

ESHD Project Report

The requirements to the project have been published on the very first lesson, they are:

"Project is a summary of your work, describing steps you learned to design an Embedded System, and presented in a Report. A zipped file, containing KiCAD project with cache library (ESHD-cache.lib), rescue Library (ESHD-rescue.lib), BOM and a netlist, must accompany the Report. I will verify your designs by Electrical Rules Checker (from menu: Inspect) and reading your netlists with PCB Editor, because schematic checker cannot catch a wrong footprint or absence of footprint in the properties of a symbol. Electrical design requires great attention to details, a single mistake may ruin the whole design. That's why I want you to create clean and complete schematic of our Embedded System.

FRAM Module sub-project was your prototype where you had a chance to learn the process of designing a PCB of a very simple module. PCB Design is another course, and we are going to limit our project to designing the Embedded System schematic, generating a BOM and a netlist."

I quantify every student's Project Report by the following chapters:

1. Requirements Specification (briefly describe the stages of design)
2. Block Diagram Pic. and comments on blocks and connections
3. Hierarchical Schematic Creation (KiCAD) Pic of Top Page
4. Example of Schematic Sheet (Page3) Pic and comments on components
5. Simulation of charging the cap 0.1uF on the input `BUTTON_EXTI13` in LTSpice to calculate the interrupt delay (Fig.20 of STM32L475 DS) Schematic and graphs from LTSpice
6. ERC - Fixing Errors and Warnings. Generating BOM and Netlist. Why some errors may be ignored?
7. External FRAM Module Connection Pic of FRAM Module connected to IoT PCBA
8. Programming uC for Testing the Sensors Snapshot of programming screen
9. Results of all tests w. detailed comments Snapshots of test results screens
10. Conclusion Are you ready to design HW for ES?

My recommendation: do not hide your knowledge - present it in a form of a good looking report, describing every step you made to achieve your goal (assignment, project, research/extra work, etc).