

# Survey Pro Software



Field Proven Data Collection  
with Survey Pro Software



FLEXIBLE  
RELIABLE  
PRODUCTIVE



# SURVEY PRO

## Simplicity, Reliability, and Security

Spectra Precision® Survey Pro™ software gives you a complete set of tools for all your survey projects. It's fast, easy to use and reliable, so you can work more productively in the field. Use Survey Pro on a range of field proven Spectra Precision rugged data collectors.

## Spectra Precision Ranger 3 Data Collector

The third generation Spectra Precision® Ranger™ Data Collector offers a large, bright touch-screen, full alpha-numeric, easy to operate, keypad, and is packed with the features surveyors depend on. Built rugged, it meets rigorous MIL-STD-810G military standard for drops, vibration, humidity and extreme temperatures, and with an IP67 rating, it's designed to keep your investment and your data safe. The Ranger 3 features Survey Pro and Windows Mobile 6.5, with the capability to run the mobile version of all your favorite programs including Excel and Outlook. Integrated Bluetooth capabilities let you connect to field equipment without cables. The Ranger 3 comes standard with 8 GB of onboard memory for storing data. Move your data fast and easily using a SDHC card, Bluetooth, USB cable, or USB memory stick, Wi-Fi, or GSM WWAN modem. Choose from four different models of the Ranger with the features that best suit your needs and your budget. They're all power-packed, so there's no wrong choice.

## Spectra Precision Nomad 900 Data Collector

The Spectra Precision® Nomad® Data Collector, packed with functionality, is an extremely powerful and full-featured rugged data collector. In addition to meeting rigorous military standards the Nomad uses a high speed 806 MHz processor, a longlife, 5200 mAh lithium-ion battery, and integrated wireless capabilities like GPS, Wi-Fi 802.11g, and Bluetooth for power and flexibility. The Nomad features a high resolution, sunlight-visible full VGA display that shows graphics and maps in crisp detail plus a backlit numeric keypad. The Nomad is available in a range of solutions from the powerful 900XC, the traditional 900LD and the economical 900B, each packed with features and benefits to suit your specific needs.



## Spectra Precision Ranger 3 Data Collector



MODELS OVERVIEW	3XR	3RC	3XC	3L
<b>PROCESSOR/SPEED</b>				
ARM® Cortex™ – A8	800 Mhz	800 Mhz	800 Mhz	800 Mhz
<b>MEMORY</b>				
SDRAM	256 MB	256 MB	256 MB	256 MB
Data Storage (On-board Flash)	8 GB	8 GB	8 GB	8 GB
<b>WIRELESS</b>				
Integrated Bluetooth	Standard	Standard	Standard	Standard
Wi-Fi	Standard	Standard	Standard	Standard
3G GSM WWAN	Standard	N/A	Standard	N/A
2.4 GHz robotic radio Module	Standard	Standard	N/A	N/A
<b>FEATURES</b>				
Compass	Standard	Standard	Standard	Standard
Accelerometer	Standard	Standard	Standard	Standard
5MP Camera with LED flash	Standard	Standard	Standard	N/A
Navigation grade GPS	Standard	Standard	Standard	Standard

## Spectra Precision Nomad 900 Data Collector



MODELS OVERVIEW	900XC	900LD	900B
<b>PROCESSOR/SPEED</b>			
Marvell PXA320 XScale	806 Mhz	806 Mhz	806 Mhz
<b>MEMORY</b>			
DDR SDRAM	128 MB	128 MB	128 MB
Data Storage (On-board Flash)	2 GB	1 GB	512 MB
<b>MEMORY</b>			
Integrated Card Slots	SD	SD	SD/CF
Integrated Bluetooth	Standard	Standard	Standard
Integrated GPS, Navigation Grade	Standard	Standard	N/A
Integrated Wi-Fi 802.11g	Standard	Standard	N/A
Integrated WWAN	Standard	N/A	N/A
Integrated Camera	Standard	N/A	N/A



## All the tools you need to do the job right

Spectra Precision Survey Pro gives you comprehensive tools to collect, work with, and organize your survey data. Use it for traverse, sideshot, coordinate geometry, staking and adjustment functions. Survey Pro provides complete control of your survey and your data. Whatever type of surveying you do, you can do it with Survey Pro.

## There's Nothing Better

Full featured data collection, calculation, mapping, data storage, and data management, all in one package. Survey Pro works with GPS/GNSS, Robotic instruments, mechanical instruments, and even manually. Data can be combined seamlessly and processed through the office software without hassles. Based on over 20 years of survey software development experience, the latest version of Survey Pro now does even more to increase productivity, reduce errors, and ensure you can do your work the way it needs to be done.

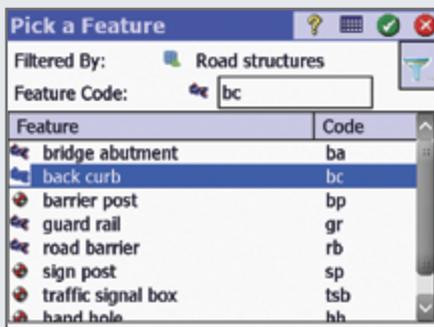


## Setup

Survey Pro setup routines are designed to get you working as soon as possible. Multiple instrument setup options using known points or resection means you can work the way you need to work. Results are conveniently displayed making it easy to check the setup. All setup data is stored and is easily reviewed and edited as necessary using the integrated data editor. If an instrument height is updated, all affected coordinates will also be updated. Survey Pro puts you in control.

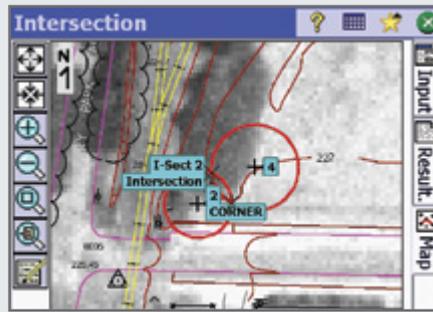
## GNSS Setup

Survey Pro provides two main methods of configuring a GNSS survey: Mapping Plane and Calibration. With these two methods, there is nearly infinite flexibility. Calibration allows you to use a local coordinate system, often set using total stations. This keeps everything aligned which makes you more productive. Survey Pro walks you through the process and provides check routines to ensure everything is spot on.



## Feature and Attribute collection

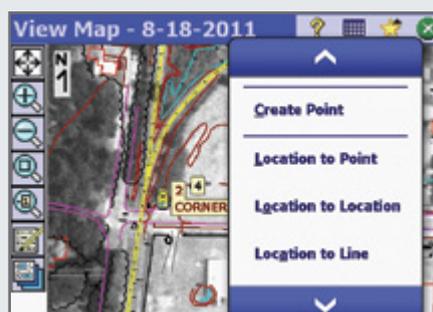
You can define features like "utility pole" and "water line" using feature codes in the field or in the office. Add features and attributes as you survey. Using line features, Survey Pro will automatically draw lines in real time making it easy to verify your work before leaving the job site. Process and adjust the data in Spectra Precision Survey Office and export to common data formats when you are done.



## COGO, Inverse, and Curves

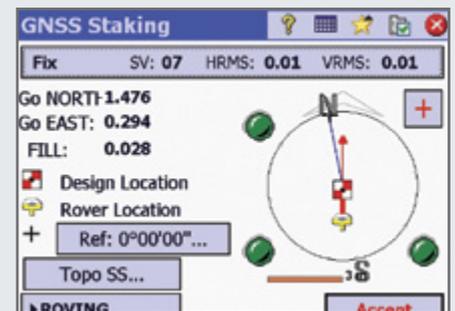
Survey Pro software provides powerful Coordinate Geometry (COGO), Inverse and Curve functions. Survey Pro offers a full suite of COGO functions, enabling you to easily perform calculations between a known and new point, compute offset, lines, alignments and points. Survey Pro inverse functions allow you to quickly inverse to points, lines, polylines, and alignments, making it easy to verify point locations and offsets from existing as staked features or linework created on the data collector.

The Survey Pro Curve menu contains powerful curve functions that compute and display all elements of horizontal circular curves, spirals or vertical parabolic curves. It then provides the most common methods to help you layout the curve in the field.



## Active Maps

Seeing your data graphically helps speed your work and ensures there are no mistakes. Survey Pro provides several exciting map features for just this reason. Active Maps provide a way to do calculations or initiate measurements right from the map views. Tap on a point to stake it. Tap two points to compute the inverse. Or, enter Survey Mode and collect points seeing them appear on the map as they are measured. Active Background Maps provide a method of importing DXF files that can be used for calculations or staking. Select a DXF line and offset points or stake it. You have full control of the DXF file layers; hide them, show them, or freeze them. See what you need to see, how you need to see it.



## Stakeout

Survey Pro provides tools to complete your stakeout tasks more efficiently. Using an active map view or interactive features, Survey Pro navigates you to the points you need to stake, when you need to stake them. Points are checked off as they are staked, preventing you from duplicating observations.

Survey Pro stores all measurement data and any as-built or as staked points that are collected. This data can then be used for cut sheet reports in the office either using Spectra Precision Survey Office or XML Style sheets. Stake DTM surfaces and use the data collected to compute volumes in the field. View the resultant DTM being staked in the field to determine where additional points might be needed. Survey Pro displays cut / fill information for any location on the DTM surface in real-time.



## Power Features

Survey Pro continually improves with capabilities that make your job easier, help you work more productively, and get the job done right. Some of the most recent feature enhancements include:

## Data Management Control

Flexibility in data collection with the ability to edit survey data to fix entry errors or blunders and immediately get updated coordinates. Change a rod height and see the change cascade through the file with our enhanced dynamic file viewer/editor.

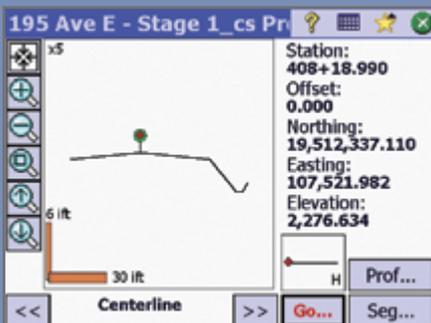
## Active DXF

Support staking with DXF files to enable data flow from design software to your field crews, improving efficiency on the road or construction site. Import a DXF file as a background map to select objects like lines and nodes for staking or calculations. Survey Pro also provides control over the layers you are viewing and what layers you can select objects from allowing you to see what you need to see.

## Optimized Workflow

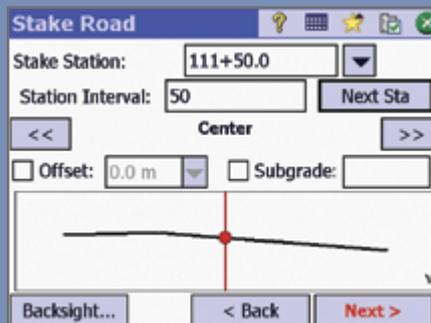
Survey Pro contains a user customizable Home screen enabling you to configure your favorite choice of field processes to expedite your daily workflow. Easily switch between functions by selecting the home screen and choosing your next action. Also use the graphical Active Survey map screen to speed your activities. For example, tap and hold to create new points, then select your points and switch to your graphical stakeout screen to complete the task.

When you choose Survey Pro, you get software built on more than 20 years of experience. You also get software that's continually enhanced thanks to input from surveyors in the field. Many of our people—including members of the Survey Pro development team—have worked as surveyors so we understand how a small change to an existing function can help you be more productive or make your job easier. That's why—and how—we continuously improve Survey Pro, along with all our hardware and software. So go ahead—tell us how we can make Survey Pro work even better for you — send an e-mail to [surveypro@spectraprecision.com](mailto:surveypro@spectraprecision.com)



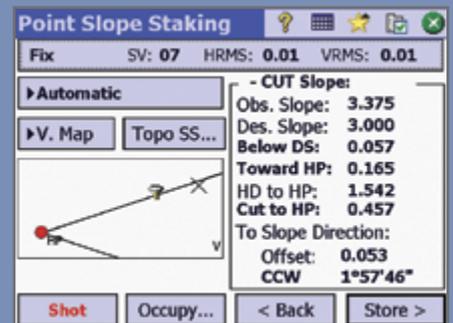
## Road Layout

Survey Pro uses road alignment data defined in the Survey Pro job file or directly from a LandXML file. Key in and modify road layout information, then stake the road in the field. Survey Pro makes defining a simple or complex road quick and easy by providing easy to follow menus that take you through the road definition and editing process.



## Road Stakeout

The road staking capabilities enable you to stake any part and even locate catch points. Once your road has been uploaded or keyed in, Survey Pro provides a comprehensive set of road stakeout tools and graphical views, depending upon which element of the road you are staking out. Quickly edit and view the road definition in the field using the road editor. Points can also be staked out to a predefined subgrade offset, depending upon the phase of the job you are working on.



## Slope Staking

Simply define a direction to use for the slope to extend, and define the desired slope to stake. Survey Pro displays all shots on a vertical realtime map display so you can see the profile, and quickly locate and stake the catch point.

**SURVEY STANDARD™** is a complete data collection package for surveyors. It contains a complete COGO suite as well as traverse, sideshot and staking routines.

**SURVEY PRO** shares all Survey Standard functions and adds advanced road layout routines, advanced staking routines, attribute collection, DTM routines and much more.

**SURVEY PRO GNSS** shares nearly all the Survey Pro functions, and it provides the capability to collect data from RTK GNSS receivers at centimeter-level accuracy. Survey Pro GNSS software is easy to use, reduces training and simplifies setups. It provides meaningful error messages if anything goes wrong. All staking functions are supported in the GNSS module too.

**SURVEY PRO ROBOTICS** shares all Survey Pro functions, works with all major brands of robotic total stations, and adds graphical staking screens.

**SURVEY PRO MAX™** is the ultimate field software. It integrates Survey Pro Robotics and Survey Pro GNSS functions, enabling you to use the same job files with both GNSS receivers and total stations.

# Survey Pro Software Functions

- Survey Standard
- ▲ Survey Pro
- ◆ Survey Pro Robotics
- Survey Pro GNSS
- ★ Survey Pro Max

TITLE BAR/TASK BAR/MENU				
Toggle collection mode (total station/GNSS)			■	★
Battery status indicator	●	▲	◆	■
Map access button	●	▲	◆	■
Editable quick picks	●	▲	◆	■
Home screen	●	▲	◆	■
Build your own custom menu	●	▲	◆	■
FILE				
Import/export	●	▲	◆	■
JOB, RAW <sup>1</sup> , TXT, CSV, LandXML, JobXML, CRS.	●	▲	◆	■
Import Control	●	▲	◆	■
Backup/Restore	●	▲	◆	■
JOB				
Edit points/polylines	●	▲	◆	■
Edit alignments		▲	◆	■
Auto linework (real time)		▲	◆	■
View/edit raw data	●	▲	◆	■
View DTM		▲	◆	■
Manage layers	●	▲	◆	■
Calculator	●	▲	◆	■
AU Conversions	●	▲	◆	■
SURVEY (CONVENTIONAL MODE)				
Backsight setup	●	▲	◆	■
Traverse/sideshot	●	▲	◆	■
Quick shot <sup>4</sup>	●	▲	◆	■
Repetition shots	●	▲	◆	■
Multiple sideshots	●	▲	◆	■
Distance/angle offset	●	▲	◆	■
Corner & 2 lines	●	▲	◆	■
Corner & angle	●	▲	◆	■
Corner & offset	●	▲	◆	■
Corner & plane	●	▲	◆	■
Shoot from 2 ends	●	▲	◆	■
Resection	●	▲	◆	■
Remote elevation	●	▲	◆	■
Check point	●	▲	◆	■
Bluetooth support (Recon)	●	▲	◆	■
Solar observation		▲	◆	■
Remote control			◆	■
Fine turning			◆	■
Tap to turn			◆	■
Surface Scan <sup>2</sup>		▲	◆	■

STAKEOUT				
Quick stake <sup>4</sup>	●	▲	◆	■
Cut/fill to design grade	●	▲	◆	■
Generate cut sheet data	●	▲	◆	■
Turn instrument to stake with 2-D and 3-D modes			◆	■
Remote stake from rod			◆	■
Stake points/list of points	●	▲	◆	■
Stake to line/polyline	●	▲	◆	■
Offset staking		▲	◆	■
Slope staking from line or point		▲	◆	■
Stake to line and offset	●	▲	◆	■
Stake to curve and offset	●	▲	◆	■
Stake to spiral and offset		▲	◆	■
Stake DTM		▲	◆	■
Define a location	●	▲	◆	■
Where is next point	●	▲	◆	■
Slope stake from a point		▲	◆	■
Station staking		▲	◆	■
INVERSE				
Multiple types	●	▲	◆	■
COGO				
Point in direction	●	▲	◆	■
Intersection	●	▲	◆	■
Offset line/points	●	▲	◆	■
Corner angle	●	▲	◆	■
Compute area	●	▲	◆	■
Triangle solutions	●	▲	◆	■
Map check	●	▲	◆	■
Predetermined area	●	▲	◆	■
HD/VD to/from SD/ZA	●	▲	◆	■
Station & offset		▲	◆	■
CURVE				
Curve solution	●	▲	◆	■
PI and tangents		▲	◆	■
3-point curve		▲	◆	■
Radius point	●	▲	◆	■
Tangent to circles		▲	◆	■
Curve layout	●	▲	◆	■
Traverse on a curve	●	▲	◆	■
Parabolic curve/layout	●	▲	◆	■
Straight grade	●	▲	◆	■
Spiral/spiral layout		▲	◆	■
Traverse on a spiral		▲	◆	■
ROADS				
Create/edit templates (cross-sections)		▲	◆	■
Create/edit alignments		▲	◆	■
Save alignment to file		▲	◆	■
Add super elevations to road		▲	◆	■
Add widenings to road		▲	◆	■
Road stakeout		▲	◆	■
Import LandXML Roads		▲	◆	■

ADJUST				
Scale/translate/rotate	●	▲	◆	■
Traverse adjust	●	▲	◆	■
MAP VIEWS				
Active Background maps				
DXF Layers	●	▲	◆	■
DXF Colors	●	▲	◆	■
Select objects for survey operations	●	▲	◆	■
Active Survey Map				
Collect points	●	▲	◆	■
Manage linework	●	▲	◆	■
Inverse point to point or line or location	●	▲	◆	■
Create Point	●	▲	◆	■
Stake to point or location	●	▲	◆	■
Show past results	●	▲	◆	■
Survey Setup display				
Occupy point	●	▲	◆	■
Backsight point	●	▲	◆	■
Base location	●	▲	◆	■
Rover location	●	▲	◆	■
Rod location	●	▲	◆	■
SURVEY (GNSS MODE)				
Cell phone/radio modem settings				★
GPS/GNSS status				★
Network connection manager				★
Base/rover setup (Smart Setup)				★
Control points				★
Collect point, features, offset				★
Projection setup/statistics				★
Remote elevation				★
Projection Calculator				★
Receiver file manager <sup>3</sup>				★
SETTINGS (GNSS MODE)				
Post process				★
Map Projection or Calibration (local transformation) modes				★
Adjust with projection and control update				★
All stakeout functions with GPS receiver				★

Please note: This chart is an abbreviated general guide to software functions. All specifications are subject to change without notice.

1. Export Only.
2. Requires motorized instrument.
3. For Spectra Precision and Trimble receivers.
4. Only available on the Nivo C, FOCUS 8 and FOCUS 30.

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