



VEBKO ONLINE HELP

"Vector View" Window, Part 1

Category	tester
Section	AMT Sequencer Module
Language	English
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To open this window, "Vector View" option from the "View" menu should be used and it is possible to open up to five "Vector Views" of simultaneously. By clicking on the right arrow of "Vector View" icon from the toolbar desired number of windows can be opened. Here, the first "Vector View" is opened. To better explain this window, first, we close "Detail View" and "Measurement" view windows. In summary, on this window it is possible to view current and voltage input and output values in different modes.

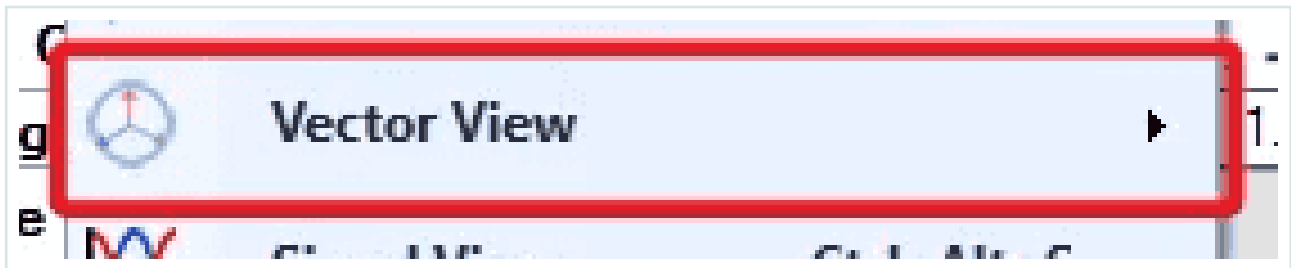


Figure 1



Figure 2

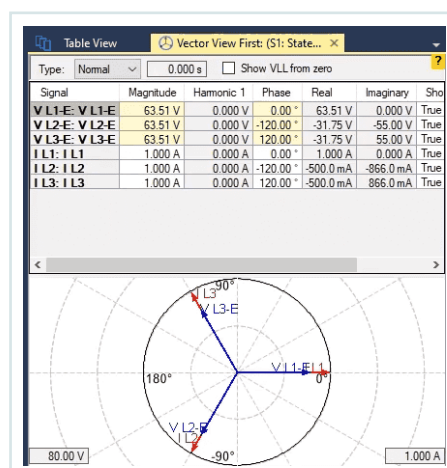


Figure 3

"Signal", "Magnitude", the first harmonic, phase, real value, imaginary values are displayed in "Signal", "Magnitude", "Harmonic 1", "Phase", "Real" and "Imaginary" columns respectively. Also, the arrow of signals can be made hidden in the "Show Arrow" column while the color of arrows can be selected from "Color" column. Moreover, to add the frequency column to this table, by right clicking in this area and selecting "Table" from "Show/Hide" option, the frequency column is added to display the frequency of signals. For example, "V L1-E" signal with a 63.51 volt range and a first harmonic value of 63.51, phase value of 0, frequency of 50, real value of 63.51 and imaginary value of 0 is depicted with a blue arrow.

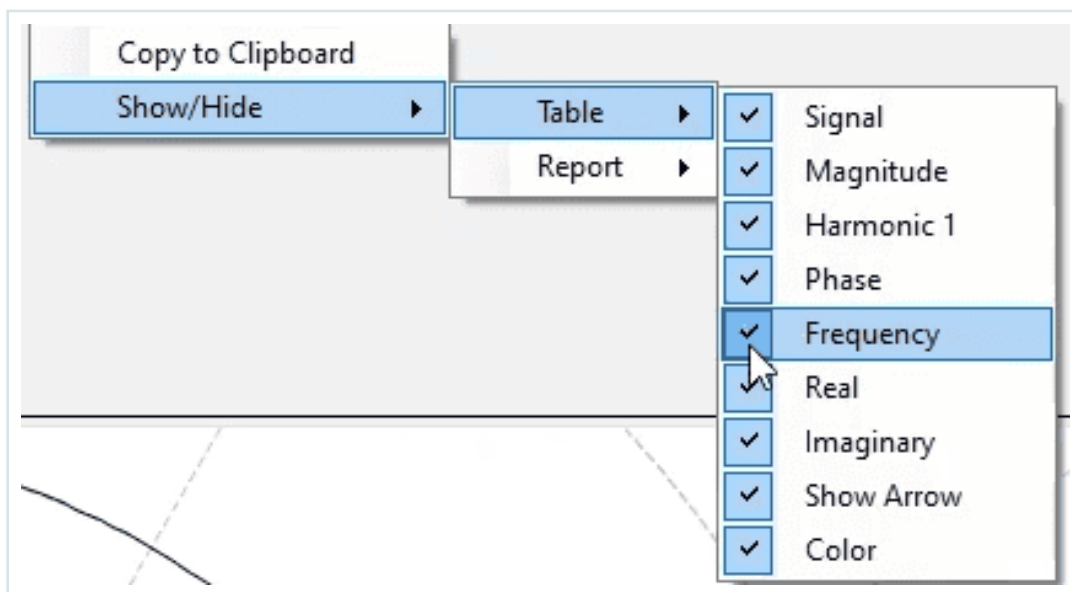


Figure 4

Now, by changing the status of "Show Arrow" to "False", you can see that the vector of this signal is made hidden in "Vector View". To optimize the display of "Vector View" vectors, right click on this section and check "Optimize". If you want to manually optimize the display of vectors, first you need to uncheck "Optimize" option and then optimize the display of vectors from the related fields at the corners of this page.

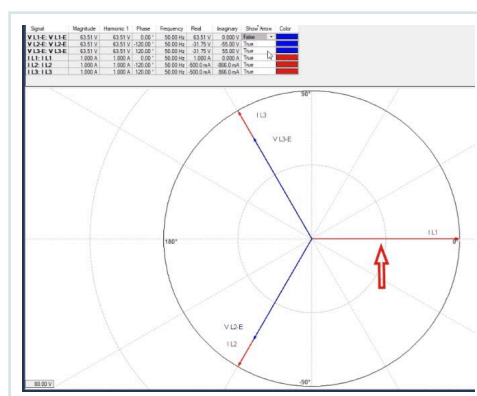


Figure 5

Also, if you want to add a signal to be displayed in "Vector View", by right clicking on the vector section of this window, you should select or remove your intended mode to be displayed from the "Show" option. By default, only "Output Value" and "Actual" are selected and phase voltage and current values of the device are displayed. By unchecking "Output Value" and selecting "Line-Neutral", you can see that in addition to phase voltage and current values, voltage and current values of neutral point are displayed in table and vector as well.

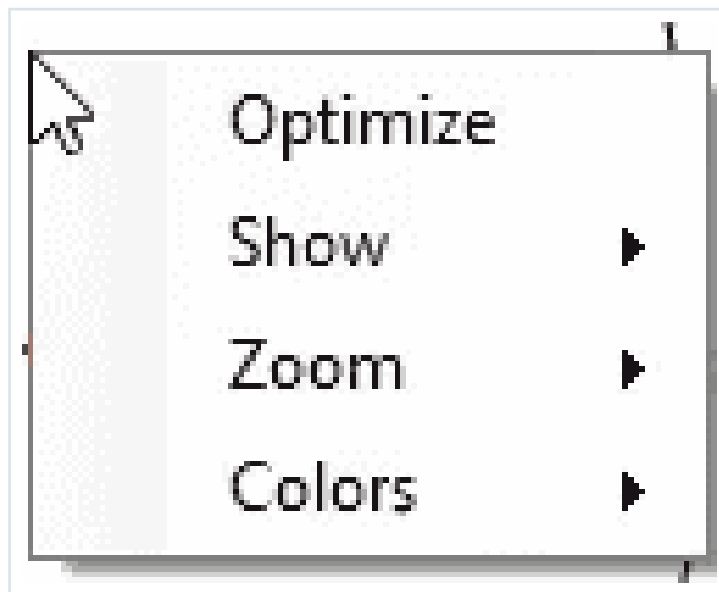


Figure 6

Also, if you want to display line-line values of output voltage of the device, you should select "Line-Line" from this list and check this option. Then you will see that the values of line-line voltage of the device are displayed in the above table and the vector display of them is displayed in the below vector. If you wish to see the symmetrical current and voltages, select "Symmetrical" option and by doing so you can see that the zero, negative and positive sequence values of voltage and current and their vector view are displayed in the below table.

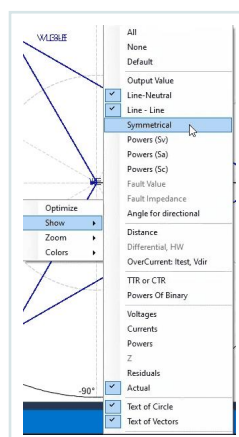


Figure 7

By selecting any of the "Power (Sv)", "Power (Sa)" and "Power (Sc)" options, the value of power is calculated in accordance with the current and voltage of the test as well as different calculation methods and then displayed in the related rows. For example, by selecting "Power (Sv)", you can see that S1, S2 and S3 quantities are displayed in three rows. In "Magnitude", "Phase", "Real" and "Imaginary" columns, the apparent power value, angle, active power and reactive power are displayed respectively. Now, since here "Power (Sv)" is selected, the power value of "Sv" is displayed according to the formulas in the box and after being calculated according to vector method, it is displayed in "Sv" row. Also, in "PFv" section, the coefficient value of apparent power is displayed.

$$P = P1 + P2 + P3$$

$$Q = Q1 + Q2 + Q3$$

$$Sv = \sqrt{P^2 + Q^2}$$

Figure 8

Now, if the user selects "Power(Sa)", the power value of "Sa" is calculated using the calculation method and according to the formulas in the box and then displayed in "Sa" field. In "PFa" field, the coefficient of power is first calculated using the same method and then displayed.

$$P = P1 + P2 + P3$$

$$Q = Q1 + Q2 + Q3$$

$$Sa = S1 + S2 + S3$$

Figure 9

If "Power (Sc)" is selected, the value and coefficient of power are calculated using the algebraic method and the displayed formulas and then displayed in "Sc" and "PFc" rows. You should keep it in mind that S1, S2 and S3 quantities are the same in all three methods and displayed on the vector. Also, when the load is unbalanced, "Power (Sc)" method works better than the others and V_{Σ} and I_{Σ} parameters refer to algebraic sum of voltages and algebraic sum of currents respectively. Also, V and I parameters refer to current and voltage of the system which are calculated in a four-phase system using the displayed formulas.

$$Sc = V_{\Sigma} * I_{\Sigma}$$

$$I_{\Sigma} = \sum \sqrt{I_a^2 + I_b^2 + I_c^2}$$

$$V_{\Sigma} = \sum \sqrt{V_a^2 + V_b^2 + V_c^2}$$

Figure 10

[jg1]Vector_View_Window_Part1