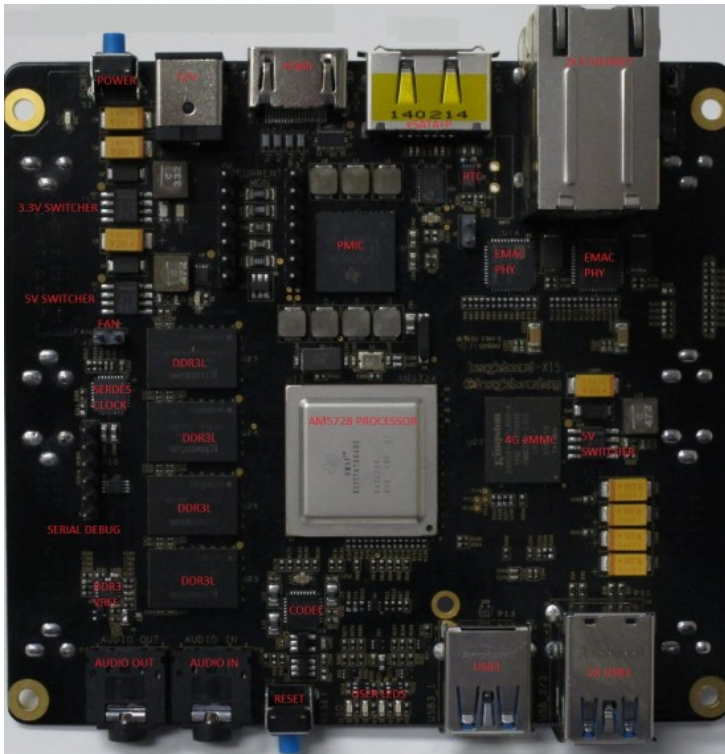


## Texas Instruments DSP



TI has a fully conformant OpenCL 1.1 implementation.

The below table is taken from <http://downloads.ti.com/mctools/esd/docs/opencl/intro.html> and shows which DSPs have OpenCL-support.

SoC  
System  
Khronos Conformance  
Installation Instructions

AM572  
AM572 EVM  
OpenCL v1.1 Conformance  
Processor SDK for AM57x

DRA75x  
DRA75x EVM  
OpenCL v1.1 Conformant  
Processor SDK for DRA7x (Enabling OpenCL on DRA75x)

AM571  
AM572 EVM  
OpenCL v1.1 Conformant  
Processor SDK for AM57x

66AK2H  
66AK2H EVM  
OpenCL v1.1 Conformant  
Processor SDK for K2H

66AK2L  
66AK2L EVM  
Not submitted for conformance  
Processor SDK for K2L

66AK2E  
66AK2E EVM  
Not submitted for conformance  
Processor SDK for K2E

66AK2G  
66AK2G EVM  
Not submitted for conformance  
Processor SDK for K2G

## Theoretical Performance of the C66x

- Fixed point 16x16 MACs per cycle: 32
- Fixed point 32x32 MACs per cycle: 8
- Floating point single precision MACs per cycle: 8
- Arithmetic floating point operations per cycle: 16 2-way SIMD on .L and .S units (e.g. 8 SP operations for A and B) and 4 SP multiply on one .M unit (e.g 8 SP operations for A and B)
- Arithmetic floating point operations per cycle: 164 2-way SIMD on .L and .S units (e.g. 8 SP operations for A and B) and 4 SP multiply on one .M unit (e.g 8 SP operations for A and B)
- Load/store width 2 x 64-bit 2 x 64-bit Vector size (SIMD capability): 128-bit (4 x 32-bit, 4 x 16-bit, 4x-8bits)

## GFLOPs

2 FLOPs - 2-way SIMD on .L1 (A side) such as DADDSP or DSUBSP

2 FLOPs - 2-way SIMD on .L2 (B side) such as DADDSP or DSUBSP

2 FLOPs - 2-way SIMD on .S1 (A side) such as DADDSP or DSUBSP

2 FLOPs - 2-way SIMD on .S2 (B side) such as DADDSP or DSUBSP

4 FLOPs - 4-way SIMD on .M1 (A side) such as QMPYSP (or CMPYSP, maybe not 4-way SIMD)

4 FLOPs - 4-way SIMD on .M2 (B side) such as QMPYSP (or CMPYSP, maybe not 4-way SIMD)

=====

16 FLOPs total per cycle per C66x CorePac ([source](#))

## Boards

A good starter board is the [BeagleBoard X-15](#), and has [OpenCL drivers](#). It has 2x C66X DSPs and 2x 1.5-GHz ARM Cortex-A15.

