



Introduction

We are very pleased to announce the release of Version 3 (v3) firmware for System 500.

Again, this latest firmware contains both new functionality and improvements to existing features.

A couple of previous newsletters have hinted at some of the new features within v3 firmware – this newsletter explains why you should invest in this new firmware for all your System 500 sensors (SR5x0, GS50, RS500 and MC500) as soon as possible.

Improved RTK

Newsletters Vol. 01, No. 6 & 7 explained how RTK works within System 500. Briefly, ambiguities are resolved twice before a phase (cm accurate) position solution is available and then, this solution is continually checked. This technique results in the highest reliability of the RTK solution of any GPS RTK system available today.

With v2.0x firmware, a cm solution could be available in under 25 seconds. Now with v3 firmware, the cm solution can be available in less than 10 seconds.

And remember the ambiguities are resolved twice in this time **AND** the ambiguity check still **continues** to be repeated once ambiguities are fixed. Reliability is just as good as with v2 firmware – **greater than 99.99%**.

This performance and reliability has to be seen (and tried) to be believed.

RTK Output on 2 Ports

Newsletter Vol. 01, No. 10 explained how the optimal way to work with RTK is to combine GSM and radio. Use radio for 90% of the survey

and when the radio link is lost, simply switch to GSM to complete the survey – without having to return to the reference station.

Improved Auto Logging

As explained in Newsletter Vol. 01, No. 11, the collection of points with auto logging has been greatly improved.

Auto logged points can now be coded, viewed in Point Manager and exported with format files from the sensor.

Additionally, the control of stopping and starting the collection of auto logged points is also improved.

Staking Out

Staking out with System 500 has always been simple and efficient with 10Hz position update rate and very low latency. It was also possible to orientate using one of several options, the sun and north orientation being the most popular.

We have now also added an arrow as an orientation option – simply push the pole away from you and the arrow immediately points to the direction in which to walk.

We have also now added a “co-ordinate check” when you measure the point you have just staked out. If the measured co-ordinates of the staked point are greater than the defined limit then a warning message is displayed. Even more quality control!

CSCS Models

V3 firmware now supports **Country Specific Co-ordinate Systems (CSCS)** – a feature unique to System 500.

The original mapping datums of most countries was established over many years using a variety of “traditional” surveying equipment from

chains to total stations. The result of this is that most mapping datums are distorted due to the limitations of the equipment and survey techniques available at that time.

Most countries wish to retain the original distorted mapping datums, but also wish to be able to use GPS within these datums. Because the GPS measurements are “too accurate” for these distorted datums, co-ordinate shifts are required to convert between the computed GPS co-ordinates and the original distorted mapping datum.

More and more countries are now publishing “look up tables” which contain these co-ordinate shifts.

Using CSCS models with v3 firmware, it is now possible to survey with GPS and use these co-ordinate shifts to directly tie into the mapping datum – in some cases removing the need to compute transformations.

CSCS models for UK, France, Denmark and Holland are already currently supported and it is simple to add the co-ordinate shifts for additional countries. Contact your local Selling Unit or Dealer for more information.

Many Other Features

Many other features are included within the new v3 firmware.

Take your time to read the release notes and learn how you can become **even more productive** with System 500.

Remember

- V3 firmware contains many new features which will improve your productivity with System 500.