



# RTK Kernel for RTD1619





# Agenda

- Wake Up from GPIO
- GPIO Configuration for Power Enable



# Wake Up from GPIO - 1/2

- Modify device tree “rtk\_iso\_gpio” node

- Ex. rtd-16xx.dtsi

```
/*  
* Suspend GPIO control  
*  
* [wakeup-gpio-list]  
* <&rtk_iso_gpio 10 0 1>: <10> BT wakeup host pin; <0> input, <1> output; <0> internal pull low,  
<1> internal pull high;  
* <&rtk_iso_gpio 26 0 1>: <26> WiFi wakeup host pin; <0> input, <1> output; <0> internal pull low,  
<1> internal pull high;  
*  
* [wakeup-gpio-enable]  
* Wakeup from BT: <0> disable; <1> enable;  
* Wakeup from WiFi: <0> disable; <1> enable;  
*  
* [wakeup-gpio-activity]  
* BT pin: <0> active low; <1> active high;  
* WIFI pin: <0> active low; <1> active high;  
*/
```



## Wake Up from GPIO - 2/2

```
rtk_iso_gpio: rtk_iso_gpio@98007100 {  
  
    wakeup-gpio-list = <&rtk_iso_gpio 10 0 1>,<&rtk_iso_gpio 26 0 1>;  
    wakeup-gpio-enable = <1>, <1>;  
    wakeup-gpio-activity = <0>, <0>;  
  
};
```

- Check GPIO wake-up configuration through sysfs
  - cat /sys/kernel/suspend/gpio\_wakeup\_en
  - cat /sys/kernel/suspend/gpio\_wakeup\_act



# GPIO Configuration for Power Enable – 1/3

## ■ Bind GPIOs in device tree

<&gpio\_controler gpio\_number direction value>

1. gpio\_controler: rtk\_iso\_gpio
2. gpio\_number: Pin number; iso gpio range: 0~85 , total 86 pins
3. direction: 0 as input, 1 as output
4. value:
  - input value, when direction 0
    - <0> pad function pull-down
    - <1> pad function pull-up
    - <2> pad function pull-disable
  - output value, when direction 1
    - <0> pad function pull-disable, default output value LOW
    - <1> pad function pull-disable, default output value HIGH
    - <2> pad function pull-up, default output value LOW
    - <3> pad function pull-up, default output value HIGH
    - <4> pad function pull-down, default output value LOW
    - <5> pad function pull-down, default output value HIGH

■ Ex. gpios = <&rtk\_iso\_gpio 2 1 1>; /\* iso gpio 2, output high \*/



# GPIO Configuration for Power Enable – 2/3

- SATA GPIO configuration

- Modify device tree “ahci\_sata” node
- Ex. rtd-1619-mmnas-megingjord-2GB.dts or rtd-1619-nas-megingjord-2GB.dts

```
ahci_sata: sata@9803F000 {  
    gpios = <&rtk_iso_gpio 67 1 1>,  
            <&rtk_iso_gpio 62 1 1>,  
            <&rtk_iso_gpio 63 1 1>,  
            <&rtk_iso_gpio 64 1 1>;  
    sata-port@0 {  
        /delete-property/ gpios;  
    };  
    sata-port@1 {  
        /delete-property/ gpios;  
    };  
};
```



# GPIO Configuration for Power Enable – 3/3

- USB GPIO configuration

- Modify device tree “rtk\_usb\_power\_manager” node

- Ex. rtd-1619-usb.dtsi

```
rtk_usb_power_manager@0 {  
    compatible = "Realtek,usb-manager";  
    realtek,port0-power-gpio = <&rtk_iso_gpio 57 1 3>;  
    realtek,port1-power-gpio = <&rtk_iso_gpio 48 1 1>;  
    realtek,port2-power-gpio = <&rtk_iso_gpio 49 1 3>;  
  
    status = "okay";  
};
```