

II-4 Changing the Graph Display

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We shall explain about how to change the appearance of graphs by changing parameters with GUI or in XML documents, in order to make graphs understandable.

help

For a detailed explanation of each parameter, you can refer to the [Help] menu of the GUI.

1. Graph Display Settings Parameters

Parameters related to graph appearance are below page in the model XML hierarchy. We shall explain about the parameters individually, using the Vm graph in the top left of the GUI screen as an example.

Parameters which are shown with red numbers are related to graph display area. When this parameter changes, the size of the corresponding graph changes, as displayed in figure 2-4-2. Also, parameters which are displayed with black numbers decide the minimum and maximum values of graph axes, and waves are displayed within this scope.

1.1. About Each Parameter

page

graph display area

min

x axis minimum value

max

x axis maximum value

interval

display interval time (time until the next display)(ms)

reference width

graph display area width

The referenceWidth value is 29,700 (0.01 mm units. In other words, 29.7 cm). The referenceHeight value of 21,000(=21 cm) is A4 size. Here is a graph image drawn on A4 size paper facing sideways.

reference Height

height of the graph display area

titleSize

font size of the name displayed above the graph

legendSize

font size of the legend displayed below the graph

axisSize

font size of the x axis, y axis titles

labelSize

font size of the number values displayed on the axis

page/Vm

graph name

target 1, target 2 ..

parameter names displayed on the graph

From target 1 until target n can be displayed, up to eight items have colours attached in this order (black,red,blue,green,pale blue,pink,yellow,beige). When 9 or more items are displayed, these colours are used again starting from black.

page/Vm/Vm

y axis title of the Vm graph

Vm / Vm / origin

starting point of a y axis on paper turned into an image

At the top is a starting point of 0. The unit of referenceWidth is 0.01mm.

#Vm / Vm / length

length of the y axis on paper turned into an image (0.01 mm)

#Vm / Vm / min

y axis minimum value

#Vm / Vm / max

y axis maximum value

page/Vm/Time

Vm graph x axis title

#Vm / Time / origin

starting position of the x axis on paper turned into an image

#Vm / Time / length

length of the x axis on paper turned into an image (0.01 mm)

#Vm / Time /does plot label

flag indicator settings of the axis label

If it's `true` then fill it in, and if it's `false` then don't

grid step

ruled line interval in a vertical or horizontal direction

label step

filled in interval of the axis label

pattern

label display format settings (example: if it's 0.0 it can have up to 1 decimal place)

Individual graph settings and shared settings

Sets the minimum/maximum values of the x axis as the child elements of a page because settings are shared by each graph differently from individual settings, like for the minimum/maximum values of the y axis.

2. Correspondence of Graph and XML File Parameters

The figure below is taken from a section of the program `matsuoka_et_al_2003/model.xml`. When the

numbers are changed in an XML document, the graph appearance changes.