Exporting Data from the Venable Software

The Venable software uses tab delimited ASCII text when exporting or importing data from the Graph tab or Dataset Text Display tab. 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 can be saved in comma-separated values format by selecting the data and then selecting Export to CSV in the Dataset program menu. Selected data also can be saved as a Matlab .mat file using Export to Matlab in the Dataset program menu. Data in this form can be easily exported to or imported from Excel, Matlab, or Mathcad applications. Screenshots of Graph tabs can be saved to .jpg, .png, or .svg format using the Export to JPG, Export to PNG, and Export to SVG menu selections in the Graph program menu.

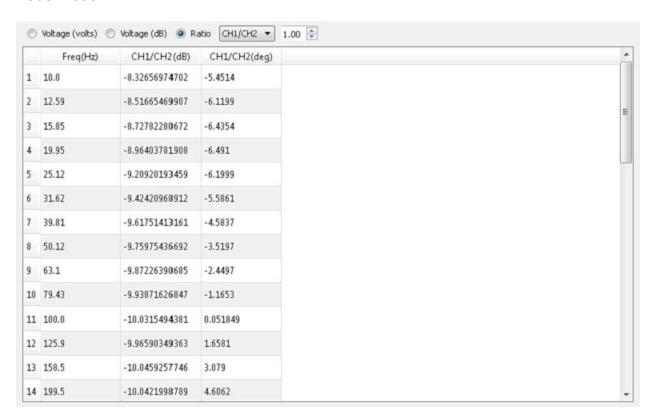**Venable Data Format in the Dataset Text Display**

Venable data can be exported to the clipboard in three different text formats that can be set in the Dataset Text Display tab. The Voltage format is the multi-column raw data acquired from each analyzer channel. The number of columns depends on the number of analyzer channels The Voltage format also allows users to examine the raw measurements and do their own calculations on the data. Voltage format can be set to either Volts or dB. The Frequency Magnitude-Phase format is the 3-column text representation of a particular data set plotted on a Venable software graph tab. 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 also located in the Data Set Properties for each plot. Changing the channel ratio or scale factor in the Dataset Text Display tab does not change the channel ratio or scale factor in the Graph tab. That has to be changed in the Data Set Properties for the data set.

1. To view the three different data formats, open up a Venable graph tab containing plotted data sets.

2. You can observe the data in the different text formats by going to the Navigation Bar in the Venable application and double clicking on one of the datasets listed.

3. A Dataset Text Display tab containing the data will open. There are three radio buttons that can be selected to set the data in either voltage (volts) mode, voltage (dB) mode or Ratio mode. There are sample screenshots of the data on the next page.

Voltage Mode:

	Freq(Hz)	Ch1(volt)	Ch1(deg)	Ch2(volt)	Ch2(deg)
1	10.0	0.025623	0.0	0.066828	5.4514
2	12.59	0.025152	0.0	0.067051	6.1199
3	15.85	0.024605	0.0	0.067207	6.4354
4	19.95	0.023983	0.0	0.067314	6.491
5	25.12	0.02339	0.0	0.067529	6.1999
6	31.62	0.022834	0.0	0.067576	5.5861
7	39.81	0.022344	0.0	0.067614	4.5837
8	50.12	0.021984	0.0	0.067623	3.5197
9	63.1	0.021703	0.0	0.067629	2.4497
10	79.43	0.021536	0.0	0.067624	1.1653
11	100.0	0.021354	0.0	0.067773	-0.051849
12	125.9	0.021516	0.0	0.067773	-1.6581
13	158.5	0.021319	0.0	0.067774	-3.079
14	199.5	0.021325	0.0	0.067764	-4.6062

Ratio Mode:

	Freq(Hz)	CH1/CH2(dB)	CH1/CH2(deg)
1	10.0	-8.32656974702	-5.4514
2	12.59	-8.51665469907	-6.1199
3	15.85	-8.72782280672	-6.4354
4	19.95	-8.96403781908	-6.491
5	25.12	-9.20920193459	-6.1999
6	31.62	-9.42420968912	-5.5861
7	39.81	-9.61751413161	-4.5837
8	50.12	-9.75975436692	-3.5197
9	63.1	-9.87226390685	-2.4497
10	79.43	-9.93871626847	-1.1653
11	100.0	-10.0315494381	0.051849
12	125.9	-9.96590349363	1.6581
13	158.5	-10.0459257746	3.079
14	199.5	-10.0421998789	4.6062

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Exporting Venable from the Data Text Display to the Clipboard

The Venable plot data without 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. With the Dataset Text Display tab open as described in the previous section, select all the data text to be exported by left clicking on the upper left corner of the spreadsheet or opening the Edit program menu and select Select All. You can also left-click on a cell and drag to select all the data or a portion of the data.

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

3. 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.

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

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 save a selected data set to a .csv file by going to the Dataset program menu and selecting Export to CSV. 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 tab delimited option and click on Finish to import the file.

Importing Venable data into Mathcad

Data can be imported into Mathcad using several 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 text 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 or Matlab 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

To import data into Matlab you can save a selected data set to a .mat file by going to the Dataset program menu and selecting Export to Matlab. You can open this file in Matlab and the data will be loaded into your workspace. You can also import Matlab files into Mathcad. See the previous section about exporting data to Mathcad.

Venable Data Format in the Graph Tab

Venable data can be exported or imported from the Graph tab in the 5-column voltage format. This format is compatible with all the older versions of the Venable software and the data output of the Circuit Analysis menu. The Voltage format is the raw data acquired from each analyzer channel. The Voltage format also allows users to examine the raw measurements and do their own calculations on the data. Voltage format shows magnitude in both Volts and dB. The Venable plot data includes data header set that consists of the analyzer model, date and time, channel ratio, scale factor and column headings.

```
*Data gathered by the Venable 350 System
*04:59PM Sunday, July 22, 2012
*Gain/Phase: Output Node=2, Input Node=1, Scale Factor=1
```

*Frequency (Hz)	Channel or Node	Voltage (Volts)	Voltage (dB)	Phase (Deg)
100	1	0.00315526	-50.0193	3.33308
100	2	1.42425e-005	-96.9283	107.771
100	3	5.91096e-007	-124.567	168.69
112.2	1	0.00314995	-50.0339	3.53305
112.2	2	1.41581e-005	-96.9799	110.364
112.2	3	5.34378e-007	-125.443	130.601
125.9	1	0.00315427	-50.022	3.7909
125.9	2	1.57248e-005	-96.0683	113.92
125.9	3	3.88818e-007	-128.205	-63.4349
141.3	1	0.00315708	-50.0143	4.19767
141.3	2	1.89814e-005	-94.4334	106.498
141.3	3	2.08983e-007	-133.598	-56.3101
158.5	1	0.00316046	-50.005	4.62527
158.5	2	2.22e-005	-93.073	104.98
158.5	3	2.95548e-007	-130.587	-168.69
177.8	1	0.00316015	-50.0059	5.11935
177.8	2	2.35869e-005	-92.5466	101.338

Exporting Venable Data from the Graph Tab to 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. With the Sweep window displayed as described in the previous section, 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).
2. When the plot to be exported is selected, go to the Edit program menu or right click on the graph to open the graph Edit menu and select Copy or use the Ctrl-C shortcut keys.
3. Open up a new graph tab or select another graph and directly paste the data into it.
4. Or paste the data into another open Venable application, including older versions of the software. Conversely, you can import data another open Venable application. For version 5 and earlier software, make sure the Voltage Format for Cut/Copy is checked in the Edit program menu.

Exporting a Venable Plot as a Graphics File

The Venable can save plots in JPEG, PNG, or SVG 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 Graph program menu.

Export Graph

Export is located under the Graph program menu. Graphs can be exported in several formats, including JPEG, PNG and SVG. It copies the active graph including slide bars to the clipboard in the chosen format using the default compression. The plot can then be inserted into other programs such as Word or PowerPoint for reports or presentation. Another method 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.