

Working with TI MSP432

Session 1

Introduction to TI Embedded Portfolio

- Overview of TI Embedded Portfolio
- Architecture of MSP432 – 32bit ARM Cortex M4F
- Advantages of TI ARM Cortex M4F
- Core Comparison on ARM Cortex M and benefits of M4F
- Review benchmarks of Performance and Energy Efficiency
- MSP432 Family Portfolio
- Advanced Mixed Signal Features including the unique 14bit 1MSPS ADC
- Energy Trace Monitoring features in the TI Code Composer Studio IDE
- Memory features and Bit Banding
- Introduction to DMA - Direct Memory Access
- Porting from MSP430 and CMSIS

Session 2

Working with GPIO in Polling and Interrupt Mode

- Overview of Digital Input and Outputs
- Capacitive Touch
- Pull Up/ Pull Down
- Working with RED LED
- Sequences with RGB LED
- Reading Switch with Polled Mode
- Enabling and using the Interrupt Mode
- Hands-On Exercises

Session 3

Working with Timer and Analog Modules

- Overview of Timers – 16 / 32 bit and ARM Standard SysTick
- Introduction to Real Time Clock – RTC
- Usage of Watchdog Timers
- Working with Timers
- Working with Capture / Compare
- Overview of ADC, Comparator and Reference
- Working with Temperature Sensor
- Hands-On Exercises

Session 4

Working with UART and Advanced Encryption Standard (AES)

- Overview of Serial Communication
- Brief on SPI, I2C and UART
- Working with UART
- Overview of Encryption and Data Integrity Accelerators
- Working with AES Enablement
- Hands-On Exercises

Deliverables to Participant after the conduction of workshop

1. Hardware – MSP432 Launchpad
2. Post Workshop Document as Soft copy