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## Eagle Point Solution to a Frequently Asked Question

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### Enhancements from *SMI Version 5.0* to *SMI Version 6.0*

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**Summary:** This document provides a list of enhancements from *SMI Version 5.0* to *SMI Version 6.0*.

**Product:** SMI Version 5.0

**Platform:**

**Related documents:**

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### Drivers/Instruments Supported

The following is a list of new drivers/instruments supported:

- (Robotic) Topcon RC-2 driver. (GTS 800 feature)
- Topcon DL100 Digital Level
- Topcon 800 I (for connecting directly to the Topcon 802A)
- Topcon GTS6 driver (same as GTS3)
- (Robotic) Topcon 800 A instrument supported.
- Topcon GMT-100
- Zeiss Elta C20 and C30
- Zeiss DINI Electronic level
- Zeiss Elta S20/S10
- Zeiss S20 interpreter in robotic cards.
- (Robotic) Georadio QL Zeiss radios supported (S20Q is the driver name)
- Leica NA2002 digital level
- Leica GS16
- MDL LaserAce 300
- LaserCraft Rangefinder

- NMEA GPS GGA driver
- Trimble Optical Instruments
- (Robotic) Satel 3Asd and Satel 2Asx radios.
- PTS-V3 two way instruments.

#### Driver/Instrument Changes

- (Robotic) G600 driver for the Geodimeter 600. Added several keys to the Custom Instrument Functions menu – FOLL DIST AIM FLW SOUN . These options allow you to have greater control over what happens when the data collector is in Coarse mode. With AIM and FLW (follow) turned off and DIST set to track mode, a shot can be collected in 3 seconds compared to 12 seconds for a fine mode shot. See Geodimeter in the Instrument Reference section of the SMI Version 8 Reference Manual for more information.
- Geodimeter driver GEO4 can now turn to the zenith angle in addition to the horizontal angle when turning to a point.
- (GPS) LLQ (Allen Osborne Associates) now works more like other GPS drivers with a live update function and GPS raw data.
- (GPS) Improved raw data for Javad, LLQ, and GGA drivers.
- (GPS) Javad and GGA drivers now allow quality of 0 for Base.
- Geodimeter 600 now follows the prism after taking Coarse mode shots.
- (Robotic) Topcon APL1-A now guarantees a new measurement on each shot. APL1A and 800 driver code separated.
- (Robotic) The Leica TCA1 driver now uses the same method of setting zero as the TCA2 driver.
- (Robotic) Added AIM in Coarse mode of CINST for Geodimeter 600 (G600).
- (Robotic) Leica TCA driver now leaves Lock mode on after performing a search.
- (Robotic) The Topcon APL and 800 drivers now sets the baud rate to 9600 when the driver is selected and not each time a instrument function is used. If the baud rate is changed manually after the driver is selected, it will stay changed until a driver is selected again. To change the baud rate to 4800, turn on ALPHA mode, type in 4800, and press **ENTER**.
- (Robotic) Shots in the reverse face are now supported in the G600 driver for the Geodimeter 600. The 600 cannot search while flopped, so the scope must be pointed at the prism when trying to get a flopped distance.
- (Robotic) The Topcon 800 (800) custom instrument menu now has the key to adjust the sensitivity of the Topcon 800. /i>
- Geodimeter 600 driver (G600) now does a compensator calibration every time the soft key ON is pressed.
- (Robotic) Added HALF toggle key in the instruments menu to allow Turbo 48's to control non-Zeiss instruments at non-Turbo baud rates. Note that a baud rate of 1200 cannot be cut in half so a 1200 baud driver will run at 2400 baud on a Turbo 48 regardless of the setting of HALF. The Zeiss S20 and S20R drivers turn the HALF flag off so they always run at 19200 in a Turbo 48.
- Meters mode now supported on the Zeiss S20. Turn it on using <CHG> <NeXT> MODE FEET / METR .
- Added LEVEL key to the Zeiss menu. It shows how level the instrument is.

## Other Enhancements

- Improved note prompting for Level Notes.
- (GPS) Added REF3 button to second page of GPS menu. Using REF3 to add a third reference point creates a sloped plane model of the Geoid. If the Geoid entered in the GPS Options menu is not zero, the sloped plane model is not used.
- Multiple line comments in the raw data file now use CRLF instead of just LF.
- (GPS) Added GEOID button to OPT menu.
- (GPS) Benchmark ( RM ) now uses a special GPS routine when a GPS driver is selected. The difference in the elevation of the point and the measured position is applied to future points.
- Removed the submenus from the menu browser.
- (Robotic) Instrument Positioning menu ( **CTRL** <POS> ) now works faster and more like other menus. LIVE key now starts the live update instead of being a toggle key. Any key stops the live update. The **ALT** key must be pressed before using the arrow keys to move the instrument, just like other menus. The menu does not need to be exited to start new menu.
- Variables local to a job (such as scale) are now stored in a job variable structure that is stored on the card and cached in internal memory.
- (Titan) Added more visible commands for F-key menus.
- (Robotic) If the distance entered for Real-time Sideshots ( **ALT** SIDS ) is negative then you are prompted for storing the side shot when the distance from the last point is reached. This gives time to get the prism level before storing the shot.
- The ZHA comment record generated by the SDA command now stores the angle right instead of the azimuth.
- (GPS) Added routines for State plane to Lat/Long conversion.
- Cleaned up Screen Plot ( SPLOT ), Note Search ( NOTE ), and Transformation ( CX ) in the Random Points menu. Also cleaned up Angle Adjustments ( AERR ) and the instrument driver's installer.
- The TIME key in the Sunshots menu no longer accepts invalid.
- Note Table menu now has PGUP and PGDN keys instead of the USE key. Pressing **ENTER** is the same as tapping USE .
- Added TOPC key to last page of <RPTS> menu. TOPC sends the points specified in the random points file. It uses the same protocol and flags as the KERMIT menu in the <JOBS> menu. Can be used instead of the SEND button in the KERMIT menu.
- The DATE key in the Sunshots menu no longer accepts invalid dates.
- Robotic instruments now search for prism after flopping.
- The data collector now prompts for an HI after a traverse if elevations are on and the HI is not 0. The prompt is not made until another key that uses the HI (such as SIDS ) is pressed. The prompt is not made if the HI is entered before taking the next shot. This helps to make sure that a new HI is entered for every setup. Using the HI key works just as it has in the past.
- Assigned the new <SRVO> menu to the **ALT** 8 key. It is useful for controlling Servo-driven instruments. The menu keys are:

CLR – Clear modes of the instrument

CRS / FINE – Select Coarse or Fine mode.

LIGHT - Toggle the stake light.

AZ - Enter an azimuth or two points and the instrument will turn to that direction.

BRG - Enter a bearing and the instrument will turn to that direction.

FS - Toggle whether the instrument turns to the foresight.

- (Robotic) In MBS, Trig, and Benchmark, the software guarantees that the instrument is in the correct face. If it is not it flops, the gun.
- Added new option to Curve Stakeout (CURVE in STAKE or STA in Curve Menu). On the second page of the menu there is now a toggle key to choose between distance and offset from the Tangent ( TAN ) and from the Chord ( CHORD ). This is useful for some types of construction layout.
- Replaced the AZ/BRG/\_RT/COOR key in the <STAKE> menu with NXPT (Next Point). If no point is on the stack, it searches the random points file for the closest point to the last shot and gives the go/come distance. If the point is on the stack, it gives the go/come distance to that point from the last shot. If two points are on the stack, it searches the range of points for closest and gives the go/come distance.
- Added TCR to the Sunshot menu for getting time, circle to sun, and results with one key press. The SHOW key was moved to the end of the second menu.
- Added Time Stamp toggle key to the <CHG> INPUT menu. When turned on, a time stamp is put in the raw data file every time a shot is taken.
- Visible Rectangular to Polar (R->P) & Polar To Rectangular (P->R)
- 2PFS (Resection) now puts calculated precision in raw data file.
- CVC Chain tangents can now be extended by any amount using the XTND key on the second page of the OPT submenu of <CONST>. The default value is 100. The HCCL must be recompiled before XTND has an effect.
- SHOTS> now gets the zenith angle before taking a shot to determine if the instrument is flopped. In Manual mode, you are prompted for the direct or reverse.
- SHOTS> now allows reverse shots at any time.
- SHOTS> now allows a new point to be added to the point list at any time. If the next point is 0, you are prompted for the point number.
- Azimuth to Bearing ( ATB ) now displays bearing instead of putting it on the stack. Also displays azimuth, angle right, and deflection angle.
- MAN3 added to INSTR (Instruments). MAN3 prompts for coordinates instead of SD, ZA, HA.
- POLE / INSTR toggle added to the 2nd page of the Instrument Direction menu. The POLE option makes Left/Right directions from the perspective of the rodman.