

目录

1 内核文件修改.....	1
2 内核配置.....	1
3 内核编译.....	2
4 测试 4G.....	2

1 内核文件修改

1.1 参考文档《Quectel_WCDMA<E_Linux_USB_Driver_User_Guide_V1.5.pdf》

https://pan.baidu.com/s/1QT2cD_3haovfxxjSOd_uGgQ?pwd=xstr 提取码:

xstr

将下载的 qmi_wwan.c 文件替换 kernel-4.4.94/drivers/net/usb/qmi_wwan.c

链接: https://pan.baidu.com/s/1TJYP3zeQFcobQ_c-jyh0sA?pwd=xstr 提取码: xstr

1.3 kernel-4.4.94/drivers/usb/serial/qcserial.c (注释下面一行代码)

- //{USB_DEVICE(0x05c6, 0x9215)}, /* Acer Gobi 2000 Modem device(VP413) */

2 内核配置

make menuconfig

(1)

Device Drivers

Network device support -->

USB Network Adapters -->

{*} Multi-purpose USB Networking Framework

(2)

Device Drivers

USB support -->

USB Serial Converter support -->

USB driver for GSM and CDMA modems

(3)

Device Drivers

USB support-->

USB Gadget Support -->

USB Gadget Drivers (Ethernet Gadget (with CDC Ethernet support))-->

3 内核编译

说明：当前的硬件上使用的是 2 路 ahd，通过 i2c1 作为 sensor 的连接，确认是 dts 设备树配置是否为 i2c1。（参照开发板接口图）

路径：

kernel-4.4.94/arch/mips/boot/dts/ingenic/shark.dts

```
&i2c0 {
    pinctrl-0 = <&i2c0_pa>;
    pinctrl-names = "default";
    status = "okay";
};

&i2c1 {
    pinctrl-0 = <&i2c1_pd>;
    pinctrl-names = "default";
    status = "okay";
};

&i2c2 {
    pinctrl-0 = <&i2c2_pb>;
    pinctrl-names = "default";
    status = "disable";
};

&i2c3 {
    pinctrl-0 = <&i2c3_pa>;
    pinctrl-names = "default";
};
```

kernel-4.4.94/arch/mips/boot/dts/ingenic/t40-pinctrl.dtsi

```
i2c1_pin: i2c1-pin {
    i2c1_pa: i2c1-pa {
        ingenic,pinmux = <gpio 17 16>;
        ingenic,pinmux-funcsel = <PINCTRL_FUNCTION0>;
    };
    i2c1_pb: i2c1-pb {
        ingenic,pinmux = <gpio 17 16>;
        ingenic,pinmux-funcsel = <PINCTRL_FUNCTION0>;
    };
    i2c1_pd: i2c1-pd {
        ingenic,pinmux = <gpio 20 27>;
        ingenic,pinmux-funcsel = <PINCTRL_FUNCTION0>;
    };
};
```

编译步骤：

第一步:使用相对配置好的板级文件 \$make isvp_shark_defconfig

第二步：根据需求选择性编译 \$ make menuconfig (默认就行)

第三步：编译内核文件 \$ make ulmage

如果报错，执行 \$ make distclean，然后从第一步重新开始。

4 测试 4G

4.1 驱动下载

驱动下载: <https://pan.baidu.com/s/1Qx5YXYSldUIT07HH6aExXQ?pwd=xstr> 提

取码: xstr

执行 make clean;make

quectel-CM 下载：

链接: <https://pan.baidu.com/s/1nybFTMwX8ouRp4mVWVpVmQ?pwd=xstr>

xstr 提取码: xstr

4.2 4G 模块上电

cd /sys/class/gpio

echo 63 > export

cd gpio63

echo 0 > active_low

echo out > direction

echo 1 > value

4.3 加载驱动

insmod GobiNet.ko

4.4 烧录完内核后执行 quectel-CM 即可

```
[1]- Done                               ./quectel-CM
[root@Ingenic-uc1_1:samples]#
[root@Ingenic-uc1_1:samples]#
[root@Ingenic-uc1_1:samples]#
[root@Ingenic-uc1_1:samples]#
[root@Ingenic-uc1_1:samples]#
[root@Ingenic-uc1_1:samples]#
[root@Ingenic-uc1_1:samples]# [01-01_00:01:35:384] Get clientWDS = 7
[01-01_00:01:35:416] Get clientDMS = 8
[01-01_00:01:35:448] Get clientNAS = 9
[01-01_00:01:35:480] Get clientUIM = 10
[01-01_00:01:35:513] Get clientWDA = 11
[01-01_00:01:35:545] requestBaseBandVersion EC20CEFILGR06A07M1G
[01-01_00:01:35:673] requestGetSIMStatus SIMStatus: SIM_READY
[01-01_00:01:35:704] requestGetProfile QMUXResult = 0x1, QMUXError = 0x1
[01-01_00:01:35:737] requestRegistrationState2 MCC: 460, MNC: 0, PS: Attached, DataCap: LTE
[01-01_00:01:35:768] requestQueryDataCall IPv4ConnectionStatus: DISCONNECTED
[01-01_00:01:35:768] ifconfig eth1 0.0.0.0
[01-01_00:01:35:773] ifconfig eth1 down
[01-01_00:01:36:056] requestSetupDataCall wdsConnectionIPv4Handle: 0x86de84b0
[01-01_00:01:36:217] ifconfig eth1 up
[01-01_00:01:36:222] busybox udhcpc -f -n -q -t 5 -i eth1
[01-01_00:01:36:226] udhcpc (v1.22.1) started
[01-01_00:01:36:270] Sending discover...
[01-01_00:01:36:340] Sending select for 10.52.232.109...
[01-01_00:01:36:400] Lease of 10.52.232.109 obtained, lease time 7200
[01-01_00:01:36:406] deleting routers
[01-01_00:01:36:419] adding dns 211.137.58.20
[01-01_00:01:36:419] adding dns 211.137.64.163
```