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1 Warranty Information and Battery Care


1.1 Warranty

All Eos Arrow receivers come with a 2-year warranty against manufacturer defects. Eos Arrow batteries have a 90-day warranty. All repairs in the US are done at the Eos service center in Portland, OR. If an Arrow receiver needs repairs, please reach out to Land Logics Group.

1.2 Battery Care

To keep Arrow receiver batteries in good condition, be sure to recharge the Arrow battery at least once every 90 days. Leaving an Arrow battery sit for longer than 90 days can cause the Li-Ion battery to be damaged. To check the battery life, use the battery gauge by pressing the button on the battery to view the LED gauge indicators.

2 Mobile Applications to Download

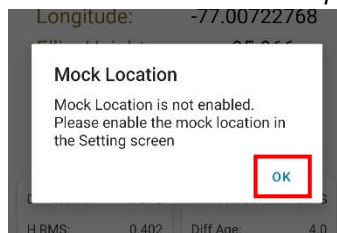
1. **Eos Tools Pro (ETP)** – Eos Tools Pro is the monitoring application for the Arrow series GNSS receivers and is a free application available on the Android app store. *Note:*  You must be paired via Bluetooth to an Arrow receiver to open Eos Tools Pro.
2. **Field data collection software application of choice** – As the Arrow series receivers are agnostic to software, organizations can choose their GIS software to use in conjunction with the Arrow units.

3 Android User Configurations

You must be connected and paired to an Arrow GNSS receiver to open and access the Eos Tools Pro application.

3.1 Starting your Arrow GNSS Receiver

- Step 1. The first time opening ETP on your mobile device, a **Mock Location** message will pop up telling you to enable the mock location in the setting screen. Click **OK** on the message, and the **Setting** screen will automatically open. *Note: You can also access the setting screen by clicking the three vertical dots in the top right corner of the app.*

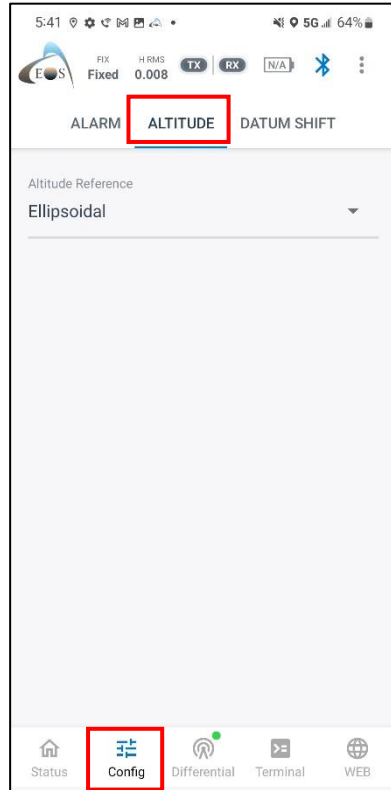


- Step 2. Toggle on the settings listed below to start your receiver. After these two settings are turned on, your receiver will begin collecting raw data from the GNSS satellites.
- a. *Auto Start GNSS*
 - b. *Replace Device Location*



3.2 Setting up Orthometric Height

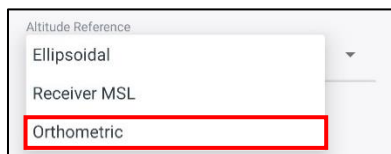
Step 1. Select the **Config** page at the bottom of the app and open the **Altitude** tab.



Step 2. Click the **Altitude Reference** dropdown.

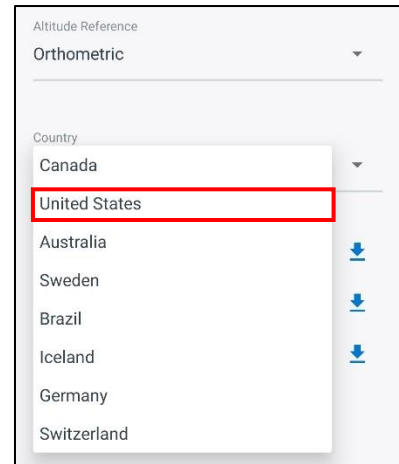


Step 3. Select **Orthometric**.



Note: The Orthometric altitude reference will give you the most accurate mean sea level elevation because you can use the most current GEOID model to calculate the Orthometric height.

Step 4. Click the **Country** drop down and select **United States**.



Step 5. A list of available GEOID models will appear below. Click on the download button next to the **GEOID18/NAVD88 (NAD83 2011)** option.



Step 6. Once the GEOID18 option finishes downloading, select it so that a blue checkmark appears on the right side.

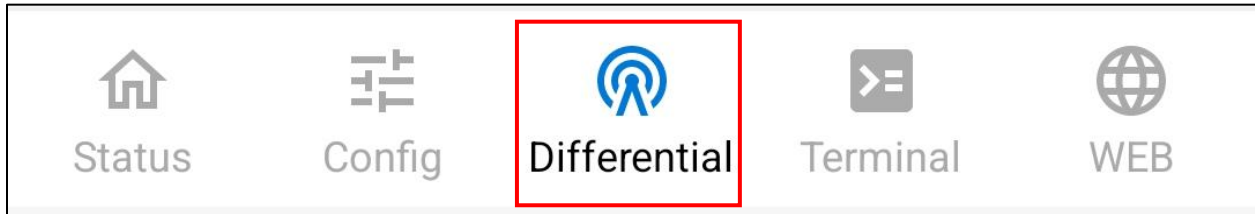


Step 7. Check that you have correctly applied the GEOID18 by going back to the **Status** page at the bottom of the screen and viewing the **Position** tab. Under Longitude, you should now see **Ortho. Height**. Under Ortho. Height, you will see the GEOID model that is currently applied. This should always be set to GEOID18 as that is the most current US GEOID model.

Latitude:	40.21408666
Longitude:	-77.00723313
Ortho. Height:	434.599 ft
GEOID18 / NAVD88 (NAD83 2011) to UTM: 34.1795	

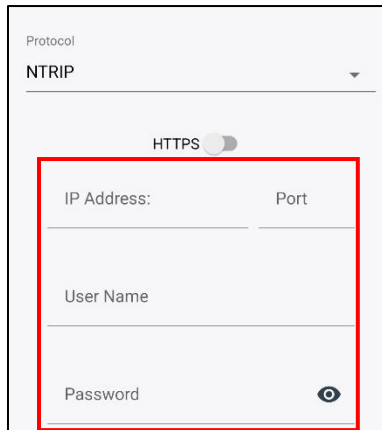
3.3 Logging into an RTK network

Step 1. Select the **Differential** page at the bottom of the screen in Eos Tools Pro.



The above image is the page menu at the bottom of the Eos Tools Pro application.

Step 2. Enter your log in credentials for your RTK network; IP Address, Port, User Name and Password.



Step 3. Select **GET MOUNTPOINT** and choose **DynamicNear** from the list.



Step 4. Click the **START** button to begin receiving RTK corrections.



Step 5. Save your RTK profile by clicking **SAVE** in the top right corner.

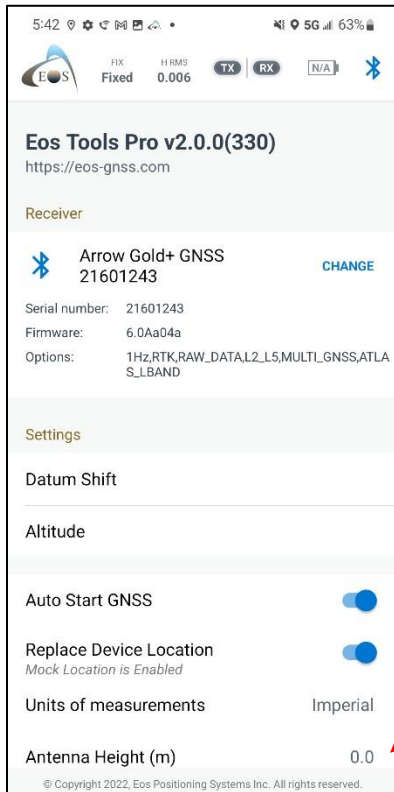
Step 6. Enter a name for your profile and again click **SAVE**.



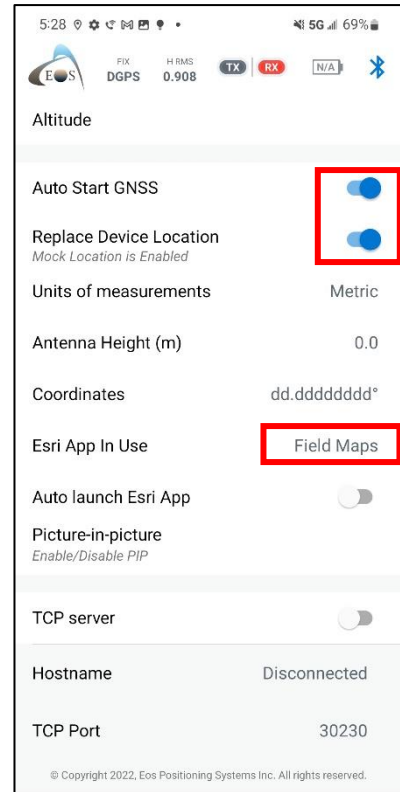
4 Get to Know the Eos Tools Pro (ETP) Mobile Application for Android Users

4.1 About Menu

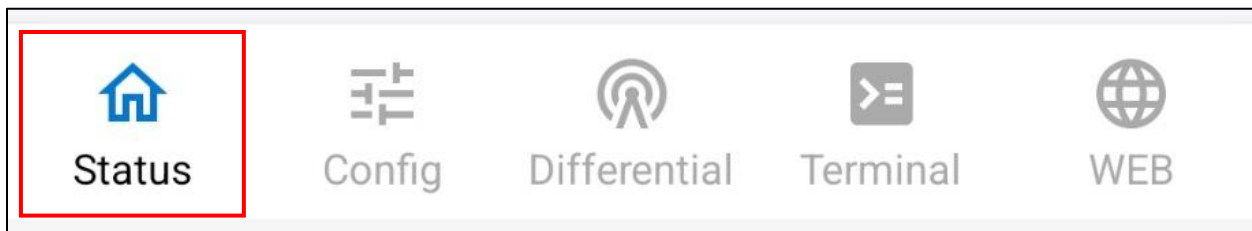
Navigate to the About Menu by selecting the three vertical dots in the top right corner of the app.



DO NOT enter in an antenna height for the receiver in Eos Tools Pro. This is done in your field data collection app.



4.2 Status Page



The above image is the page menu at the bottom of the Eos Tools Pro mobile application.

4.2.1 Position Tab

The Position tab contains information related to the data the receiver is collecting in real time. See item descriptions below:

- **Diff Status:** See note below
- **H RMS:** Estimated Horizontal accuracy
- **Sats in View:** Total satellites in view of the antenna
- **Sats Used:** Total satellites used to calculate position
- **Diff Source:** Correction service in use (SBAS or RTK)
- **Diff Age:** Frequency at which corrections are being received by the Arrow receiver (seconds)

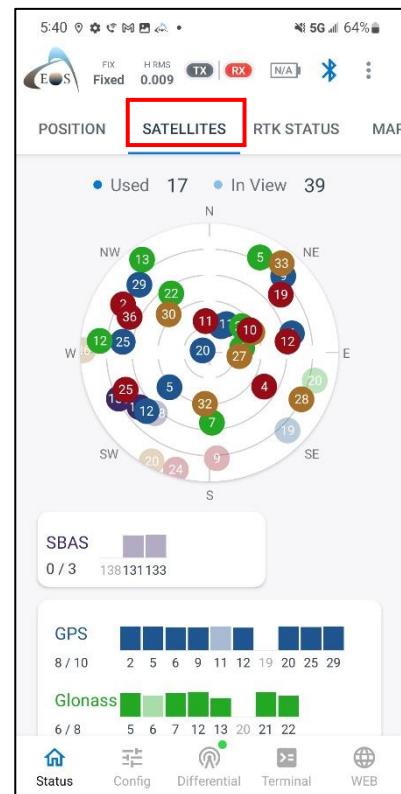
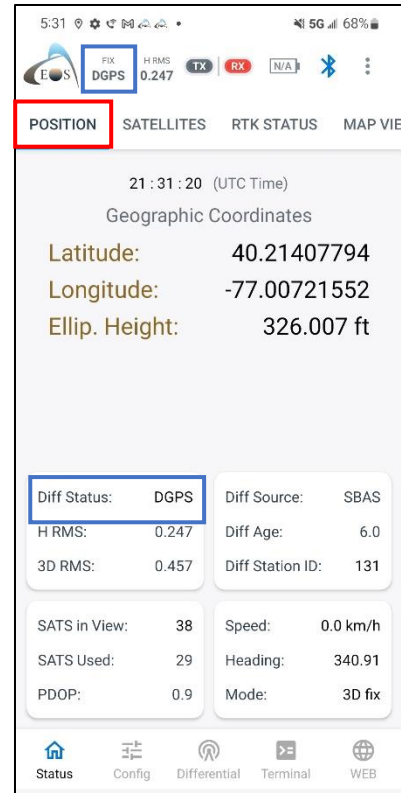
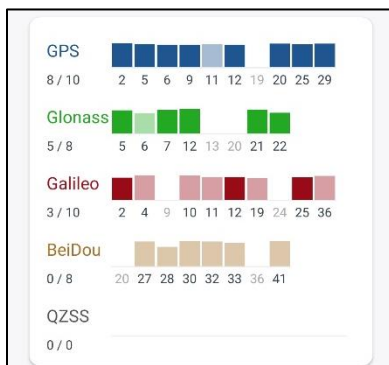
Note: Check Diff/Fix Status by looking next to the Eos logo in the top header or the top line in the bottom left of the Position tab (blue outlines in the image):

- **Fix: None** – Not receiving data from satellites
- **Fix: GPS** – Data received, but not receiving corrections
- **Fix: DGPS** – **Connected to SBAS. Sub-meter accuracy**
- **Fix: Float** – RTK corrections are streaming but not locked in
- **Fix: Fixed** – **Connected to RTK. Centimeter accuracy**

4.2.2 Satellites Tab

The Satellites tab includes a visual map of all satellites that are in view and in use (graphic on the right). The solid dots are the satellites that the receiver is using, and the faded dots are the satellites that are in view but not in use.

Underneath the map graphic, the GNSS satellites in use for each GNSS constellation - GPS, Glonass, Galileo, and BeiDou are displayed. Satellites from the QZSS constellation are not visible in North America.

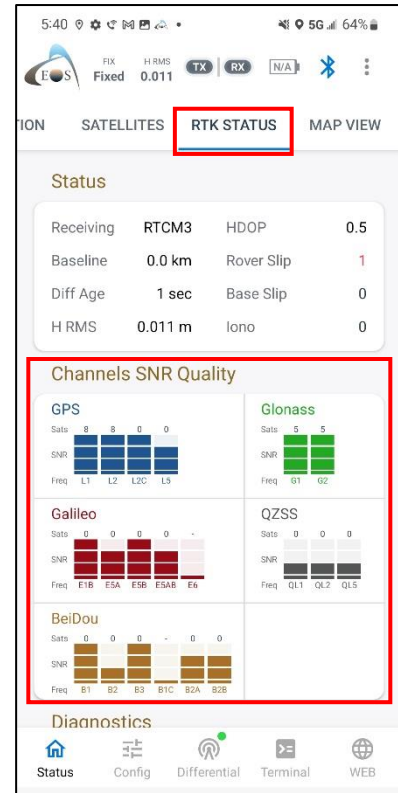
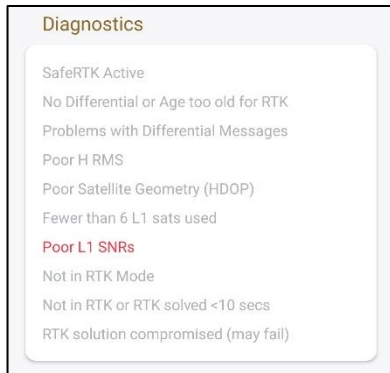


4.2.3 RTK Status Tab

The RTK Status tab includes diagnostics and signals being received by the receiver.

Diagnostics for RTK network corrections (below) are commonly referenced to identify if the receiver is in SafeRTK due to spotty internet.

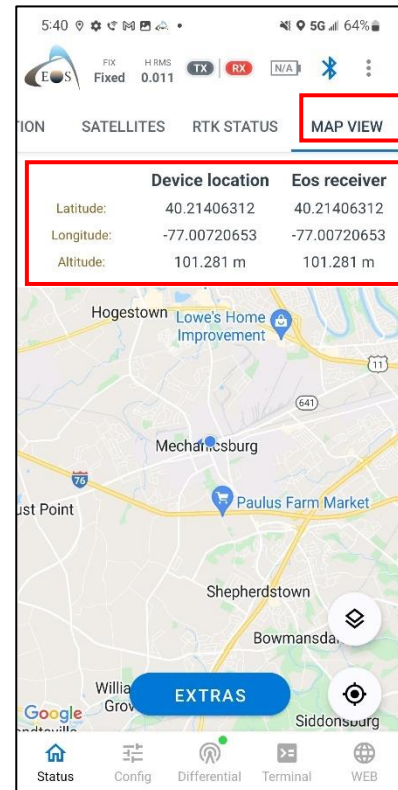
The “Channels SNR Quality” section (right) shows frequencies/signals received for the various GNSS Satellites. Notice there are no signals being received in Galileo and BeiDou as the RTK network is not currently using these constellations.



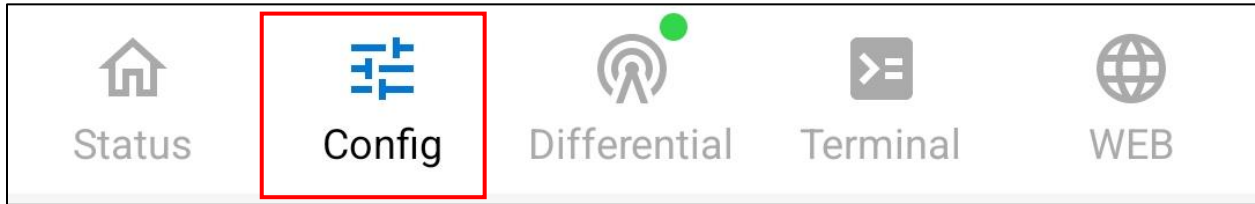
4.2.4 Map View Tab

The Map View tab shows the receiver’s current location using Google Maps.

The **Device location** and **Eos receiver** values should always be the same on the Map View page. If they are not the same, this indicates that the mock location is not configured properly. In this situation, go back through section 3.1 of this guide.



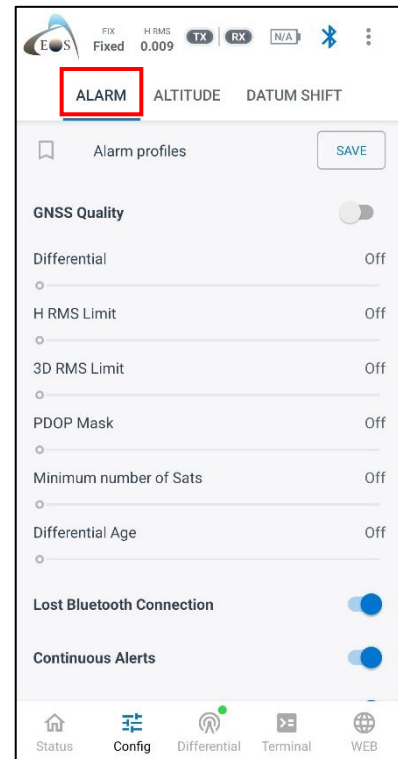
4.3 Config Page



The above image is the page menu at the bottom of the Eos Tools Pro application.

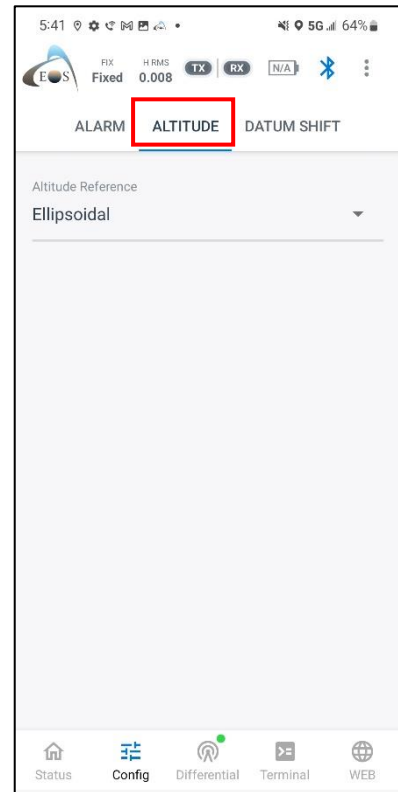
4.3.1 Alarm Tab

The Alarm tab is used to set parameters/limitations for various metadata. When the receiver goes outside of the set parameters, it will beep to notify the user. Most users prefer setting their accuracy requirement in their field data collection app rather than Eos Tools Pro, so they are notified when they attempt to capture a point.



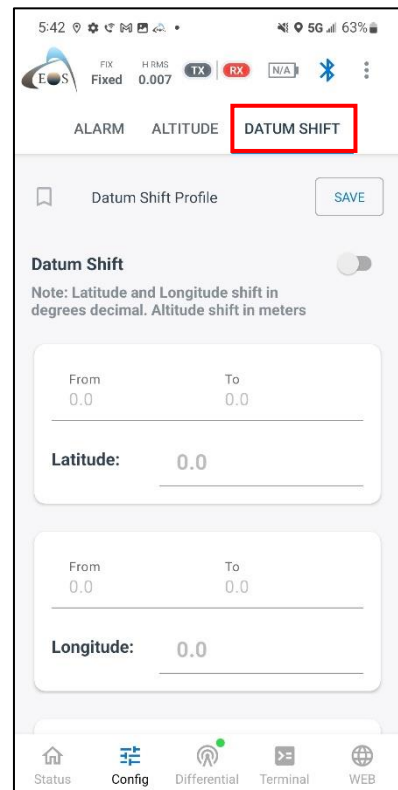
4.3.2 Altitude Tab

The Altitude tab is used to change the altitude reference of an Arrow receiver. Users should change their altitude reference to capture orthometric elevations. See section 3.2 of this guide for detailed instructions to change the altitude reference to orthometric.



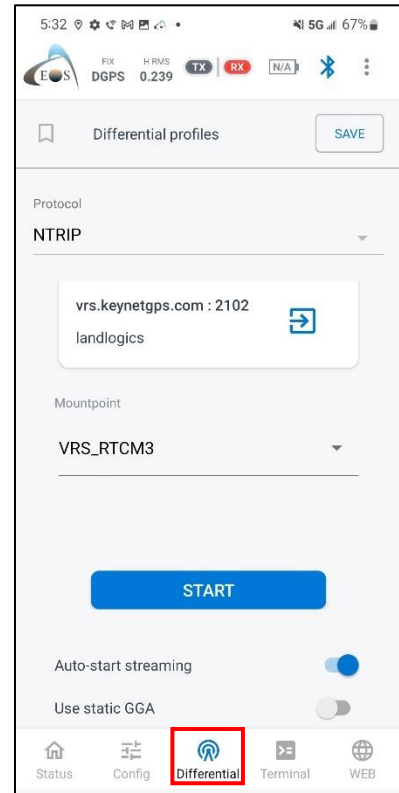
4.3.3 Datum Shift Tab

The Datum Shift tab is only used if a user's field data collection application does not have the needed datum transformation available. Most users will not need to reference or use this tab.



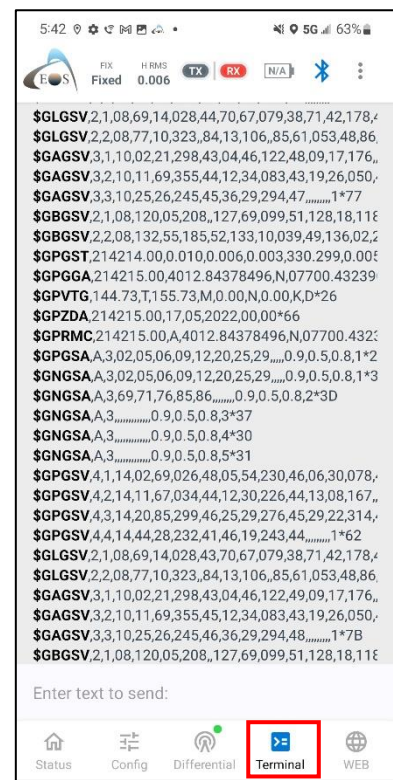
4.4 Differential Page

The Differential page is used to log into an RTK network. Logging into an RTK network will allow for the Arrow receiver to receive RTK corrections which are needed to achieve centimeter level accuracy. See section 3.3 of this guide for detailed instructions to log into an RTK network.



4.5 Terminal Page

The Terminal page shows the raw data that is being received by the Arrow receiver's antenna. Most users will not need to reference or use this page.



4.6 WEB Page

The WEB page is primarily used with web-based mapping software that does not have a downloadable app on the Android app store. Most users will not need to reference or use this page.

