RadarOmega User Guide

Software Version 5.5

RadarOmega

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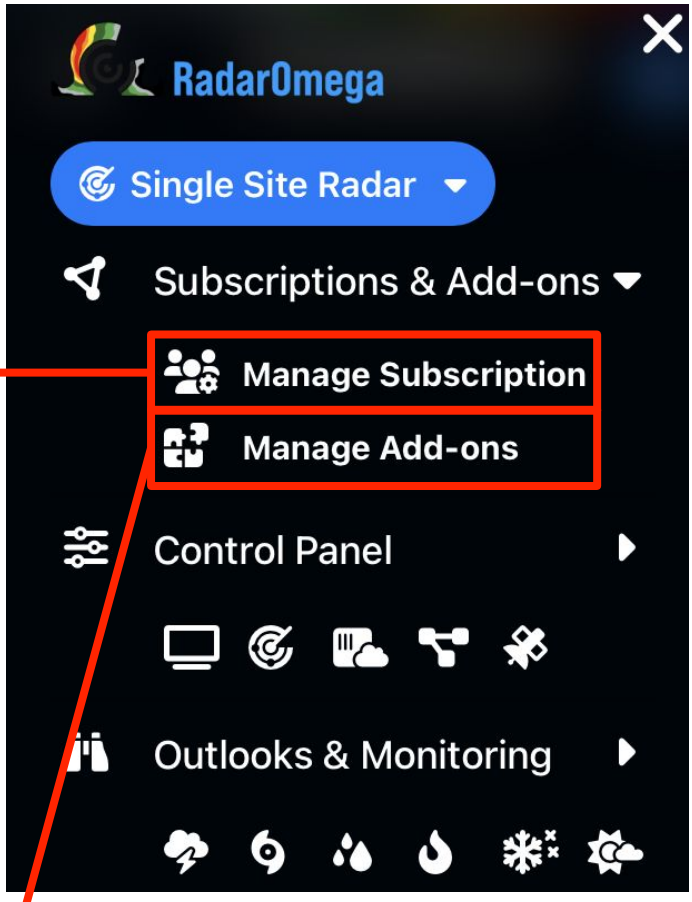
Base Application, Subscriptions, and Add-Ons

Purchasing the RadarOmega base application for $8.99 plus tax from either the iOS App Store or Google Play Store will permanently grant access to the features that come standard with the base application. This is a one-time payment that **does not** initiate a subscription or recurring payments.

Subscriptions are purchased inside RadarOmega after creating a RadarOmega account. Subscriptions require either monthly or yearly recurring payments, depending on the payment structure you choose. There are three different subscription tiers - Gamma, Beta, and Alpha - that each grant access to more features inside RadarOmega. Desktop access is available with any subscription tier. Your subscription can be upgraded, downgraded, or cancelled at any time through the "Manage Subscription" menu under the "Subscriptions & Add-ons" section in the side menu. Keep in mind that a subscription **is not required** to use the base application! More information about different subscription tiers is available on page 2.



RapidSweep is an add-on that is separate from the base application or subscriptions. This add-on is a monthly or yearly recurring payment that is purchased through the RadarOmega website (https://account.radaromega.com), or through the "Manage Add-Ons" menu under the "Subscriptions & Add-ons" section in the side menu. This add-on grants access to the RapidSweep feature only - it does not provide desktop access or any other features in any of the other subscription tiers. More information about RapidSweep is available on page 25.

Note: For enterprise users, please contact your account manager to manage your subscriptions or add-ons.

Base Application, Subscriptions, and Add-Ons

Base Application

- NEW Warning Display Dialog
- NEW Hi-Res Storm Relative Velocity
- MRMS Reflectivity
- Hi-Res Single Site Radar Data
- 30 Frames of Data
- 7 Day Radar History
- Lightning Detection/Animation
- 24 Hour Storm Reports
- SPC Convective Outlooks & Watches
- NHC Tropical Suite & Hurricane Hunter
- WPC Excessive Rainfall Outlooks
- Mesoscale Discussions (Severe, Winter, & Precip.)
- CPC Temp. & Precip. Outlooks
- Fire Weather Outlooks & Drought Monitor
- WPC Winter Forecasts & WSSI
- METARS
- Real-Time NWS Storm-Based Warnings
- Non-Precip Watches/Warnings for USA
- Flash Animation & In-App Sound Alert for All Alerts
- WPC Surface Analysis
- Buoy Data & Tide Forecasts
- NEXRAD Hail History
- Spotter Network Locations
- Power Outage Layer
- Map Type Customization
- Detailed City & Road Network
- 15 Custom Locations with a Linked RadarOmega Account
- Drawing, Data Viewer, & Distance Tools
- Storm Track Drawing Tool
- Share Screenshot & Video
- Push Notifications for All Storm-Based Watches/Warnings Using GPS Location
- Access to cyclonePORT Network

Additional Add-Ons

- Rapid Sweep[RS]

Gamma[G]

- Hi-Res Satellite Data
- Lightning Detection/Animation, METARS, & GLM for Mesoscale & Storm-Based Satellite Sectors
- National Digital Forecast Database
- Access to Project MesoVort
- 75 Frames of Data
- Dual View Radar with 30 Frames
- Smoothing for Radar/Satellite
- 30 Day Radar History
- 6 Month Storm Report Archive
- 3D Radar/Satellite
- Upload 3 Custom Color Tables
- 30 Custom Locations with Icon Upload
- 2 Custom Location Lists
- Push Notifications Open to All Weather Alerts Using GPS Location ONLY (max of 8 at a time)

Beta[B]

Everything in Gamma PLUS

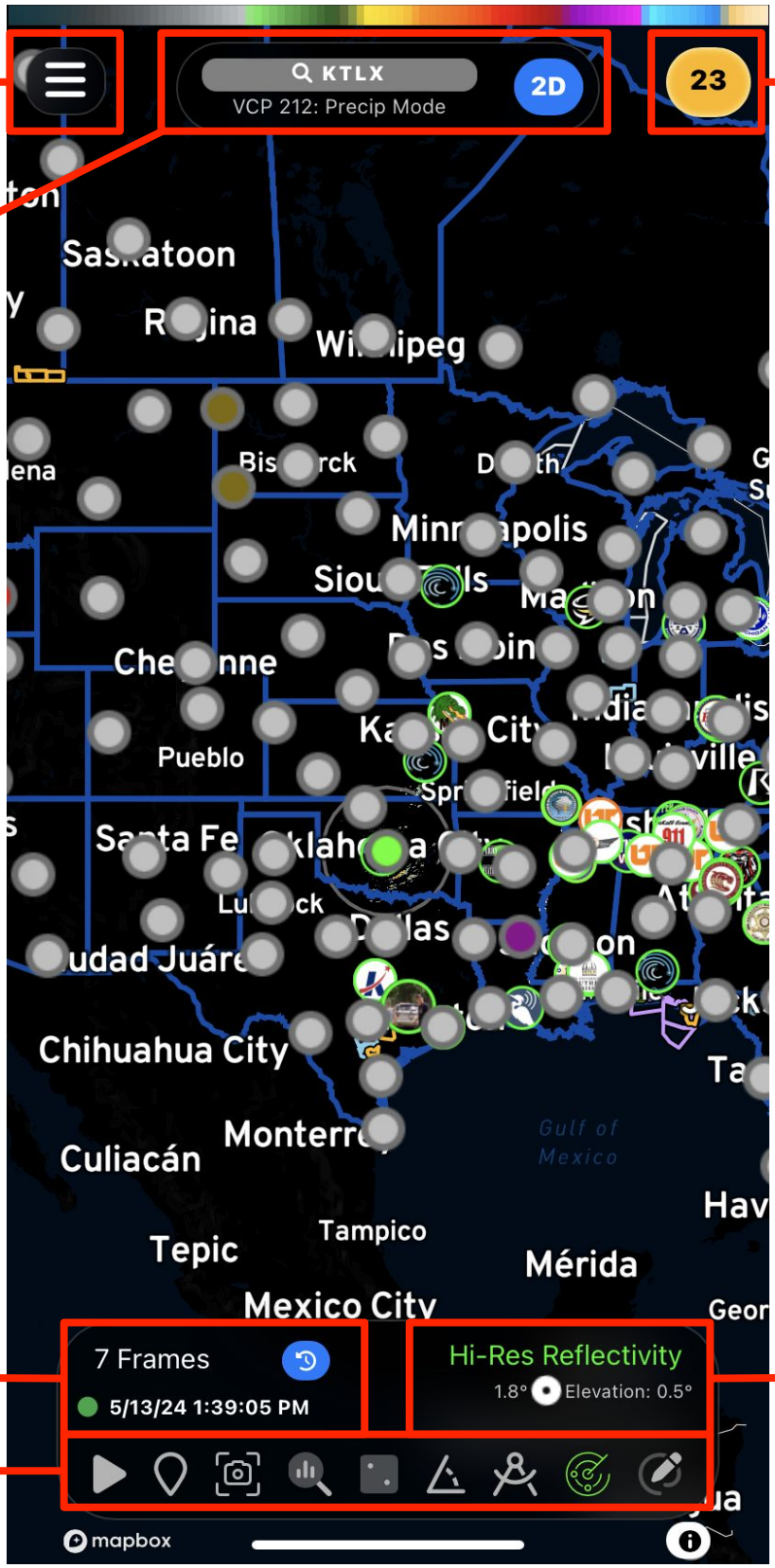
- MRMS Data
- 150 Frames of Data
- Dual View Radar/Satellite with 50 Frames
- Smoothing for MRMS
- 90 Day Radar History
- 5 Year Storm Report Archive
- 3D MRMS
- Upload 8 Custom Color Tables
- 75 Custom Locations with Icon Upload
- 5 Custom Location Lists

Alpha[A]

Everything in Beta PLUS

- Volumetric Radar
- Model Data with Contours for HRRR, NAM3KM, NAM12KM, RAP, GFS, ECMWF, HWRF, & HMON
- 250 Frames of Data
- Dual View Radar/Satellite with 100 Frames
- Quad View Radar/Satellite on Tablet & Desktop with 50 Frames
- Smoothing for Models
- 90 Day Radar History
- 10 Year Storm Report Archive
- Upload 30 Custom Color Tables
- 150 Custom Locations with Icon Upload
- 10 Custom Location Lists
- 1 Site Lightning Monitoring with Custom Range Zones
- Push Notifications Open to All Weather Alerts for up to 3 Custom Locations and GPS Locations (max of 8 at a time)

RadarOmega Main Display



Side Menu Access

Top Menu

Active Weather Alerts

Frame Selector

Bottom Menu

Product Selector

Navigating the Bottom Menu

Play/Pause button. Tap and hold to access the slider option. In Single-Site Radar Mode, this button will only appear when a tower is selected.

Hide/show your current location on the map. For mobile devices, tap and hold to open the Location Settings menu.

Take screenshot. On mobile, this option can be used to screen record as well.

Data inspector tool. Select this icon, then position the reticle over the data you would like to examine to read its exact value.

Dual panel display. Usable in single-site radar[G] and satellite[B] mode to view two different products simultaneously. Click and hold this icon to switch to quad panel display[A] (quad panel available for desktop and tablet only).

Manual storm track tool. Tap and hold to access the settings menu for this tool. More information on how to use this tool on page 9.

Distance measurement tool. After selecting, click and drag between two points you would like to measure. The distance will be given near the top of the screen.

Hide/show radar sites. Will be green when towers are showing. Only appears on the bottom menu while in Single-Site Radar mode.

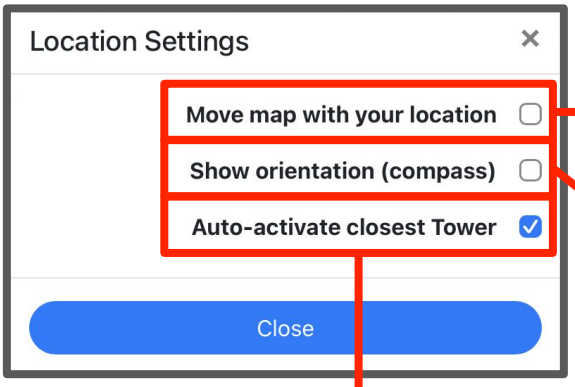
Hide/show city & road layer. This icon is not visible in single-site radar mode.

Draw tool. Allows you to make quick annotations and drawings on the map.

Location Toggle and Location Settings

You can toggle your current location on the map by tapping on the location toggle icon in the bottom menu. This icon will turn green when your location is enabled. For this feature to work properly on mobile, make sure you have allowed RadarOmega location permission in your mobile device's settings menu.

For mobile devices, tap and hold the icon to open the Location Settings menu:

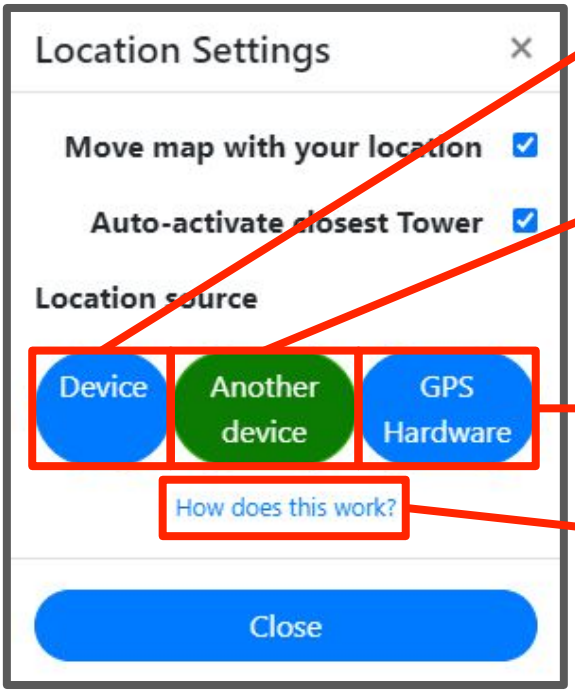


With this option enabled, the map will be fixed to your current location. Either disable your current location or disable this option to view other parts of the map.

Turn this option on to show the direction you are facing on the display.

With this option enabled, the closest tower to your location will automatically activate upon opening RadarOmega.

Most desktop/laptop computers do not have built-in GPS capability. Therefore, this menu on the desktop version of RadarOmega looks slightly different:



If your computer **does** have built-in GPS capability, select this option to use it as the location source.

Select this option to use your mobile device as the location source. Your location will populate in RadarOmega on your computer based off of your mobile device's location. You **must** be signed in to your account on your mobile device and have RadarOmega open on your mobile device..

If you have third party GPS hardware, like a GPS puck, ensure that it is connected to your computer, then select this option to use this as the location source[B].

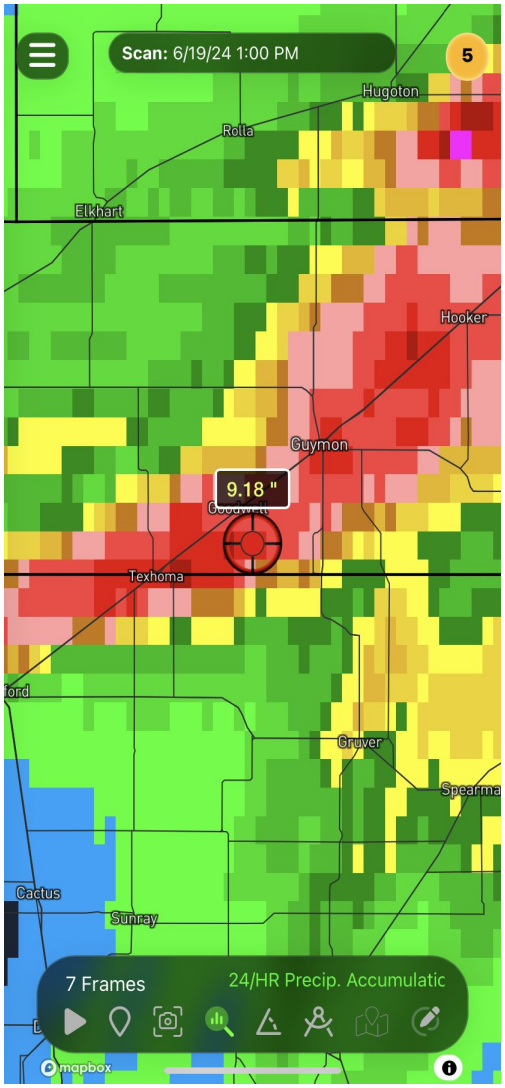
Click here to learn more about which location source is best for you.

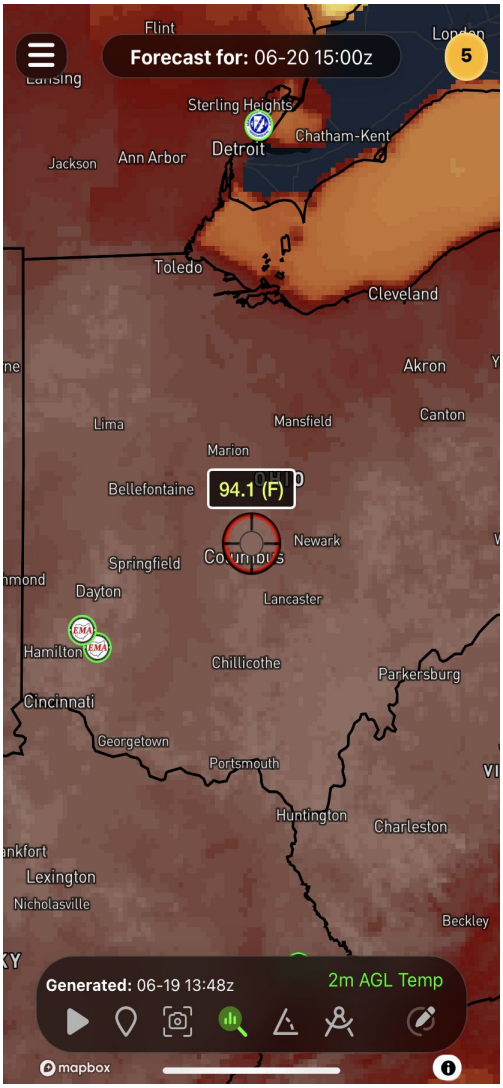
Data Inspector Tool

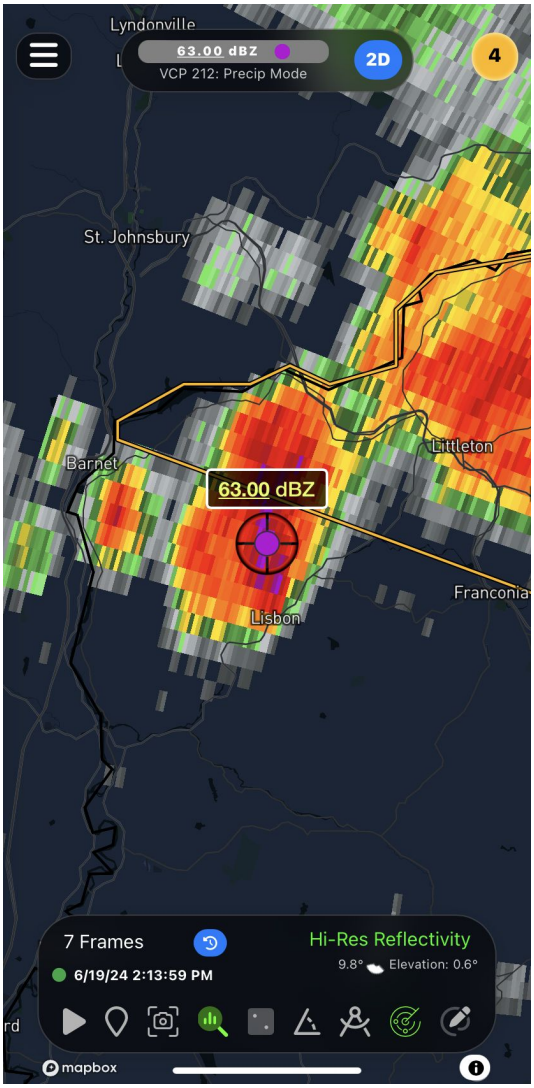
The Data Inspector Tool can be used by tapping on its icon in the bottom menu. When enabled, a reticle will appear in the middle of the screen - position the screen underneath the reticle over the data you would like to examine to read out its exact value. The readout will appear above the reticle, as well as in the top menu in single-site radar mode.

Changes made to unit types throughout the settings of RadarOmega will reflect the inspector tool readout.

Tapping and holding on the Data Inspector Tool button in the bottom menu will open the settings menu, allowing you to change where the readout will appear.

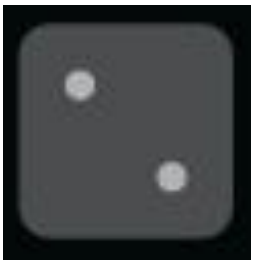




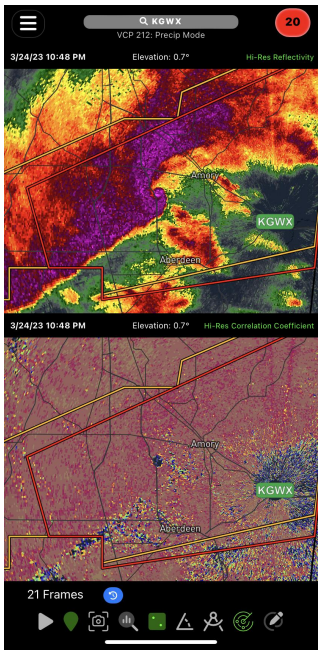


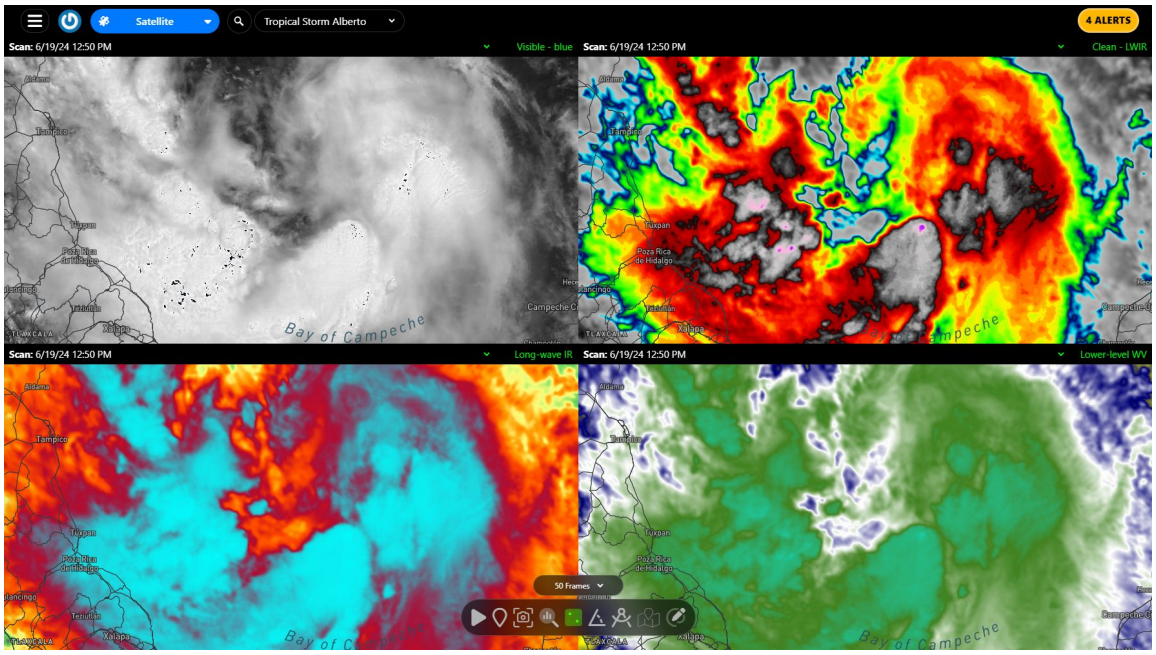
Dual/Quad Panel Display

Dual or Quad Panel Display can be used to see multiple single-site radar or satellite products side-by-side. To activate dual panel display, tap on the dual panel icon in the bottom menu. The product selector for each panel will be located in the top right corner of each display panel.



For quad panel, tap/click and hold on the dual panel icon, select “Quad Panel Display”, then tap the icon again in the bottom menu. Again, the product selector for each panel will be located in the top right corner of each display panel. Quad panel display is available only for tablets and desktop computers.





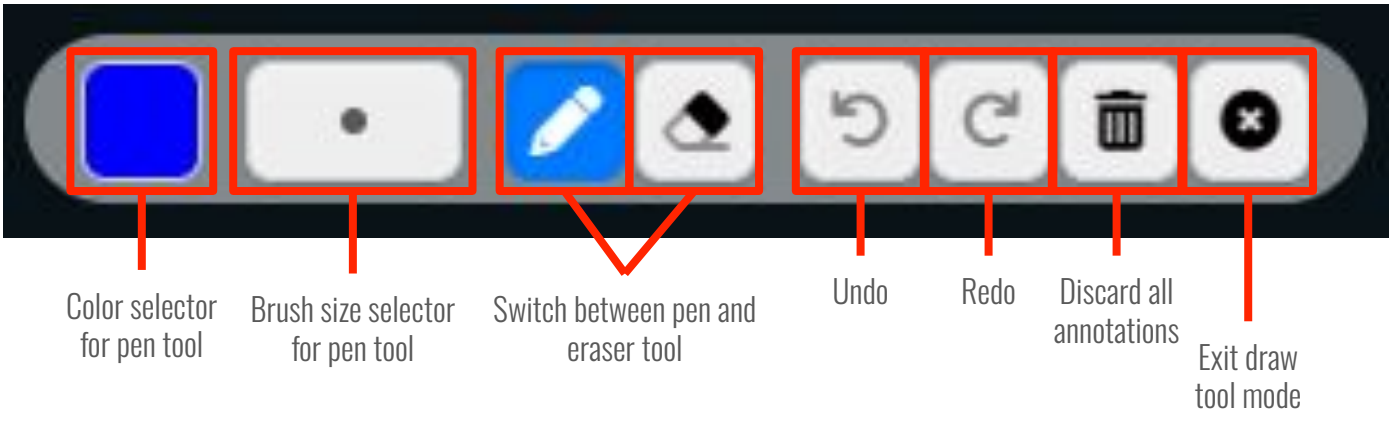
Distance Measurement Tool

You can measure the distance between two points on the map using the distance measurement tool. Select the tool, then tap and drag to measure the distance between the start point and end point. The readout will appear in the top menu.

Tapping and holding on the distance measurement tool icon will open a settings menu where various components of the measurement tool can be adjusted, or change the unit of measure. With the “New start point each time” option enabled, every time you tap and drag, the initial point will reset to where you initially tap. With this option disabled, the initial point will remain, but the end point will adjust to where you drag.

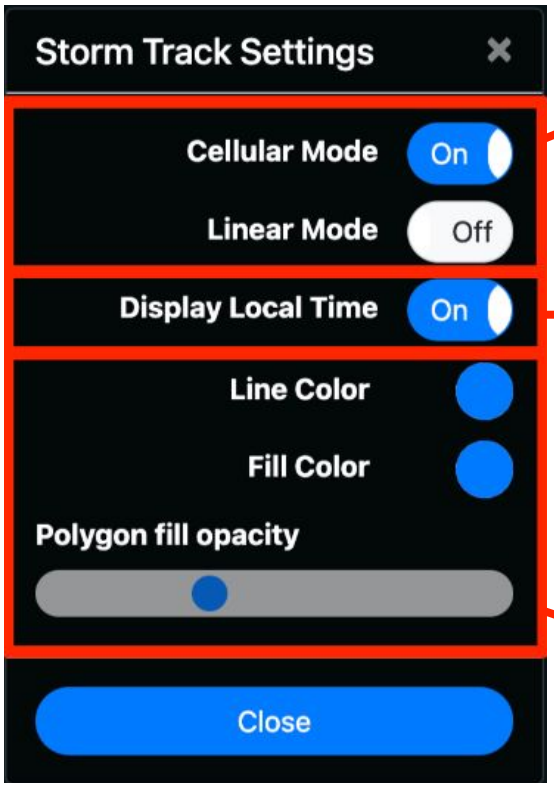
Draw Tool

The draw tool can be used to make temporary annotations on the map. Select the tool in the bottom menu, then tap and drag to draw.



Manual Storm Track Tool

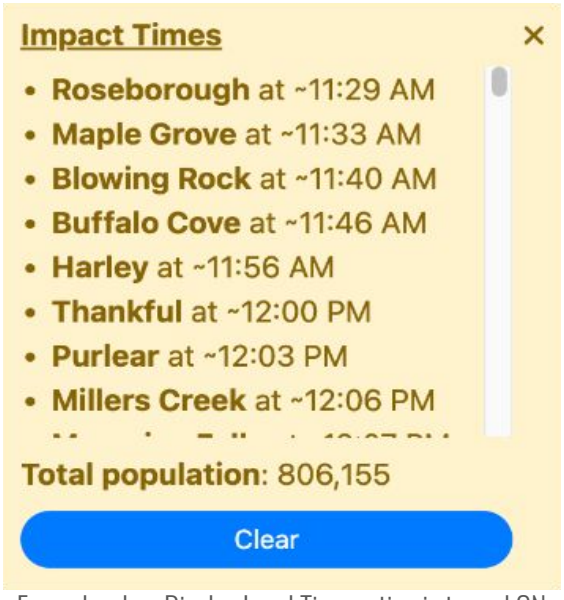
There are two modes for the storm track tool: Cellular Mode and Linear Mode. Press and hold on the storm track tool icon in the bottom menu to switch between modes or access customization options. The storm track tool returns a shaded region representing the storm's possible path, a list of communities in the storm's possible path, and estimated arrival times.



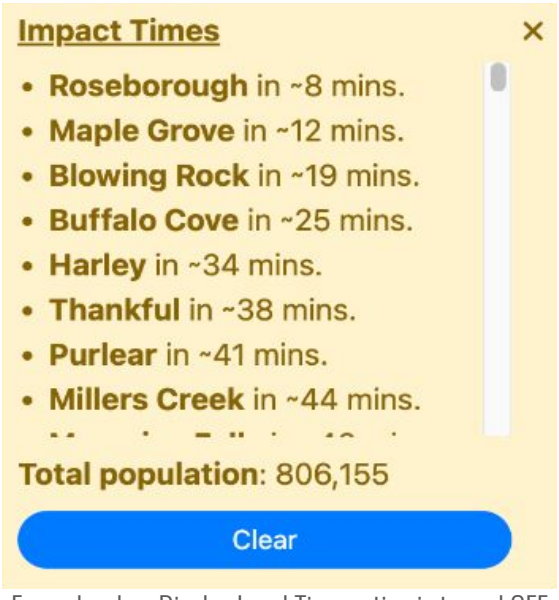
Use these options to switch between cellular and linear mode.

When turned on, the estimated arrival times will be in local time. When turned off, the estimated arrival times will be replaced by a number of minutes until each estimated arrival time.

Use these options to customize the appearance of the shaded region representing the storm's possible path.



Example when Display Local Time option is turned ON

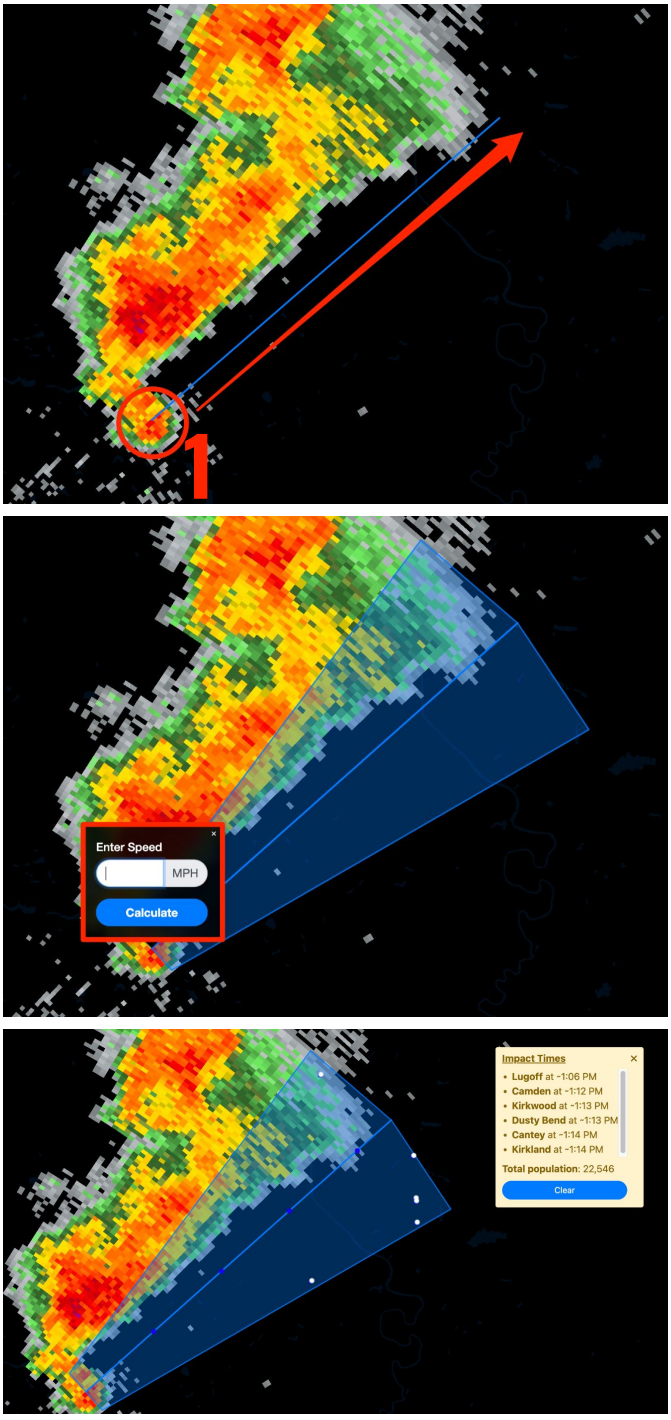


Example when Display Local Time option is turned OFF

Manual Storm Track Tool

Cellular vs. Linear Mode

Cellular Mode is the default mode; it is best used when considering a single, isolated storm. In cellular mode, tap, hold, and drag in the direction of storm motion, then enter an estimate for the storm's movement speed:

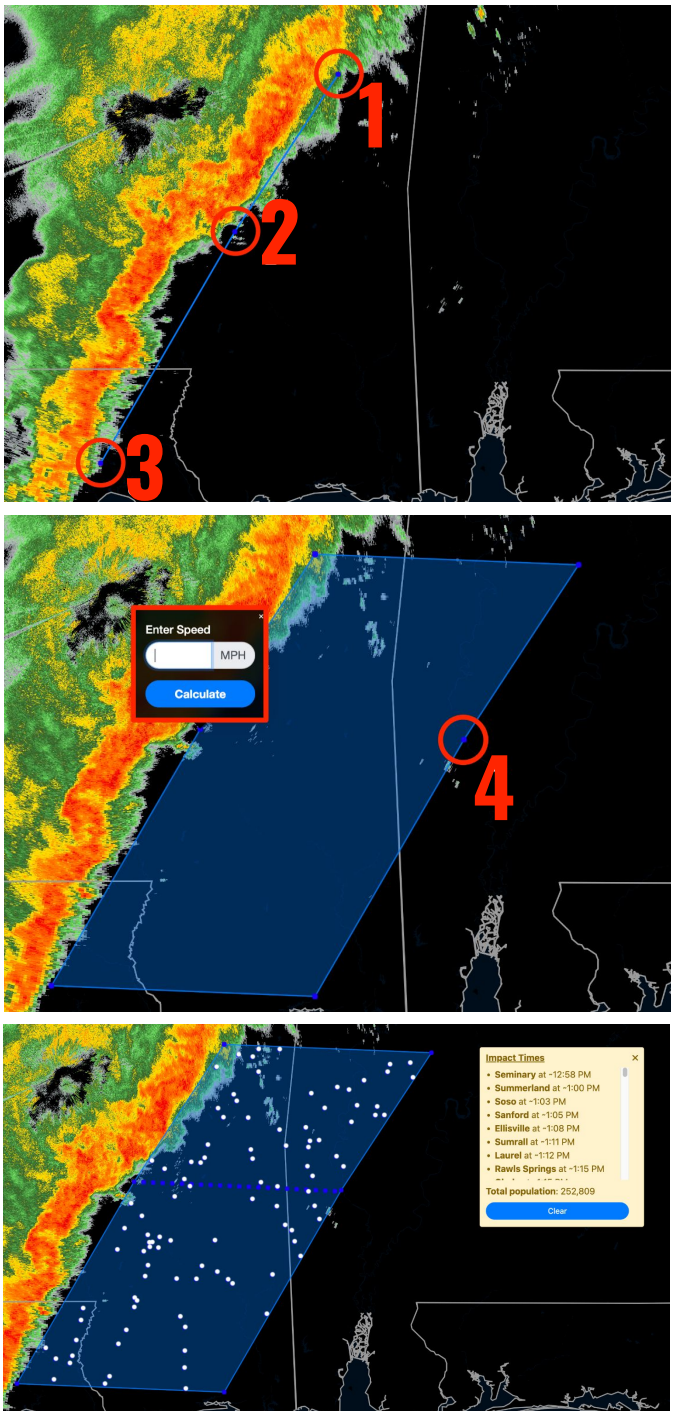


Example using a cellular storm track

Manual Storm Track Tool

Cellular vs. Linear Mode

Linear Mode is best used when considering a line of advancing storms. In linear mode, you will place four points on the map. Trace the outline of the leading edge of the storm with the first three points, then place the fourth point in front of the storm in the direction of the storm's motion, and enter an estimate for the storm's movement speed.



Example using a linear storm track

Manual Storm Track Tool

Estimating Storm Speed

1. Storm Track Initial Points

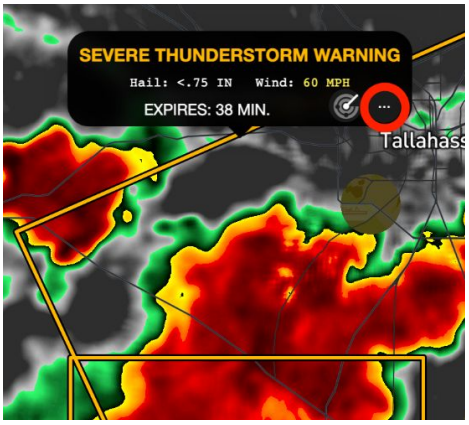
In the Radar Settings menu, you can turn on the "Initial Points" option. These points are automatically generated and can give information about the characteristics of storms in single-site radar mode (more information about initial points on page 17). Tapping on a point will display the storm's estimated movement speed:

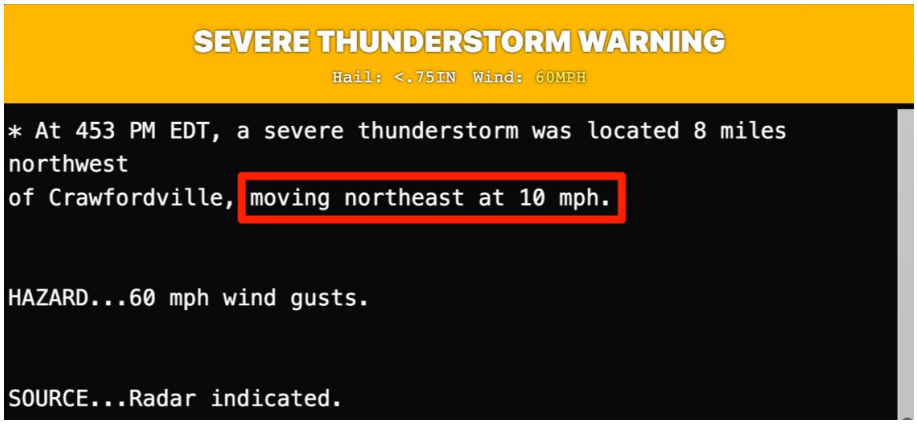
Appearance of Storm Track Initial Points on the Map

Tap to See Estimated Storm Speed

2. Official Warning Text

The text bulletins associated Special Weather Statements, Severe Thunderstorm Warnings, and Tornado Warnings will contain an estimated storm movement speed. If one of these alerts has been issued for the storm, tap on the polygon, then tap on the icon with three dots to read the text bulletin:

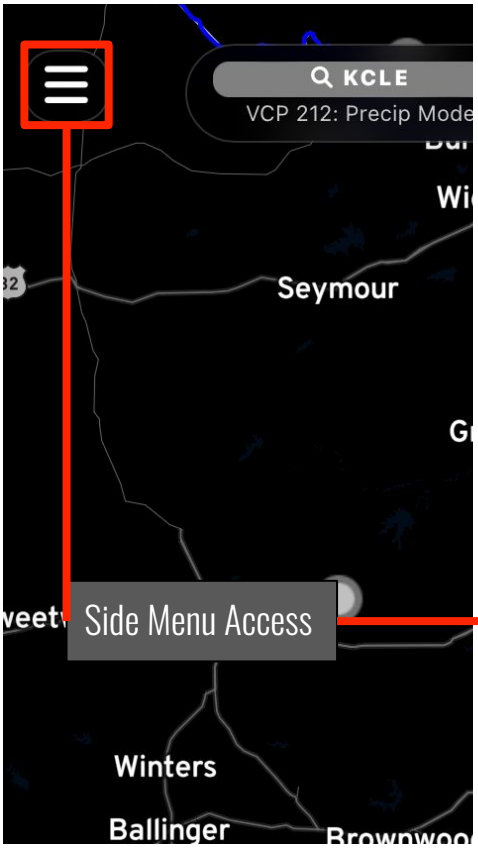


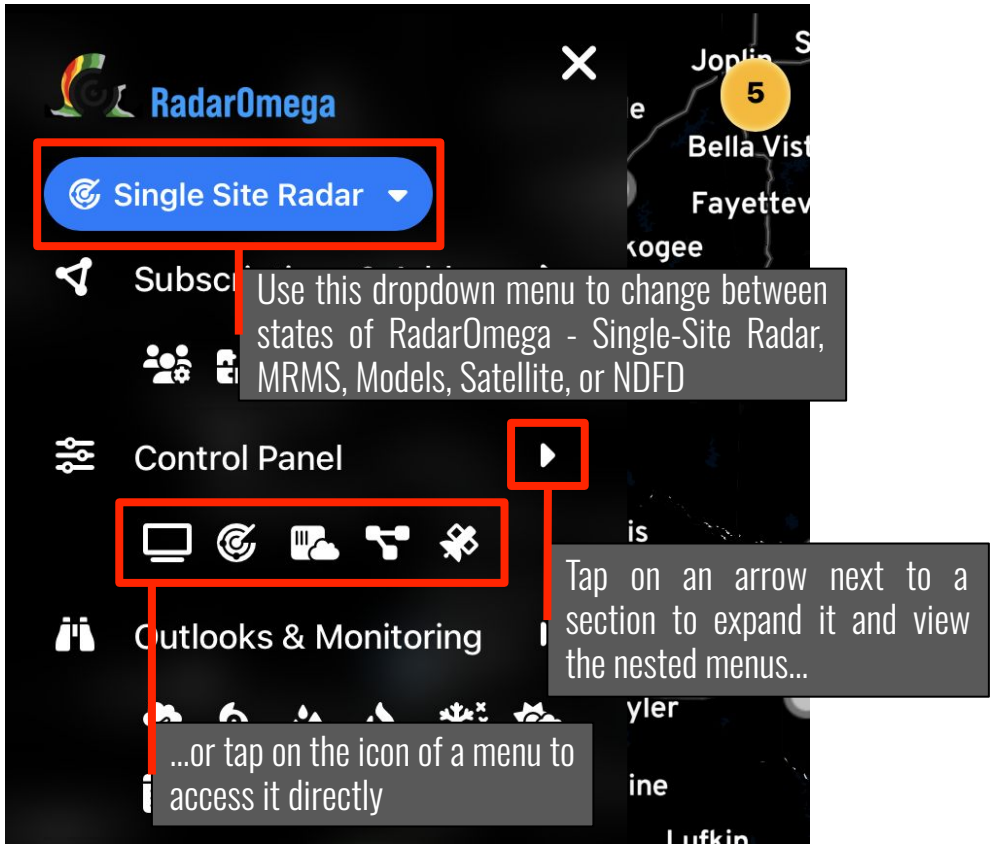


Accessing the Side Menu

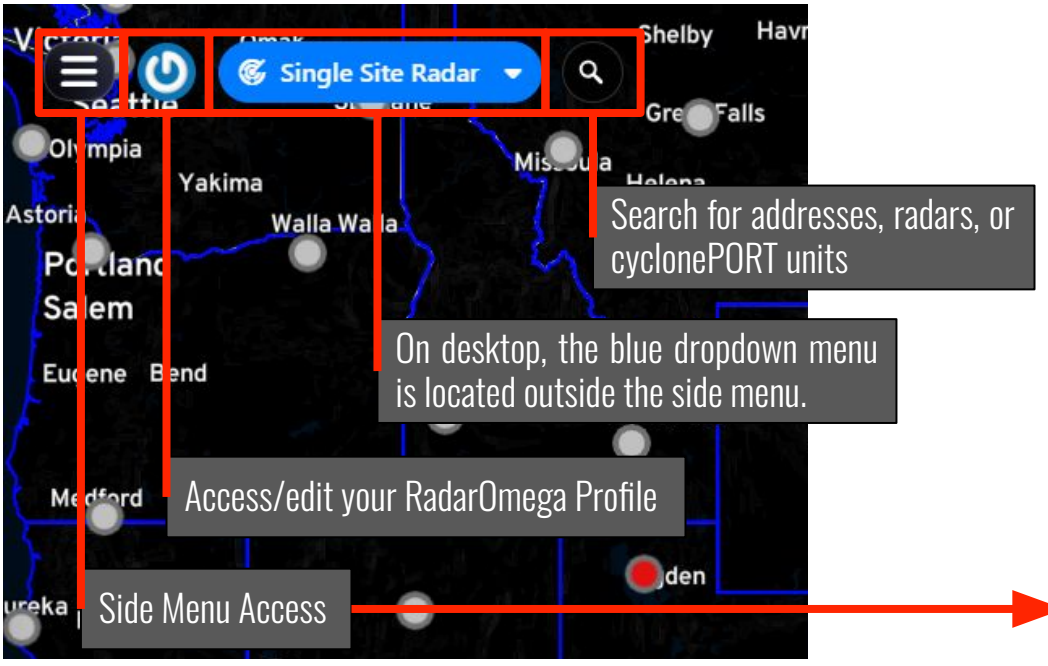
To open the side menu, tap on the icon in the far upper left-hand corner of the screen. This icon will appear as three stacked lines.

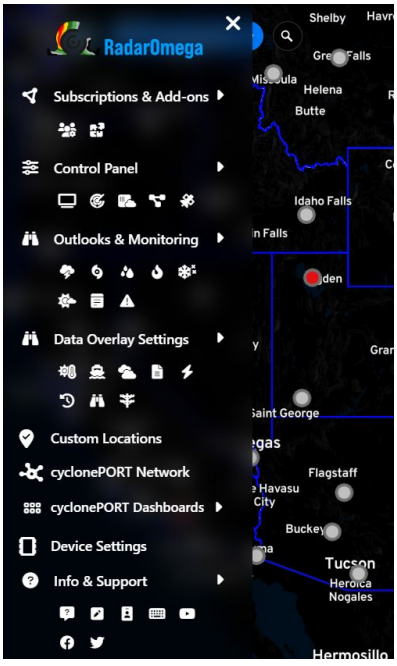
Mobile View





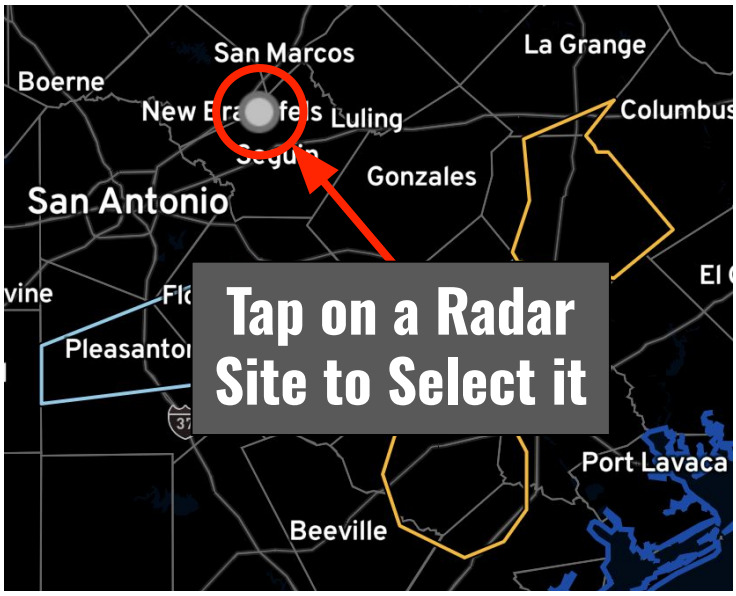
Desktop View

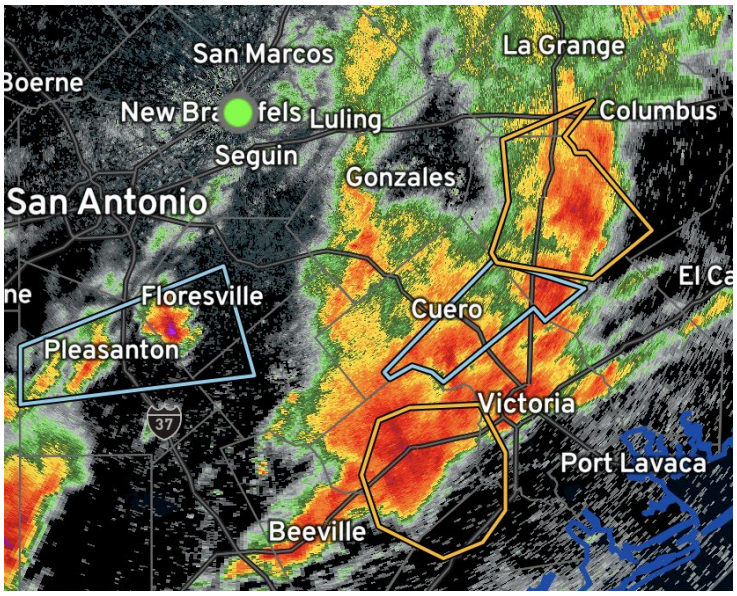




Single-Site Radar

Single-site radar mode is the default radar mode in RadarOmega. In this mode, the user will see several “dots” on the map. These dots represent radar towers. Select one to see radar data near the site. The dot will turn green when it is selected.





Single-site radar data is very high resolution, but has a limited range around a given radar site.

If you cannot see radar sites on the map, make sure they are toggled on using the **hide/show radar sites** button on the bottom menu.

Radar data can be animated using the **play/pause button** in the bottom menu.

The number of playback frames can be changed using the **frame selector** in the bottom left.

Different single-site radar products such as hi-res velocity, hi-res correlation coefficient, and hi-res differential reflectivity can be accessed through the **product selector** in the bottom right corner.

Extruded 3D[G] and Volumetric 3D[A] can be enabled by tapping the blue “2D” button on the **top menu**. (More information on Volumetric 3D on page 19)

Important: The **play button** and **top menu** will only appear when a radar site is selected. If you cannot see these, make sure a radar site is selected!

Single-Site Radar

Different Radar Types

Radars are color coded based on their type:

- **Gray**: WSR-88D towers, owned and operated by the National Weather service. These towers will have the largest range.
- **Green**: The tower that is currently selected.
- **Yellow**: Terminal Doppler Weather Radars (TDWRs). These radars are typically operated by a nearby airport and have a smaller range than a WSR-88D.
- **Purple**: University-affiliated radars.
- **Blue**: Furuno radars, a third-party radar company utilized to increase national radar coverage.
- **Brown**: Short range radars associated with the North Dakota Atmospheric Research Board utilized to increase radar coverage in North Dakota.
- **Red**: These are can be any of the above radars which may be out of service. If details are provided by the owner regarding the timing of the outage, they will appear in the "Operator Notes" window that opens in the top left automatically when selecting a red radar tower.

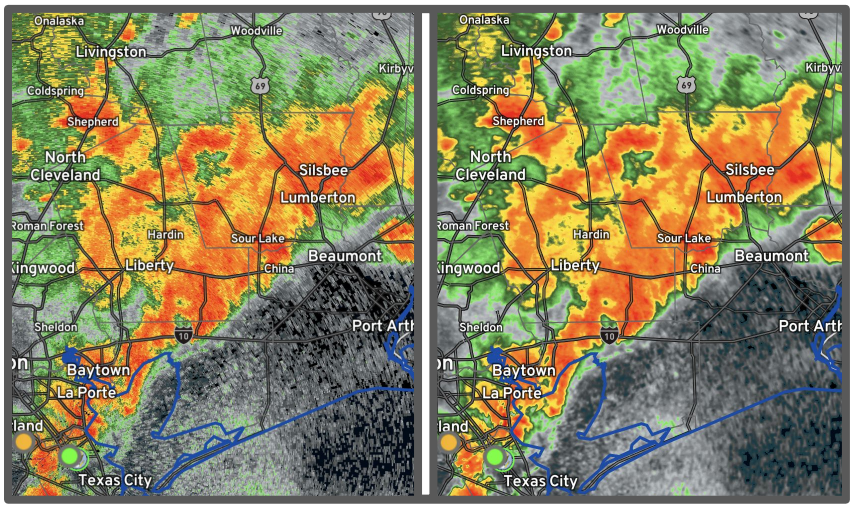
A note about radar sites in RadarOmega: None of the radar towers are owned or operated by RadarOmega - therefore, we cannot control when they are out of service, nor when their service may be restored. It is fairly common for radar sites to go offline. When this happens, you can often find updates on the outage and details about when service is expected to be restored by checking the X (Twitter) page for the National Weather Service office which operates the radar.

Single-Site Radar

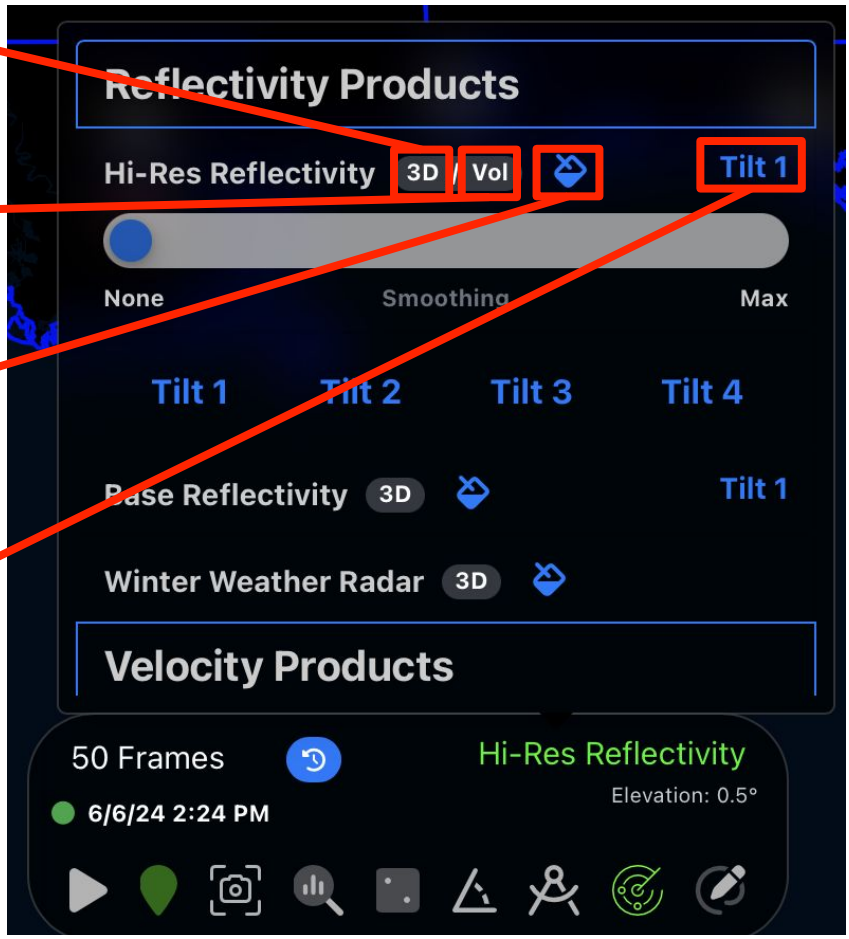
Product Selector Options

Along with changing between different single-site radar products, the **product selector** also allows you to apply smoothing or change the tilt level for compatible products. Smoothing for reflectivity is available to all users, while smoothing for all other compatible products is available to gamma subscribers and above.

For smoothing, select the paint bucket icon next to a compatible product and adjust the slider bar to your preference. If "3D" or "Vol" are next to the product name, this means they are compatible with Extruded[G] and/or Volumetric 3D[A]. Enable these using the "2D" button on the **top menu**.



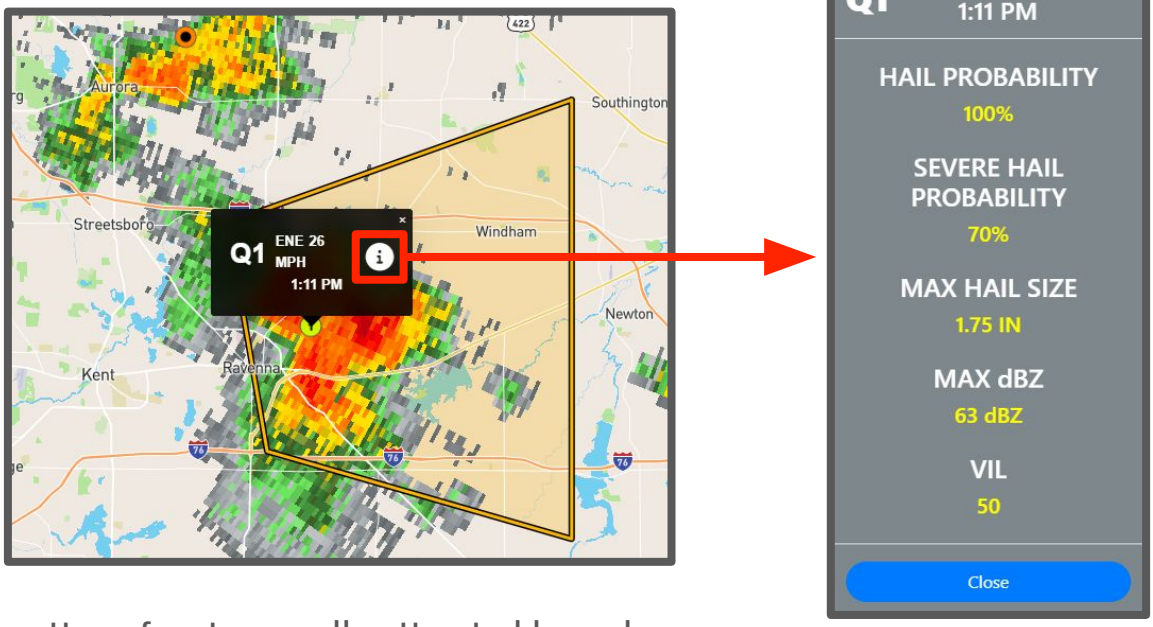
No Smoothing Applied | Smoothing Applied



Single-Site Radar

Initial Point Icons

Initial points are enabled from the Radar Settings menu. Their icons will differ depending on the characteristics of the storm as estimated by the radar, from radar-estimated hail size to tornado vortex signatures (TVS). Tap on an initial point to see info about these characteristics, as well as estimated storm motion. Keep in mind that this information is **estimated based off radar data** and should always be considered alongside other sources of information.



A location of a storm cell estimated by radar.

A storm with a “meso” value between 1 and 3. This value is a radar-estimated attempt to quantify the amount of rotation exhibited by a storm.

A storm with an estimated max hail size of 0.75”.

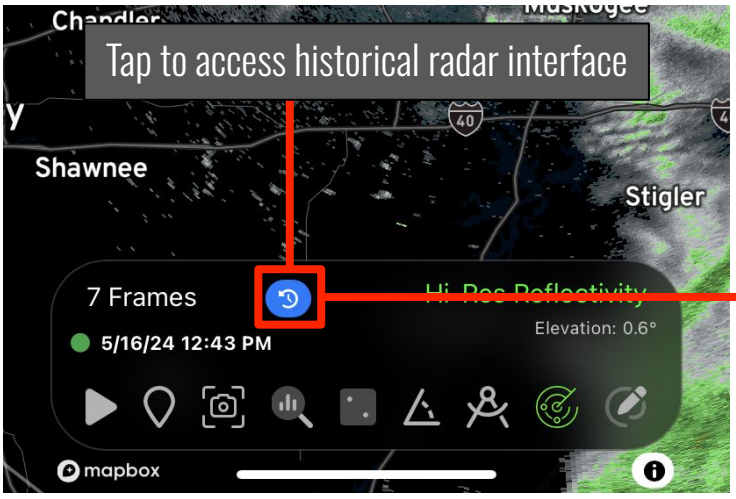
A storm with an estimated max hail size of ≥1”. The number will represent the maximum estimated hail size, rounded down.

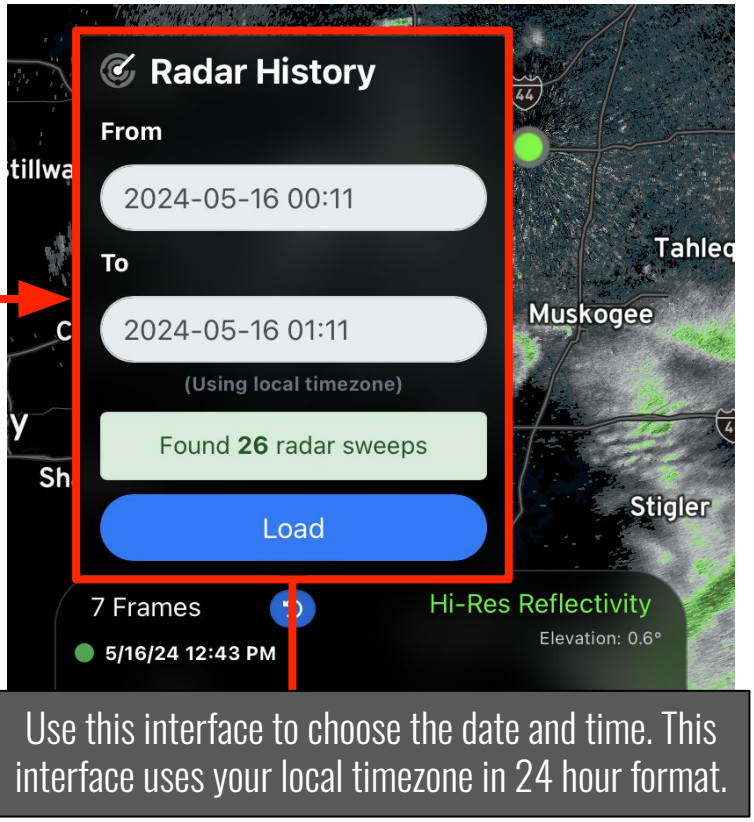
A storm which is exhibiting a TVS (estimated meso value ≥ 4). The background color will reflect the estimated hail threat.

Single-Site Radar

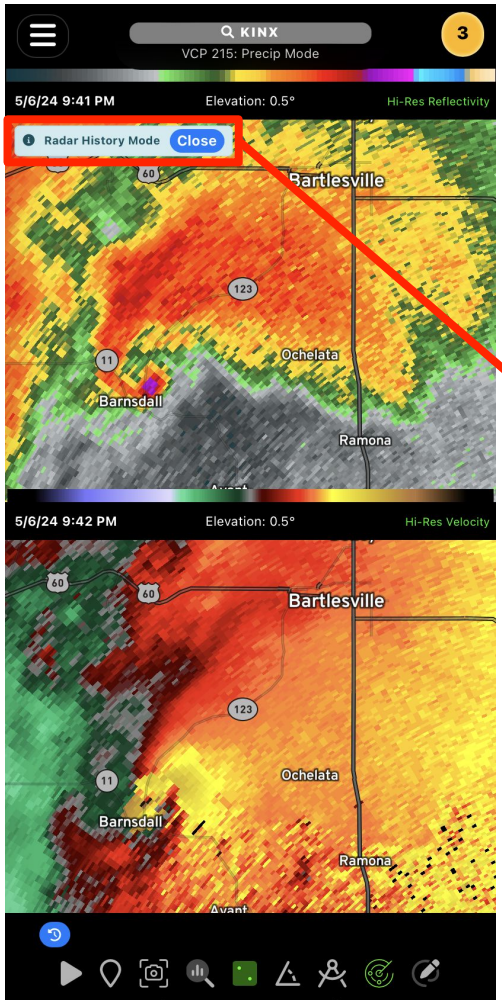
Historical Radar Data

Up to 90 days of historical single-site radar data can be accessed. You can access historical radar data by tapping blue clock icon in the **frame selector**.





Use this interface to choose the date and time. This interface uses your local timezone in 24 hour format.



This window will appear to confirm when you have entered radar history mode. Tap “Close” to return to live radar.

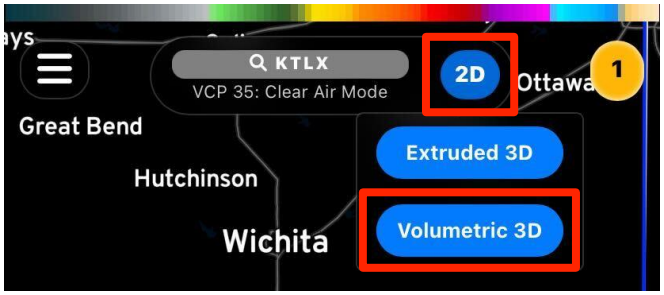
All single site radar products are compatible with radar history mode. Dual and Quad Panel displays can be used as well.

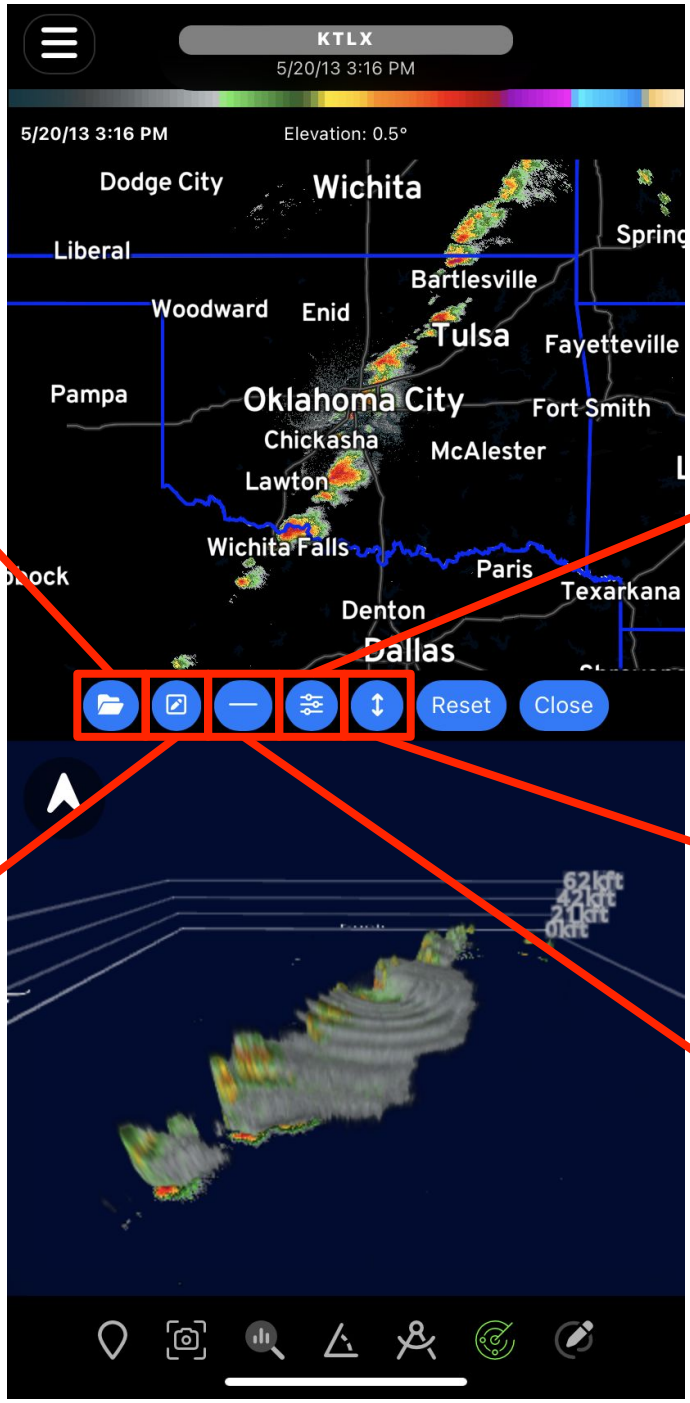
Base application users can access the past 7 days of radar history, gamma subscribers can access up to 30 days, and beta and alpha subscribers can access up to 90 days.

Single-Site Radar

Volumetric 3D Data[A]

The Volumetric 3D data viewer can be opened by tapping the “2D” button in the **top menu** and tapping “Volumetric 3D”.





Historical Examples

Settings Menu

Box Selector Tool

Full Screen

Cross Section Selector Tool

Single-Site Radar

Volumetric 3D Data[A]

The Volumetric 3D data viewer settings menu allows you to make changes to appearance of the data viewer window, the gate filter, and dBZ translucency. Choose between several preset translucency schemes, or create and save your own.

Gate filter slider bar. Works the same way as the slider bar in the Radar Settings menu. Remember, you **will not see data** if both dots are all the way to one side.

Toggles Grid Lines in background of data viewer

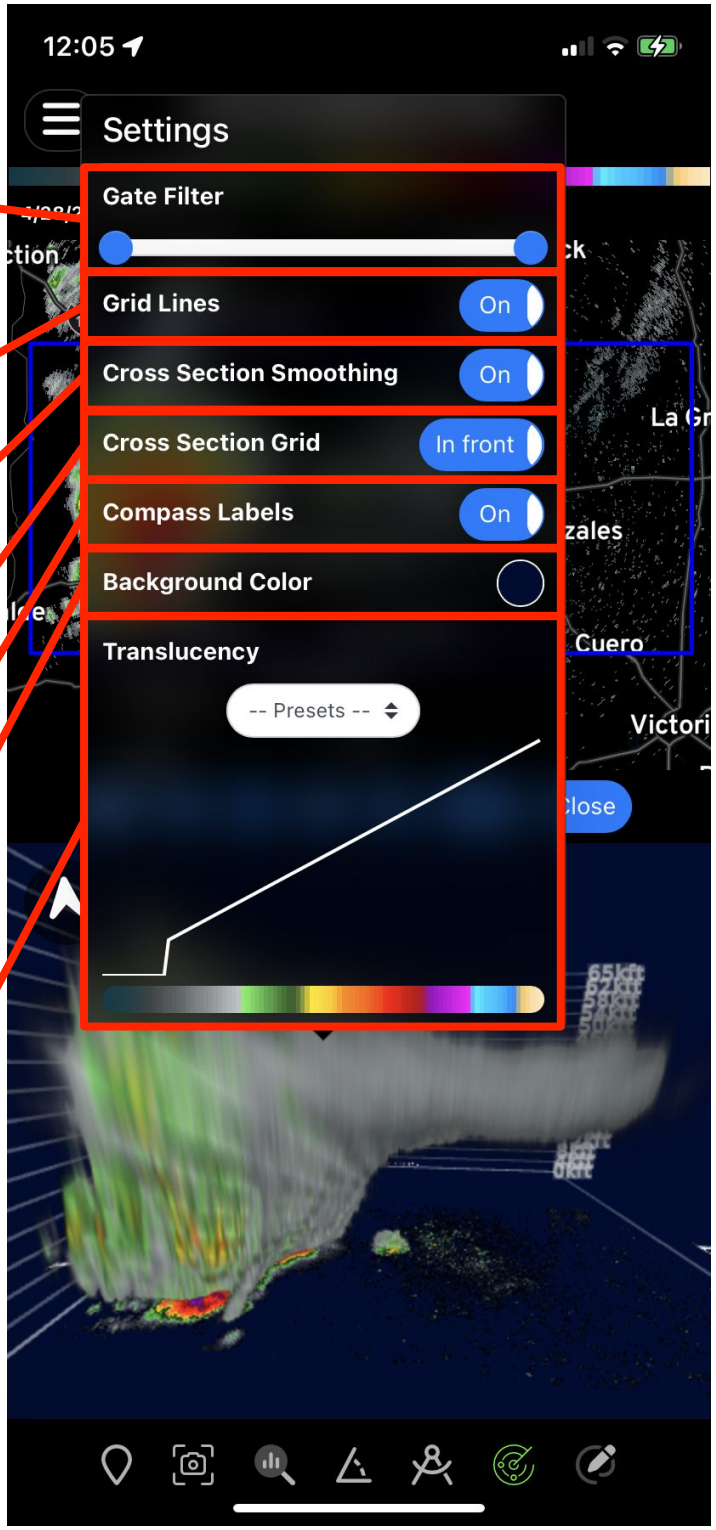
Smoothing toggle for cross section selections only

Places grid lines either in front of or behind cross section selection

Toggles compass labels in data viewer

Color selector tool used to change the background of the 3D data viewer

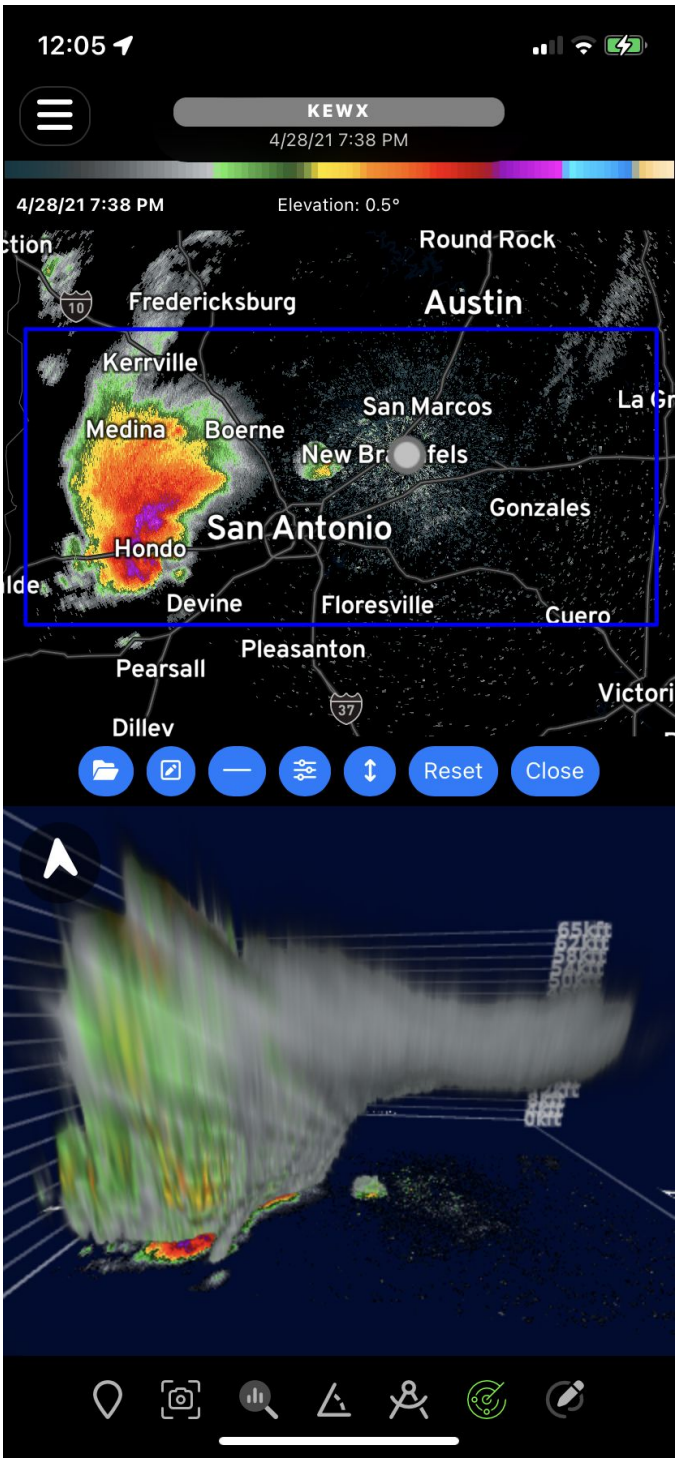
Adjust dBZ translucency. Choose from presents for Hail, Snow, or Hurricane, or create save your own.



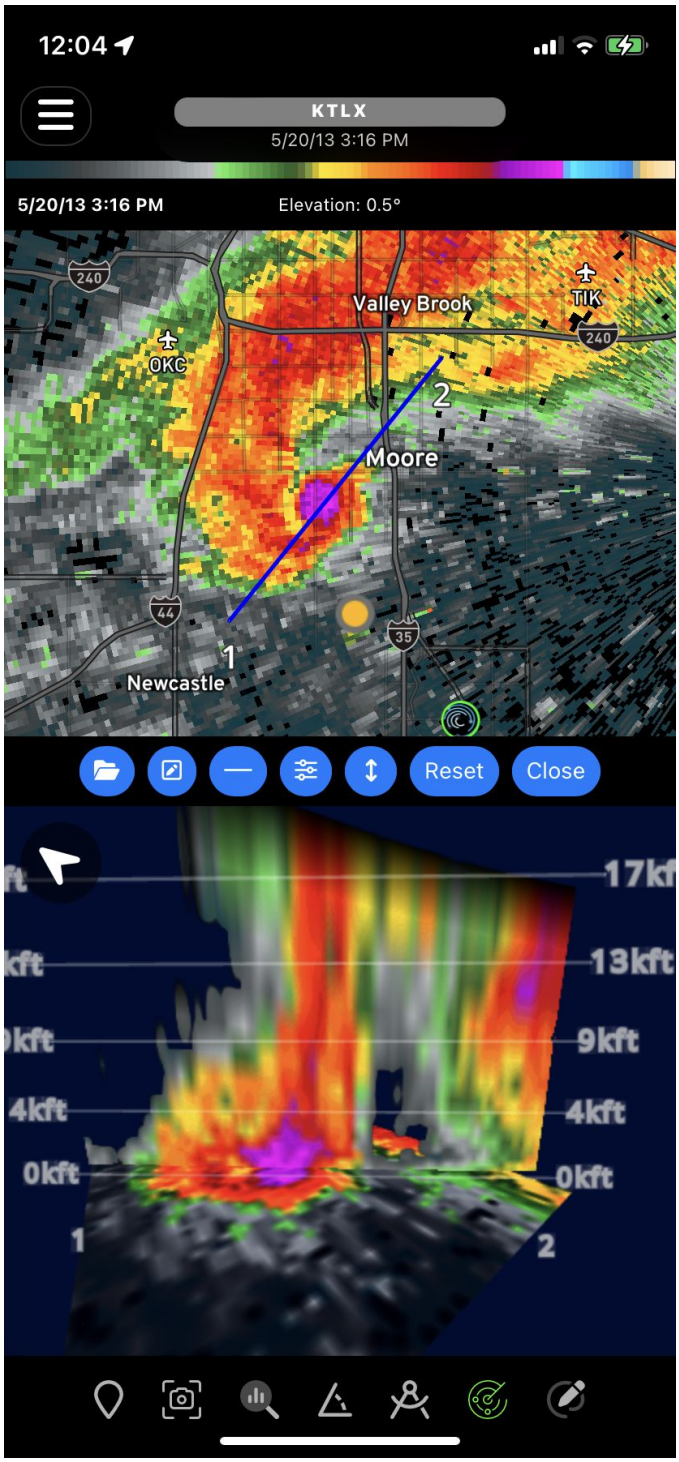
Single-Site Radar

Volumetric 3D Data[A]

Isolate a specific section of the volume by using either the box selector or the cross section selector tool:



Box Selector Tool Example

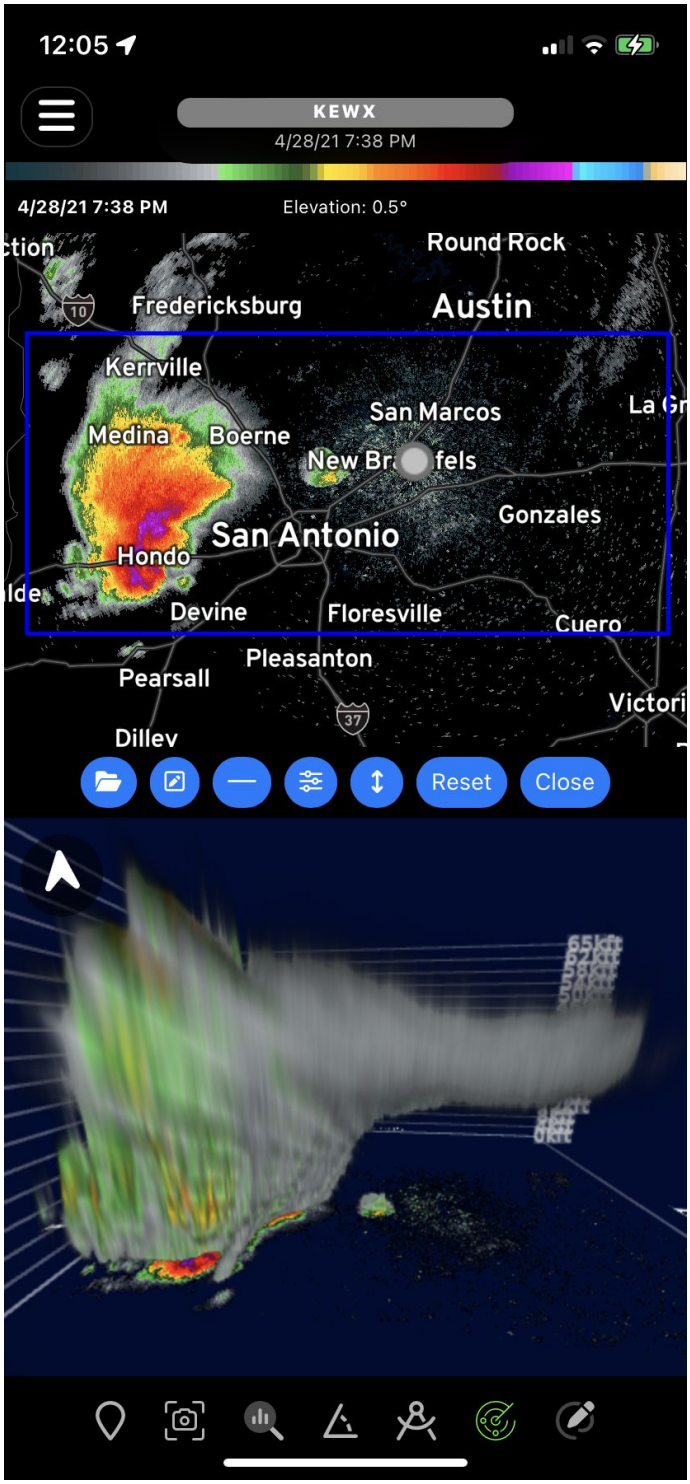


Cross Section Selector Tool Example

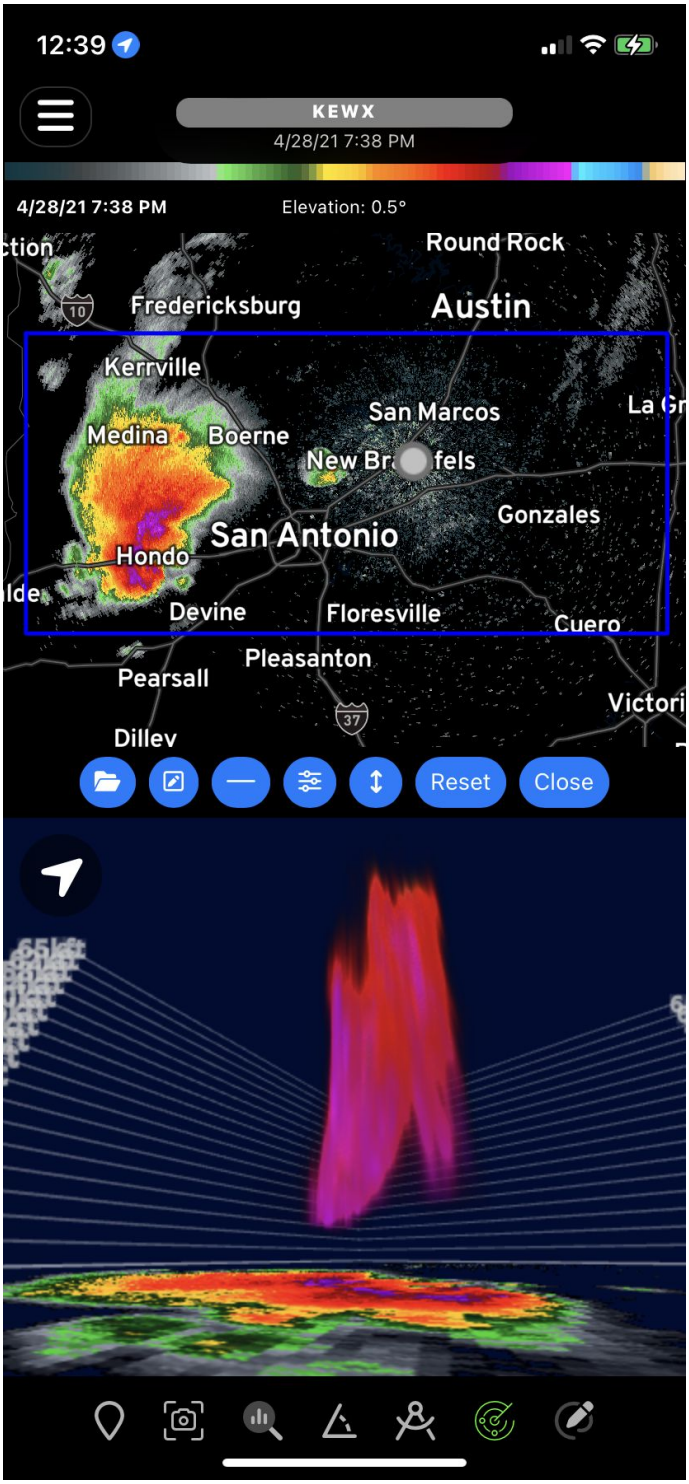
Single-Site Radar

Volumetric 3D Data[A]

Applying a translucency scheme helps to isolate dBZ values which are most relevant to what you're investigating:



Before applying "Hail" Translucency Preset

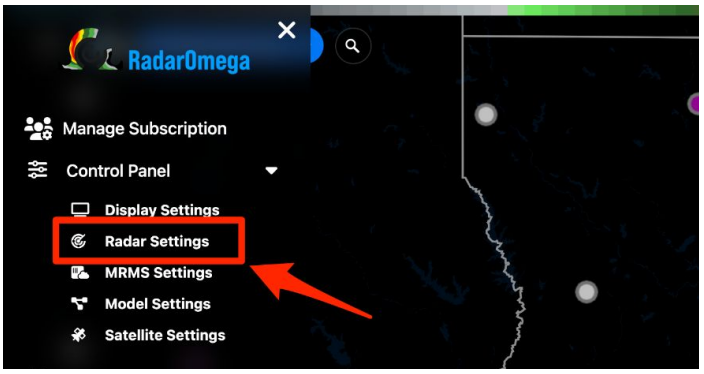


After applying "Hail" Translucency Preset

Single-Site Radar

Settings - Primary Settings

The Radar Settings menu, found under the Control Panel section, allows the user to adjust settings pertaining to **single-site radar**. MRMS will not be affected by changes in this menu.



Enabling this setting will display the full range of WSR-88D towers.

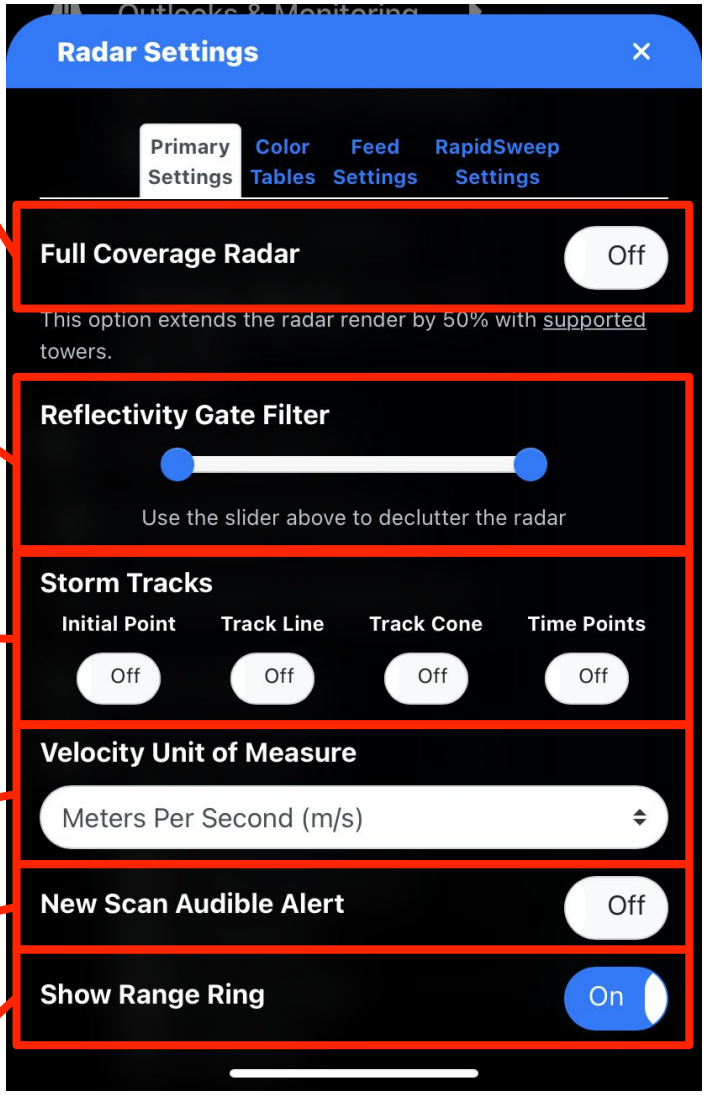
The reflectivity gate filter allows for manual decluttering. Drag the left-hand dot on this slider to the right to begin filtering out lower reflectivity values. Keeping the left-hand dot at or below 10 dBZ is recommended. Note that if both of these dots are all the way to one side of the slider, you **WILL NOT SEE RADAR DATA.**

Use these switches to enable automated storm tracks. When Initial Points are enabled, you can click on them to see radar-estimated information and characteristics of individual storms.

Changes units used in hi-res/base velocity

Option to play audible alert when a new radar scan comes in

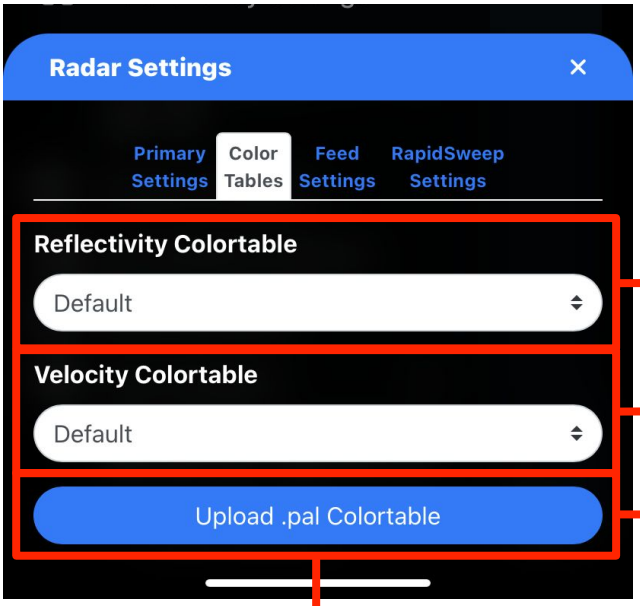
Toggles the visible ring around a selected radar site



Single-Site Radar

Settings - Colortables

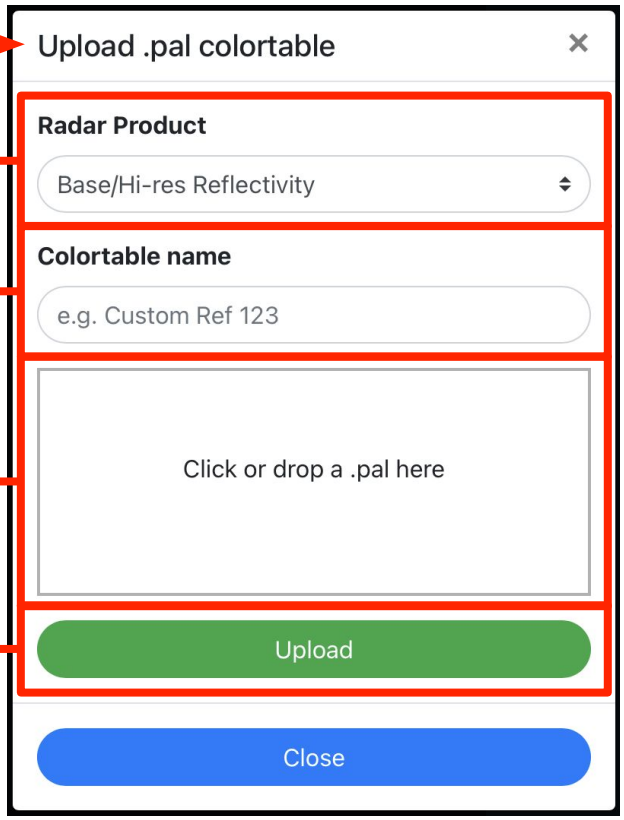
Switch between pre-loaded or custom colortables under the “Color Tables” tab of the Radar Settings menu. Custom colortables in the “.pal” format can be uploaded by tapping “Upload .pal Colortable” for reflectivity and velocity. All users can choose between preloaded color tables. Gamma subscribers can upload up to 3 custom color tables, Beta subscribers can upload up to 8, and Alpha subscribers can upload up to 30.



Change Reflectivity Colortable

Change Velocity Colortable

Upload Custom Reflectivity or Velocity Colortable[G][B][A]



Select whether the colortable will be for reflectivity or velocity

Name the colortable

Tap here to upload the .pal file from your device

Tap “upload” when you are finished - tapping “close” will **not** complete the upload

Single-Site Radar

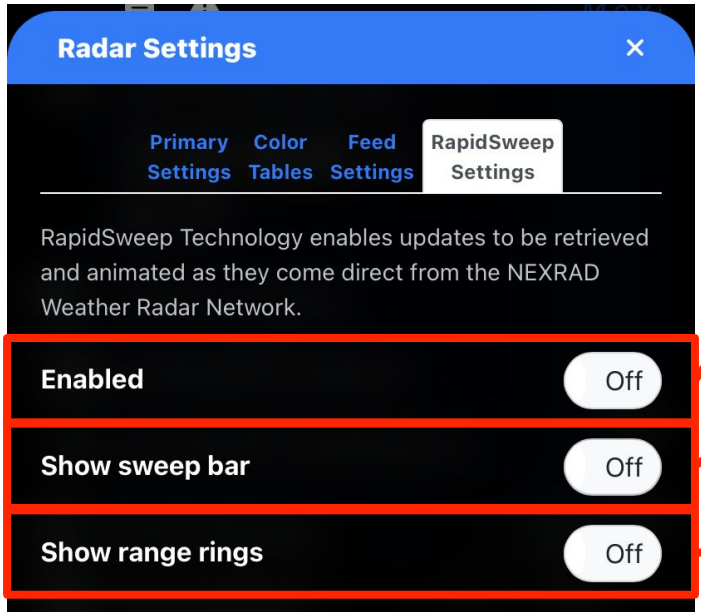
RapidSweep[RS]

RapidSweep allows the user to receive near real-time level 2 radar updates by displaying the radar scan to the user interface as the data comes in chunk by chunk while the scan is still in progress. Speed improvements range from 35 seconds to 2 minutes faster compared to other providers by using RapidSweep based on when data starts populating chunk by chunk. You'll see the sweep bar display as data for that elevation is coming in live. The RapidSweep bar **will not be continuously displayed** on the lowest tilt elevation since realistically, the radar is completing a full revolution one elevation at a time. RapidSweep gives a live representation of where the radar beam is located in real time.

RapidSweep is compatible with NEXRAD WSR-88D Radar sites only. Compatible products include Hi-Res Reflectivity, Hi-Res Velocity, Hi-Res Storm Relative Velocity, Hi-Res Correlation Coefficient, and Hi-Res Spectrum Width.

You can purchase RapidSweep by going to http://account.radaromega.com/ or from the "Manage Add-Ons" menu in the "Subscriptions & Add-Ons" section in the side menu of the RadarOmega mobile app. After purchasing the RapidSweep add-on, it can be enabled from the "RapidSweep Settings" Tab in the Radar Settings menu.

Note: Enterprise users must purchase RapidSweep through their account manager.



Enables RapidSweep Updating

Toggles the Sweep Bar Display; If RapidSweep is enabled, it will still function normally if this is turned off

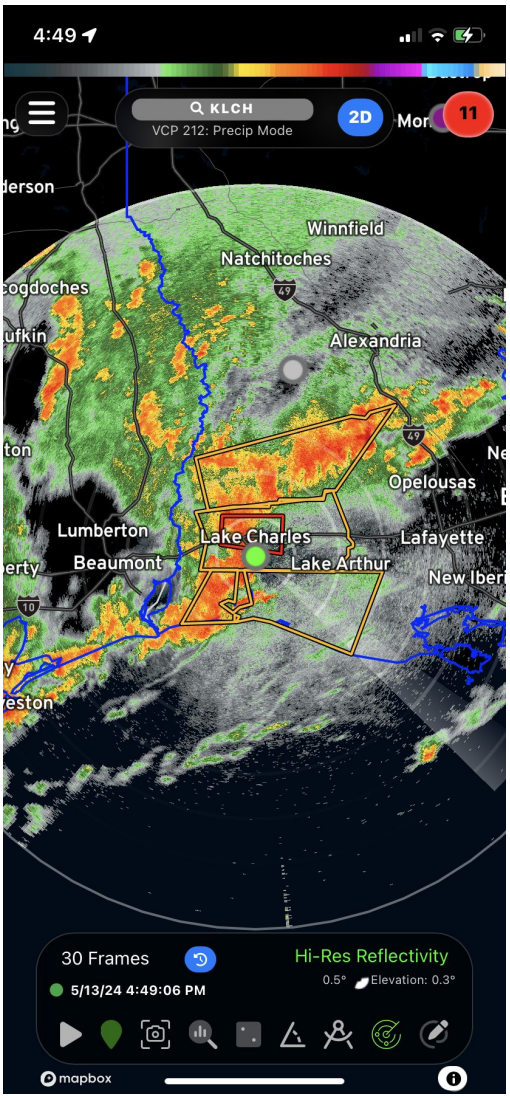
Toggles on Range Ring Display

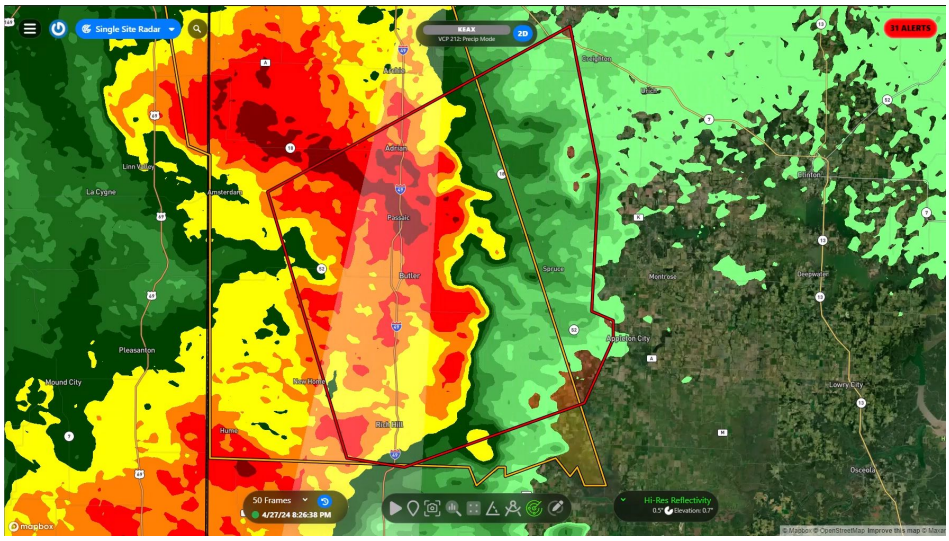
Single-Site Radar

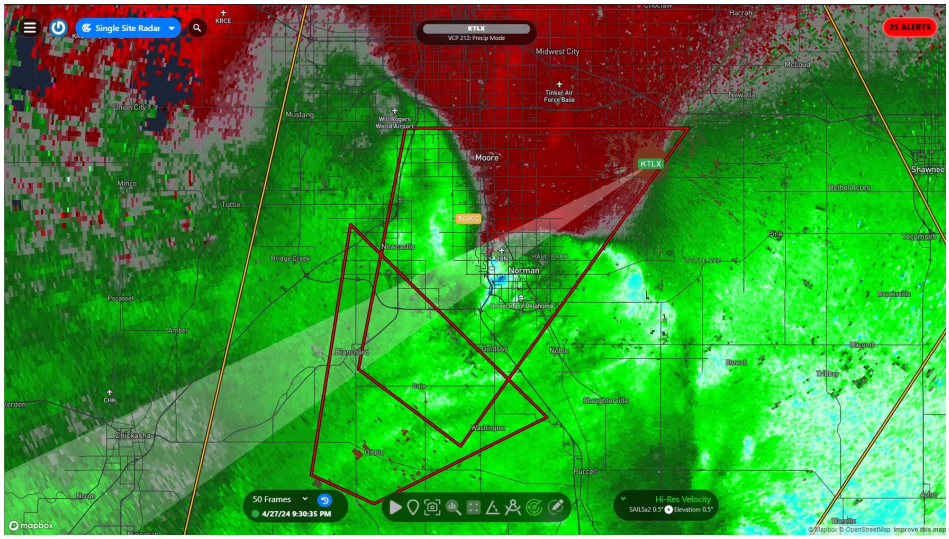
RapidSweep[RS]

With RapidSweep enabled, radar data will update as the sweep bar moves around the radar site.

In the bottom right corner, underneath the product selector, you will see the current tilt level that the radar is scanning at along with a circle representing how much progress the radar has made scanning that level. The beam will **only be visible** when the radar is scanning the selected tilt level.

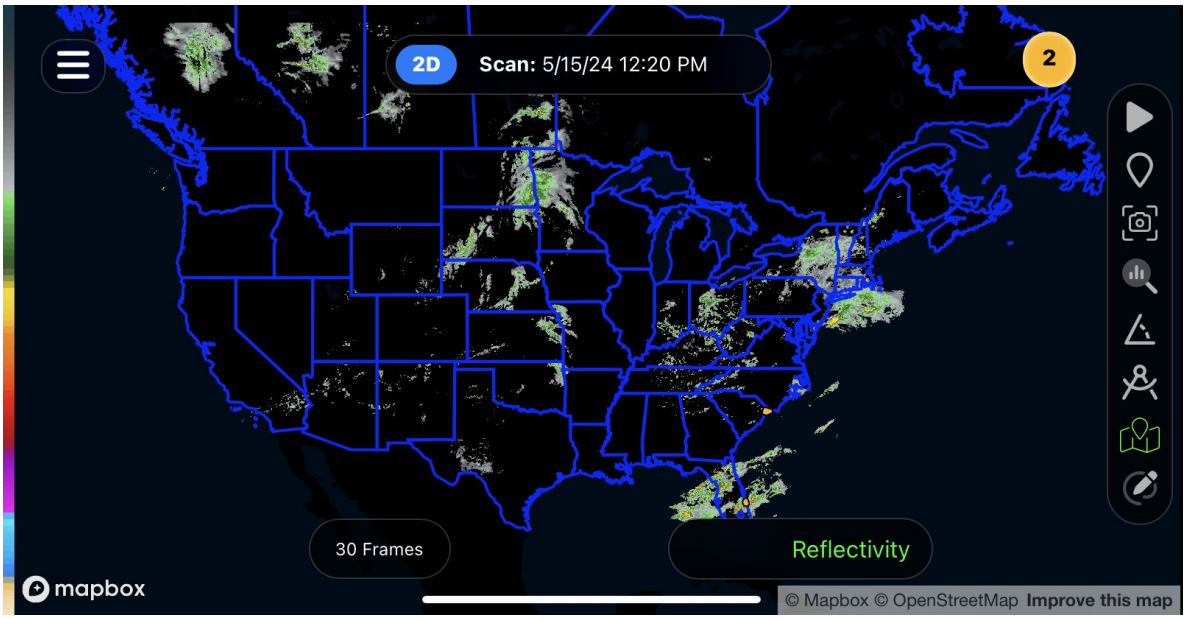




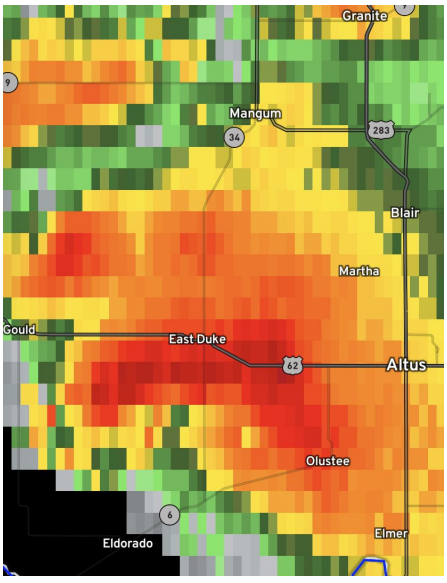


MRMS

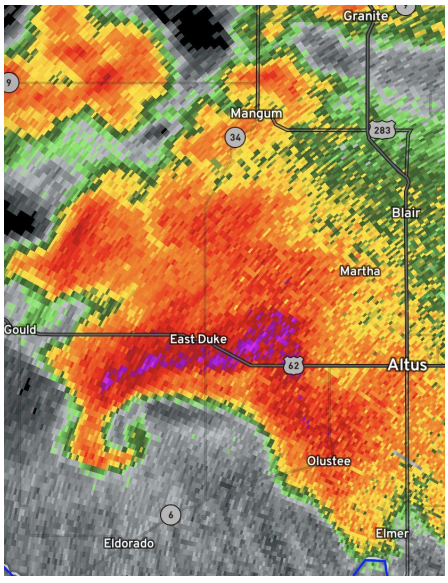
Access MRMS by changing the state of the app. Tap on the blue button at the top of the side menu, then tap “Radar”, then “MRMS”. Multi-Radar/Multi-Sensor (MRMS) is a composite of radar data across North America which integrates observations and model data. When using MRMS, you will not have to select any radar sites - you will be able to see radar data across the CONUS and most of Canada. All users can access MRMS reflectivity.



Note that while MRMS is not limited by range like single-site radar data is, data resolution is slightly lower. Using MRMS, it is often difficult to identify storm-scale features like hook echos. MRMS is a great tool for understanding the big picture, while single-site radar data is ideal for understanding smaller scale details.



MRMS Reflectivity



Single-Site Radar Hi-Res Reflectivity

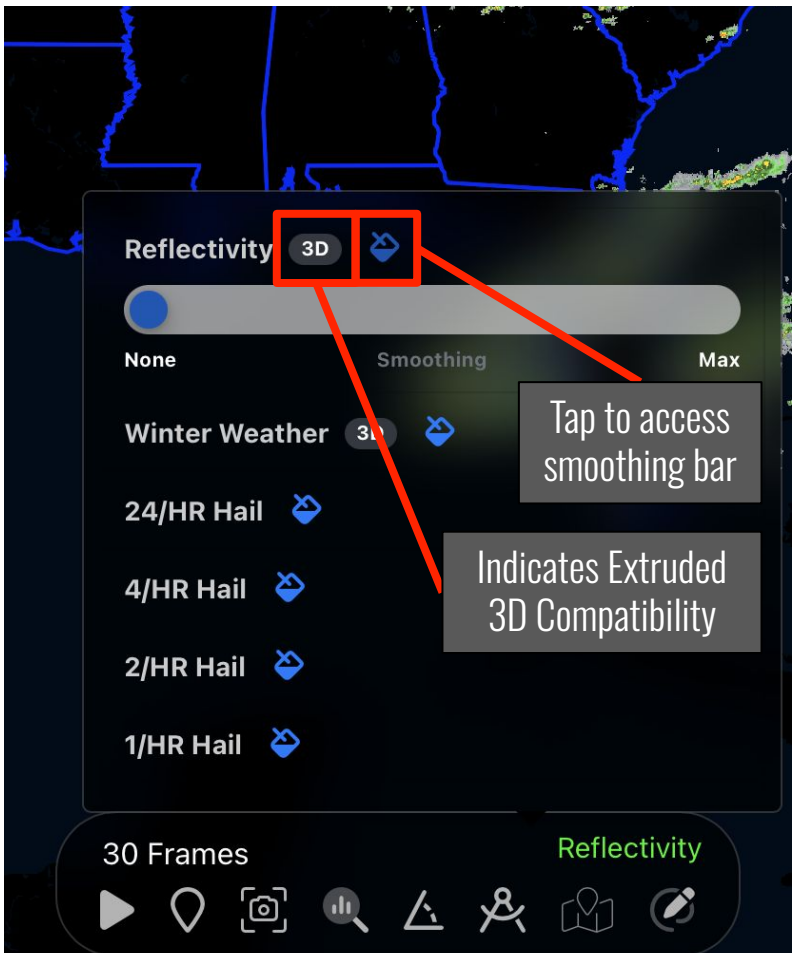
MRMS

MRMS has a different suite of products than single-site radar mode. While MRMS does not have products like hi-res velocity or hi-res correlation coefficient, it does have a variety of unique and helpful products, such as:

- 24/HR, 4/HR, 2/HR, and 1/HR Hail Swaths
- Current Hail
- 24/HR and 2/HR Rotation Tracks
- 2/HR and 30/MIN Lightning Probability
- Probability of Severe Hail
- Vertically Integrated Liquid
- 72/HR, 48/HR, 24/HR, 6/HR, and 1/HR Precipitation Accumulation

All MRMS products besides reflectivity are available to Beta and Alpha subscribers. Keep in mind that just like with single-site radar products, many of these products are purely **estimations**. Always consider other sources of information alongside radar-estimated products.

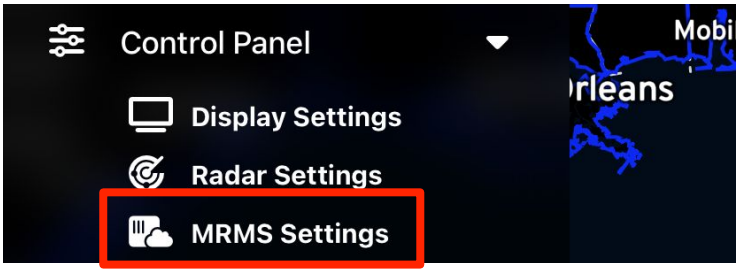
You can switch between MRMS products using the **product selector** in the bottom right corner. Certain MRMS products can be smoothed by tapping on the paint bucket icon and adjusting the smoothing slider bar. If an MRMS product is compatible with Extruded 3D, it will have a "3D" icon next to the product name in the product selector. You can enable Extruded 3D by tapping on the "2D" button in the **top menu** for compatible products.



MRMS

Settings - Primary Settings

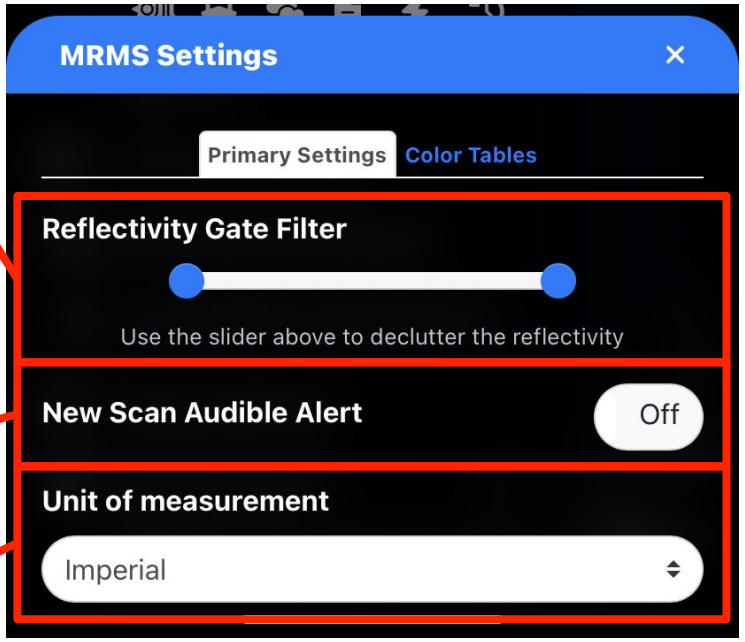
The MRMS settings menu, found under the Control Panel section, allows the user to adjust settings pertaining to **MRMS only**. Single-site radar will not be affected by changes in this menu.



The reflectivity gate filter allows for manual decluttering. Drag the left-hand dot on this slider to the right to begin filtering out lower reflectivity values. Keeping the left-hand dot at or below 10 dBZ is recommended. Note that if both of these dots are all the way to one side of the slider, you **WILL NOT SEE RADAR DATA.**

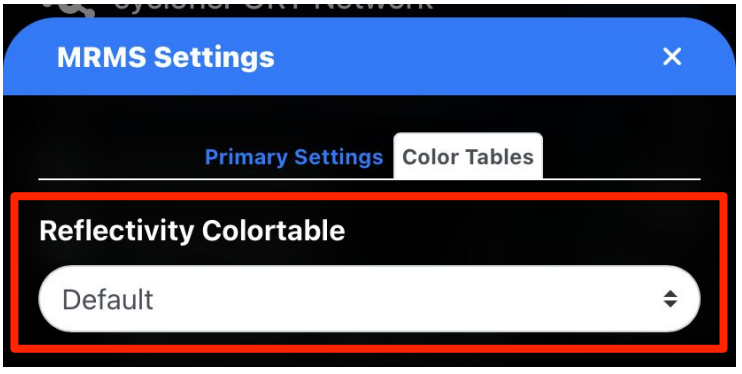
Option to play audible alert when a new MRMS scan comes in.

Option to change unit of measurement in MRMS between imperial and metric.



Settings - Colortable Settings

Switch between pre-loaded or custom colortables under the "Color Tables" tab of the MRMS Settings menu. Keep in mind that changing the colortable in the Radar Settings menu **will not** change the color table for MRMS - this must be done through the MRMS settings menu. Custom colortables can only be uploaded through the Radar Settings menu.

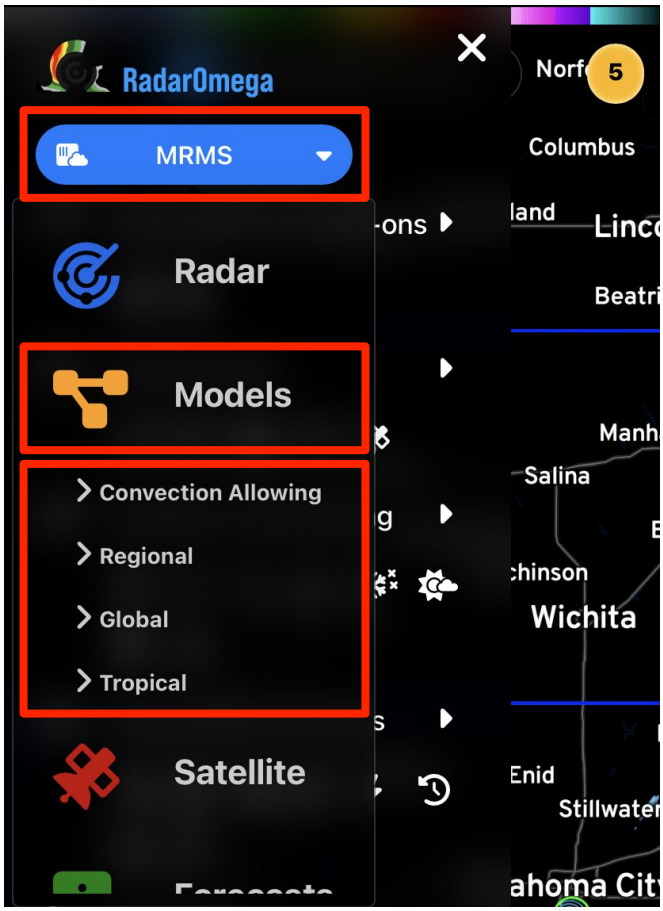


Models[A]

Access weather models by changing the state of the app. Tap on the blue button at the top of the side menu, then tap “Models”. There are four different types of models:

- Convection Allowing (HRRR and NAM3KM)
- Regional (NAM12KM and RAP)
- Global (GFS and ECMWF)
- Tropical (HMON and HWRF)

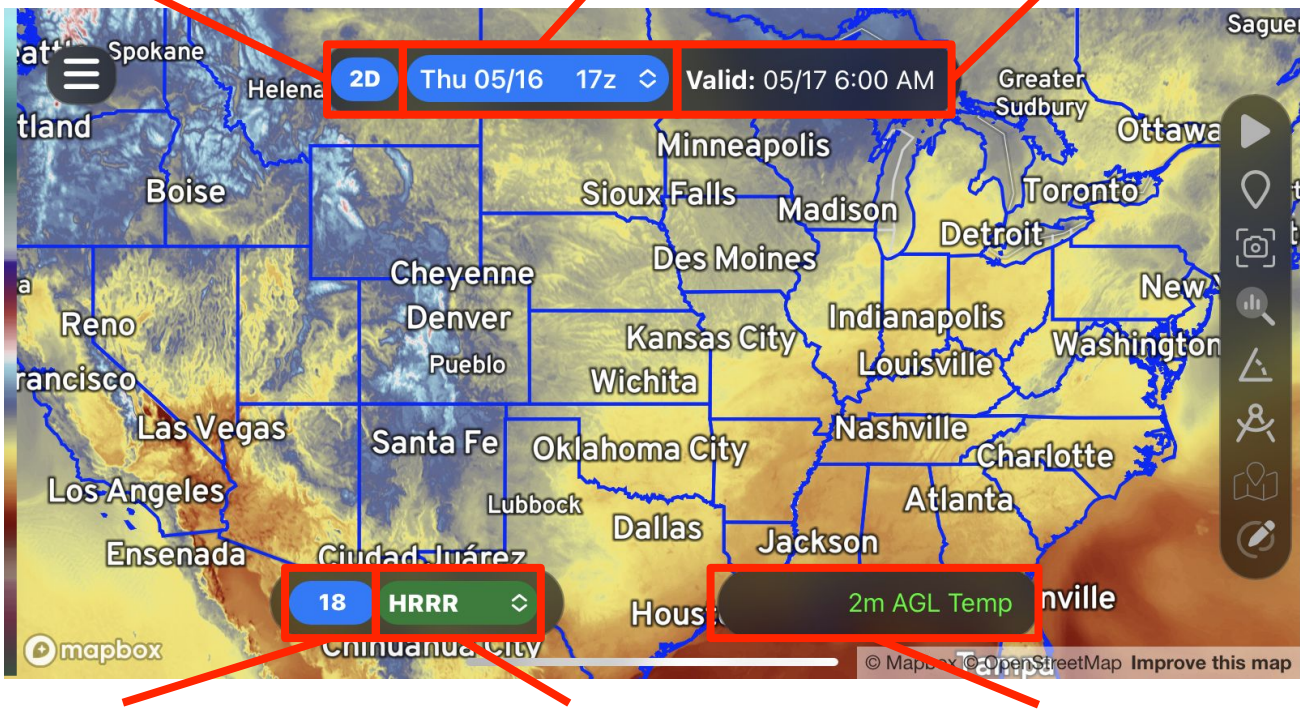
Choose one of the model types to expand the menu, then select one of the models.



Option to enable Extruded 3D

Selected Model Run

Frame validity date and time



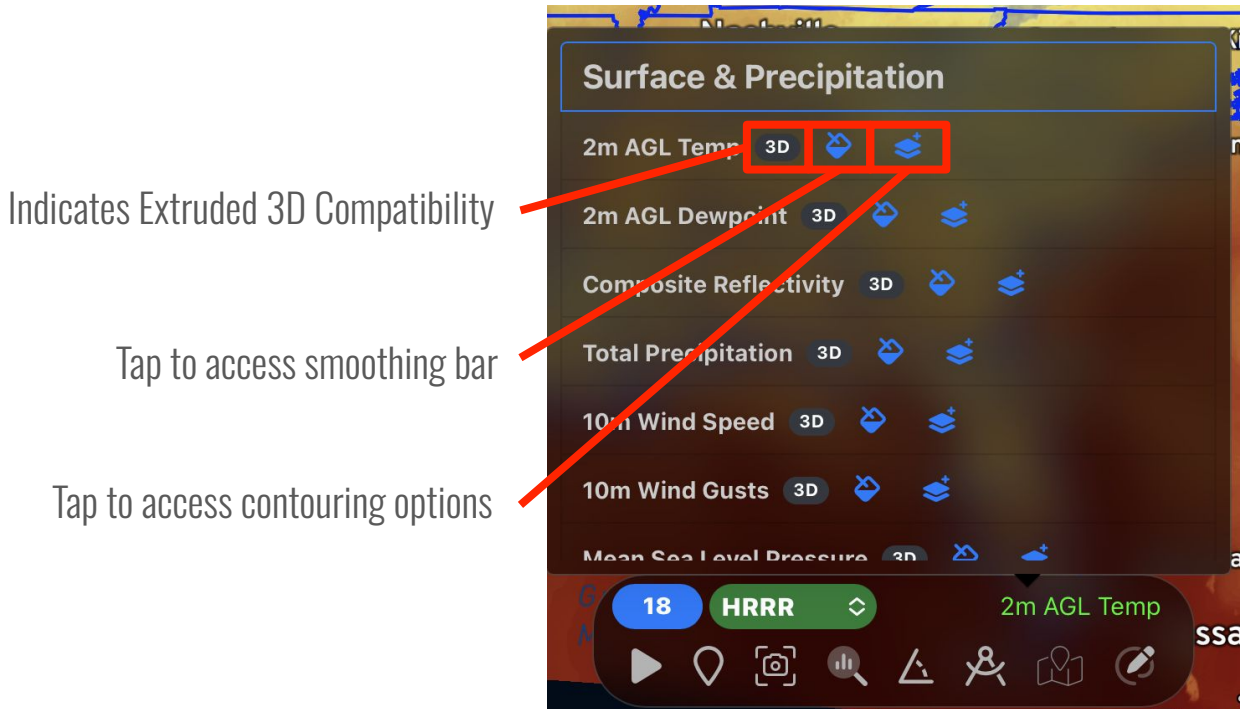
Frame selector

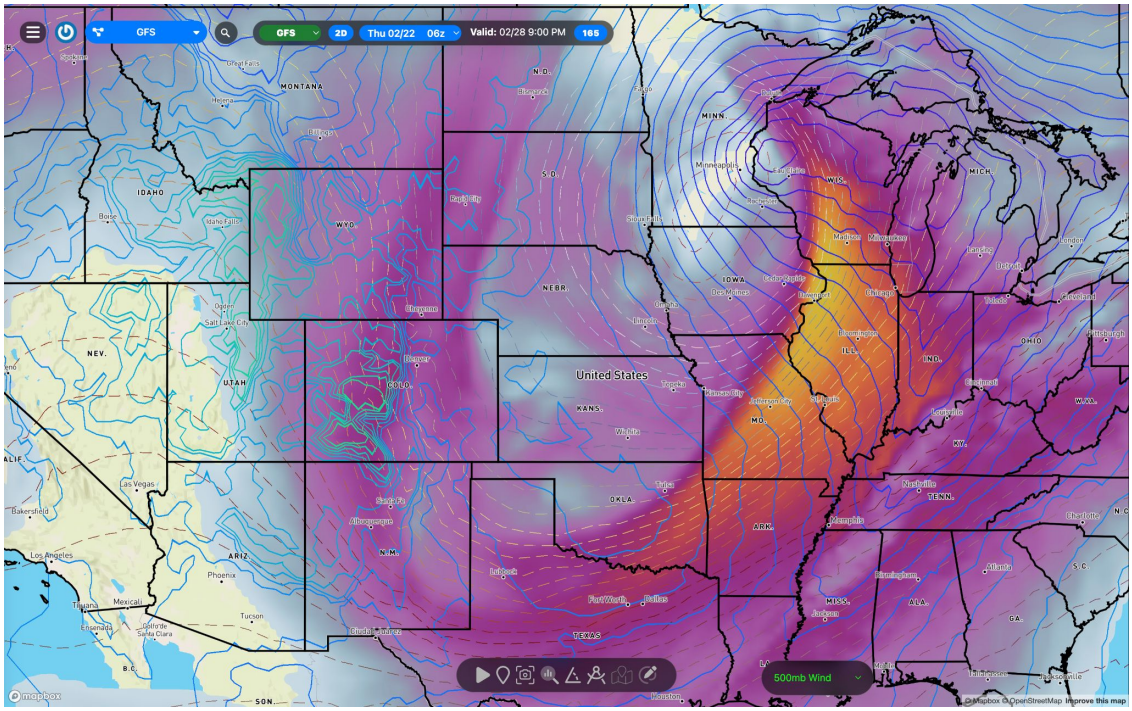
Change the selected model with this dropdown menu

Product Selector

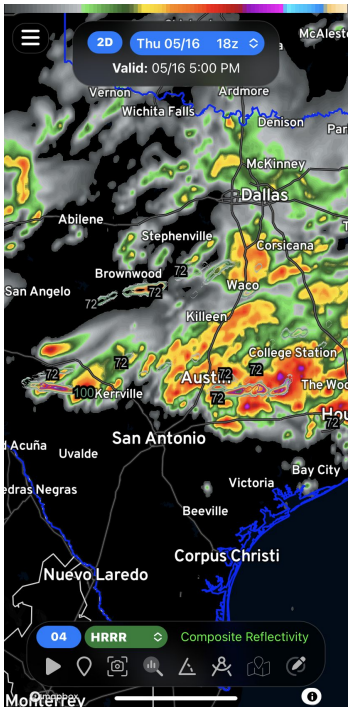
Models[A]

Model data can be customized in a variety of ways. From the **product selector**, you can choose to smooth the data by tapping on the paint bucket icon next to a product and adjusting the smoothing slider bar. You can also add up to two parameters as contours on top of the model data layer by tapping on the layer icon next to a product.





500 mb Winds + 500 mb Height Contours + MSLP Contours

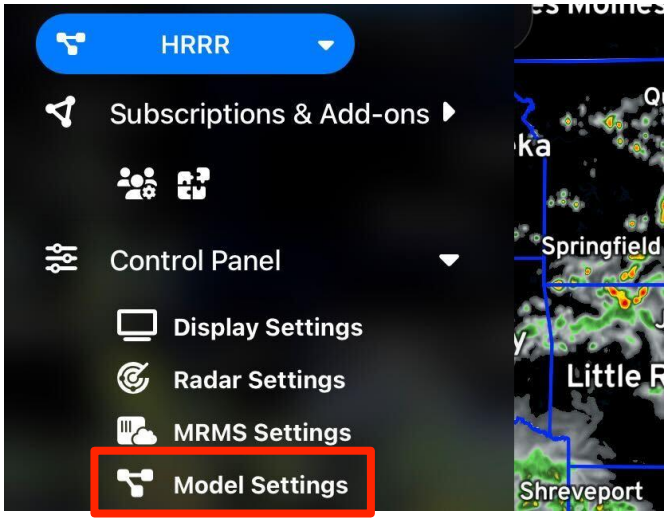


Composite Reflectivity + Updraft Helicity Contours

Models[A]

Settings - General

The Model Settings menu can be accessed through the side menu under the Control Panel section. Remember that changes made in this menu will only apply to models and model products - they will not apply to other states of the app.



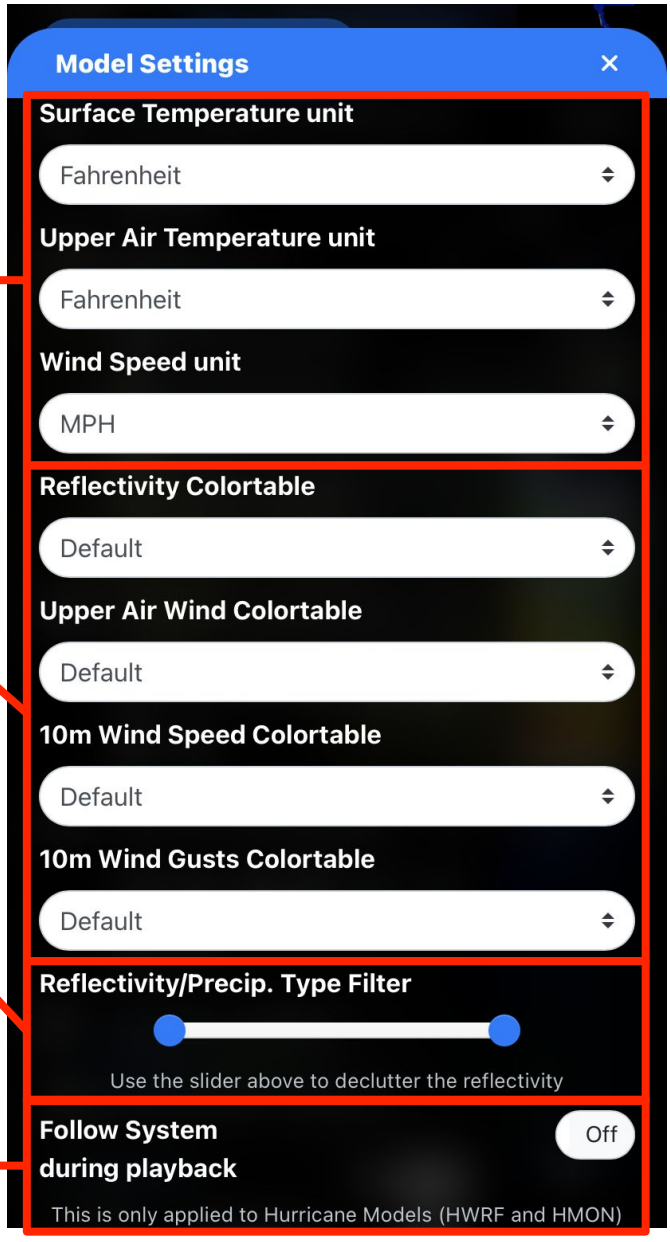
Options in the General tab of the Model Settings menu are used to:

Change the units of measurement used in various model products

Make changes to color tables for model reflectivity and wind speeds at different levels

Adjust the gate filter for composite reflectivity and precipitation type (this slider will apply only to Model reflectivity - not to single-site radar or MRMS reflectivity)

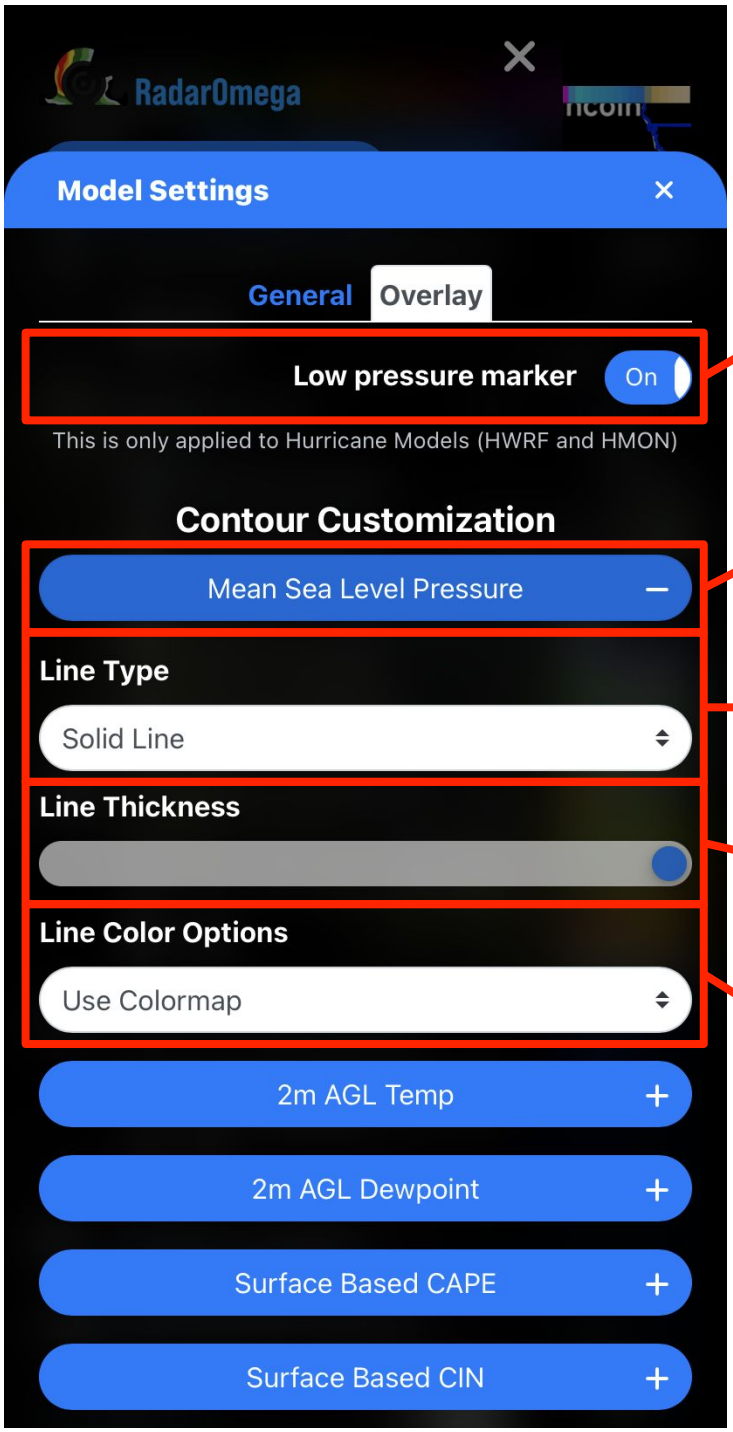
Option for the screen to follow systems during animation playback (for Tropical models only)



Models[A]

Settings - Overlay

The Overlay tab of the Model Settings menu allows you to make changes to the appearance of model contour lines.



When turned on, will toggle a low pressure marker at the center of a system when using tropic models.

Select a contour type to adjust its appearance settings

Change the appearance of the contour line between solid or dashed

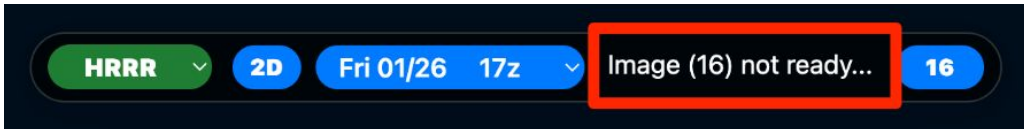
Adjust thickness of the contour line

Each contour line type has a unique built-in colormap. Choose between this colormap or a single color for each contour type.

Models[A]

"Image not ready" Message

When a new model run is initiated, it takes time to finish loading. Attempting to use a model run that has not finished loading will present you with this message at the top of the screen:

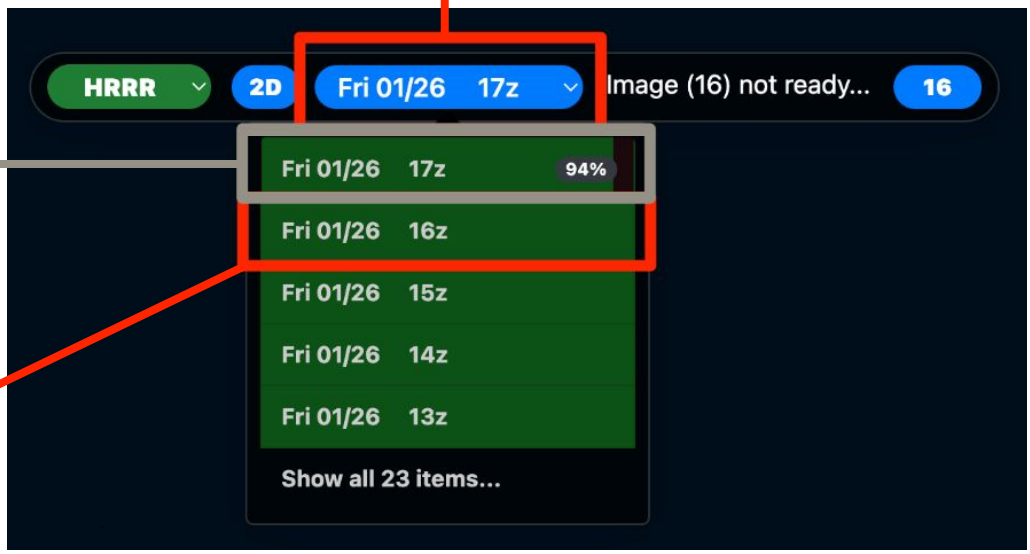


If this is the case, click on the blue box just to the left. This box will have the date and time (in UTC) in which the current model run was initiated. Clicking on this box will reveal a drop down menu allowing you to select previous model runs. Select one of the previous model runs that is fully loaded.

Click this blue box to access the drop down menu with previous model runs.

Incomplete model runs will indicate how much has been loaded with a percentage.

Previous completed model runs can be selected below.



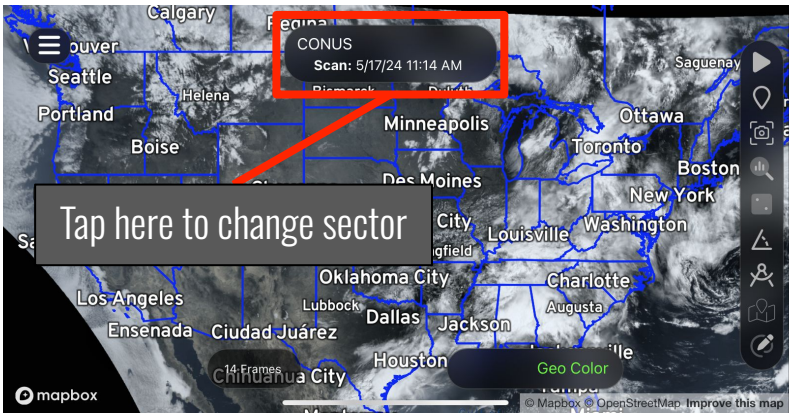
A note on model data: This is a tool that can be extremely valuable in getting a general idea of the timing and nature of weather in the near future, but use caution when interpreting model data. It's a bad idea to focus on very specific details, like the exact position of a single storm relative to a specific building 17 hours into the model run. Remember - model data shows what **could** happen, not what **will** happen.

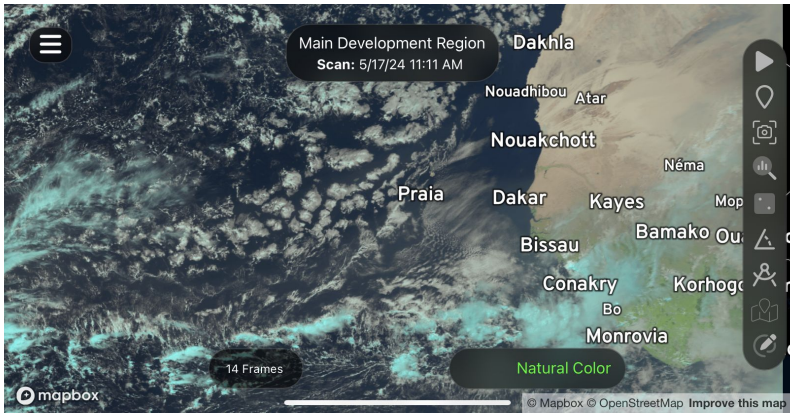
Satellite[G][B][A]

Access satellite data by changing the state of the app. Tap on the blue button at the top of the side menu, then tap “Satellite”. Satellite imagery in RadarOmega is split into sectors with each sector focusing on a different spatial region. Tapping on the **top menu** at the top of the screen in satellite mode will bring up a dropdown menu allowing you to change the sector.

There are two types of sectors: stationary sectors and storm-based sectors. Storm-based sectors are more spatially limited, but provide much higher data resolution and have more customization options. Their positions are not always fixed and may change. Stationary sectors cover a much larger area but have lower data resolution. Examples of storm-based sectors include the G16 and G18 Mesoscale sectors; examples of stationary sectors include the CONUS and Main Development Region sectors.

Similar to other states of RadarOmega, you can change between satellite products by using the **product selector** dropdown menu in the bottom right. The types of products available will vary slightly from sector to sector, but generally, each sector will feature visible, infrared, and water vapor satellite products. **Note: visible satellite products will not be visible at night** as there is no sunlight to illuminate the cloud tops. The one exception to this is the special “Geo Color” product exclusive to the CONUS sector which can provide visible satellite imagery even at night.

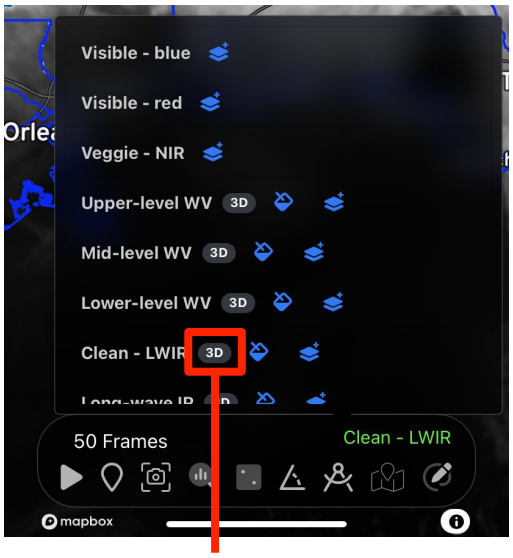




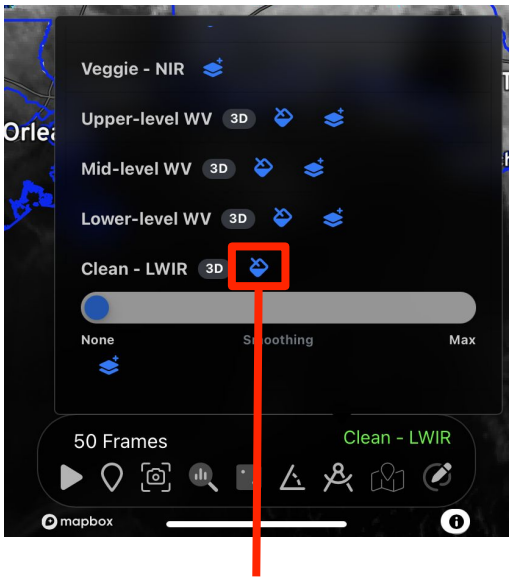
The satellite settings menu is found under the Control Panel section in the side menu. In this menu, you will find an option to follow storm-scale sectors during playback, as well as an option to play an audible alert when new imagery comes in.

Satellite[G][B][A]

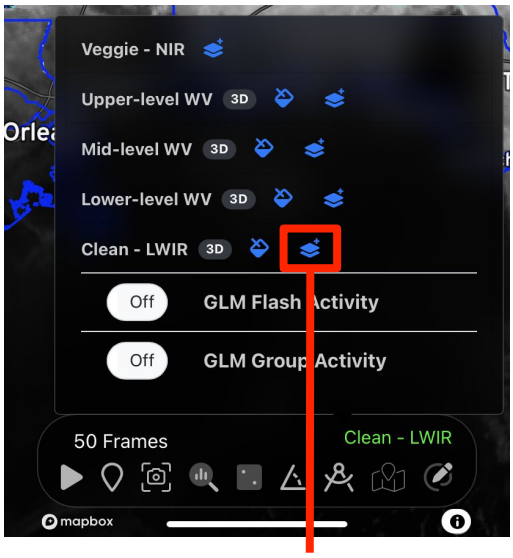
Infrared and water vapor products for storm-based sectors can be smoothed and are compatible with Extruded 3D. To enable Extruded 3D mode, tap on the “2D” icon in the **top menu** at the top of the screen with one of these products selected. In the **product selector** dropdown menu, tap on the paint bucket icon next to a product to apply smoothing. In addition, Group Lightning Monitoring (GLM) lightning data can be layered on top of high-resolution satellite imagery. These can be enabled by tapping on the layer icon next to a product and using the toggle switches.



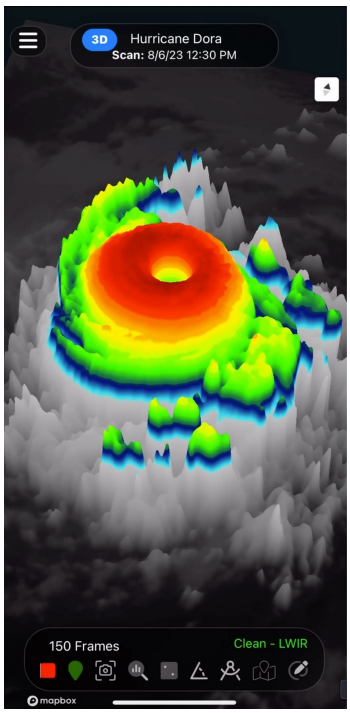
Indicates Extruded 3D Compatibility

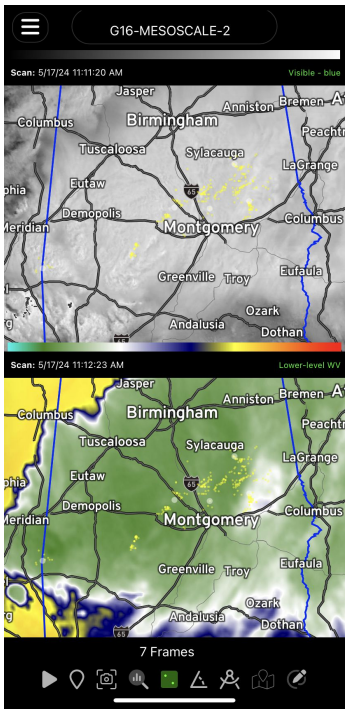


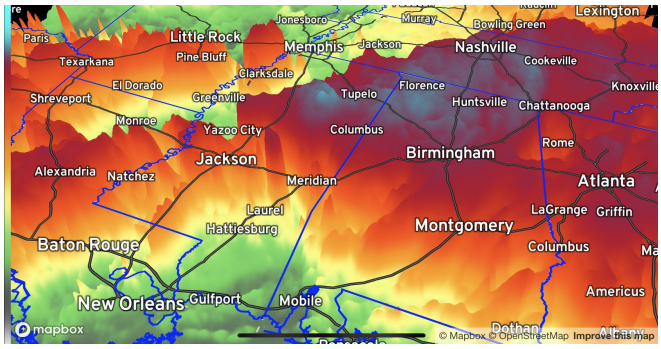
Tap to access smoothing bar

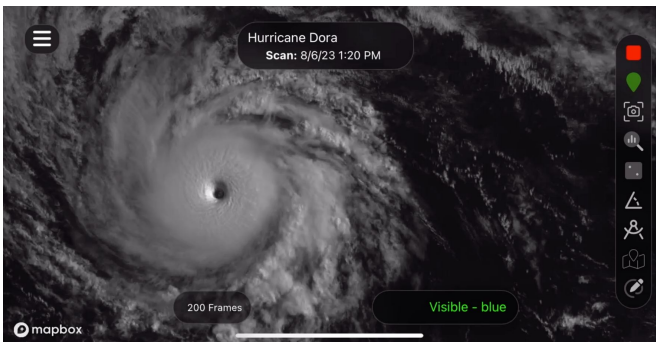


Tap to access GLM layering options



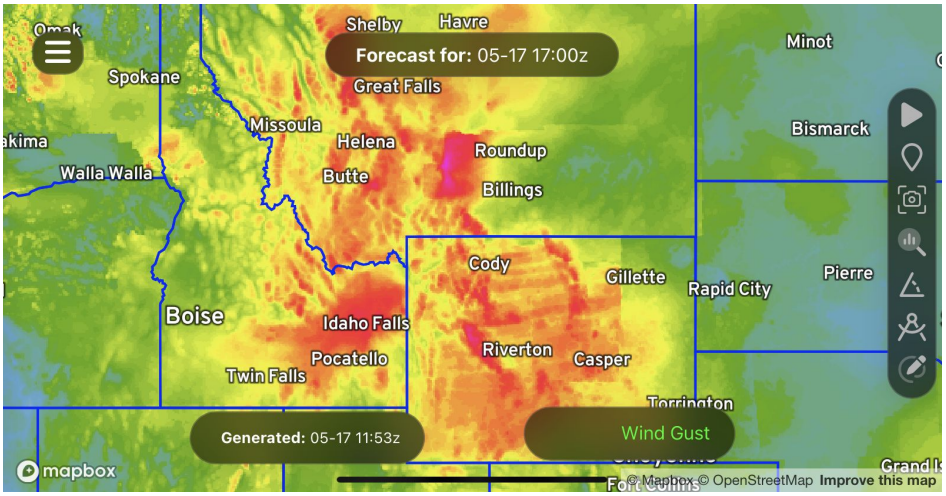


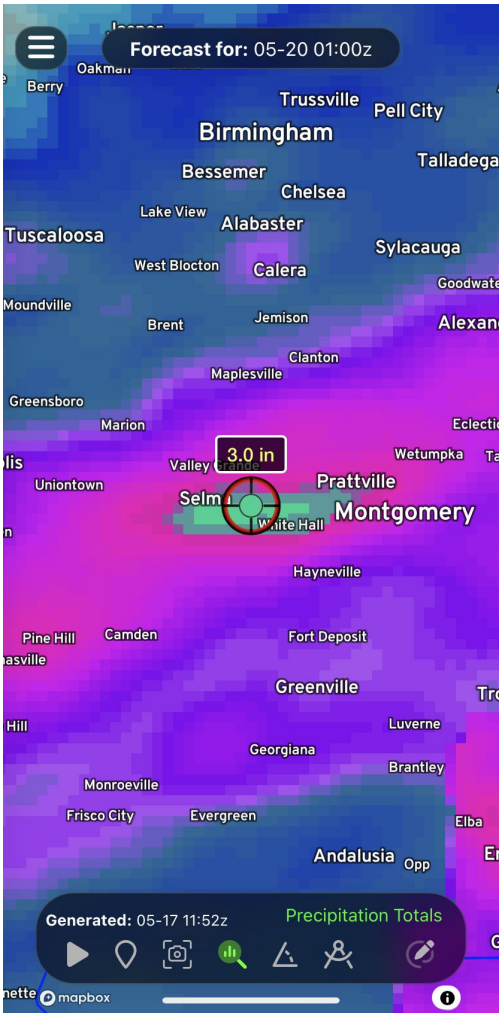


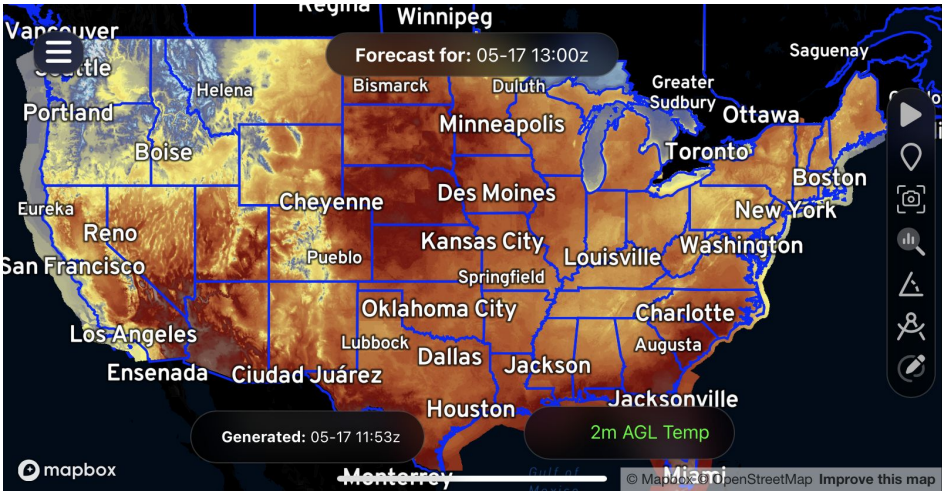


NDFD[G][B][A]

Access NDFD data by changing the state of the app. Tap on the blue button at the top of the side menu, then tap “Forecasts”, then select “National Digital Forecast Database”. The National Digital Forecast Database is a collection of the data used by the National Weather Service to create regional forecasts. In RadarOmega, this data is compiled and displayed on the map. Available products include: 2m Above Ground Level (AGL) Dewpoint, 2m AGL Temperature, Precipitation Totals, Snow 6 hours, Snow Total, Wind Gust, and Wind Sustained. Tap on the **product selector** to choose between different NDFD products.



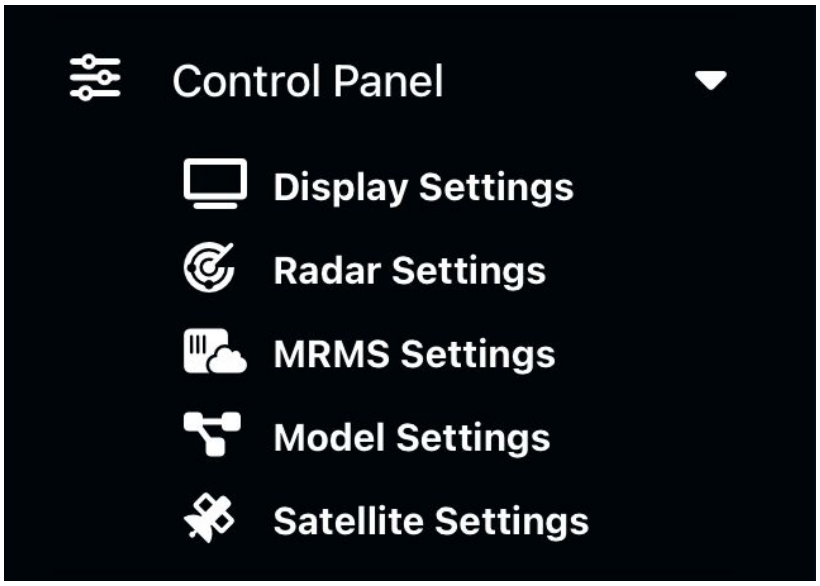




Navigating the Side Menu

Control Panel

The Control Panel section of the side menu contains various different settings menus which apply to the states of the app.



Navigating the Side Menu

Control Panel - Display Settings

The Display Settings menu, found under the Control Panel section in the side menu, allows the user to customize all aspects of the RadarOmega display.

Use these options to customize the appearance of state and county lines. Tap the colored dot next to a slider bar to open the color selector tool.

Change this setting to adjust when the City & Road Layer is shown. The default is “Show When Towers are ON”, which refers to single-site radar towers. Other options are “Show When Towers are OFF” and “No City & Road Layer.

Toggles on/off TDWR Radar Towers (see page 15 for more info on TDWR radars)

Select this option to change the appearance of radar sites from dots to their specific tower codes.

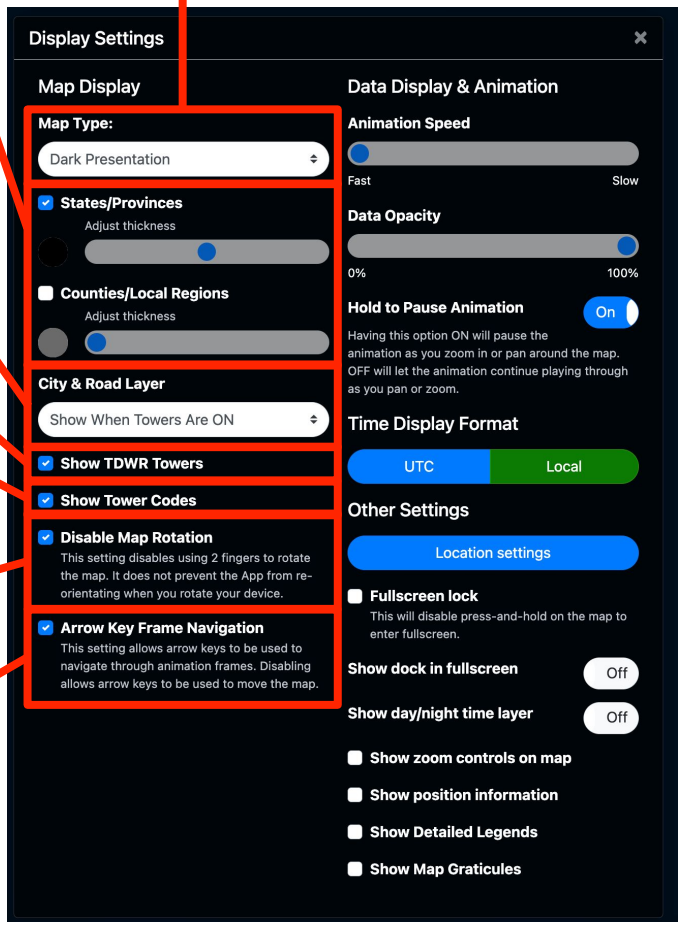
Default Appearance

“Show Tower Codes” Enabled

Disables the two-finger rotation gesture allowing the display to rotate

When selected, this option will allow arrow keys to move through animation frames. When not selected, the arrow keys can be used to move the map display.

Use this menu to change the appearance of the background map. There are 11 different map types, including: Dark/Grey/Green Presentation, Blank White, Satellite, Basic, Blue Map, Road Network, Dark Roadmap, Terrain, and Satellite Cities Only.



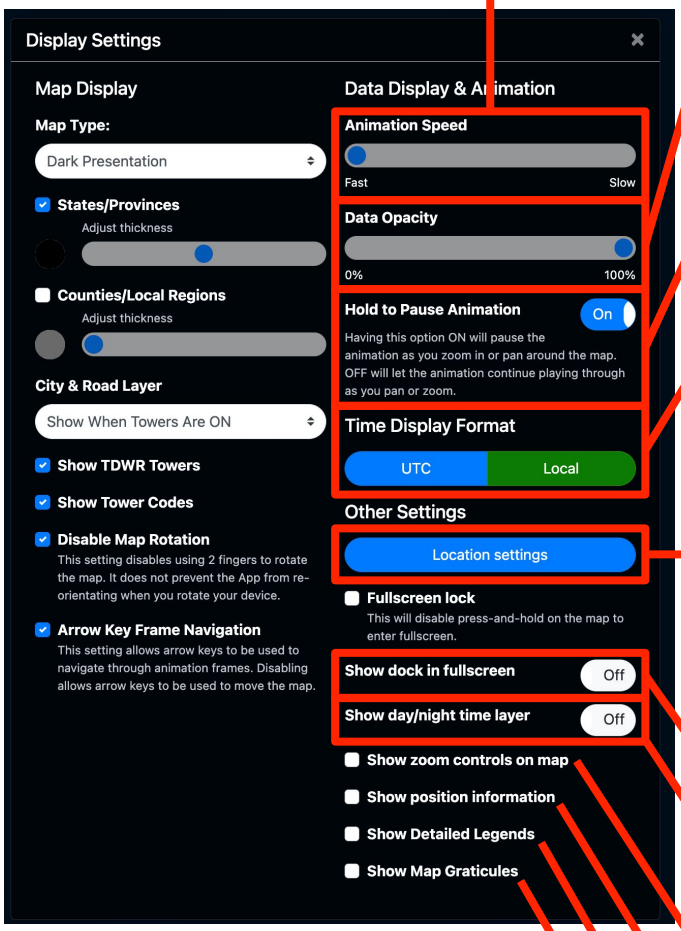
Navigating the Side Menu

Control Panel - Display Settings

The Display Settings menu, found under the Control Panel section in the side menu, allows the user to customize all aspects of the RadarOmega display.

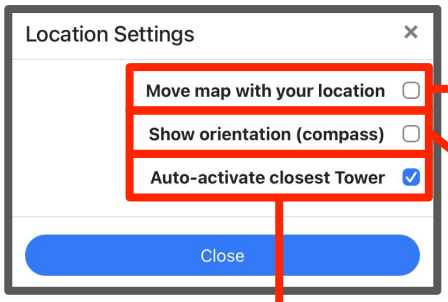
This slider adjusts the playback speed of radar, satellite, model, and NDFD data. Set all the way to the left for fastest playback speed, or all the way to the right for the slowest.

This slider adjusts the opacity of the data. Set all the way to the right for full data opacity, or all the way to the left for 0% data opacity. Note that **YOU WILL NOT SEE DATA** if this slider is set to 0%.



When enabled, tapping and holding on the display while data is animating will cause the animation to pause until the tap is released.

Use this option to change between Universal Coordinated Time (UTC/Zulu) and local time.



With this option enabled, the map will be fixed to your current location. Either disable your current location or disable this option to view other parts of the map.

Turn this option on to show the direction you are facing on the display.

With this option enabled, the closest tower to your location will automatically activate upon opening RadarOmega.

When enabled, the bottom menu will remain visible while in full screen mode

Toggles on a day/night time layer

Toggles zoom controls in top right corner

Displays coordinates based on cursor position. On desktop, clicking with this option enabled will copy the coordinates to your clipboard.

Toggles the color bars at the top of the screen

Toggles lines of latitude/longitude

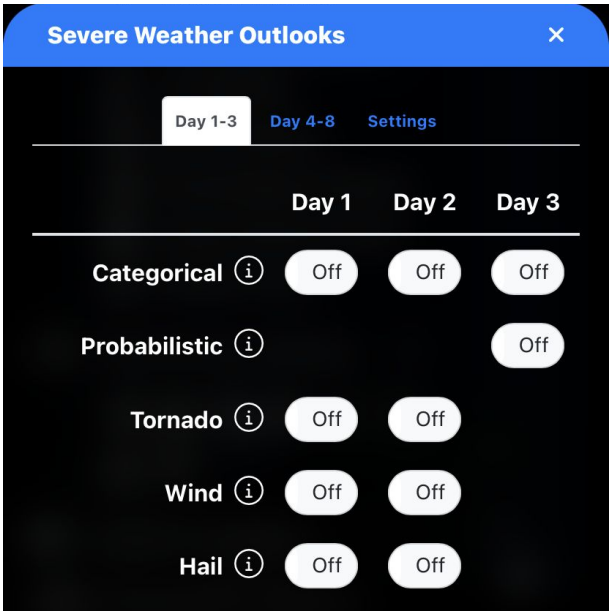
Outlooks & Monitoring

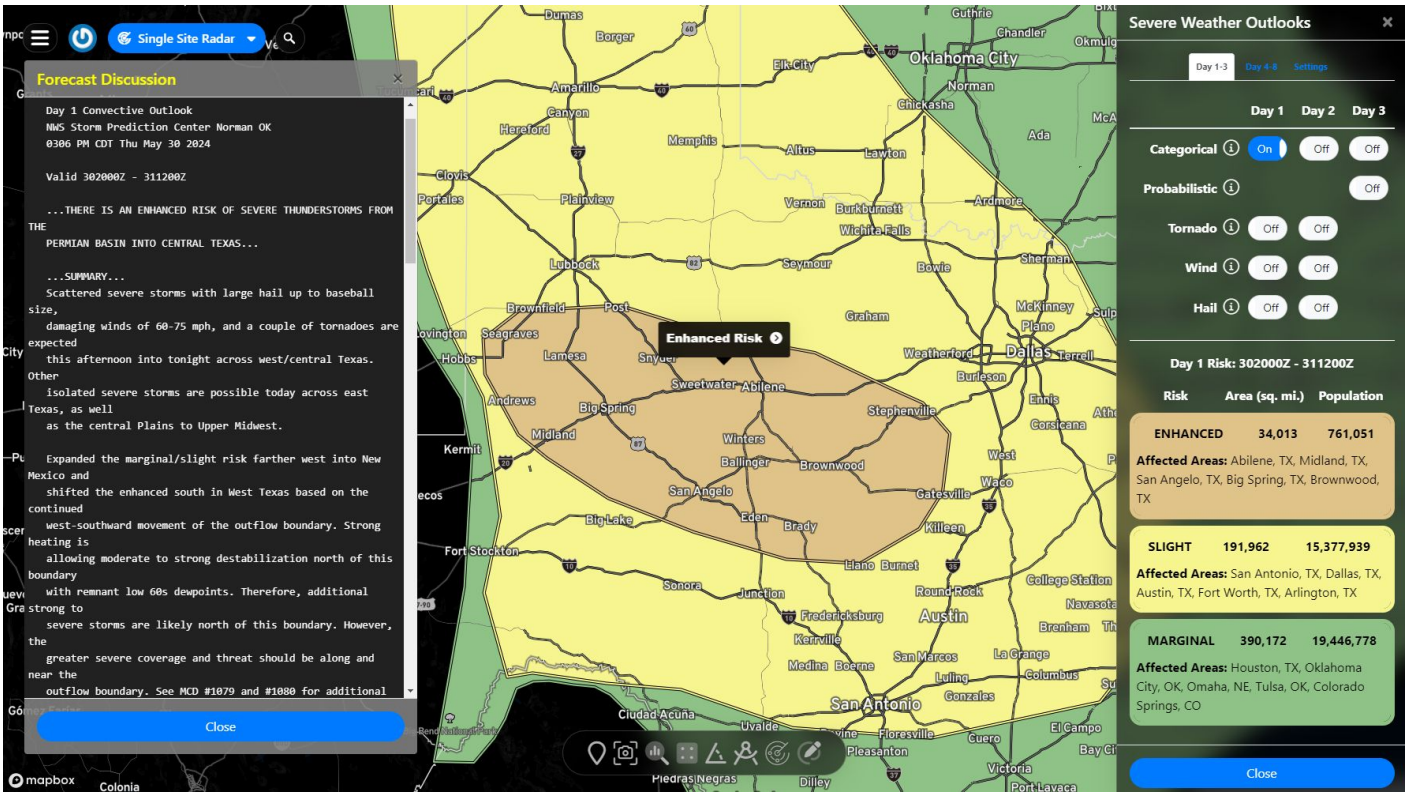
The Outlooks & Monitoring section contains all of the options for weather outlooks, discussions, and alerts.

Navigating the Side Menu

Outlooks & Monitoring - Severe Weather

Convective outlooks from the storm prediction center can be enabled for days 1-3 in the first tab. Days 1 and 2 also include breakdowns for tornado, wind, and hail outlooks, and day 3 includes a probabilistic outlook. Severe weather outlooks for days 4-8 can be found in the second tab. To learn more about a given product, tap the “i” icon next to the product.

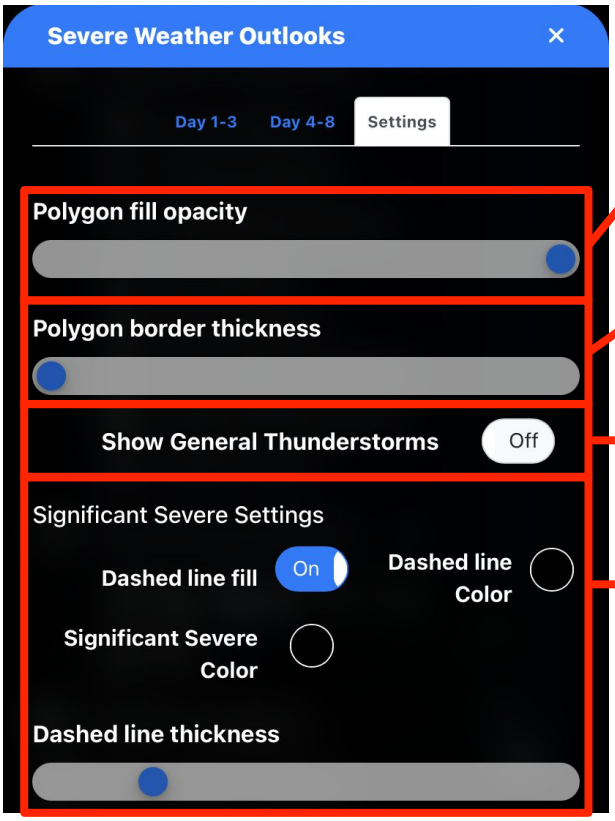




Navigating the Side Menu

Outlooks & Monitoring - Severe Weather

Settings for convective outlooks can be accessed in the third tab. Colors for the outlook polygons **cannot** be customized.

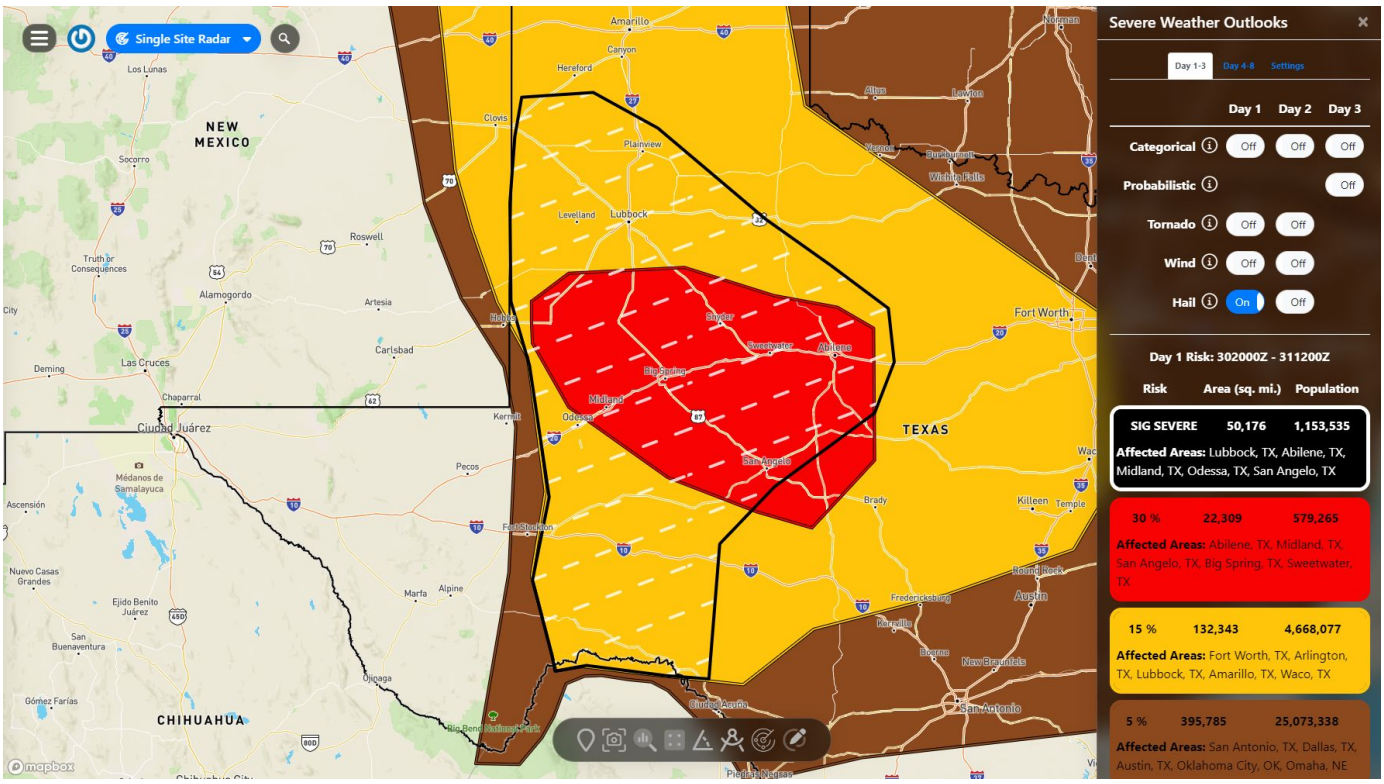


Adjust the fill opacity of the outlook polygons

Adjust the border thickness of the outlook polygons

Toggles the "General Thunderstorms" layer of the outlook

Adjust various aspects of the "Significant Severe" layer of the outlook. You can toggle the dashed line filling, change the dashed line thickness, or change the color of the components of the layer. Tapping on the color icon next to an option will bring up the color selector tool.

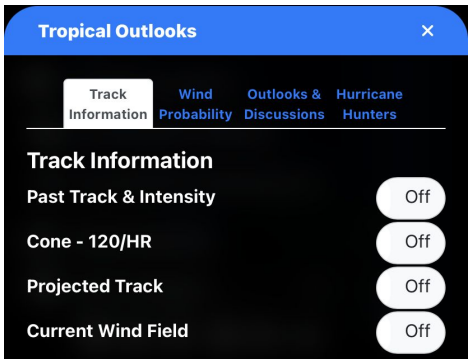


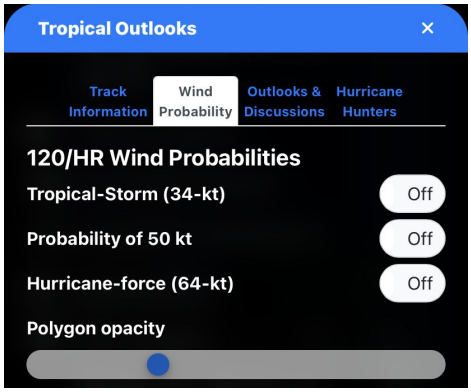
Navigating the Side Menu

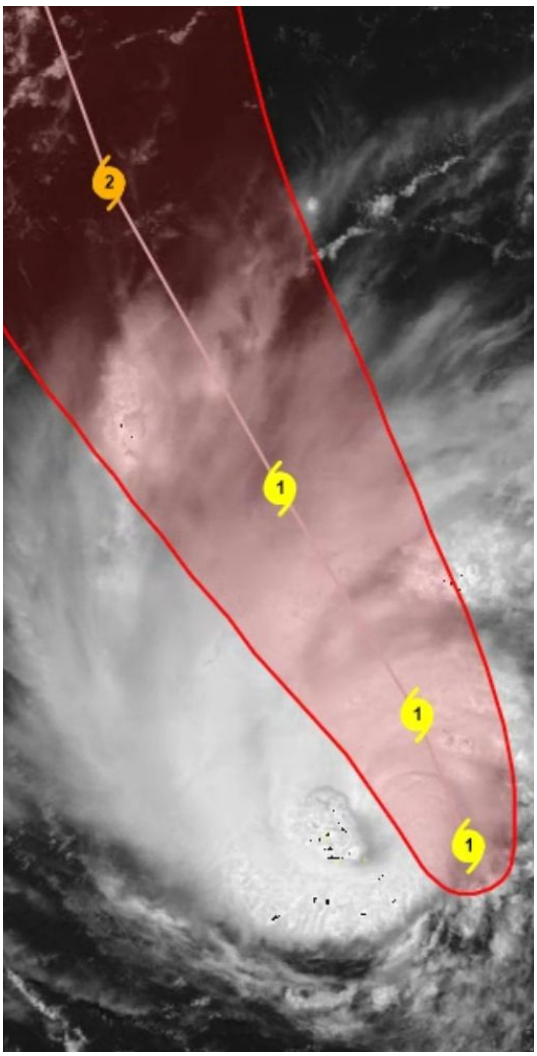
Outlooks & Monitoring - Tropical Weather

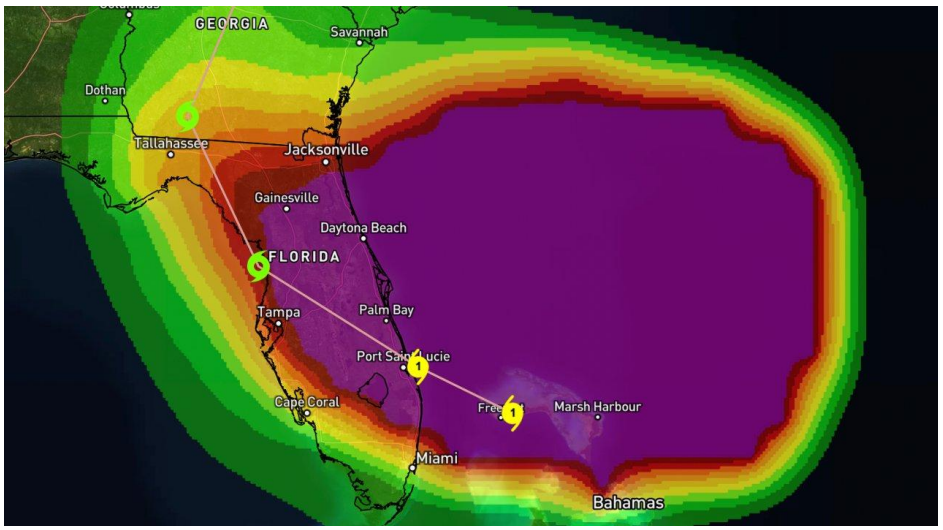
The tropical weather toolkit can be found in the Tropical Weather menu of the Outlooks & Monitoring section. The “Track Information” tab contains toggles for the different layers related to the official NHC forecast path.

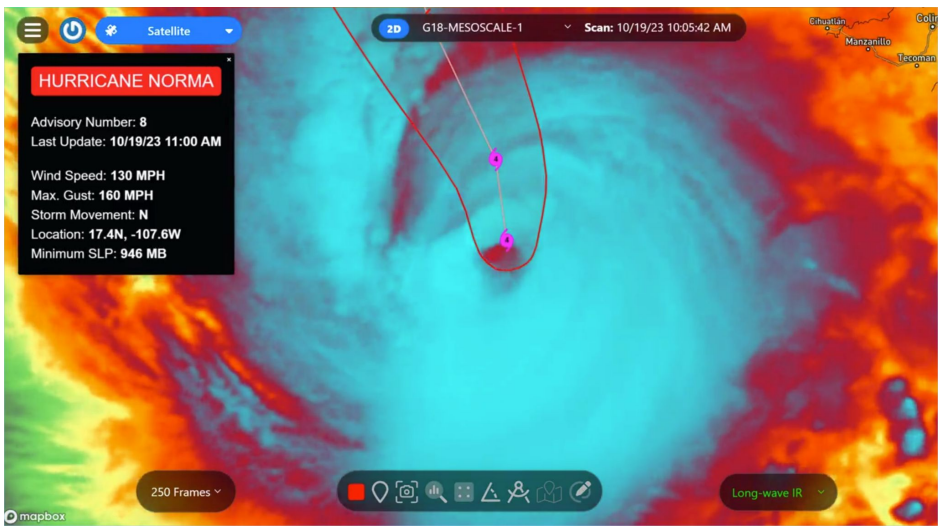
NHC wind probability outlooks are found under the “Wind Probability” tab. Outlooks for tropical-storm-force, 50 kt, and hurricane-force winds are available. All polygon opacities in the Tropical Weather menu are controlled by the polygon opacity slider in this menu.









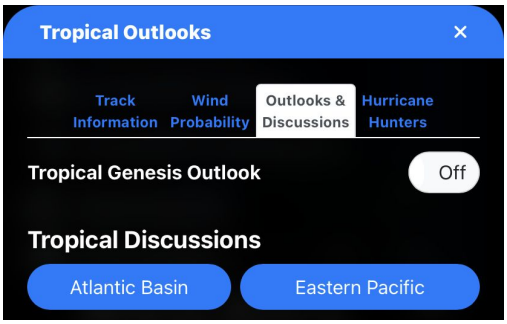


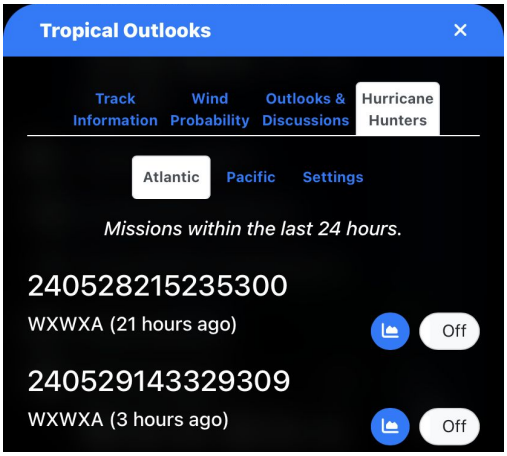
Navigating the Side Menu

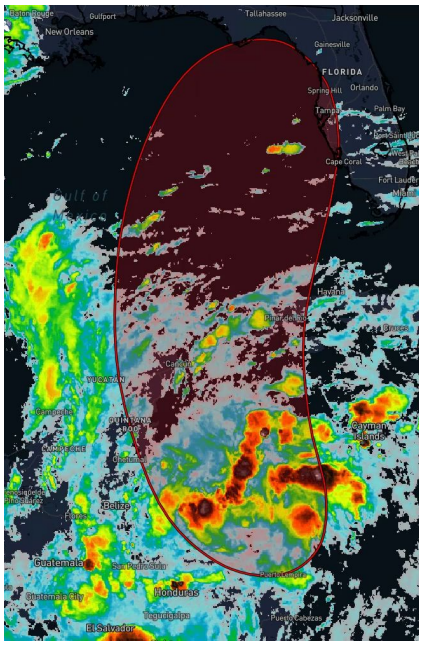
Outlooks & Monitoring - Tropical Weather

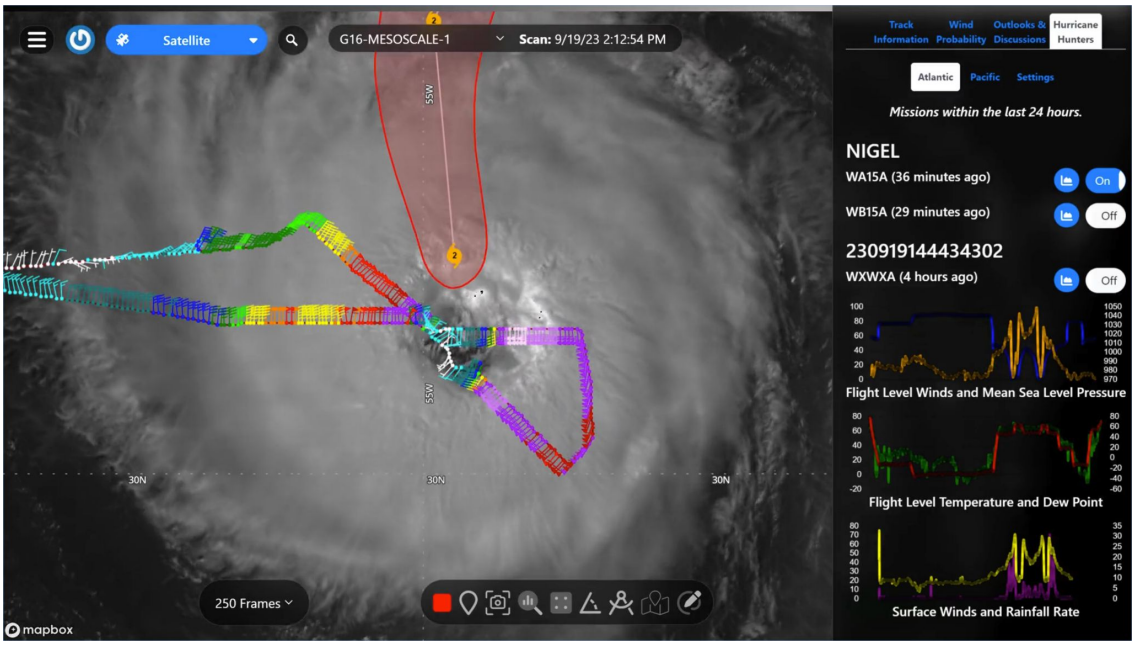
NHC Tropical Genesis Outlooks can be toggled on the map in the “Outlooks & Discussions” tab. You can also find NHC discussions for the Atlantic Basin and Eastern Pacific, which are updated regularly during hurricane season.

Data from ongoing and recent hurricane hunter missions can be found under the “Hurricane Hunters” tab. Turn on the mission flight path, or view the data graphically by tapping on the graph icon to the right of the toggle switch.







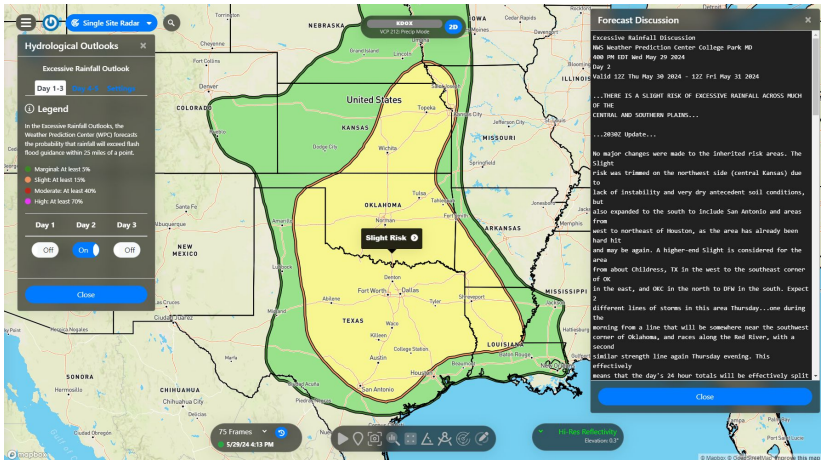


Navigating the Side Menu

Outlooks & Monitoring

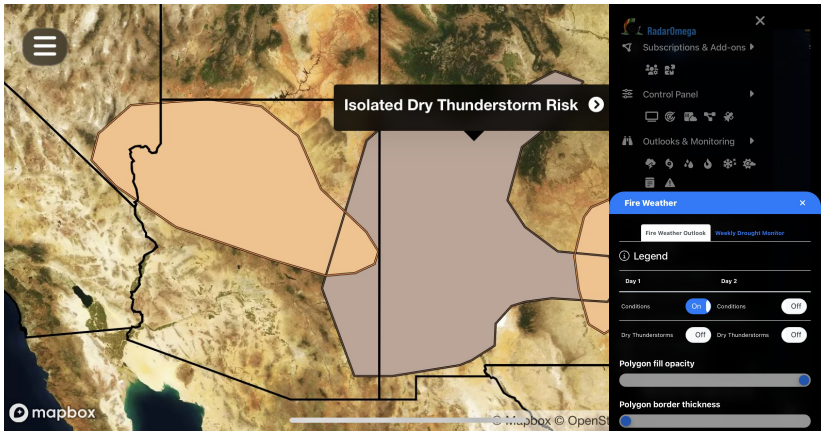
Hydrological Outlooks

Excessive rainfall outlooks for days 1-5 can be turned in on the Hydrological Outlooks menu. Settings for these outlooks can be adjusted in the “Settings” tab. Tap on the polygons to read detailed discussions, and learn more about these products by taping the“i” icon.

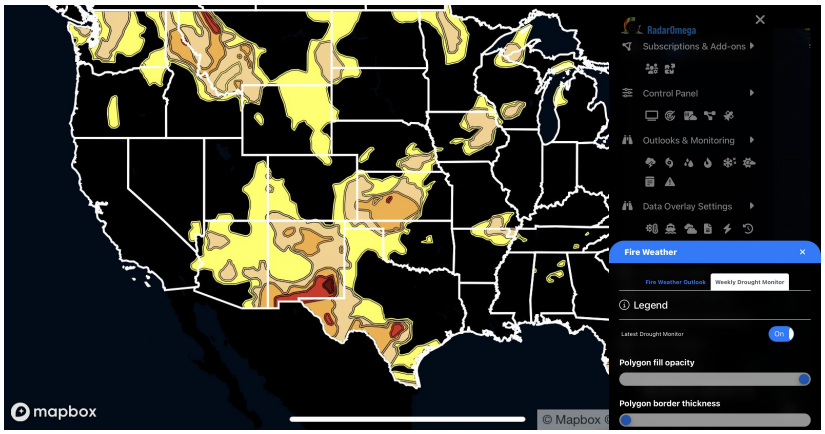


Fire Weather

Outlooks for fire weather conditions and dry thunderstorms can be turned on in the Fire Weather menu. Settings for the different layers can be adjusted using the sliders in the “Fire Weather Outlook” tab.



The Drought Monitor layer can be enabled in the “Weekly Drought Monitor” tab in this menu.



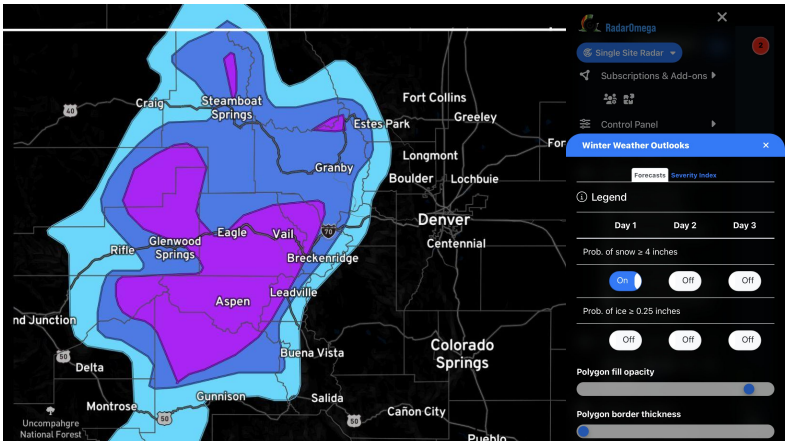
Tap on the polygons to read detailed discussions, or tap on the “i” icons to learn more about these products.

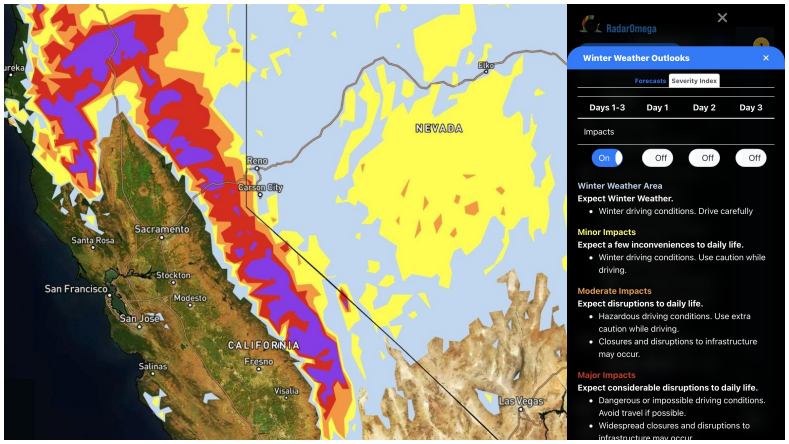
Navigating the Side Menu

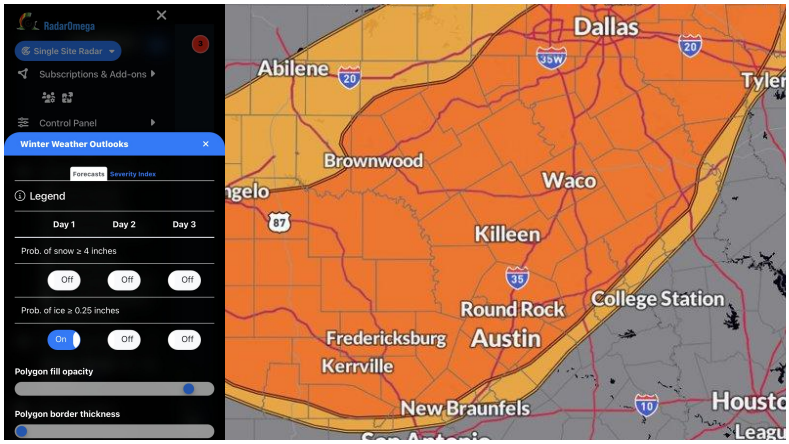
Outlooks & Monitoring

Winter Weather

The winter weather outlooks toolkit consists of heavy snow outlooks (probability of ≥4”), freezing rain outlooks (probability of ≥0.25”), and the Winter Storm Severity Index. Tap on the polygons to read detailed discussions, and learn more about these products by tapping the “i” icon in their respective tabs.

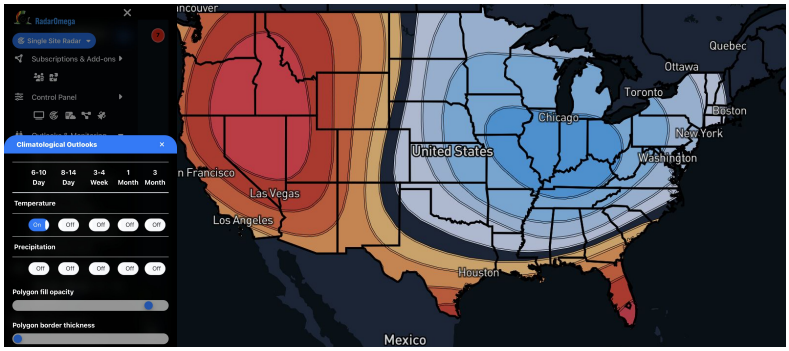


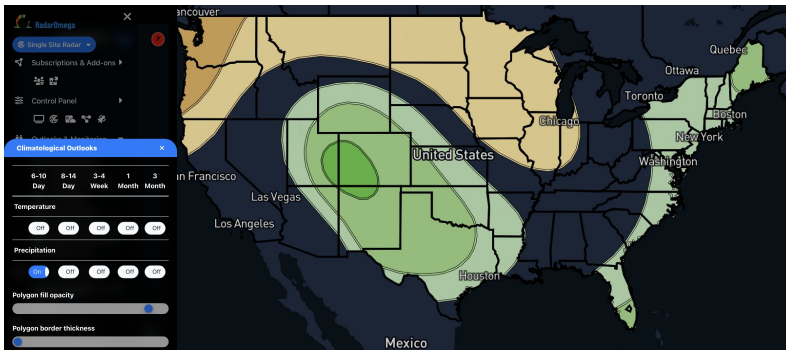




Climatological Outlooks

Climatological outlooks from the Climate Prediction Center show the probability of above/below average temperature and precipitation. Outlooks are available for all of the forecast periods that the CPC offers. Tap on the polygons to read detailed discussions.

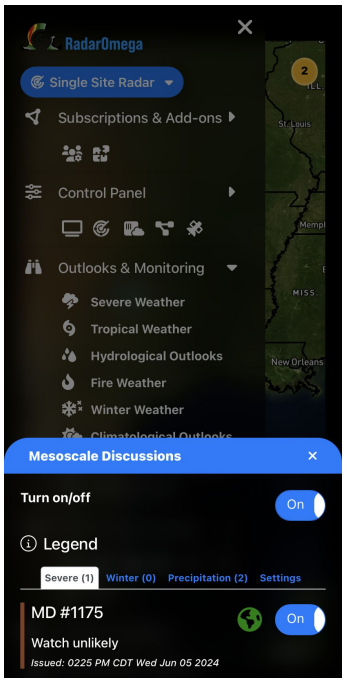




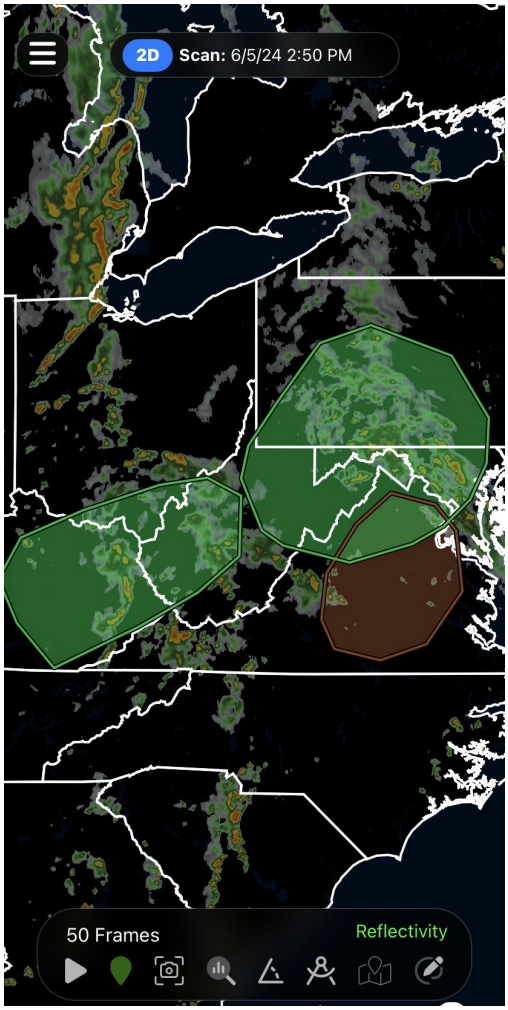
Navigating the Side Menu

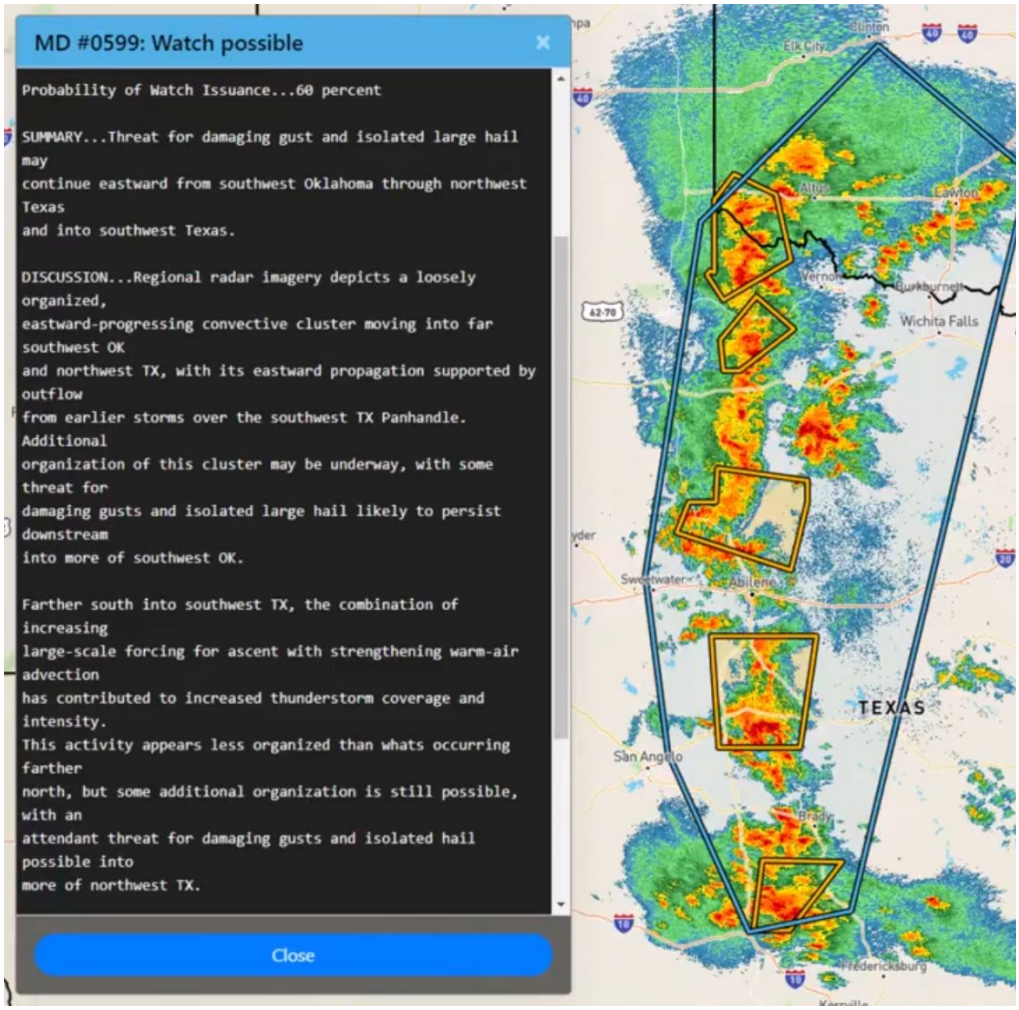
Outlooks & Monitoring - Mesoscale Discussions

Mesoscale discussions pertaining to severe weather, winter weather, and heavy precipitation can be individually toggled on in the Mesoscale Discussions menu. Note that the “Turn on/off” option must be turned “On” in order to see discussions before they can be individually toggled. Some customization options are available in the Settings tab of this menu. For more information about the different kinds of mesoscale discussions, tap on the “i” icon in each of the tabs.



In the Mesoscale Discussions menu, you can tap on the globe icon to be taken to that discussion. Tap on a mesoscale discussion polygon to see more details about the discussion, or tap on the arrow in the pop-up to read the entire discussion.

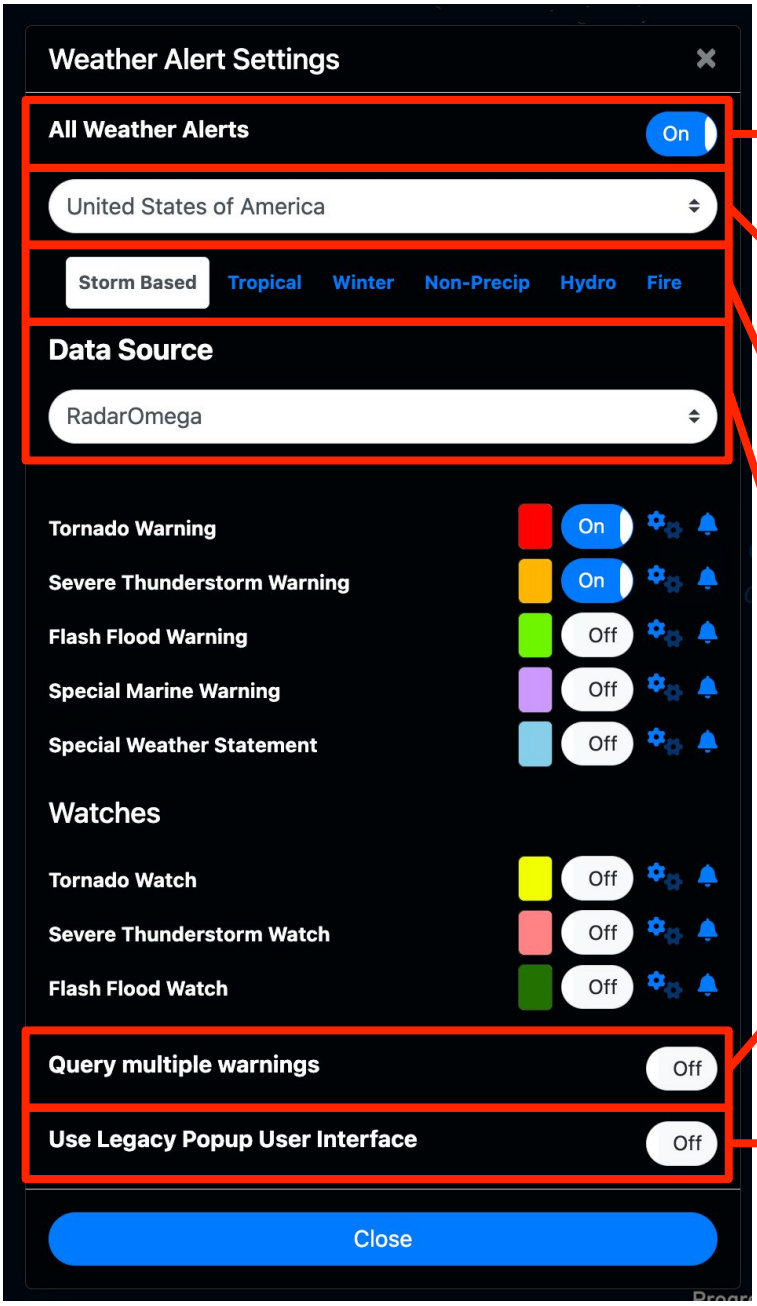




Navigating the Side Menu

Outlooks & Monitoring - Weather Alerts

The Weather Alerts menu, found under the Outlooks & Monitoring section in the side menu, is where the user can adjust which watches, warnings, and advisories populate on the map. Push notifications and audible alerts for weather alerts can be configured through this menu.



The **"All Weather Alerts"** switch is used to toggle on/off all weather alerts which are individually turned on. Turning this switch on will NOT turn on every single weather alert - only those which are individually enabled.

Weather alerts are available for the United States and Canada. To configure weather alerts for Canada, tap on this dropdown menu and select "Canada".

Different types of weather alerts are separated into their respective tabs at the top of this submenu. Use the switch next to each alert to enable/disable them.

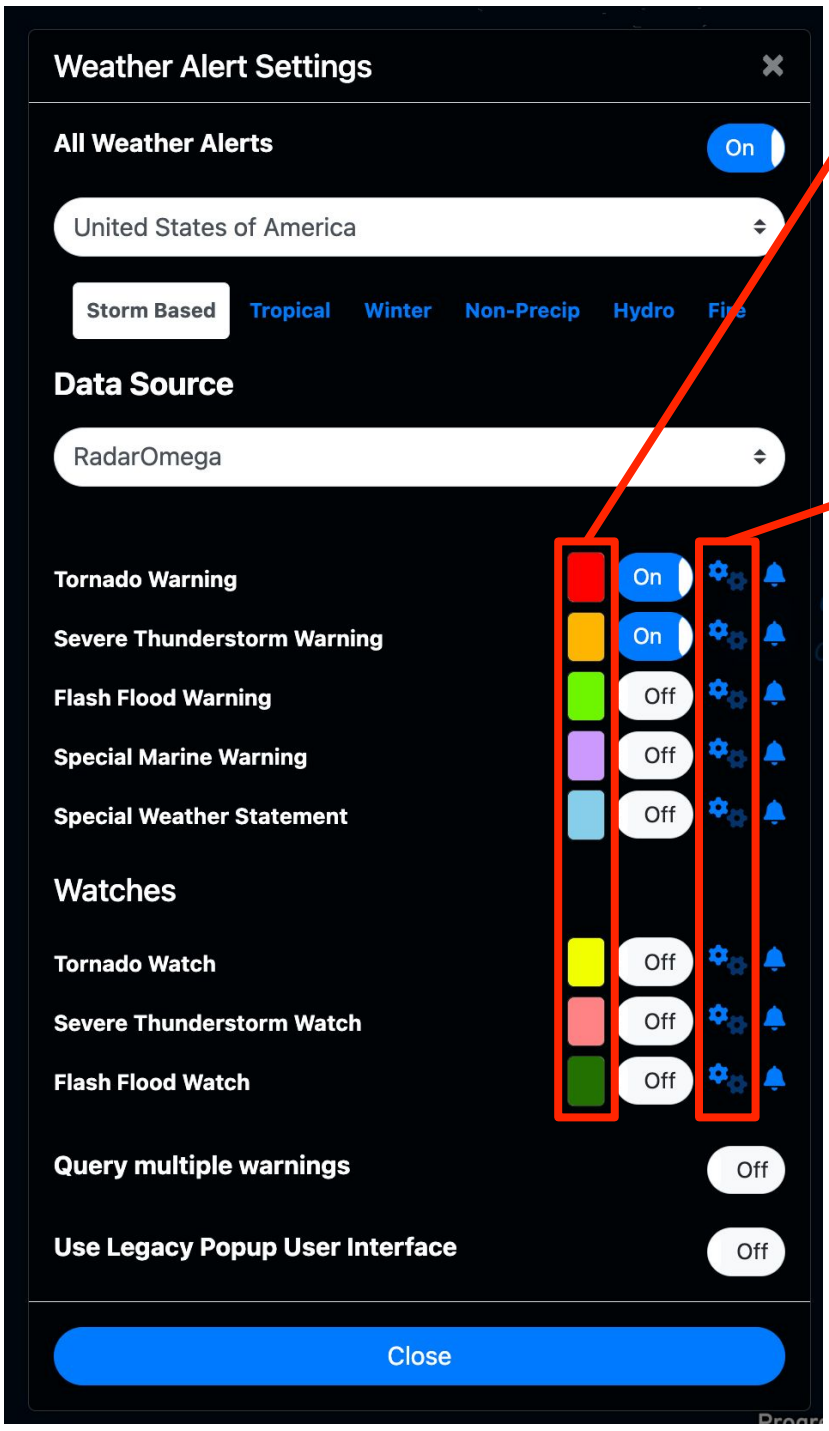
The data source for weather alerts can be changed using this dropdown menu. However, it is **strongly recommended** that you use "RadarOmega" as the data source.

If multiple weather alerts are issued on top of each other, turning this option on will allow all pop-up interfaces to appear when tapping on the alerts.

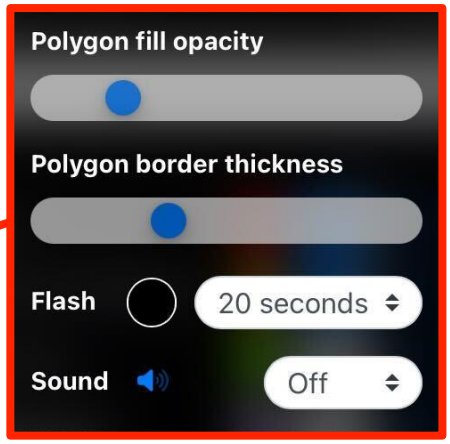
Changes the display of the weather alert pop-up interfaces to that before the 5.5 update.

Navigating the Side Menu

Outlooks & Monitoring - Weather Alerts



Tapping on the color icon next to an alert will open the color selector tool to change the color of the polygon.

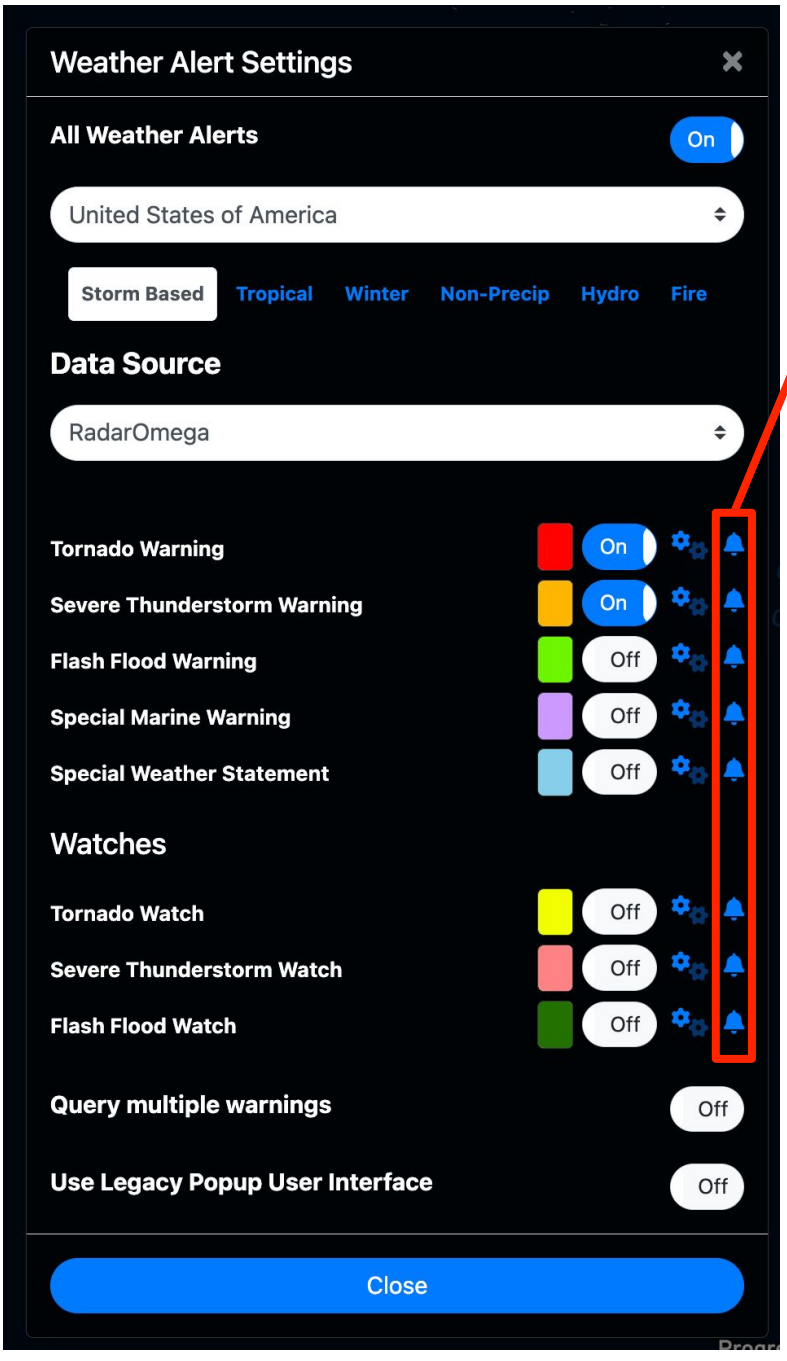


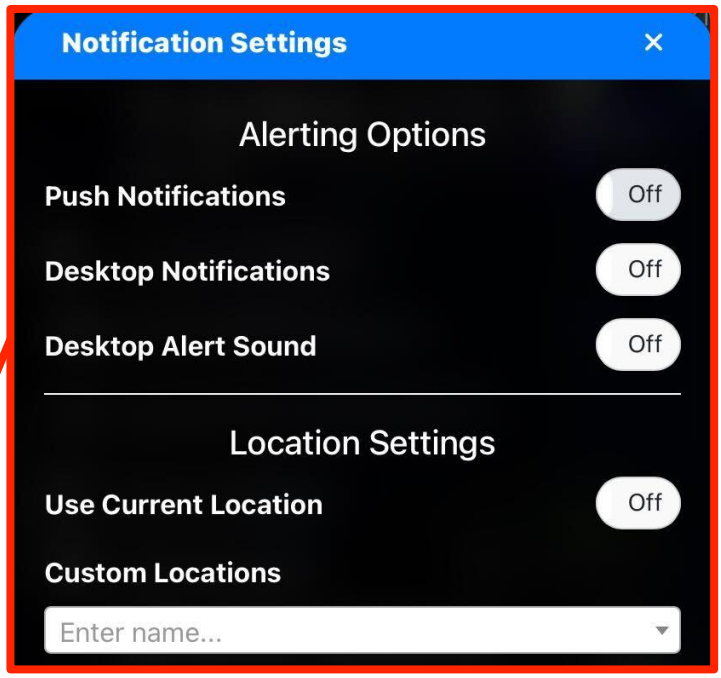
Settings for each alert type, like polygon flash color, opacity, and thickness, can be adjusted by tapping on the gear icon next to an alert type.

You can also configure audible alerts for each alert type by tapping on the gear icon. Audible alerts will play when the alert is issued and RadarOmega is open on your device.

Navigating the Side Menu

Outlooks & Monitoring - Weather Alerts





Configure push notifications for an alert type by tapping on the bell icon next to the alert type. **Important:** you must create a RadarOmega account to use this feature. You will not see the bell icons if you are not signed in to your RadarOmega account.

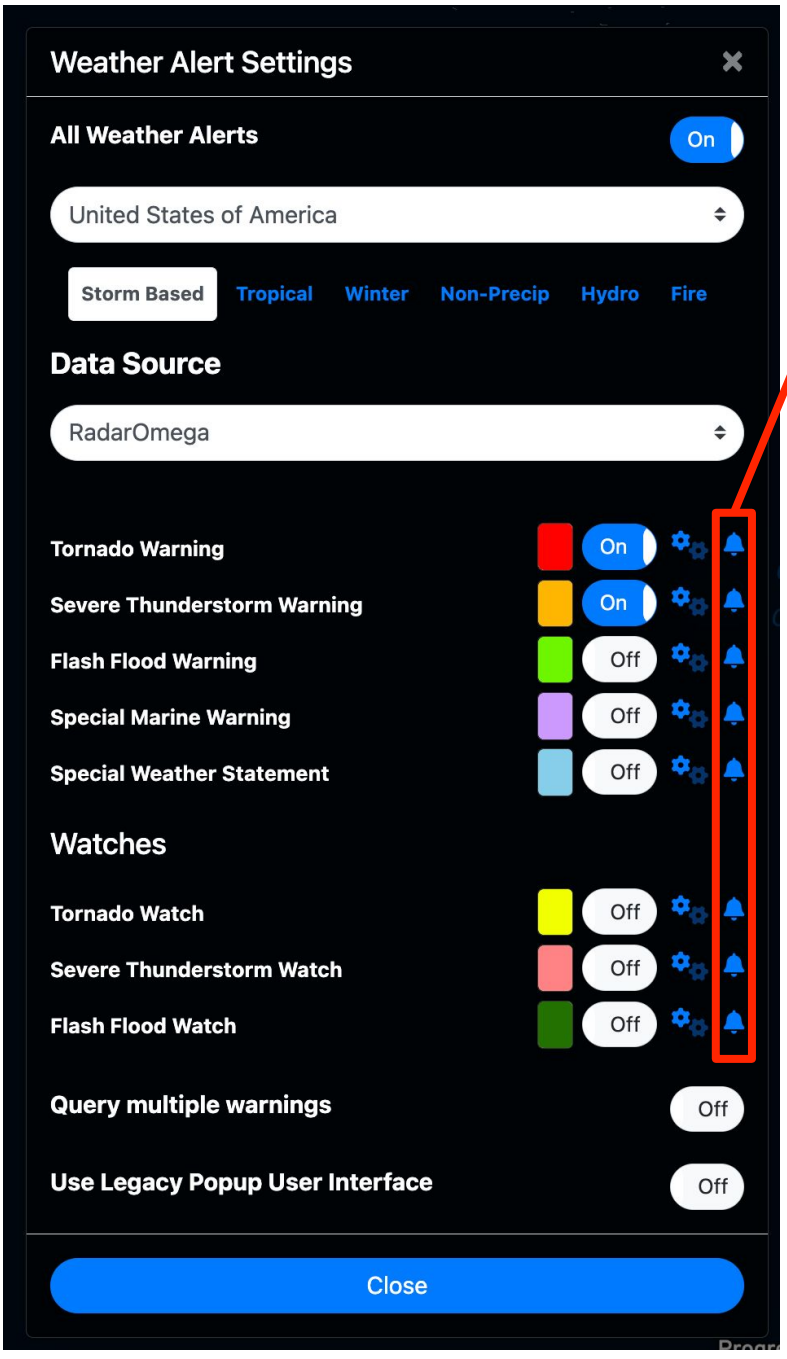
For mobile push notifications, enable “Push Notifications”. If you have desktop access, you can enable desktop notifications by turning on “Desktop Notifications”.

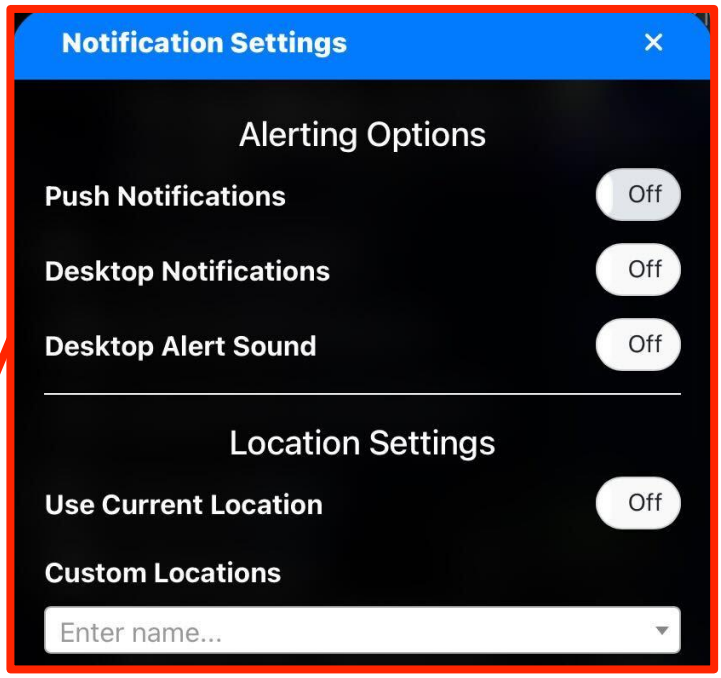
Remember: Push notifications must be enabled individually for each alert type. Up to 8 alerts can have push notifications enabled simultaneously.

Note: You must have push notification permissions enabled for RadarOmega in your device’s settings.

Navigating the Side Menu

Outlooks & Monitoring - Weather Alerts





Under "Location Settings", enable "Use Current Location" to receive push notifications based on your current location. To receive alerts based on a custom location, enter the name of a custom location under "Custom Locations" (more info on custom locations on page 59).

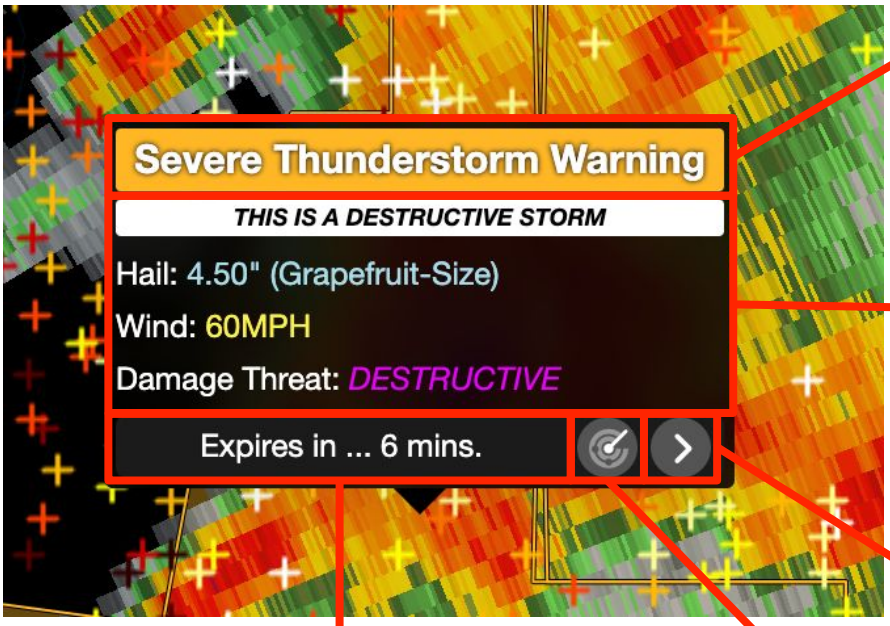
Base application users can enable push notifications for all storm-based watches and warnings using your GPS location for the location setting.

Gamma and Beta subscribers can enable push notifications for all weather alerts using your GPS location for the location setting. Alpha subscribers can enable push notifications for all weather alerts using both your GPS location and custom locations as the location settings. Up to 3 custom locations can be enabled for a single weather alert to receive push notifications.

Navigating the Side Menu

Outlooks & Monitoring - Weather Alerts

Weather alerts will appear on the map as polygons. Tapping on a polygon will display a popup interface with information about the weather alert.



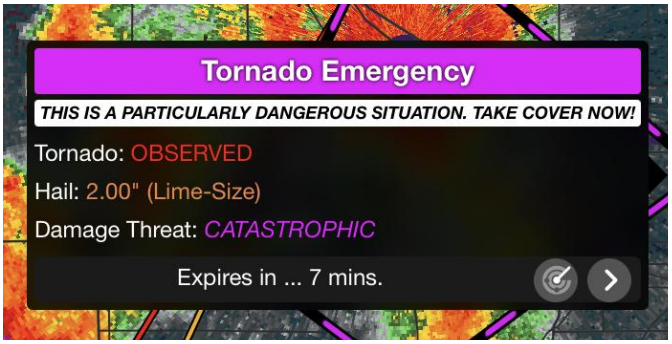
Alert type will be displayed here

Information on the threats posed by the alert will display here, if applicable. If the threats warrant a "considerable" or "destructive" tag based on NWS criteria, this will appear here as well.

Tap here to read the full alert text

Time until the alert expires will appear here

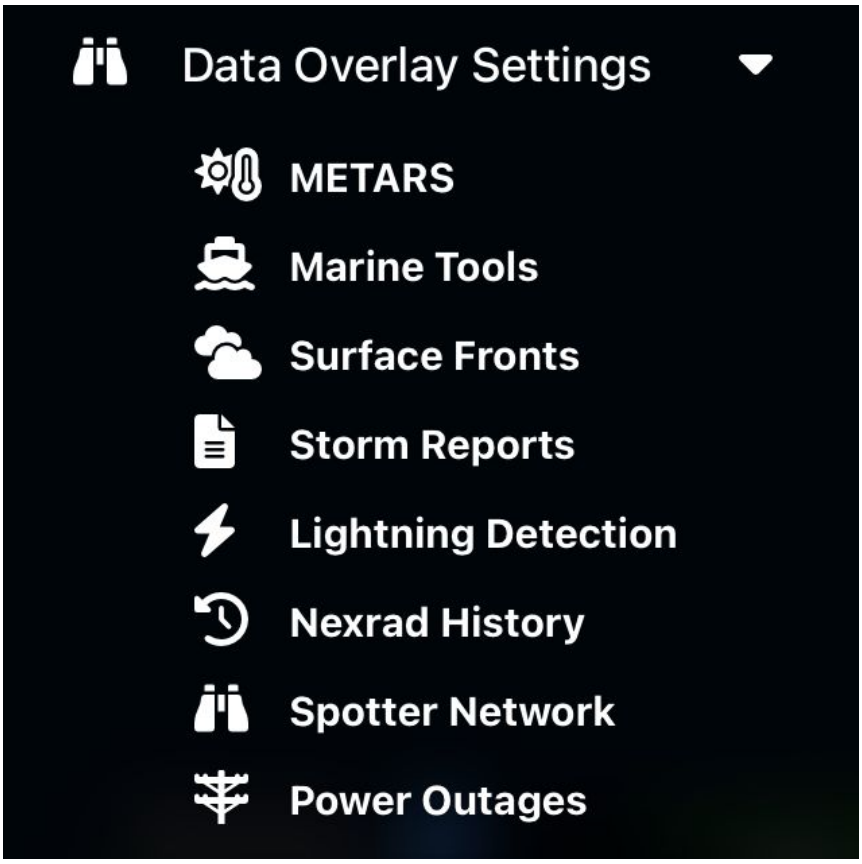
Tap here to automatically select the closest radar site (when using single-site radar mode)



Appearances of various other weather alerts in RadarOmega

Data Overlay Settings

The Data Overlay Settings section in the side menu contains several useful overlay toggles, including METARs, Storm Reports, and single-site radar Lightning Detection display.

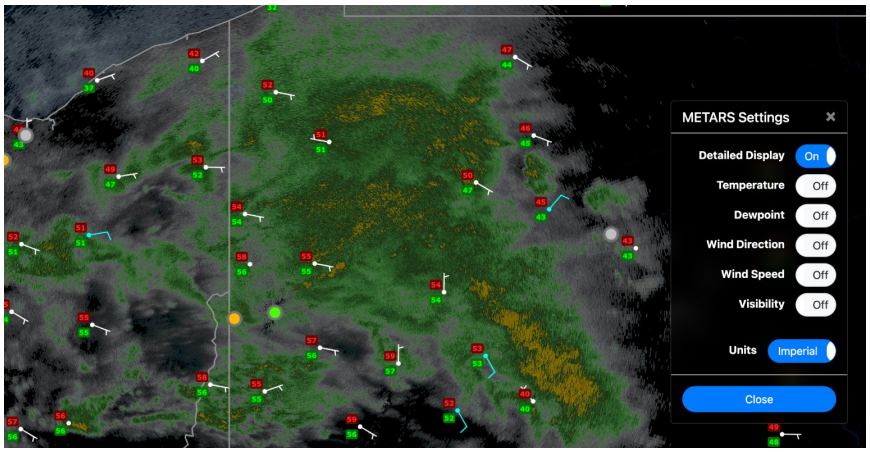


Navigating the Side Menu

Data Overlay Settings

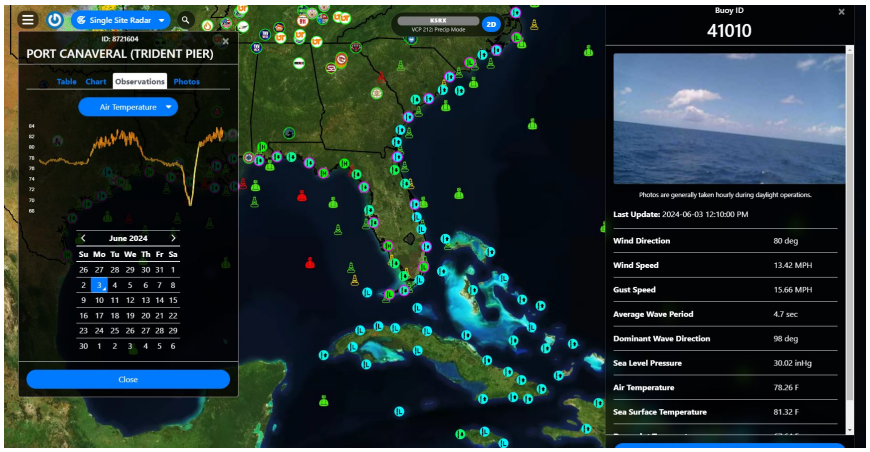
METARS

METAR refers to a standardized format of reporting weather information. Enabling one of the options in the METARS Settings submenu and selecting a storm-based satellite sector[G] or single-site radar will display information in this format from nearby weather stations.



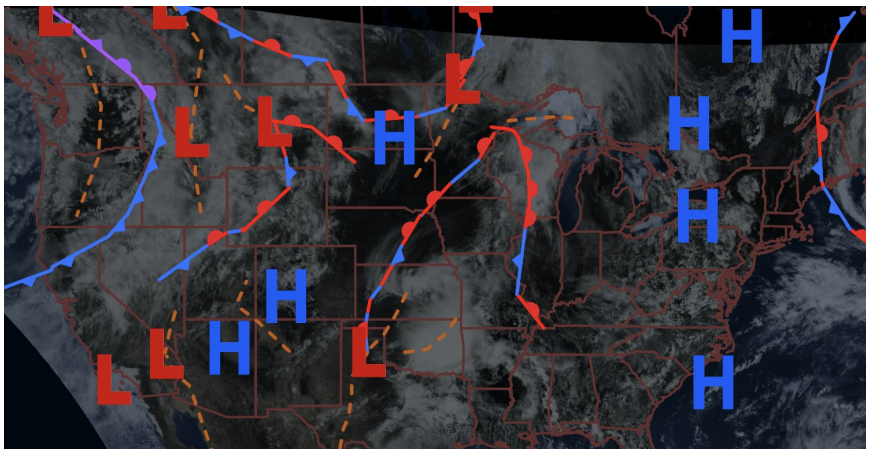
Marine Tools

Marine tools consist of buoys and tide forecast points. This worldwide network allows you to see a variety of current observations and tide forecasts. Many buoys will also take photos during daylight hours.



Surface Fronts

The surface fronts layer will display the most recent surface front analysis from the Weather Prediction Center. This analysis will update every 3 hours. You can learn more about what these mean by tapping on the "i" icons in the Surface Fronts menu.

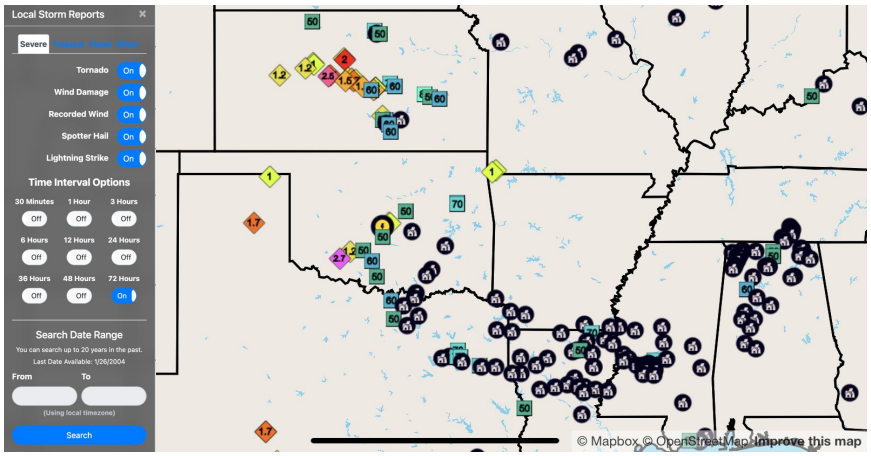


Navigating the Side Menu

Data Overlay Settings

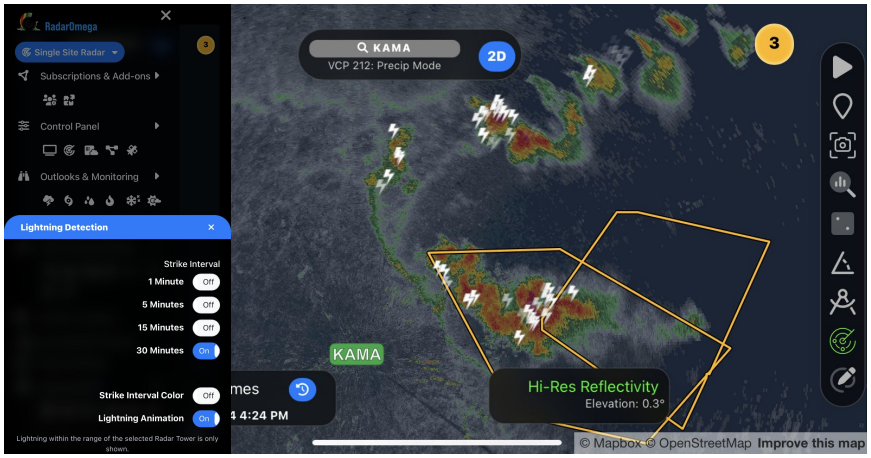
Storm Reports

To display unfiltered storm reports, turn on all of the reports that you would like to see, then select a time interval. Tap on a storm report to see more information. Access previous archived storm reports by entering a date range at the bottom of the menu, then tapping search.



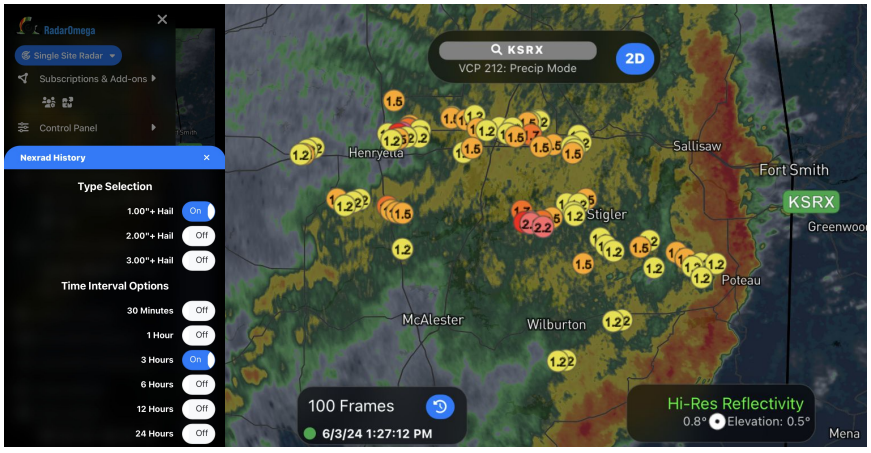
Lightning Detection

To display lightning strikes detected in a storm-based satellite sector[G] or nearby a radar site, enable a "strike interval" option, then select a radar site. Note that this is different than lightning monitoring, which is done through custom locations. With the "strike interval color" option enabled, older strikes will appear as darker colors.



NEXRAD History

The NEXRAD History layer displays recent radar estimated hail up to 24 hours in the past. Select a size range and time interval to display the layer. Remember that these are **radar estimations**, not observations. Always use features like this in conjunction with other data to understand the full context.

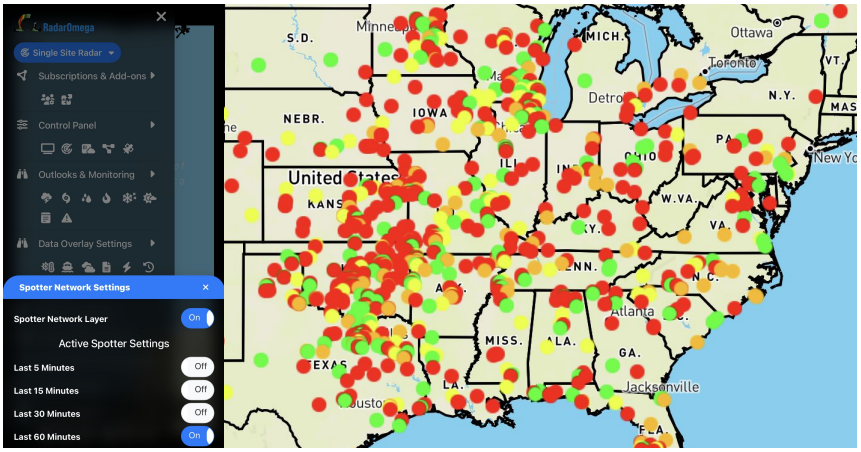


Navigating the Side Menu

Data Overlay Settings

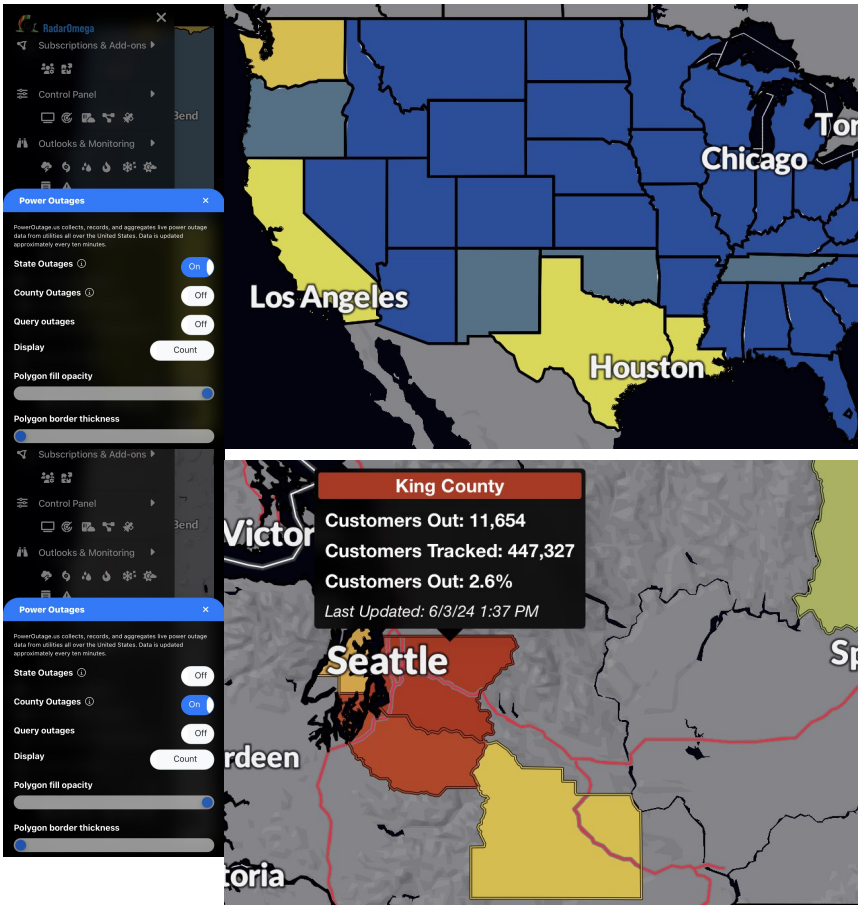
Spotter Network

If you are a member of the Spotter Network, as long as you are signed into your Spotter Network account at https://spotternetwork.org/, your position will populate inside RadarOmega. Make sure to enable the layer as well as a time interval to display the layer. Note that RadarOmega does not support Spotter Network location reporting.



Power Outages

Power outages can be displayed by state or by county. Fill color of the polygons can be based off of the percentage or total number of customers without power in the state/county. To learn more about the fill color scale, tap on the "i" icons.

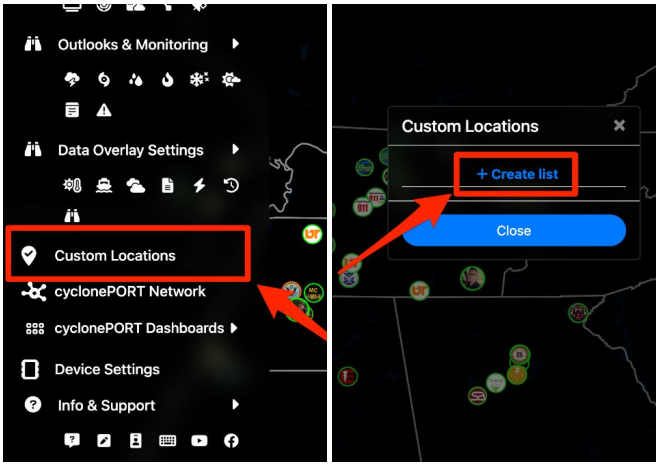


Navigating the Side Menu

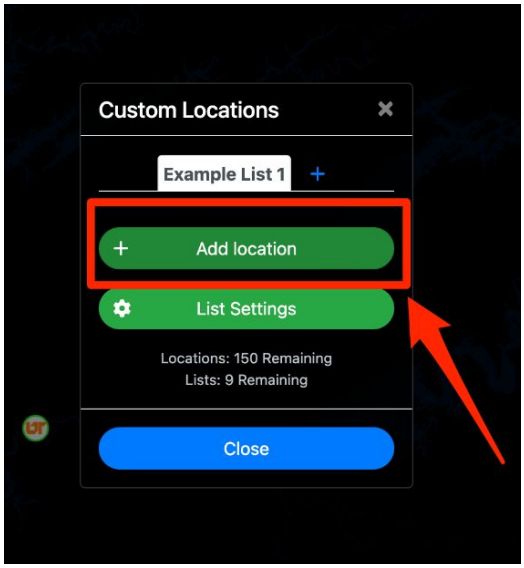
Custom Locations

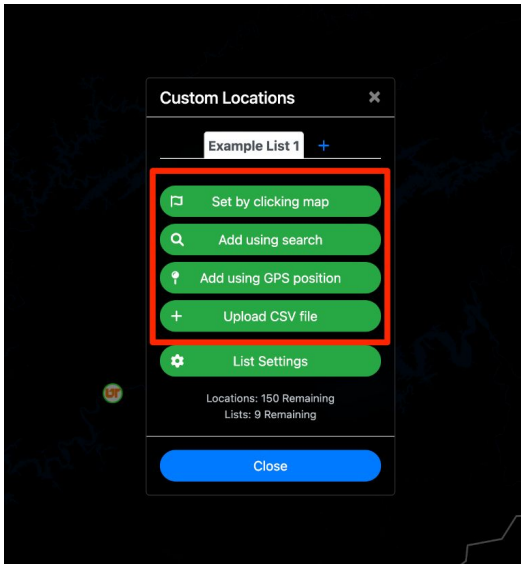
Custom locations can be created to mark and save areas of importance. Several features, like lightning monitoring[A] (more information on page 60) and push notifications, integrate with custom locations. You must be signed in to a RadarOmega account to create custom locations. Base users can create up to 15 custom locations; Gamma subscribers can create up to 30 custom locations and 2 lists; Beta subscribers can create up to 75 custom locations and 5 lists; Alpha subscribers can create up to 150 custom locations and 10 lists.

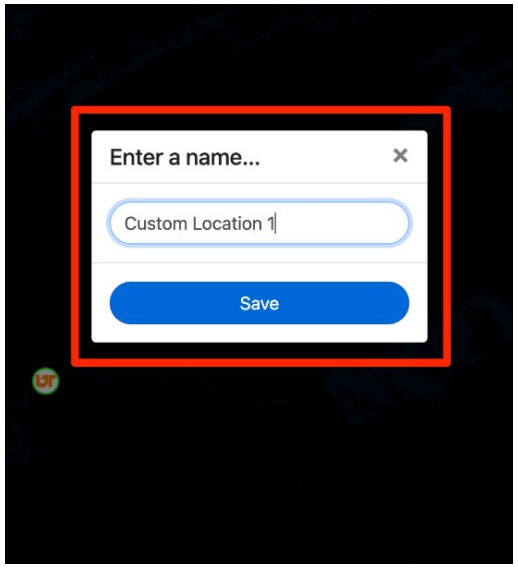
To create a custom location, navigate to the side menu and click on "Custom Locations". Select the "+ Create List" icon at the top to create a list. Give the list a name and be sure to click "Save". Keep in mind that lists are **not** custom locations - lists allow the user to separate custom locations into groups.



Additional lists can be made by clicking on the "+" icon at the top of this menu. Next, create a custom location by clicking on "Add location". Use one of the methods presented to create the location, give the location a name, and remember to select "Save".







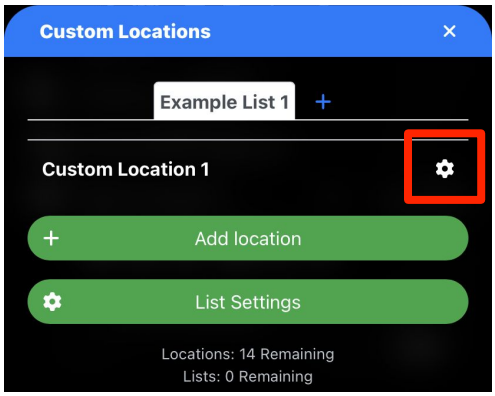
After selecting "Save", your custom location will populate on the map. At any time, you can tap/click on the custom location to center the map over the location.

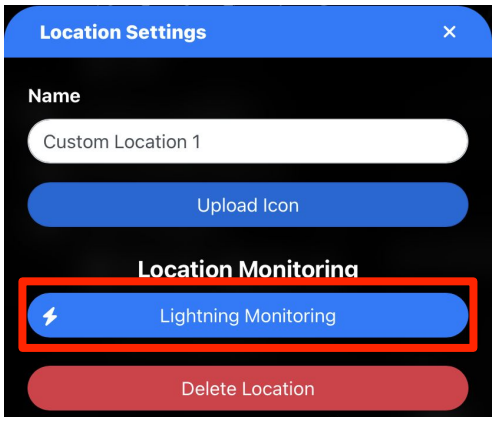
Lightning Monitoring with Custom Locations[A]

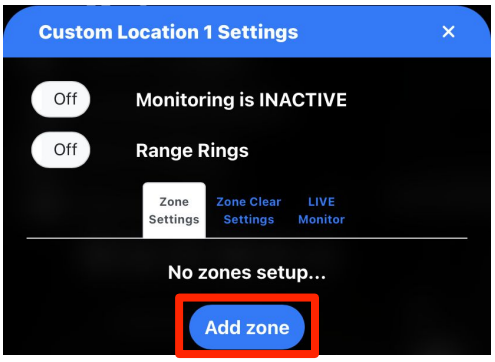
Lightning detection inside RadarOmega works using custom locations created by the user. RadarOmega users can utilize this lightning detection network by creating custom locations inside RadarOmega and setting up alert zones around the custom locations to monitor lightning strikes within the zones.

Lightning Monitoring with Custom Locations[A]

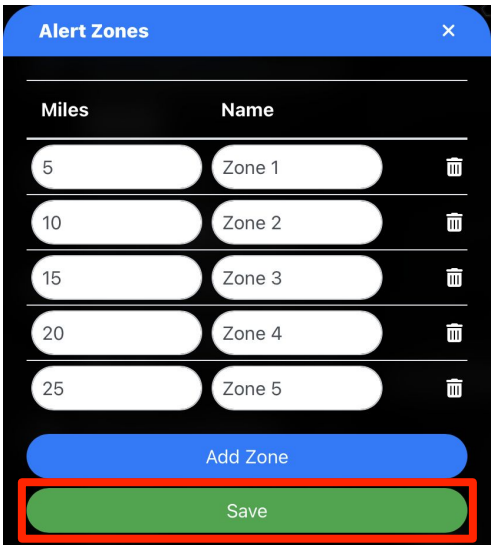
The lightning monitoring menu for a custom location can be accessed by clicking on the gear icon next to the name of the location, then clicking on “Lightning Monitoring”. This will open the lightning monitoring menu for this location. This menu will have 3 tabs. To start adding zones, click on “Add zone” under the “Zone settings” tab.





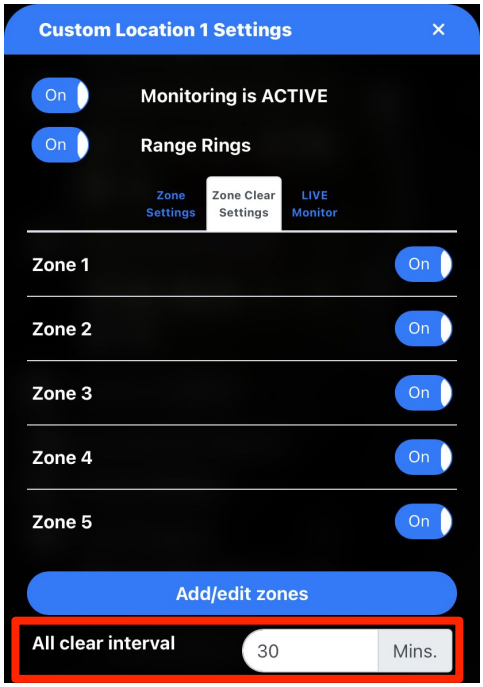


In the new screen, click “Add Zone” to add a new row. The radius of the zone in miles goes in the left-hand column, and the name of the zone goes in the right-hand column. Click “Add Zone” again to add a new row. Up to 5 zones can be added per location. A zone can have a maximum radius of 100 miles. When done adding zones, click “Save”. **IMPORTANT: You must click “Save” after making any changes in this menu.**



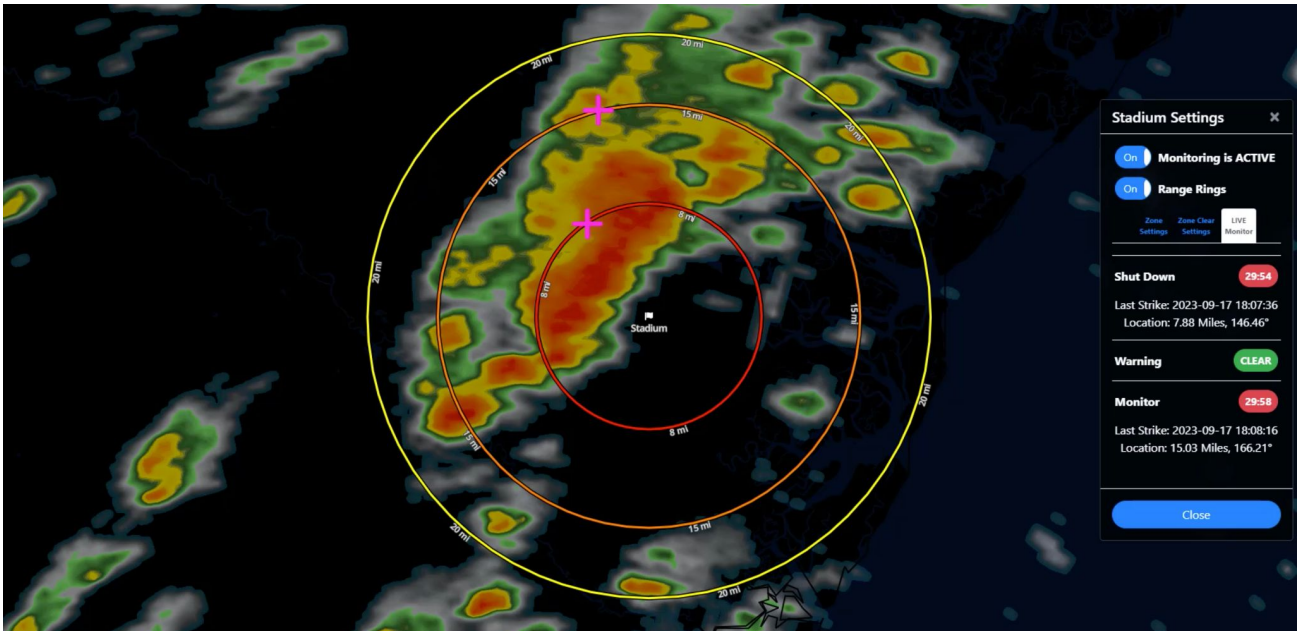
Lightning Monitoring with Custom Locations[A]

After creating zones and clicking save, the zones will populate in the "Zone Settings" tab. Lightning monitoring can now be turned on for this location by turning the "Monitoring is INACTIVE" switch to "on". When turned on, this will relabel as "Monitoring is ACTIVE". Lightning monitoring for individual zones can be toggled on/off by using the switch next to each zone name. **Remember: Lightning monitoring can be active for one location at a time.**



When a lightning strike is detected in a zone, a countdown timer will start. Adjust the length of this all-clear countdown timer by changing the "All clear interval".

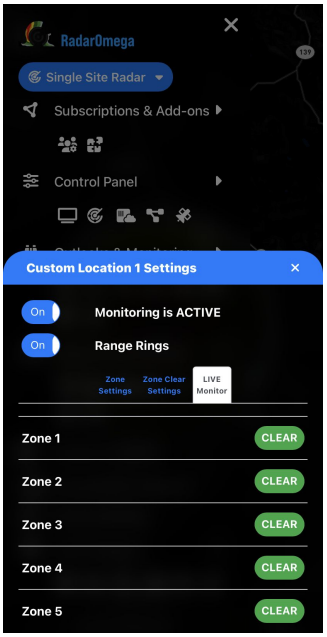
Monitor lightning detection in real time under the "LIVE Monitor" tab. When lightning is detected inside a zone, a red countdown timer will appear next to the zone in the "LIVE Monitor" tab. When the countdown timer completes, the zone will become labeled as "CLEAR". If lightning is detected inside the zone before the countdown timer completes, the timer will reset.

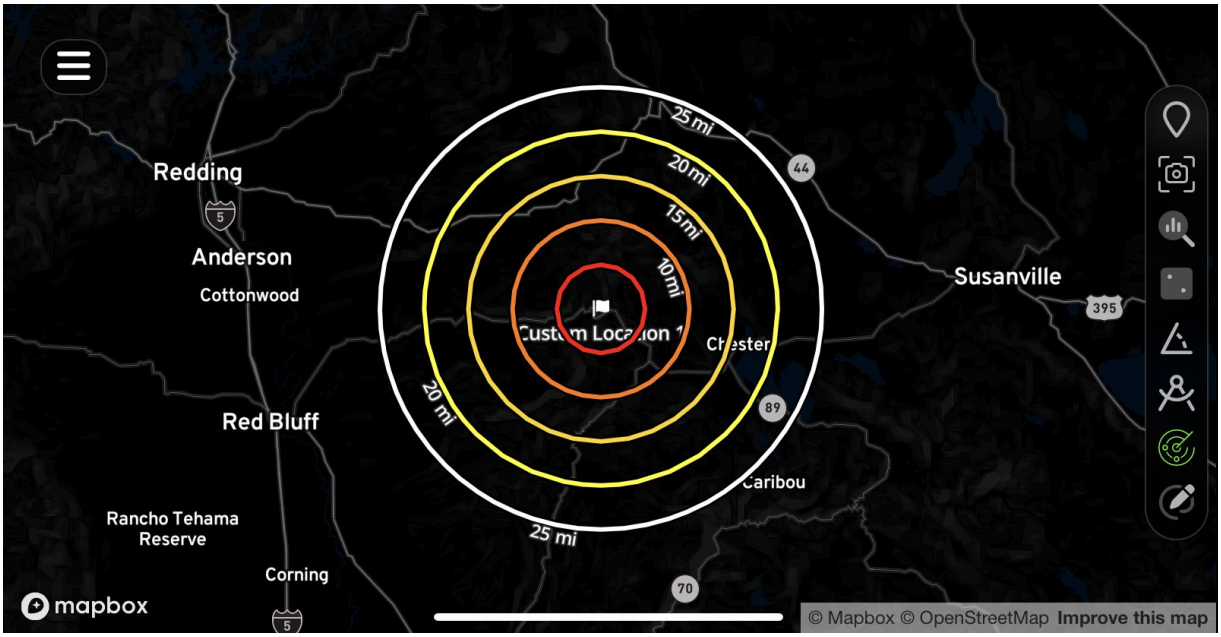


Lightning Monitoring with Custom Locations[A]

When lightning monitoring is on for a location, range rings representing each zone can be displayed on the map by turning the switch next to “Range Rings” in the lightning detection menu to “On”. Note that the range rings do **not** have to be displayed for lightning monitoring to be active.

To change the color of the range rings, click on “Add/edit zones”. By default, each zone will have a yellow circle next to it in each row - clicking on this circle will bring up a color selector tool. **Remember to click “Save” when making changes in this menu.**





Navigating the Side Menu

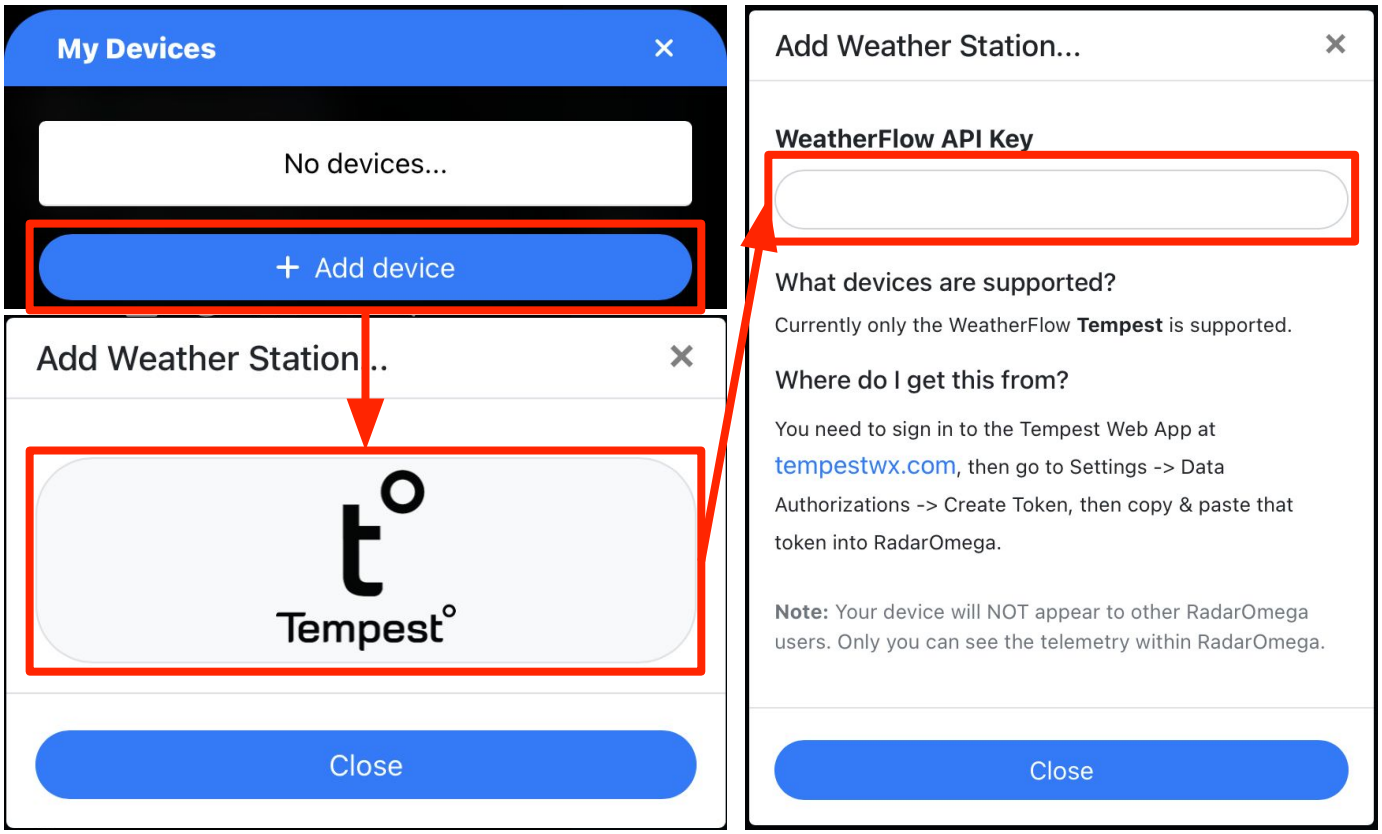
Miscellaneous

cyclonePORT Network

The cyclonePORT Network provides real-time measurements and live video feeds from units across the country. This layer can be turned on and off from the side menu next to "cyclonePORT". Special field campaigns, called "Project MesoVort"[G], can be enabled here as well when these units are deployed.

Device Settings[G][B][A]

If you have a Tempest weather station, you can integrate the station into RadarOmega so that you can view its data. This is done by tapping on "Device Settings", then tapping "Tempest" and entering the API Key. Keep in mind that this data will not be publicly available - only you will be able to see data from the station.



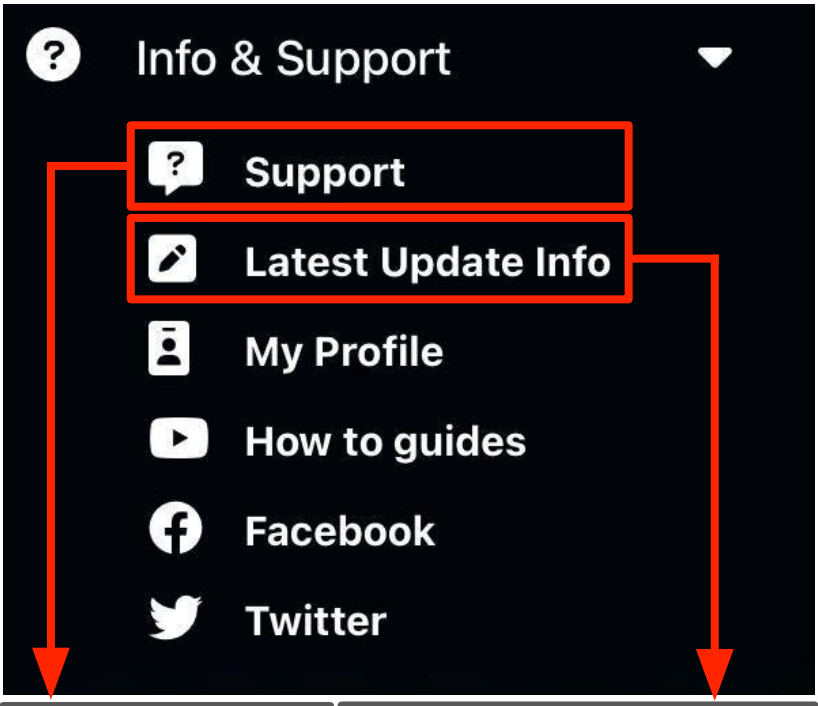
Navigating the Side Menu

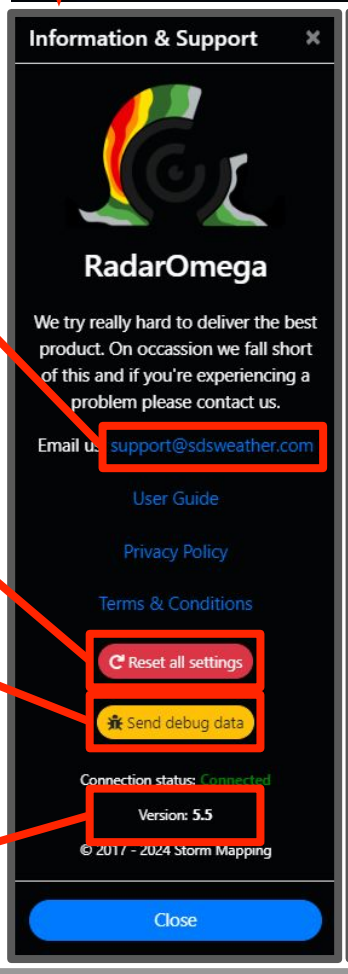
Miscellaneous

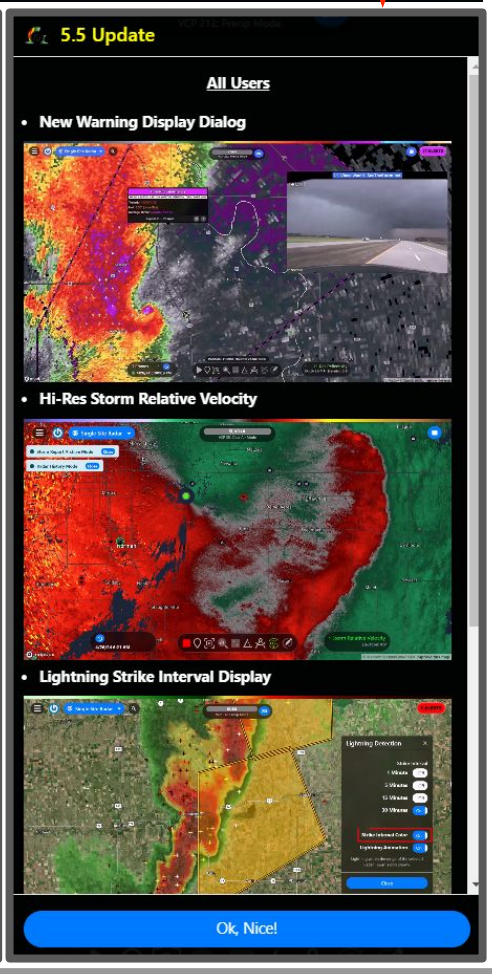
Info & Support

If you have any questions related to RadarOmega, or are encountering issues that you need help with, you can find the link to our support channel in the Info & Support section.

You will also find links to how-to guides and social media pages can be found here, as well as general information which may be helpful in improving your experience such as details about the latest update or keyboard shortcuts.







Contact us through our support line

Option to reset back to base settings

Option to send debug data, if necessary during support process

Current RadarOmega version listed here