Exporting Data from the Venable Software

The Venable software uses tab delimited ASCII text when exporting or importing data. The Venable software saves data in this form when you select, cut or copy, and paste data to the clipboard or save it to a text file. Data in this form can be easily exported to or imported from Excel, Matlab, or Mathcad applications.

Venable Data Formats

Venable data can be exported or imported in two different formats. The Voltage or DOS format is 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. This format also allows users to examine the raw measurements and do their own calculations on the data. The Magnitude-Phase format is the 3-column text representation of a particular data set plotted on a Venable software plot. The majority of users will find this the most useful format for exporting or importing data. The plotted data set consists of a channel ratio multiplied by a scale factor. 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.

1. To view the two different data formats, open up a Venable plot containing plotted data sets.

2. You can observe the data in the two different text formats by going to the Window program menu in the Venable application and selecting Add Text Display.

3. Go to the Edit pull-down menu and if the Voltage Format for Cut/Copy is checked, the data will be displayed in Voltage format. The scale factor will be noted but not multiplied by the data. See the example 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

If you uncheck the Voltage Format for Cut/Copy menu item by clicking on it, the data will be displayed in the Magnitude-Phase format.   The scale factor will be multiplied by the channel ratio. See the example 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

Exporting Venable data using the Clipboard

The Venable plot data including the data header is exported to the clipboard as tab delimited ASCII text. Here are the steps you should follow to export data from the Venable software to the clipboard and to paste the data to another application:

1. Open up the Venable plot containing the data to be exported with the Venable software.

2. Go to the Edit program menu and make sure the Voltage Format for Cut/Copy is unchecked to export data in the Magnitude-Phase format.

3. Select the data set to be exported from the plot by left clicking on the data (Black squares appear on the data set when it's selected and the data set number turns yellow). With a plot selected, different data sets can be scrolled through if there is more than one on a plot by hitting the up and down arrow keys on the keyboard.

4. When the plot to be exported is selected, go to the Edit program menu again and select Copy or use the Ctrl-C shortcut keys.

5. Either 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. The file is now in tab delimited ASCII which you can save by clicking on the Save AC File button.

6. Or open up a text editor, like Notepad or WordPad, and directly paste the data into it. Make sure to save the data as a text file in WordPad.

7. Or open up a spreadsheet application like MS Excel and directly paste the data into the workbook.

Exporting Venable data using Export to Matlab/Mathcad

The Venable plot data is exported to a text file (.dat) as tab delimited ASCII text. This function removes the data header because Matlab arrays and Mathcad input tables do not handle mixed data types. Below are the steps that should be followed to export data from the Venable software to the Matlab or Mathcad.

1. Open up the Venable plot containing the data to be exported with the Venable software.

2. Go to the Edit program menu and make sure the Voltage Format for Cut/Copy is unchecked to export data in the Magnitude-Phase format.

3. Select the data set to be exported from the plot by left clicking on the data (Black squares appear on the data set when it's selected and the data set number turns yellow). With a plot selected, different data sets can be scrolled through, if there is more than one on a plot, by hitting the up and down arrow keys on the keyboard.

4. Go to the File pull-down menu and click on the Export To Matlab/Mathcad menu item. The file Save As pop-up window will open. The data is saved as a tab delimited data (.dat) file with the Venable text header removed. See the example below:

1	31.2134	-0.1391
1.25893	31.2134	-0.1751

**Exporting a Venable Plot as a Graphics File**

The Venable can save plots in JPEG graphics format, which can be read by any web browser or easily pasted into Word. The functions for exporting graphics files are all located under the File program menu.

Copy Graph

Copy graph is located under the File program menu. It copies the active graph including titles, legends, slide bars and data descriptions to the clipboard in JPEG (.jpg) format using the default compression. The plot can then be inserted into other programs such as Word or PowerPoint for reports or presentation. A similar command is to use Alt-Print Screen to capture the active graph on to the clipboard as a Windows bitmap. In this case, you will have to use a graphics file editor to remove the window portion from around the graph.

Save To JPG

Save To JPG is located under the File program menu. It saves the active graph including titles, legends, slide bars and data descriptions to a file in JPEG (.jpg) format. A Jpeg Quality pop-up window, as shown on the next page, prompts the user for the amount of compression to be used in saving the file. The compression shown in the figure is the default. The more compression that is used when saving a file in JPEG (.jpg) format, the smaller the size of the saved file, but also the poorer the resolution.
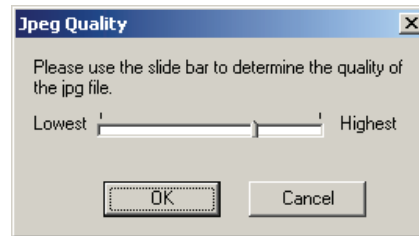
Jpeg Quality Window

Mail To

Mail To is located under the File program menu. It opens the users default email program and attaches the active graph to a New Message. The Mail As pop-up window opens up as shown below and gives the user an option of attaching a file in the JPEG or Venable file format. Venable files are typically very small and are the most convenient format for emailing. However, the recipient needs The Venable System software or the Venable Reader to open this file type. If the JPEG format is selected, the user is given an option for the amount of compression to be used in the attached file. Again, the more compression that is used when saving a file in JPEG (.jpg) format, the smaller the size of the saved file, but also the poorer the resolution.
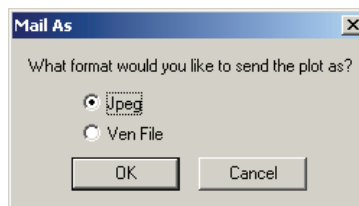
The Mail As Pop-up Window

Importing Venable data into Excel

To import data into Excel you can directly paste any data copied on to the Clipboard from the Venable software directly into an Excel worksheet or you can open up any tab delimited text files that have been saved. When opening a delimited text file with Excel, the Text Import Wizard panel will open up. Choose delimited option and click on Finish to import the file.

Importing Venable data into Mathcad

Data can be imported into Mathcad using three methods:

1.   The user can go to the Mathcad Insert program menu, select the Component menu item, and then select Input Table. Type a variable name into the placeholder for the input table. Right click on the input table and select Import from the pop up menu. Browse for a data file saved by the Export to Matlab/Mathcad method or a file with the Venable text header removed and click Open. This method reads the data from the data file only once when the data is imported instead of each time the work sheet is calculated.

2.   Data can also be imported 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 Read from a file, Text Files for the File Format, and browse for the data file and click on Finish. Type a variable name into the placeholder in the Read/Write component icon to which the data from the file will be assigned. Type the variable name and '='to display the data in an input table. Mathcad re-reads the data from the file each time the work sheet is calculated.

3.   Data can also be imported using the READPRN function. The proper syntax is to put the file path inside quotes inside the function parentheses as shown below:

M:= READPRN("C:\Program Files\Venable Inc\Venable System\mod.dat")

Type the variable name and '=' to display the data in an input table.

Importing Venable data into Matlab

Matlab uses Matlab m-files Venload.m and Vendlmread.m created by Venable to import data into a Matlab array. These files are located in a sub-folder of the program installation directory. Use the menu item, Help -> "Matlab m-files", to open up a Windows Explorer window to the folder containing these files. The Venload.m and Vendlmread.m files must be placed in the Matlab path or current directory. See the topic on **Installing the Venable Matlab Files**. Once these files are placed the in the Matlab path or current directory, the Venload function can be called from the Matlab command window or any user created m-file. A description of the functions and Matlab syntax is provided below.

Venload.m: Sets "C:\Program Files\Venable Instruments\Venable Software" directory as the current directory, retrieves the tab-delimited text file name and calls the Vendlmread.m function. A tab-delimited text file with the file extension *.dat is created using the Export To Matlab/Mathcad function under the File menu in the Venable System software.

Matlab Syntax: venload, loads file into the most recent answer array, ans.

Matlab Syntax: a = venload, loads file into array, a.

Vendlmread.m: Parses and loads Venable frequency response data from a tab-delimited text file into a Matlab array.