

CETPA INFOTECH PVT. LTD.

CURRICULUM STM8 MICROCONTROLLER

Duration: 6 WEEKS

INTRODUCTION TO EMBEDDED SYSTEM

- History & need of Embedded System
- Basic components of Embedded System
- Hardware Classification of Embedded System
- Programming Language Classification of Embedded System
- Advantage & Disadvantage of Low level & High level programming language of Embedded System

CLASSIFICATION OF MICROPROCESSOR & MICROCONTROLLER

- Difference between Microprocessor & Microcontroller
- Classification based on architecture
- Classification based on Instruction Set
- Type of Microcontroller Memory Classification

BRIEF INTRODUCTION TO COMPUTER ARCHITECTURE

- Classification of Von-Neumann and Hardware Architecture
- Difference between RISC and CISC

INTRODUCTION OF EMBEDDED C

- C programming basics
- Difference between C and Embedded C
- Compiler handling Creating and modifying projects in Compiler Conventional programs
- Basic Embedded programs structure

INTRODUCTION TO STM8 MICROCONTROLLERS

- STM8 Family
- Difference between STM8S, STM8A and STM8L
- Detailed Feature of STM8S105C6T6
- Introduction STM8S Development Board

SOFTWARE SETUP FOR STM8

- Introduction and installation of STVD IDE
- Introduction and installation of COSMIC Compiler
- Getting Free License for Cosmic Compiler
- Creating a New Project

GENERAL PURPOSE INPUT OUTPUT

- Registers Description
- Writing First Program
- LED Patterns
- Button Programming
- Seven Segment
- LCD 8 bit Mode
- LCD 4bit Mode
- Interfacing IR Sensor
- Interfacing Motors

CLOCK CONTROL

- Basics of Clock
- How to Control Clock
- Registers Description
- Programming

STANDARD PERIPHERAL LIBRARY

- Introduction to SPL
- SPL V/S Registers
- How to Create Project Using SPL

TIMERS

- Theory on Timers
- Basic Timer
- General Purpose Timer
- Advance Timers

INTERRUPT

- Polling Method
- Theory on Interrupts
- Polling V/S Interrupt
- Interrupt Controller
- Software Interrupt

- External Interrupt

ANALOG TO DIGITAL CONVERTER

- Theory of ADC
- Inbuilt ADC
- Resolution and Conversion Time
- Applications
- Programming
- Interfacing External Devices

SERIAL COMMUNICATION

- Basic of Communication
- Parallel V/S Serial
- Asynchronous V/S Synchronous Serial Communication

USART

- Basics of USAT
- USART Frame
- Baud Rate V/s Bit Rate
- How to Program
- Interfacing Computer with STM8
- Interfacing Mobile Phone with STM8

SERIAL PERIPHERAL INTERFACE

- __SPI Protocol
- __Applications
- __USART V/S SPI
- __Pin Description
- __How to Program
- __Interfacing Two MCUs

I2C PROTOCOL

- __SPI Protocol
- __Applications
- __USART V/S SPI V/S I2C
- __Pin Description
- __How to Program
- __Interfacing Two MCUs

PULSE WIDTH MODULATION

- Introduction PWM
- Applications
- Types
- Programming