ARM Integrator Checking

為了確認 ARM boards 在每次實驗後是否完好，請在每次實驗完後做以下的確認，並請所屬的助教檢查。

AP: Integrator/AP
CM: Core Module
LM: Logic Module

1. Check the LM

[1] Connect the Multi-ICE interface cable to the JTAG connector on CM.

[2] Connect the null-modem cable between COM1 of AP and COM1 of a PC.

[3] Set the 4-pole DIL switch (S1) near the keyboard connector on AP to the status: ON OFF OFF ON
   • The system will run the boot monitor

[4] Set the 4-way DIP switch (S1) on LM to the status:
   OPEN CLOSED OPEN CLOSED
   • Switch up is OPEN; switch down is CLOSED.
   • Testing program has already been loaded into the Flash image 1. This DIP setting let LM run this image when LM is powered.

   • The following LEDs and Alphanumeric display light up.
   AP
   – D2 (3V2)
   – D2 (5V)
   – D2 (12V)
   – D6 (FPGA OK) under the LM
   – Alphanumeric display near CM will show ‘H’, another one won’t.
   CM
   – POWER
   – FPGA OK
   – MISC
   LM
   – PWR
   – FPGA OK
   – LED 0~7 flash in sequence.

[6] Return the 4-way DIP switch (S1) on LM to the original setting:
   CLOSED CLOSED OPEN CLOSED
2. **Check the Multi-ICE:**

   [1] Start the “Multi-ICE server” program.
   
   - Press Auto-Configure
   - Check the result as follows:

   ![Auto-detected TAP Configuration](image)

   Figure 1. Result after pressing Auto-Configure button.

   - The processor name may be “ARM720T”, if you use this kind of CM.

3. **Check the AP and CM**

   [1] Start “HyperTerminal” program, and start a new connection.

   "C:\Program Files\Accessories\HyperTerminal\HYPERTRM.EXE"

   The serial port settings are:
   - Speed baud: 38400
   - Data bits : 8
   - Parity : None
   - Stop bits : 1
   - Flow control : Xon/Xoff

   Note: command in HyperTerminal is not case sensitive, i.e., type ‘n’ or ‘N’ result in the same response.


   [3] Reset the Integrator with one of the following two methods:

   1. Use “Reset Target” on the Multi-ICE server.
   2. Press “Reset button” on AP.

   A message similar to Figure 2 should be displayed on the HyperTerminal.

   [4] Type ‘t’ to run the **system self tests**. A message similar to Figure 3 should be displayed on the HyperTerminal.
In line 10 of Figure 3, an inquiry “Did you see the LEDs flash in sequence [Yn]?” appears. If you see D7, D8, D9 and D10 all light, type ‘Y’, otherwise type ‘N’. If you type ‘N’, please contact TA.

```
1 boot Monitor > t
2  Generic Tests
3   Type any character to abort the tests
4   Timer tests
5      Running Timer tests
6           +++++++++++
7      Timer tests successful
8   LED flashing test
9      Lighting all 4 LEDs in sequence
10  Did you see the LEDs flash in sequence [Yn]? y
11    ..performed 2 tests, 0 failures
12  Board Specific Tests
13   Type any character to abort the tests
14   Keyboard/mouse tests
15
16   Initialising KMI interface
17   ==========================
18
19   KMI: wrote FF
20   KMI: wrote FF
21      Port 0: Device unsupported or absent
22      Port 1: Device unsupported or absent
23
24    ..performed 1 tests, 0 failures
25 boot Monitor >
```

Figure 2. System startup

Figure 3. Run the system self tests.

- Acronym: KMI: Keyboard and Mouse Interface