

# SystemC Project

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# Some Tutorial links in SystemC

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[www.es.ele.tue.nl/~heco/courses/ProcDesign/systemc\\_1\\_tutorial.pdf](http://www.es.ele.tue.nl/~heco/courses/ProcDesign/systemc_1_tutorial.pdf)

[homepages.cae.wisc.edu/~ece734/SystemC/Esperan\\_SystemC\\_tutorial.pdf](http://homepages.cae.wisc.edu/~ece734/SystemC/Esperan_SystemC_tutorial.pdf)

[www.asic-world.com/systemc/](http://www.asic-world.com/systemc/)

# Some Tutorial links in SystemC TLM

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<http://www.cerc.utexas.edu/~jaa/soc/lectures/8-2.pdf>

[http://www.vlsi.informatik.tu-darmstadt.de/student\\_area/es2/files/EBS2-7.pdf](http://www.vlsi.informatik.tu-darmstadt.de/student_area/es2/files/EBS2-7.pdf)

# SystemC Software Download Page

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<http://accellera.org/downloads/standards/systemc>

# SystemC UART Modeling

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<http://www.embecosm.com/appnotes/ean1/ean1-tlm2-or1ksim-2.0.pdf>

SystemC UART Modeling

Can be run with OpenRISC ISS (Instruction Set Simulator)

ISS Installation Guide

<http://www.embecosm.com/appnotes/ean2/embecosm-or1k-setup-ean2-iss-ue-3.pdf>

First try to understand the supplied code examples  
And, to run after installation

# SystemC UART Modeling

## 0. Install Linux (Ubuntu, Fedora, Mint)

## 1. Download and Install SystemC

<http://accelera.org/downloads/standards/systemc>

## 2. Download and Install OpenRISC 1000 ISS (Instruction Set Simulator)

<http://www.embecosm.com/appnotes/ean2/embecosm-or1k-setup-ean2-issue-3.pdf> (doc)

[http://opencores.org/or1k/OpenRISC\\_GNU\\_tool\\_chain#Installation\\_of\\_development\\_versions](http://opencores.org/or1k/OpenRISC_GNU_tool_chain#Installation_of_development_versions)

## 3. Run the reference code

<http://www.embecosm.com/appnotes/ean1/ean1-tlm2-or1ksim-2.0.pdf> (doc)

<https://github.com/embecosm/esp1-systemc-tlm/tree/master/sysc-models>

a. logger

b. simple-soc

c. sync-soc

d. decoup-soc

# Project Report

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## 1. SystemC Introduction

What is SystemC

Why has SystemC been developed?

What's the usage, purpose

## 2. TLM Introduction

What is SystemC

Why has SystemC been developed?

What's the usage, purpose

## 3. Sample Program

Run the chosen sample example code (sysc, tlm)

Analyze the result output.

## 4. SystemC UART simulation – Embecosm Documents

## 5. SystemC SPI / I2C simulation

## References

- [1] <http://en.wikipedia.org/>
- [2] <http://www.allaboutcircuits.com/>
- [3] W. Wolf, "Modern VLSI Design : Systems on Silicon"
- [4] N. Weste, D. Harris, "CMOS VLSI Design: A Circuits and Systems Perspective"
- [5] J. P. Uyemura, "Introduction to VLSI Circuits and Systems"
- [6] [https://en.wikiversity.org/wiki/The\\_necessities\\_in\\_SOC\\_Design](https://en.wikiversity.org/wiki/The_necessities_in_SOC_Design)
- [7] [https://en.wikiversity.org/wiki/The\\_necessities\\_in\\_Digital\\_Design](https://en.wikiversity.org/wiki/The_necessities_in_Digital_Design)
- [8] [https://en.wikiversity.org/wiki/The\\_necessities\\_in\\_Computer\\_Design](https://en.wikiversity.org/wiki/The_necessities_in_Computer_Design)
- [9] [https://en.wikiversity.org/wiki/The\\_necessities\\_in\\_Computer\\_Architecture](https://en.wikiversity.org/wiki/The_necessities_in_Computer_Architecture)
- [10] [https://en.wikiversity.org/wiki/The\\_necessities\\_in\\_Computer\\_Organization](https://en.wikiversity.org/wiki/The_necessities_in_Computer_Organization)