AU-Herning : EPRO 4
Renewable Energy System

Project - Energy Hub

Counselor: Morten Opprud Jakobsen & Klaus Kolle

BY E10 - Team3:

Theis Christensen	**Dennis Madsen**	**Paulo Fontes**
(10691)	**(90248)**	**(10484)**

Executive summary

Preface

Table of Content

I Analysis **5**

1 Introduction **6**

2 Problem statement **7**

II Realisation **8**

3 Material and methods **9**

4 Hardware design **10**
1 Introduction . . . 10
2 Power line and switch mode . . . 10
3 Power switch . . . 10
4 Interface . . . 10

5 Digital design **11**
1 Introduction . . . 11
2 LPC2478 to spartan 6 interface . . . 11
2.1 External memory controller . . . 11
2.2 Bus functional module . . . 11
2.3 Wishbone . . . 11
3 Module design . . . 11
3.1 Design . . . 11
3.2 Indicator . . . 11
3.3 Interrupt register . . . 11
3.4 Interface . . . 11

6 Software design **12**
1 Introduction . . . 12
2 Device drivers . . . 12
3 Kernel setup . . . 12
4 Das U-Boot . . . 12

7 Web design **13**
1 Introduction . . . 13
2 Server setup . . . 13
3 Database . . . 13
4 File structure . . . 13

III Recapitulation **14**

8 Conclusion **15**

9 Discussion **16**

10 Process evaluation **17**

IV Appendix **19**

A Project 4 **20**

B two **21**

Part I

Analysis

Chapter 1

Introduction

Chapter 2

Problem statement

Part II

Realisation

Chapter 3

Material and methods

Chapter 4

Hardware design

1 Introduction

By: NAME

2 Power line and switch mode

By: Dennis Madsen

3 Power switch

By: Paulo Fontes

4 Interface

By: Dennis Madsen

Chapter 5

Digital design

1 Introduction

By: Theis Christensen

2 LPC2478 to spartan 6 interface

By: Theis Christensen

2.1 External memory controller

2.2 Bus functional module

2.3 Wishbone

3 Module design

By: Theis Christensen

3.1 Design

3.2 Indicator

3.3 Interrupt register

3.4 Interface

Chapter 6

Software design

1 Introduction

By: Dennis Madsen

2 Device drivers

By: Dennis Madsen

3 Kernel setup

By: Dennis Madsen

4 Das U-Boot

By: Dennis Madsen

Chapter 7

Web design

1 Introduction

By: Paulo Fontes

2 Server setup

By: Paulo Fontes

3 Database

By: Paulo Fontes

4 File structure

By: Paulo Fontes

Part III

Recapitulation

Chapter 8

Conclusion

Chapter 9

Discussion

Chapter 10

Process evaluation

Bibliography

Part IV

Appendix

Appendix A

Project 4

Appendix B

two