

Single User License for V&H TOOLS

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January 1, 1999

V-H Tools for MapInfo

*A MapBasic program for converting, manipulating, and mapping the
V&H Coordinates used in the Telecommunications industry.*



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V-H Tools for MapInfo

What V-H Tools Does

The *V-H Tools* program lets you use V & H Coordinates – the vertical and horizontal geographical coordinates used in the telecommunications industry – within MapInfo. When you run this MapBasic program in a MapInfo session, it adds menu functions from which you can ...

- Convert V & H Coordinates to Latitude/Longitude ... You can convert each V & H pair interactively, or with a single request you can convert the V & H Coordinates in *every* row of a table, each to its Latitude/Longitude equivalent
- Convert Latitude/Longitude to V & H Coordinates ... You can convert each Latitude / Longitude pair interactively, or with a single request you can convert the Latitude and Longitude in *every* row of a table, each to its V & H equivalent
- Directly map points from V & H Coordinates ... You can create each point interactively, or with a single request you can create a point for *every* row of a table containing V & H Coordinates
- Determine the distance between two points whose V & H Coordinates you specify.

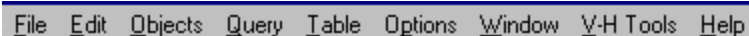
How To Install V-H Tools

You should have received *V-H Tools* on diskette. Copy the MapBasic executable program **VHTOOLS.MBX** from diskette to a directory from which you can conveniently execute it during a MapInfo session.

How To Start Running V-H Tools

To run *V-H Tools*, you must already be running MapInfo (MapInfo Version 3.0 or later is required). From the **File** pulldown menu, select **Run MapBasic Program...** When the *Run MapBasic Program* dialog appears, navigate to the directory containing the **VHTOOLS.MBX** program, then select that program to be run.

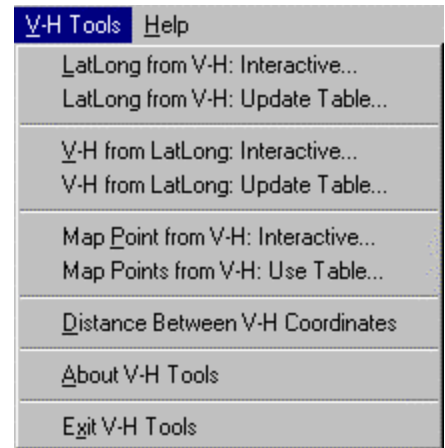
The *V-H Tools* program adds an item to the MapInfo menu, just before the **Help** menu item ...



The screenshot shows a menu bar with the following items: File, Edit, Objects, Query, Table, Options, Window, V-H Tools, and Help. The 'V-H Tools' item is highlighted, indicating it is the current selection.

When you select the **V-H Tools** menu item, the dropdown menu at the right appears, offering the functions that may be performed. As indicated earlier, these functions are:

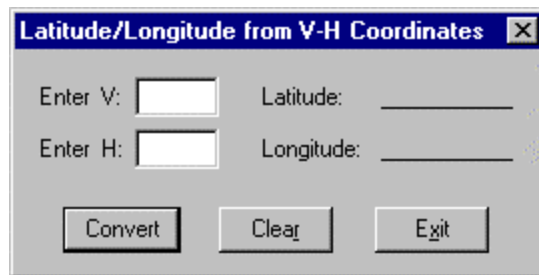
- Convert V&H to Latitude/Longitude, interactively or for a whole table
- Convert Latitude/Longitude to V&H, interactively or for a whole table
- Create map points from V&H values, interactively or for a whole table
- Determine the distance between two V&H Coordinate pairs.



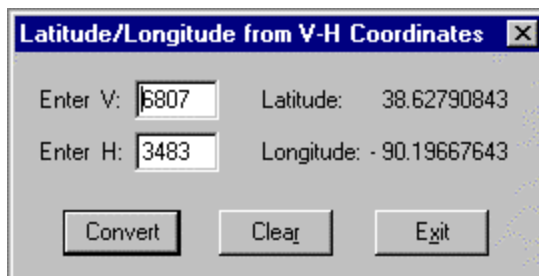
In addition, the **About V-H Tools** function provides information about the version of **V-H Tools**, and the **Exit** function ends the program and removes the **V-H Tools** item from the MapInfo menu.

Converting V & H to Latitude/Longitude Interactively

To convert interactively a V & H coordinate pair to Latitude and Longitude, from the **V-H Tools** menu choose **LatLong from V-H: Interactive...** The following dialog appears:



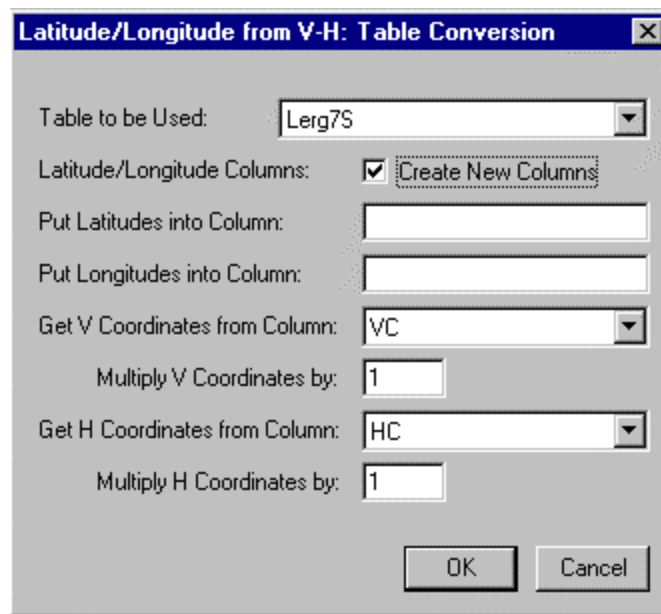
Key the vertical (V) coordinate, then the horizontal (H) coordinate. Move from one to the next by using the **Tab** key. Then either click with your mouse on the **Convert** button, or press the **Enter** key, to see the Latitude and Longitude equivalent to this V & H pair. For example:



You can now enter another V & H pair to convert, with or without first pressing the **Clear** button, or press the **Exit** button to quit this function (that removes the dialog, but the **V-H Tools** menu item remains available).

Converting A Whole Table's V & H to Latitude/Longitude

You can generate Latitude/Longitude values from V & H coordinates in *every* record of an already open table. If the Latitude and Longitude columns do not already exist in the table, you can have them created for you. From the **V-H Tools** menu choose **LatLong from V-H: Update Table...** The following dialog appears:

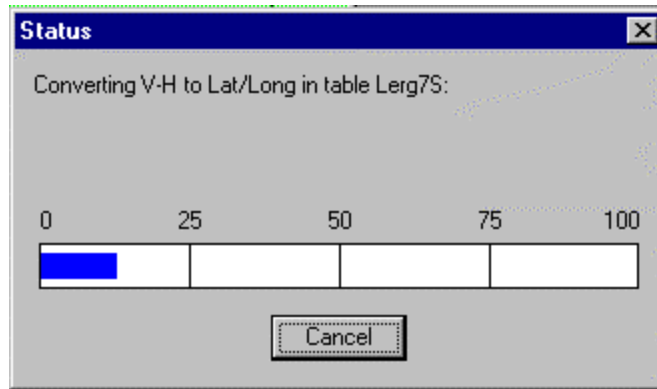


You specify the *Table to be Used ...* V-H Tools suggests the first open table, but the drop-down list box allows you to select any other open table.

V-H Tools suggests that, for the generated Latitude and Longitude, you will want to *Create New Columns*, and – if that is right – you must key in the names of the new Latitude and Longitude columns. But you can uncheck *Create New Columns* and select, from drop-down list boxes, *existing* columns into which the generated Latitude and Longitude should be placed.

You are required to select, from drop-down list boxes, the columns of this table that currently contain the Vertical and Horizontal coordinates. If these are already in proper integer form, leave the *Multiply by* entry as 1. But if the values in an existing column must first be multiplied by some factor to make them proper integers, specify the factor value for both V and H coordinates.

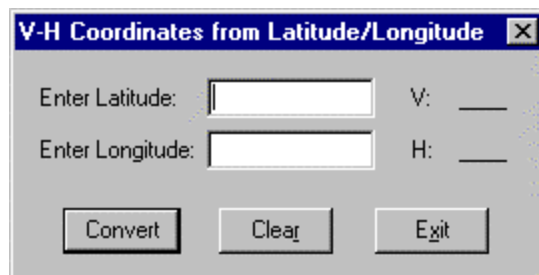
When you press the **OK** button, V-H Tools begins the conversion for the table. A progress bar dialog such as the following one tracks the conversion:



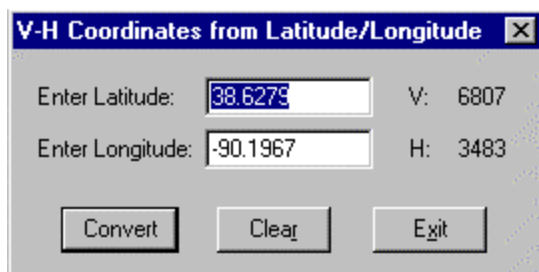
When the operation is complete, a message box appears. If any of the V & H coordinates was not valid, the number of rows with coordinates not valid is indicated ... for those rows, the Latitude and Longitude columns in the table will contain zeros.

Converting Latitude/Longitude to V & H Interactively

To convert interactively a Latitude/Longitude pair to V & H coordinates, from the **V-H Tools** menu choose **V-H from LatLong: Interactive...** The following dialog appears:



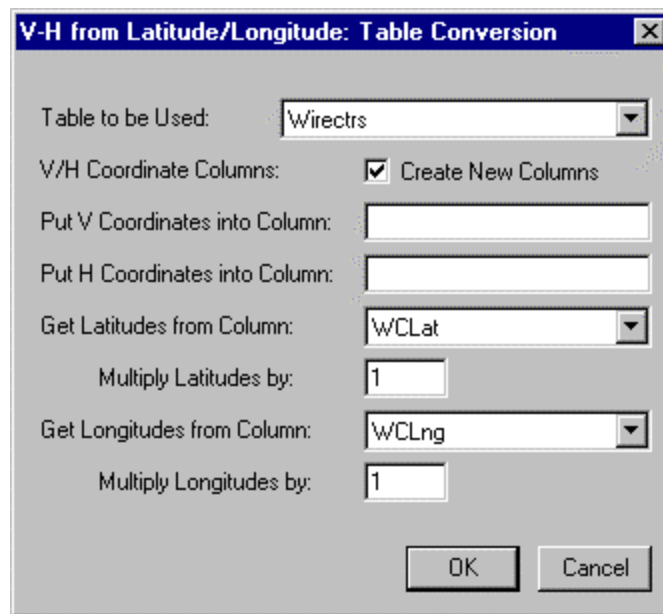
Key the Latitude, then the Longitude. Move from one to the next by using the **Tab** key. Then either click with your mouse on the **Convert** button, or press the **Enter** key, to see the V & H equivalent to this Latitude/Longitude pair. For example:



You can now enter another Latitude/Longitude pair to convert, with or without first pressing the **Clear** button, or press the **Exit** button to quit this function (that removes the dialog, but the **V-H Tools** menu item remains available).

Converting A Whole Table's Latitude/Longitude to V & H

You can generate V & H coordinates from Latitude/Longitude in *every* record of an already open table. If the V & H columns do not already exist in the table, you can have them created for you. From the **V-H Tools** menu choose **V-H from LatLong: Update Table...** The following dialog appears:

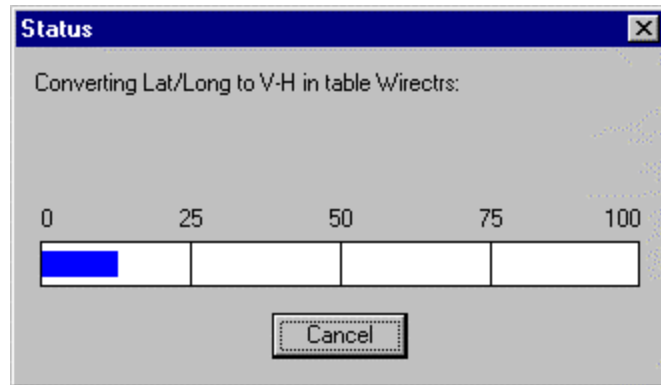


You specify the *Table to be Used* ... V-H Tools suggests the first open table, but the drop-down list box allows you to select any other open table.

V-H Tools suggests that, for the generated V & H coordinates, you will want to *Create New Columns*, and – if that is right – you must key in the names of the new V & H coordinate columns. But you can uncheck *Create New Columns* and select, from drop-down list boxes, *existing* columns into which the generated V & H coordinates should be placed.

You are required to select, from drop-down list boxes, the columns of this table that currently contain the Latitude and Longitude. If these are already in proper form, leave the *Multiply by* entry as 1. But if the values in an existing column must first be multiplied by some factor to make them proper Latitudes and/or Longitudes, specify the factor value for both Latitude and Longitude.

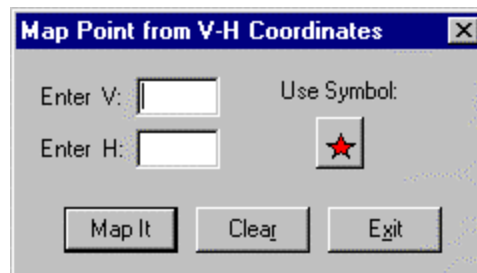
When you press the **OK** button, V-H Tools begins the conversion for the table. A progress bar dialog such as the following one tracks the conversion:



When the operation is complete, a message box appears. If any of the Latitudes or Longitudes was not valid, the number of rows with coordinates not valid is indicated ... for those rows, the V & H columns in the table will contain zeros.

Creating Points from V & H Coordinates Interactively

To create interactively a point in the *front map window* from a V & H coordinate pair, from the **V-H Tools** menu choose **Map Point from V-H: Interactive...** The following dialog appears:

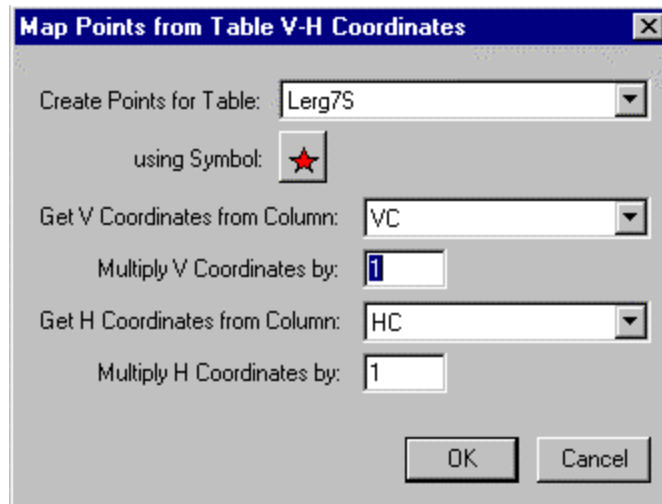


Key the vertical (V) coordinate, then the horizontal (H) coordinate. Move from one to the next by using the **Tab** key. If you want the point to appear as a different symbol from the one shown, click on the symbol button ... a standard MapInfo *Symbol Style* dialog allows you to change the symbol. Then either click with your mouse on the **Map It** button, or press the **Enter** key, to create a point corresponding to the entered V & H coordinates. The point is entered in the Cosmetic Layer.

You can then enter another V & H pair to create another point, with or without first pressing the **Clear** button, or press the **Exit** button to quit this function (that removes the dialog, but the **V-H Tools** menu item remains available).

Creating Points from a Whole Table's V & H Coordinates

You can create points from the V & H coordinates of *every* record of an already open, mappable table. These points will be created in the map of the table itself, *not* in the Cosmetic Layer. From the **V-H Tools** menu choose **Map Points from V-H: Use Table...** The following dialog appears:

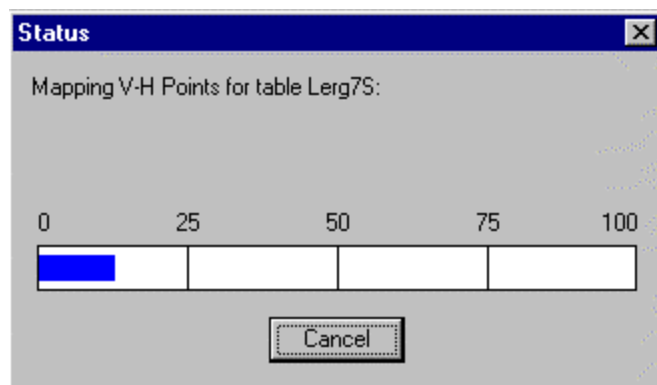


You specify the table to be used ... V-H Tools suggests the first open, mappable table, but the drop-down list box allows you to select any other open, mappable table.

If you wish to use a symbol different than the one shown, click on the symbol button ... a standard MapInfo *Symbol Style* dialog allows you to change the symbol.

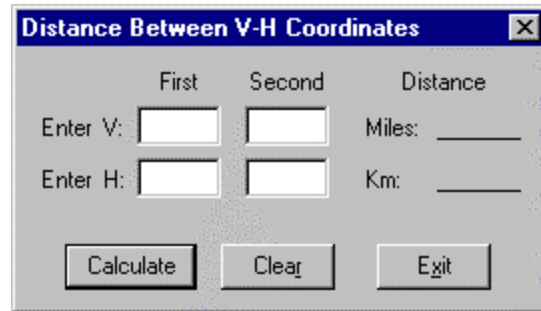
You are required to select, from drop-down list boxes, the columns of this table that currently contain the Vertical and Horizontal coordinates. If these are already in proper integer form, leave the *Multiply by* entry as 1. But if the values in an existing column must first be multiplied by some factor to make them proper integers, specify the factor value for both V and H coordinates.

When you press the **OK** button, V-H Tools generates the points for the table. A progress bar dialog such as the following one tracks the generation:



Finding Distance Between Two Pairs of V & H Coordinates

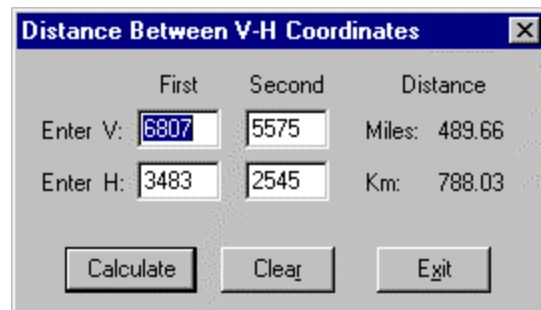
V-H Tools allows you to specify two pairs of V & H coordinates and find the distance between them. From the **V-H Tools** menu, choose **Distance Between V-H Coordinates**. The following dialog appears:



	First	Second	Distance
Enter V:	<input type="text"/>	<input type="text"/>	Miles: _____
Enter H:	<input type="text"/>	<input type="text"/>	Km: _____

Buttons: Calculate, Clear, Exit

Enter the V and H coordinates of the first location, then the V and H coordinates of the second. Move from one to the next by using the **Tab** key. Then either click with your mouse on the **Calculate** button, or press the **Enter** key, to see the distance between these locations, both in miles and kilometers. For example:



	First	Second	Distance
Enter V:	6807	5575	Miles: 489.66
Enter H:	3483	2545	Km: 788.03

Buttons: Calculate, Clear, Exit

You can now enter another pair of V & H coordinates, with or without first pressing the **Clear** button, or press the **Exit** button to quit this function (that removes the dialog, but the **V-H Tools** menu item remains available).

Ending the V-H Tools Program

To end your use of the V-H Tools program, from the **V-H Tools** menu choose **Exit V-H Tools**. This removes the **V-H Tools** item from the menu bar, and removes the V-H Tools program from memory.