

# Data Acquisition System

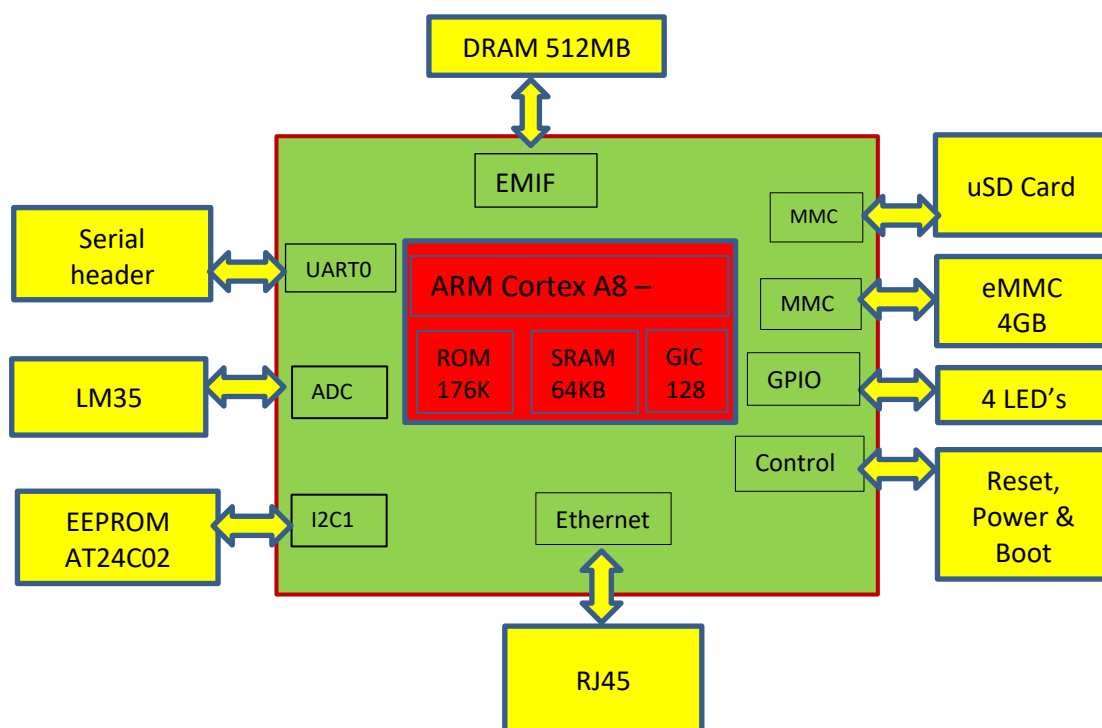
## Abstract:

Data acquisition is a process where raw data from the physical world are collected, processed, stored and used. The aim of this project is to design and develop a Data acquisition system where raw data like temperature from the physical world are collected and stored in memory. Later the data can be used by the user.

The proposed design implemented system consists of a LM35 Temperature sensor, AT24C02 EEPROM can be operated by the AM3358 SOC to retrieve the data from LM35 Temperature sensor and save the data into AT24C02 EEPROM using I2C protocol.

Data acquisition systems (DAS) are used widely in the industry. They are applied in research & development, production, process control, quality control, SCADA.

## Project Block Diagram:



## Technical Specifications:

Kernel Masters BBB Expansion board includes the following features:

- BeagleBone Black board featuring a Sitara AM335x 1GHz ARM® Cortex-A8 32-bit RISC processor, with 512MB DDR3L 800MHZ SDRAM and an on board flash memory of 4GB, 8bit Embedded MMC.
- On board LM35(temperature sensor)
- Debug Interface Support
- 16x2 Monochrome LCD interface.
- Power supply to the board – 5V DC Jack
- Up to 8-Kbytes of on – board EEPROM
- On board external RTC – DS1307
- Switches – Power, User and System push buttons
- 3 on board LEDs: 1 Power LED and 1 User LEDs
- Supports Debian, Android, Ubuntu, Cloud9 IDE on Node.js w/ BoneScript library and much more.

## Software information:

s. no		Version no.	Source code location
1.	u-boot	U-BOOT SPL 2019.04	<a href="https://github.com/kernelmasters/beagleboneblack-uboot">https://github.com/kernelmasters/beagleboneblack-uboot</a>
2.	Kernel	4.19.94-g9015fe5da-dirty	<a href="https://github.com/kernelmasters/beagleboneblack-kernel">https://github.com/kernelmasters/beagleboneblack-kernel</a>
3.	GNU tool chain	gcc version 8.3.0 (GNU Tool chain for the A-profile Architecture 8.3-2019.03 (arm-rel-8.36))	<a href="http://142.93.218.33/elix/linux/gcc-arm-8.3-2019.03-x86_64-arm-linux-gnueabi.tar.xz">http://142.93.218.33/elix/linux/gcc-arm-8.3-2019.03-x86_64-arm-linux-gnueabi.tar.xz</a>