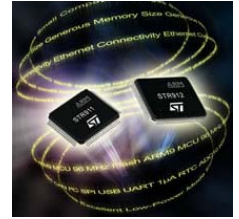


ARM Processor Training Program

The course is designed for those who want to pursue advance Embedded Systems. Embedded Technology Training enables a student, a technologist or a hobbyist to develop microcontroller based systems. The need of time is that every engineer should equip with Embedded Technologies. This course of Embedded System is composed around ARM Microcontroller. This Course cover complete details about NXP's ARM7 (LPC2xxx) processors. Training will be given on ARM Development Board. It covers complete description of ARM7 architecture, Programming, Interfacing of IO device. Various interfacing techniques like I2C, SPI, ADC, DAC, USB are also discussed. So, utilize your talent with technology of present and technology of the future.



ARM processor at glance

The ARM architecture (previously, the Advanced RISC Machine, and prior to that Acorn RISC Machine) is a 32-bit RISC processor architecture developed by ARM Limited that is widely used in embedded designs. Because of their power saving features, ARM CPUs are dominant in the mobile electronics market, where low power consumption is a critical design goal. Today, the ARM family accounts for approximately 75% of all embedded 32-bit RISC CPUs,[2] making it one of the most widely used 32-bit architectures. ARM CPUs are found in most corners of consumer electronics, from portable devices (PDAs, mobile phones, media players, handheld gaming units, and calculators) to computer peripherals (hard drives, desktop routers); however it no longer has significant penetration as the main processor in the desktop computer market and has never been used in a supercomputer or cluster. Important branches in this family include Marvell's XScale and the Texas Instruments OMAP series.

Source: *Wikipedia*

ARM processor application



Mobile Phone



Portable Media Players



Network Storage



Robots



Routers

Features of embedded linux training

- ▲ Practical oriented approach.
- ▲ Practice on professional ARM Development Board.
- ▲ Practice on open source development tools are used.

EmbeddedLinux
OS on the chip

Opportunities after the course

ARM processors are used extensively in handheld devices (like PDA, Personal Media Player, iPods etc), consumer products (like LCD TV, DVD Player, and Media Projector etc). ARM processors are also used in medical devices, robots, industrial application, computer peripherals like hard disk etc. Actually ARM processor now days are used in almost all domains (consumer, network and telecommunication, medical, industrial, defense etc). Development tools for ARM processors are also easily available in market. Open source development tools are also available for ARM. Linux, VxWorks, QNX etc embedded OS have full support on ARM processor. Companies like Samsung, LG, Nokia, Motorola etc are using ARM processor in their products. In defense sector ARM processor is also being used. In India there are R&D center of various multinational companies who are doing work on ARM. Service sector companies like HCL, Infosys, Patni are also working on ARM processor for their various projects. So there are bright chances of making career in the field of development work for ARM processor.

Course description

Module 1: Introduction

- Introduction of ARM Processors
- Evolution of ARM
- 32 – bit Programming

Module 2: ARM7 Architecture

- ARM7 Architecture
- Instruction Set Architecture
- LPC21xx Description
- Memories
- Peripherals

Module 3: ARM Processor Programming

- ARM Processor Programming in C
- Using ARM Programming Tools
- Debugging Techniques (JTAG)
-

Module 4: IO Device Interface and practical

- Study of Input Output Devices
 - LED Display
 - Intelligent LCD Display
 - Stepper Motors and Types of Stepper Motors
 - Serial Communication Concepts
 - I2C
 - SPI
 - Practices on Boards

Module 5: Advance IO

- ADC
- USB
- SD/MMC Card
- GSM Module
- Practices on Board
 -

Module 6: Project

- Projects based on ARM processor

Module 7: Conclusion

- Latest trends in ARM Processor
- Introduction to ...
 - ARM9
 - RTOS
 - Embedded Linux on ARM

Development board used in training program

ARM7 Development Board

Feature of Board

- ▲ MCU LPC 2148
- ▲ USB connector, USB link LED
- ▲ Two channel RS232 interface and drivers
- ▲ SD/MMC card connector
- ▲ Two buttons
- ▲ Trimpot connected to ADC 7.
- ▲ Two status LEDs .
- ▲ Buzzer
- ▲ 2x SPI connectors
- ▲ I2C connector



Important

1. CD Contents

- ▲ Example Programs
- ▲ ARM processor presentations
- ▲ IMBUENT Data Sheets
- ▲ ARM processor articles
- ▲ ARM processor development tools
- ▲ IMBUENT book of ARM processor



2. Course Duration

50 Hours

3. Project

During training a trainee will work on a project. Expense of project is beard by trainee.

Prerequisite

Knowledge of Basic Electronics, General Programming Skills, and Knowledge of any microcontroller is added advantageous



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