

System 1200 Newsletter – No. 20

v2.00 Firmware – What's New

MORE FUNCTIONALITY THAN EVER BEFORE

This week the v2.00 firmware for System1200 instruments will be released this week. This latest firmware can be loaded onto all System1200 instruments – TPS1200, GX1200 and GRX1200.

This new firmware not only supports SmartStation (see the last newsletter) but also contains many new other features which can be used for the individual TPS and GPS instruments.

This newsletter gives a summary of the main new features in the v2.00 firmware. A complete overview of all new features can be found in the System1200 v2.00 Release Notes which are available on all System1200 v2.00 firmware CDs. Alternatively they can be obtained from the Leica download web page when downloading the firmware itself: <http://downloads.leica-geosystems.com/downloads/>.

Note, the new firmware is protected which means that a valid maintenance contract is required for each instrument. If the contract is not valid then the firmware cannot be loaded.

This newsletter describes the features of the “main” firmware - the next newsletter will focus on the loadable application programs – this includes new features for COGO, Stakeout, Reference Line and TPS Sets of Angles.

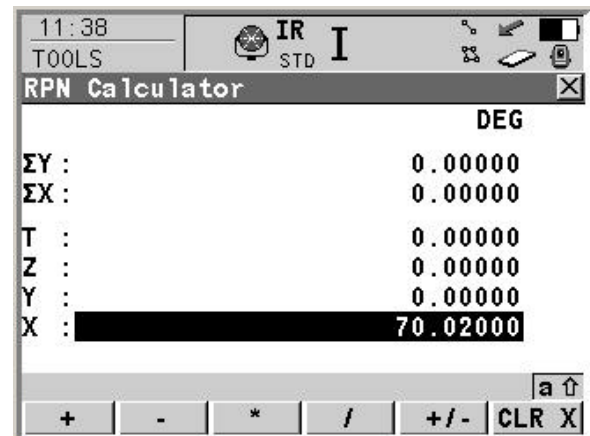
NEW FEATURES

Some new features are common to both the GPS and TPS instruments – others are instrument specific.

NEW FEATURES COMMON TO BOTH GPS AND TPS

Calculator: In the **Tools** menu (choose **6 Tools...** from the main menu), a calculator is now available (both **Standard** and **RPN** modes) – it is possible to put the calculator onto a hot key or into the **USER** menu such that it can be accessed at any time.

Additionally when data is being entered into any input field, the **F5(CALC)** button is available which allows the calculator to be directly accessed.

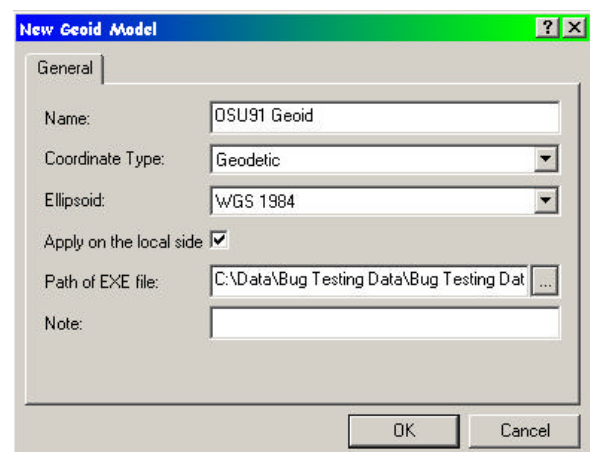


Once the calculation is complete, the result can be “pasted” back into the input field by pressing **shift F4(DONE)**.

File Viewer: Also in the **Tools** menu, a file viewer is now available allowing any ASCII file to be viewed.

This may be useful when checking what is actually stored in a file before importing the data into a job. It is also possible to press **F3(VIEW)** in the **EXPORT Export Data From Job** and **IMPORT ASCII/GSI Data to Job** panels in order to view files directly.

Handling of WGS84 Geoid Models: When a geoid model based on the WGS84 ellipsoid is created in LGO, it is now possible to define if the N value (the geoid/ellipsoidal difference) should be applied on the “WGS84 side” or “local side”. Note, v2 LGO is needed to choose this option – v2 LGO will be released soon.



If you choose the “WGS84 side” then local orthometric heights are computed by applying the N value to the WGS84 ellipsoidal height – the same as today.

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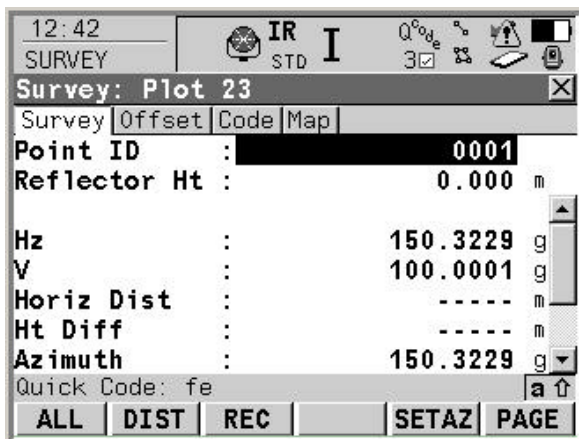
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If you choose the “local side” then local orthometric heights are computed by applying the N value to local ellipsoidal heights. This is particularly useful when setting up the RTK reference station with a “HERE” position and then visiting known points with the rover in order to compute a transformation. With the new functionality, the orthometric heights of the local points can be used with the WGS84 based geoid model (which is now applied on the local side) to obtain local ellipsoidal heights – the transformation is then computed using these local ellipsoidal heights. When the transformation is then used on the rover, correct orthometric heights are computed using the WGS84 based geoid model.

Point has been stored message line: Whenever a point is stored (either by pressing **F1(ALL)** or **F3(REC)** on TPS1200 or by pressing **F1(STORE)** on GPS1200) then the message line **Point has been stored** is shown to confirm the point was stored.

Default ID Templates: On all new instruments, default ID templates (for surveyed points, auxiliary points, auto logged point, lines and areas) are suggested.

QuickCoding message line: When using quickcodes, as the characters are typed in order to activate a quickcode then these characters will appear in the message line. This now makes the use of quickcodes a little more “obvious”.



Turn off with ESC: It is now possible to turn off both the TPS and GPS instruments by holding down the **ESC** key for 2 seconds in the main menu.

NEW FEATURES FOR TPS ONLY

New RH1200 Radio Handle: The new RH1200 radio handle is supported with v2.00 firmware.

The radio handle removes the need to use the existing external radio, battery and cables in order to use a TPS1200 as a robotic one-man instrument - the handle contains a TCPS27 radio and can be used with existing RX1220 controllers.



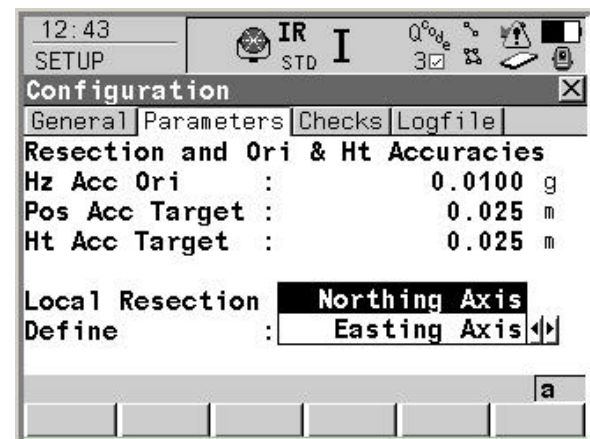
Additionally, since the radio antenna is now optimally positioned by being mounted at the top of the TPS instrument, it should be possible to work at even greater distances from the TPS instrument. In order to use the radio handle with it is necessary to have the new **GSD01(02)** side-cover fitted to the TPS instrument (this sidecover can be fitted to existing TPS instruments). Note that the Bluetooth functionality built into the new side-cover means that the general functionality relating to interfaces, ports and devices has also been extended.

New Touch Screen: v2 firmware also supports the use of the new touch screen which is now available for TPS instruments. Touch screens can be fitted to existing TPS instruments.

PowerSearch Improvements: When the automatic search after loss-of-lock is configured to be PowerSearch then only prisms at ± 10 m from the previously tracked prism will be found. This helps to ensure that only the rover prism will be found.

Also, after a PowerSearch, an additional distance check is made after the vertical search which helps ensure that only the prism detected by PowerSearch is found.

Local Resection Setup: When using the local resection method (this setup method was introduced in v1.52 firmware) to setup the TPS instrument it is now possible to choose if the easting or northing axis is being defined.



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This can be configured in the **SETUP Configuration** panel. Previously the northing axis was always defined.

GSI Output: It is now possible to output GSI measurements (or the other ASCII formats) from the TPS instrument to a 3rd party device without a CF card being inserted. It is now also possible to output measurements when auto logged points are being measured.

NEW FEATURES FOR GPS ONLY

Default Antenna Heights: Now, if the static antenna height is changed within any application program then this height is not stored to the configuration set. Previously it was stored which meant that the last used antenna height was used the next time an application was accessed.

RTK Improvements when using FKP corrections: The RTK performance of GPS1200 has been improved when using FKP corrections. The speed of the RTK initialisation can now be quicker under certain circumstances – especially under conditions of high ionospheric activity.

SUMMARY

The new System1200 v2.00 firmware is now available. It is protected and therefore needs a valid maintenance contract to be used - it is available now and can be obtained from the Leica web download site.

There are improvements for both the GPS1200 and TPS1200 instruments. It is strongly recommended to read the accompanying Release Notes before loading and using the firmware.

The next week newsletter will describe the improvements made to the loadable application programs.



Please contact your local Leica representative if there are specific topics you would like covered in these newsletters.

We welcome all suggestions for TPS1200, GPS1200, specific applications or LGO. We look forward to receive your ideas.