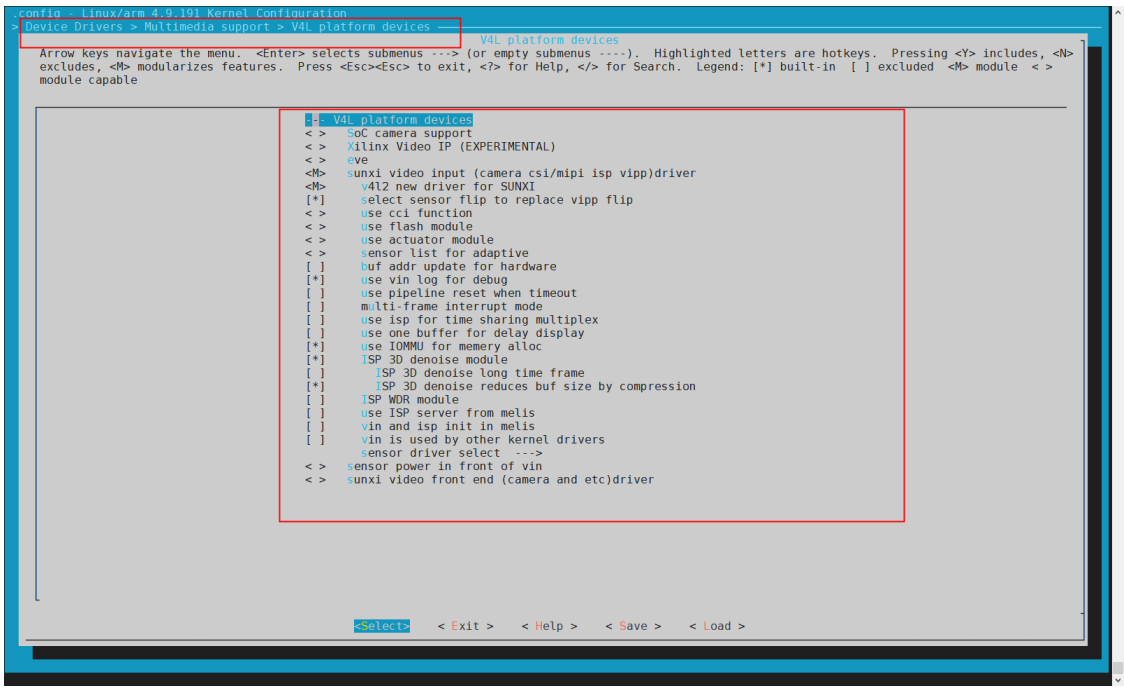
1 软件改动

1. 内核配置，需要把TDM关闭，配置如截图



2. DTS配置，TP9953使用i2c0,使用的twi引脚为PA16,PA17，需改如下：

```
        twi0_pins_a: twi0@0 {
-               allwinner,pins = "PA16", "PA17";
+               allwinner,pins = "PE16", "PE17";
                allwinner,pname = "twi0_scl", "twi0_sda";
                allwinner,function = "twi0";
-               allwinner,muxsel = <4>;
+               allwinner,muxsel = <2>;
                allwinner,drive = <0>;
                allwinner,pull = <1>;
        };

        twi0_pins_b: twi0@1 {
-               allwinner,pins = "PA16", "PA17";
+               allwinner,pins = "PE16", "PE17";
                allwinner,function = "io_disabled";
                allwinner,muxsel = <0xf>;
                allwinner,drive = <0>;
```

- VIN 和sensor配置
  - VIN配置,需要把csi2的节点打开，tdm和isp,scaler改成在线模式，如下

```
vind0:vind@0 {
            vind0_clk = <300000000>;
            status = "okay";

            csi2:csi@2 {
                pinctrl-names = "default","sleep";
```

```
        pinctrl-0 = <&ncsi_pins_a>;
        pinctrl-1 = <&ncsi_pins_b>;
        status = "okay";
    };
    /*配置成在线模式*/
    tdm0:tdm@0 {
        work_mode = <0>;
    };

    isp00:isp@0 {
        work_mode = <0>;
    };

    scaler00:scaler@0 {
        work_mode = <0>;
    };

    scaler10:scaler@4 {
        work_mode = <0>;
    };

    scaler20:scaler@8 {
        work_mode = <0>;
    };

    scaler30:scaler@12 {
        work_mode = <0>;
    };

    /*后拉的video节点从video4开始，需要配置vinc10*/
    vinc10:vinc@4 {
        vinc4_csi_sel = <2>;
        vinc4_mipi_sel = <0xff>;
        vinc4_isp_sel = <0x4>;
        vinc4_isp_tx_ch = <0>;          /*vvideo4*/
        vinc4_tdm_rx_sel = <0xff>;
        vinc4_rear_sensor_sel = <1>;    /*代表后摄*/
        vinc4_front_sensor_sel = <1>;
        vinc4_sensor_list = <0>;
        work_mode = <0x0>;
        status = "okay";
    };

    vinc20:vinc@8 {
        vinc5_csi_sel = <2>;
        vinc5_mipi_sel = <0xff>;
        vinc5_isp_sel = <0x4>;
        vinc5_isp_tx_ch = <1>;      /*video8*/
        vinc5_tdm_rx_sel = <0xff>;
        vinc5_rear_sensor_sel = <1>;
        vinc5_front_sensor_sel = <1>;
        vinc5_sensor_list = <0>;
        status = "okay";
    };
```

- sensor1节点配置

```
            sensor1:sensor@1 {
                device_type = "sensor1";
                sensor1_mname = "tp9953";
                sensor1_twi_cci_id = <0>;
                sensor1_twi_addr = <0x88>;
                sensor1_mclk_id = <2>;
                sensor1_pos = "front";
                sensor1_isp_used = <0>;
                sensor1_fmt = <0>;
                sensor1_stby_mode = <0>;
                sensor1_vflip = <0>;
                sensor1_hflip = <0>;
                sensor1_iovdd-supply = <&reg_aldo2>;
                sensor1_iovdd_vol = <1800000>;
                sensor1_avdd-supply = <&reg_dcdc1>;
                sensor1_avdd_vol = <3300000>;
                sensor1_dvdd-supply = <&reg_dldo2>;
                sensor1_dvdd_vol = <1200000>;
                sensor1_power_en = <>;
                /*复位此次由硬件控制*/
            //  sensor1_reset = <&pio PA 20 1 0 1 0>;
            //  sensor1_pwdn = <&pio PE 13 1 0 1 0>;
                sensor1_sm_hs = <>;
                sensor1_sm_vs = <>;
                flash_handle = <>;
                act_handle = <>;
                status  = "okay";
            };
/*在根节点增加tp9953的检测节点*/
/ {
    tp9953_detect {
        gpio_power = <&pio PE 13 1 0 1 0>;
        gpio_detect = <&pio PE 14 1 0 1 0>;
        gpio_reverse = <&pio PE 12 1 0 1 GPIO_ACTIVE_LOW>;
    };
};
```

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- dts中的bt有引脚冲突，需要直接注释：

```
bt:bt {
            compatible = "allwinner,sunxi-bt";
            clock-names = "32k-fanout0";
            clocks = <&clk_fanout0>;
            /*bt_power_num = <0x01>;*/
            /*bt_power1       = "axp2101-dcdc1";*/
            /*bt_io_regulator = "axp2101-dcdc1";*/
            /*bt_io_voltage = <3300000>;*/
            /*bt_power_voltage = <330000>;*/
            //bt_rst_n = <&pio PE 8 5 1 2 0>;
            status = "disabled";
        };
        btlpm:btlpm {
```

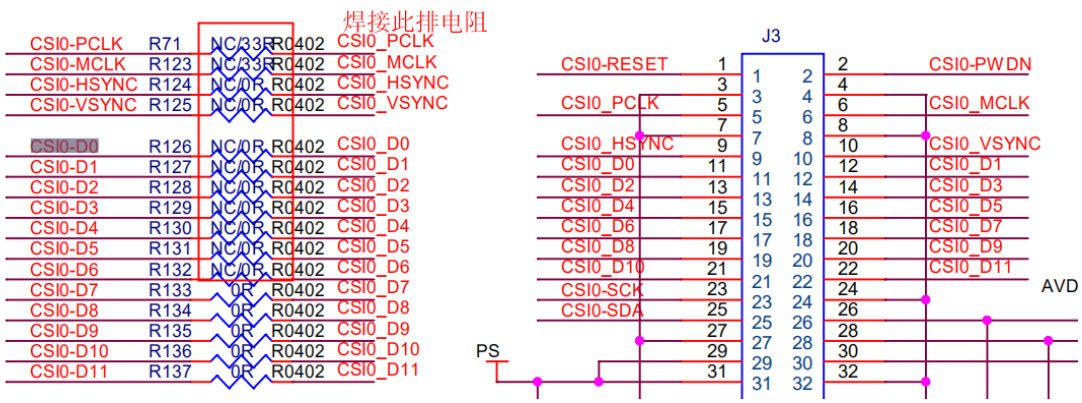
```
            compatible = "allwinner,sunxi-btlpm";
            uart_index = <2>;
    //      bt_wake = <&pio PE 15 1 1 2 1>;
    //      bt_hostwake = <&pio PE 14 6 0 0 0>;
            status = "disabled";
        };
```

- sun8iw21p1-pinctrl.dtsi的改动：

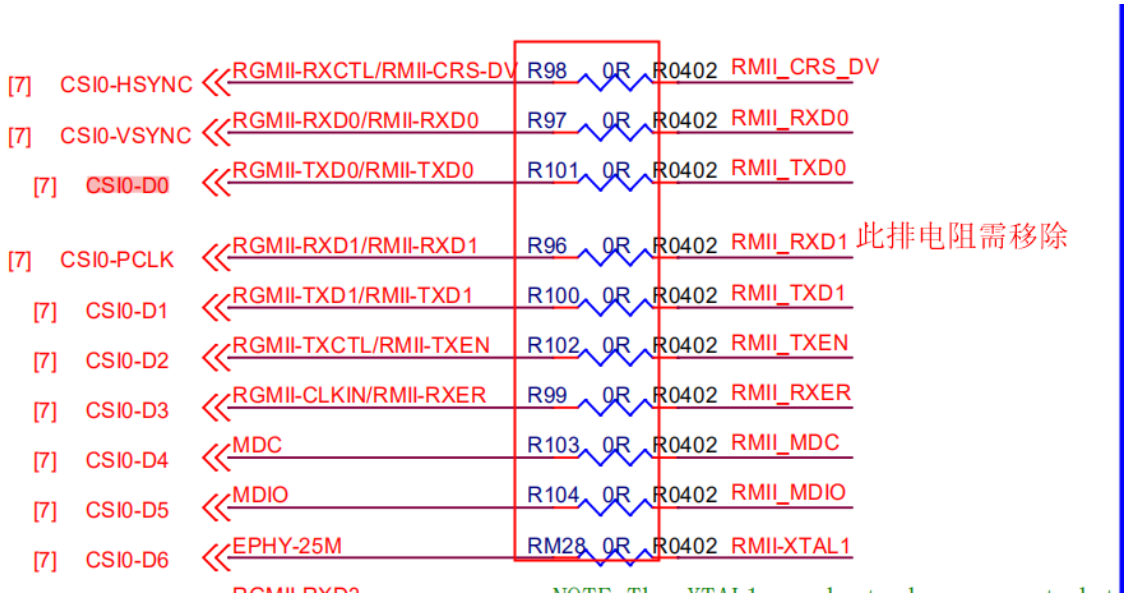
```
            ncsi_pins_a: ncsi@0 {
                allwinner,pins = "PE0", "PE2", "PE3",
                         "PE4", "PE5", "PE6", "PE7",
                         "PE8", "PE9", "PE10", "PE11";
                allwinner,pname = "ncsi_pck", "ncsi_hsync",
"ncsi_vsync",
                          "ncsi_d0", "ncsi_d1", "ncsi_d2", "ncsi_d3",
                          "ncsi_d4", "ncsi_d5", "ncsi_d6", "ncsi_d7";
                allwinner,function = "ncsi";
                allwinner,muxsel = <2>;
                allwinner,drive = <1>;
                allwinner,pull = <0>;
            };

            ncsi_pins_b: ncsi@1 {
                allwinner,pins = "PE0", "PE2", "PE3",
                         "PE4", "PE5", "PE6", "PE7",
                         "PE8", "PE9", "PE10", "PE11";
                allwinner,pname = "ncsi_pck", "ncsi_hsync",
"ncsi_vsync",
                          "ncsi_d0", "ncsi_d1", "ncsi_d2", "ncsi_d3",
                          "ncsi_d4", "ncsi_d5", "ncsi_d6", "ncsi_d7";
                allwinner,function = "io_disabled";
                allwinner,muxsel = <0xf>;
                allwinner,drive = <1>;
                allwinner,pull = <0>;
            };
```

2 硬件改动

- CSI-D0~CSI-D7，CSI0-PCLK,CSI0-MCLK,CSI0-HSYNC,CSI0-VSYNC默认没有连接，需焊接电阻连接：



- wifi和tp9953共用引脚，需要把此部分的电阻断开，如下图：


[7] CSI0-HSYNC
RGMII-RXCTL/RMII-CRS-DV
R98 0R R0402
RMII_CRS_DV
[7] CSI0-VSYNC
RGMII-RXD0/RMII-RXD0
R97 0R R0402
RMII_RXD0
[7] CSI0-D0
RGMII-TXD0/RMII-TXD0
R101 0R R0402
RMII_TXD0
[7] CSI0-PCLK
RGMII-RXD1/RMII-RXD1
R96 0R R0402
RMII_RXD1
此排电阻需移除
[7] CSI0-D1
RGMII-TXD1/RMII-TXD1
R100 0R R0402
RMII_TXD1
[7] CSI0-D2
RGMII-TXCTL/RMII-TXEN
R102 0R R0402
RMII_TXEN
[7] CSI0-D3
RGMII-CLKIN/RMII-RXER
R99 0R R0402
RMII_RXER
[7] CSI0-D4
MDC
R103 0R R0402
RMII_MDC
[7] CSI0-D5
MDIO
R104 0R R0402
RMII_MDIO
[7] CSI0-D6
EPHY-25M
RM28 0R R0402
RMII-XTAL1