UART

LCD Ctrl

Memory controller

ISA bus interface

DISPLAY ctrl

DMA controller

JPEG Codec

**MULTIPLIER/ACCUM**

CCD/CMOS

LENS

A2D

D2A

ISO SETTING

CCD

N

**COMPONENT USED**

MICROCONROLLER – The microcontroller used is Beagle Bone Black, a low-cost development platform, based on an ARM Cortex-A8 based processor.

CCD/ CMOS- A CMOS sensor is a digital device. CMOS stands for ‘complementary metal-oxide semiconductor.’ A CMOS sensor converts the charge from a photosensitive pixel to a voltage at the pixel site.

A CCD sensor is a “charged coupled device.” Just like a CMOS sensor, it converts light into electrons. Unlike a CMOS sensor, it is an analog device.

CMOS sensors have high speed, low sensitivity, and high, fixed-pattern noise.

JPEG CODEC - The Photo JPEG codec implements the Joint

Photographic Experts Group

* This codec is great for compressing high-resolution, photographic images, and is also very good for 8-bit grayscale images.
* It works very well for "slide-show" movies that have a very low frame rate.
* It has some application for Web video, although other commercial codecs are often preferable for most movies.

MEMORY CONTROLLER – It is a digital circuit that manages the flow of data going to and from the computer's main memory. A memory controller is sometimes also called a **memory chip controller** (**MCC**) or a **memory controller unit** (**MCU**)

UART- A **universal asynchronous receiver-transmitter** (**UART** ) is a [computer hardware](https://en.wikipedia.org/wiki/Computer_hardware) device for [asynchronous serial communication](https://en.wikipedia.org/wiki/Asynchronous_serial_communication) in which the data format and transmission speeds are configurable. Specialised UARTs are used for cameras [automobiles](https://en.wikipedia.org/wiki/Local_Interconnect_Network), [smart cards](https://en.wikipedia.org/wiki/Smart_card) and [SIMs](https://en.wikipedia.org/wiki/SIM_card).

MULTIPLIER/ACCUMULATOR – Multiply-accumulate is an important and expensive operation. It is frequently used in digital signal processing and video/graphics applications. As a result, any improvement in the delay for performing this operation could have a positive impact on clock speed, instruction time and processor performance.

multiply-accumulate used for -In computing, especially digital signal processing, the multiply–accumulate operation is a common step that computes the product of two numbers and adds that product to an accumulator.

DMA CONTROLLER - DMA stands for **Direct Memory Access**. ... It allows the device to transfer the data directly to/from memory without any interference of the CPU. Using a DMA controller, the device requests the CPU to hold its data, address and control bus, so the device is free to transfer data directly to/from the memory.

ISO SETTING - ISO is your camera's sensitivity to light as it pertains to either film or a digital sensor. A lower ISO value means less sensitivity to light, while a higher ISO means more sensitivity.

CONVERTOR(A2D&D2A) -An Analog-to-digital converter (ADC) takes an Analog wave as an input and converts this wave to a digitally represented output form (A digital-to-analog converter (DAC) essentially does the reverse, converting a digital representation into an Analog form.

ISA bus - Stands for "Industry Standard Architecture." ISA is a type of bus used in PCs for adding expansion cards. For example, an ISA slot may be used to add a video card, a network card, or an extra serial port. ... However, by the end of the twentieth century, ISA ports were beginning to be replaced by faster PCI and AGP slots