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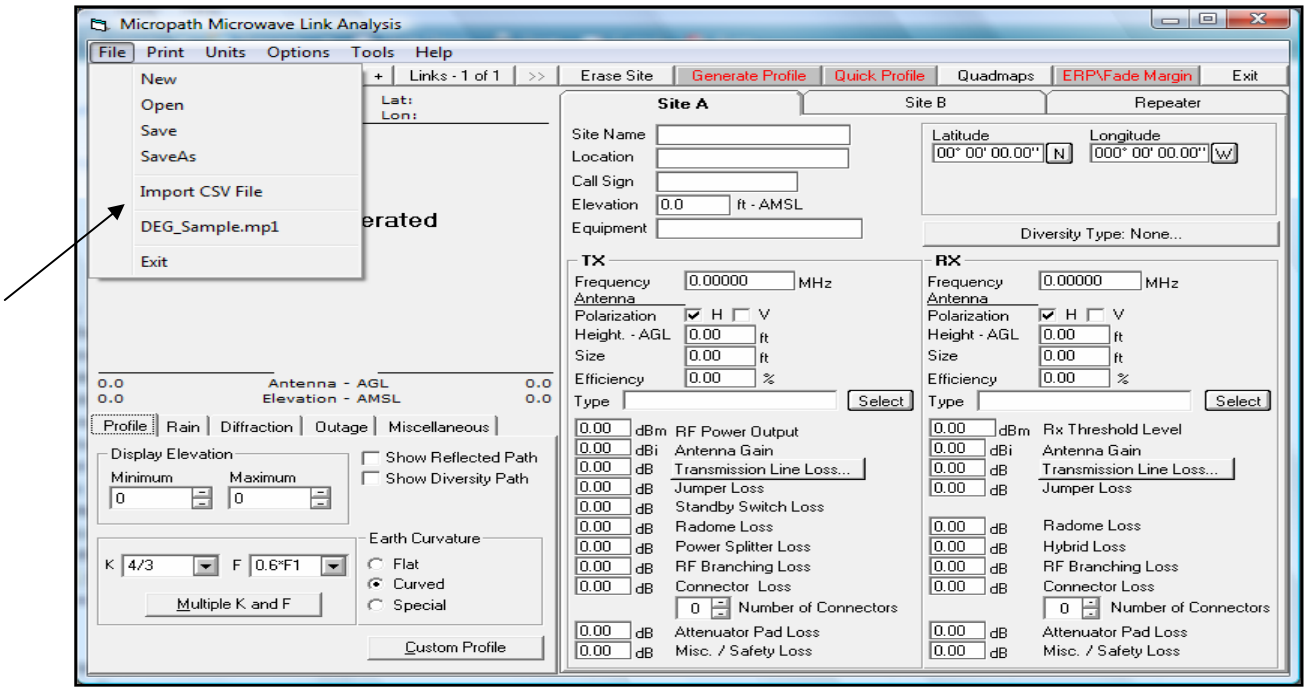
Micropath PATHANAL - Path Profile Generation
Importing A CSV File For Batch Processing

Beginning with Micropath 2001 V3.16.02 (now called PATHANAL), a CSV File Import feature has been added to the Microwave and the VHF/UHF Link Analysis menu.



This new feature will provide the means of generating path profiles based on the site information and geographic coordinates contained in a CSV (comma separated values) file.

CSV file formats contain geographic coordinates in Degrees-Minutes-Seconds, Degrees-Minutes, or Degrees. Each CSV file will have individual lines of Site information and pairs of Links. ***Each line*** in the CSV file is a Site and ***each pair*** of Sites creates a single Link for which a path profile will be generated.

In the Micropath PATHANAL folder on your PC (Usually C:\Program Files\Micropath\Pathanal), *there will be a folder called CSV*. The CSV folder will contain the CSV files and the resulting .MP1 project file. It is recommended that the newly created .MP1 project file be move to another folder since this file will be overwritten should you decide to again run the CSV path profile batch processing feature for the ***same*** CSV file.

CSV File Formats

The individual components of the CSV file are comprised of the following items separated by a comma:

Site Name, Site ID, Latitude, Longitude, Ground Elevation AMSL, Antenna Height AGL, Frequency MHz, Earth Curvature (K) Value, Fresnel Zone (F) Value

The components of the geographic coordinates for DMS and DM are separated by a hyphen (-). If you omit the N S E W hemisphere, PATHANAL will use the default hemisphere values in the program. For

Degrees, the latitude and longitude coordinates are a decimal number preceded by a hyphen (-) if the latitude is in the southern hemisphere and/or the longitude is in the western hemisphere. If the hyphen is omitted, PATHANAL will use the default hemisphere values in the program.

If you do not know the ground elevation or antenna height, enter a zero or leave the item blank. PATHANAL will insert an antenna height of 1 into the generated path profile if the antenna AGL value is 0 in order to display the LOS straight line between the end points of the path profile.

If Site Name, Site ID, Frequency, K, or F factors are unknown, you can leave these fields empty in your CSV File. The commas for these fields are required to be present. Coordinates must always be present.

It is recommended you do not exceed more than 100 Links (200 Sites) in the CSV file. Create multiple CSV files for large projects. **CSV files may have a .CSV or .TXT file extension, i.e., MyLinks.csv or MyLinks.txt.** Other file extensions should also work. **(Always backup your project and CSV files)**

Degrees-Minutes-Seconds – (see DMS_Sample.csv in the CSV folder)

```
Lakewood,MASTER,39-30-00.00N,104-30-0.00W,0,150,5800,2/3,0.6
Golden,REMOTE,39-45-00N,104-45-0W,0,150,5800,2/3,0.6
Wildhorse,,40-50-16.0N,102-38-00.7W,4054,0,5800,Infinity,0.6
Phillips,,40-30-37.0N,102-21-34.7W,3983,0,5800,Infinity,0.6
```

This sample represents 4-Sites and 2-Links. The first link is Lakewood to Golden, the second link is from Wildhorse to Phillips.

Degrees-Minutes – (see DM_Sample.csv in the CSV folder)

```
Lakewood,,39-30.15N,104-30.25W,0,150,900,1,0
Golden,,39-45.0N,104-45.0W,0,150,900,1,0
Genesee,,39-18.35N,105-45.6W,0,150,900,1,0
Canyon Point,,39-530.15N,105-28.25W,0,150,900,1,0
```

This sample represents 4-Sites and 2-Links. The first link is Lakewood to Golden, the second link is from Genesee to Canyon Point.

Degrees – (see DEG_Sample.csv in the CSV folder)

```
Gelvin,,40.16110992,-102.4071426,3973,0,5800,2/3,0.3
Wray,,40.08555603,-102.2593613,3619,0,5800,2/3,0.3
Gelvin,,40.16110992,-102.4071426,3973,0,2200,1,0.6
Phillips,,40.51027679,-102.359642,3983,0,2200,1,0.6
Akron,,40.16441727,-103.2655029,4740,0,450,Infinity,0
Lonestar,,40.35108185,-102.8502197,4205,0,450,Infinity,0
```

This sample represents 6-Sites and 3-Links. The first link is Gelvin to Wray, the second link is from Gelvin to Phillips, and the third link is from Akron to Lonestar.

NOTE: Beginning with PATHANAL V4.0.3, the CSV file format has been modified to provide the means of a single line of text to represent a link instead of two lines of text as discussed above. The left part of the line is Site A, then an & symbol followed by the Site B text, all on a single line in the CSV file. You can use the Degrees, Degrees Minutes, or the Degrees Minutes Seconds coordinate formats.

For example (using Degrees):

```
Gelvin,,40.16110992,-102.4071426,3973,0,5800,2/3,0.3 &
Wray,,40.08555603,-102.2593613,3619,0,5800,2/3,0.3
```

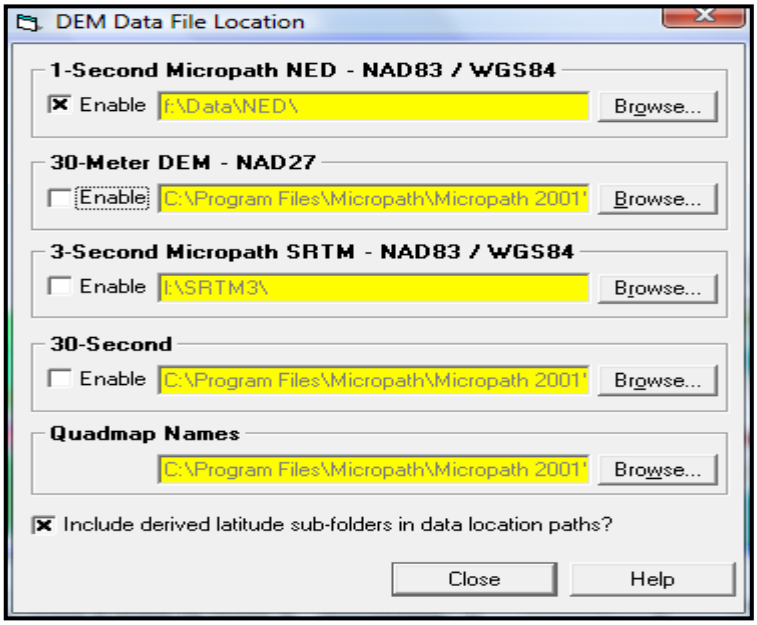
(the above is a single line of text in the CSV file, notice the & symbol preceded by a space and followed by a space

Terrain Elevation Data

The two most popular datasets are the 1-second NED for the USA and the 3-second SRTM V2 for the remainder of the world between latitudes 60N and 60S. The datum for both datasets is NAD83 / WGS84.

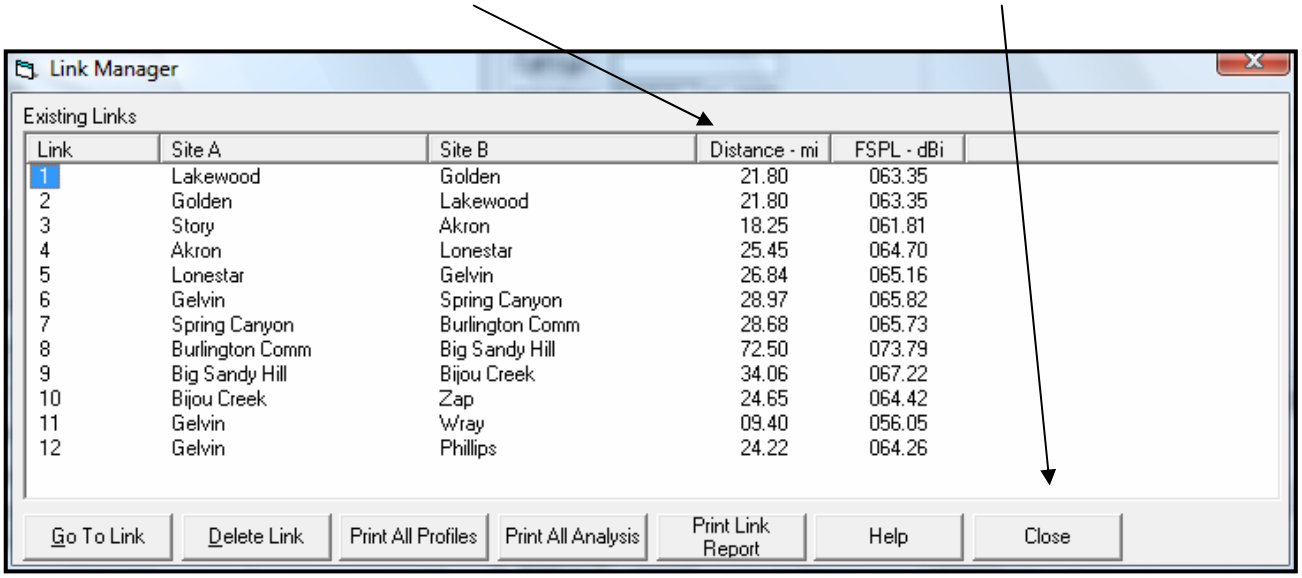
Prior to running your CSV batch processing, the location of the terrain data must be set in PATHANAL. Click on ***Options, File Locations*** and set the type of data being used (1-second NED or 3-Second) and browse to the folder where the data is located. **DO NOT** browse to the individual latitude folders.

The batch processing operation is expecting to find all the elevation data required to run the entire batch. If an elevation file is not found, a message box will appear and will keep appearing for each file not found.



After The Batch Processing Has Completed

Upon completion of the CSV batch processing, the Link Manager screen will appear. You can sort any column by clicking on the column header. *Click on **Close** to exit the Link Manager.*



Processing Additional CSV Files

In order to process additional CSV files, you ***MUST*** exit PATHANAL back to the initial program start-up screen. This ensures that all database functions have been reset and your project file has been saved. Running successive CSV batch processing without exiting will create an error condition which will be displayed in a message box.

Troubleshooting CSV Files

If you experience a problem reading a CSV file, try one of the Micropath generated sample CSV files. These files can be found in the CSV folder: C:\Program Files\Micropath\Pathanal\CSV.