

BSP LAB

in this lab you will update the bsp to support the new hardware provided by the fpga

files to change:

arch/arm/mach-versatile/versatile_pb.c

drivers/mfd/Kconfig

drivers/mfd/Makefile

1. create a new file in drivers/mfd/fpga.c to implement the driver
2. update the Kconfig file to support the new device as static or module. add also help
3. update the Makefile
4. create init and exit functions. use platform_driver_register/platform_driver_unregister with a platform device structure
5. add the required structure to the BSP, create an IRQ resource on irq 11 and iomem resource on 0x101e9000 - 9fff. use the platform_device_register function to add it to the kernel
6. implement the probe function on the driver:
 - read the memory address from the BSP and map it to virtual address (ioremap)
 - read the irq number and register a function to handle it (request_irq)
 - dump the address and irq to the kernel log
7. write the interrupt handler: write "interrupt" to the kernel log and clear the interrupt (register on offset 0x11c)
8. write the remove function to clean everything
9. implement a character device driver with
 - read function - read a packet from the fpga recording data
 - ioctl function - support all other options (set start, stop, enable, disable, alarm)
10. write a user space application to test your work