

Date: 13/02/2020

One Day Hands on Workshop on Audit Course IV (Embedded System Design Using MSP430)

Report

Aim:

1. To understand Embedded C programming & interfacing techniques of MSP430.
2. To illustrate concepts of UART Communication between PC and Launch Pad and its implementation with application oriented projects.

Contents:

The one day hands on workshop were organized for TE Students on Monday 10th And Wednesday 12th February 2020 from 9.00 am to 4.30 pm at the Texas Innovation Center JSPM's Imperial College of Engineering, Wagholi, Pune.

The center has been set up under Texas Instruments university program, as it is a part of JSPM's group of institutes. Total 61 students were attended the workshop. The workshop was conducted by Dr. S. K. Bhatiya, Mr. R. K. Sarawale & Mr. H. N. Dhanwate.

Contents of the Workshop:

- The Texas Instruments is a global semiconductor design and manufacturing company.
- The **MSP430** is a mixed-signal microcontroller family from Texas Instruments. Built around a 16-bit CPU, the MSP430 is designed for low cost and, specifically, low power consumption embedded applications like Automation & Process Control, Consumer & Portable Electronics, Human Machine Interface, Industrial, Lighting & Sensor Hub.
- In **Session I** Introduction to MSP430G2553 Launch Pad CCSv6 & GPIO Programming was covered.
- In **Session II** Blink LEDs, Interrupt based Push-button Interfacing (ISR Programming), Introduction to ADC & PWM in MSP430, ADC Programming, PWM Programming & Interfacing Potentiometer was covered.

- In **Session III** Overview of Serial Communication Lab: UART Communication between PC and Launch Pad. TIVA is a compact and versatile evaluation platform by Texas Instruments.
- Also the introduction of Energia was covered, which is an open-source electronics prototyping platform used to bring the Wiring and Arduino framework to the Texas Instruments MSP430 based LaunchPad. Utilize a web browser based environment with Texas Instruments CCS Cloud at dev.ti.com or TI's powerful CCS Desktop IDE.
- Students learned how to develop IoT based application using CC3100 & CC3200 Booster packs.

The workshop was useful to the students in the selection of final year projects based on MSP430.

Outcome:

1. Acquired skills for developing the real time applications using MSP 430.
2. Obtained the knowledge of UART Communication between PC and MSP 430 Launch Pad.
3. Learned the Application building Using MSP 430 under TIVA & Energia platform.

Few Glimpses:

