Lesson 8
BeagleBone Development Platform

BeagleBone (BB)

- Texas Instruments BeagleBone-X15 (BB-X15) latest
- (November 2015) single board computer for computing and communication
- Runs on the OSes are Linux, RISC OS
- BeagleBone-X15 runs SoC which uses the fast processor and DSP processor for graphics and video

BeagleBone (BB)

- FreeBSD, OpenBSD and additional distributions of Linux such as Ubuntu boards

- The SoC uses the processor (ARM Cortex A15

- core) and DSP processor (TMS320C64x plus multimedia 4 GB eMMC) for graphics and video. The power required is 2 W. Memory on-board 2 GB in-memory support plus and microSD cards

BB-X15 applications with high performance

- For media, 2D and 3D graphics, and video servers
- Performance nearly seems to be about twice faster than Rpi 2.

Features of BB-X15

- Single-board computer and communication board
- Prototyping ease for media, graphics and video servers needing IoT applications
- IDEs for BB includes environment for code development in Python, Scratch, Squeek
- Cloud9/Linux, C, Linux and BSD OSes.

Features of BB-X15

- Programmability for number of times downloading of codes through USB port during edit-test-debug cycles of development

- Pulse-width modulation (PWM), CAN/SPI//DVI-D, Integrated real-time clock (RTC) and Reset button to reset the sketch and any attached modules

Features of BB-X15

- Flexibility and ease of connecting the extended memory and hardware connectivity board to external sockets for the 2-channel PCI Peripheral Connect Interconnect Express (PCIe) slot (which also functions as Wi-Fi adapter)

- Stereo audio, Ethernet x2 and Micro-SD slot

- Extended interfacing capabilities using 157 GPIO pins

Features of BB-X15

- Flexibility and ease of connecting the hardware connectivity board to external through three USB 3.0 and USB hub with two USB 3.0 ports, stereo audio, video, and stream of high-definition HDMI output.

Summary

We learnt

- Single-board computer and communication board

- Prototyping ease for media, graphics and video servers needing IoT applications

- BeagleBone high performance single board computer along with 2 GB DDR L3 and 4 GB eMMC, LCD, audio, video, multi-media, 3D graphics support

Chapter-8 L08: "Internet of Things " , Raj Kamal,
Publs.: McGraw-Hill Education

End of Lesson 8 on BeagleBone Development Platform