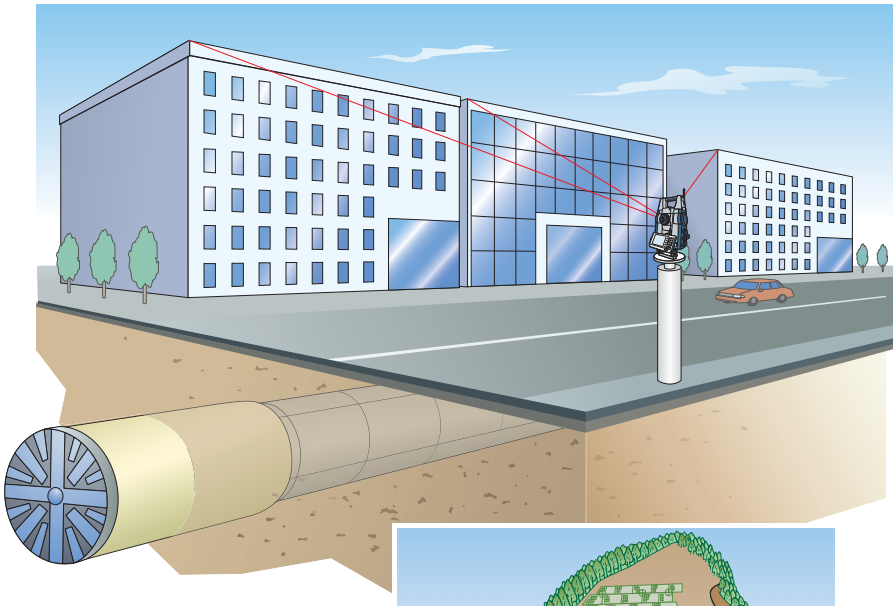
Powered by Your Imagination

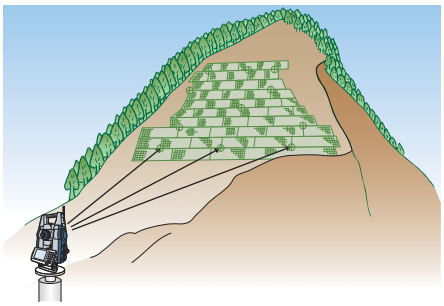
User-friendly Software Brings Out Full

Exclusive Programs for Automated Measurement

■ Periodic Monitoring Program*

Use SRX to monitor the deformation and displacement of buildings and natural terrain. Perform automatic monitoring by configuring the starting and stopping times and monitoring intervals. A time-based deformation graph is shown on the instrument display. This function is especially effective for disaster prevention. SRX detects the movement of large structures both existing and under construction such as bridges, underpasses, tunnels, buildings, dams, mining sites and slope faces.





■ Mesh-scan Survey*

Mesh-scan survey creates a mesh over a designated observation area and automatically measures the intersecting points (mesh points) at designated intervals. Select between two measurement modes depending on the jobsite conditions for surface observation of developed land, cliff faces and road surfaces.

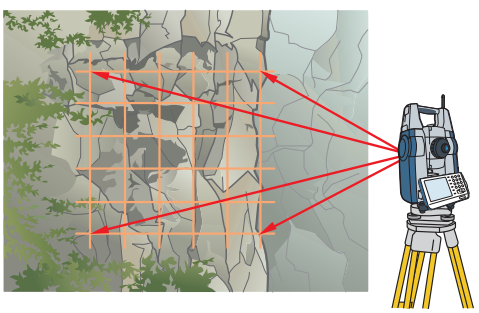
● Simple Pitch Scan

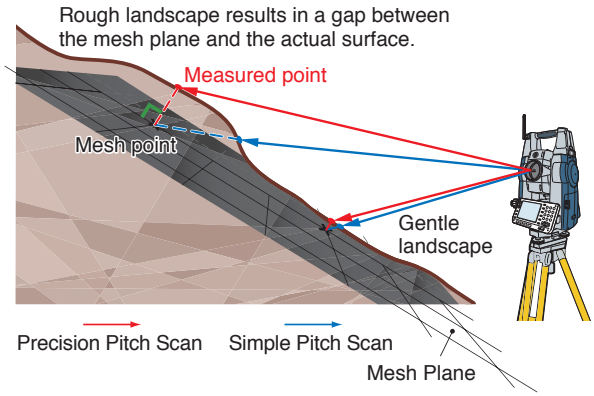
Simple Pitch Scan measures the aspects of the mesh points. This function is effective for gentle landscapes where the mesh plain is close to the earth's surface.

● Precision Pitch Scan

Precision Pitch Scan measures the mesh plane with greater accuracy. SRX measures surface points that are perpendicular to the mesh plane. This function is effective for performing accurate measurement on rough jobsites and creating cross sectional views.

* "Periodic Monitoring" and "Mesh-scan Survey" programs are available with SRX onboard software only.





Functionality of the SRX

SDR Onboard Program

Built on knowledge from surveyors and legacy of SOKKIA electronic fieldbooks, SDR program makes SRX a powerful tool for surveying, data collection and laying out. This Windows CE-based data collection software increases functionality with an easy-to-follow workflow, customizable settings and a graphic interface. SDR program offers a full range of job file handling capacity, user-definable feature code lists with point-sorting capabilities, easy setting-out guidance and the ability to export/import data with industry standard formats.

SDR Program offers an integrated solution to a wide variety of surveying tasks.

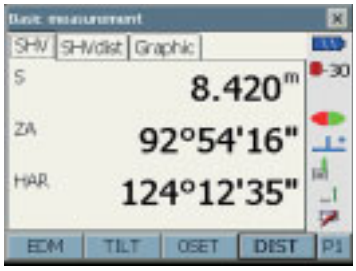
SURV	COGO	ROAD
Topography	Set Out Coords	Select Road
Traverse Adjustment	Set Out Line	Set Out Road
Resection	Set Out Arc	Set Out Road Surface
Set Collection	Resection	Road Topo
Set Review	Inverse	Cross-Section Survey
Building Face Survey	Areas	Define Road
Collimation	Intersections	Review Road
Remote Elevation	Point Projection	Define Template
Keyboard Input	Taping from Baseline	Review Template
	Transformation	
	Keyboard Input	

Status Bar

See the instrument status at a glance. Quickly select and configure instrument settings with a touch of the stylus or your finger.

BASIC

Use SRX in Basic mode to take basic total station measurements.



FUNC

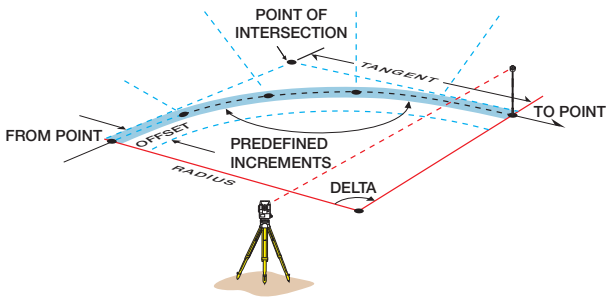
The Functions menu is used to set up or start survey jobs and controls SDR program settings.

Traverse Adjustment

Traverse adjustment allows you to specify a sequence of stations through which a traverse can be calculated and adjusted. Observations do not need to be in order of the traverse route.

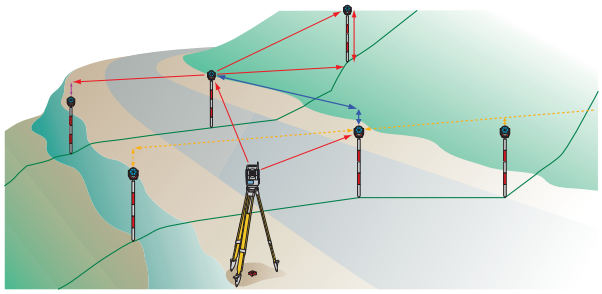
Set Out Arc

Set Out Arc provides an arc calculator to define curves from almost any combination of parameters. Points along the arc can be calculated and directly set out.



Road Topo

Perform a topographic survey relative to a defined road.



SRX

SRX1 SRX2 SRX3 SRX5

SPECIFICATIONS

Model		SRX1	SRX2	SRX3	SRX5
Telescope		Fully transiting, coaxial optics for sighting, distance measurement, Auto-Pointing and Auto-Tracking			
		Length: 173mm (6.8in.), Magnification: 30x, Resolving power: 2.5", Minimum focus: 1.3m (4.3ft.)			
Angle measurement		Absolute rotary encoder scanning. Both circles adopt diametrical detection.			
Display resolution		0.5" / 1", 0.0001 / 0.0002gon, 0.002 / 0.005mil		1" / 5", 0.0002 / 0.001gon, 0.005 / 0.02mil	
Accuracy (ISO17123-3:2001)		1" / 0.3mgon / 0.005mil	2" / 0.6mgon / 0.01mil	3" / 1mgon / 0.015mil	5" / 1.5mgon / 0.025mil
IACS		Provided (Independent Angle Calibration System)		-	
Automatic dual-axis compensator		Dual-axis liquid tilt sensor. Working range ±4' (±74mg, ±1.18mil)			
Distance measurement		Modulated laser, phase comparison method			
Measuring range (under average conditions)	With ATP1/ATP1S 360° Prism	1.3 to 1,000m (4.3 to 3,280ft.)			
	With CP compact prism	1.3 to 2,500m (4.3 to 8,200ft.)			
	With 1 AP prism	1.3 to 5,000m (4.3 to 16,400ft.) Under good conditions*1:1.3 to 6,000m (4.3 to 19,680ft.)			
	With 3 AP prisms	to 8,000m (26,240ft.) Under good conditions*1: to 10,000m (32,800ft.)			
	With reflective sheet target	1.3 to 500m (4.3 to 1,640ft.) with RS90N-K (90x90mm) reflective sheet			
	Reflectorless*2	0.3 to 500m (1 to 1,640ft.) with Kodak Gray Card White side (90% reflective)			
Unit		Meter / Foot / US foot / US foot + inch			
Display resolution		0.0001 / 0.001m (0.001 / 0.01ft., 1/16 / 1/8in.)		0.001m (0.01ft., 1/8in.)	
Accuracy (D=measuring distance, unit:mm) (ISO17123-4:2001)	With prism	(2 + 2ppm x D)mm			
	With CPS12 high precision prism system	(1.5 + 2ppm x D)mm	-		
	With reflective sheet target	(3 + 2ppm x D)mm			
	Reflectorless*2	(3 + 2ppm x D)mm : 0.3 to 200m (1 to 650ft.) (5 + 10ppm x D)mm : over 200m to 350m (over 650 to 1,140ft.) (10 + 10ppm x D)mm : over 350m to 500m (over 1,140 to 1,640ft.)			
Measuring time	Fine mode	Fine: Every 0.9s or less (initial 1.5s or less) Rapid: Every 0.6s or less (initial 1.3s or less)			
Auto-Tracking / Auto-Pointing		Pulse laser transmitter and CCD detector integrated in telescope with co-axial optics			
Auto-Tracking range	With ATP1/ATP1S 360° Prism	500m (1,640ft.)			
	With 1 AP prism	800m (2,620ft.)			
Auto-Pointing range	With ATP1/ATP1S 360° Prism	2 to 600m (6.5 to 1,960ft.)			
	With 1 AP prism	2 to 1,000m (6.5 to 3,280ft.)			
	With reflective sheet target	5 to 50m (16.4 to 160ft.)			
Interface and Data management					
Operating system		Windows CE Ver.5.0			
Control panel layout		On single face (Models with both-face control panels are available as a factory option.)			
Data storage	Internal memory	64MB (more than 1MB available for data)			
	Memory card drive	CF Type II (3.3V, max. 4GB), SD card (with CF adapter, max. 1GB), USB memory (max. 4GB, FAT32 format)			
Interface		Serial RS-232C (baud rate: 1,200 to 38,400bps), USB1.1 Host (Type A), Client (Type mini B)			
Bluetooth wireless modem*3		Class 1, Ver.1.2 (built into handles RC-TS3 and H-BT1) Operating range: up to 300m (980ft.)			
SFX data transfer		Provided			
General					
Laser-pointer function	Light source	Red laser beam for distance measurement			
	Lighting modes	ON / Auto-Off in 1/5/10/30 minutes / OFF, selectable			
Guide light		Two color LEDs, single aperture, Class 1 LED product. Operating range: 1.3 to 150m (4.3 to 490ft.)			
Dust and water protection		IP64 (IEC 60529:2001) (RS-232C serial cable or external power cable connection maintains IP64)			
Operating temperature		-20 to +50°C (-4 to +122°F)			
Instrument height		236mm (9.3in.) from tribrach bottom			
Size (with handle*4 and battery)		W 201 x D 202 x H 375mm (W 8.0 x D 8.0 x H 14.8in.)			
Weight (with handle*4 and battery)		7.7kg (17.0 lb.)			
Power supply		7.2 to 12V DC			
Operating time in Auto-Pointing mode*5	BDC58 detachable battery	Approx. 3.5 hours (approx. 7 hours using two standard batteries)			
	BDC60 external battery	Approx. 5 hours			
	BDC61 external battery	Approx. 10 hours			

On-Demand Remote Control System		RC-PR3	RC-PR4
Operating range*6 (slope distance)		2 to 300m (6.6 to 980ft.)	
Typical measuring time*7		Approx. 15s	
Bluetooth wireless modem*3		Class 1, Ver. 2.0 + EDR. Operating range: up to 300m (980ft.)	
Dust and water protection		IP55 (IEC 60529:2001)	
Operating temperature		-20 to +50°C (-4 to 122°F)	
Size		W 124 x D 99 x H 196mm (W 4.9 x D 3.9 x H 7.8in.)	W 80.5 x D 69 x H 131mm (W 3.2 x D 2.7 x H 5.2in.)
Weight (with battery)		1.1kg (2.5 lb)	410g (14.5 oz.)
Operating time*8	BDC46B detachable battery	Approx. 14 hours	Approx. 40 hours

*1 No haze, visibility about 40km (25 miles), overcast, no scintillation.
*2 Reflectorless range/accuracy may vary according to measuring objects, observation situations and environmental conditions.
*3 Usage approval of *Bluetooth* wireless technology varies according to country. Please consult your local SOKKIA office or representative in advance.
*4 RC-TS3 handle
*5 Auto-pointing by both faces (180° H&V rotation) and fine-single distance measurement every 30s at 20°C (68°F).
*6 Range depends on atmospheric conditions and type of wireless modem.
*7 Total time from pressing measurement key of the prism side data collector at 100m (320ft.) away until the SRX completes 90° horizontal rotation and a rapid-single distance measurement.
*8 Operates for 10 seconds per minute, standard mode, *Bluetooth* link kept, at 25°C (77°F).

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