



BeagleBone[®] AI

Fast Track to Embedded Artificial Intelligence



What is BeagleBone[®] AI?

Built on the proven BeagleBoard.org[®] open source Linux approach, BeagleBone[®] AI fills the gap between small SBCs and more powerful industrial computers. Based on the Texas Instruments AM5729, developers have access to the powerful SoC with the ease of BeagleBone[®] Black header and mechanical compatibility. BeagleBone[®] AI makes it easy to explore how artificial intelligence (AI) can be used in everyday life via the TI C66x digital-signal-processor (DSP) cores and embedded-vision-engine (EVE) cores supported through an optimized TIDL machine learning OpenCL API with pre-installed tools. Focused on everyday automation in industrial, commercial and home applications.

Processor: Texas Instruments Sitara AM5729

- Dual Arm[®] Cortex[®]-A15 microprocessor subsystem
- 2 C66x floating-point VLIW DSPs
- 2.5MB of on-chip L3 RAM
- 2x dual Arm[®] Cortex[®]-M4 co-processors
- 4x Embedded Vision Engines (EVEs)
- 2x dual-core Programmable Real-Time Unit and Industrial Communication SubSystem (PRU-ICSS)
- 2D-graphics accelerator (BB2D) subsystem
- Dual-core PowerVR[®] SGX544[™] 3D GPU
- IVA-HD subsystem (4K @ 15fps encode and decode support for H.264, 1080p60 for others)

Board Feature Highlights

- BeagleBone Black mechanical and header compatibility
- 1GB RAM and 16GB on-board eMMC flash with high-speed interface
- USB type-C for power and superspeed dual-role controller; and USB type-A host
- Gigabit Ethernet, 2.4/5GHz WiFi, and Bluetooth
- microHDMI
- Zero-download out-of-box software experience with Debian GNU/Linux

Documentation:

Quick Start - <https://github.com/beagleboard/beaglebone-ai/wiki/Quick-Start-Guide>

Latest Software Images - <https://beagleboard.org/latest-images>

Open Source Design - <https://github.com/beagleboard/beaglebone-ai>