



World Class Verilog & SystemVerilog Training

## Common Mistakes In Technical Texts

by Cliff Cummings of Sunburst Design - [www.sunburst-design.com](http://www.sunburst-design.com)

### 1. Testbench / Testbenches

The term "test bench" is wrong. Unlike "red bench" (adjective-noun) to describe a bench that is the color red, there is no such thing as a "test bench" (adjective-noun) or a bench of the type test. In HDL coding we make a "testbench" (noun) interact with a design (noun).

Craftsmen and craftswomen use a "workbench" (noun) not a "work bench" (adjective-noun) or a bench of the work-type. Spell checkers recognize "workbench" but they do not recognize "testbench." This is a shortcoming of current spellcheckers due to the fact that relatively few people even know what a testbench is.

Following the lead of workbenches, the plural of testbench should be testbenches (not testbenchs).

Even Janick Bergeron uses testbench in the title of his first book instead of test bench (and I agree) even though a spell checker does not like testbench (but it does like workbench).

*Dictionary Recommendations (Add to your spell-checking dictionary):*

testbench  
Testbench  
testbenches  
Testbenches

*Auto-Correction Recommendations (add to Tools>AutoCorrect):*

from "test bench" to "testbench"  
from "Test bench" to "Testbench"  
from "testbenchs" to "testbenches"  
from "Testbenchs" to "Testbenches"  
(Nice abbreviations)  
from ttbb to testbench  
from Ttbb to Testbench  
from ttbbs to testbenches  
from Ttbbs to Testbenches

*Did you get it wrong??*

Global search for "test bench" and make appropriate corrections.



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#### 2. Nonblocking Assignment

Nonblocking assignment is spelled without the hyphen, despite what a spell-checker says. Nonblocking is how it is spelled in the IEEE Verilog Standard and we even cleaned up the Verilog BNF in the 2001 standard to remove stray non\_blocking and non-blocking BNF statements. Almost all "non-blocking" references in a book should be changed to "nonblocking."

*Dictionary Recommendations (Add to your spell-checking dictionary):*

nonblocking  
Nonblocking

*Auto-Correction Recommendations (add to Tools>AutoCorrect):*

from "non-blocking" to "nonblocking"  
from "Non-blocking" to "Nonblocking"  
from "non blocking" to "nonblocking"  
from "Non blocking" to "Nonblocking"  
(Nice abbreviations)  
from nbaa to nonblocking assignment  
from Nbaa to Nonblocking assignment

*Did you get it wrong??*

Global search for "non-block" or "non block" and make appropriate corrections.

#### 3. Flip-flop / Flipflop

Based on the most common usage of the term from multiple engineering texts and sources, flip-flop is a hyphenated noun (search for "flip-flop," "flipflop" and "flip flop" on the Texas Instruments [www.ti.com](http://www.ti.com) web site. The term flip-flop appears in the title of multiple IC product description data sheets. The other terms do not - also look it up in most engineering texts)

*Dictionary Recommendations (Add to your spell-checking dictionary):* (none)

*Auto-Correction Recommendations (add to Tools>AutoCorrect):*

from "flip flop" to "flip-flop"  
from "flipflop" to "flip-flop"  
(Nice abbreviations)  
from ff to flip-flop  
from Ff to Flip-flop

*Did you get it wrong??*

Global search for "flipflop" or "flip flop" and make appropriate corrections.



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### 4. Multiplexer / ~~Multiplexor~~

Janick Bergeron uses a mixture of multiplexor and multiplexer in his first testbench book. Even though both are technically correct, one or the other should be used consistently throughout the book and multiplexer is by far the more common usage (search for both on the Nortel.com web site, a maker of network multiplexer products - Nortel even has multiple products that include "Multiplexer" in the product names - "Wavelength Division Multiplexer (WDM)") (also look it up in most engineering texts)

*Dictionary Recommendations (Add to your spell-checking dictionary):*

multiplexer  
Multiplexer

*Auto-Correction Recommendations (add to Tools>AutoCorrect):*

from "multiplexor" to "multiplexer"  
from "Multiplexor" to "Multiplexer"

*Did you get it wrong??*

Global search for "multiplexor" and make appropriate corrections.

### 5. Combinational / ~~Combinatorial~~

Based on the most common usage of the term from multiple engineering texts and sources, combinational appears to be preferred over combinatorial, although both can be commonly found. (search for "combinational" and "combinatorial" on the Texas Instruments [www.ti.com](http://www.ti.com) web site - the term combinational appears many more times than combinatorial, although both can be found).

*Dictionary Recommendations (Add to your spell-checking dictionary):* (none)

*Auto-Correction Recommendations (add to Tools>AutoCorrect):*

from "combinatorial" to "combinational"

*Did you get it wrong??*

Global search for "combinatorial" and make appropriate corrections.

### 6. "a" / "an" Usage

A very common English-usage mistake is the incorrect usage of "a" instead of "an" in a sentence. Most Americans mistakenly believe that "a" is used in front of a word starting with a consonant and that "an" is used in front of words that start with a vowel. This is wrong. "an" is used in front of any word that starts with a vowel-sound, such as "an HDL" (pronounced: "an aach-dee-ell"). Visit the following website for a full explanation: [www.dictionary.com/doctor/faq/a/a-oran.ntml](http://www.dictionary.com/doctor/faq/a/a-oran.ntml)

*Recommendation - get it right!*