(b)   Berkeley Motes

The concept of Berkeley motes can be understood by considering MICA mote embedded sensor node which is member of the Berkeley motes family having a two-CPU design. The architecture of MICA mote is depicted in the following figure,
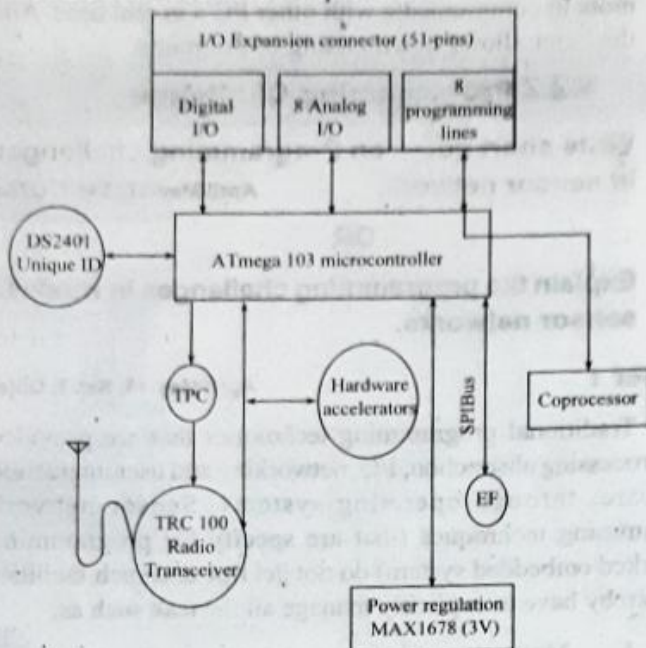

Figure: MICA Mote Architecture

It has four major components just as any other sensor node of the Berkeley motes family. These components are as follows,

- (i)   Main microcontroller unit (MCU)
- (ii) External non-volatile storage
- (iii) Default power source
- (iv) RF.

(i)   Main Microcontroller Unit (MCU)

MICA mote utilizes an MCU called Atmel ATmega 103L. It performs usual processing and has an integrated flash memory of 512 kB, and a data memory of 4 kB.

(ii)   External Non-volatile Storage

MICA mote manages the external non-volatile storage through a flash memory, that can store upto 512 KB of data. This flash memory is connected to the main microcontroller through a low-speed Serial Peripheral Interface (SPI), and is suitable for storing batch processing files rather than programs.

(iii)   Default Power Source

MICA mote utilizes a $2 \times AA$ battery as the default power source that has a capacity of 2850 mAh.

(iv)   RF (Radio Frequency)

MICA mote performs Radio Frequency (RF) communication through a TR1000 radio transceiver, that operates at 916 MHz. This transceiver can attain a maximum of 50 kbps raw data rate, plus a 40 kbps of transmission rate which can be adjusted through a potentiometer called maxim DS1804.