LandStar8 FAQ Series:
Setup a Base at a Known Position

More FAQ's like this one are available here: [LandStar8_FAQ]   Date: 9/24/2022

## DESCRIPTION

A common question is:

  How do I setup a Base (UHF, APIS, NTRIP) at a Known Position. This FAQ shows exactly how to configure an Instrument Profile to do this.

Version

This FAQ was written using version 8.1.0.4.**20240923**. You should use this version or higher to obtain similar results and slider defaults.

## Quick Note / Executive Summary

1. If you already have an **Instrument Profile** configured for the Base and LandStar does not request a starting position, then this single setting:
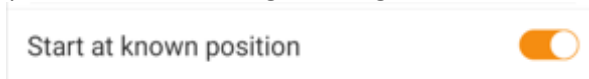
is turned off.

If you move the slider to the right, then LandStar will ask you to provide a position for the Base when starting the Base.

You may be able to edit the existing profile by dragging the profile to the right and clicking on the edit pencil:
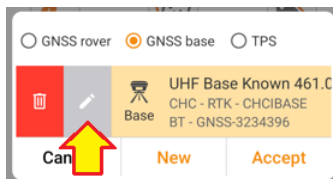
then click **Next**-**Next**-**Next** and find the **Start at known position** slider, enable it and save the updated profile.

2. When you start a base, you will have an opportunity to **Add the point to the point list**:

ALWAYS enable this option. This option is enabled by default. If you disable this option, an automatic base will be added to the point list at the Phase Center (PC) of the Base receiver's antenna instead of the Ground Mark (GM).

The Known Position

You can enter a known position using one of several methods:

Point list: import or manually enter a coordinate for the base.

From **CAD**: select a point, line endpoint, intersection, midpoint from the CAD view.

Read GPS receiver: get a measurement (AUTO, DGPS, Fixed) from the receiver.

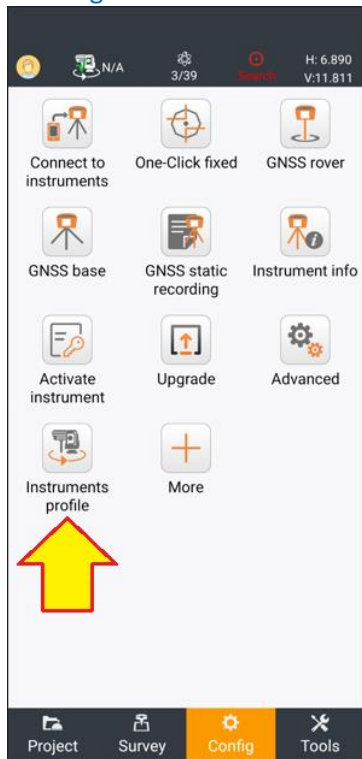For this example, a single point has been added to the Point list:

Name	North (N)[USft]	East (E)[USft]	Elevation[US
1	3490700.000	2280592.000	5667.000

The position has been rounded to the nearest integer foot to make comparing values easier.

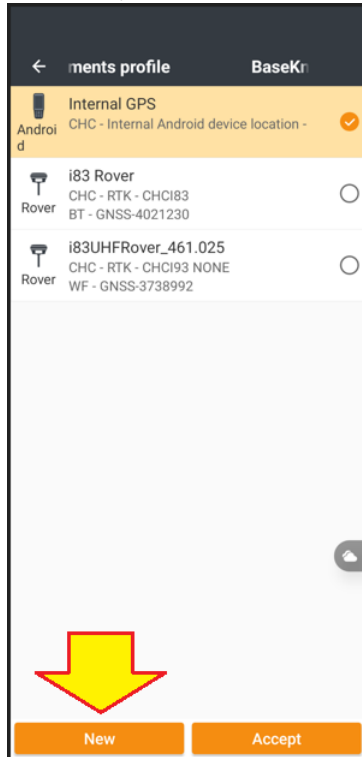## Adding an Instrument Profile for a Known Position Base

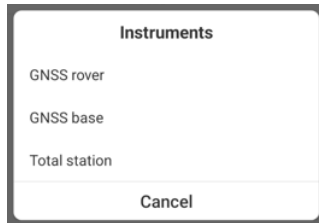From the Config tab of the **Main Menu**:
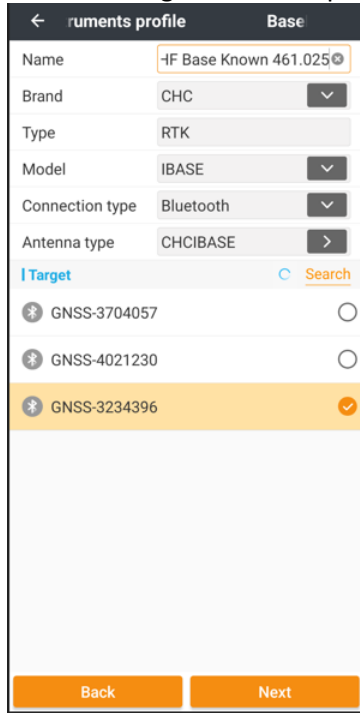
Click on **Instrument Profile**.

If there is an existing profile and you would like to edit it, drag it to the right and click on the gray edit pencil. Otherwise, click on **New**:

Click on **GNSS base** to make a new Base profile:

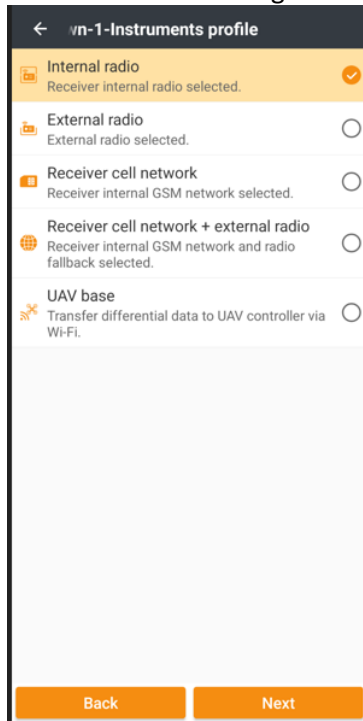The connection dialog for the new profile will be shown:

Chose an appropriate **Name** for the profile.
Select the **Brand** (typically **CHC** or **iGage**).
Select the **Type**, **Model** and **Antenna type**. For a **Base** the **Connection type** will usually be **Bluetooth**.
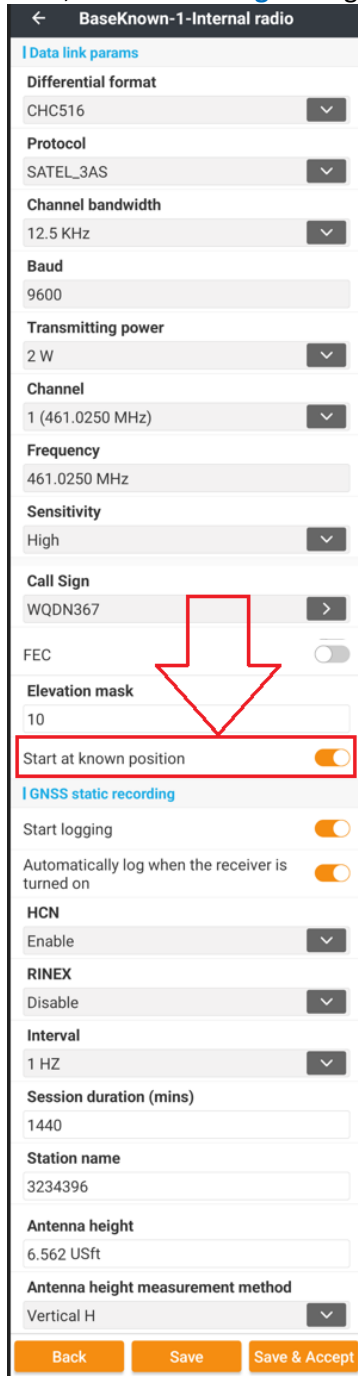Click **Next**.

The **Datalink** destination dialog will be shown:

Typically, you will select **Internal radio**, then click **Next**.

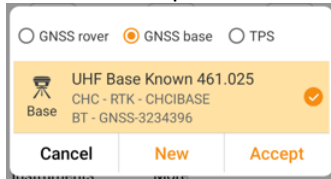The **Datalink**, **Static recording** settings will be shown:

Set values appropriately, however, **MAKE SURE YOU ENABLE Start at known position** (highlighted above). Click **Save** to save the modified or new profile. Don't click on **Save & Accept**, just **Save**.

Return to the **Main menu** (any tab) and click on the **Instrument select** button at the top:
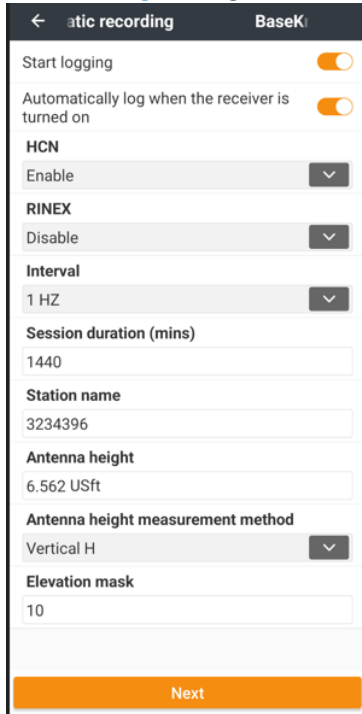

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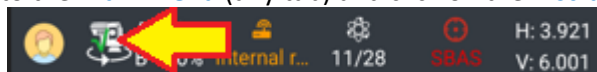
Select the **GNSS Base** profile that we just modified or added:
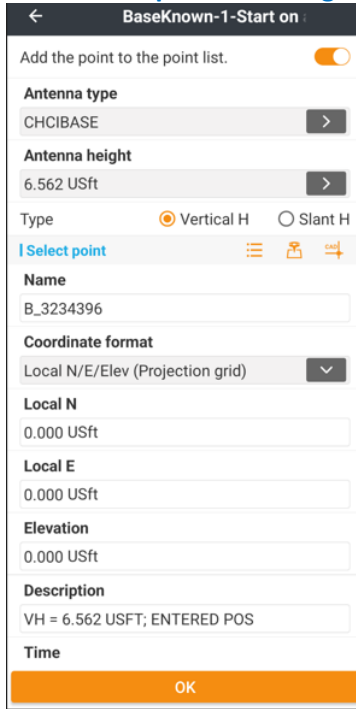

then click on **Accept**.

The **Static recording** setting defaults will be shown:

Make any needed changes (like the **Antenna height**), then click **Next**.

Note: this **Antenna height** is **NOT** the **RTK height**, it is the height that is listed in and exported RINEX file. The RTK height is a separate value (this is required for some configurations, normally you will make them the same.)

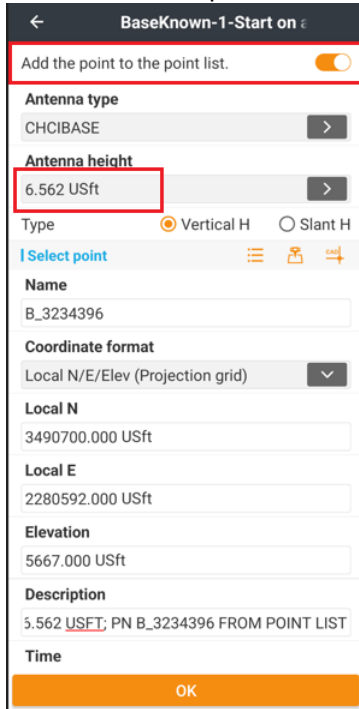The **Start on known position dialog** will be shown:

In this case we have point #1 in our **Point list**, so click on the Point list button ☰ :

then click on point 1.
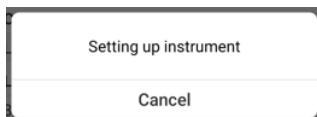
The coordinate from the point list will be shown:

Make sure the **Add the point to the point list** slider is enabled. (It will be enabled by default, don't disable it!)

Enter the **Antenna height** (HI). You can use a **Vertical height** (for example if the receiver is on a fixed height tripod) or a **Slant height** (if the receiver is on a tripod).

Note that most CHC receivers have a **Measure-Up-Bar** that can be placed under the receiver. Then a tape can be used to measure the slant distance from the **Ground Mark** to the **top** of the **Measure-Up-Bar**.
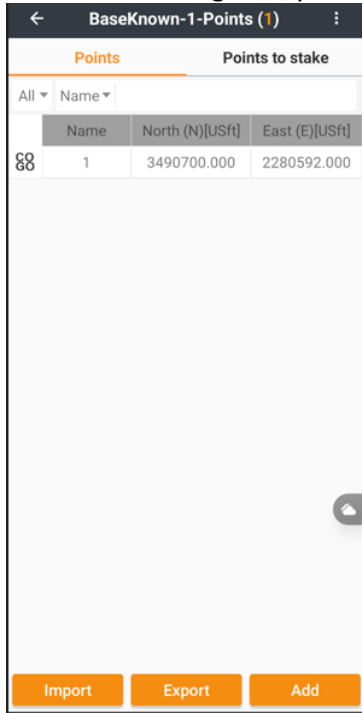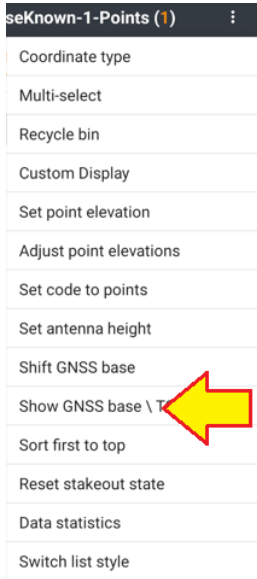
Click **OK**:

wait for the receiver to be configured.

When configuration has completed, wait for a few seconds and check that the up-down arrows are blinking once per second.

After the receiver is configured, you can return to the Point list:

If the new **Base Point** is not shown (as above), click on the 3-Dot button (top right corner):

Then click on **Show GNSS base…**

The **Point list** will be updated to include the Base positions:

Note that a new Base B_3234396 has been added with the Ground Mark coordinates matching the Known point.

GNSS RTK observations made using this new base will include this base information.

If you drag the new Base entry to the right and click on the gray edit pencil:

The position is listed as a **Ground mark position** and the elevation matches the **Ground mark**, not the **Phase center**. The RTK **Antenna Height** will be shown.