

KeyStone Multicore Workshop

Day 1 – Multicore Program

START: 9:00 AM

- Agenda/Introductions (30 minutes)
 - Attendees' Introduction and DSP Share: (2minutes per person)
 - Application Field: such as video, audio, image, etc;
 - DSP Usage Share;
 - Interested Points and Challenge;
- Keystone(I and II) Device Overview (60 minutes)
 - Keystone I and II Architecture Overview;
 - Specific Devices;

Break (15min)

- KeyStone (I and II) Software Overview (60 minutes)
 - Introduces the suite of tools provided by TI and third-party partners to enable application development on C66x SoC devices, including Code Composer Studio (CCS), the Multicore Software Development Kit (MCSDK), third-party plug-ins, and the C66x Lite Evaluation Module (EVM). In addition, ARM Software Overview presents the software structures (Linux, SysLink, LLD) that can be called from a Linux-run ARM.

Lunch (60min)

- Multicore Design Considerations (60min)
 - Concepts of Parallel Programming;
 - Keystone SoC Features to Facilitate Parallel Processing;
 - Typical Usage Case

Break (15min)

- Multicore EDMA Usage (60 minutes)
 - Takes a look at different DMA methods used on the C66x including EDMA3, QDMA, and IDMA. It provides information on programming, linking, and chaining EDMA3, examples of the transfer and sorting functions, and an introduction to TeraNet bridging.
- CCS & EVM Introduction and Bring-Up (30 minutes)
- Multicore Program Example (60 minutes, choose one)
 - Image Processing in MCSDK
 - VLFFT Demo

END: 5:00 PM

Day 2 – To Achieve High Performance

START: 9:00 AM

- C66 CorePac (60 minutes)
 - Provides a more detailed description of the C66x CorePacs including the functional units, internal and external interfaces, interrupt controller, etc.
- ARM CorePac Overview (60 minutes)
 - Provides a more detailed description of the four ARM Cortex A15 CorePacs including the functional units, Neon and VFP, cache coherency, etc.

Break (15 minutes)

- C66 Single-core Optimization (30 minutes)
 - Including pipeline considerations, software pipeline and how to achieve it, and other useful optimization techniques

Lunch (60 minutes)

- Knowledge Review and Quiz (15 minutes)
- C66 Single-core Optimization (45 minutes, Continue)
- Multicore Navigator Usage (90 minutes)
 - Provides an overview of the hardware mechanism that facilitates data movement and multicore cooperation in KeyStone SoC devices. Topics include the Navigator subsystem architecture, use cases and example code, configuration, and low level drivers.

Break (15 minutes)

- HyperLink Overview (45 minutes)
- Knowledge Review and Quiz (15 minutes)
- Multicore Navigator Example – PDK (30 minutes)

END: 5:30 PM

Day 3 – Peripherals

START: 9:00 AM

- NetCP Overview (45 minutes)
- SRIO Usage Overview (45 minutes)

Break (15 minutes)

- PCIe Usage Overview (30 minutes)

Lunch (60 minutes)

- Bootloader (45 minutes)
 - Provides an introduction to the C66x bootloader including configuration, device startup, and runtime modes.
- Peripheral Example (Choose one) (60 minutes)
 - SRIO & PCIe & Hyperlink
- FAQ Introduction (30 minutes)
- Review and Quiz (30 minutes)

END: 4:00 PM