PinPoint APRS v2.2 Quick Start Guide

Written by Frank Watervoort, AB0WV. Last updated April 18, 2026.

NOTE: This not an APRS tutorial. To understand the purpose and capabilities behind APRS and learn more about its usefulness, please visit http://www.aprs.org or do a search on "APRS Introduction" using any major search engine on the web.

This guide is only meant as a Quick Start Guide and gives a quick feature overview for PinPoint APRS.

License

PinPoint APRS ("the software") is free for use by individuals. No warranty is expressed or implied. By using the software, you agree to the fact that the author can in no way be held liable for any kind of damages resulting from direct or indirect use of the software. By using the software, you also agree to the fact that you are using this software at your own risk and you understand that it should not be used in cases where a human's life depends on it or loss of property is at stake. Please refer to the **Credits, Copyrights and License** menu item under the View menu for the entire license agreement. You're not allowed to use PinPoint APRS unless you agree to the license agreement. I'm sure you understand why this precaution is necessary.

Active Development

PinPoint APRS is a labor of love by Frank Watervoort, AB0WV and is still under active development, so all the bugs may not have been worked out. If you have a great idea for a feature or are running into problems (after you have exhausted the enclosed Quick Start guide and the FAQ on the website), feel free to send an email to ab0wv@arrl.net. If enough people suggest the feature you have in mind, it may be added to the product roadmap for PinPoint APRS.

If you are sending a Bug Report, please take a look at the instructions on the download page at https://pinpointaprs.com/download.html first to ensure you're sending the details I need to be able to troubleshoot.

System Requirements

- PinPoint APRS has been shown to run on computers with very minimal memory and processor capabilities, but I'd like to recommend at least 4GB of memory for stability, but 8 is definitely better. If your computer runs slowly with the PinPoint APRS workload, please look into upgrading your hardware.
- Microsoft .NET framework 4.7.2 (can be downloaded from https://support.microsoft.com/en-us/topic/microsoft-net-framework-4-7-2-offline-installer-for-windows-05a72734-2127-a15d-50cf-daf56d5faec2 if needed).
- A screen resolution of 1024x768 or higher. Multiple display setups are supported.
- If you're using a serial port TNC, you will need at least one COM port for your TNC and GPS (if your TNC is capable of passing GPS data through), or two COM ports if connecting the GPS and the TNC directly to your machine. Most USB to COM converters will work just fine. A radio, GPS or TNC is not required for use.
- PinPoint APRS has been actively tested on Windows 7, Windows 10 and Windows 11, but should run fine on Windows Vista and Windows 8 as well. PinPoint APRS is not supported to run on Windows XP or earlier, which is a function of the .Net version in use.
- While PinPoint APRS does not require an Internet connection, you will need one to initially cache maps (automatic) or to use the APRS-IS servers. The weather related features (NexRad Weather Radar, Weather Warnings, Wildfires) require Internet access as well. More information on that below.

Download

PinPoint APRS is free to download for individuals. The latest version can be downloaded at http://www.pinpointaprs.com. PinPoint APRS will automatically check if there is an update at startup, but only if you are connected to the Internet. This feature can be disabled under Tools > Options > Misc. If PinPoint APRS found a new update, you will see it displayed at the bottom of the map screen.

Installation

Download the file from the Download page at https://pinpointaprs.com/download.html, find the downloaded file in your Downloads directory, double click it and follow the prompts. If you have a previous version of Pinpoint installed, it will automatically be uninstalled first. No changes are necessary during installation. The default installation options will install PinPoint in the c:\Program Files (x86)\PinPoint APRS directory.

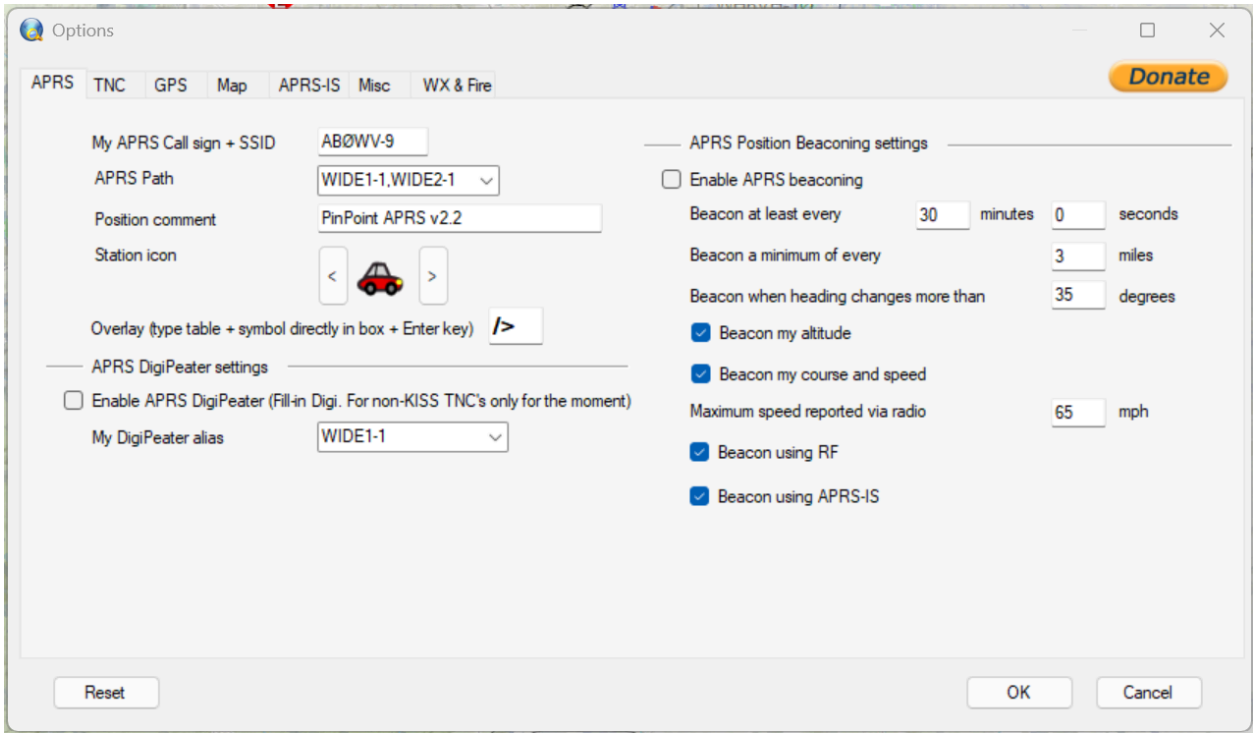
Configuring PinPoint

When you run PinPoint for the first time, the first window that will pop-up is the license agreement. If you read it and accept it, the next screen will make a few suggestions to get started, which we will cover below. Once you click 'OK', you will be presented with the Options screen,

which is accessible from the main menu by selecting Tools > Options, or pressing the F2 function key.

The Options Menu - Configuring PinPoint APRS

The Options menu is used to configure all features within Pinpoint and looks as follows:



Enter your own call sign in the APRS Call sign box and optionally add an SSID from 1-15 (no alphanumeric characters or the number zero are allowed in the SSID. Example: AB0WV-9).

Select the correct APRS Path for your purposes. For mobile applications, the default should be fine. You can select a path from the drop-down list or you can override the dropdown list and type in your own.

The Position comment is optional and could be used to identify a special event you're supporting with amateur radio, voice frequency you're monitoring, your email address, etc.

Using the left and right arrows in the Station icon section, you can select the APRS symbol you would like to use for your own station. Overlay symbols (secondary symbol table icons with an alphanumeric character placed on top) are fully supported, but should be entered directly in the text box to the right of the icon. Press Enter for it to take effect. An example of an overlay is **I&**, which is a black diamond shape with the capital letter 'I' superimposed, representing an iGate symbol.

An overview of the APRS symbols used in PinPoint can be found here: https://github.com/hessu/aprs-symbols.

If you'd like your station to function as a fill-in Digi, you can enable the APRS DigiPeater option. Fill-in Digis only respond to first hop packets from stations that use WIDE1-1 first in their path, often to help relay the packet out of an area where there isn't a lot of APRS activity so that other Digis can pick it up and repeat it. **Please note that this function is currently only supported for non-KISS TNC's on the TNC Option tab**. The non-KISS TNC's listed have internal software that will Digipeat packets, where KISS TNC's don't have that logic built-in.

The Position Beacon option will send your current position on the currently connected TNC and/or to the connected APRS-IS server by default, **unless you disable Beacon using RF (which means beacon via radio) or Beacon using APRS-IS** in this menu. The self-explanatory default settings should work well, but can be tweaked if necessary. You can send a manual position beacon under the Tools > Send Position Beacon menu option (or press the F1 key). Make sure a TNC or APRS-IS server is connected when you do. **Please do not enable Beaconing until you have set your own position on the map. To set your own position on the map: Drag the map to your location using the mouse (you can zoom out first and zoom back in), then, use SHIFT-Click (hold the SHIFT key while clicking on your location) on the Map and select "Set As My Position" from the menu that comes up, otherwise PinPoint APRS starts beaconing the default initial position (and/or pull stations from APRS-IS) which is in Castle Rock, Colorado, USA (near my home).**

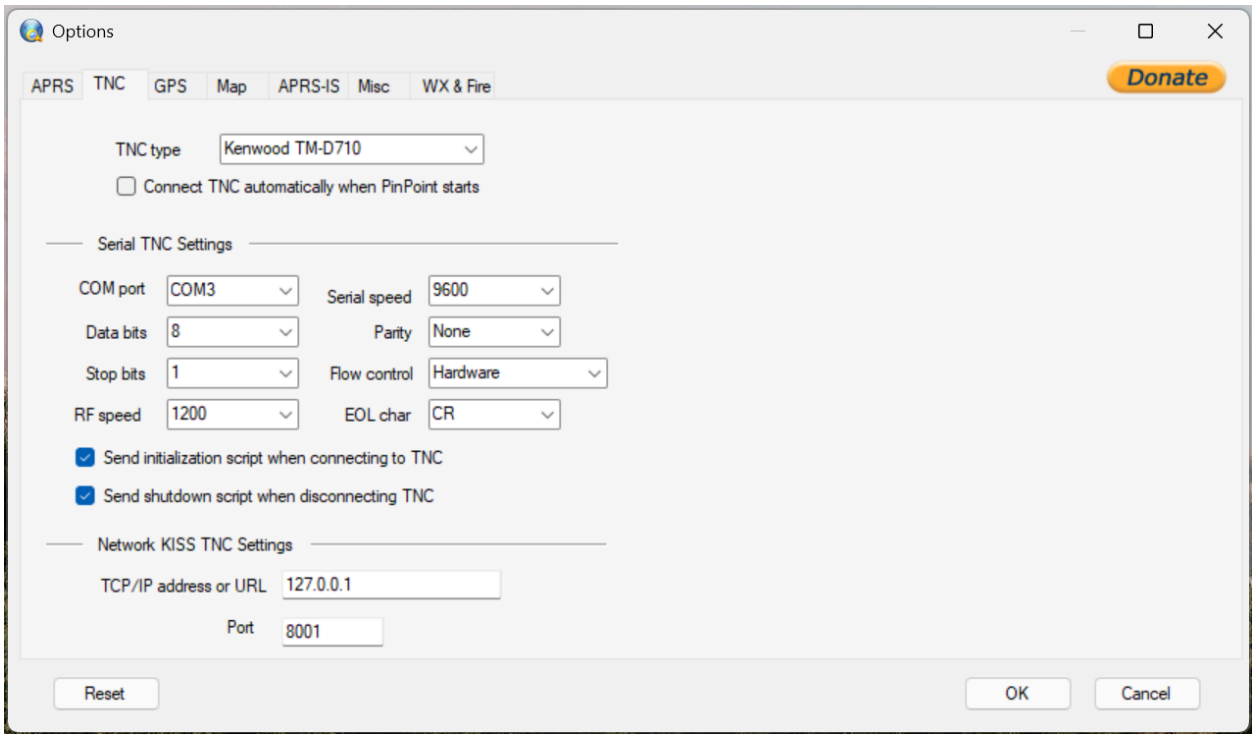
You don't need a NMEA compatible serial GPS to send out position beacons. Setting your default position on the map without a GPS can be done by dragging to map to your current position and clicking on the map with the SHIFT key held down, followed by the 'Set As My Position' menu option. PinPoint will remember that map position as your default starting position and will use that position when sending out beacons. If you're planning to be mobile while running PinPoint, you may want to consider using a NMEA compatible serial GPS to keep your position up to date on the map.

Tools > Options > TNC

While a TNC is not required, it will allow you to receive locally broadcast APRS packets via radio and will also allow you to function as an iGate, sending your received packets on to the APRS-IS servers for processing. If you are not using a TNC, you don't have to change any of the settings. If you only have one COM port on your system, PinPoint will assume that that's the one you want to use for a TNC. If you have multiple COM ports available, please select the appropriate port below.

If you have a network based TNC using the KISS protocol, please make sure your network device is not beaconing by itself if beaconing in PinPoint is enabled as well. You may configure the TCP/IP address and the UDP port number in the lower section.

If you wish to use KISS mode, please ensure your TNC hardware is already in KISS mode and keep in mind that you cannot use the DigiPeater option since that's only supported for TNC2 capable TNC's. It will not work, even if selected. DigiPeating using KISS TNC's is slated for a future release.



PinPoint currently supports the following TNC's or radios that have built-in TNC's:

- Kenwood TH-D7 (use this for TH-D72)
- Kenwood TM-D700 and TM-D710
- Kenwood TS-2000
- Kantronics KPC-3+
- Kantronics KAM-XL
- Byonics TinyTrak 4
- Serial KISS mode (use this for Kenwood TH-D74 and TH-D75 and other KISS TNC's)
- Network KISS mode
- Yaesu FTM-400 (read-only which is a shortcoming of the radio, use this for other Yaesu APRS radios as well)

PinPoint will be able to connect to your selected TNC at startup by selecting the option in this screen.

Do not select the 'Send startup script…" and "Send shutdown script…" if you are using a non TNC2 based TNC, so please disable it when using any serial or networked KISS TNC, or the Yaesu

FTM-400 or other Yaesu radios, which are all read-only since the built-in TNC won't accept external commands.

Direct support for soundcard TNC's is usually accomplished through Network KISS mode. The Kenwood, Kantronics and Byonics TNC's are supported in TNC2 (or TEXT) mode. When selecting a Kenwood, Kantronics or Byonics TNC, please make sure the TNC itself is not in KISS mode, which they are capable of. If your TNC is in KISS mode, please select the KISS mode option in PinPoint APRS.

The Modem RF Speed parameter will allow you to select the speed the modem will use over RF, not the local serial communication speed. This parameter is only supported for TNC2 type TNC's, not KISS TNC's

While not absolutely required if your TNC is already programmed correctly, the TNC2 mode TNC's use startup and shutdown files to send certain commands to the TNC to prepare them for APRS, including configuring your call sign, etc. You will find those files in the TNC directory where the PinPoint application is installed (usually under c:\program files (x86)\PinPoint APRS\TNC) and can be customized as needed.

If you have a TNC2 mode based TNC that is not listed, you could select the Custom option from the TNC type drop down and modify the custom startup and shutdown files with the correct commands for your TNC. This file can be found in the PinPoint application directory, under the TNC subdirectory.

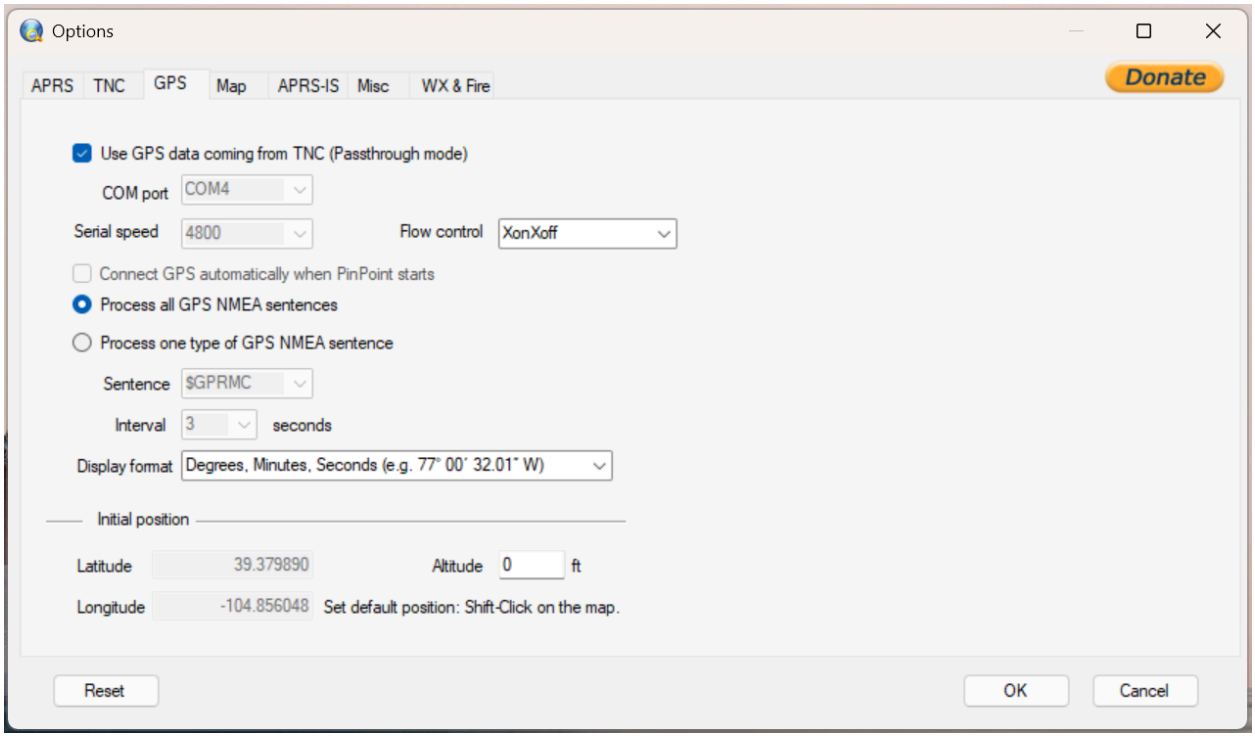
Support for the Yaesu FTM-400 and other Yaesu APRS capable radios is read-only, since the radio will not listen to any commands sent by PinPoint APRS, which is as it was designed by Yaesu. The Yaesu FTM-400 uses a non-standard APRS protocol. By selecting this as your TNC, you will be able to visualize and interpret all APRS packets received by your Yaesu APRS capable radio. Obviously make sure your Yaesu has APRS mode enabled.

Tools > Options > GPS

If you plan to be mobile and want others to be able to keep track of your position, you can add a GPS to PinPoint APRS that will keep your position current. Any NMEA compatible serial GPS will work just fine. PinPoint APRS recognizes the following NMEA sentences: $GPGGA, $GLGGA, $GNGGA, $GPRMC, $GLRMC, $GNRMC, $GPGSA, $GLGSA, $GNGSA and $PGRME (Garmin® proprietary).

If your radio has a built-in GPS (like a Kenwood TM-D710 with an **external** GPS) that sends GPS data over the same line as the serial TNC, you can select the 'Use GPS data coming from TNC' option. The Kenwood TM-D710G (with built-in GPS) will need an external GPS on its serial GPS port in the control head to make this work. The older Kenwood TM-D710 with external GPS will

work just fine. (This was a design decision by Kenwood not to allow the TM-D710G with internal GPS to put out NMEA sentences on the serial line from the radio, unless you use an external GPS).



Leave the way how PinPoint processes GPS sentences at the default setting unless you're on a very low CPU power computer and only want to deal with GPS updates every so many seconds rather than the normal 1 second interval. The "Use GPS data coming from TNC" option only works on selective TNC2 mode TNC's, like the Kenwood radios.

The Display format allows you to select the desired display format for GPS coordinates.

To set your own initial position it's easiest to drag the map to your desired start position and click on the appropriate position on the map while holding down the SHIFT key and selecting 'Set As My Position' from the pop-up menu. In the GPS screen you can set your correct Altitude when setting the position manually (without a GPS). The initial position will be your start position when you start PinPoint APRS. As soon as you connect a GPS, the coordinates sent by the GPS will update your position.

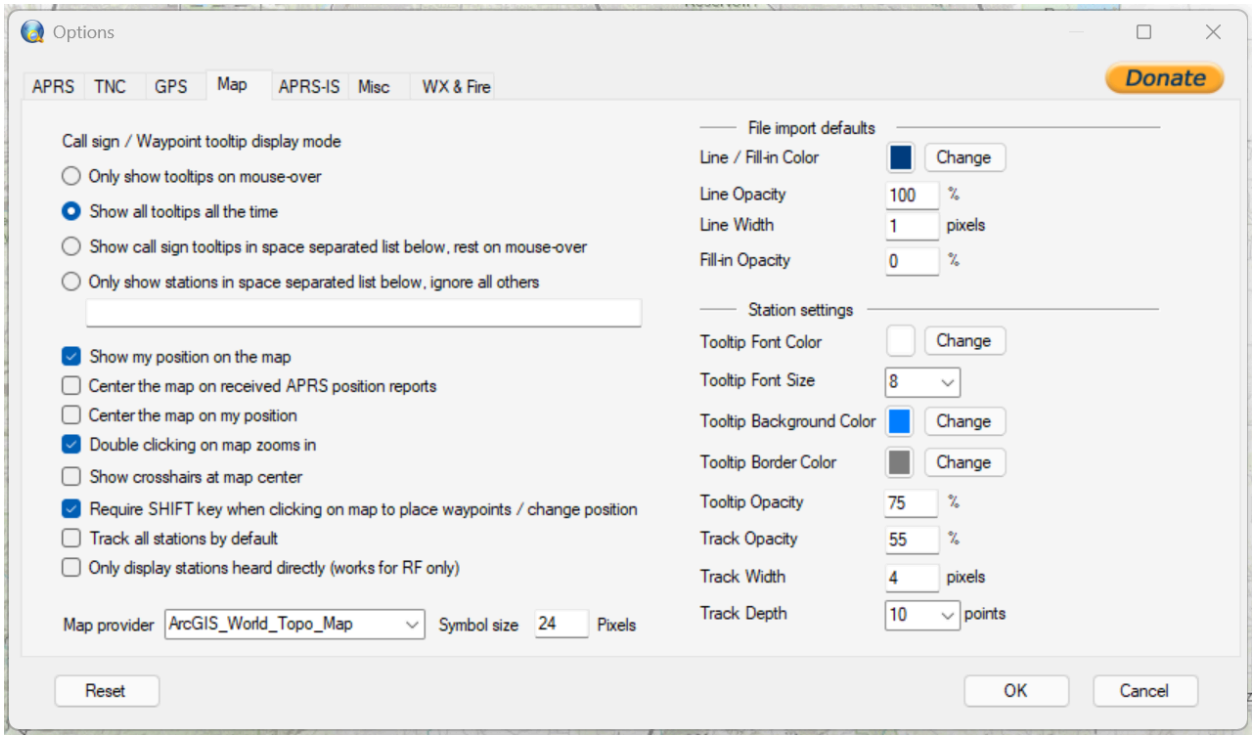
Tools > Options > Map

The Call sign tooltip display mode controls how APRS symbol call signs and other data on the map are made visible. The default is to show all tooltips (which contains the call sign and sometimes a

tactical call or other data) all the time. To declutter the map, you can select to only show those tooltips when you mouse over the APRS symbol, or you can enter a list of space separated call signs + SSID's whose tooltips you always want to see. The remaining stations will show a tooltip on mouse-over. In the list of call signs, you can use asterisks as wildcards, for example, AB0WV*, which will show all SSID's for call sign AB0WV, or if you're using tactical call signs for example, SAG* will include all tactical call signs starting with SAG.

You also have the option to completely ignore all stations except the ones listed in the space separated list of call signs by selecting the fourth option ("Only show stations in the space separated list below, ignore all others"). Only the listed call signs will be displayed on the map and in the Last Heard window. Wildcards (*) are also accepted for this option.

When using tactical call signs instead of amateur radio call signs, make sure to always put the FCC call sign in the Position Comment and ensure that the tactical call sign does not exceed 6 characters + optional SSID from 1-15. You can also assign your own tactical calls to stations on the map that are only visible to you. You can find more about that below, under "Clicking on a Station on the Map".



The option for 'Show my position on the map' shows or hides the station icon indicating your position on the map. Option 'Center the map on received APRS position reports' will center the map on every APRS position report received. The 'Require SHIFT key…' option is better left enabled, since just requiring a click to place waypoints or set your own position can sometimes interfere with clicking on symbols or dragging the map, but this can be useful when using a tablet.

The Map provider drop down box will allow you to select from a large number of map providers and map types, including topographic, satellite and hybrid maps. Not all of them are functional, which is a function of the mapping library that PinPoint APRS uses.

Maps are cached automatically in the background and are usable even when you are not connected to the Internet. To cache maps for offline use, make sure that you **drag the map around at all the various zoom levels and areas you need later while offline**, while connected to the Internet (if you anticipate being offline later). Maps are only cached for the Map provider you have selected (e.g. Google Maps, or OpenStreetMaps). WHen maps are being rendered on your screen while online, these maps will be stored in a cache database stored on your local computer. PinPoint APRS will first look for maps in the local cache before trying to download them.

The symbol size is the size of the APRS symbols shown on the map. The default setting is 24 pixels, which is a good size.

You can import your own waypoints and tracks on top of the map using one of the File import functions, which will read GPS Exchange Format (GPX) files, KML/KMZ files or GeoJson files. The File import settings allow you to customize the defaults for these imports, how they look on your map. Some of these files have their own settings. The settings in this menu are only used if the imported file doesn't have its own colors set, etc.

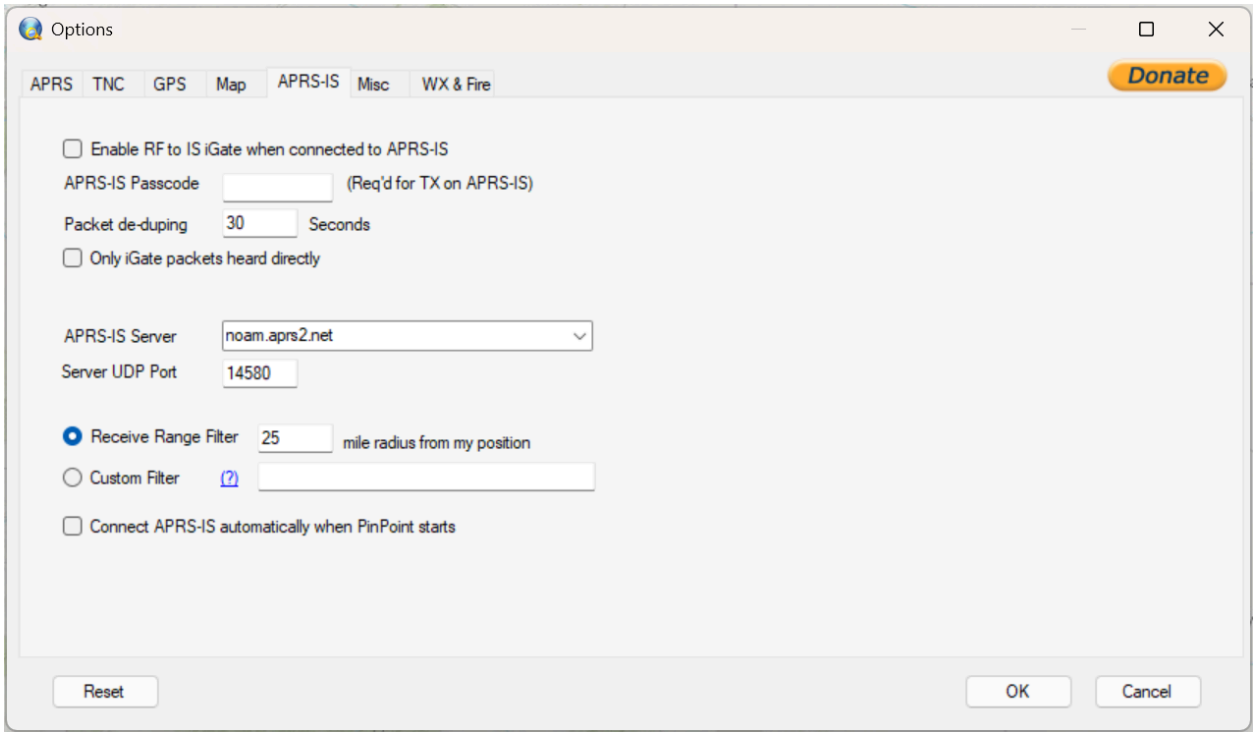
Under station settings, you can customize how a tooltip with a call sign shows up on the map.

You can track a station on the map by clicking on a station on the map and enabling the 'Tracking' option in the menu that pops-up. Every time the station moves, a line from the old position will be drawn to the new position, allowing you to track the station's path. The Station tracking settings will allow you to customize how the tracking lines show on the map, and how many lines it should draw before cleaning up old tracks.

You can also enable "Track all stations by default", which means that all mobile stations will show a track when moving.

Tools > Options > APRS-IS

APRS-IS (Automatic Packet Reporting System-Internet Service) is the common name given to the Internet-based network which inter-connects various APRS radio networks throughout the world (and space). APRS-IS is maintained and operated by volunteer Amateur Radio operators to provide world-wide capabilities to the Amateur Radio APRS RF networks and to promote the Amateur Radio service.



The APRS-IS servers take in APRS data from iGate applications all over the world. These iGates are receiving local data via radio and sending it on to the APRS-IS servers for processing and distribution. PinPoint APRS can act as a one-way iGate (from radio to APRS-IS only) and can also receive APRS data from the APRS-IS servers for display on the map, so you don't need a TNC, radio or GPS to see local APRS data by using the APRS-IS servers. **The default settings are sufficient to receive APRS data.**

To enable the iGate receive-only function, enable the checkbox and enter the APRS-IS passcode. To obtain an APRS-IS passcode, you can send an email to ab0wv@arrl.net or use online resources. The password is needed to **send** data to the APRS-IS servers (=iGate). You don't need a passcode if you just want to **receive** data from the APRS-IS servers. The passcode is a requirement from the APRS-IS stewards in order to **send** data. It tries to ensure only licensed radio amateurs can write to their servers. Please ensure you use a valid callsign to generate the passcode. Only include your callsign, not the SSID, when requesting an APRS-IS passcode. The passcode is not a function of PinPoint APRS, but it merely passes it on to the APRS-IS servers when requesting a connection.

The packet deduping function removes any identical packets received via radio as a result of other Digi's repeating the same packets you already received in an earlier transmission. This helps reduce strain on the APRS-IS servers and should be left at the default setting of 30 seconds.

APRS-IS servers receive a lot of duplicate packets from various iGates in the same area and must spend compute cycles getting rid of duplicate data. In an area that has many iGates, you can help

cut down even further on duplicate data by enabling the option that only iGates packets that your TNC heard directly, without a digipeater.

In the drop down, select the APRS-IS server that is most appropriate for where you live. If you live in North America (noam), then the default is fine. You can select an option from the drop down or type in your own.

The default Server UDP port should work just fine and should only be changed in cases where you need to use an alternate port.

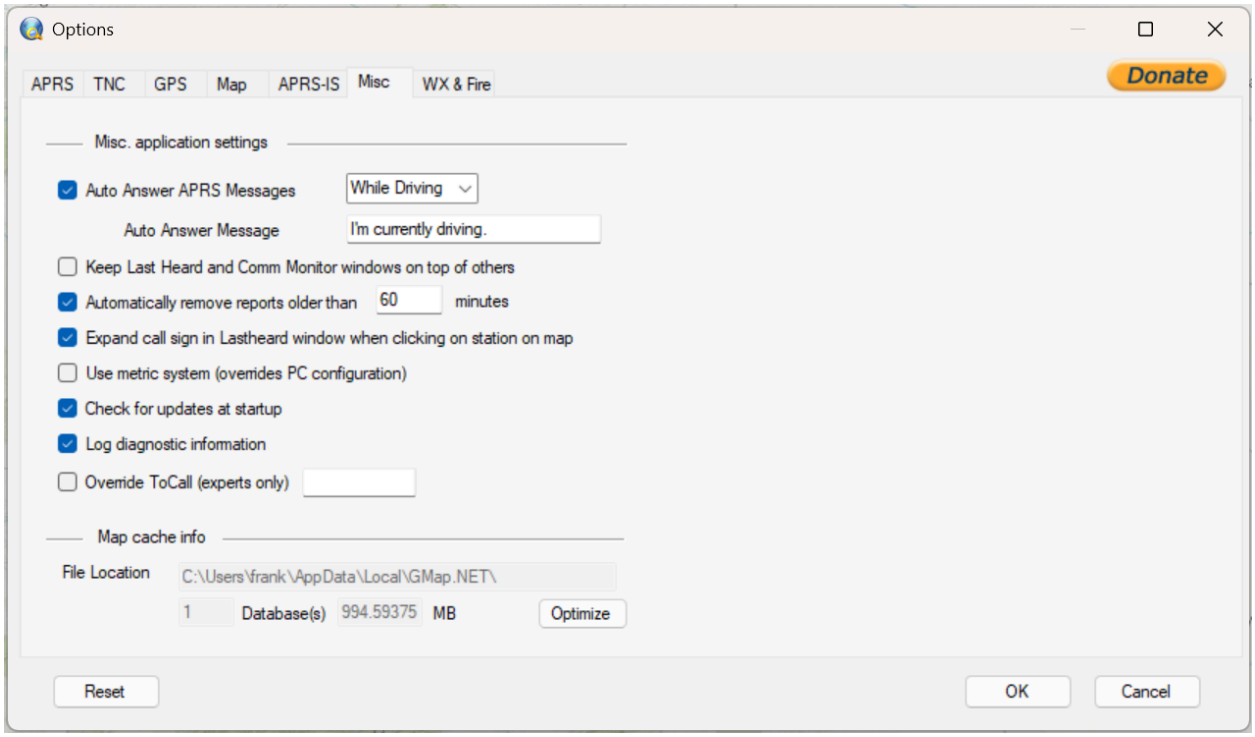
The Receive range filter will limit the APRS-IS server to only send APRS data for stations that fall in the entered radius from your current position. If you do not wish to see APRS-IS data on your map, but still want to iGate and use the radio's TNC data to show stations on the map, you can set the radius to zero. If you enter a very large radius, there's a chance your computer will get overwhelmed with APRS data from the APRS-IS servers and won't be able to keep up and run very slowly.

You can also create a custom filter for the data that the APRS-IS server sends to PinPoint APRS. Click on the question mark to open a webpage that explains the options available for creating custom filters within APRS-IS.

Enable the 'Connect APRS-IS automatically when PinPoint starts' option if you want to connect to APRS-IS at application start.

Tools > Options > Misc

PinPoint APRS supports sending and receiving messages via APRS. If you are driving while someone sends you a message, PinPoint APRS can automatically send a reply if needed.



Some people like to keep the Last Heard and Communications Monitor on top of the map screen. The corresponding option in the Miscellaneous menu allows you to keep those windows on top, even if you click on the map window.

PinPoint APRS has the ability to clean up old position reports. PinPoint APRS will remove the symbol from the map and remove the call sign from the Last Heard window if a station hasn't been heard from in the number of minutes defined under this option.

If you click on a station on the map, PinPoint APRS will expand the details in the Last Heard window for that station by default. That behavior can be turned off on the Miscellaneous tab.

PinPoint APRS will switch to metric mode if it detects that your PC runs in metric mode, but you can force it to use metric mode regardless of your PC setting by enabling the 'Use metric system' option. If you disable this option, it will run in whatever mode your PC uses.

By default, and when an Internet connection is available, PinPoint APRS, at application startup, will check if there is an update available. If an update is available, you have the option to download it by clicking the link at the bottom of the map screen (or just go to https://pinpointaprs.com/download.html to download it). If you don't wish PinPoint to check for an update every time it starts, disable the option in this screen. If you have downloaded a new version of PinPoint APRS and you want to update your current version, just exit Pinpoint APRS first, find the downloaded file in your Downloads directory, double click it and follow the prompts.

You can turn logging of diagnostic information off if you run low on diskspace.

The Override ToCall option is for APRS experts who want to replace the standard APIN21 or APIN22 ToCall (which is a piece of information that identifies the software that was being used to send the APRS packet) with something custom. For normal operation, please don't change this.

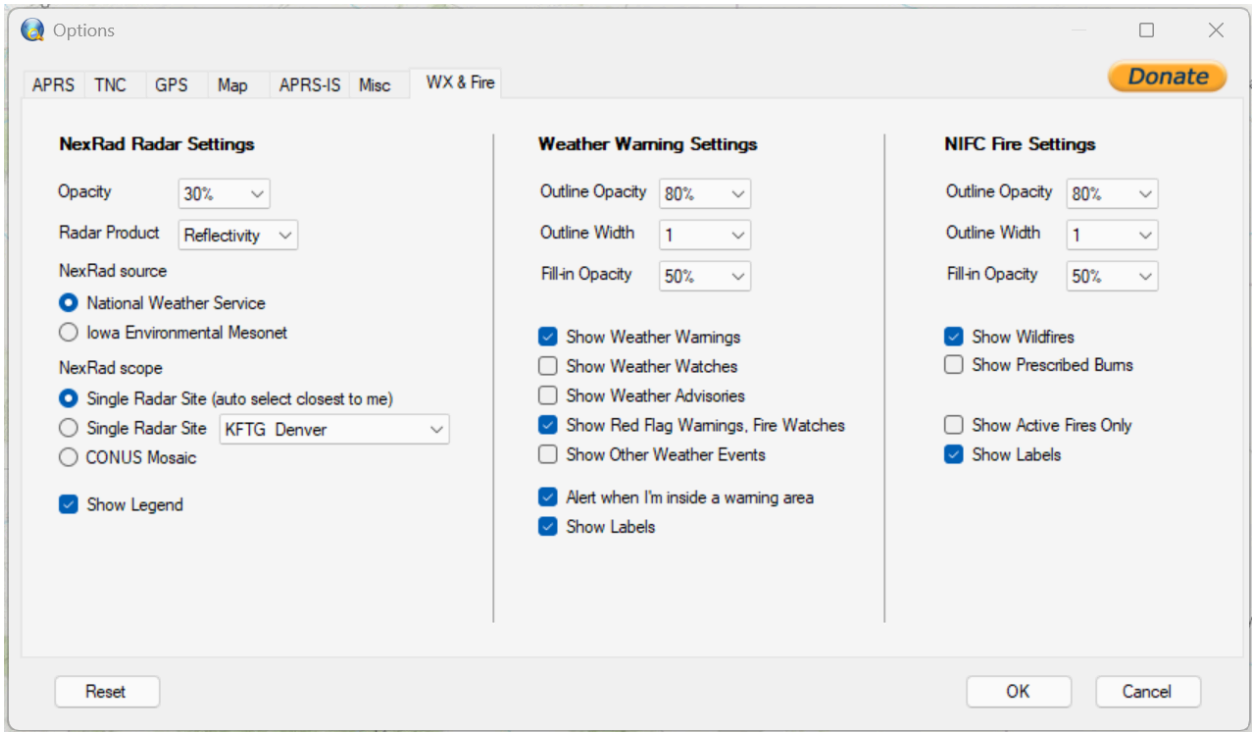
The map cache info section shows some information about the location and size of your map cache database. You can share this database with someone else in the field if they don't have Internet access available, and they will immediately have access to your cached maps. Just find the cache database called Data.gmdb in one of the subdirectories (usually C:\Users\{username}\AppData\Local\GMap.NET\TileDBv5\en) onto a thumb drive or external hard drive, move it to the other computer and use the File > Import Map Cache to import Data.gmdb onto the other computer.

The Optimize button will optimize your local map cache database, so it cleans out unused data and shrinks the file down, if possible.

Tools > Options > WX & Fire

This screen provides for configuration of situational awareness tools, like NexRad Weather Radar, Weather Warnings and Wildfire related information, which can be overlaid on the map screen.

These weather & wildfire related features are currently only available in or near the USA, since only USA based sources were being used for rendering weather data on the map, which means your APRS Position must be in or near the USA for you to be able to use these features.



NexRad Radar Settings

NexRad Weather Radar is enabled & disabled through the Map menu on the main screen. These are the available settings. If you're not as familiar with weather radar, just leave the default settings and everything should work just fine.

Opacity is the opacity of the NexRad weather radar data that is overlaid on top of the map. 30% is the default, which works quite well, but you can customize as needed. 0% is fully transparent, so you won't actually see any radar tiles. 100% is fully opaque, so nothing will be visible underneath the radar tiles (like the map, APRS stations, etc).

Radar Product: Reflectivity measures the strength of the radar signal returned from precipitation, indicating its intensity and type, while Velocity shows the speed and direction of moving objects, like wind, by detecting changes in the radar signal's frequency due to the Doppler effect, useful for spotting a rotating mass of air or tornado's.

The **NexRad source** determines which weather source PinPoint APRS will connect to. If you're not sure about the difference, leave it at the default setting.

The **NexRad scope** has three options:

- Single Radar Site (auto select closest to me) will automatically select the NexRad radar that is closest to your position on the map, which is usually fine.
- Single Radar Site with a dropdown selection for manually selecting the NexRad radar site you would like to connect to.

- CONUS Mosaic shows weather for the entire USA, which is stitched together from all the radar sites in the USA. Only useful for when you're tracking weather over a very large area.

Show Legend will show the color scale on the map bottom right in dBz for NexRad weather radar, for reference purposes only.

Weather Warning Settings

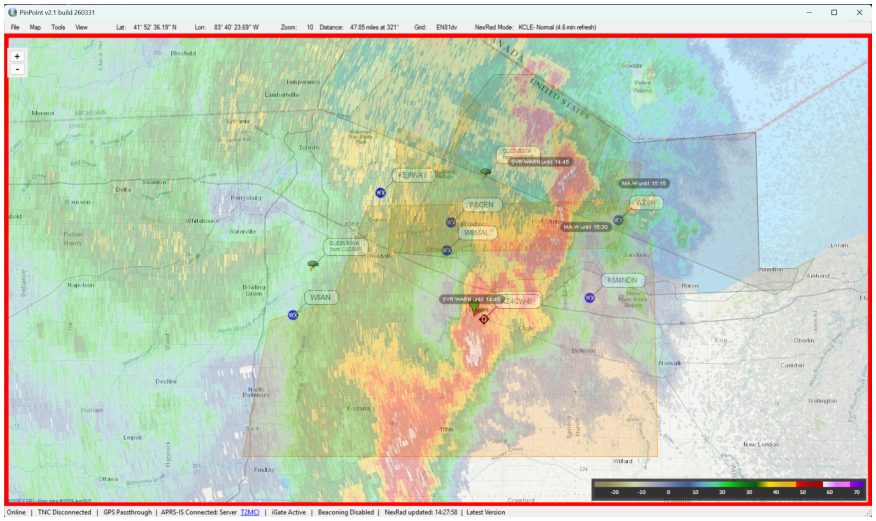
This feature shows polygons on the map indicating various weather & fire warnings, watches, etc, across the entire USA. This feature is enabled & disabled using the Map menu on the main screen.

Outline Opacity controls the opacity of the perimeter of the weather warning, while **Outline Width** determines how many pixels wide the perimeter is drawn.

Fill-in Opacity controls the opacity of the area inside the perimeter of the weather warning. 0% shows no fill-in, whereas 100% is completely opaque.

The next section allows you to control what kind of warnings, watches, etc, to show on the map. Just enable & disable what you would like to see.

Alert when I'm inside a warning area, when enabled, will draw a red border around the map if you move into a weather warning area or a weather warning is declared at your position. An example is shown below. The red border will clear if the warning is called off, or you move outside of the warning area.



Show Labels controls whether or not a label with the type of warning and expiration time is shown for the warning area. You can also click on any warning area and get more information about the warning itself.

NIFC Fire Settings

NIFC is the National Interagency Fire Center (NIFC) and serves as the U.S. support center for wildland firefighting, coordinating resources and efforts among multiple federal and state agencies. You can display current wildfires on the map using the corresponding feature under the Map menu on the main screen. Wildfires that have a known area or polygon will show the area of the fire on the map, otherwise a circle is drawn corresponding to the size of the fire. Fires that are 100% contained are shown in gray, whereas fires that are not yet 100% contained (or unknown containment) are shown in red.

Outline Opacity controls the opacity of the perimeter of the fire area, while **Outline Width** determines how many pixels wide the fire perimeter is drawn.

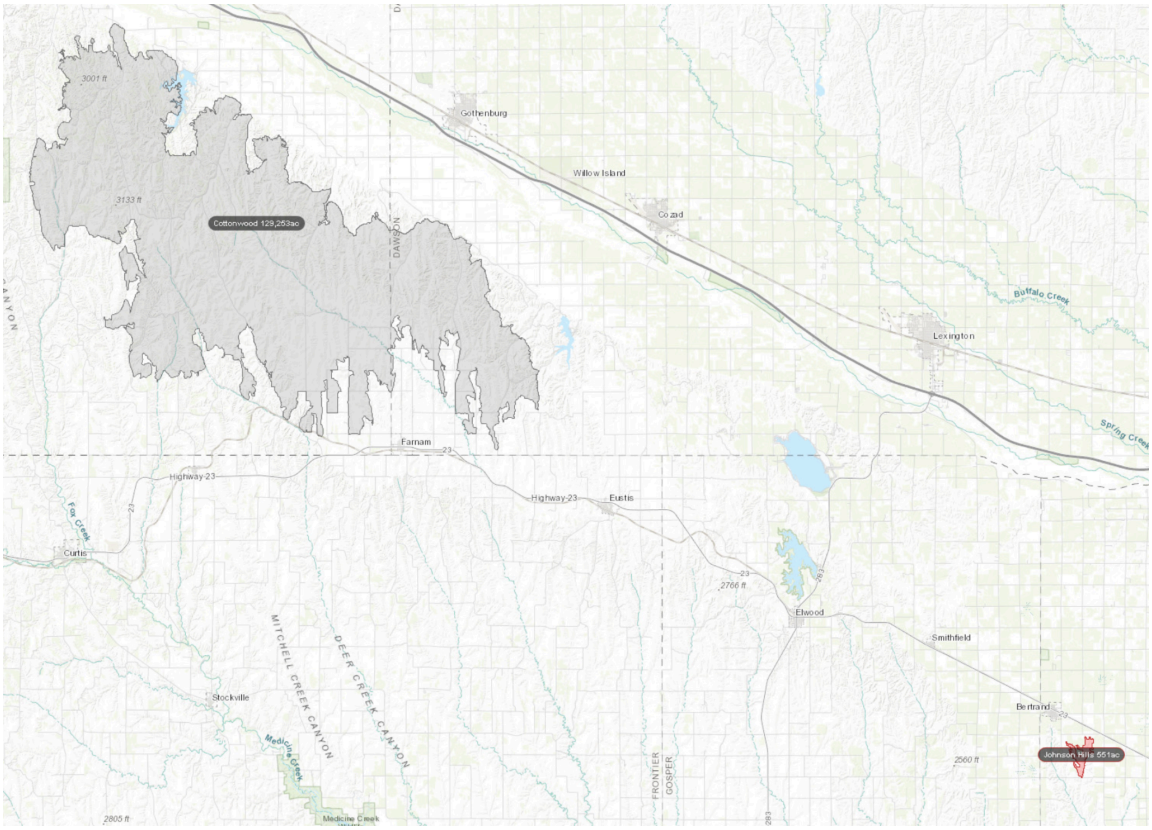
Fill-in Opacity controls the opacity of the area inside the perimeter of the wildfire. 0% shows no fill-in, whereas 100% is completely opaque.

The next section allows you to control what you would like to see on the map, wildfires and/or prescribed burns.

The **Show Active Fires Only** checkbox allows you to control whether or not to display fires that have 100% containment.

Show Labels controls whether or not a label with the wildfire name and the number of acres is shown for each fire that is greater than 100 acres. Fires that are less than 100 acres in size do not show a label by default, but you can click on any wildfire or prescribed burn and get more information about the event.

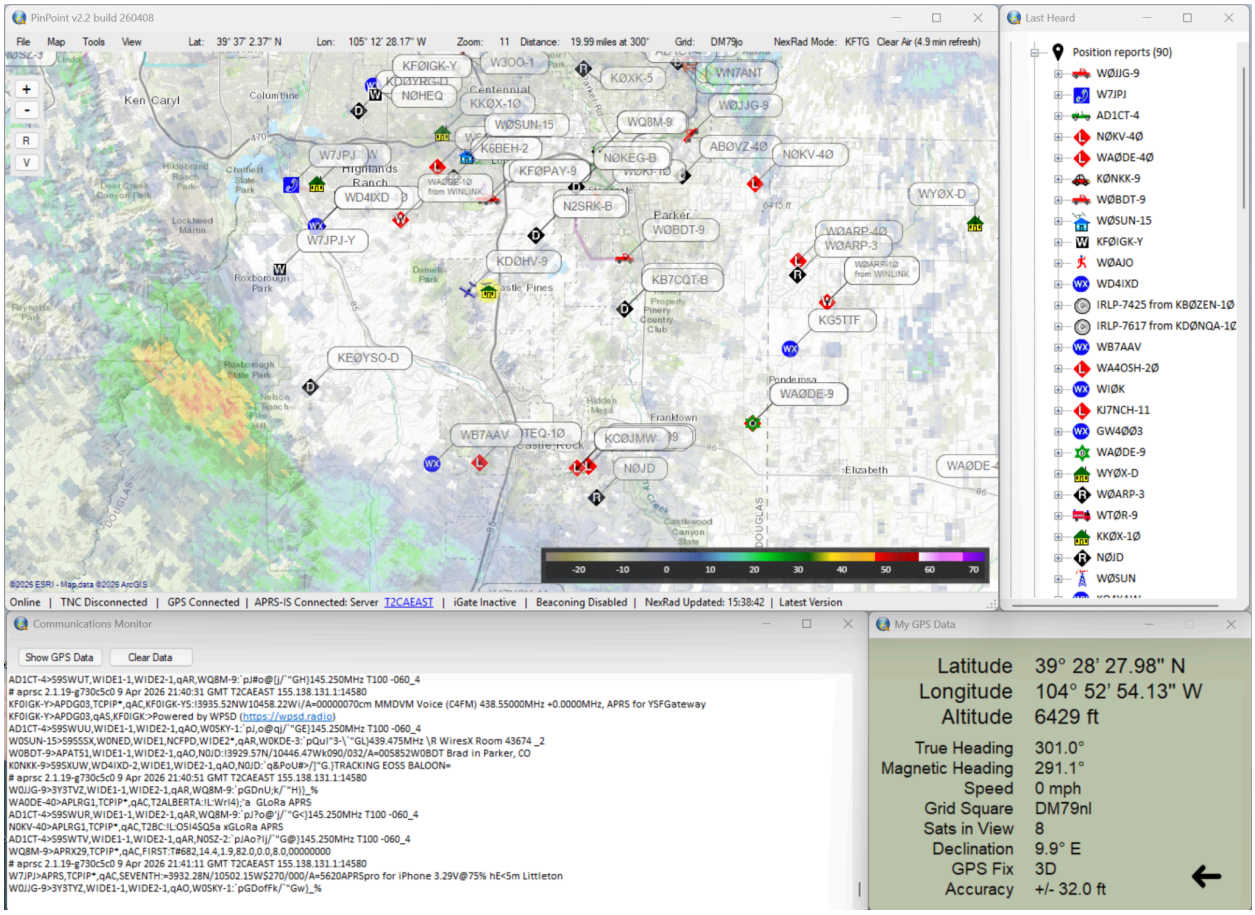
Below is an example of what the wildfire map could look like with a very large, but 100% contained wildfire on the left and a smaller but active wildfire on the right. Clicking on the wildfire polygon or label will give you more information about the wildfire.



The Main Application

PinPoint APRS uses four separate windows to interact with the user, that can be placed anywhere on the screen or across multiple displays. PinPoint APRS will remember the placement of the windows for next time you start the application.

The first thing you should do after setting up the Options menu for the first time with your call sign, etc, is to set your own position on the map: Drag the map to your location using the mouse (you can zoom out first and zoom back in), then, use SHIFT-Click (hold the SHIFT key while clicking on your location) on the Map and select "Set As My Position" from the menu that comes up, otherwise PinPoint APRS starts beaconing the default initial position (and/or pull stations from APRS-IS) which is in Castle Rock, Colorado, USA (near my home).



Map

The map in the main window shows all position reports, tracks, direction of travel for vehicle APRS symbols and controls the other windows via the menus along the top.

- The latitude and longitude displayed at the top of the Map window is the position of the mouse on the map.
- The Zoom indicator shows the current Zoom level.
- The Distance shown is the distance and heading from your current position on the map to the position of the mouse cursor on the map.
- The Grid is the ham radio grid square, also known as a Maidenhead Locator. It's a system used by amateur radio operators to describe their geographic location using a combination of letters and numbers. Each grid square typically measures 1° of latitude by 2° of longitude, allowing operators to easily communicate their location during radio transmissions.
- When NexRad Weather Radar is enabled, NexRad Mode shows the current mode the active weather radar is in, which usually dictates how fast the weather radar is updated on screen. This is only updated for NexRad radar systems that support this feature from the National Weather Service (NWS). You will notice that the NexRad radar will start to update more frequently when there is severe weather nearby.

Along the top you will find the following menu items and subitems:

- **File**
  - **Import GPX File** - Draws tracks and waypoints from a GPX formatted file (GPS Exchange Format) on your map. You can edit GPX files before loading using an external application like MapSource from Garmin. You can do some minor edits (like editing and adding waypoints) inside of PinPoint APRS (SHIFT click on the map to add a waypoint. Click on a waypoint to edit or remove it).
  - **Import KMZ/KML File** - Draws tracks and waypoints from a KMZ or KML formatted file on your map, like used in the Google Earth application
  - **Import GeoJSON File** - Imports GeoJSON data. GeoJSON is an open standard format designed for representing simple geographical features and their non-spatial attributes, based on the JSON format. It supports various geometry types, including Point, LineString, and Polygon, and is commonly used for encoding geographic data structures.
  - **Import Map Cache** - If you find yourself in the field without Internet access and you didn't get a chance to cache the maps you need using your Internet connection at home, you can import someone else's map cache. Copy the map cache file from the other person onto a memory stick and import it. The location of the Data.gmdb file can be found at the bottom of the Options screen under Tools > Options > Misc. and is usually something like C:\Users\{username}\AppData\Local\GMap.NET\TileDBv5\en
  - **Load Simulation** - Allows you to simulate receiving APRS packets through TNC or APRS-IS by playing back APRS packets contained in a text file. Very useful for testing purposes.
  - **Save Current Map as Image** - Allows you to save a copy of the current map view as a graphic image, for instance for sharing and annotation purposes.
- **Map**
  - **Clear Tracks and Waypoints** - Removes all imported and placed waypoints and tracks from the map.
  - **Clear Stations** - Remove all received position reports from the map.
  - **Center Map on My Position** - Center the map on your last reported position. Sometimes useful when you've been slewing/panning the map a lot and lost your own position on the map.
  - **Show (Hide) Weather Radar** - Overlays the NexRad weather radar data as configured in Tools > Options > WX & Fire settings. The radar will update automatically when this is enabled. Default update frequency is 5 minutes. When using NWS as the source and using a Single Radar Site mode (not the CONUS Mosaic setting), the update frequency will update automatically based on what the NexRad radar in question is doing (frequency usually increases when severe weather starts popping up). **Tip:** Adding weather radar to an otherwise already colorful map can make it hard to interpret. The ArcGIS_World_Topo_Map (select under Tools > Options > Map, is more plain with less color, making it an ideal map to overlay weather radar, warnings and wildfire data.

- If you click **Show Weather Radar** and nothing shows up on the map where you expect to see it, or it's showing outdated radar imagery, it's likely that the selected radar site is offline. If the radar imagery is more than 45 minutes old, you will receive a pop-up message indicating that the selected radar site is offline, possibly for maintenance and to select a different radar site.

- **Select Weather Radar Site** - This menu option becomes active when the Weather Radar is active and it is in Single Radar Site mode. By clicking this, weather radar data is removed from the map and all radar sites in the USA will be shown on the map as small rectangles with their identifiers. Clicking any of the shown radar sites will make that radar site active (and remembered for next time) and weather radar will be redrawn from the new radar's perspective. If you select a radar site that is inactive, PinPoint APRS will warn you.
- **Show (Hide) Weather Warnings** - This feature shows polygons on the map indicating various weather & fire warnings, watches, etc, across the entire USA. Clicking on a warning area shows more information about the weather event. Labels show the type of weather warning and the time the warning expires. Weather warnings are updated every 5 minutes, except if NexRad weather radar goes into SAILS mode, when the weather warnings update frequency increases to every 2 minutes.
- **Show (Hide) Wildfires** - Shows all wildfires currently reported by NIFC on the map for the entire USA. Wildfires that have a known area (or polygon) will show the actual area of the fire on the map, otherwise a circle is drawn corresponding to the size of the fire. Fires that are 100% contained are shown in gray, whereas fires that are not yet 100% contained (or unknown containment) are shown in red. Clicking on a wildfire label or polygon/circle will show more information about the fire in question. The label indicates the fire name and the last reported size in acres. Wildfires are updated every 5 minutes with the latest information from NIFC. Some wildfires are only updated every few days, some more often. This is a function of NIFC.

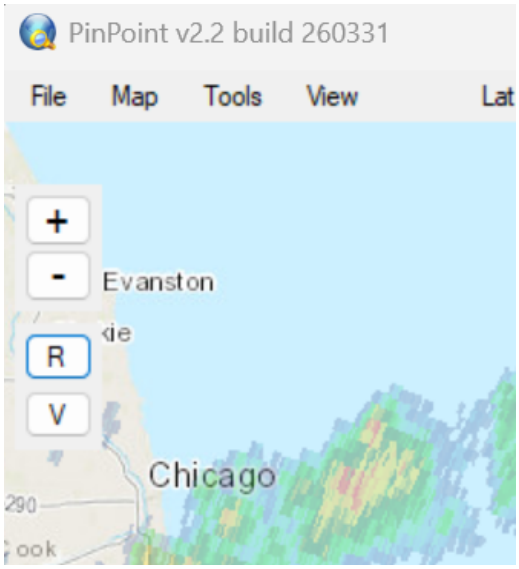
- **Tools**
  - **Connect TNC** - Connects to the serial or network TNC you defined in the Tools > Options > TNC menu.
  - **Connect APRS-IS** - Connects to the APRS-IS server with the parameters you defined in the Tools > Options > APRS-IS menu. If you don't want to receive APRS-IS packets and want to use your local TNC to receive APRS packets while iGate-ing to the APRS-IS servers, set the receive range radius to zero. Once you are connected to APRS-IS, you will see the actual server you're connected to at the bottom of the Map screen, underlined in blue. You can click on this link, which opens a browser window to that server's status screen where you can see your iGate statistics.
  - **Connect GPS** - Connects to the separate external GPS you defined under Tools > Options > GPS. If your TNC has a built in GPS or is passing GPS data through the

TNC's serial connection to your computer, make sure to enable the 'Use GPS data coming from TNC' option under Tools > Options > GPS. Most TNC's are not capable of this.

- **Send Position Beacon** - Sends a manual APRS beacon to all your currently connected devices (serial TNC and/or APRS-IS) based on your current position. You can also press the F1 function key as a shortcut. Make sure your position on the map has been correctly set using either a connected GPS or SHIFT-Clicking on your position on the map, and selecting "Set As My Position" before you start beaconing.
- **Re-test Internet Connectivity** - If you started PinPoint in offline mode, where Internet access is not available, retesting connectivity after restoring Internet access will prompt PinPoint to go to online mode, pulling down the latest maps into the cache if needed. PinPoint will test automatically to see if it is connected to the Internet every minute.
- **Mute / Unmute** - Mutes and Unmutes PinPoint's built in sounds. You can create your own sounds by replacing the *.wav files in the PinPoint application directory, under the Sounds subdirectory.
- **Options** - Brings up the PinPoint configuration window. You can also use the F2 function key as a shortcut. Keep in mind if you have connected a TNC, GPS, APRS-IS under the Toosl menu, or are showing Weather Radar, Weather Warnings or Wildfires under the Map menu, that any changes you make in Options, once you click OK, may not take immediate effect and may require you to disconnect and reconnect the TNC, GPS, APRS-IS under the Tools menu, or Hide and then Show the Weather Radar, Weather Warnings and Wildfires under the Map menu.

- **View**
  - **Last Heard, GPS and Comm Monitor Window** - Hide / Show the respective windows
  - **Events Window** - The events window is used for displaying events that happened while PinPoint was running. Certain types of errors and other events are listed in the Events window so that the user is not required to click an OK button and block the entire PinPoint application as a result. The Events window will pop-up on its own if certain events or errors are being written to it.
  - **Map Scale** - Show / Hide the map scale. While the map scale feature doesn't look very good in its current incarnation, it can give the user a feeling for scale.
  - **Save Current Window Sized and Positions** - Saves the current window sizes and positions for future use. PinPoint also saves window sizes and positions automatically if the application is ended via File > Exit.
  - **Reset Window Sizes and Positions** - This option will reset the window positions and sizes to what they were the first time PinPoint APRS was started. If a window is no longer showing up (happens sometimes when switching from a multi-monitor setup to a single monitor setup, or unplugging an external monitor on a laptop), you can use this reset option to get back to normal.
  - **Credits, Copyright and License** - A list of credits and contributors, copyright notices and the license in effect for the PinPoint APRS application.

- **+/- and R/V buttons top left on the map screen**
    - The + and - buttons top left will zoom in and out of the map. You can also use your mouse wheel to zoom in and out of the position where your mouse pointer is on the map.
    - The R and V buttons show up when you are in Single Radar Site mode and you have Show Weather Radar enabled on the map. You can use these buttons to switch between the Reflectivity and Velocity radar products, which can be useful when trying to spot a tornado, mesocyclone or otherwise rotating mass of air. The screenshot below shows what these buttons look like.



Last Heard

Provides the details for all received APRS messages and position/weather reports. Position reports received via radio and APRS-IS are displayed in different sections.

Communications Monitor

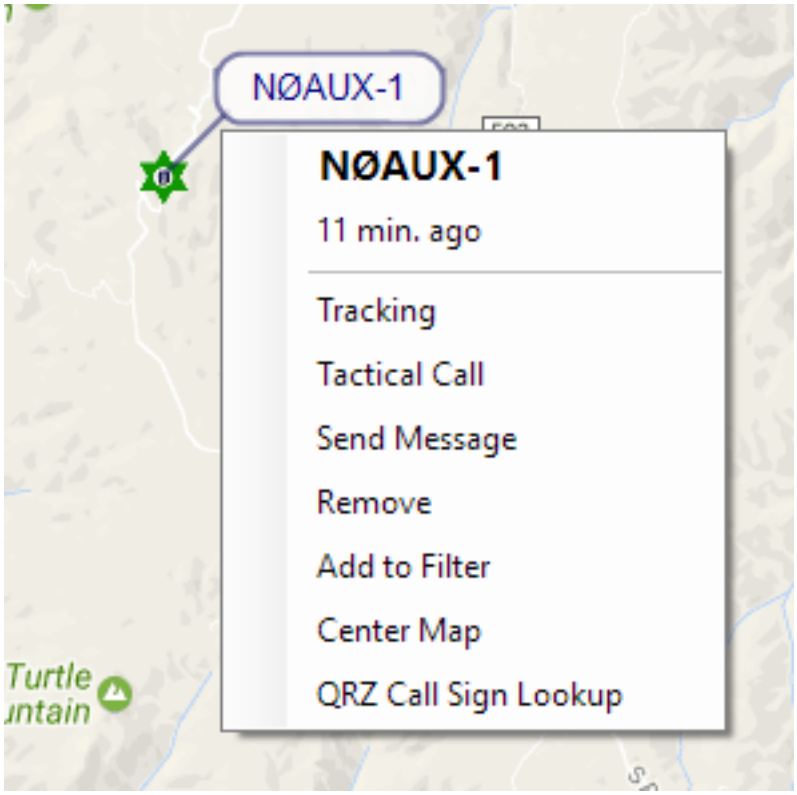
Shows raw data being sent to and received from the TNC or APRS-IS (GPS data also if using GPS pass through capabilities. If you click the Show GPS Data button, the received GPS data will also be displayed in the Communications Monitor window and can be helpful for troubleshooting purposes.

My GPS Data

If you connect a GPS to PinPoint, this window shows all the available details related to your position, speed, heading, etc.

Clicking on a Station on the Map

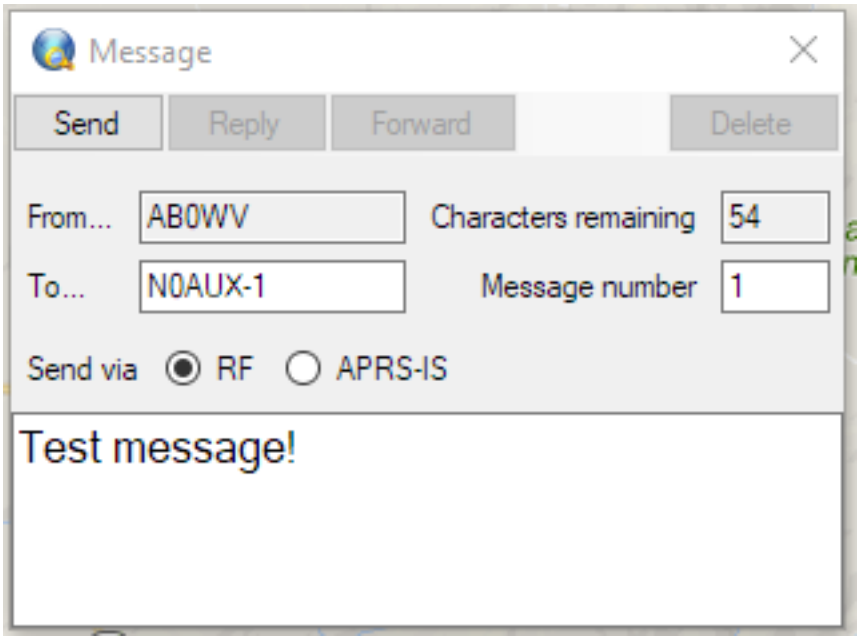
When you click on a station on the map, the following context menu pops up.



Mobile stations can be tracked by enabling the Tracking option. To turn Tracking off, click on the station again and click the Tracking option to turn it off.

Sometimes you want to keep track of a station by its Tactical Call (example: “Checkpoint 1”) and track them as such on the map. If you give a station a tactical call, the tactical call along with the call sign will be shown in the tooltip going forward. This tactical call will only be used internal to PinPoint APRS, so is not shared with anyone else.

The Send Message option allows you to send the station an APRS message. APRS messages are not guaranteed delivery. You can select whether you want the message to be transmitted via radio (“RF”) or APRS-IS. Make sure you are connected to a TNC or APRS-IS to send the message via the selected method first.



The Remove option removes the station from the map and from the Last Heard window.

The “Add to Filter” option will add the currently selected station on the filter list as seen in the Tools > Options > Map screen. If the filter is not turned on yet, all station tooltips not in the filter list will be hidden and shown only on mouse-over. If a station has already been added to the filter, this option will read “Remove from Filter”.

The “Center Map” option will center the map on the currently selected station.

The “QRZ Call Sign Lookup” option will open a web browser window and perform a lookup on the QRZ.com website to find the details associated with the currently selected station, including name, address, email address, etc. You will need a valid account on QRZ.com in order to use this function.

Donations

Donations are always welcome and will help with the expenses related to development of the software. You can make a donation by clicking the Donate button in the Tools > Options menu, or on the website at https://pinpointaprs.com. You can use any debit card or credit card and are not required to have a PayPal or Venmo account, but if you do, PayPal and Venmo are both accepted as well. You can also send donations directly with either PayPal or Venmo and send it to @frankwatervoort. Please consider making a donation if you like PinPoint APRS. Thank you in advance!

Credits, Attributions, Copyrights

A big Thank You to the Amateur Radio Emergency Services (ARES) group of Douglas and Elbert Counties in Colorado, USA, where several members helped me test PinPoint APRS extensively before releasing it to the world. You can read more about our group at http://www.aresdec.org.

APRS® is a registered trademark of APRS Software and Bob Bruninga, WB4APR (SK). Visit http://www.aprs.org for more information. Thank you, Bob!

A huge *Thank You!* to Kenneth Finnegan for hosting the PinPointAPRS.com website. I really appreciate it and the work you do to keep everything operational.

The Greatmaps .NET library version 2.1.7 used for rendering the various maps from a number of map providers is maintained by Jurgen De Leon Rodriguez and the license and software can be found here: https://github.com/judero01col/GMap.NET/wiki/License. Thank you!

The APRS® symbol set was sourced from Heikki Hannikainen, OH7LZB, author of http://aprs.fi. More copyright information regarding the symbol set can be found here: https://github.com/hessu/aprs-symbols. Thanks Hessu!

A big *Thank You!* to Advanced Installer for making their product available free of charge. Their website can be found at https://www.advancedinstaller.com/

NEXRAD Weather Radar data and Weather Warnings provided by NOAA/National Weather Service (opengeo.ncep.noaa.gov) and Iowa Environmental Mesonet (mesonet.agron.iastate.edu). NWS data is in the public domain. Thank you!

Wildfire Perimeter Data provided by the National Interagency Fire Center (NIFC) and Wildland Fire Interagency Geospatial Services (WFIGS). Thank you!