



*Version 3.0 Release Notes*

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# Improvements and Resolved Issues By Release

## Version 3.03

*Release Date: January 23, 2014*

### **New Instruments Supported:**

- Geteq SX Blue III GNSS Receiver
- Topcon FC250 (previous registrations were in error and may need to be repeated)
- Sokkia SHS250 (previous registrations were in error and may need to be repeated)
- Topcon Cygnus Total Station
- Geodetic GS1 GNSS Receiver.
- HiTarget QStar6 NMEA based handheld GNSS

### **New Data Collectors Supported:**

- Geomax Zenith 02
- HiTarget QStar Series
- South S10
- June T41
- Carlson Mini2
- Juniper Archer 2
- Stonex S4

### **New Features and Improvements:**

#### **SurvCE/SurvPC Improvements:**

- SurvCE will now combine all windows mobile installs into one "SurvCE\_Windows\_Mobile" installer that will automatically detect platform and screen orientation. Most unique installations for Windows Mobile have been eliminated with the exception of the PM100/200.
- All GPS -- The antenna database has been updated to match the official NGS relative offsets and names.
- SurvCE now displays the file size even of empty files in all file selection dialogs.
- All GPS -- Satellite Text Information page of Monitor Skyplot was changed to display SN for L1:L2:L5. The satellite type field (TYPE) was removed and combined with the PRN value. In addition the display is improved and enlarged. Constellations now use the standard RINEX abbreviations. Sat. key has been removed to save space.
- Total Zenith Path is now reported properly for meteorological data.
- Roads/Utilities -- Centerline and profiles from LandXML now allow multiple elements during the import. The user can pick CL/PRO, single, multiple, or all to import.
- Special DOS style file-browse shortcuts are now supported in SurvCE file dialogs, including

- "." to go back a level, and "\".
- The name of SOE and CSV exported through SCT to Geopak/SOE, using Road/Utilities/Cross Section file conversion now matches the Job Section name. Example: W1\_BT.soe, W1\_BT.csv, name W1, Job Section = Borrow Stripping BT.
- The newly added Job Sections are now applicable during export to Geopak, and also when storing directly IGRDS section file format, using Road/Cross Section routine. The new added values for code 97 Geodimeter file, are 13 to 19.
- X-Sec Job Sections are now using extra job section options: Borrow Stripping, Composite, Existing Asphalt, Existing Base, Overburden, Semi Final, Waterway.
- Under Job Settings there is a new option to allow Auto Store Pick Points. This avoids adding the points to the CRD when selected using Osnaps, implemented in Surv/Stake Line/Arc, Define Line. The option also applies to the Carlson SurvPC using alternate ODA Esri CAD Engine. The point name picks using this method it is noted as: <PP,<number>> picked point, or <SP, <number>> selected point.
- SurvCE now supports Auto option when NEXT Station Button in Road/Stake Road dialog, to avoid user prompt to pick the "next/prev/maintained" Offset.
- SurvCE now supports None option when NEXT Icon in Graphic/Survey screen it is used for Stakeout to pick Station/Offset.
- NMEA GPS -- "2D Position" warning is now included in information string when no altitude is in GGA message.
- When SurvCE computes more than one solution in the Offset routine, both solutions are now displayed and it is possible to select the correct solution.
- Geoid file extents are now recorded in the RW5 file. If Geoid file not found it is noted in the RW5 file.
- All GPS -- The "Name" label in the mount point selection dialog has been removed in order to give more space for the combo box.
- SurvCE now supports AT and SR fields in BP record. "AT" field values are ARP, APC or UNK to indicate where the base elevation is measured to. "SR" field is the source of the information in the BP record. "ROVER" indicates the base position was received via RTK corrections at the rover. "BASE" indicates the BP record was saved while setting up the base in SurvCE.
- All TS -- The first time a user takes an angle only reading in resection, they will now be warned that three readings will be required.
- All TS -- Any resection points with an elevation of 0.00 will automatically assumed to be "ignore elevation".
- Capacitive screens are now supported in SurvCE (this includes the T41, Archer2, and Mini2). All owner draw lists work on touch gestures MS.
- If a point is deleted using "list points", SurvCE will now also remove any associated point note from the RW5 file. This allows to skip the JSR Analysis, against deleted points, and therefore you can re-use the Point Name for a new JSR Analysis.
- GIS Feature Line Data is now easier with the Options under: File/Feature Code List/coding style/Options: Store GIS Line to RW5 (First Vertex Only), allows storing the entire data for all vertices of the linework, or the first vertex only.

#### **SurvPC Only Improvements:**

- CAD Esri OEM Alternate Engine now displays COGO/Intersections identically to the CAD basic alternate engine.
- CAD Esri OEM Alternate Engine now runs Survey/Stakeout Points identically to the CAD

basic alternate engine.

- The OEM Esri Geodatabase Extension is now supported as an alternate CAD engine. This includes full support for database which has relationships between tables and has topologies or networks.
- CAD Esri OEM Alternate Engine now supports COGO/Intersection: graphic representation of the solution resulted from the Intersection procedure, it allows selection from multiple solutions if required. The Pick Feature Class also allows changing Feature Instance and saves the result for the changed Feature Instance.
- CAD Esri OEM Alternate Engine now automatically stores software generated values (through Equations) into Field with attribute Invisible ON.
- CAD Esri OEM Alternate Engine now allows users to move features within groups/sub-groups in the table of contents (Carlson TOC).
- CAD Esri OEM Alternate Engine now supports display of "broken data sources" for specific features in the table of contents (Carlson TOC).
- CAD Esri OEM Alternate Engine now supports writing any extra codes stored during point measurement using JSR Analysis into the RW5 file.
- CAD Esri OEM Alternate Engine now allows move-to features in the table of contents (Carlson TOC).
- CAD Esri OEM Alternate Engine now maintains the point and non-point feature class most recently used (similar to current layer, in CAD, except we can have point and non-point current layers).
- The mouse wheel can now be used in CAD basic mode for the Esri OEM Alternate Engine. This means that clicking/panning reverses the direction of the zoom in/out using the mouse wheel.
- CAD Esri OEM Alternate Engine now supports basic vertex move combined with basic topography.
- The "Create Folder" feature in the file selection dialog now works more intuitively on both PC and data collector versions.
- The updated 3.0 splash screen is now used.
- CAD Esri OEM Alternate Engine does not store the automatic Surv/Stakeout Points. It uses the same method as applicable due to the fact that the control can hold 3 x/y/z (all coordinates), so it does not rely on the Point Name.
- CAD Esri OEM Alternate Engine can now add data: from Feature Classes (File/Personal Geodatabase), using Add Data routine in Feature Manager (Layer Manager) Map.
- CAD Esri OEM Alternate Engine can now add data: from \*.shp files (Esri Shape files), using Add Data routine in Feature Manager (Layer Manager) Map.
- CAD Esri OEM Alternate Engine can now add data: from \*.lyr files (Esri layer files), using Add Data routine in Feature Manager (Layer Manager) Map.
- CAD Esri OEM Alternate Engine now supports List Point/Delete Point.
- CAD Esri OEM Alternate Engine now supports List Point/Add Point and prompts for GIS data, automatically setting the nMXD and checking for OUT of Geometry.
- CAD Esri OEM Alternate Engine now supports adding Raster from files (almost all supported Raster files).
- CAD Esri OEM Alternate Engine now repairs broken data sources using group/subgroups for Feature/Raster/Data Layers.
- CAD Esri OEM Alternate Engine now supports storing features in MAP/COGO/Create Points/Draw Locate Points.
- CAD Esri OEM Alternate Engine now supports storing without a description, or a description which is not linked to the feature classes available in the Esri ArcMap Document MXD. It

- defaults to Carlson CSCRD Feature Point Class.
- CAD Esri OEM Alternate Engine can now repair any broken data source for Raster file based features.
  - CAD Esri OEM Alternate Engine now supports graphic representation of the solution resulted from running offset in Survey/Store points. It allows selection, picking feature class, and changing feature instance, and saves the result.
  - CAD Esri OEM Alternate Engine now supports add Raster from raster data sets or raster catalog (personal or file geodatabase).
  - CAD Esri OEM Alternate Engine now zooms correctly in MAP for intersection, store points first reading, areas, and offsets.
  - CAD Esri OEM Alternate Engine now supports delete features from MAP.
  - CAD Esri OEM Alternate Engine now supports Esri style selectable layers, per element, or force "selectable" all features (layers).
  - CAD Esri OEM Alternate Engine now supports adding polygon features to the Carlson TOC.

## **Bug Fixes:**

### **SurvCE/SurvPC Bug Fixes:**

- Getac Data Collector -- The long range Bluetooth cap will now reset before opening port to clear residual settings from other software.
- MAP/Import dxf/dwg options now use "filter" on/off, so the eventual settings are saved/recalled.
- The "Create Folder" feature in the file selection dialog now works more intuitively on both PC and data collector versions.
- SurvCE now allows a user to rename a new folder even when virtual keyboard is in use.
- Buttons in dialogs with two columns will now resize by screen resolution orientation and language for a better fit.
- All RTS -- SurvCE will now remember whether the user was previously tracking when last in live routine, and return to previous state, rather than force to tracking each time.
- Land XML now correctly imports the points from CRD in the sample files.
- Building face survey now works correctly with a two-point defined plane.
- Export ASCII now maintains the order under custom as x/y, etc.
- All GPS -- GPS Average will now warn the user when standard deviation, north, east, or elevation, exceeds tolerance.
- GPS Simulation -- When using export KML from GPS Simulation, SurvCE will use the lat/lon calculated from the coordinate, regardless of simulator location.
- All RTS -- SurvCE now displays the thick double lines, for Locked RTS mode (showing the direction the Total Station it is pointing to).
- The Russian-Ukraine version will no longer display "NO NAME" on some menus.
- Import DXF now correctly loads the LWPOLYLINE, even if DXF vertex codes: 41 or 42 are missing (codes are optional). Now Carlson SurvCE/SurvPC correctly loads these entities, with part of DXF code 40.
- SurvCE/SurvPC can now import DXF files produced by AutoCAD 2000 version.
- All GPS -- SurvCE will now delay storing points until the receiver is updated to the latest antenna height change.

- SurvCE can now process temporary cross sections. Road/Cross Sections support lengthy paths and file names.
- All GPS -- Monitor status now displays seconds since last position if positions stop being received.
- All GPS -- Geoid status is now displayed correctly in the position tab of Monitor Skyplot.
- All GPS -- The Survey/Store Points Offset routine now longer has the potential to set the HT to an invalid value when there is an instrument failure.
- All GPS -- The Offset routine no longer has the potential to fail after changing jobs.
- All GPS -- SurvCE will no longer prompt the user to stand still when taking a GPS reading in Grid to Ground.
- Juniper Mesa/Topcon Tesla -- The Top bar and right bar no longer have the potential to lock up after an RTS reading.
- Geoid file is now changed as soon as it is selected.
- Grid to Ground and Ground to Grid Height Factor is now calculated using ellipsoid height.
- JSR Analysis now allows duration of analysis (delay) to be greater than one day.
- SurvCE now clears all reading data when offset method is switched in Survey/Store points routine.
- All Radios -- "Network ID" radio option is now only showing up in correct radio configurations.
- In RW5 Editor we are now correctly skipping the true notes (deleted --SS, --RBM# notes) and also GIS TDS RW5's records: AT, FC, from formatting as Angles in the display.

**SurvPC Only Bug Fixes:**

- When using the Esri OEM Alternate CAD Engine, SurvPC will now use the correct license even if the similar Esri Desktop installed on the same hardware. Previous scenario: Esri ArcGIS Standard Desktop 10.1 installed, not licensed, Carlson SurvPC, OEM Esri 10.1 installed, with correct Carlson Serial Number Registered, failed to acquire the license need it. This is now resolved.
- CAD Esri OEM Alternate Engine now automatically stores user-defined alias values (through Aliases) for non-surveyed Points (user entered points: COGO, Map draw points, etc).
- Automatic EQN setup in Carlson SurvPC, using CAD basic engine now works correctly.

## Version 3.02

*Release Date: October 4, 2013*

### **New Instruments Supported:**

- Foif RTS350 Series -- Onboard version
- TechGeo GTRi/GTR-G2
- CHC LT400
- Starforce SF2000
- South S86 2013
- South S82 2013

### **New Data Collectors Supported:**

- Stonex P4,P7,S7 (uses WM6\_Portraitview\_HDPI.exe)
- Getac PS336 (NOTE: All Getac data collectors now use WM6\_Portraitview\_HDPI.exe)
- Getac PS535 (NOTE: All Getac data collectors now use WM6\_Portraitview\_HDPI.exe)
- Nautiz X3 (uses WM6\_Portraitview\_HDPI.exe)
- Geomapper100 (uses WM6\_Portraitview\_HDPI.exe)
- Geomapper200 (uses WM6\_Portraitview\_HDPI.exe)

### **New Features and Improvements:**

- Monitor/Skyplot will now display site duration and remaining time on site when logging a point through Survey/Log Static.
- SurvCE may now prompt suggested install of the software based on screen resolution and orientation. This is part of ongoing efforts to prevent wrong installations.
- Data from MAP can be exported to .dxf/.dwg including the TEXT of the block points, using user-defined precision.
- MAP view can display "zeros" or not, regarding the "Elevation" text displayed. This cleans up the map view.
- Viva/QMini data collectors now support camera features.
- The device info screen now has a binoculars icon which will get installation information and save it to a file.
- SurvCE now has increased reliability on data collector detection to determine if the correct installation is used. This should prevent registration errors by warning user if wrong install was used.
- SurvCE now supports the ability to do patterned average in GPS average. This allows, for example, averaging 10 readings every 30 minutes for 12 hours.
- GPS Simulation -- When using GPS Simulation with a localization file, the position of the simulator can now be reset by going to Equip->Localization, and pressing "load."
- All GPS -- "--Base Rod Hgt" replaced with "--Entered Base HR" in RW5 file. Also added GS record to line after BP record when Read GPS used.
- The Lithuanian translation is now supported.



- All -- Supported Import \*.gen (multiple strings), from Geopak, to Carlson SCT, under Road/Utilities.
- The Russian, Polish, and Dutch translations have been updated.
- New coordinate systems added for Poland. Poland ETRS89 CS2000. Zones 5,6,7,8.
- New coordinate systems for Indonesia. DGN 95 TM3 Zones. Includes 16 zones.
- SurvCE now has the ability to display QZSS satellites in the monitor skyplot and satinfo screens for receivers that support it.
- Waiting for reading when connecting to RTK network now displayed only for data collector internet.
- SurvPC -- SurvPC Install updated to include all new items required for ArcGIS install.

## **Bug Fixes:**

- SurvCE will now correctly increment the point ID in stakeout.
- Add to List now uses gaps, and orders the range of points in STK dialog, using points from Control and Current job .
- Land XML import is improved to allow no-named profiles.
- There is no longer the potential to have redundant entries in the helmet hotlist.
- Keyboard Input Points works the same as virtual keyboard, point x/y/z automatically retrieved when lost Point Id Edit focus (no VKB).
- When using the "-" to define a point list in stakeout, SurvCE will pull missing points from the control file if defined, regardless of "priority control" setting in job settings.
- When entering an unknown point at keyboard Input, the Next/Prev point now adjusts correctly for alpha-numeric CRD.
- NGS toggle in Ref tab Antenna dialog now works correctly.
- All TS -- SurvCE will no longer perform unnecessary grid calculations when auto\_scale is disabled. In some cases, this caused long delays when reading.
- All GPS -- Correct RTCM type now selected in RTK tab based on NTRIP mountpoint.
- All GPS -- Beidou ellipsoid parameters are now correct.
- All GPS -- NTRIP 3.1 Projection calculations now support the source height flag. EPOSA is an example of an NTRIP server that uses the flag.
- SurvCE will no longer choose the wrong point when the users skips the confirmation screen in Next Stake point.
- Russian/Greek versions -- The word "Version" will no longer appear as ?'s on About screen.
- Korean -- English text now appears in the Localization->Points screen, at translator request.
- SurvCE no longer has the potential to crash when using Stake Line after using cloud features.
- Omnistar/TERRASTAR GPS -- The dialog has been expanded, and signal strength now updates live.
- Stakeout View settings are now compatible between 2.62 and 3.0.
- SurvCE no longer has the potential to fail when "undo" per ARC defined, in MAP 2d polyline during entity creation.
- Export DXF allows "accept" only import Linework, using "orange button" = NEXT, skipping any disabled options for Import.
- All TS -- SurvCE will no longer show "send settings" when taking a reading. Status dialog during reading is smoother.
- All GPS -- DCI and SFOIP now stopped when entering the Configure Rover dialog.

- When the Windows Mobile Bluetooth driver encounters problems, it now tries to fully close the port.
- QMini M1 -- Corrected value of hardware id #1 that indicates inappropriate generic install on the data collector.
- SurvCE now correctly displays SV numbers on landscape displays.
- SurvCE now correctly displays the key for unused satellites.

## Version 3.01

*Release Date: July 16, 2013*

### **New Instruments Supported:**

- Stonex R2+ Total Station, Onboard Version
- Foif TS350 Total Station, Onboard version
- Sokkia DX Total Station
- Topcon DS Total Station
- SatLab SL300 GNSS Receiver
- Sanding T9 GNSS Receiver
- Acnovo RX9 GNSS Receiver
- Acnovo BX9 GNSS Receiver
- Leica GS14
- Geomax Zenith 25

### **New Data Collectors Supported:**

- Psion Omnii XT15
- QMini M1
- SatLab SL300
- SatLab SL55

### **Instruments No Longer Supported (still available in older versions):**

- Nikon DTM 300 (*Note: Removed due to insufficient testing. Please contact Carlson if you would like to loan one of these for development*)
- Leica 530 GPS

### **New Features and Improvements:**

- SurvPC now supports automatic download and installation of ArcGIS engine for users who have purchased it.
- The depth sounder simulator now shows reduced "no depth" messages.
- The depth sounder simulator will now be automatically disabled when exiting the software.
- The Greek and German translations have been updated.
- New record for the rw5 file for depth sounder readings has been added:  
DZ,PNx,DZx.xx,WEx.xx.
- SurvCE now supports the Grid coordinate system for Ireland National Grid.
- Attach Photograph and Export KMZ support expanded. All data collectors now support this feature.
- The Installer splash screen has been updated.
- Esri -- When using an MXD file, the user may now select a point from the points list for Stakeout.
- Carlson SurvPC now supports Esri OEM ArcGIS Engine 10.1 version in the code through the

- csesrmanagerauto blank, and 10x versions of the DLLs.
- Elevated circles now support OSNAP and have the elevated Z acquired for usage in the MAP/Survey commands, Blocks/Inserts which have been imported from Microstation and have the definition placing their origin for the BLOCK def beyond 0,0 (in negative -x,-y), are now correctly used during the OSNAP center style.
- GPS Simulation - "Test" model of GPS Simulation now has the option to get positions from an RW5 file specified in GPS Utilities. Position advances when a point is stored.
- The Carlson Cloud signup process has been modified for Clarity.

## **Bug Fixes:**

- Centerline buttons are no longer disabled in Import/Export Land XML.
- Import LandXML from TOOL, S.A. now correctly uses CLIP software. This affects Centerline, Profiles, and Section import through Utilities.
- Cogo/Inverse MAP now displays the correct point and osnap points.
- Choosing a control file will no longer gray out the backsight buttons.
- "Pick From Map" now works as designed in stakeout.
- Convert WGS83 to Nad83 is now corrected for errors on elevation and easting.
- The MAP layer manager will now refresh items in the layer command in portraitview.
- Cutsheet auto-save by job will no longer leave points file unchecked.
- Automatic Data Collector internet reconnect no longer happens when tapping "GPS Rover" button on main menu.
- Data Collector NMEA output port is now working as designed.
- Explorer 600+,FC2200/FC2500 -- SurvCE now supports import/export \*.dwg on these data collectors.
- Cogo /Keyboard input no longer locks up when used with a numeric CRD.
- Edit point elevation no longer creates a corrupt entry when used with a numeric CRD.
- SurvCE no longer has the chance to overwrite the FS prism constant after a set collection.
- The compass rule now works correctly.
- When exporting a numerical file to ascii, the point numbers will now be correctly included in the export.
- GNSS Analysis -- Obs, External Rel H/V and Delay were moved to the left to be more easily visible. Number of significant digits was reduced from 5 to 3 to better fit on the screen.
- All GPS -- DCI on the Data port now has better latency.
- KML/KMZ export extended to all data collectors with supporting cameras.
- SurvPC -- Esri -- COGO/Intersection now works when using an MXD file.
- SurvCE no longer has the potential to crash when pressing the calculate button in Localization->TS Tab, Use Ground To Grid.
- SurvCE no longer has the potential to lock up when pressing the custom-target icon.
- 14 Parameter Transformation - NAD83 was using GDA94 transformation rates. This has been corrected.
- 14 Parameter Transformation - SurvCE now uses time from GPS receiver to set transformation date and uses system time if GPS time not available. SurvCE will warn user that system time is used and display current system date.
- SurvCE now correctly turns to a point in the robotics dialog when the point is typed in.

- Starfire dialog in Advanced Settings now has an option to set the datum transformation to/from ITRS08 used by Starfire.
- Carlson cloud can now transfer files with spaces in the names.
- All GPS - "valid readings recorded" in GPS average now includes first reading.
- CListCtrlCE allows sorting in the case of Icon Style list, using compare\_names as custom sorting method. Therefore Select Symbols in FCL Editor will mimic Carlson Office: symbol library selector, used in Point Defaults.
- GNSS Analysis -- Antenna Freehand now defaults to ON. Reading from the RW5 file of the previous observation now sets the antenna freehand value on which the GNSS Analysis DLL computation relies.
- Defaults for GPS/TS/RTS, navigation are DR+Dist for GPS, and In/Out L+R for TS/RTS.
- "Position is outside the range of current Shift file" warning dialog no longer shown in wrong situation.
- When only changing one setting in the Tolerance screen, it was possible for the change to not be remembered. This has been corrected.
- There is no longer a potential for a software failure when canceling before defining points in Set Collection.
- Depth Sounders - Depth value will now be correctly applied after the conversion to local elevation. This will also ensure that the GPS record of the rw5 file remains raw GPS elevation and that an entered water elevation value will be properly used.
- COGO/Transformation/Align now shows the point IDs names if available.
- SurvPC now reports back using "simulated" light bars indicators the Offset: ranges- colors based on tolerances set by the end user.
- All GPS - Default RTK baud rate when using Cable is now determined by the current receiver driver.
- SurvPC using the Alternate Esri CAD OEM ArcGIS Engine, now correctly reloads the EQs (equations data), even if the user only opens/closes the job and no review it is done for any of the GIS Features.
- All - Added option to "X" safely and reset repeat store (turn OFF) if X = cancel pressed. Avoids user error.
- Modified the warning message to say "Discard" instead of "Clear" when canceling without saving a TGT (template grade file).
- GNSSAnalysis reads older and newer RW5 files which have stored Date/Time in the GPS vector records.
- GNSSAnalysis now uses the variance/covariance of the most recent GPS READING, correctly setting not also only the top side of the var/cov matrix (diagonal + top right) but also the low left part. GNSSAnalysis fails if the low left part left to "zeros".
- GPS Simulation - GPS Simulation Demo and Test now share the same starting positions.
- Carlson Cloud - User's CrewView position is removed from the server when SurvCE is exited.
- GPS Simulation - RW5 Simulation parsing of G0 record is now correct.
- GPS Simulation - Cosmetic improvements to GPS Simulation Test dialog.
- Invalid GNSSAnalysis values for horizontal Standard Deviation and External Reliability are now presented using the -999 invalid value in the rw5 file.



## Version 3.0

*Release Date: May 3, 2013*

### **New Instruments Supported:**

- Geomax ZGP800 GPS (supported in SurvPC)
- Stonex R2 Plus
- Sokkia 50RX
- Sokkia SX
- Topcon PS
- Epoch 50 (significant improvements)
- Altus Procyon
- Surveyor +Omnistar
- Datagrid Colibri
- Datagrid Gator
- Hemisphere Eclipse R320
- Hemisphere Eclipse A325
- Javad GISMore
- Leica GS14
- Novatel Smart AG
- Sokkia GRX2
- Topcon Tesla (internal GPS)
- Topcon HiperV
- ProMark 800
- ProFlex 800
- ProMark 700
- EFT M1
- HiTarget H32
- Topcon HiPer SR/LongLINK
- Stonex S8 GNSS
- Stonex S7 GPS
- Microhard X920 radio

### **Instruments No Longer Supported (still available in older versions):**

- Leica 50
- Zeiss Elta 2-6
- Topcon APL1/APL
- Nikon A Series
- Leica Wild (older models)
- Allen Osbourne
- Geodetics GPS
- GSI DGPS Max GPS

## **New Data Collectors Supported:**

- Mobile Mapper 10
- Promark 100/200
- NavCOM Nautiz
- CHC LT400

## **Data Collectors No Longer Supported (still available in older versions):**

- Allegro CX
- Allegro DNet
- Explorer
- FC100
- FC200
- FC2000
- JettCE
- Ranger
- Recon
- MobileMapper CE
- 2003 Portrait
- 2003 Landscape
- Psion CE4.2
- QMini CE5

## **New Translations Supported:**

- Swedish

## **New Features and Improvements:**

- SurvCE now supports data collector camera integration, including capturing and associating images with points and attaching EXIF data for Esri.
- SurvCE now has the option to output KMZ files for Google Earth.
- SurvCE now supports Cloud-based messaging between field crews and office. This includes file transfer.
- SurvCE now supports "CrewView", which allows sharing most recent location with others through the Carlson Cloud.
- SurvCE now supports reading and snapping to DWG blocks.
- SurvCE now supports RTCM3.1 Messages String for Grid/Geoid Shifts (From VRS Stations). Applies mostly to Europe (Germany, Croatia, Norway, for example.)
- SurvCE now supports Story Stake Report. This feature gives a full report to all breaks in grade when doing Stake Road, single point stake.
- SurvCE now supports advanced GNSS point averaging and blunder detection by Chi-Square Statistical Analysis and Least Squares for best point location.
- SurvPC can now store Single Point Features using Esri ArcGIS engine.



- SurvCE now supports Quick Search by GPS for robotic and motorized total stations.
- SurvCE now offers search of NGS Control points in proximity to current location.
- SurvCE now offers localization file rotate/scale to transform point and linework to grid. This allows easily moving 5000,5000 jobs over to the grid based on a .loc file.
- A new stake-nearest feature is now found with the "List" option of stake points.
- Export ASCII file has new advanced features to export configurable formats including the lat/lon and ECEF coordinates.
- Navigation options are now available in store points based on Job Settings.
- Store Points offers new "Same Point ID" option, reducing "Point Protect" prompts. This can be enabled in Hgt/Description Prompt screen.
- A new optional "feature define" now allows dealers to show their own splash screen, and hide the standard Carlson Splash screen.
- SurvCE now allows the use of "hard-coded" program action codes, as aliases: e.g. +7 = Start line to be used as "End Line Alias Action Code", etc.
- SurvCE now combines all international installs into one install version per data collector, and allows installing multiple languages and switching from within the software. Switch languages in the "About" screen.
- The Carlson CR2/CR5 is now supported on the Getac, Allegro MX, Surveyor, Zoom80C, and in SurvPC.
- A new NMEA-DGPS driver is available that allows sending DGPS or RTK corrections to the receiver using Data Collector Internet.
- COGO Transformation now works with linework. Align allows LOC/DAT/SYS/TXT-CSV and LPT Point files to be used in order to define the transformation.
- G1 Vector raw data record now shows vector to 5 decimal places.
- Current NTRIP caster and mountpoint are now saved in the instrument configuration file.
- SurvCE now allows configuration of certain receivers (PM500/PM800) to act as CSD bases via new Phone Server option.
- Ground-to-Grid user interface has been updated and enhanced to mirror Grid-to-Ground.
- SurvCE now supports automatically scaling each reading to grid option for all TS.
- Added support for several new NMEA messages saved to file or Data Collector port.
- SurvCE PC Demo version now allows "Scalable" interface window (1-3), depending on the resolution.
- Date/Time formatting support added.
- SurvCE now has some ability to detect when a wrong installation has been used and warn the user.
- SurvCE now supports robust best fit Arc/Circle in F2F.
- SurvPC now creates and manages the new Carlson Specific Point GDB (geodatabase).
- Carlson SurvPC creates non-point entities in Geodatabase. Features are also adding "vertices" as Carlson Points maintained in the new Carlson specific point GDB (geodatabase).
- SurvCE now supports new Action Codes AFIT- fit arc by two tangents and second point, ZO-elevation only.
- F2F action codes extraction and management have been modified to make it easier to add new Action Codes. Added functionality through geometrical functions for AFIT.
- Added new MAP: Test Polyline for Smooth; useful for CL creation/test.
- Battery level at 15% or below will now be indicated by a red-fill of the battery icon.
- Grid files that match name of projection are shown in System tab of localization dialog and

used in localization.

- Grid files with .grd extension can be selected using the Geoid button.
- SurvPC now supports Log Real Time horizontal/vertical alignment relative position, based on the current measurement, to an IO File, or to a COM port.
- SurvPC now correctly opens "Type based CRD jobs", as per last opened "alternate MAP type used", or as per "user's selected alternate MAP file" picked.
- SurvPC now loads "Microstation/Bentley, .dgn V7 Cell Header type elements".
- SurvPC now "SNAPS" correctly to "Shape, Complex Shape, and Complex Strings" Microstation/Bentley, .dgn elements.
- SurvPC now allows the creation of all SPT ("dot", "plus", "cross", settings in View Point settings) and the creation of any SRVPNO: 1,2,3,6,7,8. It also allows the creation of 2D, 3D groups, and also it allows scale of references Carlson type point cells, and creation of 2D/3D Carlson point type cells.
- SurvCE now allows user to overwrite known occupied point with calculated occupied point in Advanced occupation.
- Set Collection now supports selecting a unique target type for each target, and retains that information for reverse face shots and subsequent sets.
- The advanced occupation routine will now use traditional resection methods as an initial solve step to improve final results.
- The .dgn CAD platform now has full OSNAP support.
- GDOP and TDOP values will now be recorded with PDOP, HDOP and VDOP values when available.
- SurvPC now allows the display of LightBar Graphic visual indicators, within the Survey/Elev. Diff. routine.
- Edit boxes in SurvCE now support special code "G", which applies Grid to Ground scale automatically.
- SurvCE will now display size of file for GPS that support logging and have that information available.
- Most recent model is listed first in Current tab for convenience.
- SurvCE now supports: Angle format: DD.DDDD, and Mils(6400).
- SurvCE now supports: Latitude/Longitude format: DD.MMSS, and DD.DDDD, N/S(+/-), respectively W/E(-/+).
- DCI connection now verified from getting RTK corrections before continuing.
- Connect/Disconnect buttons shown in monitor when DCI used.
- Added new "QWERTY" virtual keyboard in SurvPC.
- MAP/Command CIRCLE allows, draw Circle by 3 Points.

# Improvements And Resolved Issues By Manufacturer

## GNSS Receivers

## Altus

### *Version 3.03*

- Base setup now using "setRAIMLevels,on,-2,-2,-3"

### *Version 3.02*

- APS-3L -- When Cancel is pressed while waiting for convergence in the "Calibrate with RTK" function, the tolerance is changed from 0.10m to 1.0m. If Cancel is pressed a second time, the function is canceled.
- Added support for TERRASTAR. The "Calibrate with RTK" button will average the RTK and TERRASTAR positions to get an offset to store in the receiver. This allows TERRASTAR positions to match the RTK positions.
- Internal spread spectrum radio now supported.
- Internal H24 Modem is now supported.
- "Missing memory card" no longer shown when not logging.
- Removed Veripos from the list of RTK types.
- Differential timeouts now left at their default values. (setDiffCorrUsage).
- DGPS mode turned off when using TERRASTAR.
- Internal CDMA is no longer a supported RTK device.
- Combined all Altus drivers into a single "APS-3" selection that dynamically determines the capabilities of the receiver.
- Improved detection of internal modems.
- "Converging" text now fits in portrait.

### *Version 3.01*

- The equipment list has been reorganized to show the APS3 V2 first, and use it as the default instrument.
- Base configuration now schedules RTCM3 RTK messages at rates more suitable for slow radio rates.

## Carlson

### *Version 3.03*

- Supervisor GPS (Super G) -- Port connections are now more reliable.

### *Version 3.02*

- Surveyor+ GPS -- COM3 is now an option in the RTK tab.

### *Version 3.01*

- Surveyor+ GPS -- No longer inappropriately showing “Unable to find RTK port”.

## CHC

### *Version 3.03*

- X91+ -- Antenna name and values now match the NGS relative offsets.

### *Version 3.02*

- X91+ -- Base antenna height is now applied correctly in base setup.
- All Models -- Bluetooth communication is now more reliable when setting up the base and rover.
- X91+ -- Raw data logging now works correctly.
- X91/X91+ -- Communications have been improved when starting position stream.
- X91+ -- Latency is now displayed correctly.
- All Models -- Internal GSM modem support has been improved.
- X900 -- Limited to 1Hz, removed GPS logging, improved base and rover setup and increased timeout to 2 seconds.
- X900+ -- Now supports 2Hz and 5Hz update rates.
- All Models -- CHC Now only showing Internal UHF radios that can transmit in the list of base radios. Rover radios no longer show power settings. Sensitivity replaces Squelch setting. Now showing 9600 baud for CHC radio. Radio configuration error messages removed. Now always showing channel table even if blank.
- All Models -- CHC Now only showing Tag button in Log GPS because start and stop logging not supported. Press log button on receiver to start and stop. Logging end tag now calculates epochs correctly. Correct record length now used for Logging start tag. Correct height used in logging records now.
- All Models -- Internal GSM no longer tries to get the source table.
- Beidou satellites are now supported and displayed.
- Irish national grid message limited to display only once.
- Raw data logging now supported.
- UHF Radio communications have been improved.
- Removed forward error correction option.

### *Version 3.01*

- Configuration and base setup have been improved.
- Internal UHF now sets the over the air baud rate to 4800 when 12.5 kHz Channel Spacing is selected and 9600 baud when 25 kHz Channel Spacing.
- SurvCE now supports internal Satel radio power, channel, Forward Error Correction, Squelch.
- X91+ -- SurvCE now shows extra instrument information.
- Driver names have been simplified and clarified to X900+, X91+, X900 and X91.



## Datagrid

### *Version 3.02*

- Colibri -- Improved the connection between DGRTKGeo Program and SurvPC.
- Stop logging is now supported in "Log Raw GPS".



## Geomax

### *Version 3.03*

- Zenith 25 -- SurvCE will no longer mistakenly set the stopbits to 2 on first install.
- Zenith 25 -- The PXS8 and PHS8 modems can now be configured correctly by SurvCE.

### *Version 3.02*

- Zenith 25 -- The Zenith 25 will no longer attempt to authenticate when used with the Surveyor or AllegroMX. New models do not require authentication, and will work with any data collector.
- Zenith 25 -- The Leica RTK message types are no longer supported on this receiver.
- Zenith 10/20 -- Setting up a base using “Read From GPS” now works even if already set as a base. Improved Raw data logging.
- Zenith 10/20 -- Log raw GPS now supported.
- Zenith 10/20 -- Error handling has been improved.

### *Version 3.01*

- Zenith 10/20 -- If firmware 1.60 is detected during ping, ARP height is sent to the receiver instead of the APC when setting the base position.
- Zenith 10/20 -- Base setup now working correctly for firmware 1.63.

## Hemisphere

*Version 3.03*

- S320 -- Microhard 400L radio now supports the following modes: PC5, PC6, Trintalk1, Trintalk2.

## HiTarget

### *Version 3.03*

- V30 -- The internal modem now supports NTRIP real names in addition to IP addresses.
- V30 -- Support added for CMRx message type, required to use BDS in RTK.

### *Version 3.01*

- H32 -- The receiver will no longer timeout when setting the configuration.
- H32 -- Display of sats in monitor skyplot is now correct.
- H32 -- The receiver now shows the full eight-digit serial number on the info tab.

## Javad

### *Version 3.01*

- Sigma -- Now working correctly with internal GSM.
- Triumph - Added “Simplex Repeaters” entry for internal UHF base Radio configuration.

## Leica

### *Version 3.03*

- GS14 -- Radio baud rate at the rover is now selectable.
- GS14 -- SurvCE will no longer force base radios to use COM1. This is leftover from when the internal radio did not transmit.
- GS14/GS14 -- SurvCE will no longer mistakenly set the stopbits to 2 during initial install.

### *Version 3.02*

- GS14 -- The Cinterion PXS8, PHS8, and Satel OEM22 radios are now supported.
- GS14 -- Antenna "GS14 Tripod Short" is now supported.
- GS14/GS15 -- The Leica Viva drivers will no longer lose the value for network solution type when configuring without checking the RTK tab.
- Leica GS15/GS14 -- The correction type is now visible in configure rover.

### *Version 3.01*

- GS14 -- The base can now be configured properly in base/rover mode.
- GS14/GS15 -- SurvCE will now give a more user-friendly message when the user selects an invalid base antenna.
- GS14 -- The internal modem now supports PIN code.
- GS15 -- The base port for the Leica Viva radio configuration can now be configured to COM3. This may affect some older work-around setups that required COM2.

## Navcom

### *Version 3.03*

- SF3040 -- Raw data logging now works as designed.
- 3040/3050 -- Improved antenna elevation for base systems using ACP.
- 3040/3050 -- Worked around firmware bug by correcting base position accuracy by using base position parsed directly from RTCM3 messages. Note that there is still potential for elevation errors when using CMR, due to problems in the firmware.

### *Version 3.02*

- The 14 parameter conversion calculator now operates more quickly when not connected to a receiver.
- Added a ITRF-Default datum to the 14 parameter datum list. When in SF-MODE the receiver will output ITRF Lat/Lon.
- When quickstarting with a NAD83 or WGS84 seed position, SurvCE will no longer attempt to do a 14 parameter shift, but will seed the position as WGS84.
- SurvCE now communicates more reliably and connects to NTRIP more consistently.
- SurvCE will no long report PORT "argument #1 out of range error.
- Quickstart will now perform a Quickstart reset when the Quickstart button is pressed.
- The Navcom Starfire drivers now support the "None" radio option.

### *Version 3.01*

- Use of NAD83 conversion when in SF. Use separated function for SF ITRF00->NAD83 transformation.
- 3040/3050 -- SurvCE now displays the SF Active Sat in SkyPlot.
- 3040/3050 -- SurvCE now displays additional firmware options.
- Sapphire -- SurvCE now supports 14 parameter datum transformation for StarFire receivers.
- 3040/3050 -- Configuration to NTRIP now works correctly when base does not require a NMEA GGA message.
- Sapphire -- SurvCE now supports an option to switch between SFLBand and SFOIP. If SFLBand signal is not available for more than 5 minutes, SFOIP will be automatically started.
- Sapphire -- SurvCE now supports SFOIP reconnect. Attempt to reconnect will be made if SFOIP service is lost for a period more than 1 minute.
- Sapphire -- Figure of Merit Display in Montior Skyplot.
- Sapphire -- Display the option for SFOIP in the option window.
- Sapphire -- Display of SFOIP or SFLBand for GPS type. Displayed next to Latency.
- Sapphire -- Display of DGPS messages when in SF Mode. The text was changed to display SF Mode.
- Sapphire -- Display of mount points for SFOIP. Added additional text to status to give indication of connection.
- The internal antenna for the SF3040 (NAVSF3040) will only be available for the SF3040.
- 3050 -- The default antenna type for the SF3050 will be the NAV\_ANT3001R.

- 3050 (fw 3\_3\_8) -- Use a 3rd party base receiver Glonass to calculate the position.
- 3050 (fw 3\_3\_8) -- SF rapid recovery. More quickly recover from the loss of StarFire corrected positions after receiver loss of SF signal.
- 3050 (fw 3\_3\_8) -- Use WGS84 for Starfire Quickstart

## Novatel

### *Version 3.02*

- High RMS RTK Fixes are now avoided.

### *Version 3.01*

- GPS Diagnostic log now logs more messages.
- OEM6 -- Driver Info dialog now shows receiver capabilities.



## Prexiso

*Version 3.01*

- G4/G5 -- Antenna definitions have been updated.

## Septentrio

*Version 3.02*

- TERRASTAR is now supported.

## Spectra Precision (formerly Ashtech)

### *Version 3.03*

- PM700 -- The internal antenna definition has been changed to match the NGS database.
- PM700 -- Raw data logging is now supported.
- ZXTreme -- SurvCE will no longer incorrectly report an error when setting antenna information.
- ZXTreme -- The radio port baud rate will now be properly set.

### *Version 3.02*

- SurvCE no longer has the potential to fail when loading an Ashtech/SP driver.
- The "use glonass only" checkbox has been removed and replaced with individual checkboxes for each sat. system.

## Sokkia

### *Version 3.01*

- Topcon/Sokkia Internal Digital UHF I/II Radios, ARWest Radios -- ARWest based radios other than Altus now do not set the port flow control. Errors encountered when getting radio parameters are shown now.

## Stonex

### *Version 3.03*

- S8 -- The antenna has been corrected to match the NGS name and values.

### *Version 3.02*

- S9III -- Setting up a base using “Read From GPS” now works even if already set as a base.  
Improved Raw data logging.
- S9III -- Log raw GPS now supported.
- S9III -- Error handling has been improved.
- S8 -- The L1/L2 antenna offsets have been changed to match the S9III.
- Autobase will no longer be set to NO.
- S9III -- Sats will now correctly show as enabled/disabled in monitor skyplot.

### *Version 3.01*

- S9III -- If firmware 1.60 is detected during ping, ARP height is sent to the receiver instead of the APC when setting the base position.
- S9III -- Base setup now working correctly for firmware 1.63.

## Topcon

### *Version 3.03*

- Topcon GPS Digital UHFII Radio -- Radio setup now showing 25 kHz channel width frequencies.
- Topcon base RTCM3 setup now sending message 1033 with base antenna information.
- Hiper SR -- SurvCE/PC now remembers the Topcon Hiper SR base address after a Clear NVRAM.
- Hiper SR -- Internal radios and RTK formats not supported by the Hiper SR are no longer shown as options.

### *Version 3.02*

- Topcon GPS Digital UHFII Radio -- Radio setup now showing 25 kHz channel width frequencies.
- Topcon base RTCM3 setup now sending message 1033 with base antenna information.

### *Version 3.01*

- The internal CDMA modem now allows selecting 38400 or 115200 baud.
- Topcon/Sokkia Internal Digital UHF I/II Radios, ARWest Radios -- ARWest based radios other than Altus now do not set the port flow control. Errors encountered when getting radio parameters are shown now.
- Added ability to identify make of base station in Advanced dialog. Correct base identification improves ability to achieve and keep RTK Fix.
- RTK PDOP maximum now set to 6.0 in firmware versions after 3.5.
- PDOP Tolerance added to Tolerance dialog.
- Topcon GPS Digital UHF II -- Channel Width is now shown with Channel frequency instead of it's own combo box.
- Topcon GPS Digital UHF II -- Satel protocol is now working correctly.
- GPS Log now creating the log file correctly.
- GPS Logging on a base receiver now always sets the static flag.

## Trimble

### *Version 3.03*

- Epoch 50 -- Raw data logging is now supported.
- All BD970 -- Beidou (Compass) is now supported.

### *Version 3.02*

- Sat. info and positions are now displayed more quickly.
- Vector data is now more dependable.
- Base positions from the rover are now correctly retrieved and correctly written to the BP records.

## Total Station



## Carlson

### *Version 3.02*

- CR2 -- SurvCE will now force an authentication when power search fails. This will help in cases of failed battery during use.
- CR2 -- The Getac 336 now supports this total stations. Geocom Authentication is supported.
- CR2 -- The Getac Long Range Bluetooth Radio cap is now supported. Select Bluetooth in the comms tab, and then select “Long Range Cap”.
- CR2 -- A Direct mode driver has now been added.
- CR2 -- SurvCE will now authenticate Leica Geocom when running a set angle. This will prevent lost authentication when moving instrument.  
\* *Please see Leica notes for additional CR2/CR5 improvements*

### *Version 3.01*

- CR2 -- Reading time has been shortened.
- CR2 -- SurvCE will no longer require multiple attempts to set the backsight, and the process is shortened.
- SurvCE will now turn on the laser pointer each time the user switches to RL mode, if the laser pointer is enabled.
- SurvCE now has a low-level filter to prevent redundant total station readings.
- SurvCE will now return to locked state immediately after measuring.
- CR2 -- SurvCE now takes reflectorless readings more reliably.
- Power search work area now works for all Leica based RTS.
- CR2 -- Now supported on the Getac data collector.
- Turn to angle in stakeout will no longer fail for 2D points or when vertical is disabled.

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## Geomax

### *Version 3.02*

- Zoom 30 -- The laser pointer can now be enabled/disabled.
- Zoom 80 -- The Getac Long Range Bluetooth Radio cap is now supported. Select Bluetooth in the comms tab, and then select “Long Range Cap”.

## Leica

### *Version 3.03*

- Leica MTS -- SurvCE will now force ATR visibility option and ATR field of view to normal.
- Leica RTS -- If in locked mode, SurvCE will return to locked mode after entering the TS setup screen, and not force the user back to tracking.
- SurvCE will no longer report "no valid position" when trying to store offset points on a Leica total station.
- The CTR16/RH16 Bluetooth communication method now operates more smoothly. SurvCE will now wait when coming out of a suspend before attempting to reconnect.
- Leica RTS -- Search on read will now work correctly even if lock has just been lost. Was failing to search in fast mode after briefly losing target.
- Leica RTS -- The Leica robotic total station will now swing 7 degrees in the opposite direction before performing a power search. This should increase search accuracy for prisms that are already very close on the horizontal position.

### *Version 3.02*

- Leica TS1200 and newer -- SurvCE will no longer fail to turn back to the direct face when taking a D&R reading.
- Leica TS1200 and newer -- Search on read setting will now default to ATR instead of NONE.
- Leica 1000/1100 -- The 2152 Check level command will no longer be sent for these instruments, as it is not supported.
- Leica Direct models -- SurvCE will disable ATR mode when launching the direct driver.
- Leica RTS -- Ping improved to account for extra data output on the radio port after it is opened. Baud rates will no longer cycle when pinging.
- SurvCE will now check the the angle after it is set, and confirm that it is within 10 seconds. This fixes periodic failures to set angle, especially after a reboot.
- SurvCE will now go to standby when using the Leica 1200 or Carlson CR2 in direct mode. This prevents scenario where knobs will not turn in manual mode.
- SurvCE will now throw "failure to lock on prism" error when lock fails, instead of an ambiguous Leica error code.
- SurvCE no longer supports the "Search on Lost Lock" option for Leica TS.
- SurvCE will no longer apply ATR when in Fast EDM mode and already locked or tracking the prism. This is compatible behavior to older version 2.62 and earlier. Reduces reading time in fast mode to 2 seconds.
- Leica RTS -- If the total station is already aimed at a target in when the search button is pressed in the joystick screen, it will now warn the user.

### *Version 3.01*

- Leica TS0x -- SurvCE will now correctly set the EDM mode and target settings when this total station is run in GeoCOM mode.
- Leica TS0x -- SurvCE will no longer post the message "error unsupported" when attempting to

set the laser pointer on the Leica Flexline total station.

- Leica TS11/TS15 -- The Leica TS11 and TS15 have been split into two separate drivers. The TS11 is now correctly defined as non-motorized.
- Leica TS12 -- The Leica TS12 is now listed as a separate driver, for clarity.
- Leica TS1200 and newer -- Leica GeoCOM reading time has been shortened.
- Leica TS1200 and newer -- SurvCE will no longer require multiple attempts to set the backsight on Leica total stations, and the process is shortened.
- SurvCE will now turn on the laser pointer each time the user switches to RL mode, if the laser pointer is enabled.
- SurvCE now has a low-level filter to prevent redundant Leica total station readings.
- SurvCE will now return to locked state immediately after measuring.
- The Leica 1200 and newer -- SurvCE now takes reflectorless readings more reliably.
- Power search work area now works for all Leica based RTS.
- The CTR16 radio now works with SurvCE (broken in some previous versions)
- Leica 1200 and newer -- Turn to angle in stakeout will no longer fail for 2D points or when vertical is disabled.
- The Leica 1200 Remote radio has been added back in.

## Sokkia/Topcon/Topcon

### *Version 3.03*

- Topcon RTS -- Topcon RTS will now D&R correctly in remote benchmark. Now also obeys the auto-turn and auto-read settings and prompts accordingly.
- Topcon DS/Sokkia DX -- This driver will no longer offer the option to RC search on read. This instrument does not support an RC unit.

### *Version 3.02*

- SurvCE will no longer be negatively affected by pressing the trigger button on the RC4. Note that the trigger button does NOT trigger a reading in SurvCE at this time

### *Version 3.01*

- SurvCE will no longer be negatively affected by pressing the trigger button on the RC4. Note that the trigger button does NOT trigger a reading in SurvCE at this time.
- SRX -- Reduced occurrence of "unable to rotate" message.
- SRX -- Will now rate correctly on the Turn 100 and Turn 200 buttons when in gons.

## Stonex

### *Version 3.03*

- R2 Onboard TS -- The "Perfect Precision" setting will now be detected by the software and higher precision values will be used.
- R2 Onboard TS -- Bluetooth power will be automatically disabled when running SurvCE onboard to save on power.
- R2 Onboard TS -- Laser pointer, guidelights, laser plummet, and reticle illumination are now supported.

### *Version 3.02*

- R2W Onboard -- It is no longer possible to launch multiple copies of SurvCE when running onboard.
- R2W Onboard -- Chat/Cloud features are no longer supported on any onboard version.
- R2W Onboard -- Set Horizontal angle will no longer display error message when ACK characters proceed valid response.
- R2W Onboard -- Battery status and model info are now displayed correctly.
- R2W Onboard -- Check level values have been reversed and are now correct.
- R6 -- The Stonex R6 driver is been modified to match the feature set of the Geomax Zoom 30.