

Office Software  
Data Collection  
Instruments  
Survey & GIS  
Civil Engineering  
Construction  
Accident  
Reconstruction





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Carlson Software produces a complete suite of solutions for land development professionals, across the disciplines of data collection, surveying, engineering design and drafting. In addition, utilizing its expertise in data collection, Carlson also offers accident and crime reconstruction field and office software for law enforcement personnel or law consultants.

“ We at Carlson recognize the paramount importance of free choice to the professional consumer in the land industry. We are committed to providing consistent software interfaces across hardware and across disciplines. This is the mission of Carlson Software. ”

--R. Bruce Carlson  
 Founder and President  
 Carlson Software

Founded in 1983 and based in Maysville, Kentucky, U.S.A., Carlson has branch offices and local representatives around the world.



## Carlson Works for You

Carlson Software encourages a “positive feedback loop” from our customers ensuring that our annual software releases are full of customer-driven new features. We are grateful for our high rate of customer retention over our history and firmly believe in providing free technical support, which Carlson has done since the day of its founding.



*“With RoadNETwork [in Carlson Civil], you can grip/edit a centerline and have the whole thing seamlessly and dynamically update. That is the coolest thing I’ve experienced in the software.”*

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-- Christian Smith  
Beals & Associates  
Stratham, NH



*“Carlson, with their hardware and their software, as far as I’m concerned, they’re number one in the market. You just can’t beat them. I recommend it to everybody.”*

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-- John Hill  
President, CEO,  
Alphatec Surveyors LTD  
Chesapeake, VA



*“Biggest benefit I’ve seen from SurvPC is really the time management and just how compatible it is with multiple types of software, whether it’s a Carlson software, not a CAD software, or simply just Esri®. Because of being able to do so many different data file types, I can work in any of those and I don’t have to worry about how I am going to convert files.”*

---

-- Clay White  
GIS Coordinator,  
Berea Municipal Utilities  
Berea, KY



*“We started with SurvCE on the Carlson GPS receiver and expanded to Carlson Survey and then moved over to Carlson Construction for its estimating capabilities, 3D drawings and the ability to make 3D models for machine control. The more you get to know it, the more you can do it with it.”*

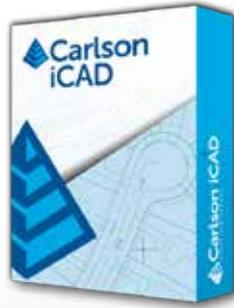
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-- Sean Roberts  
Construction Surveyor  
Van Etten/Blijdorp  
Vlaardingen,  
The Netherlands

## Carlson iCAD

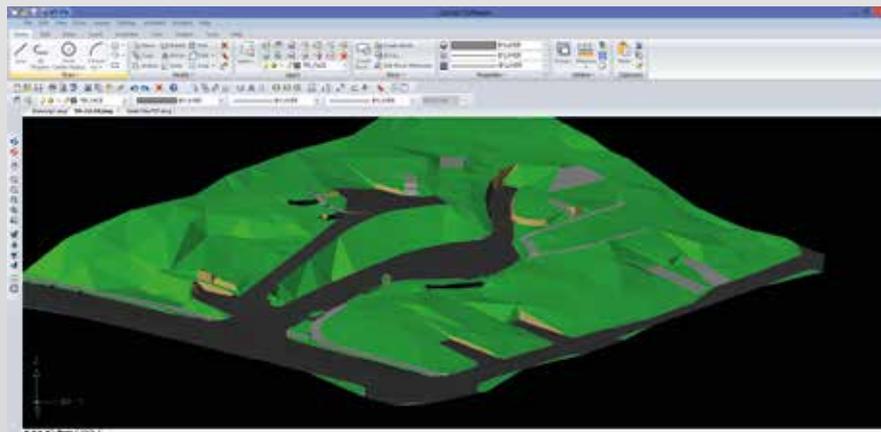
Simple but Powerful CAD solution

Carlson iCAD is an affordable CAD program that is .dwg file based and designed to fit into your production workflow. Carlson iCAD allows drafters to finish drawings and engineers to review drawings.



### Basic Features:

- 2D and 3D CAD package
- Based on .dwg, .dng file
- Built on IntelliCAD® 8.3 engine
- Carlson Software drafting and annotation tools
- Perpetual license
- Free tech support
- Open/Save .dwg, .dng and .dxf files: Supports 2017 and earlier formats
- Plot: Output to printers and PDF
- Google Earth: Import and Export KML/KMZ
- Civil 3D: Convert Civil 3D custom objects to standard CAD entities
- Xref: Manage external references
- Drawing Utilities: Functions include spell check and purge



## Carlson Survey

Surveyors' #1 Software Choice

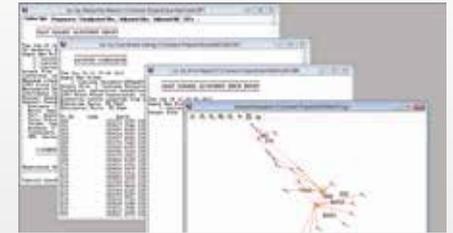
- Get full tool kit – everything from network least squares to surface modeling
- Work seamlessly between office and field
- Establish company-wide design styles
- Create GIS links & exchange Esri® data



### Choose your platform - Carlson Survey works on:

- AutoCAD® (sold separately)
- IntelliCAD® (built-in)

Or choose **Carlson Survey OEM** with built-in engine Powered with Autodesk® Technology.

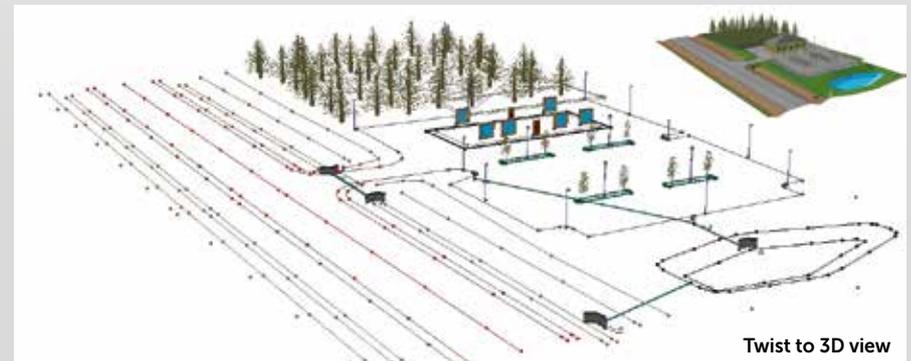


Least Squares Adjustments

### Get the Power of Carlson Field-to-Finish

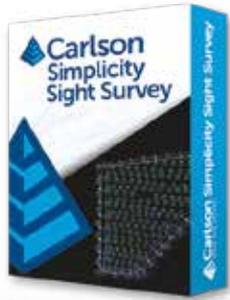
Carlson Survey together with Carlson's popular data collection software options, SurvCE, SurvPC, and Field, provide powerful, effective, and accurate "Field-to-Finish":

- Symbols, points and linework are drawn automatically in Carlson Survey
- Drawings in SurvCE, SurvPC, and Field process perfectly and easily in Carlson Survey



Twist to 3D view

# Carlson Simplicity Sight Survey



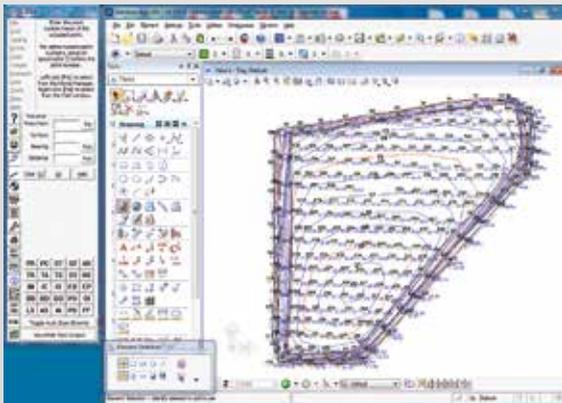
## Carlson commands, Microstation® platform

A Windows-based coordinate geometry program, Simplicity provides simplified methods for solving commonly encountered coordinate geometry and construction surveying problems.

Simplicity works with:

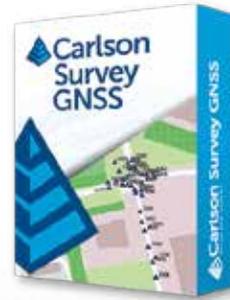
- AutoCAD®
- IntelliCAD®
- Microstation®

It can also run without a CAD application, giving its users ultimate flexibility in a COGO program and offering an economical choice to surveyors needing familiar commands, such as Field-to-Finish, Edit-Process Raw Data, and Network Least Squares.



Field-To-Finish and Contour output in Microstation V8i

# Carlson SurveyGNSS



## For all your Post-Processing needs

Designed for surveyors and positioning professionals, Carlson SurveyGNSS is a simple, yet powerful post-processing software that achieves high accuracy results for computing quality vectors and resultant positions.

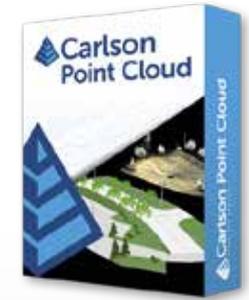
Key features include:

- Import GNSS observations from any GNSS receiver in RINEX and other proprietary formats
- Achieve high accuracy results in areas with limited or no real-time corrections
- Get intuitive user interface with tables, maps and graphs
- Interact efficiently with Carlson SurvCE, SurvPC and Carlson office software
- Do quality control of GNSS data before export to Survey or GIS software



Stop and Go rover points for topo survey

# Carlson Point Cloud



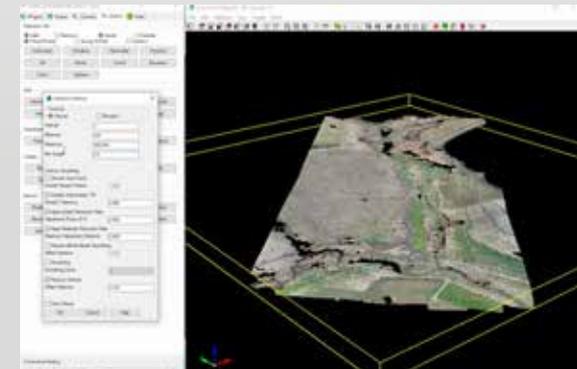
## Bring Point Cloud data to the world of CAD

A modular program that provides the ability to go from field scan to finished plat, Carlson Point Cloud delivers powerful automation for large data sets. View and process up to 1 billion points all with Carlson ease-of-use.

Key features include:

- Register scans to local coordinates, filter or decimate the points, and overlay raster images in 3D
- Snap to edges and code descriptions for automated field-to-finish processing of linework and symbols
- Create contours, profiles, sections, and breaklines from within the point cloud

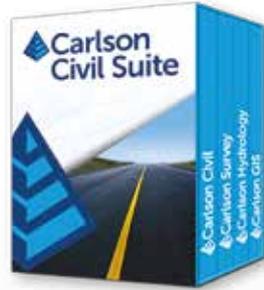
Lastly, all surface models, points, contours, breaklines, grid and profiles can be exported to CAD.



Read scan data from many instruments

# Carlson Civil Suite

## The Ultimate Civil Package



Get Fair Price, Full Featured CAD, and Free Support with Carlson Software’s Civil Suite, a powerful bundle made up of: Carlson Survey (see page 4), Carlson Civil, Carlson Hydrology, and Carlson GIS. These four civil-related modular programs, working together, provide the ultimate civil package that dramatically increases productivity while helping users create better designs.

All Carlson office software modules come with perpetual and maintenance licensing with Carlson customers allowed to own the software and to upgrade when they choose. They come with IntelliCAD® built-in, plus run on top of any AutoCAD®, Civil 3D®, or Map® from versions 2010 and up. Carlson has offered free support since the founding of the company. It’s what we’re based on – Carlson works for you!

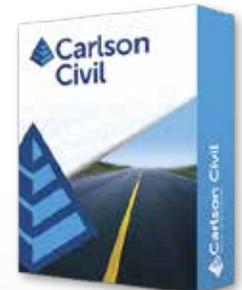
Fair Price

Full Featured CAD

Free Support

# Carlson Civil

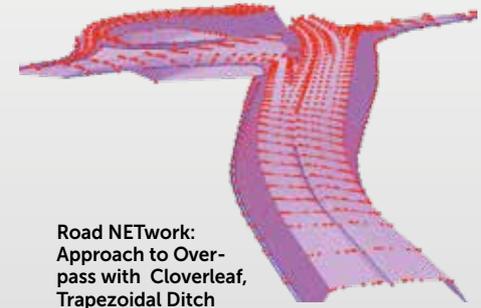
## The ‘Civil’ Choice



Carlson Civil provides the most robust automation and ease-of-use of any civil design solution available today, and it does dynamic updating without a single custom object. What might take days with other civil software takes just hours, or even minutes, with the powerful, intuitive Carlson Civil:

- **Road NETWORK.** Build all roads, intersections and cul- de-sacs in 2D and 3D with a single click of the “PROCESS” button.
- **Site NETWORK.** Elevate your estimating accuracy with this intuitive layer-based surface generator for easy cut/fill and material quantities calculations.
- **Lot NETWORK.** Quickly define an entire subdivision of lots based on an outer boundary, interior ROWs or Centerlines, and a simple set of user-defined “rules,” then pick “PROCESS” and the lots appear, defined and labeled.

With Carlson’s fully dynamic design environment, its trademark “networking,” changes made to one aspect of design are reflected in all other related aspects. Plus, Carlson Civil users get true 2D, easy-to-use 3D, intersection design, multi-baseline road networks, lot layout, storm and utility analysis and design, plus much, much more.



Road NETWORK:  
Approach to Over-  
pass with Cloverleaf,  
Trapezoidal Ditch



## Carlson Hydrology Complete Hydrologic & Hydraulic Solution

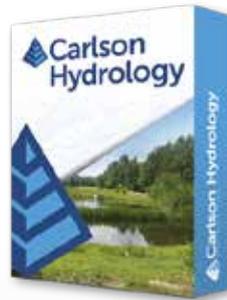
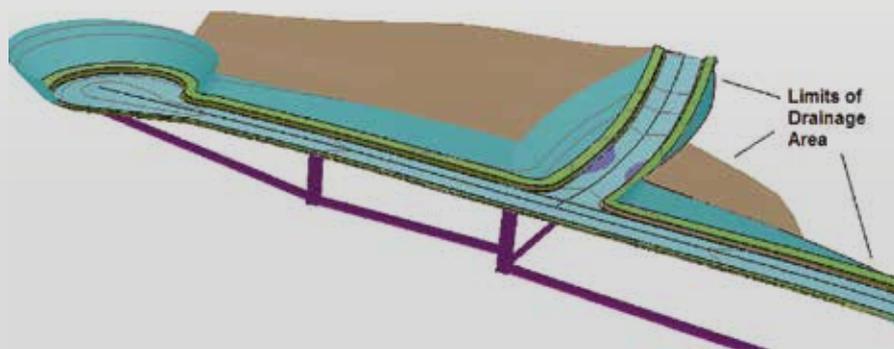
Comprehensive, yet easy-to-master, Carlson Hydrology provides the automation to meet your hydrology needs and all in the CAD environment of polylines, text, and layers.

Full 3D road and lot design feed directly into flow calculations and drainage design.

Top attributes include:

- Site Drainage-using either Rational or SCS Method
- Runoff Analysis to determine watershed area, time of concentration and peak flow rates
- Storm Drain System design and drafting
- Pond, culvert, channels, and outlet design and sizing
- Extensive libraries on rainfall, inlets, manholes, outlets

Carlson Hydrology provides a system-wide stormwater solution in 3D, offering enhanced 3D options plus a command to run multiple rain events at the same time. The software also provides warnings for collisions, excessive pipe lengths, insufficient cover, lack of slope, excessive flow rates, and more.



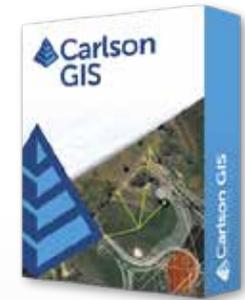
## Carlson GIS Put Your Designs on the Map

With tools for data capture and linking, data labeling, import/export of SHP files, polygon topology creation and analysis, and more, Carlson GIS is a true GIS “Swiss Army Knife” for the surveyor or engineer. The routines for managing aerial images enable users to improve the quality of the geographic positioning of their designs.

With Carlson GIS’ powerful GIS automation, users can input, edit, label, inspect, and report GIS data to entities via simple tools, in addition to obtaining topographic and planimetric features from county databases.

Other attributes include ability to:

- Import images and terrain from both Google Earth and Esri®
- Perform preliminary engineering and hydrologic studies, and planning analysis
- Drape images on 3D surfaces and view in 3D
- Handle large image areas and adjust the resolution
- Import GIS layers as linework with GIS data with Web Feature Service (WFS)
- Use Web Map Service (WMS) to place images from Carlson Image Server or user-specified server



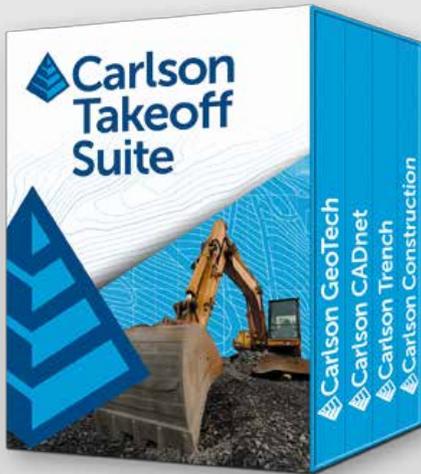
Our GIS module has a collection of routines for managing aerial images

## Carlson Takeoff Suite

Carlson Takeoff is a cut/fill volumes and data prep (for layout or machine control) solution that can estimate jobs using paper plan digitizing, PDFs, or electronic CAD files. It is available in two configurations--Takeoff OEM (comes with AutoCAD engine built-in) and the Takeoff Suite, comprised of Carlson Construction, CADnet, Trench, and GeoTech (see following).

Carlson Takeoff is the only estimating software that works in the .dwg environment natively, which gives its users a distinct "CAD Advantage" when estimating from an engineer's electronic files.

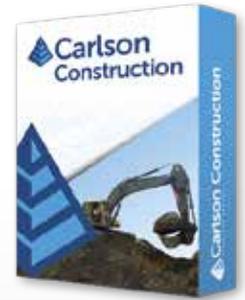
The Takeoff OEM has all of the same ingredients as the Takeoff Suite, which works on AutoCAD sold separately, or with IntelliCAD built-in. The Takeoff Suite's four modules are all fully integrated with Carlson Civil and Hydrology to meet the variety of customers' needs.



## Carlson Construction

### For Estimating & 3D Modeling

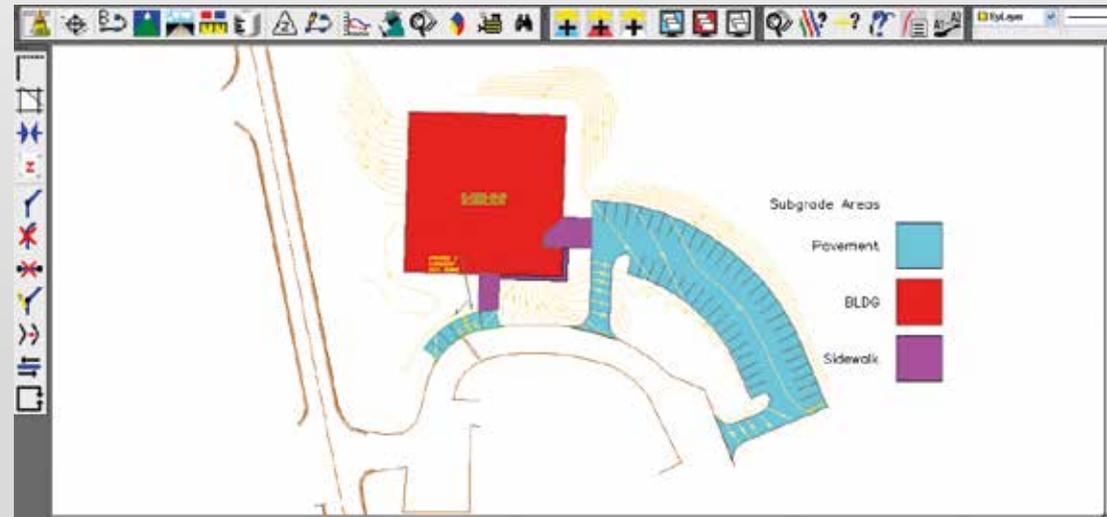
Carlson Construction is an integrated cut/fill takeoff and 3D surface modeling software solution designed for site and road construction from CAD files. It offers powerful section and 3D viewing tools for elevating 2D designs to 3D model files.



Core Abilities:

- Cut/Fill Estimating
- Output 3D Machine Control Files (Carlson Grade, Trimble, CAT-Accugrade, Leica, and Topcon)
- Output Construction Staking files for site, roadway, and building columns and offsets
- As-Built Mapping

Carlson Construction's Material Quantities Reports give estimators the volume, area, length and/or count for items such as asphalt, gravel, curb, or any "subgrade" or "select fill" that's defined. For construction data prep, Carlson Construction creates surfaces from points and contours and can easily move lines from the "wrong" elevation and slope to the correct elevation and slope.



Subgrade Color Map

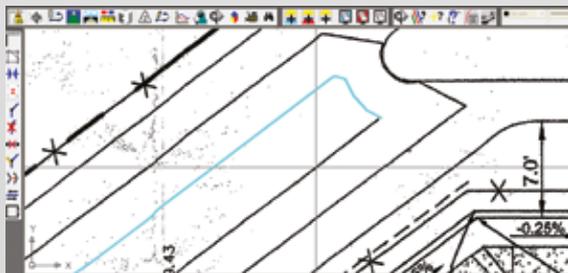
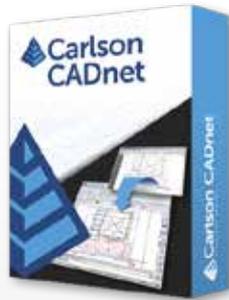
## Carlson CADnet

Create CAD from PDF, BIM, and more

Carlson CADnet allows users to create CAD from non-CAD documents such as PDFs, raster images, and paper plans. CAD text can also be generated from raster images with CADnet's built-in Optical Character Recognition (OCR).

With Carlson CADnet, users can access a full set of digitizing routines for: Points, Polylines, Areas, Contours, Profiles, Sections, End-Areas.

CADnet gives users the ability to import BIM models (doors, windows, walls, roofs, etc.) and bring them into CAD as CAD entities; plus, CADnet includes a routine to export surfaces into BIM.



PDF Auto Trace

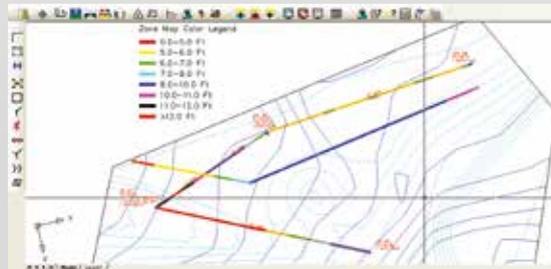
## Carlson Trench

For Trench Quantities & Modeling

Carlson Trench is for calculations related to installing pipes, sewers, or utility lines. The software calculates the volume of the trench cut, the volume of backfill (excluding pipe size), and the linear footage of pipe broken down by the pipe material, size, and/or depth.

Core capabilities in Carlson Trench include:

- Calculates trench excavation and backfill quantities
- Draws trench network in plan view, profile and 3D
- Automatically adjusts trench design based on pipe size
- Produces Trench Reports including Manhole Depth Summary, Pipe Length By Size, Stations Depth Summary, Structure Details, etc.

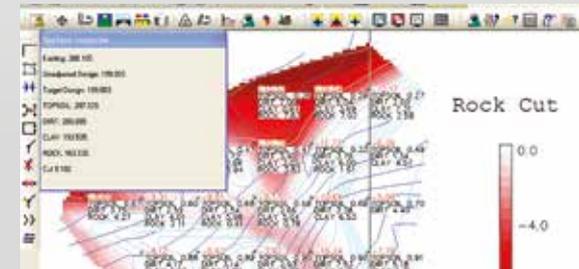
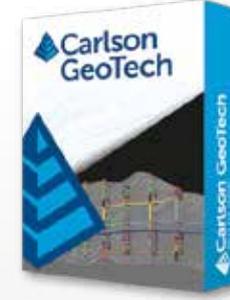


Trench Depth Zone Map

## Carlson GeoTech

Know your Strata Cut

Designed for geotechnicians, civil engineers, and construction professionals, Carlson GeoTech provides the ability to import borehole data for analyzing subsurface conditions and materials. It models all core samples, producing a detailed, easy-to-read report for drill logs, cross sections, and plan view. This information is fully integrated with Carlson Civil, for determining site stability and suitability, and also Carlson Construction, for accurate strata takeoff estimation.



Strata Cut Map

# Carlson Photo Capture

## Surveyors, Meet the Newest Tool in Your Kit

Aerial surveying is rapidly becoming a vital part of any surveyor's toolkit. Thousands of people use drone site flyovers every day to help boost efficiency and lower costs.

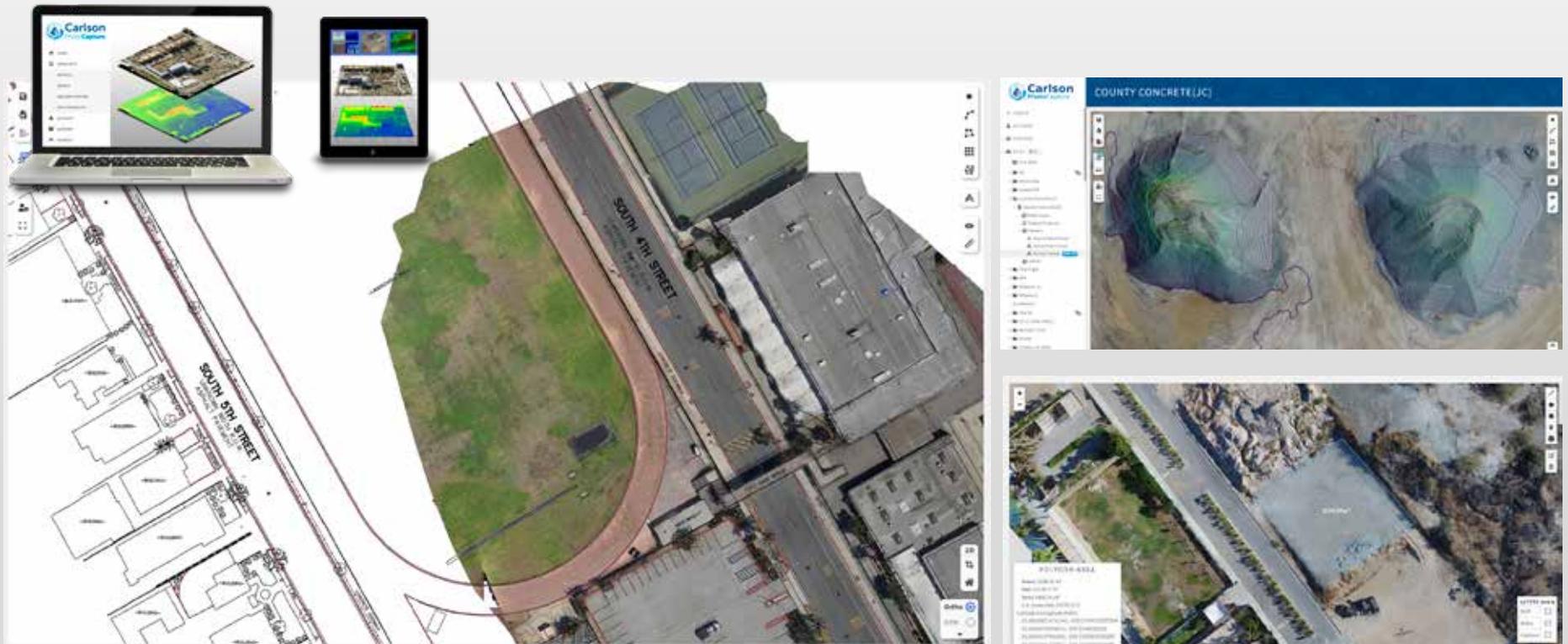
With Carlson Photo Capture processing, you can use flyover data to:

- Instantly generate interactive 3D maps of sites
- Capture highly accurate 3D site data from any camera
- Share site maps with customers -anywhere, anytime!
- Save man-hours in the field

Our proprietary technology helps you track and share every metric about your site from anywhere in the world

## Powerful Features:

- View and edit your 3D map the minute it's done uploading
- Capture the full 3D layout of your land from any camera angle
- Composite an accurate map from multiple flyovers
- Turns pixels into accurate 3D models of your worksite
- Set control points to fine-tune the accuracy of your survey data
- Get topographic elevations of landscape features with just a click
- Show your 3D job site to customers and employees with our web app
- Instantly calculate the mass of any feature to learn how big your project is
- Get precise location-based data no matter what state you're in

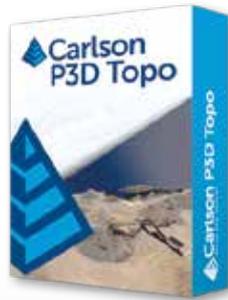


# Carlson Precision 3D Topo

## Bridge the gap between drones and CAD

Designed for use by surveyors, civil engineers, and contractors, Precision 3D Topo allows users to import survey data, points, polylines, surfaces, point clouds, both traditional LIDAR and aerial drone survey data, and more from a wide variety of programs and entities to create usable 3D surfaces.

- Importing Point Cloud data from Lidar and Aerial Drone mapping.
- Merge and edit point clouds to create surface models.
- Import survey data to further refine surface models.
- Powerful surface Editing tools to perfect surface models. Including Google Maps photographic background, automated Google surface creation.
- Easy surface volume tools directly from point clouds or surfaces.
- Advanced Texturing and Presentation Tools
- Import / Export all data as LandXML, DXF, and Surface Models as TIN, TN3, and TTM.

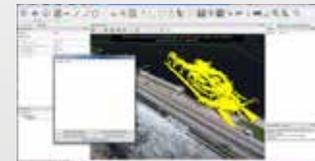
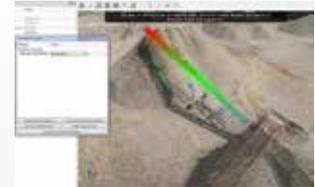


## Import Point Cloud data from Lidar and Aerial Drone mapping.

- Import up to 50 point cloud files at once
- Bare earth classification filter .las, .laz, .ply, .xyz, .pts, .e57, .pcd files
- Remove outliers
- Apply thinning factor
- Automatically merge clouds.

## Once the point clouds are loaded use the powerful editing tools.

- Point Cloud point selector tool for crop, delete, with the ability to create a totally new cloud from a the selection.
- Save point cloud to LAS/LAZ version 1.2, 1.3 and 1.4 including coordinate projection WKT.
- Merge multiple point clouds together.
- Crop point cloud to smaller area.
- Delete point cloud points.
- Crop/delete points using polygons.
- Remove trees, vegetation, cars, building using bareground filter.
- and much more....



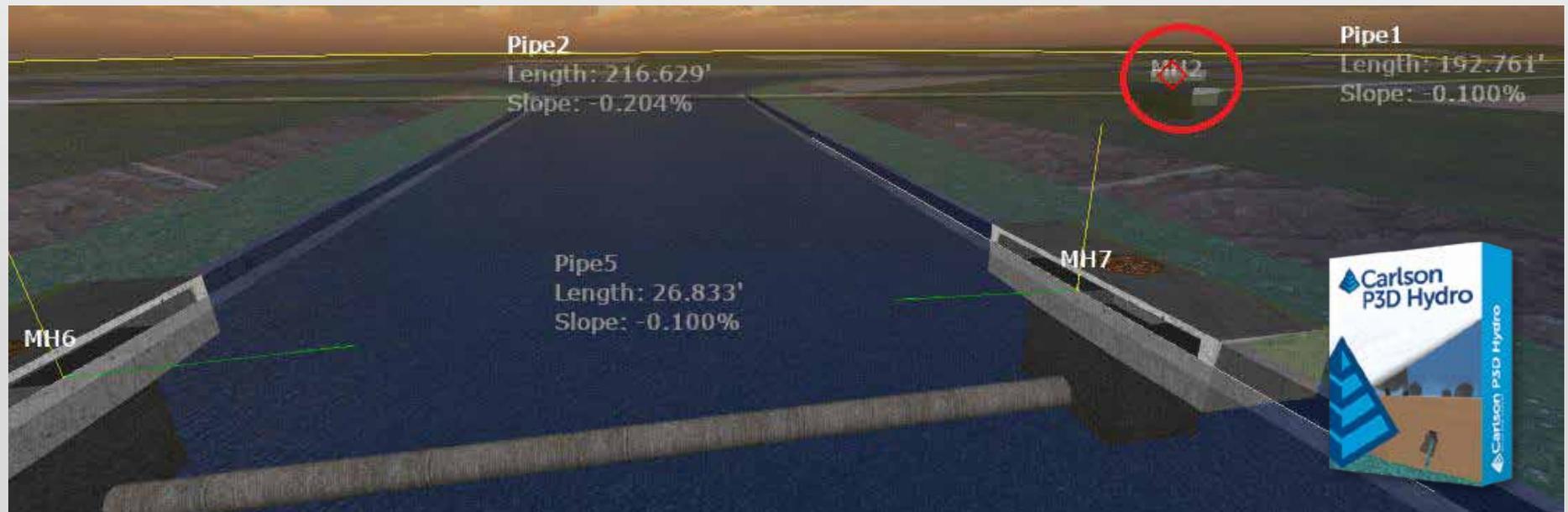
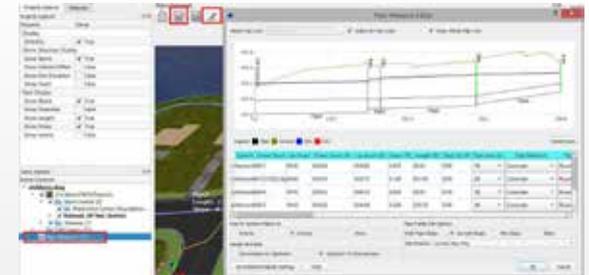
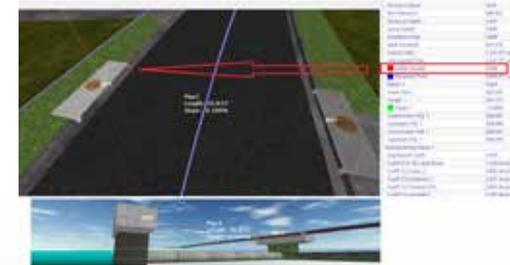
# Carlson Precision 3D Hydro

## Powerful 3D Design, Traditional CAD Deliverables

A smart, new software, with game-like ease of use, providing users tools for rigorous, precise engineering in 3D.

- Dynamic CAD automated plan and profile CAD design documentation
- Speed design with revolutionary drag and drop options for selecting headwalls and endwalls
- Delineate drainage and ponding areas
- Calculate runoff from surface models
- Size culverts and place at low points
- Curb Line Snap and low point snap for fast inlet placement
- Robust drainage structure library and the ability to customize their dimensions
- Grade surfaces for both upstream and downstream designs
- Move culverts and headwalls to new locations with full dtm restoration
- Choose from multiple barrel options
- Integrate easily into Carlson Civil Suite, AutoCAD and Microstation

Carlson Precision 3D 2020 provides the analytical tools to design with ease in a 3D environment while creating your CAD deliverables seamlessly and simultaneously.



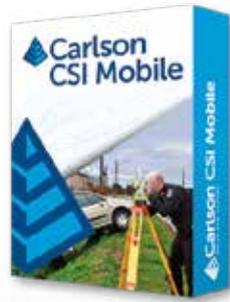
## CSI Mobile & CSI Office

Designed by and for Law Enforcement Professionals

Carlson CSI Mobile is easy-to-learn and -use crash/crime scene software that utilizes the top data collection technology of Carlson Software, which has been adapted by police professionals for law enforcement's specific needs.

Top attributes:

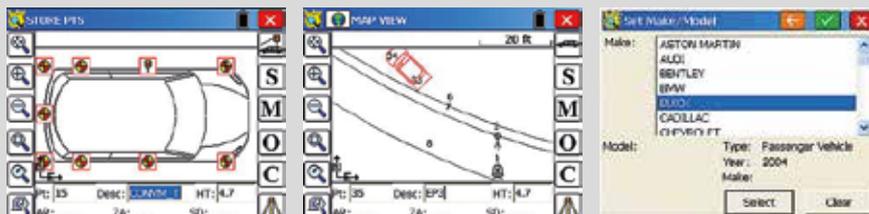
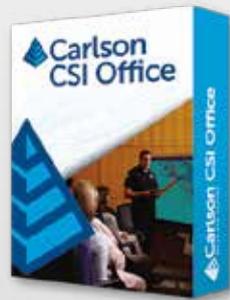
- Clear crash scenes faster
- Work in all kinds of weather
- Find commands conveniently all in one menu
- Access extensive and up-to-date vehicle library
- Easily generate required PDF reports



## Reconstruct traffic accidents... Measure and map crime scenes...

CSI Office, which is made for city and county police departments, State Police, and consulting firms engaged in accident reconstruction, provides powerful forensic diagramming capabilities to measure and map crime scenes and traffic accidents.

Together with CSI Mobile, accident and crime scenes can be investigated and reconstructed accurately in the field then analyzed and mapped in the office.



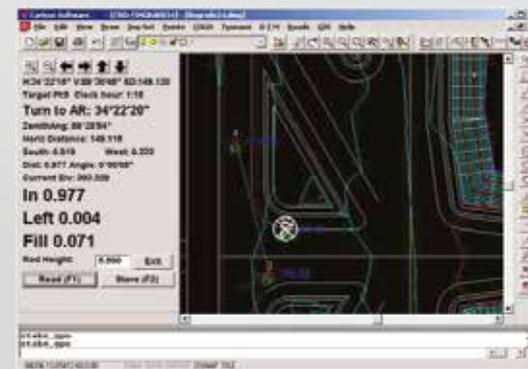
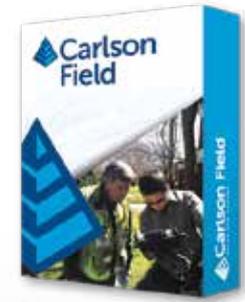
## Carlson Field

Full Data Collection Inside CAD

Carlson Field enables real-time surveying in CAD on ruggedized PC/laptop computers. Users can not only collect data in the field, they can accomplish any basic COGO operation and also any high-level CAD operation. It is also possible to stakeout building corners, lot corners or any CAD feature by "snapping" to the CAD entity—without creating point numbers.

- Runs RTK GPS and conventional/robotic total stations
- Collects and stores points directly in the AutoCAD .dwg format
- Ability to place text on your drawing and contour in the field to verify that you have taken enough points
- Cut/Fill automatically displayed for staked points with elevation or along any TIN or Grid terrain model
- Plots linework. Field-to-finish is completed in the field!

Field is also designed for GIS work. It allows the collection of data associated with valves, manholes, power poles and other standard GIS elements. It works with affordable, sub-meter accuracy GPS systems from various manufacturers.



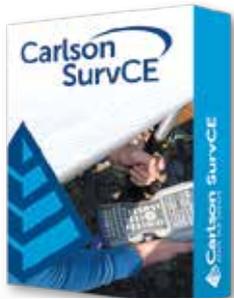
GPS Stakeout mode.



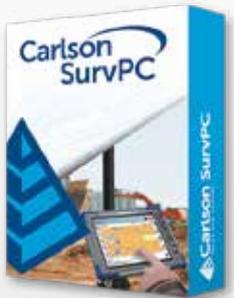
The large buttons on all Carlson Field dialog boxes designed for touchscreen computers

# Carlson SurvCE / SurvPC

The data collection software for the professional surveyor



With SurvCE (for Windows Mobile) and SurvPC (for Windows) you are using the most flexible software on the market to get your work done in the most efficient and productive way.



Almost every surveying instrument from the following manufacturers is supported: Altus, Ashtech, Carlson, Geomax, Leica, Pentax, Sokkia, Spectra-

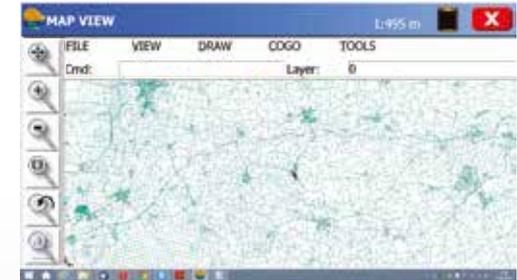
Precision, Stonex, Topcon and many more...

**Carlson SurvCE** and **SurvPC** are combining advanced functionality, ease-of-use, and sheer capability with excellent service and technical support to make it surveyors' first choice in data collection software.

This complete data collection system for Real Time (RTK) GPS and total stations with in-field coordinate geometry supports the widest range of popular and new release RTK GPS and conventional/robotic total stations.

These powerful features help you do more, do it accurately and in less time:

- **Powerful Roding:** favored by U.S. DOTs and heavy highway contractors around the world
- **Advanced functionality** for staking intersections and cul-de-sacs using Carlson Road Network Files
- **Highly graphical** and intuitive **user interface** - the software prompts you so no detail is missed
- **Strong GIS features** for accurate data capture, including attribute data, that allows seamless links to Esri®
- **True versatility:** SurvCE and SurvPC run on most all GPS and total station equipment models in service today
- **Optimal Field-to-Finish:** no need to spend extra hours in the office to make drawings
- **Easy data exchange** due to rich support of CAD file formats and .dwg, .dgn, .shp
- **More field capabilities** with quick and easy volume calculation and ability to generate points from polylines
- **Cut/Fill stakeout** using surface files



### Take Your Pick

Get the world's most flexible & powerful data collection software:

- SurvCE for handheld data collectors
- SurvPC for rugged PCs



# Carlson Hybrid+

## Follow Me

An alternative to optical tracking, Follow Me continuously turns the total station towards the prism using the GNSS location. Say goodbye to stray reflectors and lengthy searches, and say hello to a total station that is ready when you are.

## Smart Lock

Use smart lock for a smarter survey. The software will automatically detect when you are slowing to take a measurement and lock on the prism so that it's ready to go as fast as you can hit store.

## Smart Staking

With smart staking, it will no longer be necessary to maintain optical tracking during stakeout. Keep your stakeout directions fresh using the GNSS receiver as you make your way to your stakeout point. When you get close, the total station will automatically turn and lock on the prism for the final staking precision you need.

## Cross Check

SurvCE will automatically cross-check your total station and GNSS positions and warn you when they differ, so you can cross stray reflectors and false-fixes off your worry list.

## Backup Tracking

You always know where you are, and now your software will too. With backup tracking, SurvCE will automatically show your GNSS position on the map when your total station isn't locked.

## Hybrid-Resection

Easy hybrid-resection allows for setup anywhere using GPS positions to calculate the total station occupied point and orientation. Measurements from the GPS and RTS are time-synchronized for an accurate and simple one-tap resection measurement.

## Auto-Localize

Simplify setup by seamlessly auto-localizing your GPS receiver as you store total station points.

## Easy Setup Wizard

The easy setup wizard walks you through setup using auto-localization, hybrid resection, or hybrid localization, then finishes with a Cross-Check to get you up and running quickly and confidently.



# SurvPC with ESRI®

Get the ability to work natively in Esri

**“This is an industry first. The new capability of SurvPC enables surveyors to work in the ArcGIS® system, yet with the interface they are familiar with. In the case of Esri® maps, SurvPC displays the map as saved in Arc and accesses the entire geodatabase. Features and attributes collected in the field are stored back to the geodatabase and displayed graphically with the correct symbols and linetypes.”**

**Bruce Carlson**

## Closing the gap

There has always been a large gap between land surveyors and GIS Data professionals. Shape files were for a long time the only link between these professions. Now through **Carlson SurvPC** it is possible for the land surveyor, through a familiar interface, to work with Esri® data without conversions or data loss.

The Esri® map is surprisingly sharp and clearly displayed in the field, including built-in zoom resolution, ‘freeze / thaw’. This also applies to MicroStation® drawings. In both cases, there is no conversion, you work in the original map, and you can identify each feature, modify or expand through conventional snap selection. Land surveyors have access to the available Esri® maps of municipalities and water boards, utilities, state or national government, and SurvPC will automatically retrieve all map related attributes. There is no specific preparation necessary - the built-in Esri® engine reads and writes Esri® mxd documents allowing SurvPC to

collect data and edit data directly into Esri® format. This makes it possible for surveyors and consultants to perform work in a uniform way for a variety of customers who make use of Esri® products, in an efficient manner.

## Total freedom in hardware choice

It has never been easier to create your own configuration of software and hardware. Carlson SurvPC supports a wide range of instruments; RTK GNSS receivers, Total Stations, rangefinders or even a Sonar for hydrographic surveys. Choose your own platform; a robust tablet for the field or a powerful laptop for the office.

## User Interface

Carlson SurvPC is designed for field use under all conditions. Simple interfaces and a large virtual keyboard, has made entering data even easier.



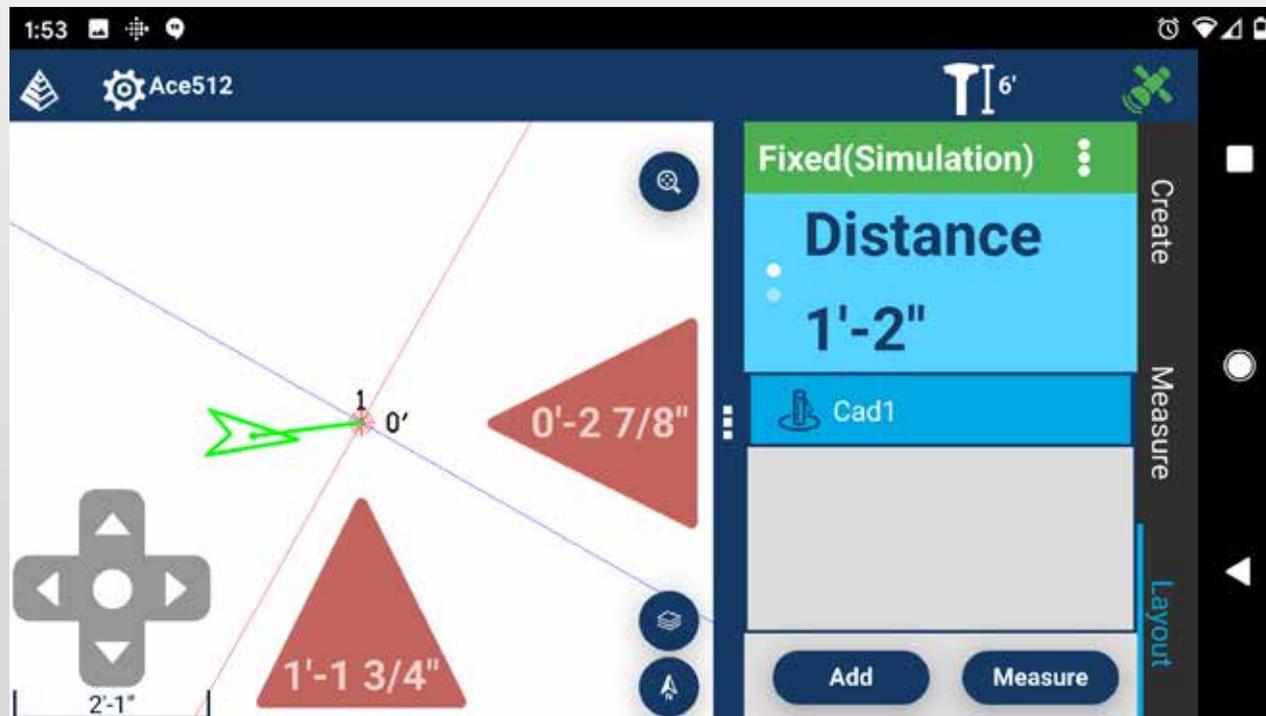
# Carlson Layout®

## Fast, Efficient Software for the Construction Layout Professional



Spend less time learning software and more time getting the job done with Layout's intuitive user experience

- **ANDROID BASED**  
The Android platform allows **stability** and **performance** while operating on a wide range of mobile and tablet options
- **THE LARGEST DRIVER LIBRARY ANYWHERE**  
With the full Carlson driver library, Layout delivers the widest range of hardware options available anywhere
- Full support for **DXF** and **DWG** files through the all-new mobile IntelliCAD engine
- Supports the full **Carlson projection library**
- Compatible with **Carlson CRD** and **CRDB** files
- Integration with **Google Drive** and other cloud storage for simple file handling
- Get **GPS RTK** connections from a cell phone, internal modem, internal radio, or external radio
- Simple, two-tap layout for points, lines, and surfaces
- Powerful reporting options to get your deliverables out the door
- Easily check surface or fixed elevations without creating points



# Surveyor2

The world's most reliable data collector!

## Powered with SurvCE

### FASTER PROCESSOR

More on-board storage space  
- now 8GB; and 1.0 GHz processor

### LONG-RANGE BLUETOOTH

Up to 450m paired with class I device

### EXTENDED BATTERY LIFE

Up to 20 hours

### LARGE, BRIGHT DISPLAY SCREEN

Higher resolution, easier to read colour display with scratch-resistant glass

### COMPLETELY RUGGEDIZED

IP68 water & dustproof; shock resistant

### EASY TO USE

Now with a QWERTY keyboard for faster data entry

### MORE OPTIONS

- Integrated camera
- 3G modem
- GNSS receiver



### PROCESSOR AND MEMORY

- 1.0 GHz ARM Cortex A8 i.MX53 processor
- 512 MB RAM

### OPERATING SYSTEM AND SOFTWARE

- Microsoft® Windows Embedded Handheld 6.5.3

### MEMORY AND DATA STORAGE

- 8 GB flash storage
- User-accessible micro SD / SDHC slot

### DISPLAY

- Active viewing area: 4.3" (109 mm)
- High-visibility backlit LCD

### TOUCHSCREEN

- Projected capacitive touch interface
- Chemically-strengthened glass

### PORTS

- COM1, RS-232C 9-pin D connector with 5VDC power output on pin 9 software-enabled
- USB host (Full A), USB client (Micro B)
- 12, 24VDC input, 10-36V unregulated
- 3.5 mm audio jack, supports speaker / microphone or stereo output (pin detect)
- IO docking ports for charging
- USB port connector protector

### BATTERY

- Intelligent Li-Ion battery 3.7VDC @ 10600 mAh, 38.7 Whr
- Operates 20+ hours on a single charge
- Charges in 2 to 4 hours
- Battery easily changeable in field
- Optimized for excellent performance in cold temperatures

### PHYSICAL

- Size, Standard models: 5.4" w x 10.2" l x 1.6" d (138 mm x 256 mm x 40 mm)
- Weight: 2 lbs (908 g), with battery

### ENVIRONMENTAL

- IP68 waterproof and dustproof

# Carlson RT4

## Rugged Tablet

The Carlson RT4 is designed for surveying, stake out, construction layout and GIS mapping and is bundled with Carlson SurvPC – the Windows-based data collection program – with the option of running with the Esri® OEM program for use in the field. Or use in the office with any Carlson office software.

### Performance

- Powerful Windows 10 for office-to-field use
- Plenty of memory - 4 GB RAM & up to 128 GB flash storage

### Expandable Battery

- All-day battery runs 12+ hours for minimal downtime
- Operates in extreme temperatures from -20°C to 50°C (-4 F to 122 F)



### Ready for Anything

- Long-range Bluetooth® Smart Ready, Wi-Fi®, USB connectivity,
- 4G LTE (GEO CELL)
- High-performance GNSS receiver and 8 MP rear, 2 MP front camera (GEO & GEO CELL)

### Juniper RUGGED™

- Maximum protection for your data
- Dustproof & waterproof (IP68 rating)
- Designed to MIL-STD-810G for ultra-ruggedness
- 2-year warranty

### ILLUMIVIEW™ High-Visibility Display

- Large, 7-inch display for easy viewing
- IllumiView technology provides extraordinary visibility
- Optically-bonded capacitive touch screen for needle-sharp imagery
- Chemically-strengthened Dragontrail™ glass for excellent impact and scratch resistance

### Available models

- Standard
- CELL
- GEO-CELL



## Carlson BRx7

The BRx7 is Carlson's flagship GNSS receiver

### GNSS Technology

The BRx7 features best-in-class RTK performance provided by the Athena GNSS engine, supporting multi-frequency GPS, GLONASS, BeiDou, Galileo, QZSS, IRNSS, and Atlas L-band capability. Users will experience fast initialization to Fixed RTK, as well as stable and repeatable performance in varied conditions thanks to its SureFix® RTK quality indicating technology. Magnetic interference-free tilt capabilities allow flexible and accurate surveying, while the 11+ hours of battery life add versatility and productivity. The lightweight BRx7 receiver may be used as a Base or Rover on demand.

### Wireless Communications

The BRx7 has an integrated dual-band UHF transceiver with spread spectrum technology, and a Quad-Band GSM LTE modem together with Wi-Fi and Bluetooth for modern wireless capabilities. Carlson's Listen-Listen service allows Base/Rover operation via the cellular modem for better correction transmission ranges. In addition, SurvCE|PC provides the option to utilize the cellular modem or Wi-Fi in the hand-held computer via the SurvCE|PC Data Collector Internet feature.

### SurvCE/SurvPC

Carlson's SurvCE/SurvPC is combined with the BRx7 on either the Surveyor 2 field computer or RT4 Windows tablet for a full field solution. SurvCE/SurvPC has full BRx7 configuration, system status and data logging via Bluetooth. For improved Quality Control and efficiency, SurvCE/SurvPC features an intuitive Live Digital Level with an auto record option when the BRx7 is level. With SurvCE/SurvPC, users leverage Carlson's expert team to expand features for quality and productivity.

**The BRx7 smart antenna expands GNSS capabilities for premium GNSS RTK performance with 800+ channels.**

### Key Features

- Multi-Frequency GPS, GLONASS, BeiDou, Galileo, QZSS, IRNSS, and Atlas® L-Band
- Best-in-class RTK performance with the Athena GNSS engine
- Internal tilt sensor corrects collected point coordinates to within 2 cm
- Dual, Hot-Swappable Lithium-Ion Batteries for 11+ Hours of Use
- Quad-Band LTE Modem, Wi-Fi, Bluetooth
- 8 GB Internal Memory



# Carlson NR3

The Carlson NR3 is a compact GNSS Smart Antenna designed for Network Rover applications. The NR3 and a prism make a light weight survey pole assembly to utilize SurvCE/PC 6.0 with Hybrid+ for simultaneous GNSS and Robotic Total Station surveys.

## GNSS Technology

The NR3 utilizes 4 constellations to produce reliable GNSS RTK, with triple-frequency tracking on GPS, GLONASS and Galileo. The solution incorporates multipath and ionospheric detection algorithms to maintain accuracy, while exhibiting stable satellite tracking during shocks or vibration. The lightweight NR3 receiver may be used as a Base or Rover.

## Wireless Communications

The NR3 has an integrated 4G LTE cellular modem, Wi-Fi and Bluetooth for modern wireless capabilities. Carlson's Listen-Listen service allows Base/Rover operation via the cellular modem for better correction transmission ranges compared to traditional terrestrial UHF radios.

## SurvCE/SurvPC

The new Hybrid+ feature allows simultaneous interaction with GNSS and a Robotic Total Station, with the GNSS and prism both mounted on the survey pole.

Hybrid+ provides increased Quality Control as there are two instruments measuring the same point. In addition, GNSS position at the pole allows a faster prism acquisition than traditional searching, as well as improved tracking.

Hybrid+ allows easy setup anywhere using GNSS coordinates, and minimizes common survey challenges from stray reflectors, false fixes and obstructions.

## KEY FEATURES

- GPS, GLONASS, BeiDou, Galileo
- Light weight 820 g (1.8 lbs)
- Hot-Swap Batteries
- 4G LTE Cellular Modem
- Wi-Fi 802.11 b/g/n
- Bluetooth 2.1 + EDR
- 16 GB Internal Memory



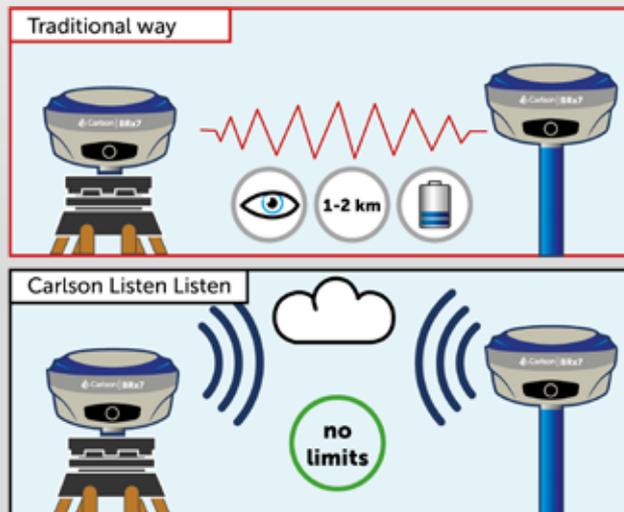
## Carlson Listen-Listen

### Cloud connect your base/rover

Carlson Listen-Listen is a cloud-based, low latency, high performance service. Carlson Listen-Listen utilizes an internet connection at the base and rover, thus eliminating traditional UHF radio limiting factors.

- Available to Carlson SurvCE/PC customers using Carlson's BRx6 GNSS receiver as a base station
- Multiple rovers can simultaneously connect to a base using Carlson Listen-Listen
- Hosted through Amazon Web Services for unlimited processing power, speed and bandwidth
- The system eliminates base line length restrictions encountered when using UHF radios

Carlson Listen-Listen is available by subscription and is easy to use and configure. The internet connection can be provided by fixed line broadband, a WiFi or MiFi dongle, or a gprs modem in the GNSS unit or data collector. A fixed or static IP address sims is not required.



## Atlas

### GNSS Global Correction Service

Atlas is Carlson's innovative correction service for RTK-capable GNSS receivers. Using approximately 200 reference stations worldwide, Atlas produces its correction signals via L-Band satellites distributing coverage from 75°N to 75°S ensuring Earth's landmass is covered.

Industry-Leading Capabilities:

- Positioning Accuracy: Atlas provides positioning accuracies down to 2 cm RMS in certain applications
- Positioning Sustainability: Cutting-edge position quality maintenance in the absence of correction signals
- Convergence Time: Industry-leading convergence times of 10 - 40 minutes

Atlas is available through subscription to Carlson SurvCE/PC customers using Carlson's BRx6 GNSS receiver. Additionally, through Carlson SurvCE's vast library of compatible drivers, any third-party GNSS receiver utilizing an Athena™ engine can also use Atlas.



## Carlson CR1+, CR2+ and CR5+

### Advanced Technology

The advanced positioning of STReAM 360, X-motion hybrid drives and accXess EDM Technology incorporated in Carlson's super reliable CR+ series robotic total stations provides the most efficient way to survey. Leading edge technologies minimize the time needed to complete any type of survey task.

### STReAM360: Fully Robotic

**Scout:** Scans the entire working area within seconds to quickly find the target.

**TRack:** Continuously track targets. Once locked onto, the instrument remains accurately aimed on the moving target.

**AiM:** The telescope is accurately aimed at any prism, without need to look through the telescope.

Measurements are performed automatically with consistently high and repeatable dependability.

### X-MOTION™ Hybrid Drives

The CR1+, CR2+ and CR5+ incorporate highly innovative X-motion hybrid drives, promoting up to 20% automation performance compared to conventional drives. It follows your targets at 90 km/h at 100m distances.

### accXess™ EDM Technology

accXess EDM Technology provides leading reflectorless measurements up to 1000 m.

The extra small laser footprint and the sophisticated signal-processing technology, ensure maximum accuracy – regardless of the distance or conditions.



## Carlson FiX1

### Automated LIDAR Monitoring

The FiX1 Fixed Installation Scanner provides volumetric scanning and stockpile measurement. Designed as a permanent installation, the FiX1 is used to automate the delivery of volumetric data without the need for personnel or additional measurement tools on-site.

### Flexible, Simple, Accurate

The Carlson FiX1 provides a simple, automated method for obtaining volumetric data of stockpiles in many different installation scenarios. The instrument can be mounted upside down or right-side up dependent on the stockpile placement. After installation, no knowledge of surveying, data processing, or point cloud manipulation is required by users. It can be scheduled to scan, process, and deliver a result without user intervention.

### Easy Web UI

The instrument is accessed through the FiX1 Web UI. Once a volumetric scan is activated, the FiX1 Web UI will generate a point cloud, extract the region of interest, and automatically calculate the volume of material in that area. A complete history of scans with graphical representations is available, as well as all the necessary options such as scan density and coverage area.

### Durable Connectivity

The FiX1 features a rugged IP67 design for operation even in extreme environments. It can be remotely connected through either cellular data, Wi-Fi, or ethernet connection.



# Carlson Works for You



[www.carlsonsw.com](http://www.carlsonsw.com)

46.3633691, -76.3850919

Laser Measurement Devices  
11 Rosemount Ave., Unit 100  
Ottawa ON, K1Y 4R8

52.8616695, -3.1670545

Laser Measurement Devices  
Halifax House/Unit 2, Tockwith  
York, YO26 7QP

38.6473778, -83.7651394

Carlson Software Inc.  
33 East Second Street  
Maysville, KY, USA 41056

42.3659274, -71.2080285

480 Pleasant St, Suite C100  
Watertown, MA, USA 02472

52.1795885, 5.2133703

Carlson EMEA BV, Markerkant 1338  
1314 AN Almere, The Netherlands

-26.4049109, 144.4454041

Carlson Software Australia Pty Ltd  
APAC Sales and Service Suite 2  
60 Township Drive, Burleigh  
Heads, Queensland, Australia 4219

-37.7920151, 144.9363224

APAC LMD Sales and Service  
43 Stubbs Street, Kensington  
Victoria, Australia 3031



## The Complete Workflow

Offering powerful software, with comprehensive yet easy-to-use features, backed by dedicated customer service, Carlson is used world-wide by professionals in land surveying, civil engineering, construction, machine control, mining, crash/crime investigation, and agriculture.