

SURVEYING INSTRUMENTS

SOKKIA™

SDR31

**ELECTRONIC FIELD BOOKS
VERSION 4.2**



OUTSTANDING VALUE AND FUNCTIONALITY

from The World Leader in Data Collection

THE SDR31 ELECTRONIC FIELD BOOKS COMBINE FUNCTIONALITY AND AFFORDABILITY

The Sokkia SDR31 Electronic Field Books offer the features and functions you want at a price you'll find very appealing.

The lightweight SDR31 Electronic Field Books are ergonomically designed for ease of use. The side "read" key starts your total station, records your measurement and assigns it a point identification. Stored data can be easily recalled and used for calculations in the field or electronically transferred to a computer, plotter, serial printer or battery-operated field printer for faster generation of hard copy and reduced chance of error.

Transfer Data to and from the Office

SDR31 Electronic Field Books provide a vital link to and from the office. Data collection and management is fast and simple because the software is designed to make it that way. Measurements and other vital data can be transferred, analyzed, edited, designed and sent back to the field for error-free stake-out.

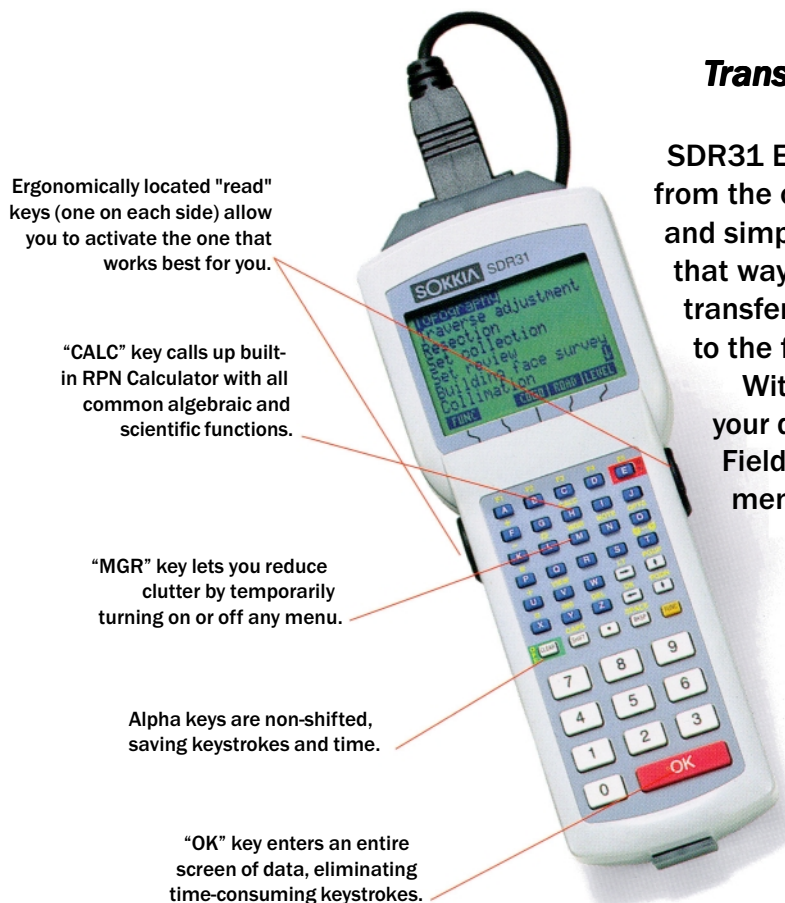
With the SDR31, you can pick the unit that best fits your data storage requirements. SDR31 Electronic Field Books are available with 640K and 1Mb memory capacities.

THREE VERSATILE SOFTWARE OPTIONS AVAILABLE

The *Standard* software option offers basic functionality. It's simple and easy to use, perfect for someone moving up from a calculator-type "data collector."

The *Standard Enhanced* software option offers more sophisticated functionality than the *Standard*, but without the design functions of the *Expert*.

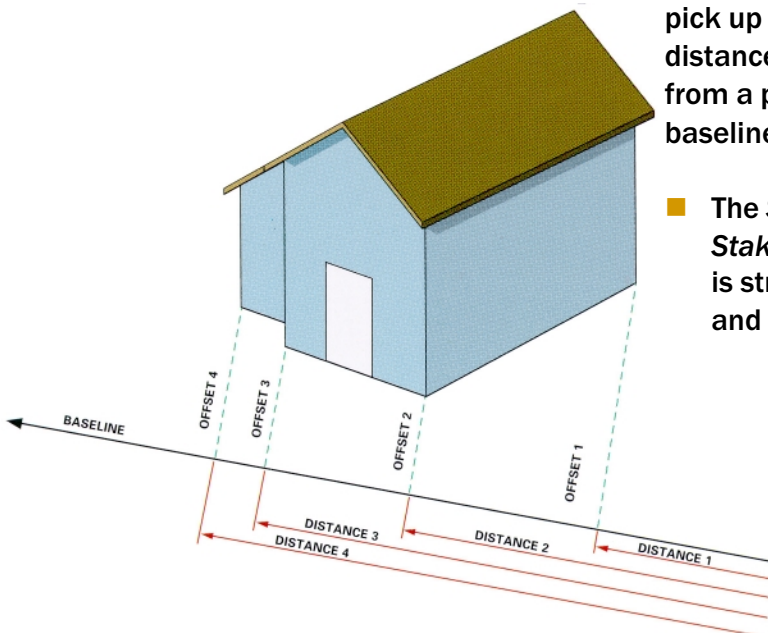
The *Expert* software option is the top of the line, designed for power users such as engineers, surveyors and others requiring greater versatility and variety of functions - including powerful roading capabilities and the optional Professional Positioning solution for calculating the coordinates of an unknown station.

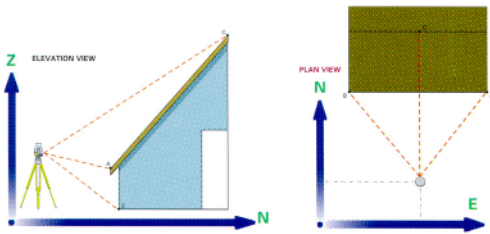
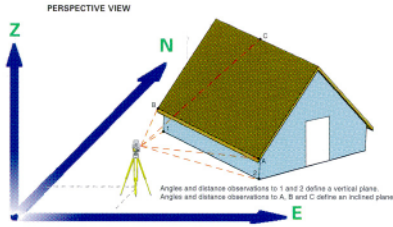


ON-BOARD SOFTWARE MAKES YOUR JOB EASIER AND MORE ACCURATE

Streamline your data collection and management with these SDR31 software routines:

- The *Configuration Manager* lets you reduce clutter by temporarily turning off menus not needed for your job.
- The *Expert PROPOS* software option provides the *Professional Positioning* program to calculate the coordinates of an unknown station based on observations to known target points. Advanced adjustment and mathematical techniques allow for the detection of observation errors or blunders.
- The SDR31 supports several “setting out” methods of staking out points on lines, arcs and parallel offsets.
- With the *Taping from Baseline* feature, you can pick up detail by distance and offset from a pre-defined baseline.
- The *Slope Staking* function is streamlined and easy.
- The *Traverse Adjustment* feature can be used with traverse data collected in either *Set Collection* or *Topography*. 3-D traverse data can be collected in any manner, including non-consecutive set-ups. The SDR31 can then do some of the thinking for you, like calculating precision and errors of closure, adjust traverse and angle or elevation adjustment.
- The *Topography* program helps increase data validity by automatically calculating and displaying the difference in observed positions. When a point is observed more than once, you may choose to replace the old observation, store the new observation under a different point number, or average the two observations for a stronger result. Differences are keyed by user defined tolerance settings.
- The *Control Job* feature lets you mark a job which contains control point information. If you try to recall the coordinates of a control point and the point isn't in the current job file, the control job file is accessed for optimum convenience.





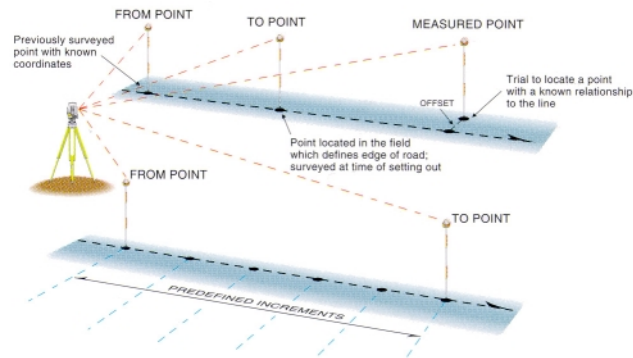
■ The *Building Face Survey* feature allows for the coordination of points in a vertical plane using angle-only observations; or, observe three points to solve an inclined plane. Recessed and protruding points may also be surveyed.

■ *Roading* is accomplished by loading or keying in the horizontal and vertical alignment and template information into the SDR31. When you tell it what stationing and offset or coordinate point you wish to set out, the SDR31 will give you angles and distances to set out that point in 3-D. Horizontal and vertical offsets and checking of roads under construction may also be easily accomplished with this program.

- *String Road Setting Out* lets you load design data from a road design package (such as Sokkia *ROADING* Software) and set them out by name of string, station and offset.

- *Superelevation* parameters are user defined. Left and right definitions and calculations are independent of each other.

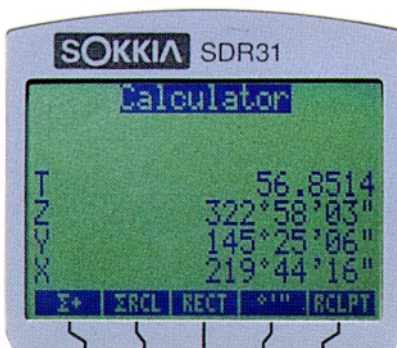
■ *COGO* features like setting out coordinates, resection and inverse are included in both models. The SDR31 interpolates elevations linearly and allows you to check pipe grades and alignments. Plus, it's easy to subdivide lines and arcs or calculate point projections.



■ The *Leveling* program eliminates transcription and math errors; no more manual note taking. Can be used in manual mode or with an electronic level.

■ *Reciprocal Vertical Calculations* improves the accuracy of your elevations.

LIGHTWEIGHT, DEPENDABLE POWER IN THE PALM OF YOUR HAND



New, Built-In Calculator Function

The SDR31 includes an RPN calculator, which is easily called up from within any SDR31 program. The calculator supports all the common algebraic and scientific functions, including trigonometric functions and Σ memories. Displays and performs calculations using angles in degrees-minutes-seconds mode, including display of symbols. The X, Y and T registers are always visible on the screen, as are the Σ registers (if in use). Best of all, values, including coordinate pairs, may be passed back and forth between the calculator and any SDR31 program.

SDR31 Offers Time-Saving Features

- Transferring data is quick and easy with COMMS, a Windows-based communication software. COMMS also converts SDR files into DXF, ICS, SDMS and MOSS formats, as well as converting MOSS files to SDR files which can then be transferred to an SDR instrument.
- *Set Collection* lets you structure your traverse and network data collection procedures. A sophisticated set review mechanism allows you to scan the accumulated data with as much summary or detail as you need. Differences and standard deviations are displayed. You can mark a "bad" set and recalculate. It may be re-marked as "good" and the original calculations restored.
- Intersection calculations are supported by three methods: bearing-bearing, bearing-distance, and distance-distance.
- The *Helmert Transformation* option allows you to rotate, translate and scale a survey data set while it's constrained to known points. This process uses a least-squares technique. Or, use the simple *Linear Transformation* for shift in X, Y, Z and rotation.
- All data are stored as raw observations for instant recall. A single "softkey" function lets you view stored observations in the form of coordinates or reduced data.
- Data capacity for 4-part observations ranges from 2,400 to 9,000 points depending on the memory and software options you choose.

OPERATING SOFTWARE

Functionality comparison of Standard, Standard Enhanced and Expert software options.

FUNC		SURV		COGO		ROAD		LEVEL	
Options	S N E	Options	S N E	Options	S N E	Options	S N E	Options	S N E
Job	■ ■ ■	Topography	■ ■ ■	Set Out Coords	■ ■ ■	Select Road	■	Leveling	■
Instrument	■ ■ ■	Traverse Adjustment	■ ■	Set Out line	■ ■ ■	Set Out Road	■	Report/Adjust	■
Job Settings	■ ■ ■	Resection	■ ■ ■	Set Out Arc	■ ■	Set Out Road Surface	■	Keyboard Input	■
Configure Reading	■ ■ ■	Set Collection	■ ■	Resection	■ ■ ■	Road Topo	■		
Tolerances	■ ■ ■	Set Review	■ ■	Prof. Positioning**	■	Cross-Section Survey	■ ■ ■		
Units	■ ■ ■	Building Face Survey	■	Inverse	■ ■ ■	Define Road	■		
Communications	■ ■ ■	Collimation	■ ■	Areas	■ ■ ■	Review Road	■		
Date & Time	■ ■ ■	Remote Elevation	■ ■ ■	Intersections	■ ■ ■	Define Template	■		
Job Deletion	■ ■ ■	Keyboard Input	■ ■ ■	Point Projection	■	Review Template	■		
Calculator	■ ■ ■			Taping From Baseline	■				
Feature Code List	■ ■ ■			Transformation	■				
Hardware	■ ■ ■			Linear	■				
Upgrade	■ ■ ■			Helmert	■				
User Program	■			Keyboard Input	■ ■ ■				
Language	■								

* S - Standard; N - Standard Enhanced; E - Expert

Product design and specifications subject to change without notice or obligation.

** Two versions of the Expert software are available: Expert and Expert with Professional Positioning. The latter version replaces Resection with Professional Positioning and does not include leveling functions.

SDR and Electronic Field Book are trademarks of Sokkia.
AutoCAD is a trademark of AutoCAD, Inc.
Windows is a trademark of Microsoft Corporation.

SOKKIA CO.,LTD.

1-1, TOMIGAYA I-CHOME, SHIBUYA-KU, TOKYO, 151 JAPAN
PHONE +81-3-3465 5211 FAX +81-3-346-5203
INTERNATIONAL DEPT. PHONE +81-3-346-5201 FAX +81-3-3465-5202



Sokkia is a sponsor
of the
International Federation
of Surveyors.

