Lab Rubrics

HL

Feb. 2017

1. General Guidelines

(1) Use IEEE paper template to generate your report. One line title, factual and right-to-the-point, avoid marketing terms.

(2) Abstract (50-100 words) with design objectives, technical challenges,methodology, hardware and software resources description, deliverables and the implementation result.

(3) Strictly follow the IEEE paper style, no modification of spacing, fonts, section enumeration etc. and be sure to provide Appendix section with source code listing.

2. System and Hardware Level Design

(1) provide system block diagram(s) to capture the entire design, testing, prototyping setup, for example, laptop computer with USB cable to your microprocessor system.

(2) Block diagram for the microprocessor system with detailed pin connectivity information, labels of each individual block of the system.

(3) Schematics of each basic building blocks and/or subsystems, and/or entire system.

(4) Photos of the actual implementation of the entire system and/or subsystems.

3. Software Design

(1) Description of the software development environment and its set up procedure including MCU Xpresso.

(2) Algorithm description in a well-organized, step-by-step fashion, for example steps from 1 through 5.

(3) Flow chart(s) to give further details of the algorithm, if needed, multiple flow charts can be utilized.

(4) Pseudo code to match up the flow charts. Due to the nature of the hardware and software co-design, algorithmic type Pseudo code is usually too abstract, details down to the level of registers and bits patterns of registers are needed, so use one line of C code. Provide a few more lines of C code if needed, but keep it minimum to make the

point.

(5) Source code (segment of code) to support the Pseudo Code.

4. Testing and Verification

Report will have a Testing and Verification section, which will cover:

(1) Hardware testing: photos of the waveforms from oscilloscope and/or logic analyzer if needed when describing debugging issues, data from the system testing result, and/or SPICE simulation capture if needed.

(2) Software testing: Screen capture of the execution result, data from program execution.

5. Reference Section

Provide reference section with detailed technical reference and datasheet, etc.

(End)