Asmedia 28xx/18xx Linux GPIO Test

GPIO Driver – Building

1. Install linux-tool-chain
   $ sudo apt-get install build-essential linux-headers-$(uname -r)

2. Compile driver Package(including xxxx.c & Makefile)
   $make clean
   $make
   =>generate file(xxx.ko)

User Space - Sysfs control GPIO Under Root Permission(Note 1)

3. Install driver
   $insmod xxx.ko

4. Check GPIO Chip folder, label and Pin-Number Base after driver installation
   $ cd /sys/class/gpio
   $ ls => check gpiochipxxx folder in /sys/class/gpio/ directory
   $ more /sys/class/gpio/gpiochipxxx/label => confirm label with ASMEDIA GPIO
   $ ASMEDIA GPIO
   $ more /sys/class/gpio/gpiochipxxx/base => confirm base of Pin number
   $ 0
   EX.
   0 + 0(0) => GPIO0
   0 +1 (1) => GPIO1
   0 +2 (2) => GPIO2
   0 +3 (3) => GPIO3
   0 +4 (4) => GPIO4
   0 +5 (5) => GPIO5
   0 +6 (6) => GPIO6
   0 +7 (7) => GPIO7
5. GPIO1 Pin test example:

- In Sysfs GPIO entries (/sys/class/gpio)

  Export the particular GPIO pin for user control. GPIO1 is taken as example.

```
$ echo 1 > /sys/class/gpio/export
```

Change the GPIO pin direction to in/out

```
$ echo "out" > /sys/class/gpio/gpio1/direction
```

or

```
$ echo "in" > /sys/class/gpio/gpio1/direction
```

Write the value to GPIO output pin

```
$ echo 1 > /sys/class/gpio/gpio1/value
```

or

```
$ echo 0 > /sys/class/gpio/gpio1/value
```

Read the value form GPIO input pin

```
$ cat /sys/class/gpio/gpio1/value
```

Unexport the GPIO pin

```
$ echo 1 > /sys/class/gpio/unexport
```

6. Un-install driver

$rmmod xxx.ko

Note 1: Enable GPIO sysfs support in kernel configuration and build the kernel

```
Device Drivers  --- > GPIO Support  --- > /sys/class/gpio/... (sysfs interface)
```