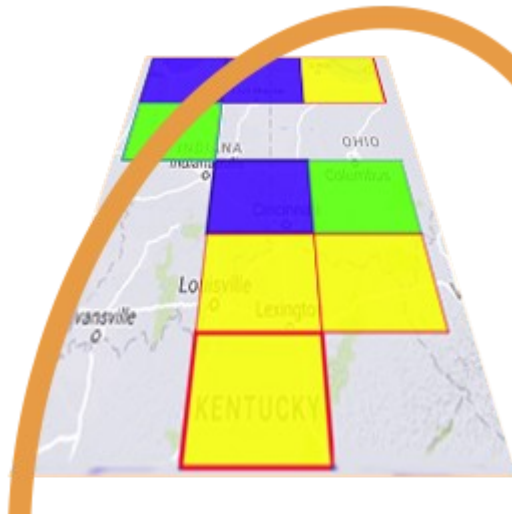


GridTracker

Windows/Mac

Linux/Rpi

v.1.18.0406



www.tagloomis.com
gridtracker@gmail.com
Freenode IRC #gridtracker
GridTracker on Discord

(c)2018 Tag Loomis
(c)2018 Henry Forte

Table of Contents

RELEASE NOTES.....	5
WHAT IS GRIDTRACKER?.....	6
INTRODUCTION.....	7
SETTINGS.....	10
General.....	10
Application Status.....	11
Receive UDP Messages.....	11
Forward UDP Messages.....	11
Center Gridsquare.....	11
Share On-Air Status.....	12
Check For New Version.....	12
Clear All Settings.....	12
AUDIO.....	13
Text-to-speech Voice.....	13
Speech Rate.....	13
Speech Pitch.....	13
Speech Volume.....	13
Phonetics.....	14
File Audio Volume.....	14
MAP.....	15
Current Mode.....	15
Current Map.....	15
Show Legend.....	15
Grid Decay Rate.....	16
Path Width.....	16
Clear on Band Change.....	16
Hue.....	16
Brightness.....	16
Invert.....	16
Effect.....	16
LOGGING.....	18
Logtype.....	18
Menu.....	18
Startup.....	18
Details.....	18
Band.....	19
Test.....	19
Test Result.....	19
N1MM Logger.....	19
Log40M Logger.....	19
ALERTS.....	20
Alert Type.....	20
Value.....	20
Callsign.....	20

Gridsquare.....	20
Notify Type.....	21
Text-To-Speech (TTS).....	21
Media File.....	21
Visual Popup.....	21
Repeat.....	21
QSO and QSL lock.....	22
CHANGES.....	23
ABOUT.....	24
MAP AND ACTIVITY PANEL.....	25
Grids.....	25
QSO.....	25
QSL.....	25
LCD.....	25
Decodes.....	26
Last.....	26
DXCCs.....	26
WORKED.....	27
CONFIRMED.....	27
CALLSIGNS.....	27
HISTORY.....	28
Even Cycles.....	28
Odd Cycles.....	28
Average.....	28
Sum.....	28
Clear.....	29
Export.....	29
UNKNOWN DECODES.....	30
FUNCTION ICONS.....	31
Shadow Toggle.....	31
Push Pin.....	31
Path Markers.....	33
Maidenhead.....	35
Show Stats.....	35
Settings.....	35
Load Adif.....	35
Opening ADI(F)s.....	36
Select band to view.....	37
QSO and QSL Lock.....	38
Audio Mute.....	38
Conditions Information.....	39
PSK24.....	39
QRX LotW and Club.....	39
On-Air Flag.....	40
ACTIVITY AND STATUS.....	41
status panel.....	41
station information (QTH).....	43

Legend.....	43
UDP traffic.....	44
GridTracker version.....	44
Copying Grid Contents.....	47
Opening Grid Lookup Window.....	48
call sign lookup.....	49
Grid Information.....	50
EDITING SPEECH JSON FILES.....	53
Phonetic Changes.....	53
Geographic Nameplace Changes.....	54
NOTES on WSJT-X JTDX and PSKReporter.....	56
PLATFORM NOTES.....	58
Windows.....	58
Editing JSON Files.....	60
Windows 10.....	60
Mac.....	61
Debian.....	62
Raspbian.....	63
phone.json.....	64
enums.json.....	65
CHANGELOG.....	73
HARDWARE and SOFTWARE.....	78
Tested Platforms:.....	79
Other.....	80
Additional Credits.....	80

RELEASE NOTES

In this release, the entire menu system has been rewritten to reduce the number of icons on the sidebar, and to consolidate all settings into a tabbed menu system.

UDP MultiCast has been implemented to compliment and expand on the current UDP forwarding to allow more options when setting up additional programs such as logging or other.

A couple display options for the sidebar were added to make it less busy, or to show the map in full screen (kiosk) mode.

At the time of writing, Germany and France have been added to the list of countries with individual states/provinces added. There may be more by the time this release is final. Or not. We're adding them as time allows.

Current Condition load times have been made dramatically faster. For those with slow or metered connections, you should see an immediate improvement.

Country flags added to popup tables.

Mouse left/right click behavior changed to make callsign lookup easier.

Time display now shows either local or UTC time.

The change to a tabbed menu and information system made a (mostly) complete rewrite of this document necessary. Sections have been moved to a hopefully more logical order, also. Errors or omissions may be present. Email gridtracker@gmail.com with any comments or suggestions.

WHAT IS GRIDTRACKER?

GridTracker is a companion program for WSJT-X. It listens to WSJT-X or JTDX decodes and displays them on a map for Linux, Mac and Windows.

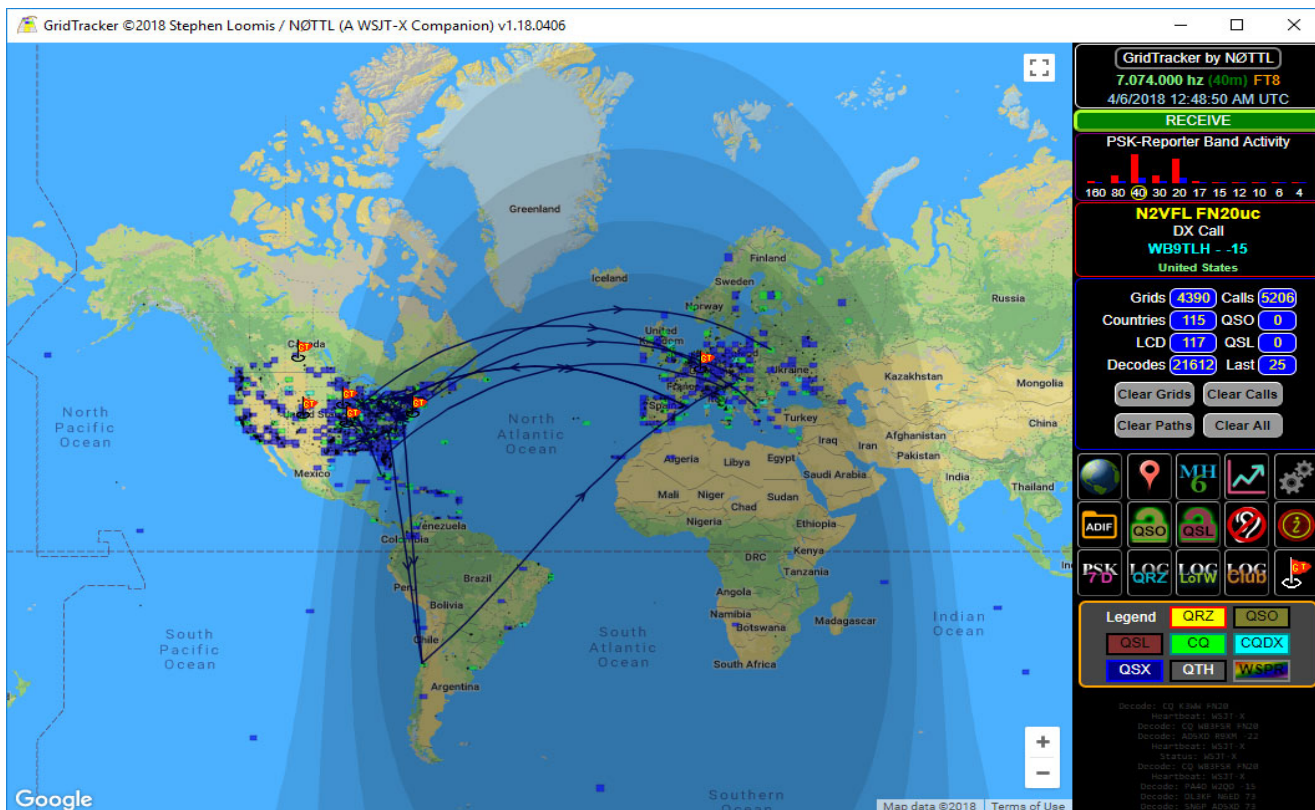
Display on a large second monitor in your amateur radio club, hamfest or as a demonstration in a classroom. Everyone gets excited when they can see what you're doing!

Features:


- ✓ Realtime Traffic Decoding to world map.
- ✓ Audio / Visual / Text-to-Speech Alerts on Callsign, DXCC, CQ Designator, Grid and more.
- ✓ ADIF Log parsing.
- ✓ QSO log reporting.
- ✓ Complete DXCC, Country, Callsign Prefix recognition.
- ✓ Band activity from PSK-Reporter
- ✓ Maidenhead 4 and 6 wide views
- ✓ 100% offline mode available for field-day use.
- ✓ UDP Multicast message support.
- ✓ UDP message forwarding.
- ✓ State / Province / Locality information
- ✓ Decode history charting for propagation and radio performance analysis.
- ✓ Active development with you in mind, tell us what you'd like to see!

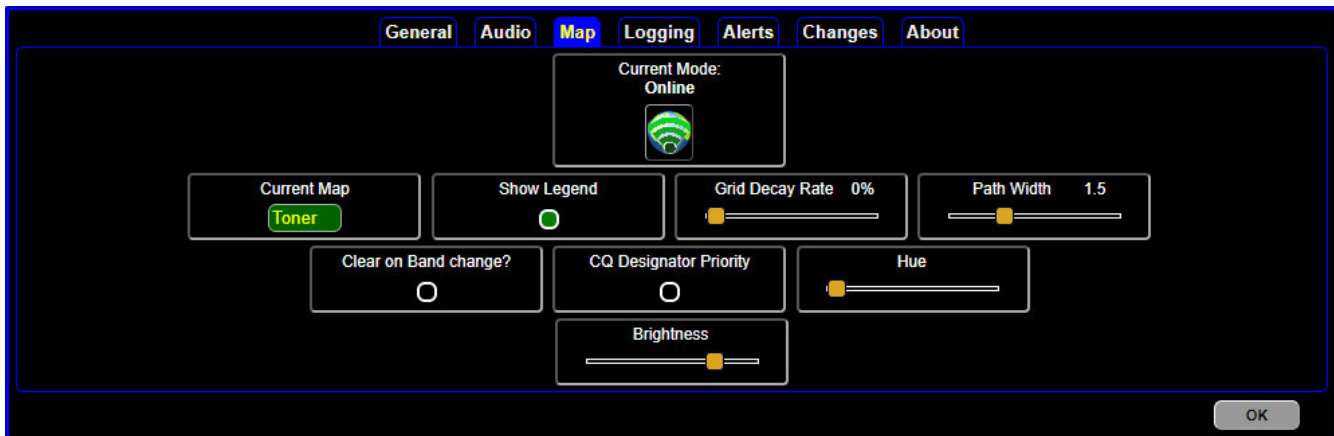
INTRODUCTION

Download the GridTracker for your OS at www.tagloomis.com. This will be a single Windows executable that will install the program, a Mac .ZIP file, or a .DEB or .TAR for linux.




After installation, start by opening from the Icon or the Start Menu. GridTracker opens to a single window with two main sections. The Maps view on the left, and the GridTracker menu bar on the right.

If offline maps are preferred, click the **Settings** Icon , and change settings from the **Map** tab.



The map view uses all the standard controls for zoom, pan and view.

- | | |
|-----------------|-------------------------|
| Mousewheel | - Zoom in and out |
| + / - | - Zoom in and out |
| Arrow keys | - Left, Right, Up, Down |
| PageUp/PageDown | - Map page up/down |
| Home/End | - Map page left/right |

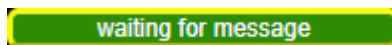
You can also use the + and – symbol on the map to change zoom level, or the full screen icon .

NOTES:

If the map full screen icon is used, mouseover functions for grid or station data will not work as long as GridTracker is in kiosk mode. Hitting the map full screen icon again will return full functionality. Using the application window full screen function does not affect any GridTracker functions.


Direction arrows will not display in Offline mode.

On start, GridTracker will open waiting for the first decoded message from WSJT-X or JTDX. GridTracker will wait for a few seconds for a UDP message from either WSJT-X or JTDX, and begin displaying data immediately. If no UDP stream is detected, GridTracker will open with the waiting notification in the status bar.



If GridTracker has been run before, it will open centered on your previous grid square entered as QTH.


If no internet is detected, GridTracker will open with offline maps.

The default port for WSJT-X and JTDX is 2237 and it will be listening there. If you have changed the port in either program, enter that port here. Either must be running and processing decodes for GridTracker to start displaying live data. You can change the port at any time by pressing the **Settings** icon , and then go to the **General** tab.

For more information about changing WSJT-X or JTDX UDP ports, see the notes at the end of this document.

For users running multiple instances of either program, only a single instance of GridTracker will run at a time.

SETTINGS

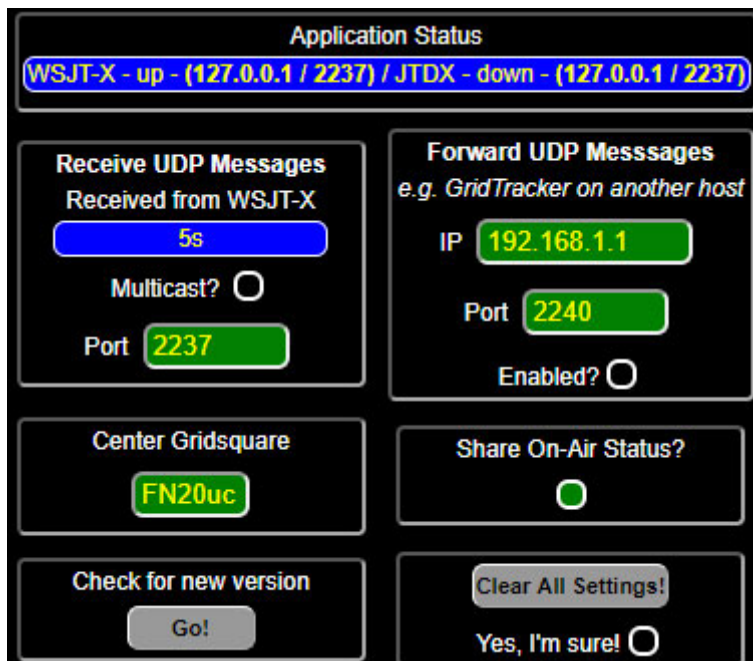
Use the **Settings** icon  to open the Settings menu. From here, there are seven tabs, **General**, **Audio**, **Map**, **Logging**, **Alerts**, **Changes** and **About**.



Clicking OK on the bottom right, exits any of the tabbed panels.

General

The General tab displays application Status and configuration panels for UDP, sharing On-Air Status and other settings.



Application Status

Displays the connect status of WSJT-X and JTDX.

Receive UDP Messages

At the top is a counter that shows the seconds since the last UDP message received. The normal background color is **blue**, with it changing to **yellow** after 18 seconds without a received UDP packet, and **red** after 2 minutes.

The standard Port for WSJT-X is **2237**. There is also a checkbox to enable **UDP Multicast**, described in it's own section.

Forward UDP Messages

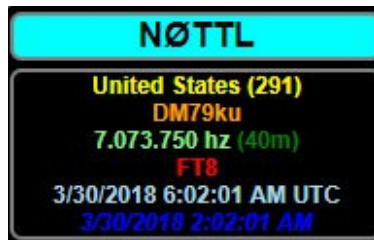
Allows you to use standard message forwarding to the IP and Port of your choice on your local LAN. Simply enter the desired IP/Port and check the **Enabled** box.

Center Gridsquare

Enter your home 4 place Maidenhead that will be used as your Home position until GridTracker knows your actual position from either a live update from WSJT-X or by loading an ADI(F). You can also use this to re-center the map on any grid square of interest at any time.

Share On-Air Status

Checking this box will place a flag 🚩 at your home location as set in WSJT-X on your map, and allow other GridTracker users see your monitoring status on theirs. Mousing over a user flag will cause an information panel to appear at the top of the Menu Bar.



Check For New Version

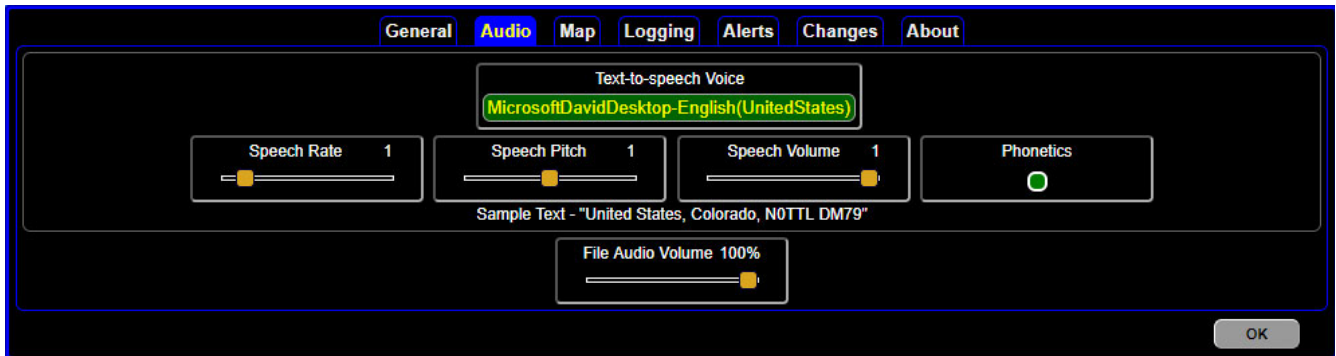
Simply press the button to see if your version of GridTracker is up to date.

Clear All Settings

If you ever want to reset your GridTracker installation and clear all saved configuration settings, click the checkbox and press the button. Be sure, This can not be undone.

AUDIO

Settings for the Text-To-Speech engine, and alert system.



Text-to-speech Voice

This selects which of the available voices will be used for vocalizing alerts.

Speech Rate

Sets the rate of speech for audio alerts. Default is 1.

Speech Pitch

Sets the pitch or tone of the alert voice. Default is 1.

Speech Volume

Alert speech volume when Audio Alerts are active. Default is 1.

Phonetics

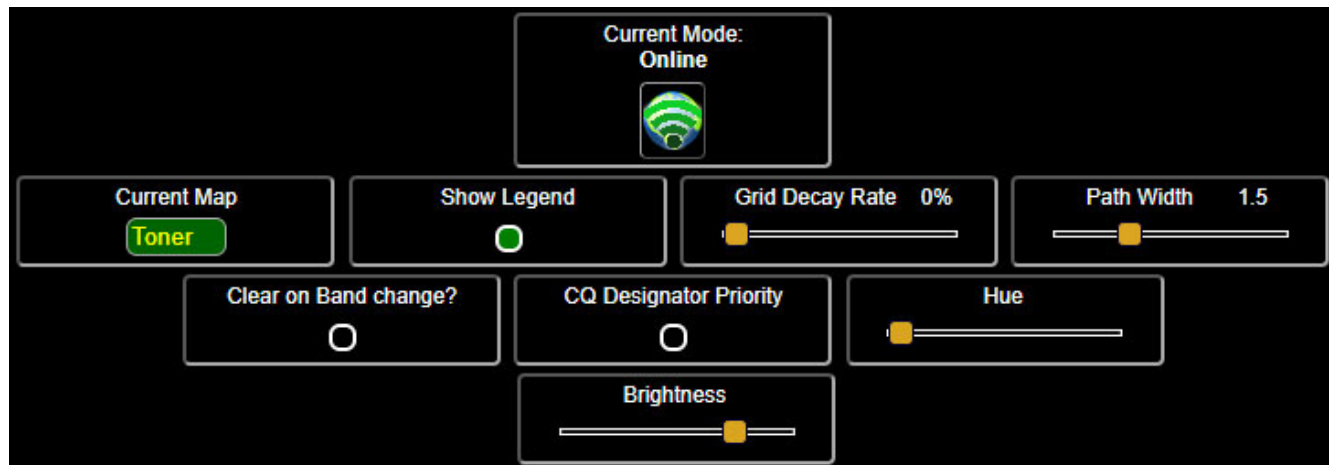
Sets the choice of either the letter name or a phonetic announcement for letters in call signs. See **Phonetic Changes** on how to customize this.

File Audio Volume

Sets the volume for audio files when Media-File alerts are set.

MAP

The **Map** tab is for selecting the desired map display mode, and adjusting it according to user preferences,



Current Mode

Selects either Online maps from **Google Maps**, or Offline using pre-installed maps from **stamen.com**.

Current Map

Selects between three map types for each **Mode** option, **Terrain**, **Toner** or **Satellite**.

Show Legend

Toggles the Map Legend visibility in the sidebar.



Grid Decay Rate

The **Grid Decay** slider determines how long active grids remain on the map. 0% sets them to remain active until manually cleared, and a setting of 90% will cause grids to decay and vanish after two decode cycles.

Path Width

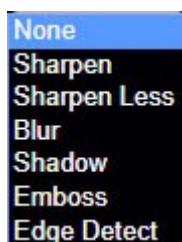
Path Width adjusts the thickness of the message path indicators and direction arrows.

Clear on Band Change

If selected, all **Grids**, **Calls Countries**, **LCD** entries, **QSO** and **QSL** data is cleared, as well as the **Decodes** counter whenever the monitored band is changed.

Hue Brightness Invert and Effect

For online maps, Hue and Brightness can be adjusted using the sliders, and for offline maps, two additional controls are available, **Invert** and **Effect** which has several options.



Or a third, **Greyscale**.

Map adjustments are useful for night vision, or when high contrast maps are desired. Full control of the map display in either mode allows the user to customize the display according to their preference.

NOTE: Because online maps are stored on your computer during install, zoom levels will be limited because of file size considerations. Five levels of zoom for Terrain and Toner.

LOGGING

GridTracker is compatible with multiple logging systems, and any number of selects programs or services can be run simultaneously.



Logtype	Menu?	Startup?	Log QSO?	Details	Band	Test	Test Result
GridTracker		<input checked="" type="radio"/>	<input checked="" type="radio"/>	GridTracker QSO Logfile	All		
File		<input type="radio"/>			All		
PSK-Reporter	<input checked="" type="radio"/>	<input type="radio"/>		7 Day History <input type="radio"/>	All		
QRZ.com	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	API Key <input type="text"/>	All	Test	
LotW	<input checked="" type="radio"/>	<input type="radio"/>		Login <input type="text"/> Password <input type="text"/>	All	Test	
ClubLog	<input checked="" type="radio"/>	<input type="radio"/>		Email <input type="text"/> Password <input type="text"/>	All	Test	
HRDLOG.net			<input type="radio"/>	Callsign <input type="text"/> Upload Code <input type="text"/>		Test	

N1MM Logger+ IP <input type="text" value="127.0.0.1"/> Port <input type="text" value="2333"/> Enabled <input type="checkbox"/>	Log4OM Logger IP <input type="text" value="127.0.0.1"/> Port <input type="text" value="2236"/> Enabled <input type="checkbox"/>
---	--

Logtype selects GridTracker's own logging, **File** which loads an ADI(F) on program start, PSK-Reporter, QRZ, LotW, or ClubLog ADI(F) downloads. HRDLOG supports only reporting QSOs at this time.

Menu determines if the appropriate logging service icon appears in the icon area of the Menu Bar.

Startup allows for each of the log sources to automatically load or download your latest available logs at program start.

Details is for entering the proper credentials for each online service. You can also select between 7 Day or 24 Hour log downloads form PSKReporter. The Menu Bar icon will change to show the current selected mode.  or .

Band lets you specify a single band of interest to load, or if you can chose to load several band of interest by selecting each desired band individually, and loading them in succession.

Test allows you to check login credentials for each of the online logging services.

Test Result displays the return status for credential tests.

N1MM Logger

<https://n1mm.hamdocs.com/tiki-index.php>


Log40M Logger

<http://www.log4om.com>

The N1MM Logger+ and Log40M panels allow configuration for running either program locally on your computer by communicating with each through the appropriate **IP/Ports**. Default settings are pre-configured for each, and for most users, simply checking the **Enabled** checkbox should be all you need to do.

ALERTS

The Alerts system in GridTracker is a powerful tool that can be set up to alert for almost any trigger type(s).



Type	Value	Notify	Repeat	Filename	Alerted	Last Message	When	Reset	Delete
Call	N0TTL	<input checked="" type="checkbox"/>	Inf	Bells-1	No	-	-		
Grid	FN20	PopUp	Once	-	Yes	CQ WB3FSR FN20	4/5/2018 2:47:14 PM UTC		
CQ	OR (Oregon)	TTS	Once	-	No	-	-		
CQ	LU (Luxembourg)	<input checked="" type="checkbox"/>	Once	Power-down	No	-	-		
CQ	QC (Québec)	<input checked="" type="checkbox"/>	Once	Explosive-bang	No	-	-		
QRZ	N2VFL	<input checked="" type="checkbox"/>	Inf	Short-buzz	No	-	-		
DXCC	New Zealand (170)	TTS	Once	-	No	-	-		
Call	OY1R	<input checked="" type="checkbox"/>	Once	Coun...blip	No	-	-		
Grid	FN20	TTS	Inf	-	Yes	CQ NF3R FN20	4/6/2018 1:08:00 AM UTC		

GridTracker includes an alert system that can be used to notify the user on message events according to several definable conditions. Call Sign, Grid Square, CQ Designator, DXCC Location or QRZ.

The menu is divided into two areas. The top bar is for entering the details for the alert desired, and the bottom is a listing of all active alerts. It will be empty if there are no saved alerts.

To enter an alert, simply select an **Alert Type** by clicking on the selector box. Once the alert type is chosen, the **Value** area will change to either a drop list, or an entry field, depending on the alert type selected. For **Callsign** or **Gridsquare**, the entry box checks the input for validity as you type it.

Alert types may be stacked, so that multiple alert types can be entered for each desired trigger event.

Example: When **Gridsquare** is selected, entering FN20 (case insensitive), the entry box will change from red to green to indicate a proper Gridsquare entry. Entering FN2o will show a red entry box, and hitting the **ADD** button will display an **Invalid Gridsquare** error.

The **Notify Type** offers three options. **Text-To-Speech (TTS)**, **Media File** and **Visual Popup**. Multiple alert types can be setup for each desired target by creating a separate entry for each alert desired.

If **Media File** is selected as the **Notify Type**, you have the choice of notification sounds to associate with that alert. Each alert can be assigned a different sound to differentiate them individually, or by type.

You can add your own sounds by placing an .mp3 or .wav file to the appropriate folder. See **Platform Notes** for file locations. A large selection of sounds are already included, so whatever you add, better be a good one.


Repeat sets the number of times the alert is repeated. Once, never or until the alert is deleted.

ADD enters the alert into the alert list. Alerts are listed in the order they were entered.





The Alert List has 8 columns to show the alert and it's status, and two for alert control, Delete and Reset.

Type and **Value** show the alert item, **Repeat** (and if an audio alert, Filename) the alert notification type. **Alerted**, **Last Message** and **When** will show information about the last trigger on that alert.

Audio alerts can be muted by toggling the  icon so that it displays .

To change audio alert and text to speech setting, open the Control Panel by hitting the  icon. From there you can change the speed, pitch and volume of the TTS alerts, and the playback volume for the audio alerts on the **Audio** tab.

Anytime an adjustment is made, a sample announcement will playback to test your settings.

The QSO and QSL lock icons, toggle between locked,   and unlocked,  . These set the status of **Callsign Worked** and **Callsign Confirmed** alerts within the overall alert programming.

CHANGES

The changes tab will display the latest Changes.txt for GridTracker that was included in the install package.

```
[v1.18.0406] March 6th, 2018
```

- * Fixed station-flags from re-appearing after disabled
- * Fixed station-flag info sometimes following the mouse pointer
- * Fixed path-width not saving across sessions
- * Fixed issue while ignoring messages and switching between offline/online would allow messages again
- * Added UTC / Local time toggle (press the timestamp on the menu to toggle)
- * Added Multicast UDP Support! (224.0.0.1 - 239.255.255.255)
- * Added ability to turn off legend in map settings
- * Added France and German states to DXCC lookups
- * Added ability to hide menu (press menu header)
- * Added loading of Callsigns from WSJT-X logfile for 'worked' info
- * Moved Night-shadow toggle back to menu
- * Moved all settings to tabbed panel
- * Moved all informative lookups except "Current Conditions" to tabbed panel
- * TODO: Add 'CQ' Zones, Stats view, New Alert types

```
[v1.18.0330] March 30th, 2018
```

- * Added optional On-Air reporting
- * Added View other On-Air GridTracker stations
- * Added State/Province info for North America and Australia
- * Added Decode history charting (press 'Last (###)' to view)
- * Improved Windows installer for size and speed, no more patches
- * Moved Quickstart guide to our website (<https://tagloomis.com/docs>)
- * Fixed issue with ADIF loading locking up menu control if no Internet connection
- * TODO: Move all settings into one panel with tabs
- * TODO: More localities for DXCC's as we get to them , let us know your DXCC and we'll make it a priority

```
[v1.18.0324] March 24th, 2018
```

- * Added current conditions view (Online map mode only)
- * Added show grid info on right-click on open map
- * Added Key press M, T or V while holding-right-mouse on open map creates Grid alert
- * Added HRDLOG.net QSO logging

ABOUT

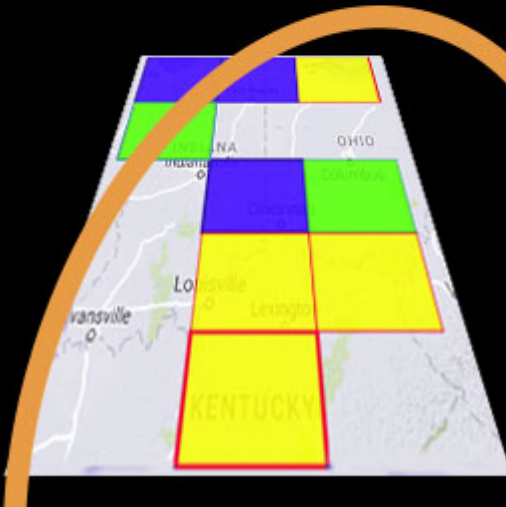
Displays GridTracker developer information as well as other credits.

GridTracker - A WSJT-X Companion

GridTracker listens to traffic from WSJT-X and displays it on a map.
It will also load ADIF log files from WSJT-X and PSKReporter

©2018 Stephen "Tag" Loomis / NØTTL (tag.loomis@gmail.com)
with many thanks to the following for code, suggestions and testing:

Henry "atouk" Forte / N2VFL
Shawn "d-UDE" Hastwell / KB8UDE
Andy "Dad" Loomis / KEØUL
Kenneth "Bart" Schmidt / NØNYY
Johnny "cuops"
Youssef "prog" Touil



Documentation and Logo design ©2018 Henry Forte / N2VFL

MAP AND ACTIVITY PANEL

The center of the side bar contains the Map and Activity Panel. This is where current map and station statistics are displayed, as well as trigger icons for GridTracker operation.



Grids and **Calls** will display totals for each heard since program start, loaded from ADI(F)s or since being cleared by either the Clear Calls, Clear Paths or Clear All buttons.

QSO will display the total for decoded QSOs, the number of QSOs from loaded ADI(F)s, or the total for all if decoding is active.

QSL will display the total for decoded QSLs confirmed from log files only.

LCD (Low Confidence Decodes) will show decodes flagged by WSJT-X as Low Confidence (lc), or of unknown content (?). A decode counted here may not actually be bad, but is either flagged as questionable, or GridTracker can not parse the message meaningfully. GridTracker may still display some of the (lc) flagged message grids.

Decodes is a counter of all received decodes from WSJT-X or JTDX.

Last shows the number of decoded messages from the last decode cycle.

The **Clear Paths** button clears only visible Path indicators on the map and has no effect on the other statistics.

Clicking on **Calls**, **Countries**, **QSO**, **QSL** or **LCD** will open a tabbed popup that will show a list for each as selected.



DXCCs

DXCCs lists the number of DXCC entities received since the start of the program, or from loaded ADI(F) files or downloaded from PSKReporter using the **PSK24** button or other loggers.

DXCC entities are listed alphabetically with columns showing the **Flag**, **Count** of stations for that entity, and totals for **QSO** and **QSL**.

DXCC	Flag	Count	QSO	QSL
Alaska		11		
Andorra		2		
Angola		1		
Anguilla		9		
Argentina		71		
Asiatic Russia		3		
Australia		55		
Austria		86		

WORKED










Worked will display the total for decoded QSOs, the number of QSOs from loaded ADI(F)s, or the total for all if decoding is active.

CONFIRMED

Confirmed will display the total for decoded QSLs confirmed from log files only.

CALLSIGNS

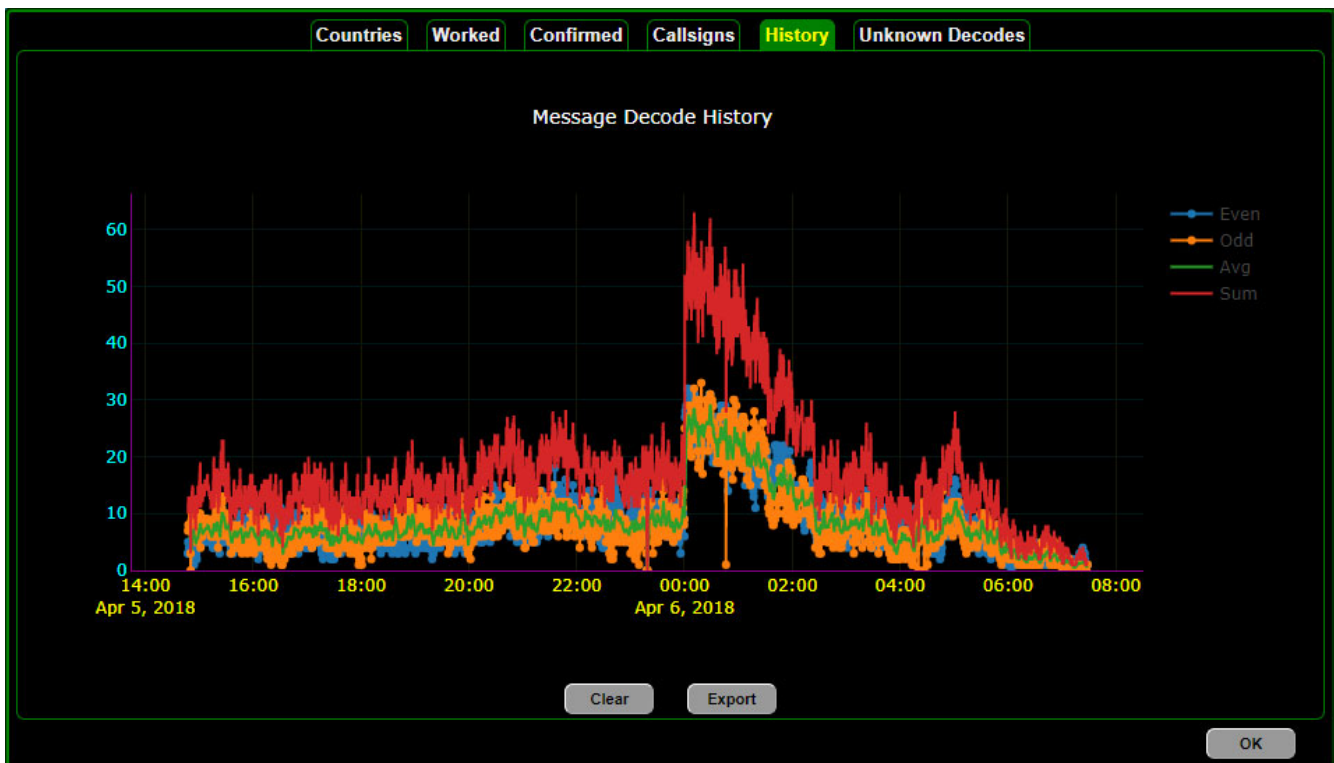
Callsigns lists all stations heard for the current session, or from any loaded loggers or files.

Callsign	Grid	Origin	DXCC	Flag	QSO	QSL
2E0EES	IO81WJ	England	223			
2E0JZA	IO92	England	223			
2E0SYI	IO91	England	223			
2E0TAL	IO93IK	England	223			
3Z1ESH	JO93	Poland	269			
4L1MA	LN21KS	Georgia	75			
4O4A	JN92	Montenegro	514			
4O7TC	JN92LS	Montenegro	514			
4Y1SK	KM72JB	Israel	226			

Callsigns are listed alphanumerically with the **Grid** of the last location heard, the country of **Origin** of the call, the **DXCC** ID of that country, its **Flag**, and the **QSO** and **QSL** status of that callsign.

HISTORY

History displays a graph of decode activity with 4 marker lines. Even, Odd, Avg and Sum. The 4 lines for **Even Cycles**, **Odd Cycles**, **Average** and **Sum** can be selected/deselected independently, so that only the data elements of interest can be viewed by clicking on the legend items on the right. The graph will continue to update while open.



Mousing over the graph will also expose a toolbar with selections on working with the displayed data.

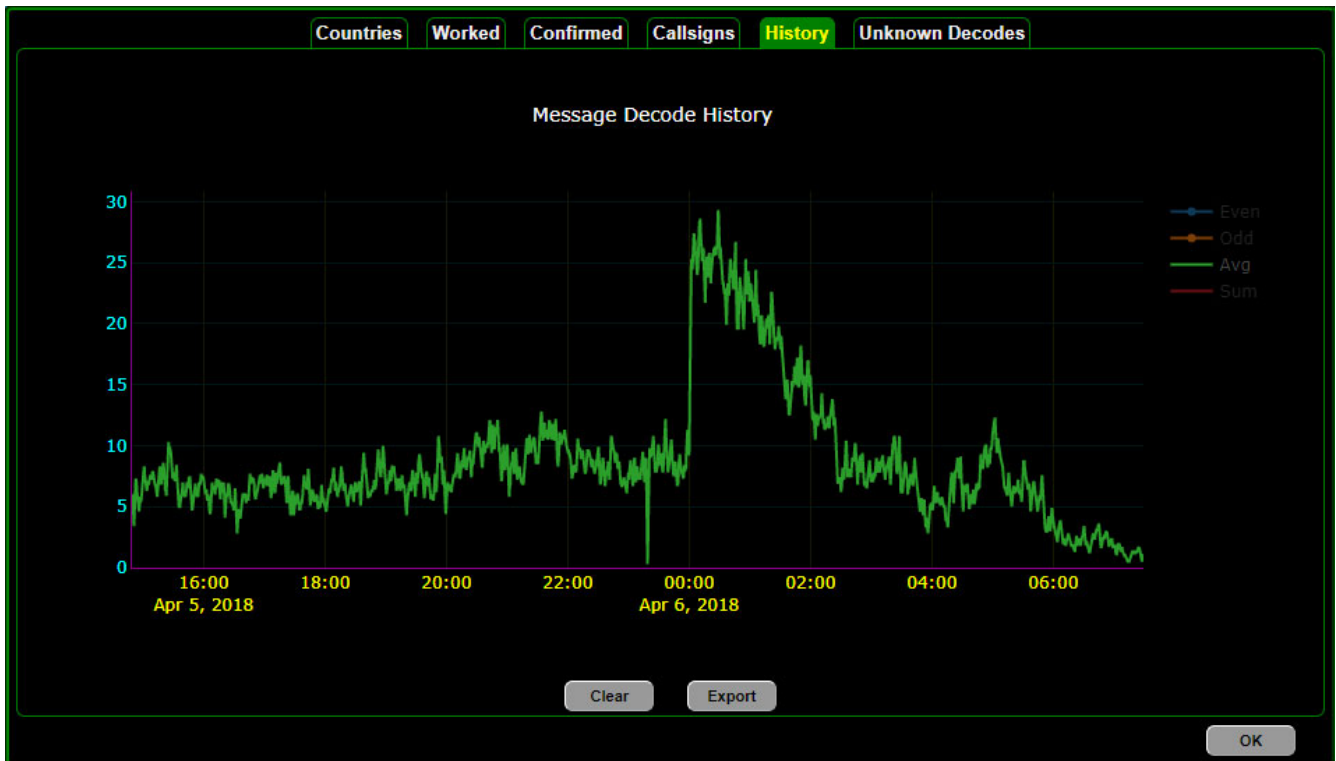


These tools include Zoom +/-, Reset, Pan, Save as PNG, and others. Some individual tools may not be active.

On the bottom of the graph is **Clear** and **Export**.

Clear – Clears all data.

Export – Export as CSV.



Average Only shown in the above example.

Exported CSV files are saved in %documents%\GridTracker\.


UNKNOWN DECODES

A list of potentially bad decodes (lc) as flagged by WSJT-X, or those that may have parsed incorrectly.


```
-20 0.8 1345 CQ DG0OFT JO50 (lc)  
-20 1.0 646 CQ K6RC CM98 (lc)  
-19 1.2 2386 CQ WB3FSR FN20 (lc)  
-20 1.0 2425 6W1ZEWU?TTM8R (?)  
-22 0.9 2010 CQ W3BIT EL29 (lc)  
-24 2.2 2231 5MGIY-/+X46IA (?)  
-16 0.9 2773 CQ N0UR EN33 (lc)  
-19 0.9 1546 CQ WA0KDS DM33 (lc)  
-23 0.9 332 CQ WA9GBC EM49 (lc)  
-19 0.9 1106 CQ NZ2X EM83 (lc)
```

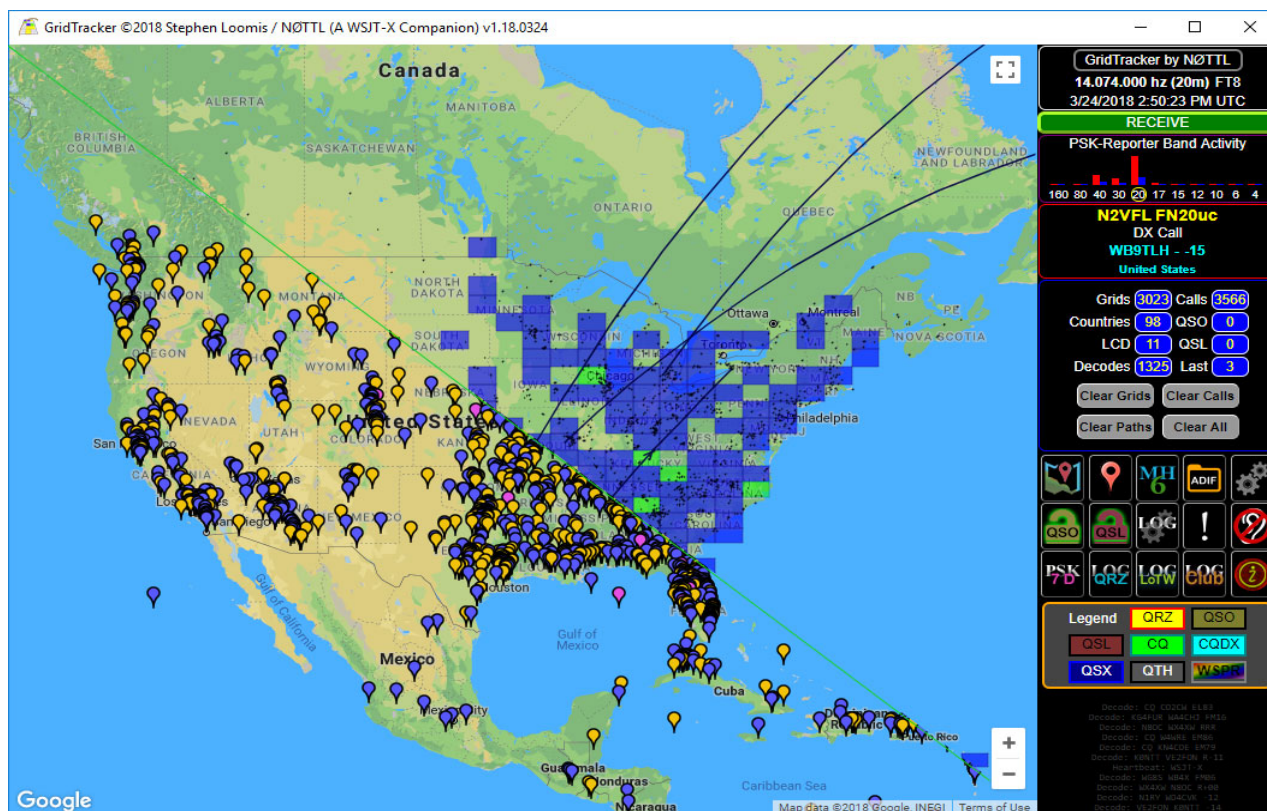
FUNCTION ICONS

Shadow Toggle

For online maps, the Sun Shadow control  is to turn shadows on and off by clicking the Globe icon.

Push Pin

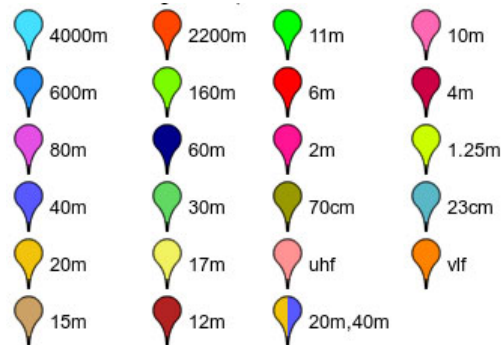
The Push-pin Icon  toggles the display from grid square based, that displays all active grid squares, to push-pins.



The screenshot shows the GridTracker software interface. The main window displays a map of North America with a grid overlay. The grid squares are colored in shades of blue and green, indicating active stations. Numerous push pins are scattered across the map, representing individual stations. The control panel on the right side of the window contains the following information:

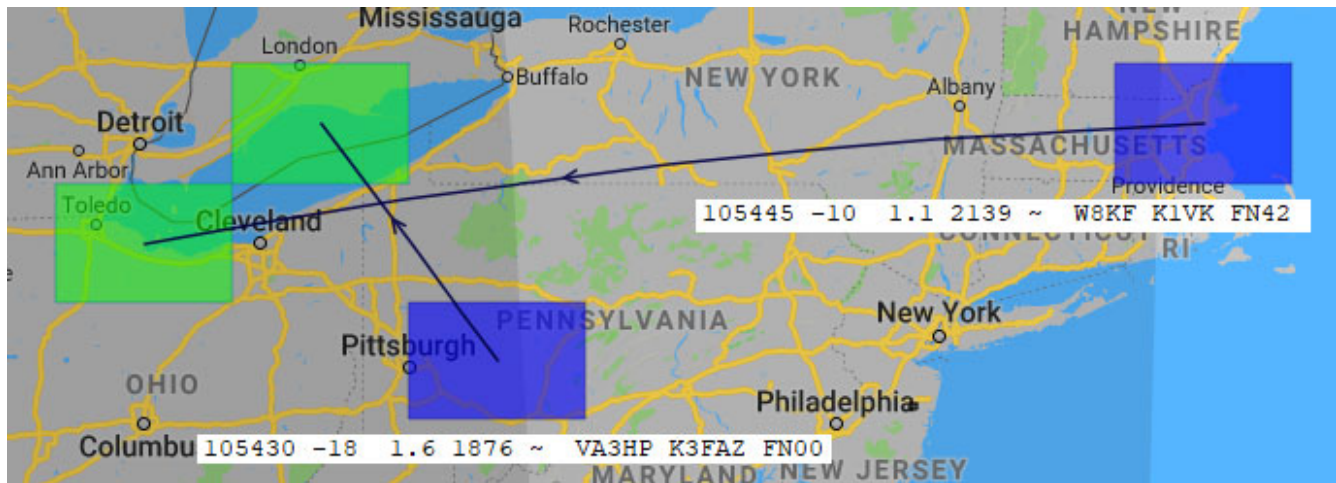
- GridTracker by NØTTL
- 14.074.000 hz (20m) FT8
- 3/24/2018 2:50:23 PM UTC
- RECEIVE
- PSK-Reporter Band Activity
- 160 80 40 30 20 17 15 12 10 6 4
- N2VFL FN20uc
- DX Call
- WB9TLH - -15
- United States
- Grids 3023 Calls 3566
- Countries 98 QSO 0
- LCD 11 QSL 0
- Decodes 1325 Last 3
- Clear Grids Clear Calls
- Clear Paths Clear All
- Legend QRZ QSO
- QSL CQ CODX
- QSK QTH WSPR

In Push Pin mode, the pins are also colored according to the standard used by PSKReporter for the various bands.



WARNING: Maps are not intended to be used as navigational aids. Recalculating. Nope, still not a navigational aid.

Path Markers display the contact activity between two stations. A black* marker shows the start, end and direction of a contact with a small arrow showing direction.

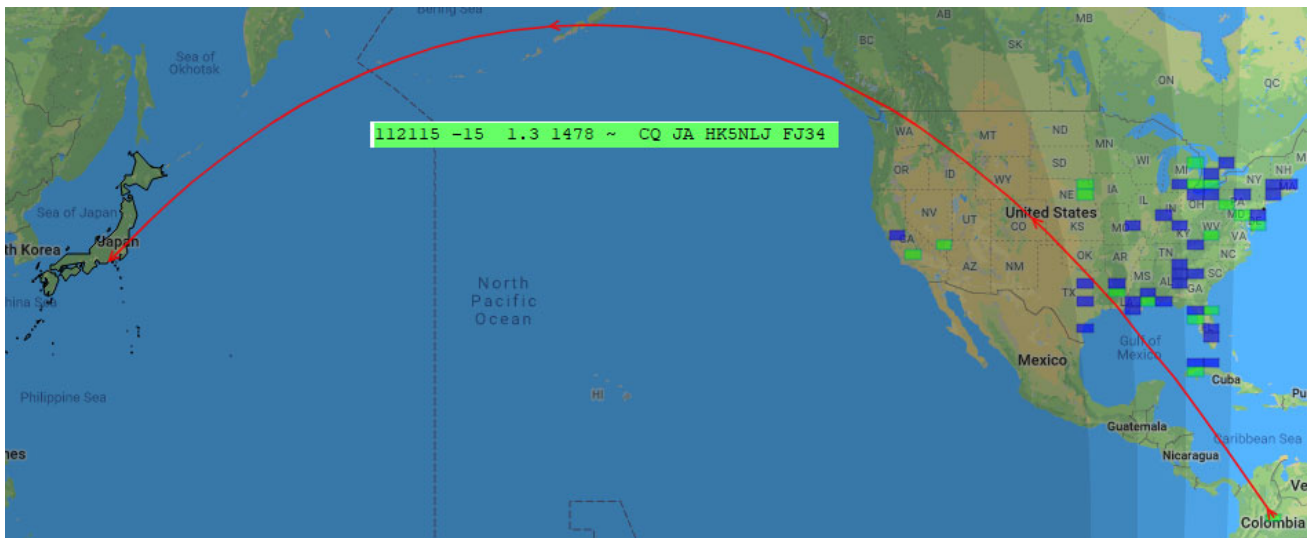


In both examples above, the path is defined by the calling station, the target station, and the 4 place maidenhead of the calling station. The target station MH4 is known because it was heard in an earlier message and stored, so that when both the calling stations above announce their MH4, GridTracker is able to create the path.

You may also see paths with arrows in both directions. This shows that both a call and a reply were decoded. The reply could have been a message such as **WB4CTX VE3NRG 73**. Since GridTracker knows the MH4 of both stations from previous messages, the path marker was created from the calling station, to the target station of the reply message. Since GridTracker can only create the paths for stations with known MH4 grids at both ends, not all messages will spawn path markers.

Red* Path Markers indicate a call has been made to a specific DXCC entity or Continent.

* Black and Red are the default path colors.
Making changes in map settings may change them, also.



The message `CQ JA HK5NLJ FJ34` shows station `HK5NLJ` in grid `FJ34` calling any station in Japan (`JA`). The path marker shows the direction of the call, and the called DXCC entity is highlighted with a border. The complete list of entities is stored in `enums.json`.



Looking at the entry for `JA`,

```
"JA": "Japan",  
"JE": "Jersey",  
"JM": "Jamaica",  
"JO": "Jordan",  
"JP": "Japan",
```

you will notice that a few lines down, there is also `JP` for Japan. Some other entities will also have more than one entry to follow common uses.


This file is freely editable to allow users to make changes for their personal or language preference. See **EDITING SPEECH JSON FILES** for more information.

Maidenhead


The Maidenhead icon toggles between displaying Station and Grid display depth on the map as 4 place maidenhead , or 6 place , if available.

6 place maidenhead grids are considerably smaller than 4 place, and you may have to zoom in to distinguish them.


Show Stats

The **Stats** icon , opens the tabbed panel showing **DXCCs**, **Worked**, **Confirmed**, **Callsigns**, **History** and **Unknown Decodes**.

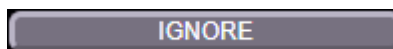
Settings

The Settings icon  opens the main tabbed Settings area.

Load Adif

The Load ADIF icon,  will import local ADI or ADIF files for display on the map. Multiple files may be loaded at once, and as with live data, they will age according to the position of the Grid Decay Rate slider.

Loading an ADI(F) will not interfere with live tracking. If you wish to view ADI(F) data only, be sure to click the Status bar at the top to Ignore,



and then clear all paths and grids with the **Clear All** button.

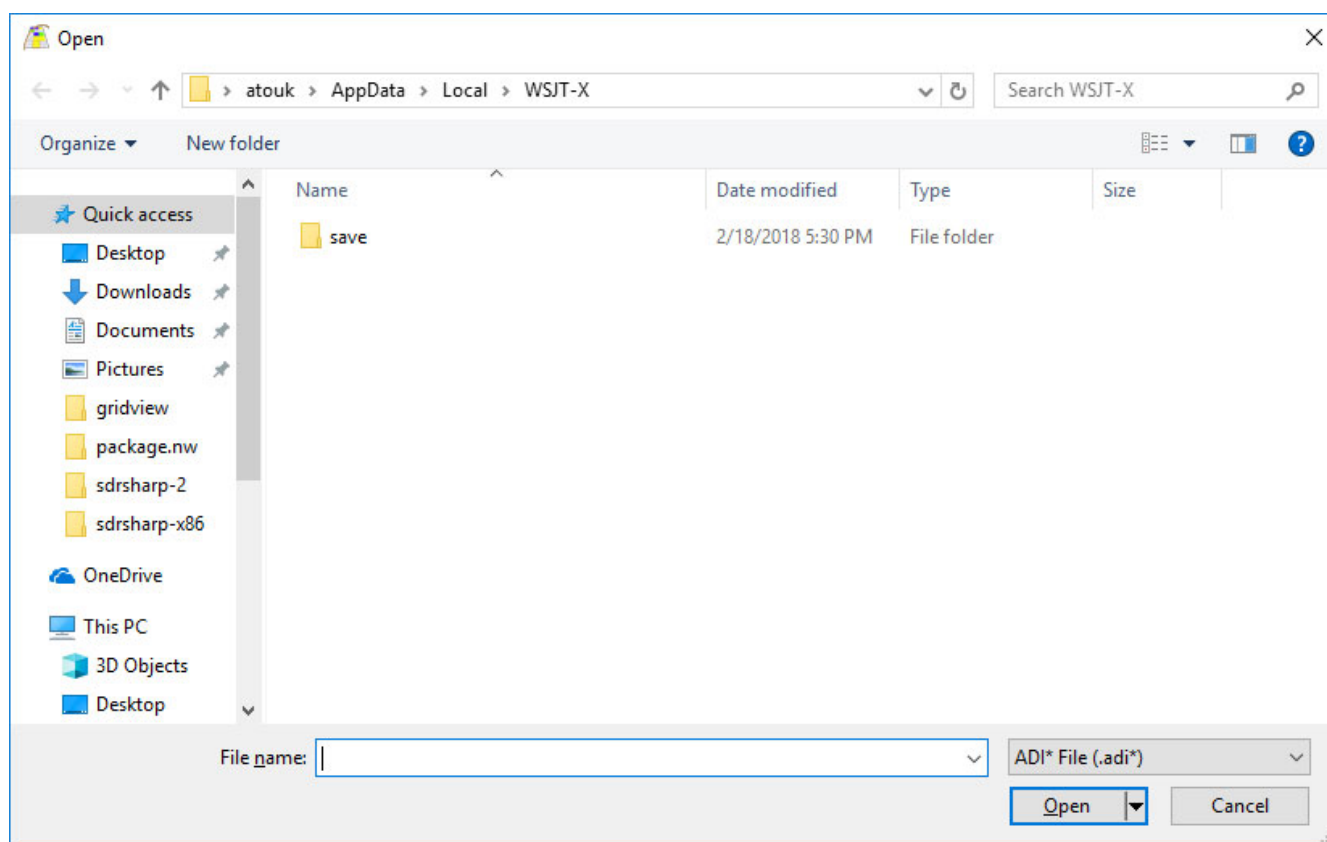
If a grid square decays to 0, all information about that grid square is removed from memory. If you are viewing an ADI(F), it's a good idea to keep the Decay Rate at 0% to prevent grids from disappearing.

Live processing can be resumed by clicking the **Status Bar** to turn GridTracker back to a listening state.

NOTE: When set to **IGNORE**, live logging will continue if configured in Log Settings. Only map activity will be halted.

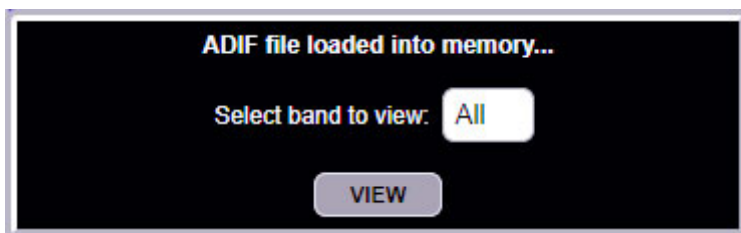
Opening ADI(F)s

Once the **Load ADIF** button is pressed, a standard file selector box will open (Windows shown).

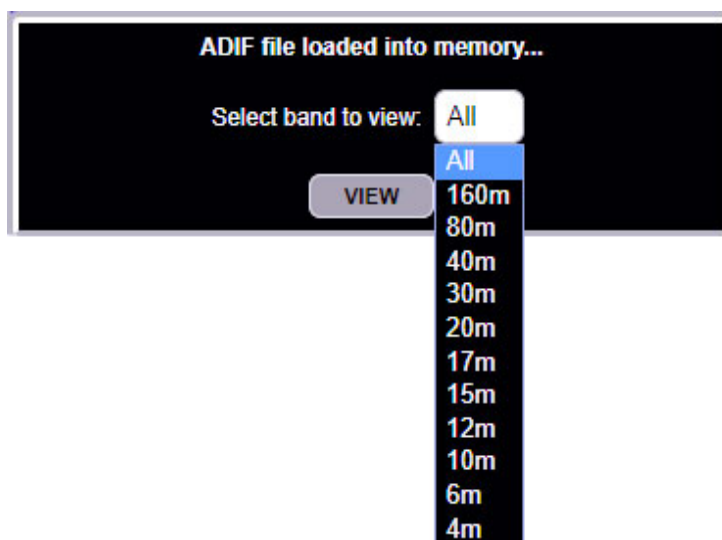


The default folder will be the location that WSJT-X stores ADI files it generates. If a different location contains your ADI(F) files, navigate to the proper folder and select the desired ADI(F).

Once selected, a popup will open.

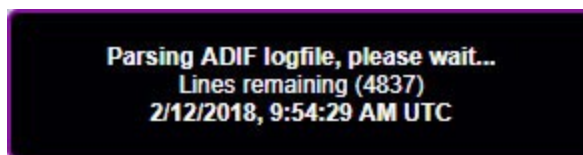


Select band to view when clicked, gives you the option to view all entries from the ADI(F) selected, or a single band of interest.



Multiple ADI(F)s may be loaded, or a single ADI(F) loaded multiple times, highlighting only desired bands. For example only 20m and 40m, from a file containing 20m, 40m, 80m and 160m.





After selecting an ADI(F) a notification will display confirming file processing, with a count of total lines remaining in the selected ADI(F), and the time code for each line read in the ADI(F).



If the ADI(F) is loaded during live processing, it will not interrupt decoding of received data.

ADIF import was tested with PSKReporter ADIF and WSJT-X ADI files with up to 200K entries. Actual parsing speed and file size limitations may depend on computer OS, CPU or available memory.

QSO and QSL Lock


QSO and **QSL** icons toggle between unlocked  , and locked  . Locking QSO and QSL prevents those grids from decaying regardless of the position of the **Grid Decay Rate** slider.

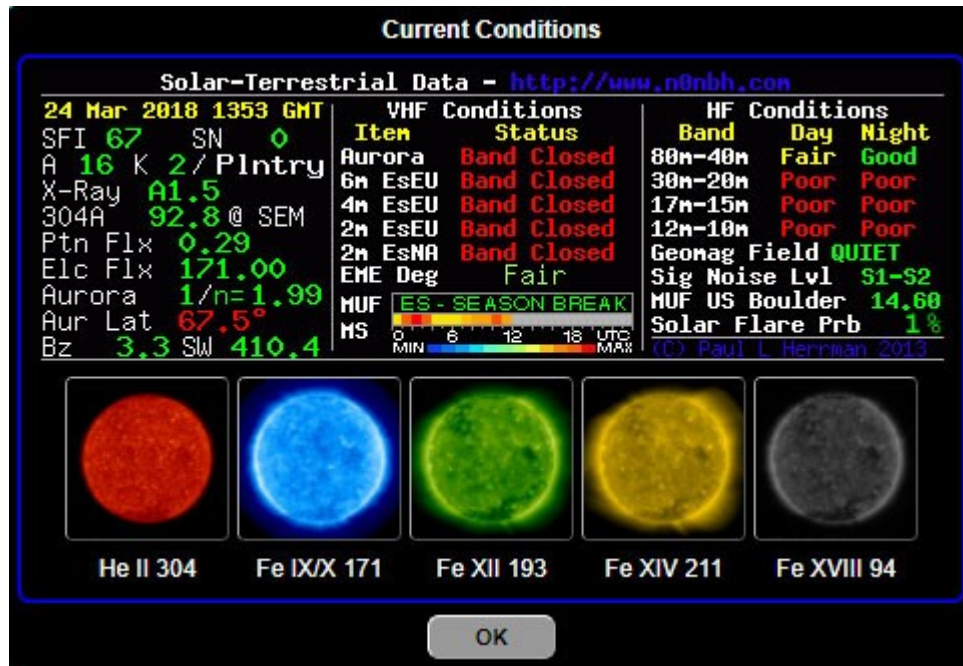
It's worth noting that when loading multiple QSO/QSL for a single grid square, the most recent QSO/QSL will set the grid color. If you've chosen to lock QSL's , then it will stay QSL color once set.

Audio Mute



The Audio Mute icon(s),   toggle Audio Alerts.

Conditions Information



The **Information icon**  will display current solar and band conditions loaded from www.hamqsl.com. and Solar images from the Solar Data Analysis Center at NASA, <https://umbra.nascom.nasa.gov>





PSK24

The **PSK 24H icon** , downloads and displays the reported messages to PSKReporter for the previous 24 hours, or 7 days , as selected in the **Logging** tab in **Settings**. Data will be displayed in the map according to the status of Maidenhead 4/6.

QRX LotW and Club

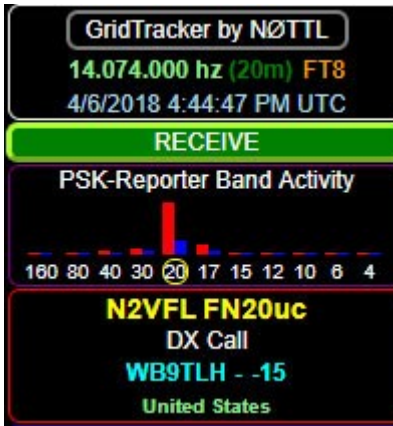
These Icons,   , will appear, if activated in the **Logging** tab of the **Settings** menu.

On-Air Flag

Toggling this icon will activate , or deactivate , the On-Air user flags on the map.

ACTIVITY AND STATUS

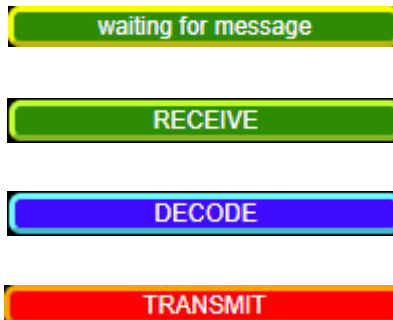
The topmost area of the menu bar contains the **status panel**.



The tuned frequency, operating Band and Mode, and the time in UTC or Local, as reported by WSJT-X are displayed. Clicking on the Time will toggle between these two options.

Above that is the GridTracker Title. Click on that to hide the Status Bar for a full screen map display. Clicking on the small icon on the upper right, restores the Status Bar.

Below that is the Status Indicator. It will display the current WSJT-X status.



GridTracker will stop receiving messages when the status bar is toggled, and display **IGNORE** to turn off UDP listening.

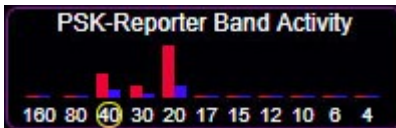
This useful when tuning, changing mode, or making other adjustments to WSJT-X or your radio. It is also handy when loading an ADI(F) to keep current activity from updating the map as you work with it.

If you close WSJT-X during operation of GridTracker it will display;



Normal operation will resume when WSJT-X is restarted.

Next is a display of live data collected from PSKReporter.info showing band activity. This data is updated every 15 minutes and is only an indicator of reporting station activity on PSKReporter.



While not showing actual band conditions, it is a guideline of current activity by other users reporting to PSKReporter based on your grid square and operating mode as reported by WSJT-X. If “no data yet” appears, it indicates a problem communicating with PSKReporter, and GridTracker will attempt to load the data at the next 15 minute cycle.

If you mouseover any of the band positions, it will display the raw data for that band as downloaded from PSKReporter.

The circled band also indicates the current tuned band as reported by WSJT-X. 40 meters in the image above.

NOTE: 2m and 70 cm activity is not shown, but still recognized by GridTracker.

Underneath that is your current station information (QTH), home grid square (QRZ), and call sign if any is entered. Below that is the DX Call and Grid, as well as the signal strength of the last calling station (QRZ).



The final panel area is the **Legend**, and includes the grid square color key. This can be hidden by un-clicking the **Show Legend** checkbox in the **Map** tab in **Settings**.



- QSO** - Grid containing a station you are contacting
- QSL** - Grid containing a station with a confirmed contact
- CQ** - Grid containing a station calling for a new contact
- CQDX** - Grid containing a station calling for a long distance contact
- QSX** - Grid with a station responding to a CQ or CQDX message
- QTH** - Your Home Grid
- QRZ** - Grid containing a station calling you
- WSPR** - WSPR Stations

Moving the mouse cursor over any of the legend labels will show their definition in a Tool Tip as a reminder.

Below the Menu Bar is a live feed of UDP traffic being received.

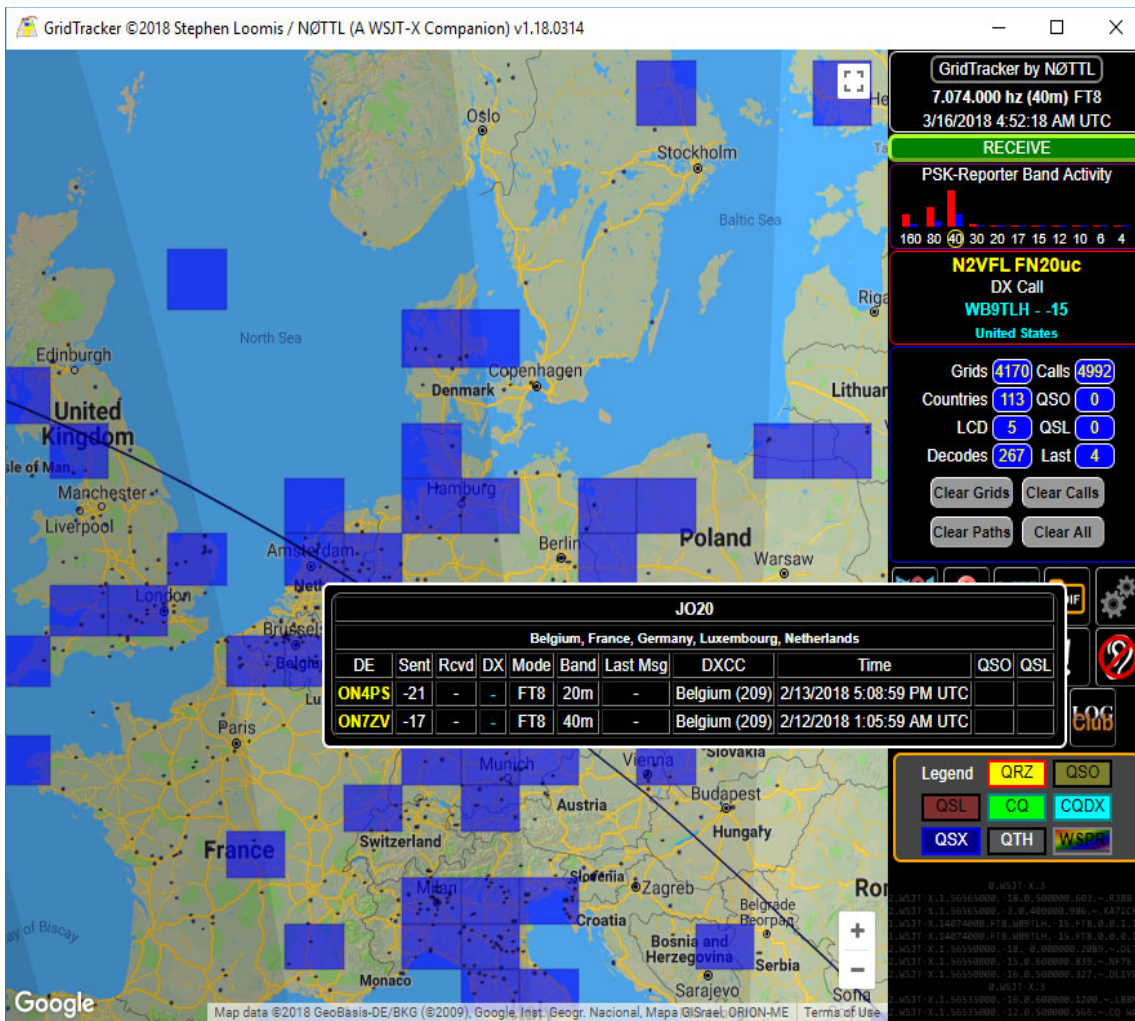
```
1.WSJT-X.7074800.FTB.K0HMHZ.15.FTB.0.0.0.572.
1.WSJT-X.7074800.FTB.K0HMHZ.15.FTB.0.0.1.572.
1.WSJT-X.7074800.FTB.K0HMHZ.15.FTB.0.0.0.572.
2.WSJT-X.1.81045000.15.0.500000.2229.--CQ.VE
2.WSJT-X.1.81045000.17.0.500000.1521.--CQ.KR
2.WSJT-X.1.81045000.17.0.500000.992.--9Y4D.K
2.WSJT-X.1.81045000.7.1.400000.874.--6Y55G.D
2.WSJT-X.1.81045000.7.0.900000.726.--9Z4Y.YH
1.WSJT-X.7074800.FTB.K0HMHZ.15.FTB.0.0.1.572.
1.WSJT-X.7074800.FTB.K0HMHZ.15.FTB.0.0.0.572.
2.WSJT-X.1.81030000.9.0.500000.2853.--VA3TO.K
2.WSJT-X.1.81030000.4.0.200000.2091.--CQ.NB
2.WSJT-X.1.81030000.2.0.400000.1860.--CM2PBR
2.WSJT-X.1.81030000.20.0.400000.1405.--W0M5T
2.WSJT-X.1.81030000.12.0.400000.1148.--VE2TB
2.WSJT-X.1.81030000.21.1.000000.873.--EA7YI
1.WSJT-X.7074800.FTB.K0HMHZ.15.FTB.0.0.1.572.
1.WSJT-X.7074800.FTB.K0HMHZ.15.FTB.0.0.0.572.
2.WSJT-X.1.81015000.3.0.800000.2155.--WY95.K
2.WSJT-X.1.81015000.14.1.100000.2005.--PP1M
2.WSJT-X.1.81015000.6.0.200000.1226.--W4W0.K
2.WSJT-X.1.81015000.5.1.000000.1022.--N9X0H
2.WSJT-X.1.81015000.5.1.400000.874.--6Y55G.D
2.WSJT-X.1.81015000.11.0.500000.726.--9Z4Y.Y
1.WSJT-X.7074800.FTB.K0HMHZ.15.FTB.0.0.1.572.
1.WSJT-X.7074800.FTB.K0HMHZ.15.FTB.0.0.0.572.
2.WSJT-X.1.81000000.15.0.200000.477.--JAS8EM
2.WSJT-X.1.81000000.7.0.500000.2727.--W43ERD
2.WSJT-X.1.81000000.2.0.300000.2005.--SP7CKD
2.WSJT-X.1.81000000.8.0.500000.1753.--K1C1ERD
2.WSJT-X.1.81000000.19.0.400000.1246.--CQ.YG
2.WSJT-X.1.81000000.4.2.100000.738.--CQ.W8ZZ
0.WSJT-X.3
2.WSJT-X.1.80995000.14.1.000000.1030.--N9X0H
2.WSJT-X.1.80995000.10.1.000000.2229.--CQ.VE
```

The GridTracker version number will always be displayed in the top bar of the program window.

Grid Square Data

When the mouse pointer is moved over any active grid, a popup will appear showing all the stored information about that grid.

This data can be either from live monitoring, opening an ADI(F), or both. It will also show the combined data from multiple ADI(F)s if more than one is open in succession.



Moving the mouse into a 4 place grid square will show you the all the stations within that area. It will also display the DXCC entity(s) within that grid. For some grids there will be multiple entries if that grid contains more than one defined entry.

Moving the mouse over a 6 place grid square will show only the stations within that smaller defined area. Maidenhead 6 popups will not show region data the way Maidenhead 4 popups do because of the complexity and size of the database required.

GridTracker ©2018 Stephen Loomis / NØTTL (A WSJT-X Companion) v1.18.0314

GridTracker by NØTTL
7.074.000 hz (40m) FT8
3/16/2018 4:55:28 AM UTC

DECODE
PSK-Reporter Band Activity

JO20BW										
DE	Sent	Rcvd	DX	Mode	Band	Last Msg	DXCC	Time	QSO	QSL
ON8KW	-13	-	-	FT8	40m	-	Belgium (209)	2/9/2018 9:05:45 PM UTC		

N2VFL FN20uc
DX Call
WB9TLH -15
United States

Grids 4170 Calls 4992
Countries 113 QSO 0
LCD 7 QSL 0
Decodes 333 Last 5

Clear Grids Clear Calls
Clear Paths Clear All

Legend
QRZ QSO
QSL CQ CODX
QSX QTH WSPR

Clicking the **Maidenhead** icon will toggle the display between four place **MH 4**, and six place **MH 6** Grid or **Push Pin** display.

Changing mode will clear all saved data and Grids/Pins on the map. While in 4 place mode, opening an ADI(F) with 6 place data, the final 2 placed will be truncated before data is displayed on the map.

Copying Grid Contents

While the grid square data is visible in a popup, shift-right clicking the mouse will copy all the visible data onto the clipboard as Comma Delimited text. This can be handy for active if the grid information needs to be copied elsewhere.

	A	B	C	D	E	F	G	H	I	J	K
1	EL87										
2	DE	RST Sent	RST Rcvd	DX	Mode	Band	Last Msg	DXCC	Time	QSO	QSL
3	KB4FB	-6-		YO7DBR	FT8	20m	EL87	United States (291)	8s		
4	KI4UIP	-9-			FT8	40m	-	United States (291)	2/13/2018 3:54:29 AM UTC		
5	KX4HL	-10-			FT8	40m	-	United States (291)	2/12/2018 11:20:59 PM UTC		
6	N4SEC	-21-			FT8	40m	-	United States (291)	2/12/2018 12:58:30 AM UTC		
7	NY1E	-14-			FT8	40m	-	United States (291)	2/12/2018 12:33:44 AM UTC		
8	K1KEN	-14-			FT8	40m	-	United States (291)	2/11/2018 11:43:45 AM UTC		
9	KQ0J	-7-			FT8	40m	-	United States (291)	2/11/2018 3:03:30 AM UTC		
10	K1ARL	-19-			FT8	40m	-	United States (291)	2/8/2018 1:03:14 AM UTC		


```

1 EL87
2 DE,RST Sent,RST Rcvd,DX,Mode,Band,Last Msg,DXCC,Time,QSO,QSL
3 KB4FB,-5,-,-,FT8,40m,-,United States (291),2/13/2018 12:00:14 PM UTC,,
4 KI4UIP,-9,-,-,FT8,40m,-,United States (291),2/13/2018 3:54:29 AM UTC,,
5 KX4HL,-10,-,-,FT8,40m,-,United States (291),2/12/2018 11:20:59 PM UTC,,
6 N4SEC,-21,-,-,FT8,40m,-,United States (291),2/12/2018 12:58:30 AM UTC,,
7 NY1E,-14,-,-,FT8,40m,-,United States (291),2/12/2018 12:33:44 AM UTC,,
8 K1KEN,-14,-,-,FT8,40m,-,United States (291),2/11/2018 11:43:45 AM UTC,,
9 KQ0J,-7,-,-,FT8,40m,-,United States (291),2/11/2018 3:03:30 AM UTC,,
10 K1ARL,-19,-,-,FT8,40m,-,United States (291),2/8/2018 1:03:14 AM UTC,,

```

LibreOffice Calc and Notepad++ shown above.

Paste as Un-formatted Text, and select Comma as delimiter for spreadsheets.

Opening Grid Lookup Window

Right Click will open new window that will, along with the grid Maidenhead identifier and DXCC entity information, contain the stations within that grid and all available information on the last message received by that station.



The screenshot shows a window titled "GridTracker Lookup" with a table of station data for grid EM74. The table has columns for DE, Sent, Rcvd, DX, Mode, Band, Last Msg, DXCC, and Time. The data is as follows:

EM74								
United States (Alabama / Georgia)								
DE	Sent	Rcvd	DX	Mode	Band	Last Msg	DXCC	Time
AJ1F	-7	-	-	FT8	20m	-	United States (291)	4/5/2018 9:11:29 PM UTC
K4ELI	-9	-	-	FT8	40m	-	United States (291)	4/5/2018 11:14:29 AM UTC
KW4GT	-10	-	-	FT8	40m	-	United States (291)	4/5/2018 2:04:30 AM UTC
NZ2Z	-17	-	-	FT8	40m	-	United States (291)	4/5/2018 1:26:30 AM UTC
K4OY	-5	-	-	FT8	40m	-	United States (291)	4/4/2018 11:37:14 AM UTC
W4JUJ	-3	-	-	FT8	40m	-	United States (291)	4/4/2018 12:25:59 AM UTC
AK0L	-17	-	-	FT8	40m	-	United States (291)	4/3/2018 9:34:59 PM UTC
K4LDC	-5	-	-	FT8	40m	-	United States (291)	3/31/2018 11:54:14 PM UTC
WA2EXZ	-5	-	-	FT8	40m	-	United States (291)	3/31/2018 11:08:14 AM UTC
AK4DO	-8	-	-	FT8	40m	-	United States (291)	3/31/2018 12:08:14 AM UTC
N4SEC	-21	-	-	FT8	20m	-	United States (291)	3/30/2018 2:26:59 PM UTC

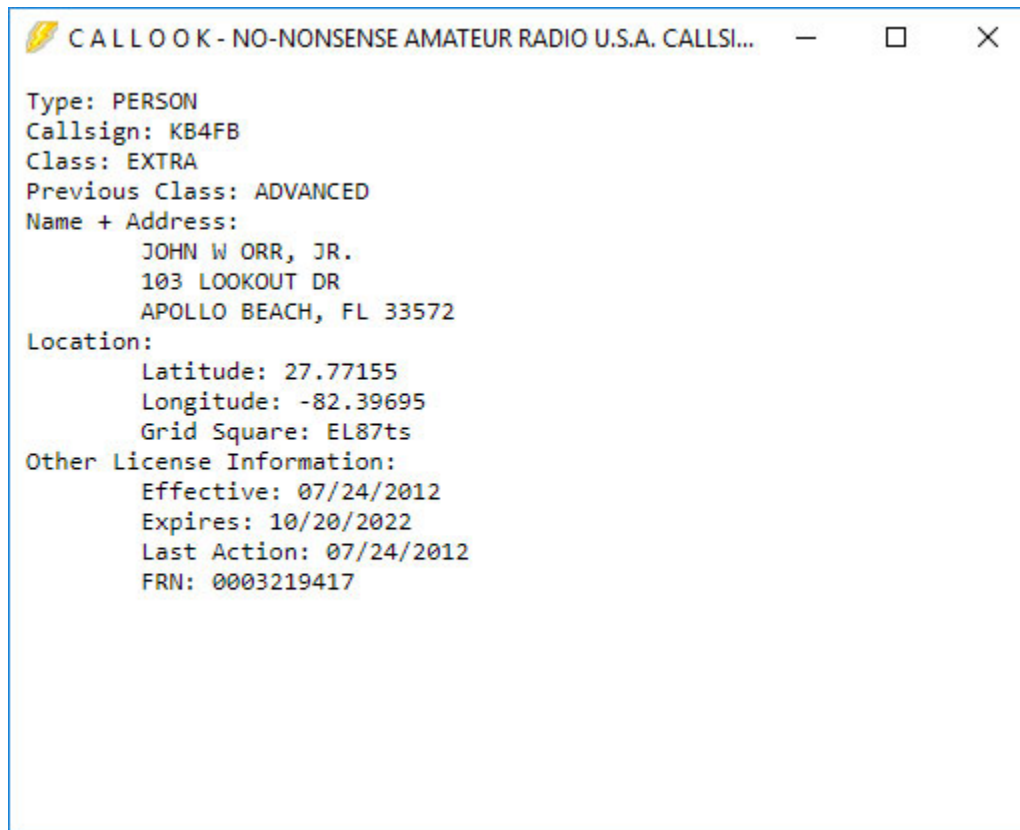
Call sign lookups through <https://callook.info>.

NOTES:

The DXCC column also displays the ARRL DXCC entity number.

Contacts older than 1 hour will show the Date and UTC of the contact, otherwise it will show time in minutes and seconds since signal decoding.

If you click on a call sign in the DE or DX column, it will do a call sign lookup through callook.info. Only US issued call signs will open the lookup window.

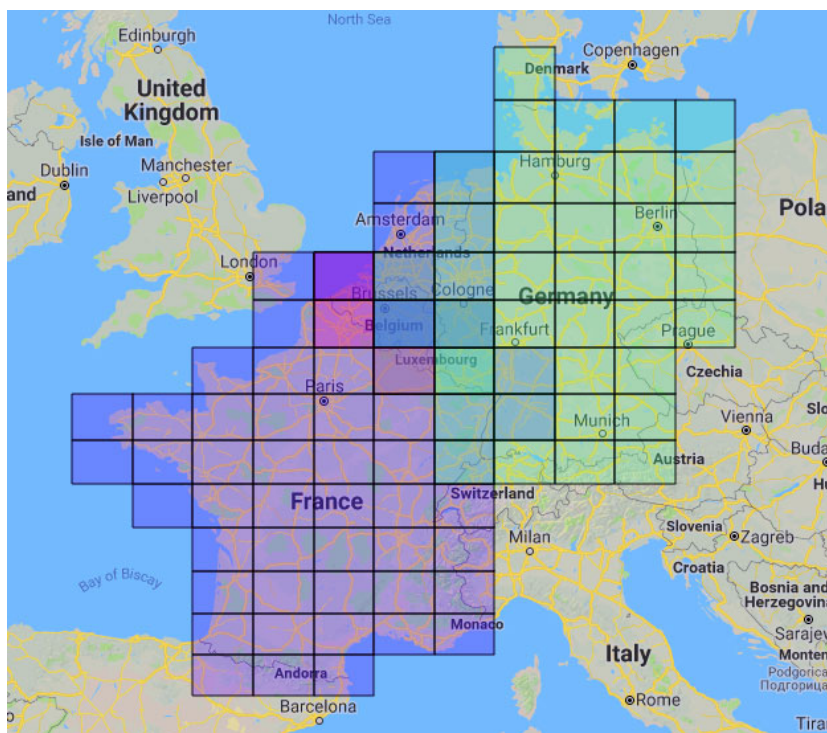


Grid Information

Right clicking over an empty grid will display the 4 place Maidenhead designator for that grid, as well as geographic entities within that grid, along with the DXCC ID.



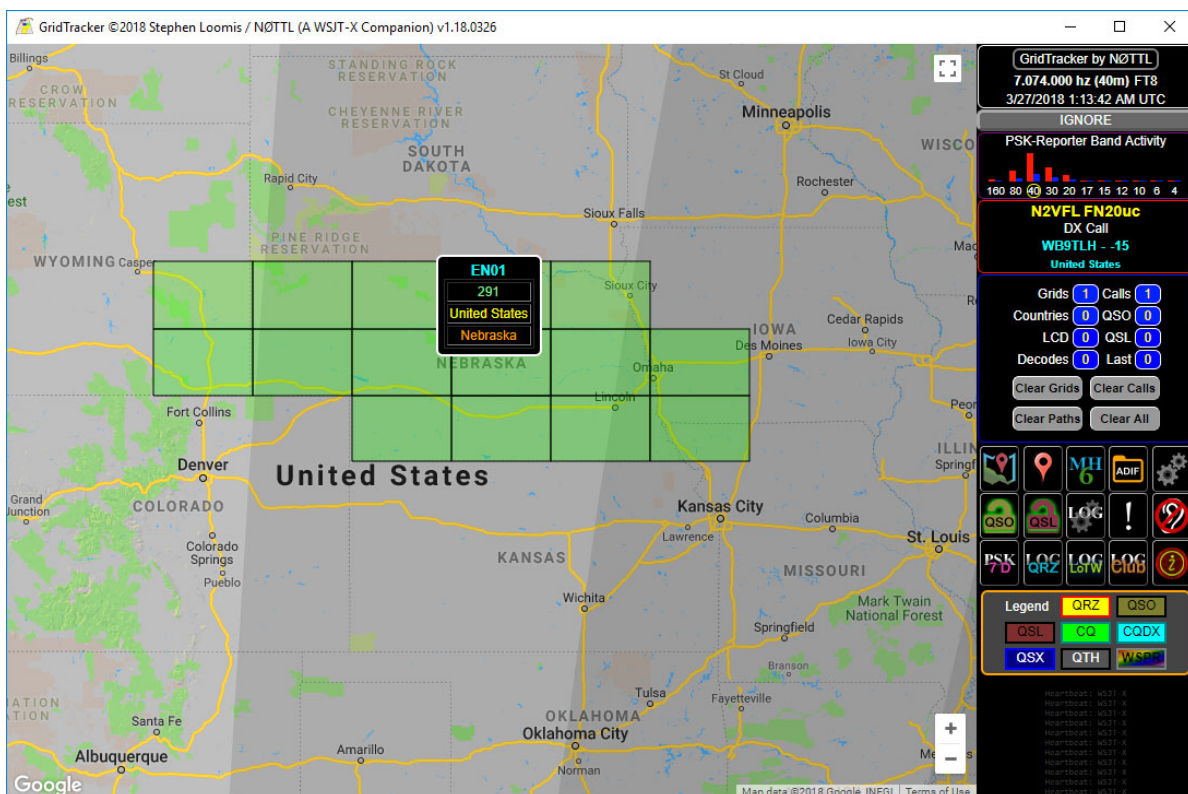
Hitting **A** with a grid selected, will highlight every grid in the entity(s) within that grid. If multiple entities are contained in the grid, then all entity bodies will be highlighted, each in a random color to differentiate them. Hitting **A** again will clear them.



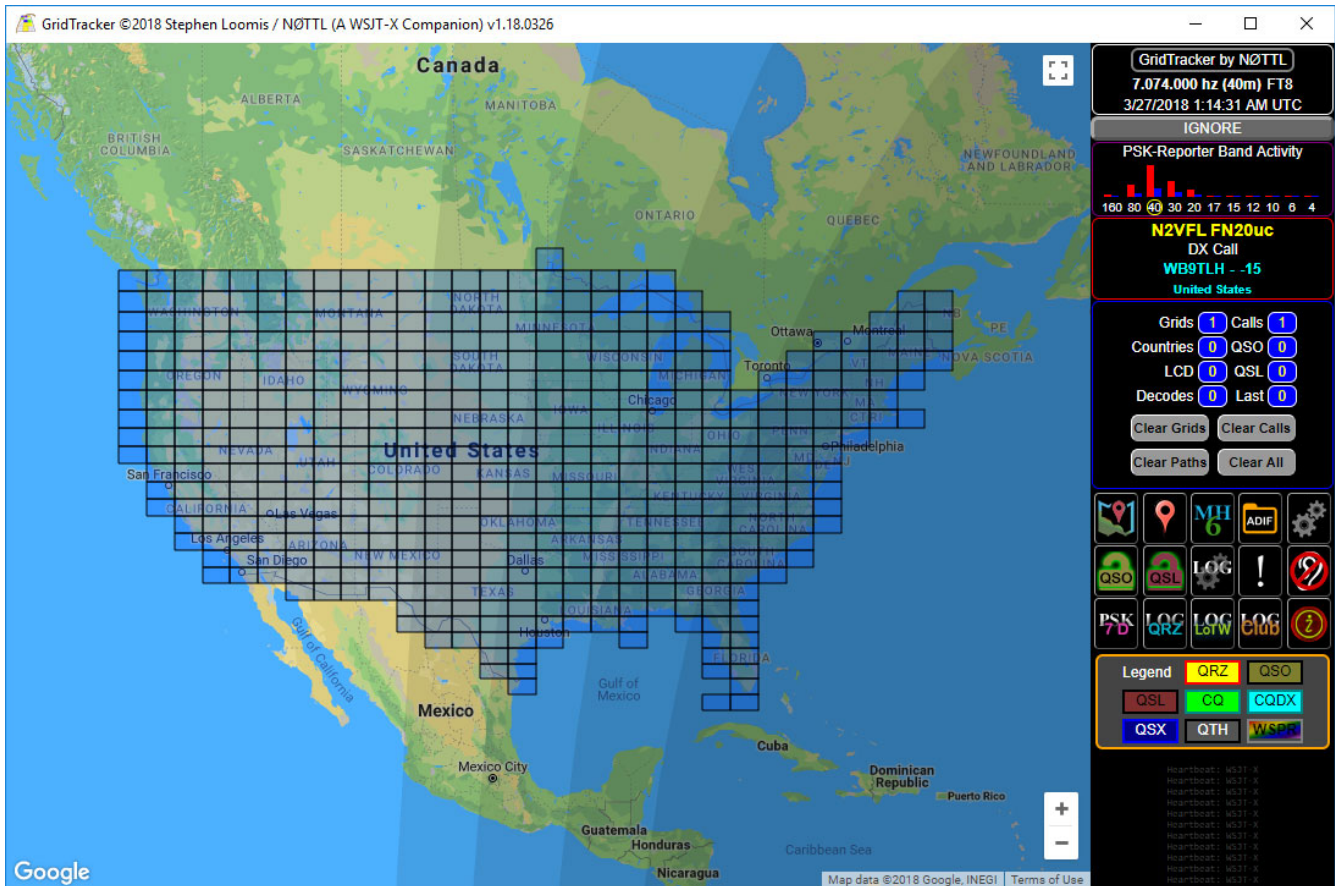
Selecting a grid in the Continental US or Canada will display Country with State(s)/Province(s).



Depending on the state of **CQ Designator Priority** in **Map Settings**, hitting **A** with a grid selected will display only the grids for the selected State(s)/Province(s) in the US, Canada, Mexico and Australia;



Or the grids for the entire Country;



NOTE: More Countries will be added in each future release, so the above list may not be current or complete.

EDITING SPEECH JSON FILES

Two JSON files contain the phonetics and content for the voice alerts, **phones.json** and **enums.json**. The contents of these files can be edited to customize the alerts according to user preferences.

Before making any changes, backup the originals! A text editor like Notepad++ is recommended.

Phonetic Changes

In **phones.json**, the definition of “/” is set to “Stroke”:

```
...
...
"6": "Six" ,
"7": "Seven" ,
"8": "Eight" ,
"9": "Nine" ,
"/": "Stroke",
" ": " ", "
}
```

To change it to “slash”, simply edit the corresponding entry,

```
"/": "Stroke", to
```

```
"/": "Slash" .
```

Individual changes, such as changing Nine to Niner, or making the entire listing language specific to your locale may be done in the same way.

Geographic Nameplace Changes

In `enums.json`, each designator is followed by a name entry

```
{  
  "AA": "US Armed Forces",  
  "AB": "Alberta",  
  "AD": "Andorra",  
  "AE": "US Armed Forces Overseas",  
  "AF": "Africa",  
  "AG": "Antigua & Barbuda",  
  "AI": "Anguilla",  
  "AK": "Alaska",  
  "AL": "Alabama",  
  ...  
}
```

The designator field may be customized to make GridTracker announcements language specific to your needs.

For Example:

```
"DX": "Distance",
```

Can be changed for the shorter announcement,

```
"DX": "Dee Ex".
```

NOTE: Errors in either of these files will make GridTracker very sad. Be sure to double check your edits, and verify proper JSON structure and format with an online validator such as;

<https://jsonformatter.curiousconcept.com>.

If errors in edits cause issues, either copy over the JSON files with your backups, or reinstall GridTracker. Proper JSON file structure **MUST** be maintained.

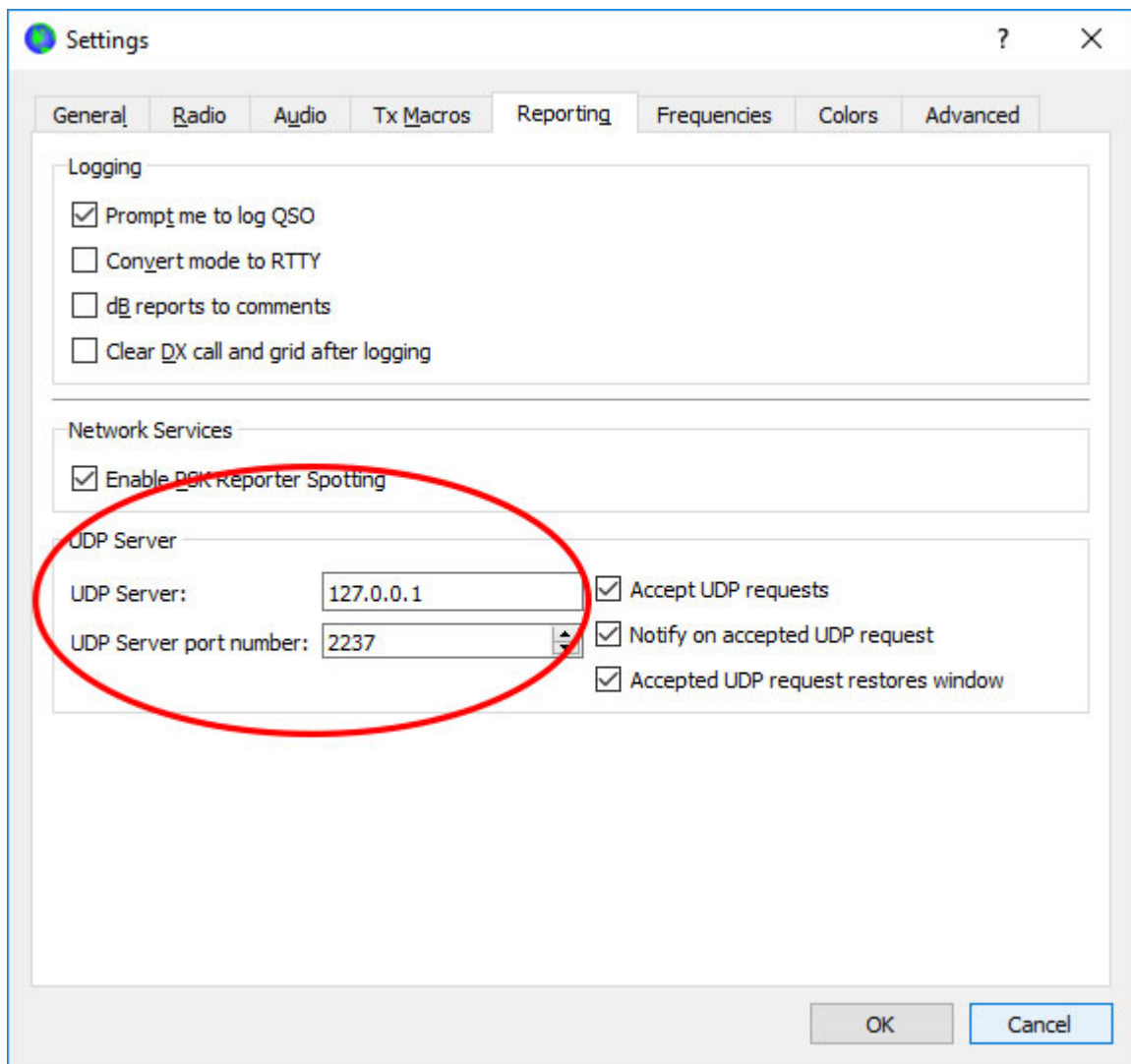
NOTE: The included DXCC JSON file that contains the MH4 grid entities may be reused **ONLY** if the included copyright attribution is included in it's entirety regardless of use in it's entirety or edits.

IMPORTANT!: Be sure to have backups saved, as all json files are reloaded with updates. Check file format(s) before overwriting as they may change in future versions.

WARNING!: None of the other json files created, or used by GridTracker should be edited by the user. Ever!

NOTES on WSJT-X JTDX and PSKReporter

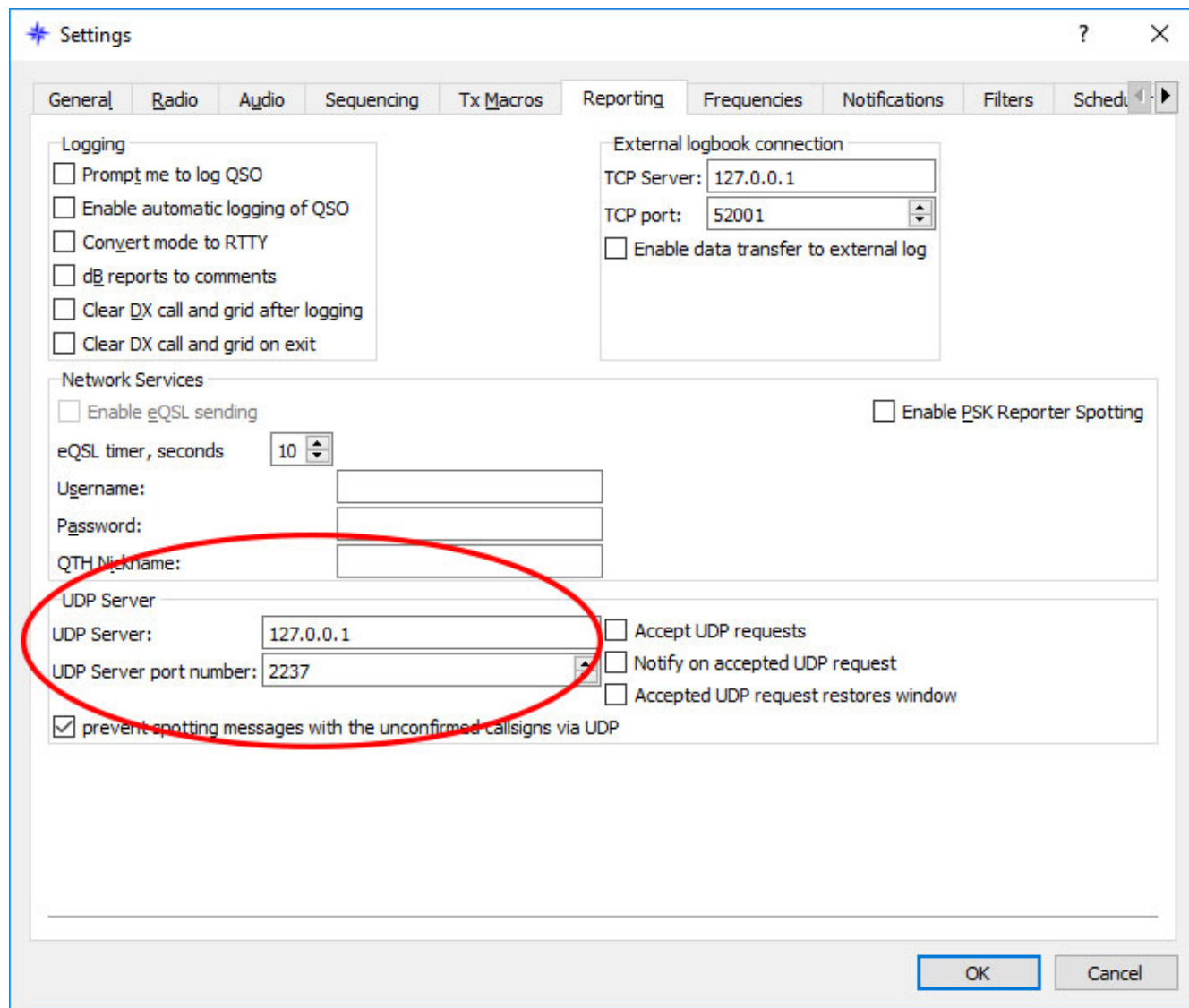
WSJT-X UDP settings can be found in the fifth tab of the Settings menu (F2).



Settings other than 127.0.0.1 for the UDP server address, and 2237 as the active port will cause GridTracker to not see any active data.

Make sure **Enable PSK Reporter Spotting** is checked to have all decodes logged at PSKReporter.info. See WSJT-X docs and PSKReporter.info for more information.

JTDX UDP settings can be found in the sixth tab of the Settings menu (F2).



PLATFORM NOTES

All Platforms

Some features may not be available on all platforms at the time of release. Future releases will make resolving incompatibilities a top priority so that all supported OSs have the same feature set and capabilities, if possible. Always check for a Readme in the distribution files for last minute changes or other important information.

Windows

Sounds are in:

C:/Users/[username]/Documents/Gridtracker/media

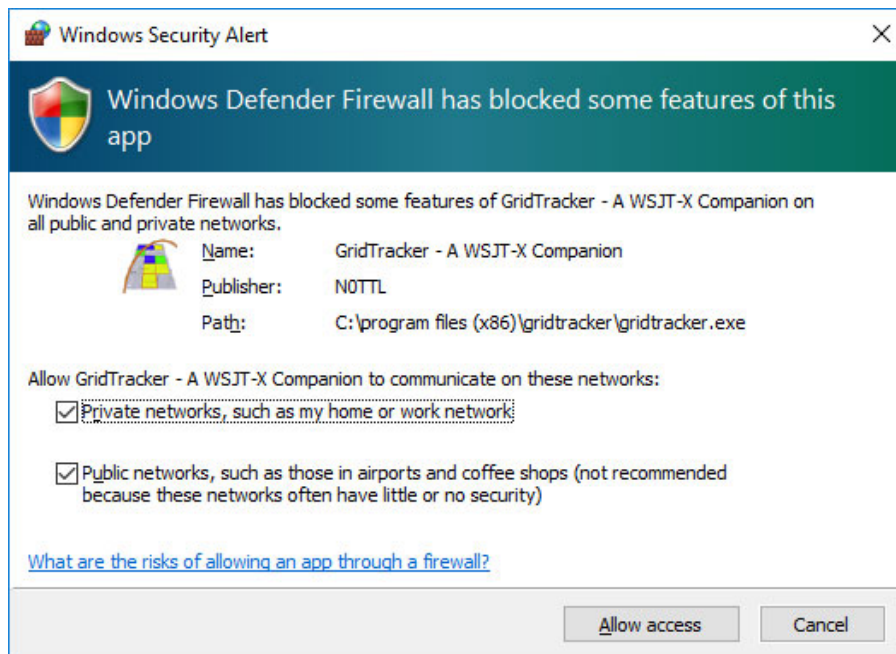
JSON files can be found in:

C:/Program Files(x86)/GridTracker/package.nw/data

Offline maps are stored in

C:/Program Files(x86)/GridTracker/package.nw/map

During installation or upgrade, you may get a Windows security alert. To ensure that all features of GridTracker function, select both Private and Public networks.

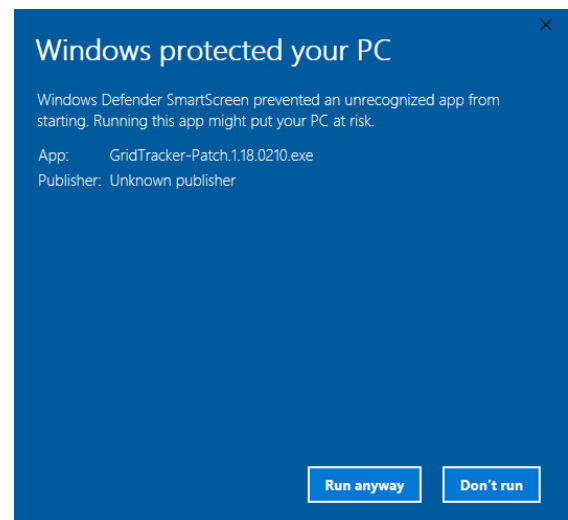
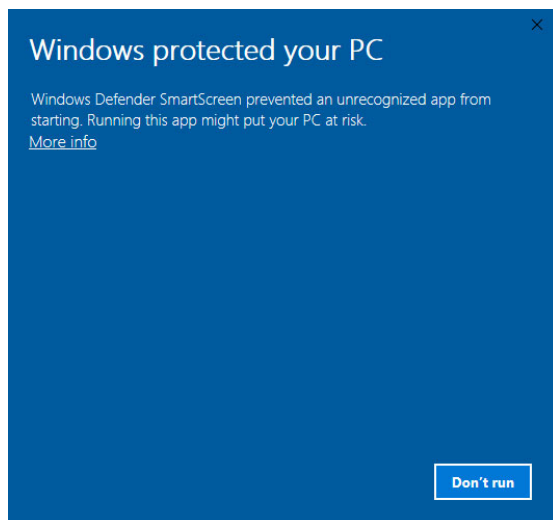


Editing JSON Files.

Your editor may need to be opened in Administrator Mode to allow saving edited files.

Windows 10

During Installation or upgrade, Windows may display a Windows Defender Smartscreen warning. If this happens, it is not because Defender detected any treat, but simply that it did not find a Verisign certificate for the app being installed. Simply click **More Info**, and the popup will be replaced by one showing additional info. To complete installation, press **Run anyway**, and the installer process will continue.



Mac

Files can be found in:

{user}\Documents\GridTracker

/home/{user}/Documents/GridTracker

Debian

Files can be found in:

{user}\Documents\GridTracker

/home/{user}/Documents/GridTracker

Tested on Ubuntu 16.xx/64

Do not run as root.

Currently, vocalizations (TTS) in Debian do not work.

If you get the error:

GridTracker: error while loading shared libraries:

libXss.so.1: can not open shared object file: No such file or directory

you will need to install "libXScrnSaver"

```
sudo yum install libXScrnSaver
```

Raspbian

Download GridTracker - Linux Arm - tar.gz .

Open File Manager and navigate to Downloads. Right click the file and select Extract Here, or extract to a location of your choice.

Open a Terminal and navigate to the folder you extracted to.

Type ./Gridtracker, and that will launch the main GridTracker application.

To launch from the desktop in this example we'll assume you're working from home/pi/Desktop. Edit or create *yourname.desktop* in /home/yourname/Desktop, and GridTracker was extracted to home/pi/Downloads/GridTracker.

pi.desktop would contain:

```
[Desktop Entry]
Name=GridTracker
Comment=GridTracker
Icon=/home/pi/Downloads/gridtracker.png
Exec=/home/pi/Downloads/GridTracker/GridTracker
Type=Application
Encoding=UTF-8
Terminal=false
Categories=None;
```

NOTES: Text-To-Speech currently not functioning.

phone.json

```
{  "A":"Alfa" ,
    "B":"Bravo" ,
    "C":"Charlie" ,
    "D":"Delta" ,
    "E":"Echo" ,
    "F":"Fox-trot" ,
    "G":"Golf" ,
    "H":"Hotel" ,
    "I":"India" ,
    "J":"Juliette" ,
    "K":"Kilo" ,
    "L":"Lima" ,
    "M":"Mike" ,
    "N":"November" ,
    "O":"Oscar" ,
    "P":"Papa" ,
    "Q":"Quebec" ,
    "R":"Romeo" ,
    "S":"Sierra" ,
    "T":"Tango" ,
    "U":"Uniform" ,
    "V":"Vicktor" ,
    "W":"Whiskey" ,
    "X":"X-ray" ,
    "Y":"Yankee" ,
    "Z":"Zulu" ,
    "0":"Zero" ,
    "1":"One" ,
    "2":"Too" ,
    "3":"Three" ,
    "4":"Four" ,
    "5":"Five" ,
    "6":"Six" ,
    "7":"Seven" ,
    "8":"Eight" ,
    "9":"Nine" ,
    "/":"Stroke",
    " ":" , "
}
```

NOTE: Leema and Vicktor are misspelled intentionally for proper phonetic vocalization.

enums.json

```
{
  "CN-AF": "Afghanistan",
  "AF": "Africa",
  "AL": "Alabama",
  "AX": "Aland Is.",
  "AK": "Alaska",
  "CN-AL": "Albania",
  "AB": "Alberta",
  "DZ": "Algeria",
  "ALL": "All CQ designators",
  "CN-AS": "American Samoa",
  "AD": "Andorra",
  "AO": "Angola",
  "AI": "Anguilla",
  "AQ": "Antarctica",
  "AN": "Antarctica",
  "AG": "Antigua & Barbuda",
  "CN-AR": "Argentina",
  "AZ": "Arizona",
  "AR": "Arkansas",
  "AM": "Armenia",
  "AW": "Aruba",
  "AS": "Asia",
  "AU": "Australia",
  "AT": "Austria",
  "CN-AZ": "Azerbaijan",
  "IO": "BIO Territory",
  "BS": "Bahamas",
  "BH": "Bahrain",
  "BD": "Bangladesh",
  "BB": "Barbados",
  "BY": "Belarus",
  "BE": "Belgium",
  "BZ": "Belize",
  "BJ": "Benin",
  "BM": "Bermuda",
  "BT": "Bhutan",
  "BO": "Bolivia",
  "BA": "Bosnia & Herzegovina",
  "BW": "Botswana",
  "BV": "Bouvet Is.",
  "BR": "Brazil",
  "BC": "British Columbia",
  "VG": "British Virgin Is.",
```

"BN": "Brunei Darussalam",
"BG": "Bulgaria",
"BF": "Burkina Faso",
"MM": "Burma",
"BI": "Burundi",
"CA": "California",
"SB": "California",
"KH": "Cambodia",
"CM": "Cameroon",
"CN-CA": "Canada",
"CV": "Cape Verde",
"CN-KY": "Cayman Is.",
"CF": "Central African Republic",
"TD": "Chad",
"CL": "Chile",
"CN": "China",
"CX": "Christmas Is.",
"CC": "Cocos (Keeling) Is.",
"CN-CO": "Colombia",
"CO": "Colorado",
"KM": "Comoros",
"CG": "Congo",
"CT": "Connecticut",
"CK": "Cook Is.",
"CR": "Costa Rica",
"CI": "Cote d'Ivoire",
"HR": "Croatia",
"CU": "Cuba",
"CY": "Cyprus",
"CZ": "Czech Republic",
"DC": "D.C.",
"CD": "DR of Congo",
"DE": "Delaware",
"DK": "Denmark",
"DX": "Distance",
"DJ": "Djibouti",
"DM": "Dominica",
"DO": "Dominican Republic",
"EC": "Ecuador",
"EG": "Egypt",
"SV": "El Salvador",
"GQ": "Equatorial Guinea",
"ER": "Eritrea",
"EE": "Estonia",
"ET": "Ethiopia",
"EU": "Europe",

"FK": "Falkland Is.",
"FO": "Faroe Is.",
"FJ": "Fiji",
"FI": "Finland",
"FL": "Florida",
"FR": "France",
"GF": "French Guiana",
"PF": "French Polynesia",
"TF": "French Southern & Antarctic Lands",
"CN-GA": "Gabon",
"GM": "Gambia",
"GE": "Georgia",
"GA": "Georgia",
"CN-DE": "Germany",
"GH": "Ghana",
"GI": "Gibraltar",
"GR": "Greece",
"GL": "Greenland",
"GD": "Grenada",
"GP": "Guadeloupe",
"CN-GU": "Guam",
"GU": "Guam",
"GT": "Guatemala",
"GG": "Guernsey",
"GN": "Guinea",
"GW": "Guinea-Bissau",
"GY": "Guyana",
"HT": "Haiti",
"HI": "Hawaii",
"HM": "Heard Is. & McDonald Is.",
"HN": "Honduras",
"HK": "Hong Kong",
"HU": "Hungary",
"IS": "Iceland",
"ID": "Idaho",
"IL": "Illinois",
"CN-IN": "India",
"IN": "Indiana",
"CN-ID": "Indonesia",
"IA": "Iowa",
"IR": "Iran",
"IQ": "Iraq",
"IE": "Ireland",
"IM": "Isle of Man",
"CN-IL": "Israel",
"IT": "Italy",

"JM": "Jamaica",
"JP": "Japan",
"JE": "Jersey",
"JO": "Jordan",
"KS": "Kansas",
"KZ": "Kazakhstan",
"KY": "Kentucky",
"KE": "Kenya",
"KI": "Kiribati",
"KW": "Kuwait",
"KG": "Kyrgyzstan",
"CN-LA": "Laos",
"LV": "Latvia",
"LB": "Lebanon",
"LS": "Lesotho",
"LR": "Liberia",
"LY": "Libya",
"LI": "Liechtenstein",
"LT": "Lithuania",
"LA": "Louisiana",
"LU": "Luxembourg",
"CN-MO": "Macau",
"MK": "Macedonia",
"MG": "Madagascar",
"ME": "Maine",
"MW": "Malawi",
"MY": "Malaysia",
"MV": "Maldives",
"ML": "Mali",
"CN-MT": "Malta",
"MB": "Manitoba",
"MH": "Marshall Is.",
"MQ": "Martinique",
"MD": "Maryland",
"MA": "Massachusetts",
"MR": "Mauritania",
"MU": "Mauritius",
"CN-YT": "Mayotte",
"MX": "Mexico",
"MI": "Michigan",
"FM": "Micronesia",
"MN": "Minnesota",
"MS": "Mississippi",
"MO": "Missouri",
"CN-MD": "Moldova",
"MC": "Monaco",

"CN-MN": "Mongolia",
"MT": "Montana",
"CN-ME": "Montenegro",
"CN-MS": "Montserrat",
"CN-MA": "Morocco",
"MZ": "Mozambique",
"MP": "N. Mariana Is.",
"CN-NA": "Namibia",
"NR": "Nauru",
"NE": "Nebraska",
"NP": "Nepal",
"CN-NL": "Netherlands",
"CN-AN": "Netherlands Antilles",
"NV": "Nevada",
"NB": "New Brunswick",
"CN-NC": "New Caledonia",
"NH": "New Hampshire",
"NJ": "New Jersey",
"NM": "New Mexico",
"NY": "New York",
"NZ": "New Zealand",
"NL": "Newfoundland & Labrador",
"NI": "Nicaragua",
"CN-NE": "Niger",
"NG": "Nigeria",
"CN-NU": "Niue",
"NF": "Norfolk Is.",
"NA": "North America",
"NC": "North Carolina",
"ND": "North Dakota",
"KP": "North Korea",
"NT": "Northwest Territories",
"NO": "Norway",
"NS": "Nova Scotia",
"NU": "Nunavut",
"OC": "Oceania",
"OH": "Ohio",
"OK": "Oklahoma",
"OM": "Oman",
"ON": "Ontario",
"OR": "Oregon",
"PK": "Pakistan",
"PW": "Palau",
"PS": "Palestine",
"CN-PA": "Panama",
"PG": "Papua New Guinea",

"PY": "Paraguay",
"PA": "Pennsylvania",
"CN-PE": "Peru",
"PH": "Philippines",
"PN": "Pitcairn Is.",
"PL": "Poland",
"PT": "Portugal",
"PE": "Prince Edward Is.",
"CN-PR": "Puerto Rico",
"PR": "Puerto Rico",
"QA": "Qatar",
"QC": "Qu\u00e9bec",
"RE": "Reunion",
"RI": "Rhode Is.",
"RO": "Romania",
"RU": "Russia",
"RW": "Rwanda",
"GS": "S Georgia S Sandwich Is.",
"WS": "Samoa",
"SF": "San Francisco",
"SM": "San Marino",
"ST": "Sao Tome & Principe",
"SK": "Saskatchewan",
"CN-SA": "Saudi Arabia",
"SN": "Senegal",
"RS": "Serbia",
"CN-SC": "Seychelles",
"SL": "Sierra Leone",
"SG": "Singapore",
"CN-SK": "Slovakia",
"SI": "Slovenia",
"CN-SB": "Solomon Is.",
"SO": "Somalia",
"ZA": "South Africa",
"SA": "South America",
"SC": "South Carolina",
"SD": "South Dakota",
"KR": "South Korea",
"ES": "Spain",
"LK": "Sri Lanka",
"BL": "St. Barthelemy",
"SH": "St. Helena",
"KN": "St. Kitts & Nevis",
"LC": "St. Lucia",
"MF": "St. Martin",
"PM": "St. Pierre & Miquelon",

"VC": "St. Vincent & the Grenadines",
"CN-SD": "Sudan",
"SR": "Suriname",
"SJ": "Svalbard",
"SZ": "Swaziland",
"SE": "Sweden",
"CH": "Switzerland",
"SY": "Syrian Arab Republic",
"TW": "Taiwan",
"TJ": "Tajikistan",
"TZ": "Tanzania",
"TN": "Tennessee",
"TX": "Texas",
"TH": "Thailand",
"TL": "Timor-Leste",
"TG": "Togo",
"TK": "Tokelau",
"TO": "Tonga",
"TT": "Trinidad & Tobago",
"CN-TN": "Tunisia",
"TR": "Turkey",
"TM": "Turkmenistan",
"TC": "Turks & Caicos Is.",
"TV": "Tuvalu",
"CN-AE": "UAE",
"AA": "US Armed Forces",
"AE": "US Armed Forces Overseas",
"AP": "US Forces Pacific",
"UM": "US Outlying Is.",
"VI": "US Virgin Is.",
"UG": "Uganda",
"UA": "Ukraine",
"GB": "United Kingdom",
"US": "United States",
"UY": "Uruguay",
"UT": "Utah",
"UZ": "Uzbekistan",
"VU": "Vanuatu",
"CN-VA": "Vatican City",
"VE": "Venezuela",
"VT": "Vermont",
"VN": "Viet Nam",
"VA": "Virginia",
"WF": "Wallis & Futuna Is.",
"WA": "Washington",
"WV": "West Virginia",

```
"EH": "Western Sahara",  
"WI": "Wisconsin",  
"WY": "Wyoming",  
"YE": "Yemen",  
"YT": "Yukon",  
"ZM": "Zambia",  
"ZW": "Zimbabwe"
```

```
}
```


CHANGELOG

[v1.18.0406] March 6th, 2018

- * Reversed Right-Click and Shift-Right-Click on grid behavior (Thanks ZL1RPL)
- * Renamed Countries list to DXCCs
- * Fixed station-flags from re-appearing after disabled
- * Fixed station-flag info sometimes following the mouse pointer
- * Fixed path-width not saving across sessions
- * Fixed issue while ignoring messages and switching between offline/online would allow messages again
- * Added Country Flag compiled for DXCCs by N2VFL
- * Added UTC / Local time toggle (press the timestamp on the menu to toggle)
- * Added Multicast UDP Support! (224.0.0.1 - 239.255.255.255)
- * Added ability to turn off legend in map settings
- * Added France and German states to DXCC lookups
- * Added ability to hide menu (press menu header)
- * Added loading of Callsigns from WSJT-X logfile for 'worked' info
- * Moved Night-shadow toggle back to menu
- * Moved all settings to tabbed panel
- * Moved all informative lookups except "Current Conditions" to tabbed panel
- * TODO: Add 'CQ' Zones, Stats view, New Alert types, QRZ.com callsign lookups for QRZ.com members

[v1.18.0330] March 30th, 2018

- * Added optional On-Air reporting
- * Added View other On-Air GridTracker stations
- * Added State/Province info for North America
- * Added Decode history charting (press 'Last (###)' to view)
- * Improved Windows installer for size and speed, no more patches
- * Moved Quickstart guide to our website (<https://tagloomis.com/docs>)

[v1.18.0324] March 24th, 2018

- * Added current conditions view (Online map mode only)
- * Added show grid info on right-click on open map
- * Added Key press M, T or V while holding-right-mouse on open map creates Grid alert
- * Added HRDLOG.net QSO logging
- * Added 7 day option to PSKReporter log download
- * Fixed issue with Log file settings not saving correctly
- * Fixed security issue with QRZ.com transactions, now 100% SSL

[v1.18.0318] March 18th, 2018

- * Added Log4OM QSO logging support (Special thanks to Kevin Fontes (KI0EB))
- * Complete overhaul of WSJT-X message handling, no more issues on Mac and Linux
- * TODO: Take a nap

[v1.18.0315] March 15th, 2018

- * Fixed an issue with Alert media file selection
- * Moved Media and GridTracker QSO log files to {user}\Documents\GridTracker
- * (If you have created Media file alerts, you will need to make new ones. Sorry)
- * Ported to Mac platform
- * Ported to Linux - 64 bit - Debian flavor
- * Fixed ToolTip weirdness on shift-right-click

[v1.18.0314] March 14th, 2018

- * Moved Grid Decay and Path Width sliders into the Map Settings window
 - * Removed eQSL log downloading due to ADIF incompatibilities
 - * Added QSO and QSL pop-up tables with sortable columns
 - * Added CQ Designator "ALL" to alerts to alert on all CQ Designators
 - * Added CQ "Continent", "Country" and "US States and Canadian Provinces" outline dazzle
 - * Added CQ Designator prioritizing lookups, with FIPS alias support (eg: Japan ISO "JA" to FIPS "JP")
 - * Added "CQ DX" Alert exclusion if calling station is from the same DXCC as you
 - * Added map pan/center on Alert caller if grid known
 - * Added correct prefixes for US territories (Guam, Wake Island...)
 - * Split Russian grids between European and Asiatic DXCCs
 - * Special thanks to Rick (N0BNK) for the new feature request; "Clear grids on Band change" option
 - * Special thanks to Steve (KF3BH) for the new feature request; "Unique WSPR Grid Color per Band"
 - * TODO: More DXCC Prefix additions
 - * TODO: Linux AMD/Intel 64/32 and Mac ports (No Linux-ARM is planned at this time)
- ==> 'Remember to look up at the stars' -Stephen Hawking[v1.18.0310] March 10th, 2018

- * Fixed issue with Grid tooltip and Windows 10
- * Added N1MM Logger+ UDP QSO Logging
- * Added QRZ.com QSO Logging
- * Added GridTrackers own QSO Logging and Loading
- * Added a complete list of Maidenhead Grids for each DXCC (Henry and I had fun editing this one)
- * Added country list inside Grid tooltip header (check out J020)
- * Added Band color to Maidenhead 6-wide pin mode
- * Improved load times of large ADIF files significantly
- * NOTE: If you have "Ignore Messages" enabled and forget, don't worry; QSO's from WSTJ-X will still be logged.
- * TODO: Contesting support? You tell us what you need/want, we're listening

[v1.18.0307]

- * Fixed issue with ADIF band selection dialog
- * Fixed issue when switching map types
- * Added Callsign QSO/QSL exclusion to alerts
- * Added QRZ.com, eQSL, Logbook of the World, ClubLog log file downloading
- * Added PSKReporter 24 hour to log settings with startup option
- * Added Band selection to all log types
- * Added Google map styling options
- * Added fullscreen control to offline map
- * Moved load ADIF on startup dialog to Log Settings window
- * Changed path color to compliment hue, if set
- * TODO: Multicast UDP Support
- * MAYBE: QSO uploading
- * NOTE: When in offline map mode, remote ADIF downloading is disabled

[v1.18.0304] March 4th, 2018

- * No patch available this release
- * Fixed wsjt-x/jtdx ini loading issue introduced in last release
- * Added QRZ (Someone calling you) alert type
- * Added offline maps (Terrain and Toner)
- * Added map settings window
- * Added many offline map options
- * Changed startup logic, if google maps fails to load, revert to offline mode.
- * TODO: Multicast UDP support
- * TODO: eQSL, QRZ, LoTW logbook downloading.
- * NOTE: pushing alert exclusions to the back-burner unless someone really needs it

[v1.18.0228] Feb 28th, 2018

- * Fixed an issue with bad callsign decoding
- * Added WSPR decodes
- * Added alerts for Callsign, CQ Designator, DXCC, Gridsquare
- * Added alert notification types Media File, Text-to-Speech, Flash-PopUp
- * Added text-to-speech settings
- * Added audio alert volume settings
- * Added full country/dxcc support
- * Added ITU callsign prefix recognition
- * Added country counts and display window
- * Added callsign display window
- * Added number of decoded messages per decode round
- * Added save and restore of window position and size
- * Added N2VFL Tooltip popout of grid info (shift-right-click on gridsquare)
- * Added country and dxcc code to grid info
- * Added country to DX Call area
- * Added extensive but not complete CQ enums
- * Added 264 Audio Clips for use with Alerts (add your own too!)
- * TODO: alert exclusions are coming for qso/qsl dxcc, callsigns and grids
- * TODO: Multi-cast UDP support
- * TODO: eQSL, QRZ, LoTW logbook downloading.
- * NOTE: If there's an alert style/case you need please let us know

[v1.18.0221] Feb 22th, 2018

- * Added full country/dxcc support
- * Added ITU callsign prefix recognition
- * Added country counts and display window
- * Added number of decoded messages per decode round
- * Added save and restore of window position and size
- * Added N2VFL Tooltip popout of grid info (shift-right-click on grid square)
- * Added country and dxcc code to grid info
- * Added country to DX Call area
- * NOTE: All this was needed in advance of Alerts.

[v1.18.0216] Feb 22th, 2018

- * I want to thank Henry (N2VFL) again for his tireless efforts on documentation, imagery and testing!
- * I said alerts would be in this release, but there were too many other improvements
- * Added Band Activity as reported by PSKReporter.info! (refreshed every 15 minutes)
- * Cleaned up the menu more, moved the legend to the bottom
- * Added brand new icons created by Henry
- * QSL / Confirmed added in log loading
- * QSL / Confirmed grid squares can be locked from decaying in settings
- * Maidenhead designator 4 place and 6 place toggle.
- * PSK-24H button will grab your last 24 hours of traffic from PSKReporter.info
- * Log loading no longer locks out the UI, giving you a visual as you load (fun to watch on 14 days logs from PSKReporter)
- * Increased minimum size from 800x600 to 1024x700
- * TODO: Alerts still in the works.

[v1.18.0212] Feb 12th, 2018

- * Right-clip clipboard copy of grid square tooltip now in CSV format
- * QSO count added to Menu (Logfiles and WSJT-X Log QSO message will increase the count)
- * QSOs now have a unique "highlighter" grid square
- * QSOs can be locked so they do not change or decay when new messages arrive
- * Low Confidence decodes and unknown messages moved to separate window (freeing room for alerts)
- * Added Low Confidence decodes and QSO counts to stats view
- * Push-Pin mode toggle added
- * TODO: Alerts next release!

[v1.18.0210] Feb 10th, 2018

- * UDP message forward support (optionally forward messages to another IP:Port)
- * 6 character wide Maidenhead grid square support when loading ADIF log files
- * Fixed issue when loading large ADIF files (6 wide mode will consume more ram than normal 4 wide)
- * Load ADIF on startup changed to its own selectable file
- * WSJT-X and JTDX configuration aware (will try to come up on the right port on a fresh install, or clean settings)
- * Complete overhaul of startup process
- * Validation, validation, validation! (entered fields are validated as you enter them, no 'set' needed)
- * "Clear All Settings" added to settings menu
- * Version naming convention changed
- * General code and UI clean up, still lots to go
- * TODO: Alerts!

[v1.18.28] Feb 8th, 2018


- * Prompt for "Band" on ADIF loading
- * Optional load last ADIF on startup/decode.
- * Version checking with self-updating for minor updates (if allowed)
- * Odd flashing issue when scrolling over a grid square with many entries fixed
- * Saved settings restored correctly

[Older than v1.18.28]

- * Too many to mention!

HARDWARE and SOFTWARE

Radio hardware and software used while testing, and creating all the example shots in this document:

- SDR# - www.airspy.com 
Our favorite SDR software.
- WSJT-X - <https://physics.princeton.edu/pulsar/k1jt/wsجتx.html>
JT65, FT8, etc decoder from Joe Taylor, K1JT.
The guy!
- VBCable - <https://www.vb-audio.com/Cable/>
Audio patch software.
- Airspy HF+ - www.airspy.com
The BEST HF SDR radio available in it's price range (or lots higher).
- GridTracker - Tested to run on Windows XP, 7, 8.1 and 10.
While running, GridTracker uses less than 200 MB of memory.

Tested Platforms:

Windows 10/64	https://www.microsoft.com AMD Ryzen 5, 16 GB memory (Works fine with much much less).
Windows 7	8 Core Intel i7 2.3ghz 16GB memory
Mac	MacOS Sierra Retina 5k 27inch Late 2015: 3.2g Intel i5 16GB memory
Ubuntu	4 Core Intel i5 32bit 14.04.5 LTS 64bit 16.04.4 LTS 16GB memory
Raspbian	Raspbian-stretch 2018-03-13 Raspberry Pi 2 Model B Logitech MK320 Keyboard/Mouse Vizio 42" LCD

Other:

This document was created using:

- LibreOffice - <https://www.libreoffice.org/>
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Please report all errors, omissions or suggestions to gridtracker@gmail.com.