Using Mocked Positions with Carlson Layout on the CT8 Tablet

Most android phones and tablets include a built-in GPS chip to provide positions through the Android operating system to all installed apps with location permission. While this position is useful for applications such as google maps, most built in GPS only has an accuracy of around 5M–not nearly good enough for a GPS Survey.

The Android Operating system includes a standard feature on most devices called "Mocked Positions" or "Mocked Locations". This advanced feature allows an application to replace the built in android position with a higher accuracy position. Once the mock location is enabled, every app using the device will automatically get the improved position when requesting location from the OS.
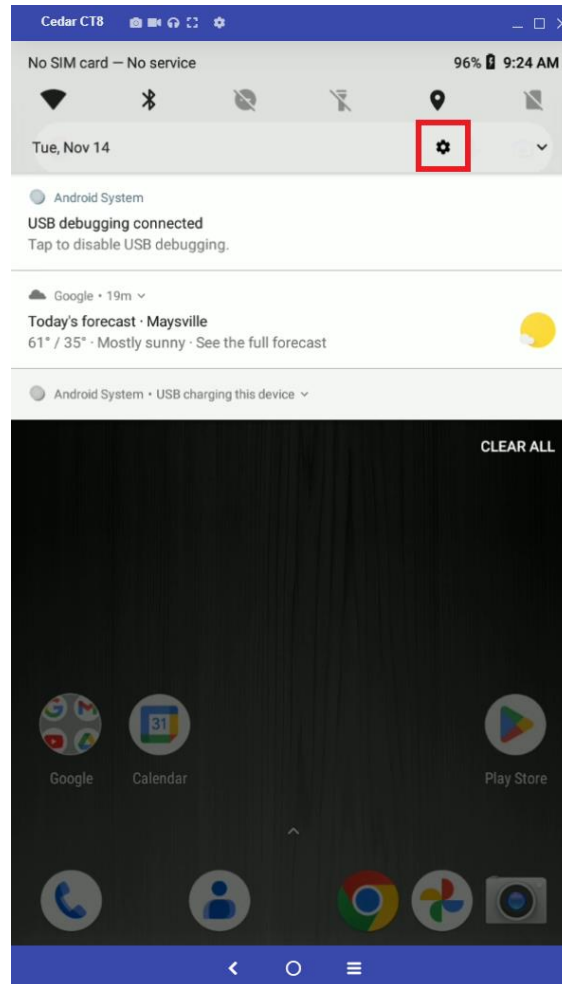
Carlson Layout has the ability to provide a Mock Location to the Android OS. This allows users to take advantage of the Layout driver library and configuration to provide high accuracy positions to other apps on the android device, such as Esri Field Maps.

The exact steps to configure the Android OS to accept mock locations vary from device to device. This guide will detail the steps to set up and use mock locations on the Carlson CT8. To use this device with other tablets, you may need to search on the internet for details specific to your tablet. This guide assumes Carlson Layout is already installed and registered on your tablet.
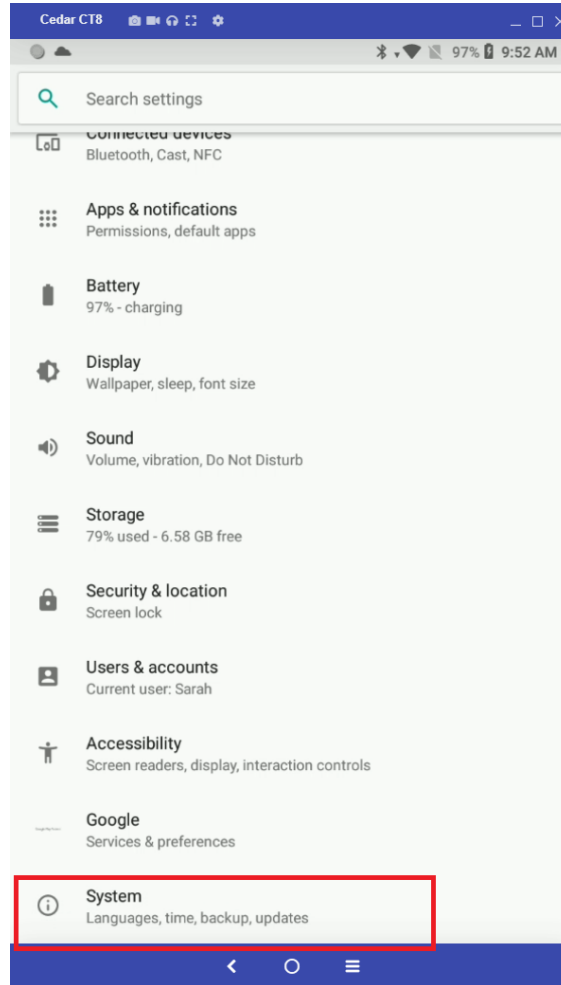
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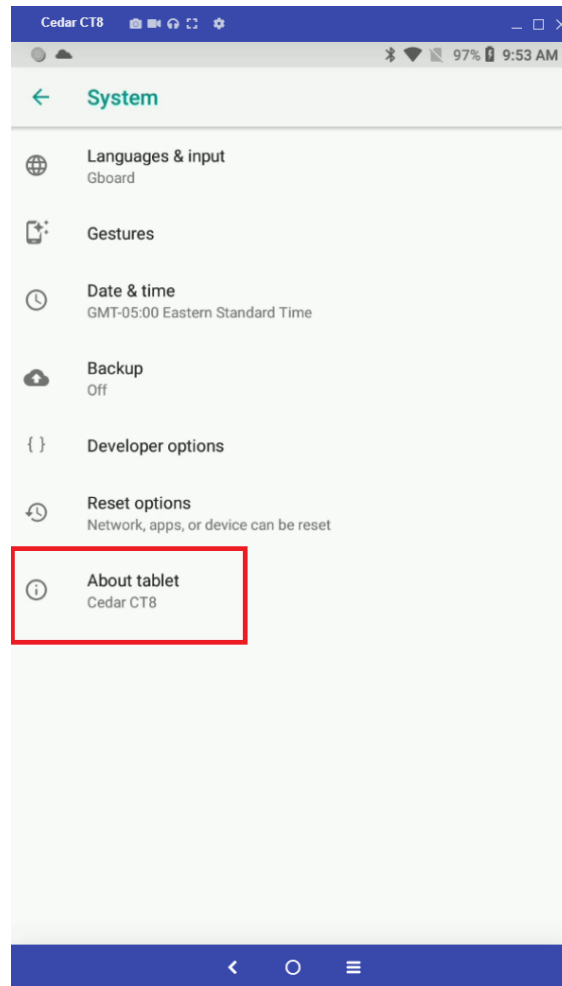
Enable Mock Locations on the Android Tablet

To enable mock locations on the Carlson CT8, you must first enter developer mode. From the home screen of the CT8, swipe down from the top and and press the **GEAR** icon to access the tablet settings.

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Page 2 of 15   Updated 11/14/2023

In Settings, scroll to the bottom and select **System**:
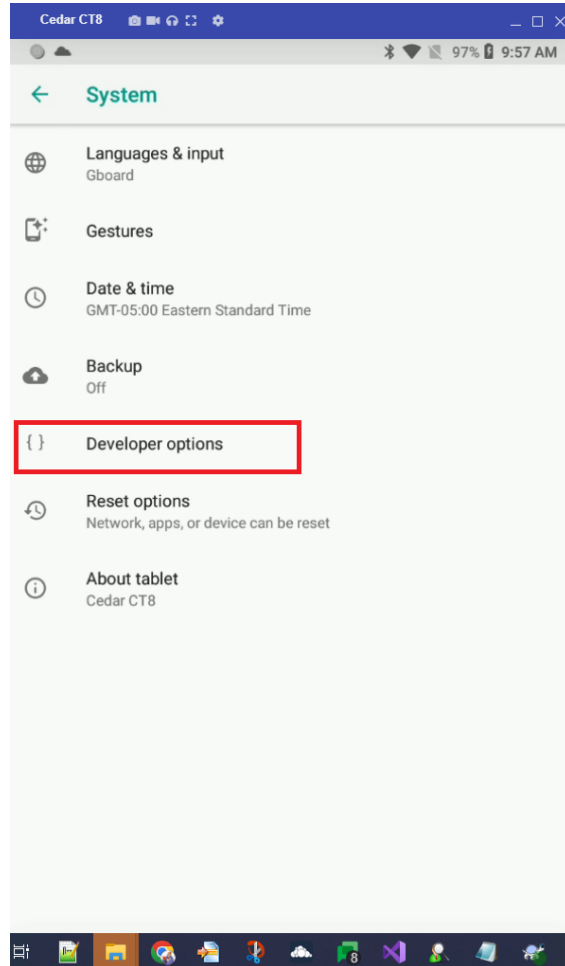
Updated 11/14/2023
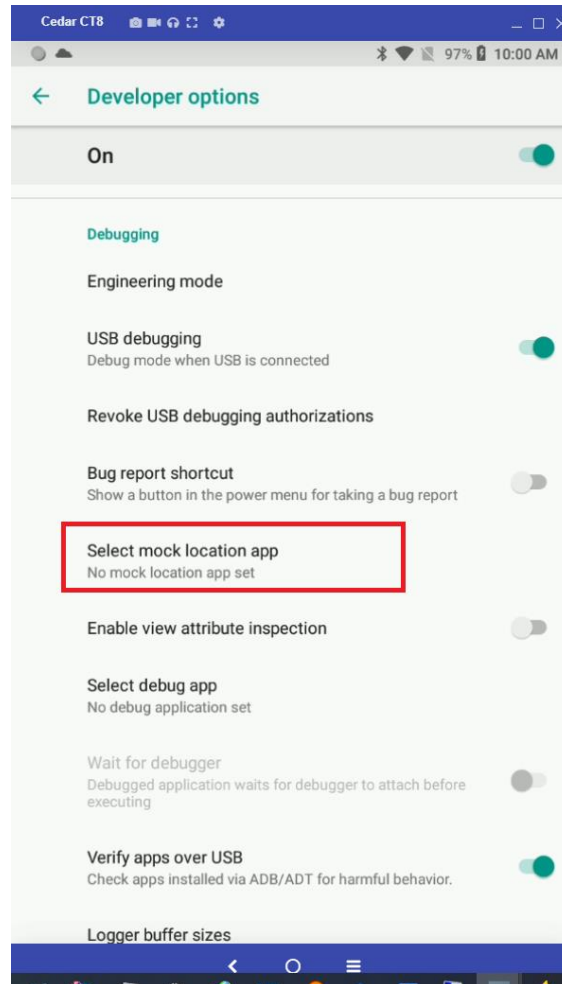
And then **About Tablet**:

Finally, from the About Tablet section, tap five times on the **Build Number** option to enable Development Mode. You should get a pop up that says "*You are now a developer.*"

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Page 4 of 15   Updated 11/14/2023
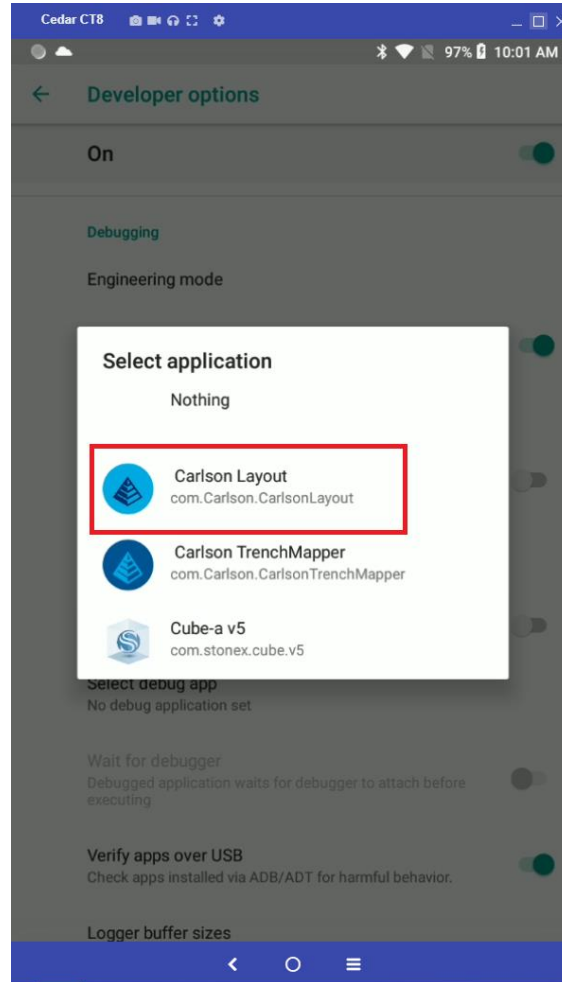
Once developer mode is active, press the back arrow to return to the previous settings screen, look for the new **Developer Options** Section, and select it.

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Page 5 of 15   Updated 11/14/2023

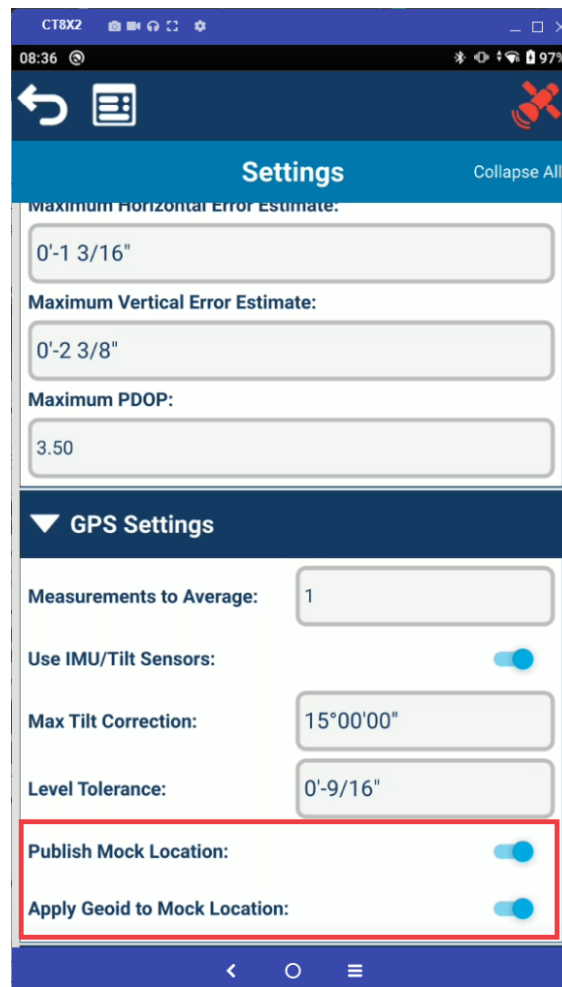Scroll down the list and find **Set Mock Location App**.

Tap on this option and choose **Carlson Layout** as your Mock Location App.

This concludes the Android OS part of the setup.

Enabling Mock Locations in Carlson Layout

The next step is to turn on Mock Locations in Carlson Layout. Launch Carlson Layout and use the pyramid in the top left corner to access settings. Scroll down to the GPS Settings section, and enable the "Publish Mock Locations" option.

The Apply Geoid to Mock Location option allows you to apply the geoid adjustment configured in Layout to the elevation of your mock location. This can be useful when providing positions to a third party application without built in geoid support.
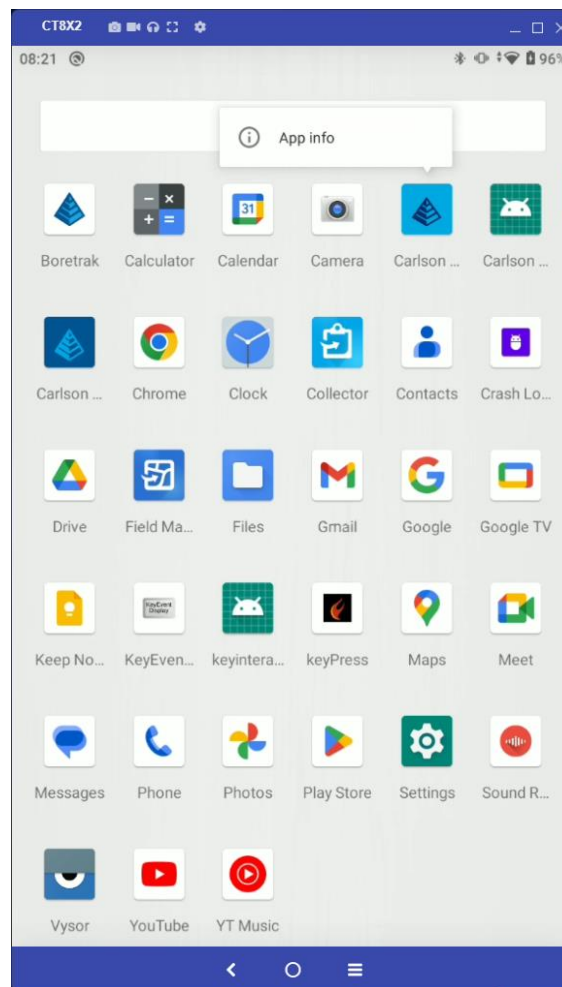
Configure your GNSS receiver as you normally would in Carlson Layout. Positions received in Carlson Layout will now be provided to third party applications installed on the Android Device.
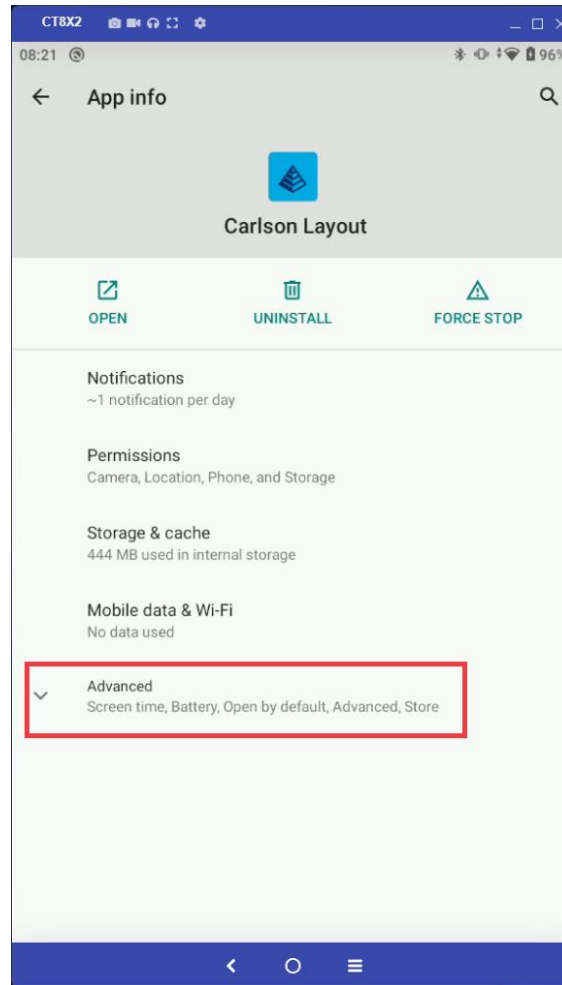

Updated 11/14/2023

Keeping Layout active in the background

The Android OS will periodically try to 'clean up' applications running in the background in order to optimize battery life and memory resources. This unfortunately includes Carlson Layout when running in the background while using a third party application. Mitigating this will vary depending on the device manufacturer. On the CT8, this OS clean-up can be delayed using the following steps:
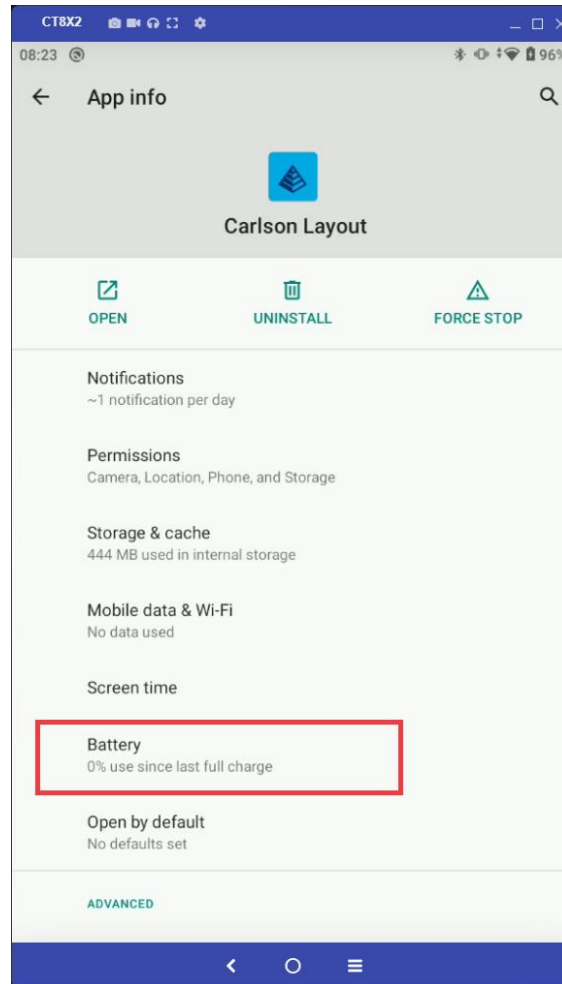
In the app menu or on the home screen, press and hold on Carlson Layout until you see "App info". Press **App info**
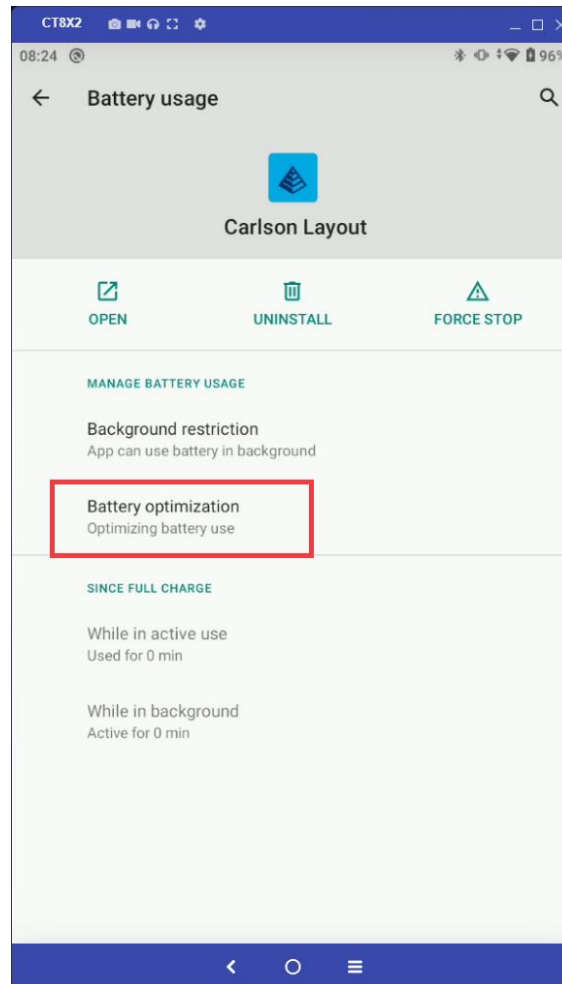

This will take you to the Android settings for Layout. Press the **Advanced** tab at the bottom of the screen
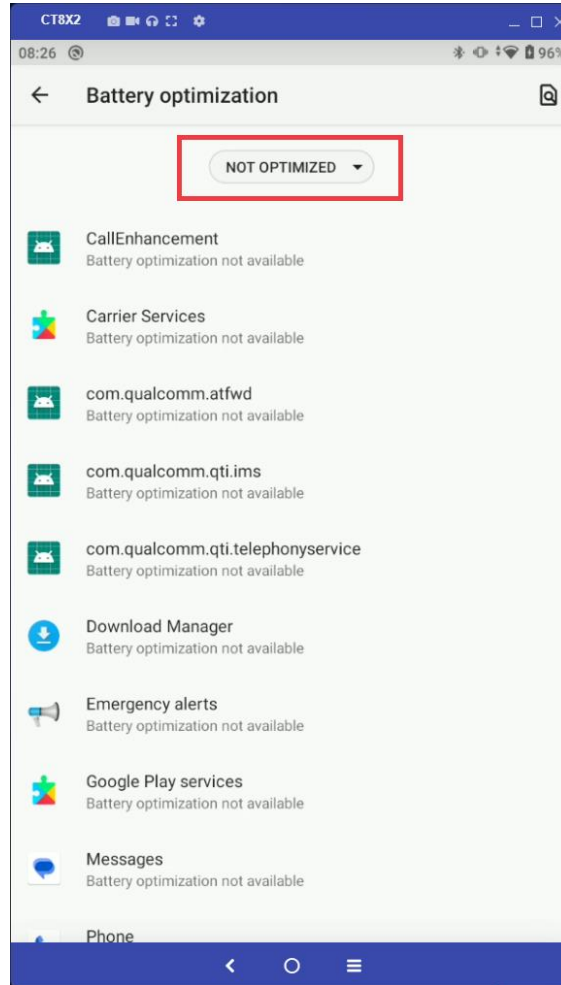
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Page 10 of 15   Updated 11/14/2023

Next press **Battery:**

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Page 11 of 15   Updated 11/14/2023

Under the Battery optimization section you will likely see **Optimizing battery use**. This is *not* the preferred setting. This means that the Android OS will be quicker to 'clean up' Layout after it is minimized. To change this setting tap **Battery optimization**
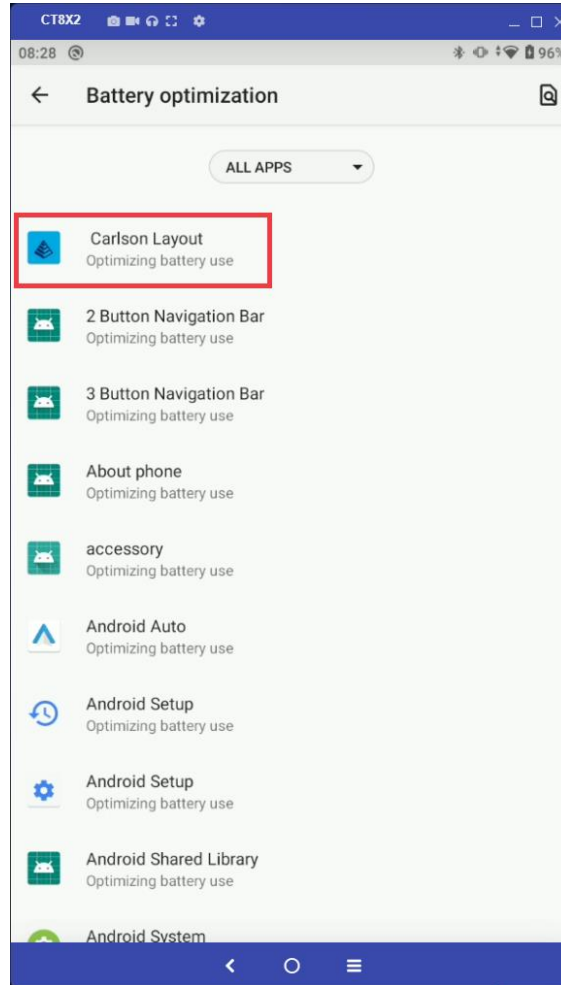
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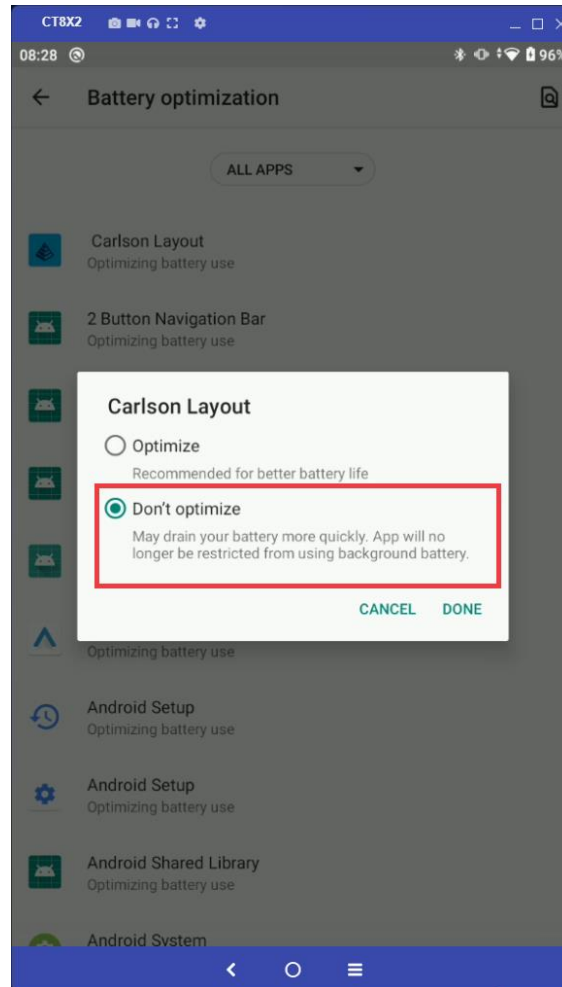Change the drop box from **Not optimized** to **All apps**

Updated 11/14/2023

Find and tap **Carlson Layout**

Change the setting to **Don't optimize** and press **Done**

Note: This setting will not persist if Layout is uninstalled and will have to be changed again upon re-installation.

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Page 15 of 15   Updated 11/14/2023