

## Importing Data into the Venable Software

The Venable software uses tab delimited ASCII text when exporting or importing data. Data has to be in this form to be imported into the Venable software.

### Venable Data Formats

Data can be imported using two different text formats. The Voltage or DOS format shows the 5-column raw data acquired from each analyzer channel. Data from the DOS versions of the Venable software can be imported and saved using the Voltage format as shown below.

Gain4.ven: Data 12:

\*Data from Synthesis / Circuit Analysis Menu

\*01:26PM Wednesday, December 04, 2002

\*Gain/Phase: Output Node=2, Input Node=1, Scale Factor=10

*Frequency (Hz)	Channel or Node	Voltage (Volts)	Voltage (dB)	Phase (Deg)
1	1	1	0	0
1	2	3.63637	11.2134	-0.1391
1.25893	1	1	0	0
1.25893	2	3.63637	11.2134	-0.1751

The Magnitude-Phase format is the 3-column text representation of a data set as plotted on a Venable software plot. The plotted data set consists of a channel ratio multiplied by a scale factor. When importing 3-column data the default scale factor will be unity and the default channel ratio set to 2/1. The channel ratio and scale factor settings for each plotted data set can be changed and are located in the Data Set Properties for each plot. An example of the 3-column format is shown below.

Gain4.ven: Data 12:

\*Data from Synthesis / Circuit Analysis Menu

\*01:26PM Wednesday, December 04, 2002

*Frequency (Hz)	Gain (dB)	Phase (Deg)
1	31.2134	-0.1391
1.25893	31.2134	-0.1751

Data is often saved as a tab delimited data file without the Venable text header. Data can be imported in this form also. See the example below:

1	31.2134	-0.1391
1.25893	31.2134	-0.1751

## Exporting tab-delimited text data from Excel

To export data from Excel you can select and copy data from cells on to the Clipboard and paste directly into a Venable software plot or the Frequency (AC) Data window in the Circuit Analysis Menu. You can also save the data into a tab-delimited text file with Excel. The data must be in the 3-column Magnitude-Phase format or 5-column Voltage format if it is to be successfully imported into the Venable software.

## Exporting tab-delimited text data from Mathcad

Data can be exported from Mathcad as a tab-delimited text file using three methods. The exported Mathcad data must be in the 3-column Magnitude-Phase format or 5-column Voltage format if it is to be successfully imported into the Venable software.

1. Type the data array variable name and '=' to display the data in an output table. Right click on the output table and select Export from the pop-up menu. Save the data to a tab-delimited text file with a \*.dat file extension. This method reads the data from the data file only once when the data is exported instead of each time the work sheet is calculated.
2. Data can also be exported by going to the Insert pull-down menu, selecting the Component menu item and then selecting File Read or Write. The File Read or Write Wizard should appear. Choose Write to a file, Tab-Delimited Text for the File Format, and browse for a data file name and directory to where the data is to be written and click on Finish. Type a variable name containing the data to be written to the file into the placeholder in the Read/Write component icon and hit Enter. The data will be written to the specified file. Mathcad re-writes the data to the file each time the work sheet is calculated.
3. Select all the data by clicking in the upper left corner of an input or output table. Use the Ctrl-C copy shortcut keys to copy the data to the clipboard. The data can be pasted directly into a Venable software plot, Excel or any text editor and saved.

Data can't be exported using the WRITEPRN function. This function uses space-delimiting and space-delimited text files can't be read by the Venable software:

## Exporting tab-delimited text data from Matlab

Matlab uses a Matlab m-file Vensave.m created by Venable to export data into a tab-delimited text file. This file is located in the "C:\Program Files\Venable Instruments\Venable Software" directory. The Vensave.m-file must be placed in the Matlab path or current directory. See the topic on **Installing the Venable Matlab Files**. Once this file is placed in the Matlab path or current directory, the Vensave function can be called from the Matlab command window or any user created m-file. A description of the function and Matlab syntax is provided on the next page.

Vensave.m Creates a tab-delimited text file from a Matlab array in a suitable format for importing into the Venable System software. The data must be in the 3-column Magnitude-Phase format or 5-column Voltage format if it is to be successfully saved to a file. The tab-delimited text file (\*.dat) can be imported into the Venable System software using the Import From Matlab function under the File menu.

Syntax: `vensave(venarray)`, saves the array to a tab delimited text file.

Syntax: `a = vensave(venarray)`, saves the array to a tab delimited text file.

`a = 1` if the file is successfully saved.

`a = 0` if the file is not saved.

### **Importing data into the Venable software using the Clipboard**

The Venable plot data including the data header can be exported to the clipboard as tab delimited ASCII text from Excel and Mathcad. There are two methods you can follow to import data into the Venable software from the clipboard.

1. Paste the tab delimited ASCII text data directly to plot from the clipboard. Data can be directly copied to the clipboard from Excel workbook or from Mathcad Input or Output tables.
2. Open the Circuit Analysis Menu, which is located in the Actions program menu. Left-click on the Frequency (AC) data tab. Right click for the Edit pull-down menu and select Paste or hit the Ctrl-V keys to paste the data into the text window. Left-click on the Import into Graph button to import data into the plot.

### **Importing data from Matlab or Mathcad into the Venable software**

The Import From Matlab/Mathcad function imports data files with a file extension of \*.dat saved by either Matlab or Mathcad into the Venable software plot. It will import data files saved with or without a data header. To use this function do the following:

1. Go to the File program menu and click on the Import From Matlab/Mathcad menu item. The File Open pop-up window will open up.
2. Browse for the tab-delimited text file containing the data to be imported and left-click on the Open button to import data into the plot.

## Using the Venable Circuit Analysis Menu to Import Data

The Frequency (AC) data window in the Circuit Analysis Menu imports data files with a file extension of \*.ac saved by Venable DOS software. It will also import tab delimited ASCII text data files (\*.dat and\*.txt) saved with or without a data header. To use this function do the following:

1. Open the Circuit Analysis Menu, which is located in the Actions program menu. Left-click on the Frequency (AC) data tab.
2. Left-click on the Open AC File button and the File Open pop-up window will open up. Browse for the tab-delimited text file containing the data to be imported and left-click on the Open button to import data into the text window. Left-click on the Import into Graph button to import data into the plot.