Icons used in this catalog

Auto Tracking — Continuously tracks the prism, updating distance and angle values in real-time.

Auto Pointing — Automatically sights and measures the target.

Reflectorless — Survey-grade reflectorless distance measurement.

Sheet Target — Possible to perform measurements using reflective sheet targets.

Guide Light — Equipped with a high-visibility guide light to aid in setting-out operations.

OS WIN-CE — Windows CE based operating system installed.

CF Card — Supports a CompactFlash memory card for data storage and handling.

SD/SDHC Card — Supports an SD memory card and a large capacity SDHC card for data storage and handling.

USB — USB port for data storage and/or connection with a PC.

-30˚C/-22˚F — Low Temperature models available.

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 66

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

IP X7 · IP 67 · IP X6 · IP 66
IP 65 · IP 64 · IP 56 · IP 55
IP 54 · IP X4 · IP 44

Laser Class:
IEC 60825-1Amd.2:2001 / FDA CDRH 21 CFR Part1040.10 and 1040.11 (Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No.50, dated July 26, 2001.)

Your local Authorized Dealer is:

TOPCON CORPORATION
75-1 Hasunuma-cho, Itabashi-ku, Tokyo 174-8580, Japan
Phone: (+81)3-3558-2993 Fax: (+81)3-3960-4214
www.topcon.co.jp

Specifications subject to change without notice

SOKKIA

Multiply Your Surveying Possibilities

POSITIONING INSTRUMENTS
CATALOG 2012 vol.2

Superior X-ellence Station

SX Series
Superior X-ellence Station

Auto-Tracking models:

SX-101T/SX-102T/SX-103T/SX-105T/

Auto-Pointing models:

SX-101P/SX-102P/SX-103P/SX-105P/

SX-101T

Bluetooth®

Measuring beam spot size (reflectorless mode)

Distance	10m (33ft.)	40m (131ft.)	100m (328ft.)
Beam spot size (height x width)	7 x 9mm (0.28 x 0.35in.)	14 x 14mm (0.55 x 0.55in.)	29 x 24mm (1.14 x 0.95in.)

Auto Tracking | Auto Pointing | Reflectorless | Sheet Target | Guide Light | OS WIN-CE | USB | IP65

* Only for Auto-Tracking models

The auto tracking models from the SX series total stations track a moving prism even with obstacles such as strong backlight or repetitive interruptions. When the prism is lost, the advanced on-demand remote control system RC-PR5 allows the SX to instantly relocate and lock the lost prism.

Common Features for Auto-Tracking and Auto-Pointing models

- Fast measurement reading at every 0.9 seconds .
- Reflectorless measuring range from 30cm to 1000m*.
- SOKKIA's widely acknowledged pinpoint precision in reflectorless distance measurement.
- Auto-pointing with instant one touch operation.
- IP65 dustproof / waterproof rating.
- *Bluetooth*® Class1 wireless technology for reliable data communications.
- One-touch star key [★] offers instant access to functions.

*With Kodak Gray Card white side (90% reflective). Brightness level at object surface: ≦500 lx.

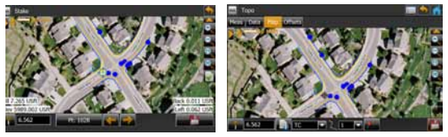
Rapid prism search with RC-PR5

■ MAGNET™

MAGNET™ is a software family that uses the “cloud” for seamless data connection between the field and office.

• MAGNET™ Field

Powerful on-board software that covers full functions for surveying and engineering tasks. MAGNET Field handles data collection, stake out, roads and coordinate geometry.



RC-PR5
RC-Controller

- The RC-PR5* On-Demand Remote Controller allows rapid prism search regardless of your position. A built-in directional sensor constantly monitors the prism movement so the SX can turn left or right whichever in closer direction.

* Applicable with SX Auto-Tracking models

IP55

	RC-PR5
Operating Range[*1] (slope distance)	2 to 300m (7 to 980ft.)[*2]

*1 Good conditions.
*2 When the height difference between total station and RC-PR5 is within 20m (66ft.).

ATP1/ATP1S
Most Versatile and Accurate Prism System

ATP1 Features

- The high-precision 360° prisms can be mounted at either the top or bottom of a range pole.

ATP1S Features

- The new, compact 360° Sliding Prism ATP1S slides along the Pin Pole PP2 to enable quick adjustment of a prism height.
- In combination with a pin pole, prism height can be set as low as 10cm (4in.). The lower prism height improves measurement accuracy by minimizing error caused by tilt of a pole. (ATP1S)

ATP1

ATP1S

		SX-101P	SX-101T	SX-102P	SX-102T	SX-103P	SX-103T	SX-105P	SX-105T
Auto-Tracking		-	●	-	●	-	●	-	●
Auto-Pointing		●	●	●	●	●	●	●	●
Measuring range (Average conditions)	Reflectorless*[1]	0.3 to 800m (1 to 2,620ft.) / 0.3 to 1,000m (1 to 3,280ft.)*[2]							
	With reflective sheet target	1.3 to 500m (4.3 to 1,640ft.) with RS90N-K (90x90mm) reflective sheet							
	With ATP1(S) 360° Prism	1.3 to 1,000m (4.3 to 3,280ft.)							
	With 1 AP prism	1.3 to 5,000m (4.3 to 16,400ft.) / to 6,000m (to 19,680ft.) under good conditions							
Distance accuracy (ISO17123-4:2001)	Reflectorless*[1]	(2 + 2ppm x D)mm : 0.3 ≦ D ≦ 200m (1 ≦ D ≦ 650ft.) (5 + 10ppm x D)mm : 200 < D ≦ 350m (650<D ≦ 1,140ft.) (10 + 10ppm x D)mm : 350 < D ≦ 1,000m (1,140<D ≦ 3,280ft.)							
	With reflective sheet target	(2 + 2ppm x D)mm							
	With prism	(1.5 + 2ppm x D)mm							
Angle display resolutions (selectable)	Degree	0.5" / 1"				1" / 5"			
	Gon	0.0001 / 0.0002gon				0.0002 / 0.001gon			
	Mil	0.002 / 0.005mil				0.005 / 0.02mil			
Angle accuracy (ISO17123-3:2001)	H&V	1" / 0.3mgon / 0.005mil		2" / 0.6mgon / 0.01mil		3" / 1mgon / 0.015mil		5" / 1.5mgon / 0.025mil	
Auto-Tracking range / Auto-Pointing range	With AP Prism	1,000m (3,280ft.)							
	With ATP1(S) 360° Prism	600m (1,960ft.)							

*1 Kodak Gray Card white side (90% reflective). Reflectorless range/accuracy may vary according to measuring objects, observation situations and environmental conditions.
*2 When brightness at object surface is 500 lux or less, regardless of ambient brightness conditions.

Exclusive TSshield technology built-in

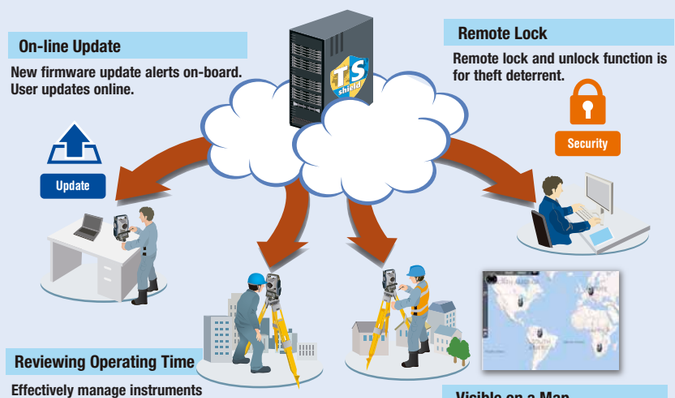
World's First Integrated support service

TSshield*

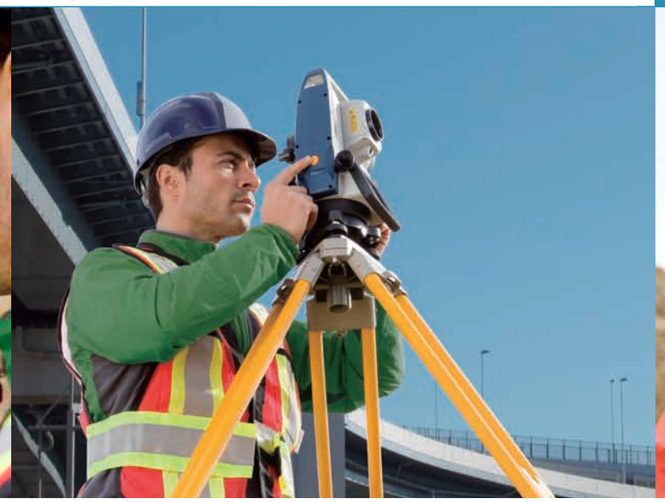
World's first cloud-based total station management system.

- Instrument location visible on a map
- Remotely lock and unlock instrument
- Review instrument operating time
- New firmware alerts and user updating

* This service may not be available in some areas.



Functional X-ellence Station



Compact X-ellence Station

FX Series
Functional X-ellence Station
FX-101/FX-102/FX-103/FX-105/FX-107

FX-105

Bluetooth®

Reflectorless · Sheet Target · Guide Light · OS WIN-CE · USB · IP 65 · -30°C/-22°F *

* Option

The FX series offer the highest standard IP65 in environmental protection among Windows CE models. The completely new on-board applications “MAGNET Field” or “Pocket-3D Lite” software can be chosen for a variety of jobs.

- Fast measurement reading at every 0.9 seconds.
- SOKKIA's widely acknowledged pinpoint precision in reflectorless distance measurement.
- Dependably operates in the heat of up to +60°C (+140°F).
- *Bluetooth* Class1 wireless technology for reliable data communications.*
- One battery provides 20 hours of power.
- One-touch star key [★] offers instant access to functions.
- By using the trigger key, a series of measurement can be easily taken without taking your eye off the telescope.

* Offered as a factory option.

MAGNET™
MAGNET™ is a software family that uses the “cloud” for seamless data connection between the field and office.

• MAGNET™ Field
Powerful on-board software that covers full functions for surveying and engineering tasks. MAGNET Field handles data collection, stake out, roads and coordinate geometry.

Pocket-3D Lite
Simple on-board software for engineering stakeout.
With features of, simple and intuitive operation, sequential work flow, graphical points view, and supported general CAD formats.

		FX-101	FX-102	FX-103	FX-105	FX-107
Measuring range (Average conditions)	Reflectorless*1	0.3 to 500m (1 to 1,640ft.)				
	With reflective sheet target	1.3 to 500m (4.3 to 1,640ft.) with RS90N-K (90x90mm) reflective sheet				
	With 1 AP prism	1.3 to 4,000m (4.3 to 13,120ft.) / 1.3 ≦ 5,000m (4.3 ≦ 16,400ft.) under good conditions				
Distance accuracy (ISO17123-4:2001)	Reflectorless*1	(3 + 2ppm x D)mm : 0.3 ≦ D ≦ 200m (1 ≦ D ≦ 650ft.)				
	With reflective sheet target	(3 + 2ppm x D)mm				
	With prism	(2 + 2ppm x D)mm				
Angle display resolutions (selectable)	Degree	0.5" / 1"	1" / 5"			
	Gon	0.0001 / 0.0002gon	0.0002 / 0.001gon			
	Mil	0.002 / 0.005mil	0.005 / 0.02mil			
Angle accuracy (ISO17123-3:2001)	H&V	1" / 0.3mgon / 0.005mil	2" / 0.6mgon / 0.01mil	3" / 1mgon / 0.015mil	5" / 1.5mgon / 0.025mil	7" / 2.2mgon / 0.035mil

*1 With Kodak Gray Card white side (90% reflective).

CX Series
Compact X-ellence Station
CX-101/CX-102/CX-103/CX-105/CX-107

CX-105

POWER 36 Hours Battery

Bluetooth®

Reflectorless · Sheet Target · Guide Light · USB · IP 66 · -30°C/-22°F *

* Option

Featuring enhanced RED-tech EDM, convenient trigger key, powerful on-board software and market-proven reliability, the CX Series set a new standard for reflectorless total stations for all surveying and engineering applications.

IP 66

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

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

- Fast measurement reading at every 0.9 seconds.
- SOKKIA traditional pinpoint precision in reflectorless distance measurement.
- Reflectorless operation from 30cm to 500m.
- Dependably operates in the heat of up to +60°C (+140°F).
- *Bluetooth* Class1 wireless technology for reliable data communications.*1
- The CX single battery can last up to 36 hours.*2
- CX-101 and CX-102 feature groundbreaking IACS (Independent Angle Calibration System) technology for extremely reliable angle measurement.
- IP66 dustproof / waterproof rating.
- One-touch star key [★] offers instant access to functions.
- Trigger key lets you take a series of measurements without taking your eye off the telescope.

*1 Offered as a factory option.
*2 Operating time will vary depending upon environmental conditions and CX activity.

		CX-101	CX-102	CX-103	CX-105	CX-107
Measuring range (Average conditions)	Reflectorless*1	0.3 to 500m (1 to 1,640ft.)				
	With reflective sheet target	1.3 to 500m (4.3 to 1,640ft.) with RS90N-K (90x90mm) reflective sheet				
	With 1 AP prism	1.3 to 4,000m (4.3 to 13,120ft.) / 1.3 < 5,000m (4.3 ≦ 16,400ft.) under good conditions				
Distance accuracy (ISO17123-4:2001)	Reflectorless*1	(3 + 2ppm x D)mm : 0.3 ≦ D ≦ 200m (1 ≦ D ≦ 650ft.)				
	With reflective sheet target	(3 + 2ppm x D)mm				
	With prism	(2 + 2ppm x D)mm				
Angle display resolutions (selectable)	Degree	0.5" / 1"	1" / 5"			
	Gon	0.0001 / 0.0002gon	0.0002 / 0.001gon			
	Mil	0.002 / 0.005mil	0.005 / 0.02mil			
Angle accuracy (ISO17123-3:2001)	H&V	1" / 0.3mgon / 0.005mil	2" / 0.6mgon / 0.01mil	3" / 1mgon / 0.015mil	5" / 1.5mgon / 0.025mil	7" / 2.2mgon / 0.035mil

*1 With Kodak Gray Card white side (90% reflective).

Automated Gyro Stations

GYROX

Automated Gyro Stations
GYRO1X/GYRO2X/GYRO3X

Sokkia's market-proven precision Gyro Station now incorporates auto-pointing capability and automates the observation of the pendulum gyro oscillation (precession) by newly equipped image sensor. It automatically finds true north in 19 minutes and determines the azimuth with 15" precision regardless of the work site environment. Operation is speedy and easy even for unskilled operators to reduce stress and fatigue.

*When measured at 35° latitude area. Measurement time differs by the latitude due to the nature of gyro motor.

GYRO3X

Total Station Unit

		SRX1X	SRX2X	SRX3X
Measuring range (Average conditions)	Reflectorless*	0.3 to 800m (1 to 2,620ft.)		
	With reflective sheet target	1.3 to 500m (4.3 to 1,640ft.) with RS90N-K (90x90mm) reflective sheet		
	With 1 AP prism	1.3 to 6,000m (4.3 to 19,680ft.) under good conditions		
Distance accuracy (ISO17123-4:2001)	Reflectorless*	(2 + 2ppm x D)mm : 0.3 to 200m (1 to 650ft.)		
	With reflective sheet target	(2 + 2ppm x D)mm		
	With prism	(1.5 + 2ppm x D)mm		
Angle display resolutions (selectable)	Degree	0.5" / 1"		1" / 5"
	Gon	0.0001 / 0.0002gon		0.0002 / 0.001gon
	Mil	0.002 / 0.005mil		0.005 / 0.02mil
Angle Accuracy (ISO17123-3:2001)	H&V	1" 0.3mgon 0.005mil	2" 0.6mgon 0.01mil	3" 1mgon 0.015mil

* With Kodak Gray Card white side (90% reflective).

Gyroscope

Accuracy of azimuth determination* (Standard deviation)	±15" (5mgon, 0.074mil)
Measuring time	Approx. 19min.
Weight of gyro unit	4.0kg (8.8 lb.)

* When telescope pointed to within ±20' of true north.

Gyro Stations

GP1X/GP2X/GP3X/GP5X

Gyro Stations

Locate true north at any time regardless of visibility or weather conditions, even when working underground, and without the need of a reference station. A combination of the GP1 manual gyroscope and reflectorless total station SET X, the GYRO STATION locates true north and determines azimuth with a 20 arc-second (6mgon, 0.1mil) precision. The calculated azimuth is instantly set to the total station's horizontal angle. The DLC1 3-key remote trigger facilitates Enter key operation during gyro measurement procedures. It also allows distance measurement to be triggered wirelessly.


DLC1


GP3X

Total Station Unit

		SET1X	SET2X	SET3X	SET5X
Measuring range (Average conditions)	Reflectorless*1	0.3 to 500m (1 to 1,640ft.)			
	With reflective sheet target	1.3 to 500m (4.3 to 1,640ft.) with RS90N-K (90x90mm) reflective sheet			
	With 1 AP prism	1.3 to 6,000m (4.3 to 19,680ft.) under good conditions			
Distance accuracy (ISO17123-4:2001)	Reflectorless*1	(3 + 2ppm x D)mm : 0.3 to 200m (1 to 650ft.)			
	With reflective sheet target	(3 + 2ppm x D)mm			
	With prism	(2 + 2ppm x D)mm			
Angle display resolutions (selectable)	Degree	0.5" / 1"		1" / 5"	
	Gon	0.0001 / 0.0002gon		0.0002 / 0.001gon	
	Mil	0.002 / 0.005mil		0.005 / 0.02mil	
Angle Accuracy (ISO17123-3:2001)	H&V	1" 0.3mgon 0.005mil	2" 0.6mgon 0.01mil	3" 1mgon 0.015mil	5" 1.5mgon 0.025mil

*1 With Kodak Gray Card white side (90% reflective).

Gyro Unit

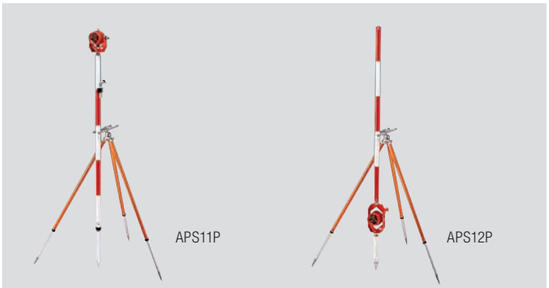
Accuracy of azimuth determination (Standard deviation)	±20" (6mgon, 0.1mil)
Measuring time	Approx. 20min.
Weight of gyro unit	3.8kg (8.4 lb.)

Reflective Prisms

Prism Sets with detachable tribrach

Model	Description
APS11-MAR	Single tilting prism complete with WA100 tribrach
APS12-MAR	Single tilting prism complete with coaxial target and WA100 tribrach
APS34-MAR	Triple tilting prism complete with coaxial target and WA100 tribrach

Range Pole Prisms

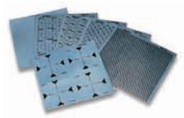


Mini Prisms

Reflective Sheet Targets and Staves

Reflective Sheet Targets
RS Series Reflective Sheets (self-adhesive type)

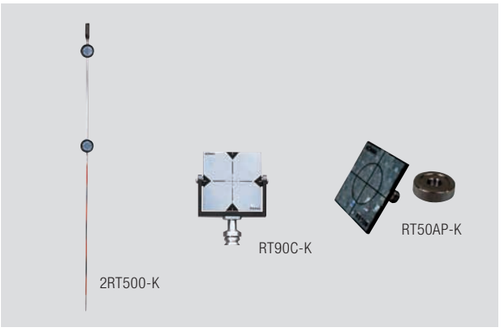
Model	Size (mm)	Model	Size (mm)
RS10N-K	10 × 10	**RS50N-K**	50 × 50
RS15N-K	15 × 15	**RS70N-K**	70 × 70
RS20N-K	20 × 20	**RS90N-K**	90 × 90
RS30N-K	30 × 30	**RS00-K**	230 × 230



2RT500-K Two-Point Target
Two reflective targets attached on a narrow pole for 2-distance offset measurements of hidden points with all of the SOKKIA total stations.

RT90C-K Detachable Rotary Target
A 90 x 90mm, fully rotatable reflective target to be used on tribrachs or prism poles.

RT50AP-K Reflective Sheet Target for AP Prism Mount
A 50 x 50mm sheet target to be used with AP11 Single Tilting Mount of AP Series glass prism.



Data collector

SHC25/SHC25A
Data collector

Lightweight, ultra-compact body not only fits in your pocket, but also meets the military standard to withstand extremely rough conditions. The Sokkia SHC25/25A offers the affordable choice for surveying and GIS data collection applications.

- MIL-STD-810G Ruggedness.
- IP65 Dust/Water Protection.
- Integrated 20ch GPS Receiver.
- Built-in 3MP Camera, Compass, and Altimeter (SHC25A).
- 2GB Flash Memory.
- WLAN / *Bluetooth* Wireless.
- Field-replaceable Li-ion Battery.

SHC25

OS	Windows Mobile version 6.5
Processor	Samsung S3C2450, 533MHz
Memory	256MB SDRAM
Display	3.5 in., VGA 640 x 480, sunlight-active TFT color touch-screen display
Dust and water protection	IP65 (IEC 60529:2001)
Weight w/Battery	320g (0.7 lb.)

SHC250
Data collector

The SHC250 data collector incorporates the latest Windows Mobile® 6.5 and the MAGNET Field software that fully controls Sokkia GPS/GNSS receivers and total stations with unsurpassed ease and speed.

- User-friendly intuitive operation fully utilizing the Windows Mobile 6.5 and large touch screen display.
- High-speed processor and large memory for maximum speed and productivity.
- Internal *Bluetooth* module.
- IP66 dust/water protection.

OS	Windows Mobile Version 6.5
Processor	806 MHz XScale processor
Memory	256 MB SDRAM / 1 GB flash memory
Display	3.7 in., VGA 640 x 480, sunlight-active TFT color touch-screen display
Dust and water protection	IP66 (IEC60529:2001)
Weight w/Battery	700g (1.54 lb.)

SHC2500
Data collector

The advanced data collector SHC2500 integrates full alphanumeric keyboard and a wide array of features in a rugged waterproof body.

- Full 55 keys for the quickest input of attributes, coordinates and other features.
- High-speed processor and large memory for maximum speed and productivity.
- Internal *Bluetooth* module.
- Hot swappable two batteries.
- 5MP digital camera.
- Rugged shock-proof body.

OS	Windows CE.NET Version 5.0
Processor	624 MHz XScale processor
Memory	256 MB SDRAM / 2 GB flash memory
Display	3.5 in., QVGA 320 x 240, sunlight-active TFT color touch-screen display
Dust and water protection	IP67 (IEC60529:2001)
Weight w/Battery	1.04kg (2.3 lb.)

MAGNET Field
Data Collection Software

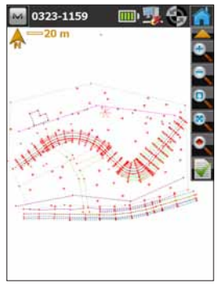
MAGNET Field is controller software that will increase your productivity and connect you to others in the field as well as in the office.

- Cloud connected data exchange and backup.
- Survey: Topo, Auto Topo, X-Section.
- Stake: Points, Lines, Surface, Curve, Real-Time Roads, Slope.
- Calculate: Inverse, Intersection, Curves, Area, Traverse, DTM.

■ Proper module can be chosen from optional modules* provided for GNSS, total stations configurations and different applications.

- Basic, GPS, Roads, Robotic

*Contact your local SOKKIA representative for details.



GNSS/GPS System

GRX1
GNSS Receiver

The GRX1 brings a new level of versatility and flexibility into precision GNSS positioning applications. Whether it's used for RTK base or rover, for network RTK rover or even as a static receiver, the GRX1 provides unmatched usability and convenience that increases field work efficiency on every job site.
The GRX1 GNSS receiver fully integrates GPS+GLONASS receiver and antenna, digital UHF modem, GSM/GPRS module, *Bluetooth* module and detachable battery into a compact and rugged magnesium alloy body.

- Fully scalable architecture maximizes your return on investment. It allows you to start with an L1 GPS+GLONASS receiver with a minimal initial cost, which can be upgraded up to 72-channel L1/L2 GPS+GLONASS receiver at any time.
- 72 universal channels are available for GPS, GLONASS and SBAS signals tracking.
- Supports GPS L2C signals.
- Triple wireless technologies: All of three commonly-used wireless technologies can be integrated into GRX1 receiver.
  1. Digital UHF Modem (Rx/Tx): for RTK base and rover
  2. GSM/GPRS Module: for network RTK
  3. Bluetooth Module: for controller and other PC (Class 1 long-range specifications)

* Internal "UHF modem" and "UHF+GSM/GPRS modem" are available as factory options.

SHC250

GRX1

Maximum Versatility in RTK Applications

Utilizing full wireless connectivity and the Sokkia-invented voice navigation system, the GRX1 dramatically facilitates the use of both RTK and network RTK technologies.

- Built-in GSM/GPRS modem makes the GRX1 an ideal rover receiver for network RTK positioning.
- The GRX1 can be used for both private RTK base and RTK rover using internal digital UHF modem without any extra device.
- Voice messages notify the users when RTK is fixed or lost, or other problems occur, eliminating a need for repeated checks with the controller display.

Position accuracy	RTK L1+L2	H:10mm + 1ppm, V:15mm + 1ppm
	Static L1+L2	H:3mm + 0.5ppm, V:5mm + 0.5ppm
	L1 only	H:3mm + 0.8ppm, V:4mm + 1ppm
	DGPS	<0.5m
Channels		72 channels
Memory		SD / SDHC card
Wireless communication	UHF radio*1	410-470MHz, receiver/transmitter
	GSM*1	GSM/GPRS module
	Bluetooth	V.1.1, Class 1
Size		Dia. 184 x H 95mm (Dia. 7.24 x 3.74 in.)
Dust and water protection		IP67 (IEC60529:2001)
Weight	GRX1 receiver	1.1kg (2.43 lb.)
	BDC58 battery	195g (6.9 oz.)
	Internal modems	115 to 230g (4.1 to 8.2 oz.), depending on modem

*1 Internal "UHF modem" or "UHF+GSM modem" available as factory options.

MONMOS

MONMOS
3D Coordinate Measuring System

The MONMOS handles large-scale 3D measurement tasks with unmatched ease and speed, allowing a single operator to instantly acquire precise 3D coordinate values.

MONMOS applications include:
- Deformation/displacement monitoring of large structures.
- Precise baseline management.
- Tunnel, bridge, railroad and power plant constructions.
- Manufacturing and maintenance of ships, vehicles, railcars and aircrafts.

NET05AX
Automated 3D Station

Featuring 0.5" angle accuracy and sub-millimeter EDM, the NET05AX offers maximum precision in a broad range of applications.

■ **0.5" angle accuracy**
■ **Sub-millimeter EDM**

- Sub-millimeter 0.5mm + 1ppm accuracy using reflective sheets within the range of 200m (650ft.).
- 0.8mm + 1ppm precision with standard prisms up to 3,500m (11,480ft.).
- Reflectorless measurement can be performed with 1mm + 1ppm precision up to 100m (320ft.).
- 0.01mm ultra-fine distance resolution for industrial measurement applications.

NET05AX/NET1AX New Features

- 1” auto-pointing accuracy with a standard prism.
- Enlarged 3.7 inch LCD with automatic brightness control.
- **Reflector Prescan*** can be used to quickly locate target positions, dramatically reducing initial setup time for structural monitoring.
- **Rapid 2D Monitoring*** enables fast recognition of vertical and horizontal movements of targets for real-time subsidence monitoring and alarming applications.

* Available when operating the NET via command operation from an external PC or other devices.

NET1AX
Automated 3D Station

The NET1AX incorporates longer range EDM and a laser beam emitter option designed for tunnelling and general construction applications.

■ **1" angle accuracy**
■ **Longer-range EDM**

- 1mm + 1ppm precision up to 300m (980ft.) range with reflective sheets.
- Extended 400m (1,310ft.) reflectorless range with 2mm + 1ppm accuracy.
- The LSP1 optional laser beam emitter can be built into the telescope. The bright laser beam can be utilized for automatic profile projection on tunnel faces as well as various setting out tasks in underground constructions. Narrow parallel beam reaches up to 700m (2,300ft.).

NET05AX/NET1AX Common Features

- Specialized Auto-Pointing algorithm enhances reliability of periodic monitoring with predetermined prisms.
- Constantly tracks a moving prism up to 90km/h at a distance of 100m (56mph at 320ft.).
- Built-in target illumination for use in dim lighting conditions.
- Robust IP64 dust/water protection.
- Long-range *Bluetooth* module available as an option.

Bluetooth®

Auto Tracking · Auto Pointing · Reflectorless · Sheet Target · OS WIN-CE · CF Card · USB · IP64

NET05AX

NET05X
3D Station

Equipped with a variety of innovative features, the NET05X provides ideal solutions for the most demanding surveying and measurement tasks that require the highest in precision.

- 0.5" angle accuracy.
- Sub-millimeter EDM with 0.5mm + 1ppm precision with reflective sheets.
- Windows CE.
- IP65 dust/water protection.
- Long-range *Bluetooth* module option.
- An optional Remote Trigger DLC1 enables wireless operation.

Reflectorless · Sheet Target · OS WIN-CE · CF Card · USB · IP65

Bluetooth®

DLC1

NET05X

Application Software for MONMOS

Contact your local SOKKIA representative for details.

		NET05AX	NET05X	NET1AX
Angle Display resolutions (Selectable)		0.1" / 0.5", 0.00002 / 0.0001gon, 0.0005 / 0.002mil		
Angle Accuracy (ISO 12857-2:1997)		0.5", 0.15mgon, 0.0025mil		1" / 0.3mgon / 0.005mil
Measuring range	With reflective sheet target	1.3 to 200m (4.3 to 650ft.)		1.3 to 300m (4.3 to 980ft.)
	Reflectorless*1	0.5 to 100m (1.6 to 320ft.)	0.3 to 100m (1.0 to 320ft.)	0.5 to 400m (1.6 to 1,310ft.)
	With 1 AP Prism	1.3 to 3,500m (4.3 to 11,480ft.)		
Minimum distance resolution (selectable)	Fine mode	0.00001m (0.01mm) 0.0001ft., 1/64in.		0.0001m (0.1mm) 0.001ft., 1/16in.
Distance Accuracy (ISO17123-4:2001)	Reflective sheet target	(0.5 + 1ppm x D)mm		(1+1ppm x D)mm
	Reflectorless*1	(1 + 1ppm x D)mm		(2+1ppm x D)mm
	With Prism	(0.8 + 1ppm x D)mm		(1 + 1ppm x D)mm
Auto-Pointing range	With 1 AP prism	2 to 1,000m (6.6 to 3,280ft.)	–	2 to 1,000m (6.6 to 3,280ft.)
	With reflective sheet (RS50N-R)	5 to 50m (16.4 to 160ft.)	–	5 to 50m (16.4 to 160ft.)
Auto-Tracking range	With ATP1(S) 360° prism	2 to 600m (6.6 to 1,970ft.)	–	2 to 600m (6.6 to 1,970ft.)
Auto-Pointing Accuracy*2	With Prism	1"(1mm@200m)	–	1"(1mm@200m)
	With reflective sheet	1mm@50m	–	1mm@50m

*1 With Kodak Gray Card white side (90% reflective).
*2 Auto-pointing accuracy is verified using the methods specified by the ISO 17123-3.

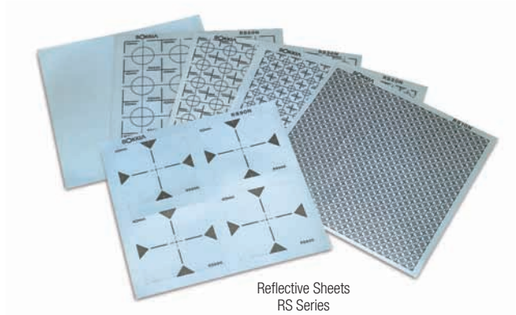
Targets for MONMOS

The industry's widest variety of reflective targets ensures full functionality of the MONMOS 3D Measuring System.

Reflective Sheets RS Series

Self-adhesive sheets can be directly attached to the objects to be measured.

- Choose from various sizes according to measuring distance.
- "T" type sheets feature 0.3mm thin cross lines for higher sighting accuracy.
- The unique "Half" type targets provide further measurement flexibility.



Reflective Sheets
RS Series

Half Type Reflective Sheets

	RS20H-R	RS30H-R	RS50H-R	RS90H-R
Size (mm)	10×20	15×30	25×50	45×90
Number of targets per sheet	200	98	32	8
Cross-line thickness	0.5mm			

Reflective Sheets

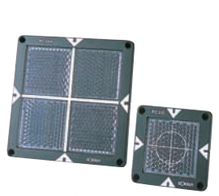
	RS00-R	RS10N-R	RS15N-R	RS20N-R	RS30N-R	RS50N-R	RS70N-R	RS90N-R	RS05T-R	RS10T-R	RS15T-R	RS20T-R	RS30T-R
Size (mm)	230×230	10×10	15×15	20×20	30×30	50×50	70×70	90×90	5×5	10×10	15×15	20×20	30×30
Number of targets per sheet	1	441	196	100	49	16	9	4	1600	441	196	100	49
Cross-line thickness	Plain	0.5mm							0.3mm				

Note: NET1200 can also adopt the "K" type targets for normal total stations.

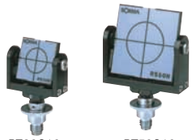
Specialized Targets

- Plastic Targets for long-range measurement.
- Rotary Targets provide easy connection of coordinate systems when instrument position is shifted.
- 2-point Target for hidden measurement points, Detachable Anchor Grip Type Targets, and more.

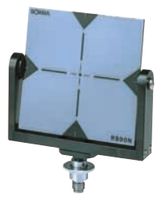
Consult your local SOKKIA agent for further details.



RC100 RC50



RT30G10 RT50G10

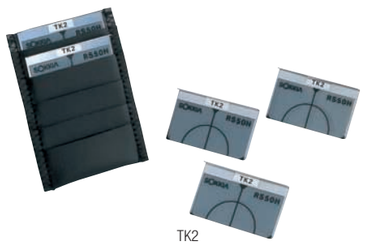


RT90G10

RT50M RT90M

RT1A

2RT310A



TK2

	CPS12	KUS1	RC50	RC100	RT1A	RT30G10	RT50G10	RT90G10	RT50M	RT90M	2RT310A	TK1	TK2
Product name	High-Precision Prism	Magnet Block	Plastic Type Targets		High-Precision Target	Anchor Grip Type Rotary Targets w/10mm male screws			Magnetic Type Rotary Targets		Two-Point Target	Corner Half Target	Surface Half Target
Target size and/or configuration	w/tribrach	6 pcs.	50×50mm	100×100mm	90x90mm w/tribrach	30×30mm	50×50mm	90×90mm	50×50mm	90×90mm	w/magnet arm	3pcs., 25x50mm w/case	5pcs., 25x50mm, w/case

Theodolites

DT240/DT540/DT740/DT940/ DT540L/DT740L/DT940L

Digital Theodolites

Quality, Performance, and Affordability that Ensure Maximum Profitability

- Superior Performance and Durability
  All models feature superior optics, mechanics, advanced absolute encoder systems, proven tilt compensators, and the industry's highest IP66 protection grade.
- Power-Saving Technology Saves Battery Costs
  Four AA alkaline batteries provide extra-long operating time from 100 to 170 hours, saving costs for replacement batteries. The DT Series instruments operate for two to five weeks without changing batteries*.

* When used for seven hours a day, five days a week, excluding the use of laser pointers.

- Laser Pointer to Increase Construction Work Efficiency
  (Laser models) (The laser models incorporate built-in coaxial laser pointers that maximize construction work efficiency.
- The applications include:

- Layout (Setting-Out)
- Horizontal/Vertical Alignment
- Leveling
- Grading
- Squaring

DT540L

DT240

DT940

IP66

		DT240	DT540	DT740	DT940	DT540L	DT740L	DT940L
		Standard Model				Laser Model		
Laser visible range	Daylight / Indoor	–				50m (160ft.) / 200m (660ft.)		
Telescope Magnification		30x			26x	30x		26x
Display resolutions (selectable)		1" / 5" 0.2 / 1mgon		5" / 10" 1 / 2mgon	10" / 20" 2 / 5mgon	1" / 5" 0.2 / 1mgon	5" / 10" 1 / 2mgon	10" / 20" 2 / 5mgon
Angle Accuracy		2"	5"	7"	9"	5"	7"	9"
Automatic compensator	Working range	±3'(±55mgon)		–	–	±3'(±55mgon)	–	–
Control panel layout		On both faces			On single face	On both faces		On single face
Weight w/batteries		4.1kg (9.0lb.)			3.5kg (7.7lb.)	4.2 kg (9.3lb.)		3.6kg (7.9lb.)
Battery		LR6/AA batteries x 4				LR6/AA batteries x 4		
Operating time with alkaline batteries (approximate)	Theodolite only	100hours	140hours	150hours	170hours	140hours	150hours	170hours
	Laser only	–				80hours		
	Theodolite + laser	–				45hours		

SDL1X

Digital Level

0.2mm Precision
Auto Focus

The SDL1X is designed to achieve the highest precision and productivity in leveling and height measurement applications. From Intelligent Auto Focus to wireless operation, a number of innovative technologies are implemented for unmatched reliability. The SDL1X sets the ultimate benchmark for the precision digital levels.

Saving Measurement Time by up to 40%

- The combination of advanced “Auto Focus” and “View Finder” reduce the total measurement time by up to 40% compared to manual focus digital levels.

Intelligent Auto Focus

- The SDL1X automatically focuses exclusively on the RAB-Code staff, eliminating false focusing on undesirable objects.
- Auto Focus eliminates the incomplete focusing that often causes inaccurate measurement with digital levels.
- Seamless switching between Auto Focus and manual focusing.

Measurement and Recording Programs

- Onboard software supports height difference measurement and data recording in the following procedures:
  BF, BFFB, BBFF, BFBF, aBF, aBFFB, aFBBF
  (B: Backsight, F: Foresight, a: alternating)
- Measurement tolerance can be set in each route for on-site accuracy checks.

World's Highest 0.2mm Precision

- The SDL1X achieves the highest in precision when combined with the New Super-Invar RAB-Code Staff BIS30A that boasts the industry's lowest linear expansion coefficient ±0.1ppm/°C.
- Ideal for first-order leveling as well as sub-millimeter height and subsidence measurement applications.

Eight innovative features never before available in the industry:*

1. 0.2mm precision (ISO17123-2)
2. Auto Focus for high-end digital level
3. View Finder for quick sighting
4. Remote Trigger for wireless operation
5. Dual-axis Tilt Sensor that ensures precision
6. SD card slot for data storage
7. 100m (320ft.) *Bluetooth* wireless communication
8. BIS30A staff with ±0.1ppm/°C linear expansion coefficient

* As of July 1, 2012

Height accuracy*1 (with RAB-Code staffs)	0.2mm (0.008in.)*2 (with New Super-Invar BIS30A) 0.3mm (0.012in.) (with Invar BIS20/30) 1.0mm (0.04in.) (with Fiberglass BGS40/50/50G3)
Distance accuracy (with RAB-Code staffs)	Up to 10m (33ft.) : Within ± 10mm (± 0.4in.), 10 to 50m (33 to 160ft.) : Within ± 0.1% x D (D=measuring distance)
Measuring range (with RAB-Code staffs)	1.6 to 100m (5.3 to 328ft.)
Minimum display (with RAB-Code staffs)	Height : 0.00001 / 0.0001 / 0.001m (0.0001 / 0.001 / 0.01ft.) Distance: 0.001 / 0.01 / 0.1m (0.01 / 0.1 / 1ft.)
Measuring time	Single mode: < 2.5s, Rapid-repeat: < 1s
Auto Focus Range	1.6 to 100m (5.3 to 328ft.)
Telescope magnification	32x
Compensator	Type: Pendulum compensator with magnetic damping system, Working Range: ± 12'
Horizontal circle	Graduation: 1º (1gon)
Data storage	10,000 points
Weight w/battery	3.5kg (7.7 lb.)

IP54

DLC1 SDL1X

*1 ISO 17123-2 (Standard deviation for 1km double-run leveling.)
*2 Conditions for the highest accuracy: Low level of atmospheric turbulence, stable ambient temperature, no direct sunlight on instrument and staff.

RAB-Code Staffs

The RAB-Code is one of the Sokkia's breakthrough technologies. Since its first introduction in 1998, the RAB-Code technology has been providing exceptional reliability in a wide variety of environmental conditions. Whether it's sunny or rainy, hot or cold, you can take measurement with maximum confidence.

BIS30A New Super-Invar Staff

- The BIS30A boasts the industry's lowest linear expansion coefficient of ±0.1ppm/°C.
- Its expansion/shrinkage value is less than 1/10 of ordinary invar staffs in the market today.
- The BIS30A ensures the world's highest leveling precision in combination with the SDL1X digital level.

BIS30A

BIS30/20 Invar Staffs

- 1ppm/°C linear expansion.
- Provides 0.3mm precision with the SDL1X and 0.6mm with SDL30.

BGS Fiberglass Staffs

- Standard for the popular SDL30 and SDL50 models.

BAS/BRS Aluminum Staffs

- Affordable and lightweight staffs.

Material	Model	Length	Section	Weight	Reverse side graduation
New Super-Invar	BIS30A	3m (9.84ft.)	1	5.5kg (12.1lb.)	–
Invar	BIS20	2m (6.56ft.)	1	4.3kg (9.5lb.)	–
	BIS30	3m (9.84ft.)	1	5.5kg (12.1lb.)	–
Fiberglass	BGS40	4m (13.12ft.)	3	2.4kg (5.3lb.)	Metric
	BGS50	5m (16.40ft.)	4	3.0kg (6.6lb.)	Metric
	BGS50G3	5m (16.40ft.)	4	3.2kg (7.1lb.)	feet/10th/100th
Aluminum	BAS55	5m (16.40ft.)	5	1.9kg (4.2lb.)	Metric

SDL30/SDL50

Digital Levels

Simply focus on the RAB-Code staff and press a button. The measurement results of both height and distance are displayed on the screen in 3 seconds. The SDL30 and SDL50 digital levels minimize human error and maximize the ease of leveling work, allowing an increased productivity.

SDL30

SDL50

IPX4

- The SDL30/SDL50 automatically calculate height difference and elevation.
- Setting-out for cut/fill can be easily performed.
- Internal memory stores 2,000 points of data in 20 job files.
- Measured data can be exported in CSV format using “SDL TOOL” software.
- The innovative "Wave-and-Read" technology provides automatic detection of the least value of staff reading while the staff is waved back and forth.

Wave-and-Read

SDL30

- A high performance digital level with 0.6mm precision using Invar RAB-Code staffs.
- 1.0mm accuracy with using standard fiberglass RAB-Code staffs.

SDL50

- A digital level with 1.5mm height precision.
- Provides convenience and functionality of digital technology at an affordable cost.

	SDL30	SDL50
Height accuracy* (with RAB-Code staves)	0.4mm (0.016in.) (with Invar BIS30A), 0.6mm (0.03in.) (with Invar BIS20/30), 1.0mm (0.04in.) (with Fiberglass BGS40/50/50G3)	0.6mm (0.024in.) (with Invar BIS30A), 1.5mm (0.06in.) (with Fiberglass BGS40/50/50G3)
Distance accuracy (with RAB-Code staves)	Up to 10m (33ft.) : Within ± 10mm (± 0.4in.), 10 to 50m (33 to 160ft.) : Within ± 0.1% x D (D=measuring distance)	
Measuring range (with RAB-Code staves)	1.6 to 100m (5.3 to 320ft.)	
Minimum display (Single, Repeat, Average)	Height : 0.0001m / 0.001m, 0.001ft. / 0.01ft. or 1/8in., Distance: 0.01m (0.1ft. or 1in.)	
Measuring time	Single mode: < 3s, Tracking: < 1s	
Telescope magnification	32x	28x
Compensator	Type: Pendulum compensator with magnetic damping system, Working Range: ± 15'	
Horizontal circle	Graduation: 1º (1gon)	
Data storage	2,000 points in max. 20 job files, (Job name user-definable)	
Weight w/battery	2.4kg (5.3lb.)	

* ISO17123-2 (Standard deviation for 1km double-run leveling.)

B20/B30/B40

Automatic Levels

SOKKIA provides a wide range of automatic levels to suit your specific needs. All models incorporate exclusively designed precision compensators that employ a magnetic damping system for outstanding accuracy and dependability.
IPX6 compliant water resistant.

B20

B30

B40

IPX6

		B20	B30	B40
Telescope	Objective aperture	42mm (1.7in.)	36mm (1.4in.)	32mm (1.3in.)
	Magnification	32x	28x	24x
	Minimum focus	0.2m (7.9in.) from end of telescope, 0.3m (1.0ft.) from instrument center		
Accuracy*	Without micrometer	0.7mm (0.03in.)	1.5mm (0.06in.)	2.0mm (0.08in.)
	With micrometer	0.5mm (0.02in.)	–	
Compensator	Type	4 wire pendulum compensator with magnetic damping system		
	Working range	±15'		
Horizontal circle graduation		1º (1gon)		
Water protection		IPX6 (IEC60529)		
Weight		1.85kg (4.1lb.)	1.7kg (3.7lb.)	

* Standard deviation for 1km double-run leveling.

GS1

Super Invar Staff

The GS1 is specially designed for the most precise leveling tasks. GS1's thermal expansion is theoretically "zero".