

**For modifying device tree of AM572x IDK for SPI testing**  
**Follow the steps below**

1.1. Open "**dra74x-mmc-iodelay.dtsi**" located at  
Poky\_BCU/poky/build/tmp-default-glibc/work-shared/am57xx-evm/kernel-source/arch/arm/boot/dts

1.2. Add lines

```
&mcspi2 {
    spi2_pins_default: spi2_pins_default {
        pinctrl-single,pins = <
            DRA7XX_CORE_IOPAD(0x37C0, (PIN_OUTPUT | MUX_MODE0)) /* spi2_sclk */
            DRA7XX_CORE_IOPAD(0x37C4, (PIN_OUTPUT | MUX_MODE0)) /* spi2_d1 */
            DRA7XX_CORE_IOPAD(0x37C8, (PIN_INPUT_PULLUP | MUX_MODE0)) /* spi2_d0 */
            DRA7XX_CORE_IOPAD(0x37CC, (PIN_OUTPUT | MUX_MODE0)) /* spi2_cs0 */
        >;
    };
};
```

Physical Address of SPI2\_SCLK = 0x4A00 37C0 – use this 37C0 with IOPAD as shown above 0x37C0

Physical Address of SPI2\_D1 = 0x4A00 37C4 – use this 37C4 with IOPAD as shown above 0x37C4

Physical Address of SPI2\_D0 = 0x4A00 37C8 – use this 37C8 with IOPAD as shown above 0x37C8

Physical Address of SPI2\_CS0 = 0x4A00 37CC – use this 37CC with IOPAD as shown above 0x37CC

MUX\_MODE0 – Corresponding Select by Pin muxing number – refer AM572x Technical reference manual

2.1. Goto Poky\_BCU/poky/build/tmp-default-glibc/work-shared/am57xx-evm/kernel-source/arch/arm/configs

2.2. open **tisdk\_am57xx-evm\_defconfig** file

2.3. Insert line as shown for Configuring spidev

```
CONFIG_SPI_SPIDEV=y
```

3.1. Goto /Poky\_BCU/poky/build/tmp-default-glibc/work-shared/am57xx-evm/kernel-source/arch/arm/boot/dts

3.2 open **am572x-idk.dts** and insert the given lines

```
&mcspi2 {
    status = "okay";
    pinctrl-names = "default";
    ti,pindir-d0-out-d1-in=<1>;

    spidev@0{
        compatible="linux,spidev";
        spi-max-frequency = <48000000>;
        reg = <0>;
        spi-cpol;
        ti,hwmods = "mcspi2";
    };
};
```

4.1 To append gcc compiler in yocto boot, goto **/build/conf/** and open **local.conf**

4.2 Insert **IMAGE\_INSTALL\_append = "packagegroup-core-buildessential"** in local.conf

5.1 Save all the files and goto Command terminal /Poky\_BCU/poky/build\$

5.2 Enter the commands given below

5.3. \$ **bitbake -c cleanall tisdk-base-image**

5.4. \$ **bitbake -c menuconfig virtual/kernel**

5.5 Save the configurations

5.6 \$**bitbake tisdk-base-image**

(Also tried the command \$**bitbake -C compile virtual/kernel** , may be not important.If the steps are not working try this also)

5.7. Copy .wic file generated and paste to Desktop

5.8. unzip file using the commands

```
~/Desktop$ unxz ./tisdk-base-image-am57xx-evm-20221116141005.rootfs.wic.xz
```

5.9. Burn image to SD card

```
~/Desktop$ sudo dd if=./tisdk-base-image-am57xx-evm-20221116095736.rootfs.wic of=/dev/sdb  
bs=500M iflag=fullblock oflag=direct conv=fsync status=progress
```

**Note: Select Disk name of SD card - sdb , make sure your SD card is dev/sdb from Disk utilities**

Boot SD Card in AM572x-IDK and check /dev/spidev

To test spidev program,

Short spi2\_d0 and spi2\_d1 in AM572x-IDK ( J21, 26 & 28)

copy spidev\_test.c program to SD card home/root folder

```
$gcc spidev_test.c -o spitest
```

```
$/spidev_test -D /dev/spidev1.0 -v
```

### Output

```
spi mode: 0x0  
bits per word: 8  
max speed: 500000 Hz (500 KHz)  
TX | FF FF FF FF FF FF 40 00 00 00 00 95 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF F0 0D | .....@.....  
RX | FF FF FF FF FF FF 40 00 00 00 00 95 FF FF FF FF FF FF FF FF FF FF FF FF
```