

Designing with Ethernet MAC controllers

Ref : 004553A

Duration : 2 days

OBJECTIVES

- Know the different Xilinx solutions about Ethernet connections
- Understand Ethernet basis, protocol and OSI model
- Identify the different Ethernet core used alone or in a SoC
- Select the appropriate core
- Develop software to control the peripheral
- Integrate core using EDK

RELATED COURSES

- Ethernet Bus (003367A)
- Designing with the Virtex-5 family (004555A)
- Designing with the Virtex-6 family (004852A)

PARTNERS

- This training course is approved by XILINX

PREREQUISITES

- C and VHDL Language
- Successful design using ISE and EDK

TRAINING MATERIALS

Software Configuration :

- Xilinx ISE Design Suite 13.1 Embedded Edition

Recommended Hardware Configuration :

- Intel Core 2 or more recent
- Windows XP or 7
- 1 GB Free disk after software installation
- At least 2Go RAM
- Minimum Display resolution : 1024 x 768
- On Site training : video projector



Contact

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Course also available
customized

Next sessions, see : <http://www.mvd-training.com/en/schedule.html>

TOPICS

1st day

- Ethernet basis
 - Introduction
 - Network standard
 - OSI model
 - Ethernet framing
 - MAC
- Network protocol, Ethernet interface and hardware
 - Network protocol
 - Ethernet interface
 - Hardware
 - Lab 1 : Ethernet frame analyze
- Physical layer
 - Auto-negotiation
 - 8b/10b coding
 - Ordering sets
 - MII, GMII, RGMII interface
 - MDIO interface
 - TBI interface
 - SGMII interface
 - XGMII, XGXS, XAUI interface
 - Signaling
- Local link interface
 - Ethernet PCS/PMA
 - Transmitting MAC user interface
 - Receiving MAC user interface
 - Flow control

- Manage interface
- Lab 2 : VLAN and Jumbo frame
- Ethernet MAC Xilinx solutions
 - Xilinx EMAC
 - Coregenerator
 - EDK

2nd day

- Lab 3 : Implementation
- 10/100 EMAC Solutions
 - AXI Ethernet MAC lite
 - EDK Delivery
 - Software Development
 - Lab 4 : Loopback mode EMAC Lite
- TEMAC
 - Client Interfaces
 - Statistics
 - Host Interface
 - Differences – Soft and Hard
 - Configuration
 - Software
 - Lab 5 : Loopback mode TEMAC
- 10G EMAC
 - Introduction
 - XGMII, XAUI, XSBI interface
 - 10G EMAC core
 - Lab 6 : 10G EMAC frame analyze

DOCUMENTATION

Training manuals will be given to attendees during training in print.