

Stonex 'Cube A' S590 GNSS - Quick guide

Getting started:

Turn on the S590 receiver by holding down the On/Off button for 2 seconds. Put the unit on the survey pole. Turning on the tablet and slide up with finger to show the main screen. There is no password.

Tap on the '**Cube A**' App in the middle of the screen and **then let it go through its initialisation process.**

If outside in view of satellites it will show how many satellites it is receiving.

It will display **DGNSS, Float or Fixed** when it is receiving the **RTK** signal over the internet.

H:0.020 means the expected horizontal accuracy is 20mm and V: 0.026 is 26mm accuracy. Example below

The Bluetooth / RTK Icon gives the amount of time from receiving the RTK / DGPS correction signal.

Using the mobile phone internet it will typically be between 1 and 5 secs. The **Battery level** of the GNSS receiver is to the right of the RTK status.

On the main front page at the bottom of the screen are the 6 menu tabs. **Project, Device and Survey** etc.

A **Project** name will have been created or it can be done in the Project menu in **Project Manager.**

The **Device** menu is where communication link is created. It should already be configured for the S590.

Surveying:

On the bottom of the screen you will see **Survey.**

In this menu use **Point Survey** to record a point.

Tap on the bottom right **REC** teardrop Icon to record a point at your location. The point is where ever the GPS antenna is located.

Above the REC icon there is P1, P2, P3 list. This is where you can view and edit points.

Below the REC icon is where the **antenna height** from ground is entered. If its on a pole, it is 2m.

Setting out a point is done in the Survey menu by selecting the **Point Stakeout** menu. This will allow you to navigate to a selected point. The point is selected from a list or from the map.

Record a **track log** at defined distance or time interval. Click on the pole Icon in the bottom centre of the screen. Select **Auto Point** in the drop down menu and then set the distance or time interval. Distance is referred as Step.

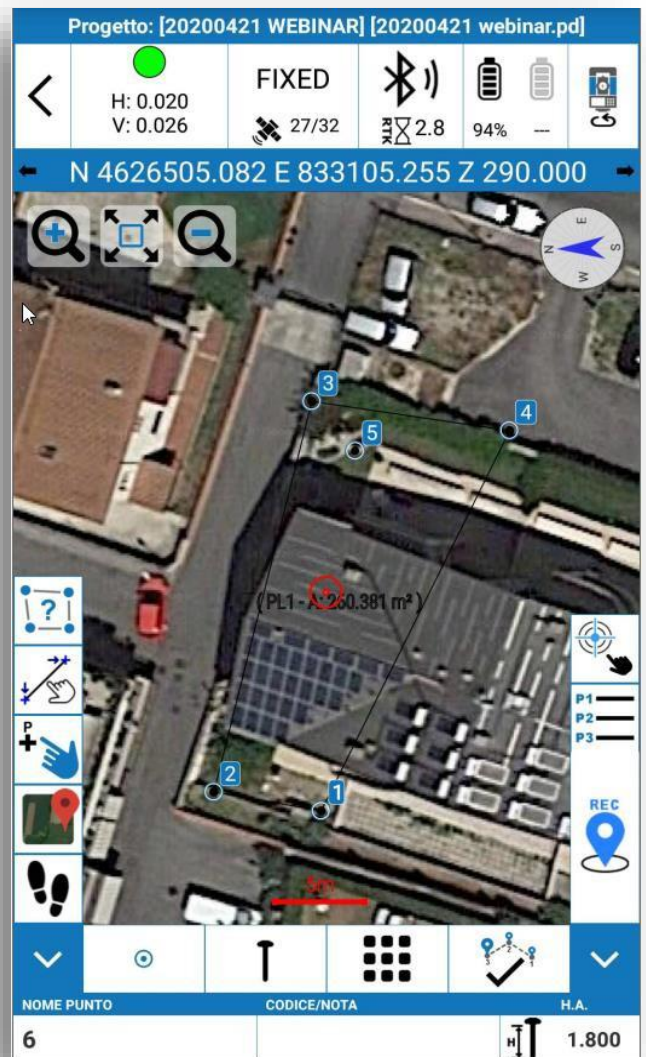
The Google image on the left side of the screen will Bring up a google map of the area. You need to have an Internet connection for this function.

Always remember to keep an eye on H: & V: at top of screen to make sure you know the estimated accuracy.

To **Export** your recorded points go to the **Projects menu** in the main screen. Then open Export Data.

Select Point Id, East, North, Height and Code in the list. **Also tick the box to share after export.**

This will let you email the data to your personal email. The other way to export data is using the **USB C** cable connected to a PC. Swipe down with your finger from the top of the tablet screen and you will see Android System – Charging this device via USB.



Tap on this message to bring up other options. Now select **File Transfer**. On your computer open the **Internal shared storage**, then open **StonexCube**, then open the **Export** folder. Your exported CSV will be in this folder.

In the **Project** menu you are able to **Import points** into your job it is the reverse procedure. You copy and paste a CSV file with 5 columns. Name, Easting, Northing, Height, Code into the Input folder of StonexCube. Then select this file and miss the first line of the spreadsheet if it has a header line.

Feature Codes can be created for your own list of codes. Simply create New and give it a name and then add codes for common features that you might be recording.

Other useful information when using the CubeA main menus is as follows.

In the **Configure** menu at bottom of screen you will see the following menu tabs

Coordinate System is where **Ellipsoid** is set to **GRS80** when working in Australia

Projection is set to UTM and it is here that you select a different UTM zone. The Central Meridian for Zone 50 is 117 degrees and for zone 51 it is 123 degrees. This can be auto selected by tapping the icon to the right.

Geoid is where a model of mean sea level is selected to change heights from Ellipsoid to AHD. Import the file for your project area.

Local Offsets is sometimes enabled to adjust for a local change in coordinates and height.

Display Settings – Display point Name should be selected to show your points on the map screen.

Record Settings is where you can set the acceptable tolerance for the survey points that you collect. The points you collect will be called **Topo points**.

Solution Limit Float

HMRS 0.30 which is 30cm - this is just so you don't get the warning message pop up. Always look at VRMS 0.50 which is 50cm the estimated accuracy at the top of screen before recording a point.

Auto Point in the Record Settings menu allows you to create a track log of points using a time interval or a distance interval (labelled Record according to Step).

The **Device** menu at bottom of screen

Working Mode is where you can check the S590 receivers settings.

Select **Rover** Check that in the Communication Mode box that **Atlas L-Band** or **Phone Network** or **UHF Radio** is selected. Double check that all the Satellite constellations have been enabled.

Then press Apply to ensure that any changes have been saved.

Static Survey is in working mode and is used to record a static survey session. Raw GPS data can be collected for a single point and later post processed to get a very accurate 3D position. A session can be from 1 minute to 20 minutes depending on how far you are away from a Base station / CORS. The raw GPS file for the session is found in the GPS receiver. It is downloaded via the WebUI, please read below.

When **Phone network** is selected as the data link, you need to select a reference station near where you are working. When close to a reference station you get the accuracy to 1cm but if you are 80km distant it will get to around 10cm accuracy and take longer to get a **Fixed** solution.

NTrip Access Points when using Auscors can be found on <https://portal.ga.gov.au/persona/pa>

When working in Perth's Northern region usually use PERT00AUS0 and when working in the Southern Suburbs choose SALT00AUS0.

When used in Melbourne there are CORS like BNDR00AUS0 in Bundoora that can be used.

Note that the current data link signal has to be stopped before a mount point can be changed.

To Exit the Cube A software press the Return button near the On/Off button. The S590 receiver can be turned off by **ticking the box** at the same time. To turn off the S590 manually press the On/Off button for 2 seconds.

Using the Web UI and configuring the receiver

Firstly connect the S590 via WiFi on your computer. Ignore messages such as no internet. Then open a Web browser like Internet Explorer or Chrome and Type **192.168.10.1** in the browser window. It will ask for username and password which is **admin** and **password** respectively. You can now access the receivers information and make changes to the GPS settings.

Download Raw Data is where Raw GNSS data that has been recorded is stored. This can be used for Post Processing and to send off to get an **Auspos report** or post processed on the SmartNetAus portal. Around 3 hours or more data is need for a good Auspos report. Only a few minutes is needed for SmartNetAus processing.

Management is where New Firmware is installed.