VERSIÓN 1.0

20-10-2025

# DRIVERDISH.APP AUTOCORRECTION

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## 1. THE NEED FOR AUTOMATIC CORRECTION

Due to unpredictable and variable errors that occur depending on the elevation of a target, an automatic correction system is essential.

To address this challenge, the Autocorrection feature in DriverDish.App is designed to generate the necessary data for the program to automatically adjust the required offsets. The main goal of this tool is to ensure the most accurate pointing possible by dynamically compensating for any deviations that may arise.

## 2. STARTING THE PROCESS AND CONFIGURATION

To begin, navigate to the main menu of the application and click the **AutoCorr** button. This will open the Autocorrection configuration panel.

### PREREQUISITES:

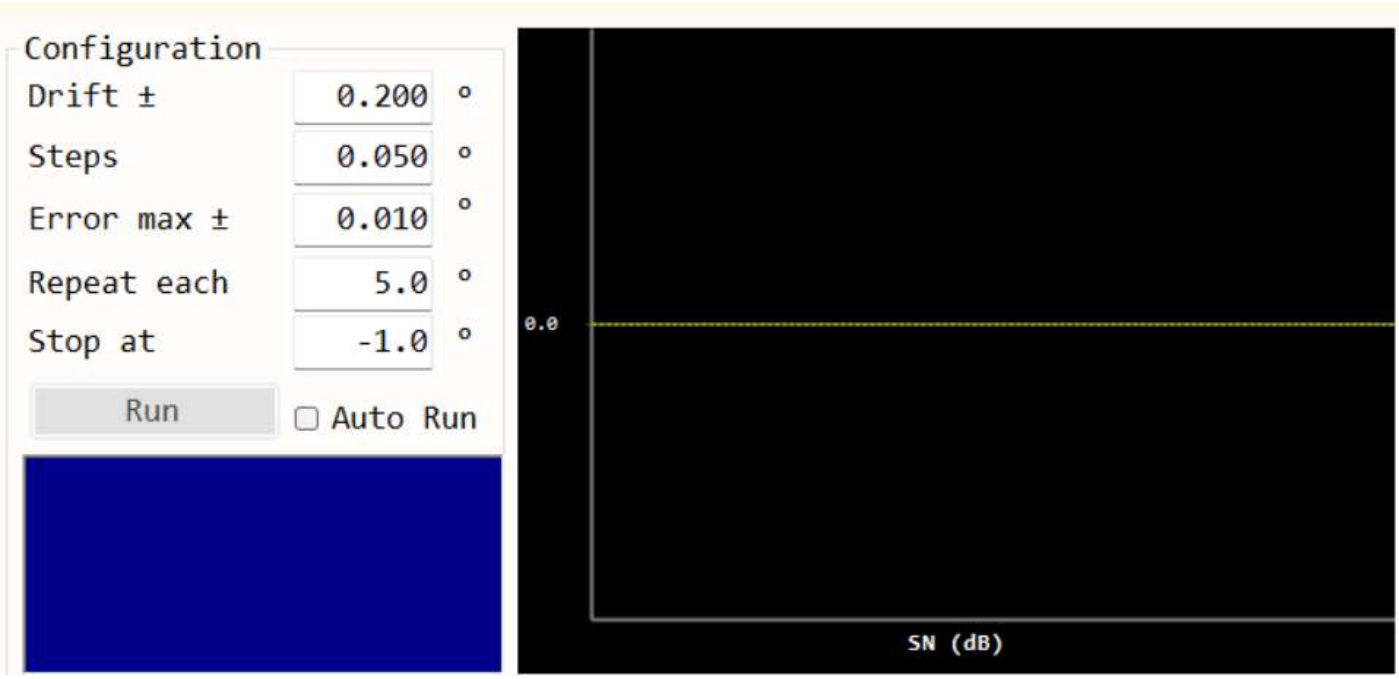
Before starting the process, it is crucial to ensure two key points:

**Active Tracking:** The system must be actively tracking the target (Sun or Moon).

**Signal Reception:** Confirm that the **SpectraVue** program is receiving the signal correctly. You can verify this by checking the indicator in the **SNR (Signal-to-Noise Ratio)** panel.

### CONFIGURATION PANEL

The Autocorrection panel allows you to define the parameters for the calibration process.




Below is a description of each configuration option:

- **Drift ±:** This value defines the deviation range, in degrees, that the system will scan to find the strongest signal. For example, a value of `0.200` means the system will search ±0.200 degrees from the current position.
- **Steps:** This determines the size of each step, in degrees, the system will take within the `Drift` range. A smaller value results in a finer and more precise search but will take more time.
- **Error max ±:** This defines the positioning error margin, in degrees, used during the system's movements. This parameter is crucial for determining when the system has reached the desired position before taking a measurement.
- **Repeat each:** This indicates the frequency, in degrees of azimuth, at which the autocorrelation process will be repeated. For example, a value of `5.0` means a new calibration will be performed every 5 degrees of the target's movement.
- **Stop at:** This defines the maximum azimuth, in degrees, at which the autocorrelation process will automatically stop. This is useful to avoid measurements at very low altitudes where the signal can be unreliable.

## 3. EXECUTING THE AUTOCORRECTION PROCESS

Once you have configured the parameters, the next step is to start the calibration process. It is crucial to understand that **the correction sweep is always performed on the Azimuth axis**.

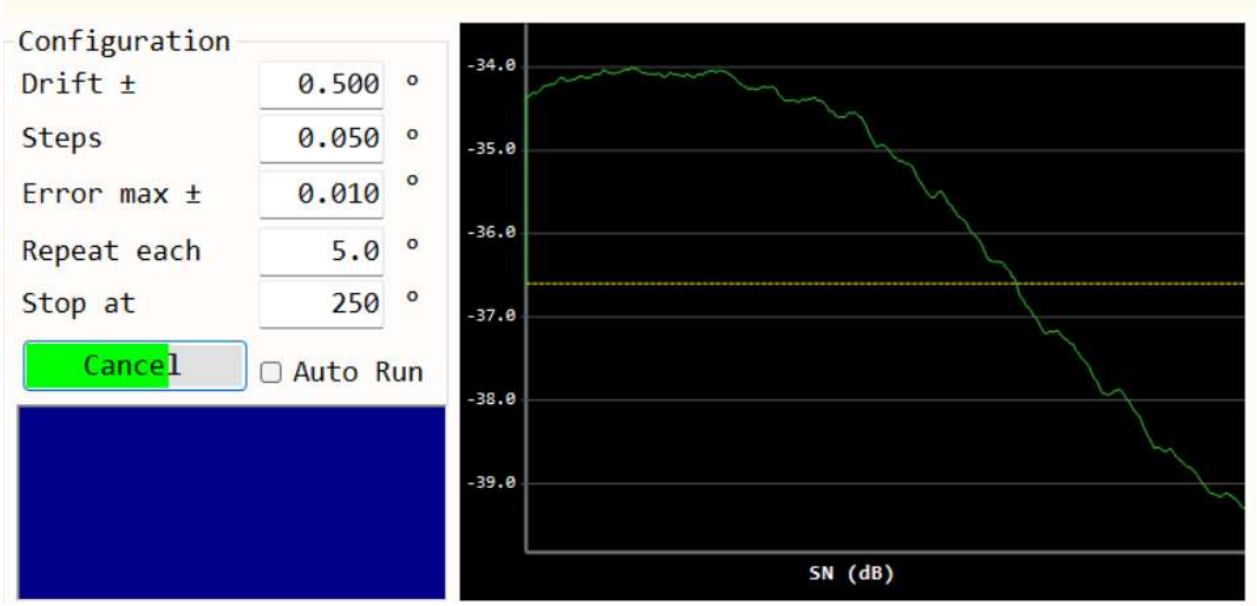
For the best results, a two-phase procedure is recommended:

### INITIAL CALIBRATION (MANUAL)

The first step is to perform an initial manual calibration to find the approximate point of maximum signal.

- **Set a high Drift:** Establish a relatively large Drift ± value, for instance, 0.500 degrees. This allows for a wide sweep to locate the signal peak, even if the initial error is significant.
- **Run the process:** Click the **Run** button.

The system will perform a single azimuth sweep. Observe the graph on the right to see the **SN (dB)** signal curve being drawn. Upon completion, the software will have centered the pointing on the detected signal peak.



With the system pre-calibrated, you can start the automatic mode for precise and continuous tracking.

**Adjust the Drift:** Reduce the Drift ± value to a finer range, such as 0.200 degrees. Since the large error has already been corrected, such a wide sweep is no longer necessary.

**Set the stop limit:** Ensure the value in **Stop at** is appropriate for your session.

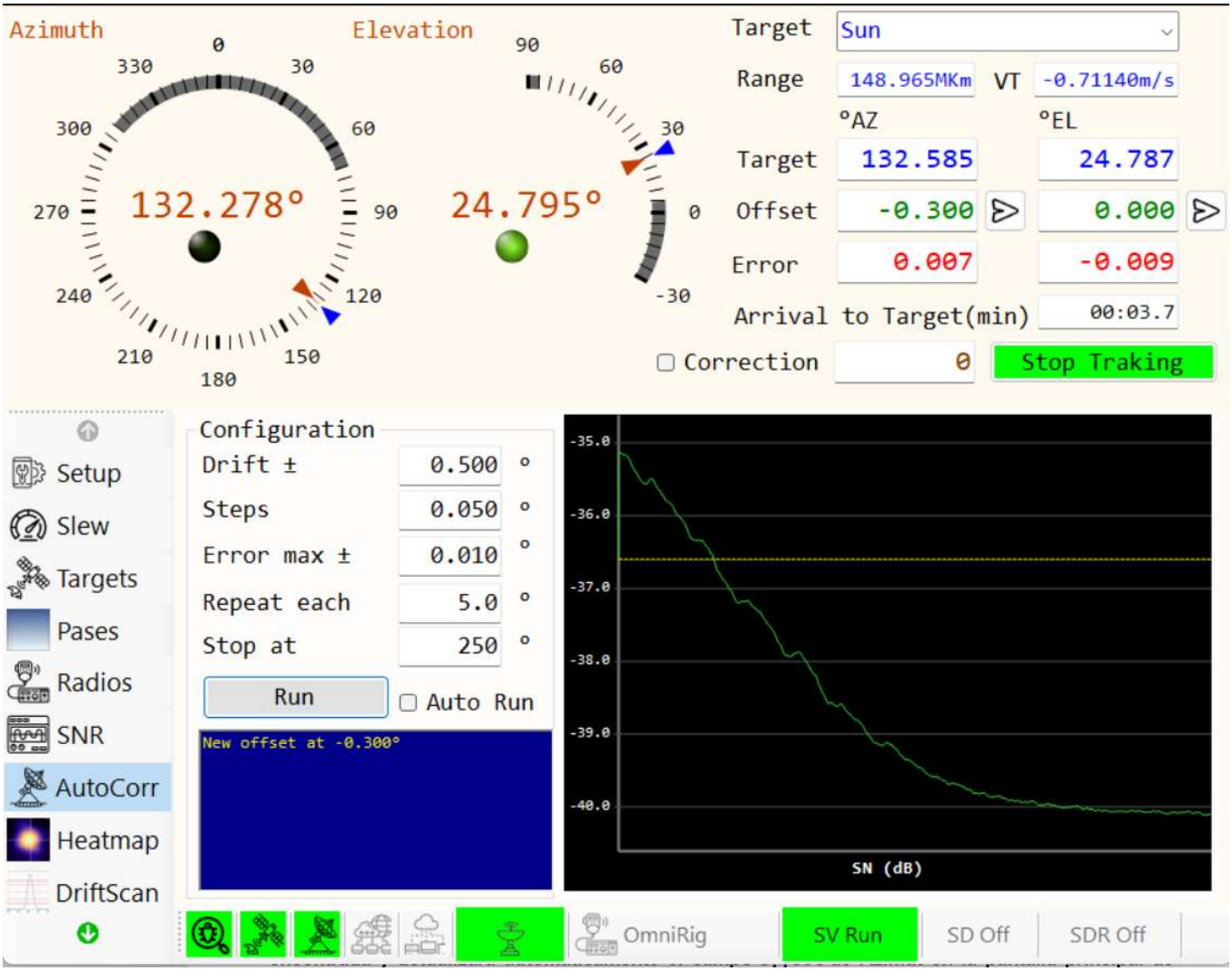
**Activate automatic mode:** Check the **Auto Run** box.

The system will perform a fine calibration and continue to execute new corrections automatically according to the interval defined in Repeat each, stopping when the Stop at elevation is reached

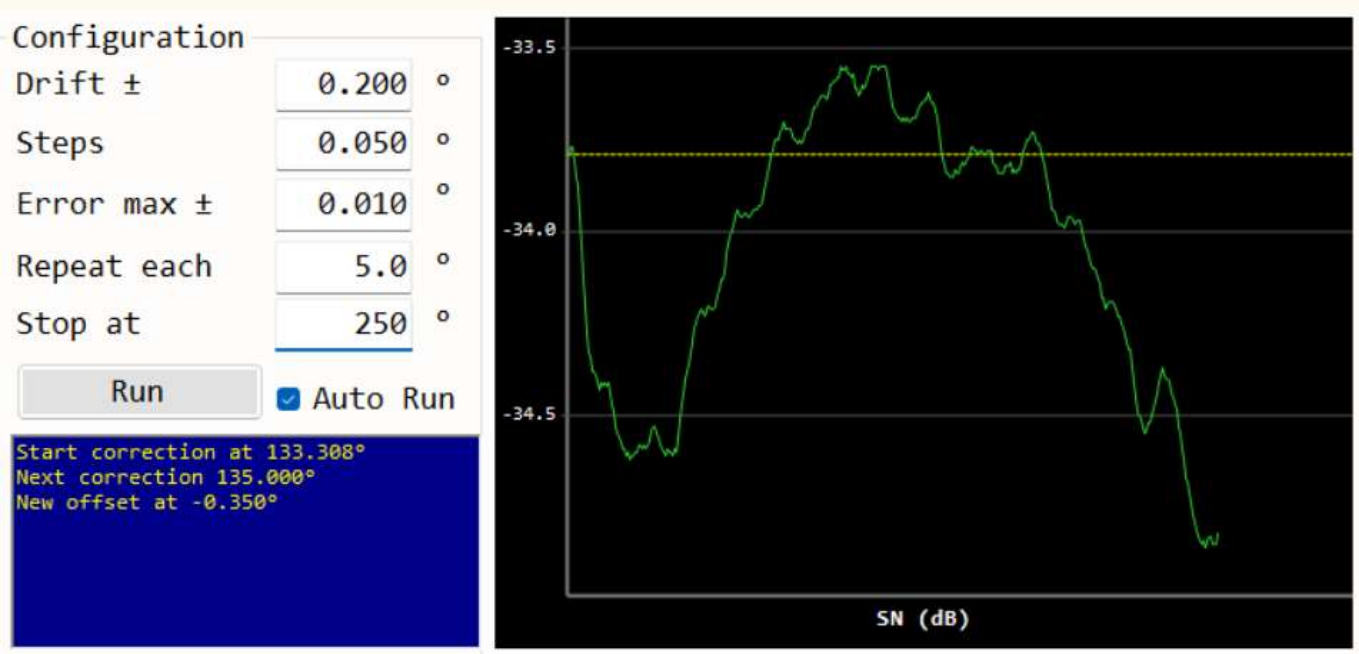
## 4. RESULT: AZIMUTH OFFSET UPDATE

A fundamental aspect of the Autocorrection process is its immediate result. After each completed calibration cycle (both manual and automatic), the system will calculate the detected deviation and automatically update the Azimuth `Offset` field on the main rotor control screen.

This means that each calibration instantly refines the pointing by applying the necessary correction to keep the target perfectly centered. The updated offset value will be used for all subsequent positioning calculations until a new autocorrelation is performed.




Auto Run process.




## 5. CORRECTION DATA FILE: `CORRECTIONS.TXT`

In addition to the instantaneous offset update, at the end of the `Auto Run` process (when the elevation reaches the `Stop at` point or is stopped manually), the system generates a log file named **`corrections.txt`**.

This file stores all the calibration points measured during the session. Its purpose is to allow the program to use these corrections in future tracking sessions without needing to run a full new autocorrelation process.

### FILE STRUCTURE

The file content has a simple, readable format. An example is shown below:

```
;10-10-2025
;Azimuth Offset
123.750 -0.250
124.998 -0.250
129.999 -0.200
134.999 -0.200
...
244.999 0.350
```

The structure is broken down as follows:

- **Comment Lines:** Lines beginning with a semicolon (;) are comments. The first line is used to record the date the data was generated, making it easy to identify.
- **Data Lines:** Each subsequent line contains a pair of values representing a correction measurement:
    - **First field:** This is the **Azimuth** position where the measurement was taken.
    - **Second field:** This is the calculated correction **offset** value for that specific position.

This file is essential as it creates an "error map" of the system that DriverDish.App can reference to apply the most accurate corrections possible based on the azimuth being targeted.

## 6. USING STORED CORRECTIONS IN TRACKING

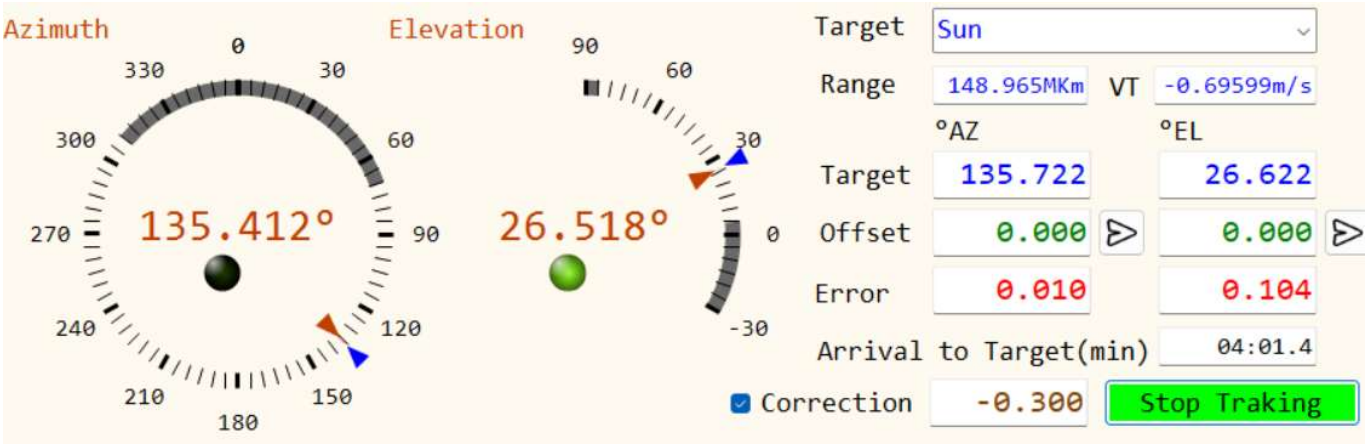
Once you have generated the corrections.txt file, the program can use it to apply precise corrections automatically during any tracking session, without needing to run the autocorrelation process again.

To activate the use of these saved corrections, follow these steps from the main screen:

1. **Reset the Azimuth Offset:** Before starting to track, ensure the **Offset** field for Azimuth (°AZ) is set to **0.000**. This is important to avoid applying a manual correction on top of the automatic correction that will be calculated.

2. **Activate Correction:** Check the **Correction** box.

Immediately after checking the box, you will notice that the numeric field next to Correction is updated. The program will search the corrections.txt file for the target's current position and, through interpolation, calculate and display the exact offset value that corresponds to that azimuth in real-time.




From this moment on, as long as the Correction box is active, the program will continuously adjust the pointing using your previous calibration data, ensuring the highest possible accuracy throughout the target tracking.