

Serial Graphing Utility v1.00

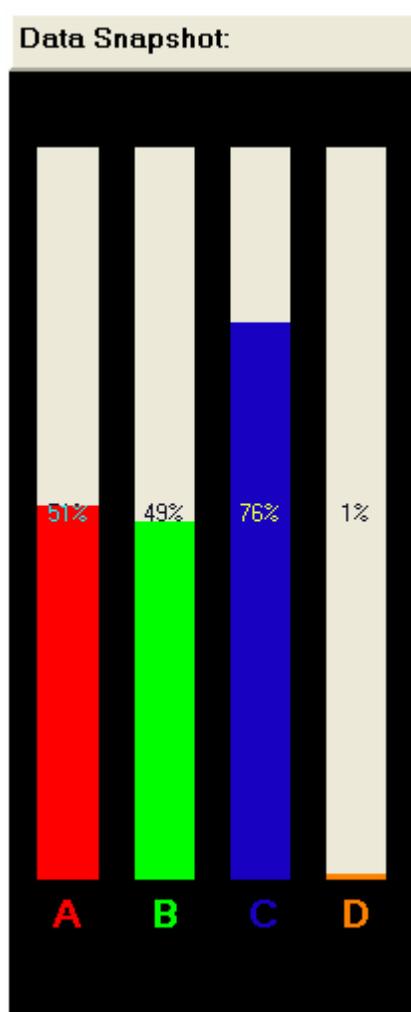
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The serial graphing utility allows incoming data on the PC serial port to be automatically graphed in time or displayed upon a series of bar graphs. The utility also supports displaying the serial data from P&E's embedded USB serial ports which may be found on certain Freescale development boards including the DEMOQE.

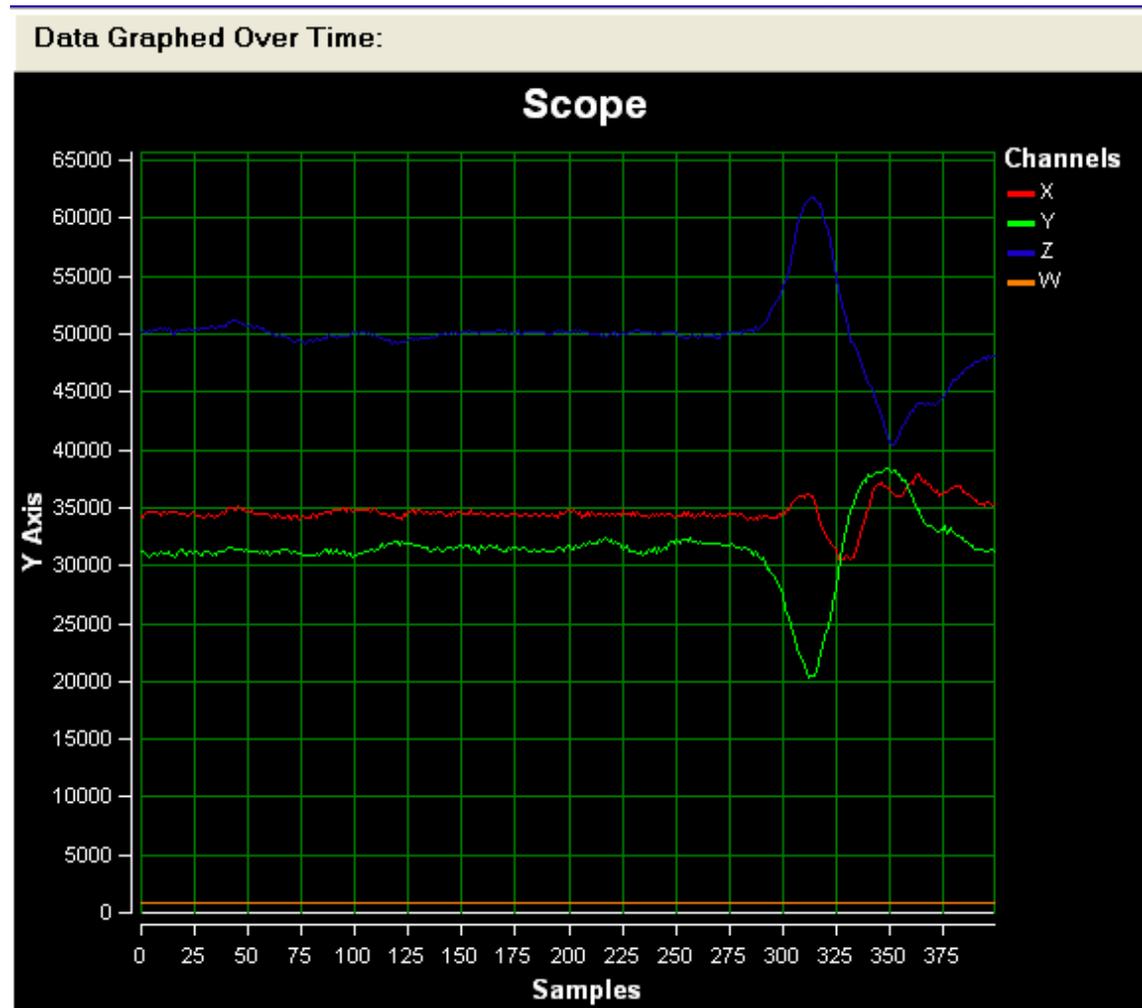
All data is in hexadecimal format. The data can be accepted and displayed either as incoming byte values (\$00-\$FF) or word values (\$0000-\$FFFF). The data format indicates whether the data is byte or word data. The graphical components automatically size their range depending upon the incoming data.

Visual Components

The **Bar Graph** has four separate bars A, B, C, and D. On each bar a percentage value is displayed which indicates the current value relative to the full range. A byte value of \$7F (max is \$FF) would show up as approximately 50% as would a word value of \$7FFF (max is \$FFFF). As can be seen in the data formatting section, all four bars must be written at the same time. The bars are shown here:



The **graphing component** shows four waveforms X, Y, Z, and W. The magnitude axis either has a range of \$00-\$FF if byte values are incoming on the serial port or \$0000-\$FFFF if word values are incoming. Each new set of values which come in the serial port are added to the far right side of the graph and the rest of the data values move to the left. The incoming data is the magnitude of each waveform (vertical axis) and the number of samples is shown on the horizontal axis. The graph has a limited size and older samples will fall off the left part of the graph. As can be seen in the data formatting section, each incoming data command affecting the graphing component must have new data for all four waveforms. An example graph is shown here:



Data Format

The data format is broken into two sections depending upon whether the incoming data is in byte or word format.

Byte Formatted Data

There are two commands which may be accepted. Both commands must end in the special characters # $\$0D$ and # $\$0A$ which are CR (carriage return) and LF (line feed). The accepted commands are:

WnnZnnYnnXnn

The nn values are 00-FF and correspond in order to the data displayed on the following graph lines : W, Z, Y, X.

AnnBnnCnnDnn

The nn values are 00-FF and correspond in order to the data displayed on the following bar graphs lines : A, B, C, D.

Word Formatted Data

There are three commands which may be accepted. All commands must end in the special characters # $\$0D$ and # $\$0A$ which are CR (carriage return) and LF (line feed). The accepted commands are:

nnnn,nnnn,nnnn,nnnn

The nnnn values are 0000-FFFF and correspond in order to the data displayed on both the graph and bar graphs as follows: X/A, Y/B, Z/C, W/D.

nnnn:nnnn:nnnn:nnnn

The nnnn values are 0000-FFFF and correspond in order to the data displayed the graphing component as follows: X, Y, Z, W.

nnnn=nnnn=nnnn=nnnn

The nnnn values are 0000-FFFF and correspond in order to the data displayed on the bar graph component as follows: A, B, C, D.