# About DXer Tools

This application contains stuff that I've developed for my own use in domestic MW DXing over the past few years. (Some of it can also be used for FM DXing.) I'm making DXer Tools publicly available since others may find it useful also. DXer Tools is especially designed with DXing SDR spectrum recording in mind as it provides a way of switching between older and current station lists.

The name DXer Tools does not have any connection with the DX Tools company run by the late Gerry Thomas. It's just what I called the application when I first created it, with no thought of making this public. Ironically, Gerry has a connection to what I think is the best tool here … but more on that below.



Don Moore  DonMooreDXer@Yahoo.com
http://www.DonMooreDXer.com/apps/

## What Does DXer Tools Do?

Phonetic Search: Helps the DXer find listed stations with call signs phonetically similar to what was heard. Works for US and Canadian AM and FM stations.

FCC Cross Search: Search on two different frequencies (AM and/or FM) for stations that are either in the same city or have the same owner.

Make HTML Pages: Create formatted web pages for local use from FCC data and from the Topaz Designs website.

Check Logs: Compares logs with FCC data to check for typos or other errors in call sign, state/province, or city of license.

# Getting Started with DXer Tools

DXer Tools doesn't need to be installed. Just unzip the folder and place it somewhere on your system. (And that someplace should be where Windows won't complain when new files and folders get created.) DXer Tools can even be run from a USB thumb drive. The DXerTools folder contains these files and folders:

*DXerTools.exe*: This is the program. Click on it to open.

*createdPages* folder: This currently empty folder is used for HTML pages created by DXer Tools.

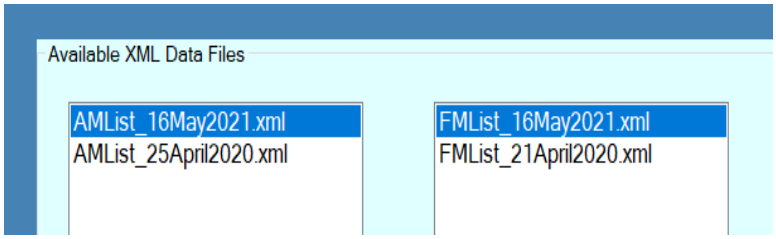
*docs* folder: Contains a copy of this document and a PDF on call letter confusion (see below)

*PipedFiles* folder: Contains downloads of FCC AM and FM station data from April, 2020 and May, 2021. This is the recommended destination for future downloads of FCC data by the user. (More on this in the directions.)

*references* folder: Contains files directly used by DXer Tools – the phonetic table, the color table (for created web pages), and FCC station list XML files from April 2020 and May 2021. Future FCC XML files created by the user will be placed here.

*TopazDownloads* folder: This contains downloaded USA and Canada lists from May 2020 from the Topaz Designs website. It is recommended that users place any future downloaded pages here. (More on this in the directions.)

# The Start Tab

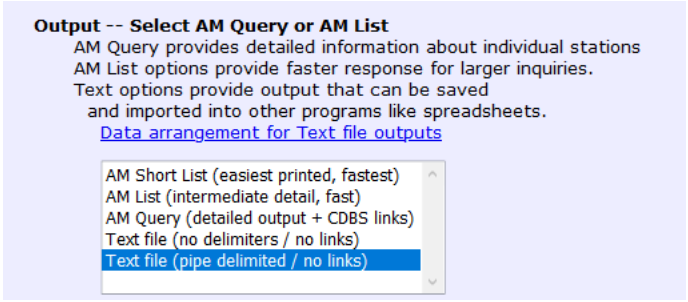



The *Phonetic Search*, *FCC Cross Search* and *Check Logs* tools in DXerTools use XML files created from FCC records. These are stored in the *references* folder. Two lists, from 2020 and 2021, are included for AM and FM, but the DXer can create and add new ones at any time. This can be done periodically or for a DXpedition or other significant listening session for use with later DXing of SDR spectrum recordings. At start-up all available files are listed in the two boxes on the *Start* tab and the most recently created ones are automatically selected.

## Creating New XML Files

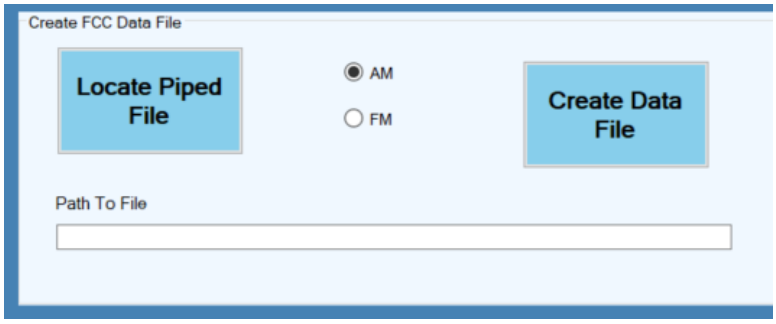
To create new XML data files, first go the following links:

https://www.fcc.gov/media/radio/am-query
https://www.fcc.gov/media/radio/fm-query




The process is the same for AM and FM. Leave the selection criteria at the default settings for all stations. Scroll down to the *Output* section and select *Text file (pipe delimited / no links)* then click one of the two results buttons. It can take anywhere from 30 seconds to several minutes for the entire table to load. Scroll down to the bottom of the page and confirm that everything through 1700 kHz or 107.9 MHz has been downloaded. Now under your browser menu select *Save Page As*, give the file an appropriate name, and save it to your computer. (I suggest storing these in the *PipedFiles* folder in DXerTools to keep them for future reference.)

Now open the DXerTools application and go to the *Create FCC Data File* box in the *Start* tab. Use the 'Locate' button to browse for the piped file or enter the full path in the text box.




Select AM or FM and click the *Create Data File* button. Within a few seconds a new XML file will appear in the *references* folder. The application strips out all fields not used by this application and all station listings not in the USA or Canada* to create the new file.

The XML files are given names like FMList_23May2020.xml, where the date is the current date the process was run. If you run the same process (AM or FM) twice on the same day, the old file will be replaced by a new version. Because the file name uses the current date, if you run this against an old piped file (say from a year ago) you will want to change the date in the XML file name to match the date that the data is for. Also, be aware that DXer Tools defaults to using the most recently created XML files for AM and FM. It looks at file creation date, not the date in the file name. So if you do create an XML file from an old piped file you may want to recreate the current one afterwards if you want DXer Tools to default to current data.

* Yes, I know that the FCC's Canadian listings are not kept up to date. But the CRTC doesn't have any Canadian lists on their website.

# Call Sign Phonetic Search

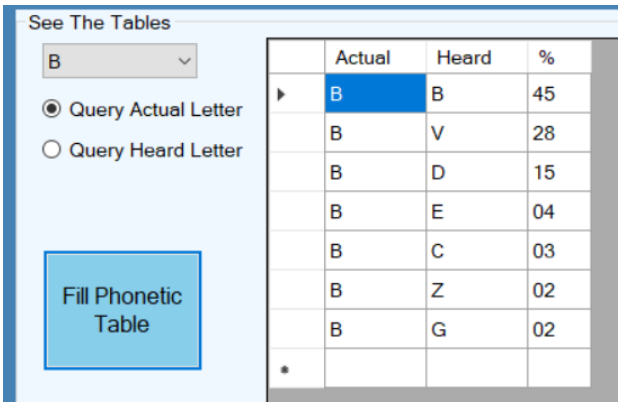
Understanding the letters in call-signs on a QRM-filled frequency is probably the most difficult part of DXing US and Canadian radio stations. This tool, which is based on work done by the late Gerry Thomas, should help.

In the 1970s Gerry did a study on perceptual confusion of letters of the English alphabet under noisy conditions. A PDF of the study, as published by the IRCA, is in the *docs* folder. I've always kept a copy of the study in my DXing files but never figured out a practical way to use it. Years later I earned an M.A. degree in Applied Linguistics and then a degree in computer programming. For the last eighteen years of my professional life I combined the two, designing and programming automated telephony systems – the ones where you call a phone number and get to talk to a computer instead of a person. My final job before retiring was for a small company in Chicago that developed call systems for large corporations. One of our clients needed callers to say eight-character alphanumeric account numbers, like B45NA6T9 or JM90435D. I spent over a year tweaking that system and learned a lot about phonetic letter confusion in the process. And Gerry's study was very useful.

In early 2020 while working on this program I came up with the idea of creating a tool around Gerry's study. I began playing around with it and was about to write and tell Gerry when I heard that he had passed away. I think he would have been pleased to know that his long ago work was finally bearing some fruit.

## The Phonetic Table

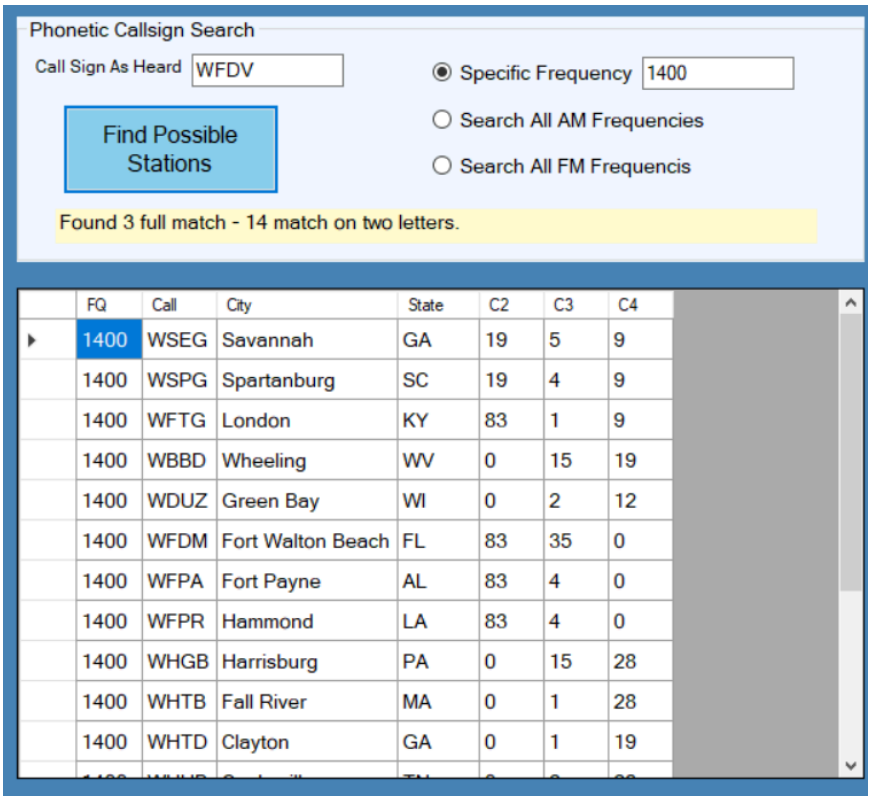
This tool uses a table constructed from Gerry's study with a few small adjustments I made based on my work in computer voice recognition. The table just lists the likelihood that a particular letter will be heard correctly or else incorrectly as another letter. For example, 'B' was only heard correctly 45% of the time. It was heard as 'V' 28% of the time, 'D' 15%, etc.




| Actual | Heard | % |
|---|---|---|
| B | B | 45 |
| B | V | 28 |
| B | D | 15 |
| B | E | 04 |
| B | C | 03 |
| B | Z | 02 |
| B | G | 02 |

## Phonetic Call-sign Search

Running a search just requires entering the four-letter call sign as it was heard and selecting a search type. (No three letter calls.) On FM, if the ID is something like WFDV-FM or WFDV-LP just enter the first four letters. The first search type is for a specific frequency, AM or FM. This could be the frequency the station was heard on, but I also use this a lot when I hear a MW station announce an FM ID and frequency. (DXer Tools select AM or FM based on the entered frequency.) Or you can search for the call letters on all AM or all FM frequencies. I find this useful when I hear the call-sign and partial frequency of a sister station. For example, maybe I heard a call and a frequency that sounded like 93 point something.




| FQ | Call | City | State | C2 | C3 | C4 |
|---|---|---|---|---|---|---|
| 1400 | WSEG | Savannah | GA | 19 | 5 | 9 |
| 1400 | WSPG | Spartanburg | SC | 19 | 4 | 9 |
| 1400 | WFTG | London | KY | 83 | 1 | 9 |
| 1400 | WBBD | Wheeling | WV | 0 | 15 | 19 |
| 1400 | WDUZ | Green Bay | WI | 0 | 2 | 12 |
| 1400 | WFDM | Fort Walton Beach | FL | 83 | 35 | 0 |
| 1400 | WFPA | Fort Payne | AL | 83 | 4 | 0 |
| 1400 | WFPR | Hammond | LA | 83 | 4 | 0 |
| 1400 | WHGB | Harrisburg | PA | 0 | 15 | 28 |
| 1400 | WHTB | Fall River | MA | 0 | 1 | 28 |
| 1400 | WHTD | Clayton | GA | 0 | 1 | 19 |

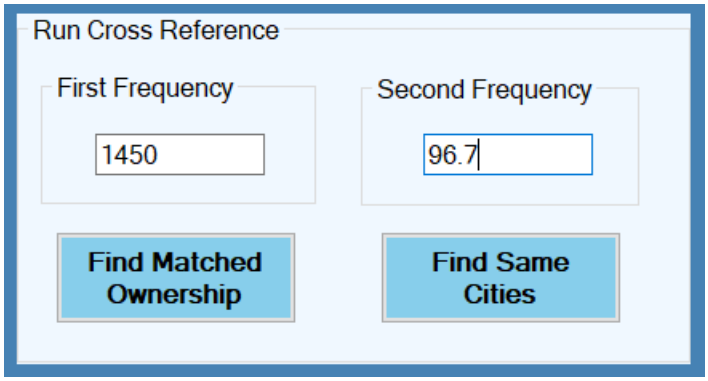
DXer Tools looks for possible phonetic matches using the dated AM or FM XML file that was selected on the *Start* tab and the phonetic table. DXer Tools assumes that the first letter (W, K, or C) is correct. If you actually aren't sure what the first one was then you simply need to run the query more than once.

The results table lists stations that phonetically match on at least two of the final three characters and gives the numerical value from Gerry's study. Of course, do not assume that the one with the biggest numbers is the

right one. And, even if there is only one result, do not assume it must be right. It is up to the DXer to use this information as a guide while re-listening to the ID and looking for other clues, like network news or local ads.

## FCC CROSS SEARCH

Way too often in DXing I find myself trying to puzzle out a partially readable ID listing multiple call signs and frequencies. This tool uses records taken from the FCC database to cross reference two different frequencies for stations with matched ownership or located in the same city of license. It could be two AM stations, two FM, or one of each. The program automatically detects and searches the appropriate table for each frequency.




Of course, the fact that two stations have the same ownership is no guarantee that they would be simulcasting. In the following list, the stations in Albert Lea and Mason City and the pair of Wyoming stations would be likely candidates for simulcasting and the DXer can consider that while replaying the ID announcement. On the other hand, it's unlikely that Cumulus stations in Texas, Oregon, and Pennsylvania would be simulcasting.

| Stn 1 | City 1 | State 1 | Owner | Stn 2 | City 2 | State 2 |
|---|---|---|---|---|---|---|
| KATE | Albert Lea | MN | Alpha 3e Licensee Llc | K244FA | Mason City | IA |
| KBBS | Buffalo | WY | Legend Communications Of ... | K244CG | Cody | WY |
| KIKR | Beaumont | TX | Cumulus Licensing Llc | K244DL | Cottage Gro... | OR |
| KIKR | Beaumont | TX | Cumulus Licensing Llc | WLLF | Mercer | PA |
| KIKR | Beaumont | TX | Cumulus Licensing Llc | K244FT | Nederland | TX |
| KMMS | Bozeman | MT | Townsquare Media Bozema | KISN | Belgrade | MT |

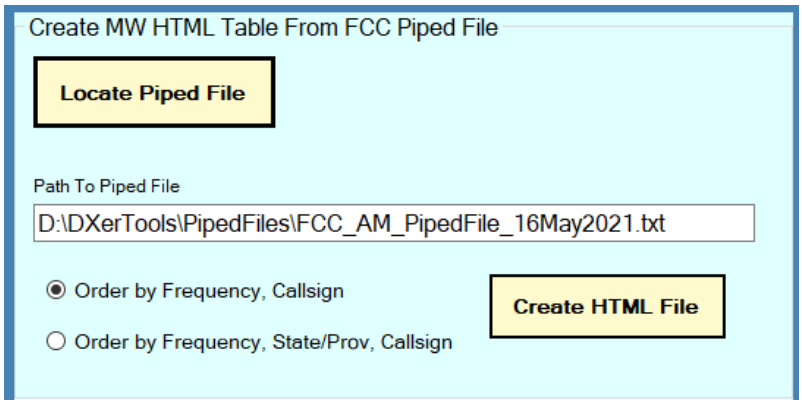
Likewise there is no guarantee that any of these pairs of AM/FM stations in the same city would be simulcasting. But, again, it's something to consider while replaying the ID.

| Stn 1 | City 1 | State 1 | Owner | Stn 2 | City 2 | State 2 |
|---|---|---|---|---|---|---|
| KVEN | Ventura | CA | | KLJR-FM1 | Ventura | CA |
| WSTU | Stuart | FL | | W244BD | Stuart | FL |
| WVLD | Valdosta | GA | | WGOV-FM | Valdosta | GA |
| WAOV | Vincennes | IN | | WFML | Vincennes | IN |
| WCJU | Columbia | MS | | WFFF-FM | Columbia | MS |

# MAKE MW HTML PAGES

I do most of my MW DXing using SDR spectrum recordings which may have been made that same day or may have been made years ago. So I need references which were current at the time the spectrum recordings were made.

### Create MW HTML Table from FCC Piped File




This turns the information contained in those piped files from the FCC into an easy-to-read web page which can be opened from a local drive or folder. This only works for AM (MW) piped files, not FM ones.

Just locate and select the file you want to turn into a web page, select how to have the information ordered, and click the *Create HTML File* button. Depending on which order was selected, this will create an HTML file named FCCListByCall_<date>.html or FCCListByLocation_<date>.html in the *createdPages* folder. The date will be the current date so if you are using an old piped file you should change the date to match when the data was saved. Click on the page and open it in your browser. (See below on how to set colors, fonts, and font-size.)

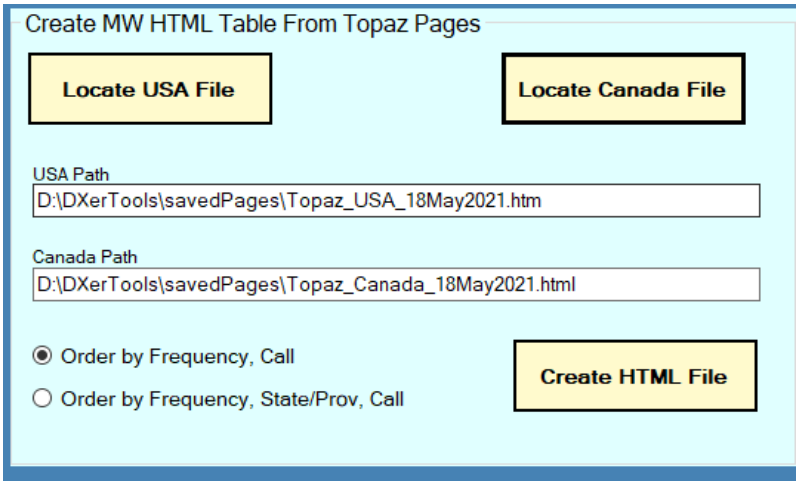
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1150 | WSNW | Seneca | SC | ND2 | 0.5 kW | 0.058 kW | - | Toccoa Foundation, Inc |
| 1150 | WTMP | Egypt Lake | FL | DA2 | 10.0 kW | 0.5 kW | - | Nia Broadcasting, Inc. |
| 1150 | WWDJ | Boston | MA | DA2 | 5.0 kW | 5.0 kW | - | Relevant Radio, Inc. |
| 1150 | WXKO | Fort Valley | GA | ND1 | 1.0 kW | 0.062 kW | - | Shanks Broadcasting, Llc |
| 1160 | KBDT | Highland Park | TX | DA2 | 35.0 kW | 1.0 kW | - | Dallas Broadcasting, Llc |
| 1160 | KCTO | Cleveland | MO | DA2 | 5.0 kW | 0.23 kW | - | Alpine Broadcasting Corporation |
| 1160 | KMRV | Waukon | IA | ND2 | 0.88 kW | 0.026 kW | - | Wennes Communications Stations, Inc. |
| 1160 | KRDY | San Antonio | TX | DA2 | 10.0 kW | 1.0 kW | - | Relevant Radio, Inc. |

### Create MW HTML Table From Topaz Pages

I really like the station lists at the Topaz Designs website as the site includes information about formats, slogans, simulcasting, etc. It is possible to query all Canadian or all USA stations and save those pages for future use. But I wanted a way to save and view the two countries on the same page. I also find all-caps format and font used difficult to read. This tool changes all that. But first you need to download the information from the website. Here are the steps:

Open www.topazdesigns.com/ambc/
On the right side find the *List all stations in state/province* drop-down box. At the bottom on the list select *All Canada* and click the *List* button.
From your browser menu select *Save Page As …* (the exact wording may vary by browser). Rename the page if you like and save.
Now reopen the drop-down box and select *All USA* (which is just above the Canadian provinces). Save this page. It will need a different name to avoid overwriting the Canada page.
In Windows Explorer open your *Downloads* folder (or wherever your browser stores downloaded files).
There should be an htm file and a folder for each of the pages you downloaded. Open the folder with Canadian information. Find the file named amsearch96a_002.htm and rename it "Topaz_Canada_ddMonthyear.htm" (e.g. Topaz_Canada_18May2021.htm). Copy this file to the *TopazDownloads* folder in DXerTools. Repeat the process with the USA folder. Now you can delete the original htm files and folders.

Creating the page works similar to creating the FCC pages. Use the 'locate' buttons to find the two files you saved (or copy/paste the file names and paths into the boxes). Then select the sort method and click *Create HTML File*. This will create a file named either TopazByCall_<date>.html or TopazByState_<date>.html in the *createdPages* folder.




**Formatting the Web Pages**

HTML pages created by DXerTools default to the Times New Roman font at 12 point. These settings can be updated on the right side in the *HTML Page Fonts* box. Arial and mono-spaced Courier fonts are available the size can be anything from 8 to 16 points. Both the FCC lists and Topaz Design contain certain fields in all CAPS and DXerTools automatically converts those so that only the first letter is capitalized. If you prefer to keep the fields in all CAPS check the KEEP ALL CAPS box. These settings are not stored so you will have to update them everything you run DXerTools.

On the other hand, the four color codes used to color the rows are stored in a text file and can be permanently changed. The file is named *RowColorList.txt* and is in the *references* folder. It just contains a list of four HTML color values. The first two lines are the colors used for even

10 kHz channels (540, 560, 580, etc) while the second pair is used for the odd channels (530, 550, 570, etc).

```
FFE4E1
FFF5EE
DCDCDC
C0C0C0
```

These can be updated with any valid HTML hex color codes. (Just Google “HTML hex color codes”.) The letter values may be either lower or upper case, but do not include the initial # sign. And if you mess up, just delete the file. The next time you start DXerTools it will recreate the file with the original values.

## Check Logs

This is a little tool I wrote because I have a bad habit of getting typos into logs that I submit to DX bulletins. It just reads through the logs and confirms that there is a station with that call sign on the given frequency and, if there is, checks that I have the state/province abbreviation correct and have spelled the city name correctly. It does this by comparing my logs to the selected FCC XML file. The logs can be separated by either tabs or one or more spaces but must be in the format:

Freq Call State/Prov City Everything else

You can either copy/paste the logs directly into the large box or load them from a text file by providing a path.