<u>**Course Title:**</u> Peripherals, Interfacing and Embedded Systems Lab (CSE-4620)

Department of Computer Science and Engineering (CSE)
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<u>**Lab # 01**</u>
*Familiarizing with MDA 8086 Trainer Kit and Commands.*

<u>**Objective:**</u>
To understand MDA 8086 Trainer Kit Commands in Machine Mode.
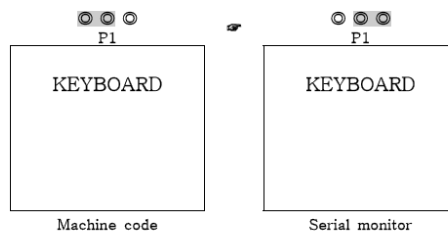
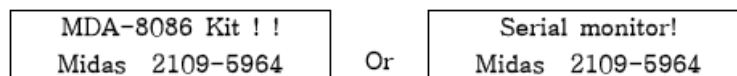<u>**Theory:**</u>
- **Machine Mode**
  Machine mode is the concept where all the works have to be done in the kit using its hardware components (i.e., Keyboard, Jumper etc.). To use machine mode, move jumper P1 which located on the PCB like the following figure.

- **Serial Monitor Mode**
  Serial monitor is the basic monitor program mode to have data communication between MDA-8086 and Computer (i.e., PC). To use serial monitor mode, move jumper P1 which located on the PCB like the following figure.



After this press the RES key to change the mode of MDA-8086 serial monitor mode:



<u>**Tasks to do:**</u>

1. Write an Assembly Language Program using EMU8086 to transfer the following hexa-decimal values to the specified registers:
2. AX = 4789 h, BX = AB9F h, CX = C25A h, DX = B21C h [put a leading 0 to avoid the bug of EMU8086]
3. Then, ADD the value of AX with BX and SUBTRACT the value of DX from CX. MOV the contents from AX to BX and CX to DX. Then, make an AND operation using the updated contents of AX and CX.
4. Find the Machine Code of the corresponding Assembly Language Program using MASM (i.e., use *.lst file).
5. Type the Machine code in the MDA 80x86 trainer kit using Kit Mode.
6. Press STP key, and verify the calculated value of different registers in Machine Code Mode of MDA-8086 Kit.