1. Download Etcher tool on Ubuntu

2. modify code with SPI function

refer readme.txt

(1) start SPI

path: git/som1_ek/buildroot-at91/output/build/linux-linux4sam-2020.10/arch/arm/boot/dts

file: sama5d2.dtsi

```
flx4: flexcom@fc018000 {
                compatible = "atmel,sama5d2-flexcom";
                reg = <0xfc018000 0x200>;
                clocks = <&pmc PMC_TYPE_PERIPHERAL 23>;
                #address-cells = <1>;
                #size-cells = <1>;
                ranges = <0x0 0xfc018000 0x800>;
                status = "okay";  //the status is set to "disabled" by default
        };
```

(2) configure SPI parameter

path: git/som1_ek/buildroot-at91/output/build/linux-linux4sam-2020.10/arch/arm/boot/dts

file :at91-sama5d27_som1_ek.dts

```
spi3: spi@400 {
            compatible = "atmel,at91rm9200-spi";
            reg = <0x400 0x200>;
            interrupts = <23 IRQ_TYPE_LEVEL_HIGH 7>;
            clocks = <&pmc PMC_TYPE_PERIPHERAL 23>;
            clock-names = "spi_clk";
            pinctrl-names = "default";
            pinctrl-0 = <&pinctrl_mikrobus_spi &pinctrl_mikrobus1_spi_cs
&pinctrl_mikrobus2_spi_cs>;
            atmel,fifo-size = <16>;
            status = "okay"; /* Conflict with uart6 and i2c3. */

  /*the following code is added to enable spidev in userspace
      specifies which driver will be used for this device
      definition that will be used as the CS number for SPIDEV
      specifies the clock frequency for SPIDEV */
    spidev@1{
                    compatible = "atmel,at91rm9200-spidev";
                    reg = <1>;
                    spi-max-frequency = <2500000>;
```

```
        };
};
```

(3) define compatibility

path: git/som1_ek/buildroot-at91/output/build/linux-linux4sam-2020.10/drivers/spi
File: spidev.c

```
#ifdef CONFIG_OF
static const struct of_device_id spidev_dt_ids[] = {
        { .compatible = "rohm,dh2228fv" },
        { .compatible = "lineartechnology,ltc2488" },
        { .compatible = "ge,achc" },
        { .compatible = "semtech,sx1301" },
        { .compatible = "atmel,at91rm9200-spidev" },   //add
        { .compatible = "lwn,bk4" },
        { .compatible = "dh,dhcom-board" },
        { .compatible = "menlo,m53cpld" },
        {},
};
```

(4) recompile and effective process

cd git/som1_ek/buildroot-at91/output/build/linux-linux4sam-2020.10$ rm .stamp_built
cd git/som1_ek/buildroot-at91/output/build/linux-linux4sam-2020.10$ rm .stamp_target_installed

cd git/som1_ek/buildroot-at91/output/build/dt-overlay-at91-linux4sam-2020.10$ rm .stamp_built
cd git/som1_ek/buildroot-at91/output/build/dt-overlay-at91-linux4sam-2020.10$ rm .stamp_target_installed

3. observe how the SPI functionality was configured in the Linux kernel

refer to https://microchipdeveloper.com/32mpu:apps-spi

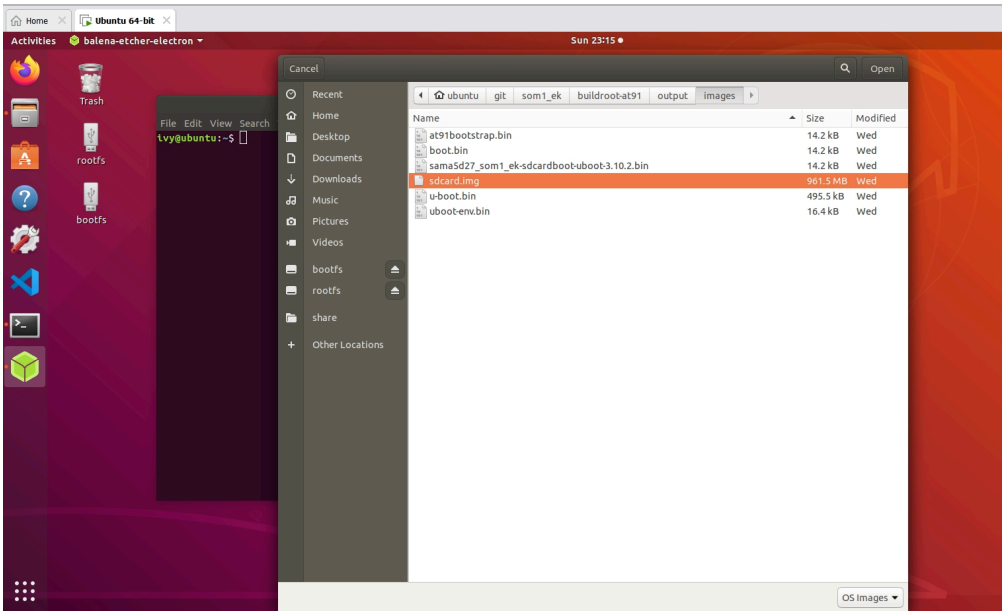
cd /git/som1_ek/buildroot-at91$ make linux-menuconfig

4. compile

cd /git/som1_ek/buildroot-at91$ make

5. SD1 burning via Etcher tool

Path:



6. change SD1 to Microchip and try to boot it

go to cd dev can see spidev1.1 successfully