

Introduction to VCD

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The aim of this document is in the first part to learn more on VCD file. In a second part I will describe my project and few solutions.

Part I

What is a VCD file ?

1 Description

VCD stands for " Value Change Dump ". This is a format for dumpfile generated by simulation tools such a GHDL (the one I use). It use a quit easy but uncommon syntax.

2 Syntax

A VCD file has 4 main sections :

- Header section
- Variables definitions section
- \$dumpvars section
- Values changes section

Beware ! VCD is case sensitive.

2.1 Header

This section contains a timestamp, a simulator version number, and a timescale. You can also include some comments.

2.2 Variables definitions

This section contains variables definitions. We use the following syntax to define variables :

`$var type bitwidth id name`

The id is an ASCII-character from ! to .

2.3 \$dumpvars

This section only contains variables initializations i.e the values of the variables at time t=0. The syntax is the following :

`values id`

without space except for variables having bitwidth of 8.

2.4 Values changes

We denote the time by the following syntax :

`#time`

and the fact that a variable changes by :

`new_value id`

without space.

Part II

Library

3 SVG

3.1 `svg.js`

A little bit more complex than the others. There is also some animation functions but less than in `snap.svg`.

3.2 `snap.svg`

This library is open source and free. The documentation is well-explained and comprehensive. There is a lot of examples. There is animation handler that looks good. We can use external SVG files : I mean, not generated with `snap.svg`. Used by Adobe. By the developers of `raphael.js` in order to support new browsers.

3.3 `raphael.js`

Consider everything as a DOM object. There is animation functions too. Well documented. Most used for now.

4 VCD

5 Tessel VCD parser

6 My choices