IMX8MM Interrupt issue

Open ~/A100_PMIC/imx-yocto-bsp/

imx8mm-a100.dtsi × imx8mm-a100.dts

```
&ecspi1 {
        #address-cells = <1>;
        #size-cells = <0>;
        fsl,spi-num-chipselects = <1>;
        pinctrl-names = "default";
        pinctrl-0 = <&pinctrl_ecspi1_gigabyte &pinctrl_
        cs-gpios = <&gpio5 9 GPIO_ACTIVE_LOW>;
        status = "okay";
        can1: can1@0 {
            compatible = "microchip,mcp2518fd";
            reg = <0>;
            clocks = <&can0_osc>;
            pinctrl-names = "default";
            pinctrl-0 = <&pinctrl_sai1_can1_int_3v3_soc
            spi-max-frequency = <20000000>;
            interrupt-parent = <&gpio4>;
            interrupts = <14 IRQ_TYPE_LEVEL_LOW>;
            //interrupts-extended = <&gpio4 14 IRQ_TYPE_
            //interrupts = <14 IRQ_TYPE_EDGE_FALLING>;
            vdd-supply = <&reg_3v3>;
            xceiver-supply = <&reg_5v0>;
            status = "okay";
        };

};
/*      4 pins have been used for uart-4 in a100 */
&ecspi2 {
        #address-cells = <1>;
        #size-cells = <0>;
        fsl,spi-num-chipselects = <1>;
        pinctrl-names = "default";
        pinctrl-0 = <&pinctrl_ecspi2_gigabyte &pinctrl_
        cs-gpios = <&gpio5 13 GPIO_ACTIVE_LOW>;
        status = "okay";
        can2: can2@1 {
            compatible = "microchip,mcp2518fd";
            reg = <0>;
            clocks = <&can1_osc>;
            pinctrl-names = "default";
            pinctrl-0 = <&pinctrl_sai1_can2_int_3v3_soc
            spi-max-frequency = <20000000>;
            interrupt-parent = <&gpio4>;
            interrupts = <15 IRQ_TYPE_LEVEL_LOW>;
            //interrupts-extended = <&gpio4 15 IRQ_TYPE_
            //interrupts = <15 IRQ_TYPE_EDGE_FALLING>;
            vdd-supply = <&reg_3v3>;
            xceiver-supply = <&reg_5v0>;
```

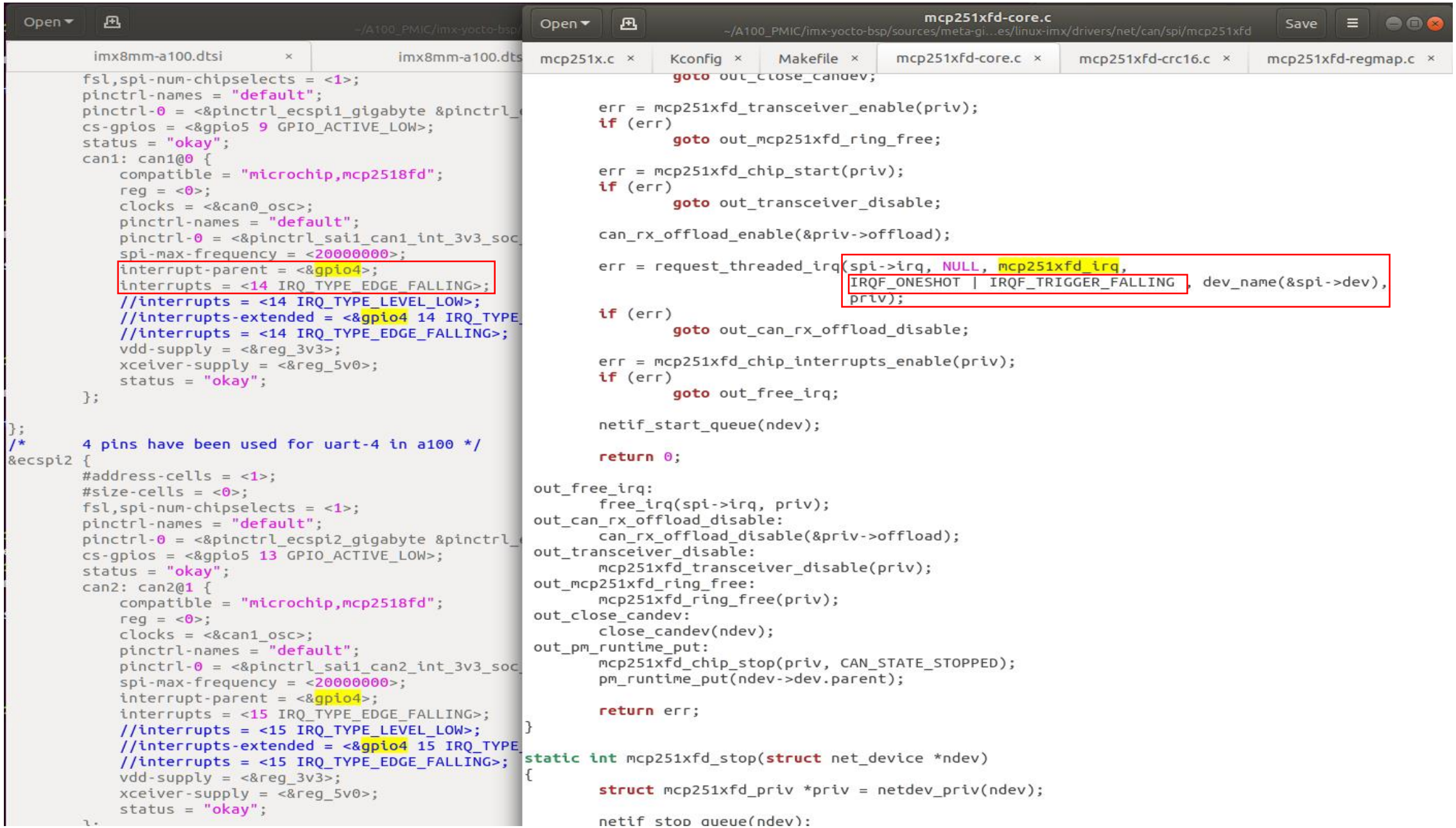
Open mcp251xfd-core.c ~/A100_PMIC/imx-yocto-bsp/sources/meta-gi...es/linux-imx/drivers/net/can/spi/mcp251xfd Save

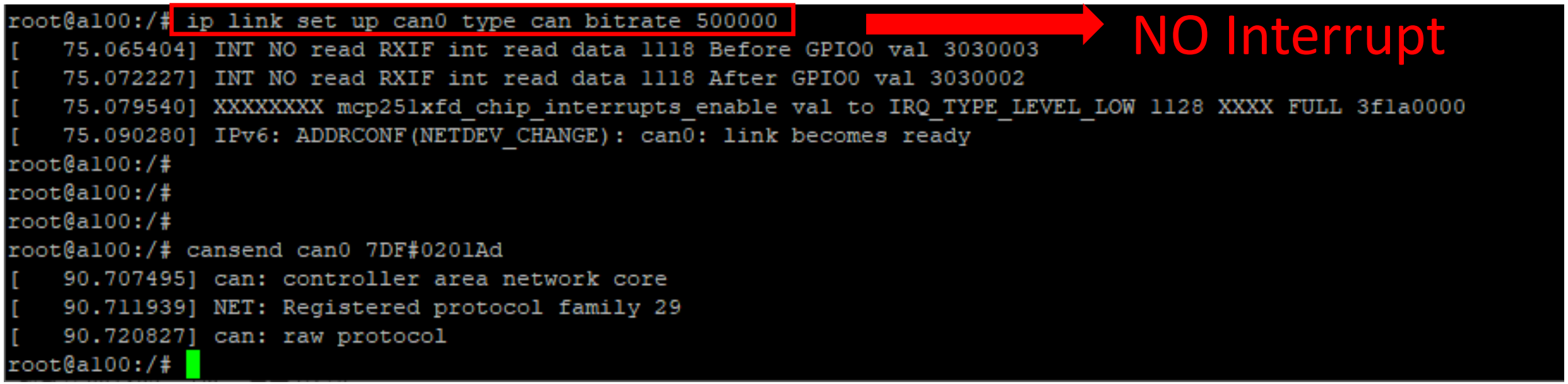
mcp251x.c × Kconfig × Makefile × mcp251xfd-core.c × mcp251xfd-crc16.c × mcp251xfd-regmap.c ×

```
        if (err)
                goto out_close_candev;
                goto out_close_candev;

        err = mcp251xfd_transceiver_enable(priv);
        if (err)
                goto out_mcp251xfd_ring_free;

        err = mcp251xfd_chip_start(priv);
        if (err)
                goto out_transceiver_disable;

        can_rx_offload_enable(&priv->offload);

        err = request_threaded_irq(spi->irq, NULL, mcp251xfd_irq,
                                   IRQF_ONESHOT | IRQF_TRIGGER_LOW, dev_name(&spi->dev),
                                   priv);
        if (err)
                goto out_can_rx_offload_disable;

        err = mcp251xfd_chip_interrupts_enable(priv);
        if (err)
                goto out_free_irq;

        netif_start_queue(ndev);

        return 0;

out_free_irq:
        free_irq(spi->irq, priv);
out_can_rx_offload_disable:
        can_rx_offload_disable(&priv->offload);
out_transceiver_disable:
        mcp251xfd_transceiver_disable(priv);
out_mcp251xfd_ring_free:
        mcp251xfd_ring_free(priv);
out_close_candev:
        close_candev(ndev);
out_pm_runtime_put:
        mcp251xfd_chip_stop(priv, CAN_STATE_STOPPED);
        pm_runtime_put(ndev->dev.parent);

        return err;
}

static int mcp251xfd_stop(struct net_device *ndev)
{
        struct mcp251xfd_priv *priv = netdev_priv(ndev);
```

```
root@al00:/# ip link set up can0 type can bitrate 500000
[   55.801749] INT NO read RXIF int read data 1118 Before GPIO0 val 3030003
[   55.808663] INT NO read RXIF int read data 1118 After GPIO0 val 3030002
[   55.817445] XXXXXXXX mcp251xfd_chip_interrupts_enable val to IRQ_TYPE_LEVEL_LOW 1128 XXXX FULL 3f1a0000
[   55.827418] IPv6: ADDRCONF(NETDEV_CHANGE): can0: link becomes ready
root@al00:/# [   58.336653] irq 182: nobody cared (try booting with the "irqpoll" option)
[   58.343453] CPU: 0 PID: 0 Comm: swapper/0 Not tainted 5.10.72-lts-5.10.y+g22ec7e8cbace #1
[   58.351628] Hardware name: FSL i.MX8MM EVK board (DT)
[   58.356679] Call trace:
[   58.359134]  dump_backtrace+0x0/0x1a0
[   58.362797]  show_stack+0x18/0x70
[   58.366115]  dump_stack+0xd0/0x12c
[   58.369517]  __report_bad_irq+0x4c/0xdc
[   58.373354]  note_interrupt+0x2d8/0x39c
[   58.377190]  handle_irq_event+0xd8/0x150
[   58.381113]  handle_level_irq+0xc0/0x1b0
[   58.385035]  generic_handle_irq+0x30/0x50
[   58.389046]  mxc_gpio_irq_handler+0x50/0x140
[   58.393316]  mx3_gpio_irq_handler+0x80/0xf0
[   58.397501]  __handle_domain_irq+0x7c/0xe0
[   58.401598]  gic_handle_irq+0xc0/0x140
[   58.405345]  el1_irq+0xcc/0x180
[   58.408489]  cpuidle_reflect+0x24/0x40
[   58.412240]  cpu_startup_entry+0x24/0x70
[   58.416164]  rest_init+0xd8/0xe8
[   58.419395]  arch_call_rest_init+0x10/0x1c
[   58.423490]  start_kernel+0x4ac/0x4e4
[   58.427151] handlers:
[   58.429425] [<00000000416487c0>] irq_default_primary_handler threaded [<00000000b0f09a6b>] mcp251xfd_irq [mcp251xfd]
[   58.439955] Disabling IRQ #182

Broadcast message from systemd-journald@al00 (Wed 2021-03-24 10:26:13 UTC):
```

Interrupt and call trace


Open
imx8mm-a100.dtsi
imx8mm-a100.dts
fsl,spi-num-chipselects = <1>;
pinctrl-names = "default";
pinctrl-0 = <&pinctrl_ecspi1_gigabyte &pinctrl_
cs-gpios = <&gpio5 9 GPIO_ACTIVE_LOW>;
status = "okay";
can1: can1@0 {
compatible = "microchip,mcp2518fd";
reg = <0>;
clocks = <&can0_osc>;
pinctrl-names = "default";
pinctrl-0 = <&pinctrl_sai1_can1_int_3v3_soc
spi-max-frequency = <20000000>;
interrupt-parent = <&gpio4>;
interrupts = <14 IRQ_TYPE_EDGE_FALLING>;
//interrupts = <14 IRQ_TYPE_LEVEL_LOW>;
//interrupts-extended = <&gpio4 14 IRQ_TYPE_
//interrupts = <14 IRQ_TYPE_EDGE_FALLING>;
vdd-supply = <&reg_3v3>;
xceiver-supply = <&reg_5v0>;
status = "okay";
};
};
/* 4 pins have been used for uart-4 in a100 */
&ecspi2 {
#address-cells = <1>;
#size-cells = <0>;
fsl,spi-num-chipselects = <1>;
pinctrl-names = "default";
pinctrl-0 = <&pinctrl_ecspi2_gigabyte &pinctrl_
cs-gpios = <&gpio5 13 GPIO_ACTIVE_LOW>;
status = "okay";
can2: can2@1 {
compatible = "microchip,mcp2518fd";
reg = <0>;
clocks = <&can1_osc>;
pinctrl-names = "default";
pinctrl-0 = <&pinctrl_sai1_can2_int_3v3_soc
spi-max-frequency = <20000000>;
interrupt-parent = <&gpio4>;
interrupts = <15 IRQ_TYPE_EDGE_FALLING>;
//interrupts = <15 IRQ_TYPE_LEVEL_LOW>;
//interrupts-extended = <&gpio4 15 IRQ_TYPE_
//interrupts = <15 IRQ_TYPE_EDGE_FALLING>;
vdd-supply = <&reg_3v3>;
xceiver-supply = <&reg_5v0>;
status = "okay";
Open
mcp251xfd-core.c
~/A100_PMIC/imx-yocto-bsp/sources/meta-gi...es/linux-imx/drivers/net/can/spi/mcp251xfd
Save
mcp251x.c
Kconfig
Makefile
mcp251xfd-core.c
mcp251xfd-crc16.c
mcp251xfd-regmap.c
goto out_close_candev;
err = mcp251xfd_transceiver_enable(priv);
if (err)
goto out_mcp251xfd_ring_free;
err = mcp251xfd_chip_start(priv);
if (err)
goto out_transceiver_disable;
can_rx_offload_enable(&priv->offload);
err = request_threaded_irq(spi->irq, NULL, mcp251xfd_irq,
IRQF_ONESHOT | IRQF_TRIGGER_FALLING, dev_name(&spi->dev),
priv);
if (err)
goto out_can_rx_offload_disable;
err = mcp251xfd_chip_interrupts_enable(priv);
if (err)
goto out_free_irq;
netif_start_queue(ndev);
return 0;
out_free_irq:
free_irq(spi->irq, priv);
out_can_rx_offload_disable:
can_rx_offload_disable(&priv->offload);
out_transceiver_disable:
mcp251xfd_transceiver_disable(priv);
out_mcp251xfd_ring_free:
mcp251xfd_ring_free(priv);
out_close_candev:
close_candev(ndev);
out_pm_runtime_put:
mcp251xfd_chip_stop(priv, CAN_STATE_STOPPED);
pm_runtime_put(ndev->dev.parent);
return err;
}
static int mcp251xfd_stop(struct net_device *ndev)
{
struct mcp251xfd_priv *priv = netdev_priv(ndev);
netif_stop_queue(ndev);


root@a100:/# ip link set up can0 type can bitrate 500000
[75.065404] INT NO read RXIF int read data 1118 Before GPIO0 val 3030003
[75.072227] INT NO read RXIF int read data 1118 After GPIO0 val 3030002
[75.079540] XXXXXXXX mcp251xfd_chip_interrupts_enable val to IRQ_TYPE_LEVEL_LOW 1128 XXXX FULL 3f1a0000
[75.090280] IPv6: ADDRCONF(NETDEV_CHANGE): can0: link becomes ready
root@a100:/#
root@a100:/#
root@a100:/#
root@a100:/# cansend can0 7DF#0201Ad
[90.707495] can: controller area network core
[90.711939] NET: Registered protocol family 29
[90.720827] can: raw protocol
root@a100:/#
NO Interrupt