



***Preliminary AIC8800 Low-Energy  
Wi-Fi6/BT5.0 SoC  
USB 移植手册***

Revision: 1.1

2022/05/26

## 历史更新记录

时间	修改内容	修订人	版本
2021/06/07	初版	Aiden	1.0
2022/05/26	新增 Q&A 栏位	Aiden	1.1

## 该文件移植平台为 RK3229 Android10.0 平台

### 内核移植

可对比以下档案，确认是否有档案缺失。

aic8800	Wifi 驱动包
aic_btusb	蓝牙 btusb 驱动包
aic8800_porting_package\USB\driver_fw\drivers 驱动包	

fmacfw.bin	Wifi 固件
fw_adid.bin	蓝牙固件
fw_patch.bin	蓝牙固件
fw_patch_table.bin	蓝牙固件
aic8800_porting_package\USB\driver_fw\fw\aic8800 固件档案	

aicbt	蓝牙 libbt-vendor
aic8800_porting_package\USB\driver_fw\aic	

1. 将 aic 驱动包放置在 kernel/drivers/net/wireless/ 之下，并且修改 kernel/drivers/net/wireless/Kconfig 以及 kernel/drivers/net/wireless/Makefile

source "drivers/net/wireless/st/Kconfig"
source "drivers/net/wireless/ti/Kconfig"
source "drivers/net/wireless/zydas/Kconfig"
source "drivers/net/wireless/quantenna/Kconfig"
source "drivers/net/wireless/rockchip_wlan/Kconfig"
source "drivers/net/wireless/aic8800/Kconfig"
修改 kernel/drivers/net/wireless/Kconfig

obj-\$(CONFIG_WLAN_VENDOR_MEDIATEK) += mediatek/
obj-\$(CONFIG_WLAN_VENDOR_RALINK) += ralink/
obj-\$(CONFIG_WLAN_VENDOR_REALTEK) += realtek/
obj-\$(CONFIG_WLAN_VENDOR_RSI) += rsi/
obj-\$(CONFIG_WLAN_VENDOR_ST) += st/
obj-\$(CONFIG_WLAN_VENDOR_TI) += ti/
obj-\$(CONFIG_WLAN_VENDOR_ZYDAS) += zydas/
obj-\$(CONFIG_WLAN_VENDOR_QUANTENNA) += quantenna/
obj-\$(CONFIG_AIC_WLAN_SUPPORT) += aic8800/
修改 kernel/drivers/net/wireless/Makefile

2. 将 aic\_btusb.c 和 aic\_btusb.h 放到 kernel/drivers/bluetooth/之下，并且修改 kernel/drivers/bluetooth/Kconfig 以及 kernel/drivers/bluetooth/Makefile

```

config BT_HCIBTUSB_RTL
    bool "Realtek protocol support"
    depends on BT_HCIBTUSB
    select BT_RTL
    default y
    help
        The Realtek protocol support enables firmware and configuration
        download support for Realtek Bluetooth controllers.

        Say Y here to compile support for Realtek protocol.

config BT_AICBTUSB
    tristate "AIC HCI USB driver"
    depends on USB
    help
        AIC Bluetooth HCI USB driver

config BT_RTKBTUSB
    tristate "RTK HCI USB driver"
    depends on USB
    help
        RTK Bluetooth HCI USB driver

config BT_HCIBTSDIO
    tristate "HCI SDIO driver"
    depends on MMC
    help
        Bluetooth HCI SDIO driver.
        This driver is required if you want to use Bluetooth device with
        SDIO interface.

        Say Y here to compile support for Bluetooth SDIO devices into the
        kernel or say M to compile it as module (btsdio).

config BT_HCIUART

```

**kernel/drivers/bluetooth/Kconfig**

```

obj-$(CONFIG_BT_HCIBTUSB)      += btusb.o
obj-$(CONFIG_BT_HCIBTSDIO)     += btsdio.o

```

```
obj-$(CONFIG_BT_AICBTUSB) += aic_btusb.o
obj-$(CONFIG_BT_RTKBTUSB) += rtk_usb.o
```

#### kernel/drivers/bluetooth/Makefile

修改内核的 config(或用 make menuconfig)，为以下参数

```
#
# Bluetooth device drivers
#
# CONFIG_BT_HCIBTUSB is not set
CONFIG_BT_AICBTUSB=m
# CONFIG_BT_RTKBTUSB is not set
# CONFIG_BT_HCIBTSDIO is not set
CONFIG_BT_HCIUART=y
CONFIG_BT_HCIUART_H4
.
.
.
# CONFIG_RTL8822BS is not set
# CONFIG_MVL88W8977 is not set
CONFIG_AIC_WLAN_SUPPORT=y
CONFIG_AIC8800_WLAN_SUPPORT=m
CONFIG_AIC_LOADFW_SUPPORT=m
# CONFIG_MAC80211_HWSIM is not set
# CONFIG_USB_NET_RNDIS_WLAN is
```

#### 需添加在内核 config 之参数

3. 编译完后即可得到  
aic\_btusb.ko、aic8800\_fdrv.ko、aic\_load\_fw.ko

4. 各驱动模块的功用  
aic\_load\_fw.ko：模块固件初始化  
aic8800\_fdrv.ko：Wifi 驱动  
aic\_btusb.ko：USB 蓝牙接口

当 AIC8800 上电时(EVB 板请按下按键上电)，USB 会侦测到

Bus 003 Device 007: ID a69c:8800

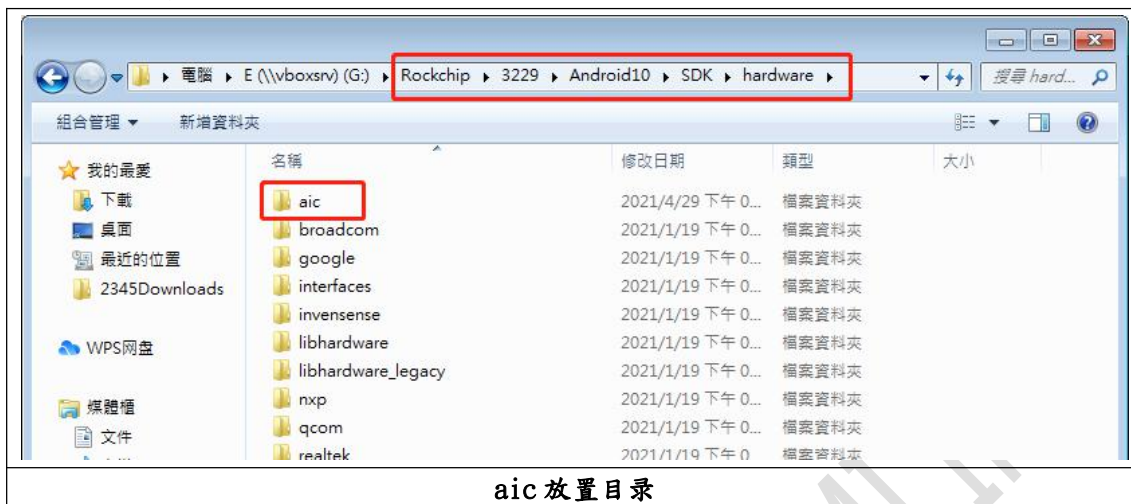
当 aic\_load\_fw 将固件加载到 AIC8800 时，设备 ID 会改为

Bus 003 Device 007: ID a69c:8801

此时模块固件便加载完成，之后即可加载 aic8800\_fdrv.ko 以及 aic\_btusb.ko

## 蓝牙移植

将 aic 包放在 andoird\hardware\之下。



针对蓝牙部分进行以下修改。

```
# Bluetooth HAL
PRODUCT_PACKAGES += \
    libbt-vendor \
    android.hardware.bluetooth@1.0-impl \
    android.hardware.bluetooth@1.0-service \
    android.hardware.bluetooth@1.0-service.rc

ifeq ($(strip $(BOARD_HAVE_BLUETOOTH_RTK)), true)
include hardware/realtek/rtkbt/rtkbt.mk
endif

ifeq ($(strip $(BOARD_HAVE_BLUETOOTH_AIC)), true)
include hardware/aic/aicbt/aicbt.mk
endif

ifeq ($(strip $(TARGET_BOARD_PLATFORM_PRODUCT)), box)
include device/rockchip/common/samba/rk31_samba.mk
PRODUCT_COPY_FILES += \
$(LOCAL_PATH)/init.box.samba.rc:$(TARGET_COPY_OUT_VENDOR)/etc/init/hw/init.box.samba.rc \
device/rockchip/common/cifsmanager.sh:system/bin/cifsmanager.sh

修改 android/device/rockchip/common/device.mk
```

```
chmod 0660 /dev/rtk_btusb
chown bluetooth net_bt /dev/rtk_btusb
```

```

chmod 0660 /dev/rtkbt_dev
chown bluetooth net_bt /dev/rtkbt_dev
# for aic bt usb
chmod 0660 /dev/aicbt_dev
chown bluetooth net_bt /dev/aicbt_dev

# bluetooth MAC address programming
chown bluetooth net_bt ro.bt.bdaddr_path
chown bluetooth net_bt /data/misc/bluetooth
setprop ro.bt.bdaddr_path "/data/misc/bluetooth/bdaddr"

```

修改 android/device/rockchip/common/init.connectivity.rc

```

# for BT
/dev/vflash          0660  bluetooth  net_bt_stack
/dev/ttyS0           0660  bluetooth  net_bt_stack
/dev/ttyS1           0660  bluetooth  net_bt_stack
#/dev/ttyS2          0660  bluetooth  net_bt_stack
/dev/rtk_btusb       0660  bluetooth  net_bt_stack
/dev/aic_btusb       0660  bluetooth  net_bt_stack

#for hid audio
/dev/hidraw0         0660  audio      audio

# for serial
/dev/ttyS4           0660  system     system

# for radio
/dev/ttyUSB0         0660  system     radio

```

修改 android/device/rockchip/common/ueventd.rockchip.rc

```

ifeq ($(strip $(BOARD_CONNECTIVITY_MODULE)), ap6xxx_gps)
BLUETOOTH_USE_BPLUS := true
BLUETOOTH_ENABLE_FM := false
endif
endif

BOARD_HAVE_BLUETOOTH_RTK := false
BOARD_HAVE_BLUETOOTH_AIC := true

```

修改 android/device/rockchip/common/wifi\_bt\_common.mk

## Android 移植

可选择当下开发的平台、主控、系统进行比对，例如：移植 RK3229 Android10 可到补丁包中的 for\_Rockchip/3229/Android10 目录下选择比对 orig 以及 mod 之间的差异，将不同之处

打上您 SDK 当中。

内核移植、蓝牙移植以及 Android 移植完成后，将 SDK 编译即可使用 AIC8800 Wifi 以及蓝牙功能。 Enjoy!

## Q&A

Q:GMS 测试发生问题。

A:需要确认 wifi-hal 是否有移植上，可对比移植包中的 orig 以及 mod 进行确认。