


```

#if 1 // 2025-04-24 Added by Quectel
if (serial->dev->descriptor.idVendor == cpu_to_le16(0x2C7C)) {
    __u16 idProduct = le16_to_cpu(serial->dev->descriptor.idProduct);
    struct usb_interface_descriptor *intf = &serial->interface->cur_altsetting->desc;


    if (intf->bInterfaceClass != 0xFF || intf->bInterfaceSubClass == 0x42) {
        //ECM, RNDIS, NCM, MBIM, ACM, UAC, ADB
        return -ENODEV;
    }

    if ((idProduct&0xF000) == 0x0000) {
        //MDM interface 4 is QMI
        if (intf->bInterfaceNumber == 4 && intf->bNumEndpoints == 3
            && intf->bInterfaceSubClass == 0xFF && intf->bInterfaceProtocol ==
0xFF)
            return -ENODEV;
    }
}
#endif

/* Store the device flags so we can use them during attach. */
usb_set_serial_data(serial, (void *)device_flags);

return 0;
}

```

-  drivers/usb/serial/usb_wwan.c

```

static struct urb *usb_wwan_setup_urb(struct usb_serial_port *port,
                                     int endpoint,
                                     int dir, void *ctx, char *buf, int len,
                                     void (*callback) (struct urb *))
{
    ... ..
    usb_fill_bulk_urb(urb, serial->dev,
                     usb_sndbulkpipe(serial->dev, endpoint) | dir,
                     buf, len, callback, ctx);

#if 1 //2025-04-24 Added by Quectel for zero packet
    if (dir == USB_DIR_OUT) {

```

```

    struct usb_device_descriptor *desc = &serial->dev->descriptor;

    if (desc->idVendor == cpu_to_le16(0x2C7C))
        urb->transfer_flags |= URB_ZERO_PACKET;
}
#endif
    return urb;
}

```

- `Reset-resume` `drivers/usb/serial/option.c`

```

static struct usb_serial_driver option_lport_device = {
    ... ..
#ifdef CONFIG_PM
    .suspend          = usb_wwan_suspend,
    .resume           = usb_wwan_resume,
#if 1 //2025-04-24 Added by Quectel
    .reset_resume     = usb_wwan_resume,
#endif
#endif
};

```

- `QMI_WWAN` `drivers/net/usb/qmi_wwan_q.c` `drivers/net/usb/Makefile` `qmi_wwan_q.c`

```

#Makefile
# must insert qmi_wwan_q.o before qmi_wwan.o
obj-$(CONFIG_USB_NET_QMI_WWAN) += qmi_wwan_q.o
obj-$(CONFIG_USB_NET_QMI_WWAN) += qmi_wwan.o

```

2.3 ????

`Makefile`

- `Makefile`

```

cd ../../
mkdir kernel_out

```

- [] [] [] [] [] []

```
export CROSS_COMPILE=$HOME/l4t-gcc-toolchain/aarch64--glibc--stable-2022.08-1/bin/aarch64-  
buildroot-linux-gnu-          # [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  
make -C kernel                  # [ ] [ ] Jetson Linux [ ] [ ] [ ]  
sudo -E make install -C kernel  # [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
```

- [] [] [] [] [] [] [] [] [] [] [] []

```
cp kernel/kernel-jammy-src/arch/arm64/boot/Image ../Linux_for_Tegra/kernel/Image
```

- [] [] NVIDIA [] [] [] [] [] [] [] []

```
export CROSS_COMPILE=$HOME/l4t-gcc-toolchain/aarch64--glibc--stable-2022.08-1/bin/aarch64-  
buildroot-linux-gnu-  
export KERNEL_HEADERS=$PWD/kernel/kernel-jammy-src  
make modules
```

- [] [] [] [] [] [] [] []

```
export  
INSTALL_MOD_PATH=$HOME/nvidia/nvidia_sdk/JetPack_6.2.1_Linux_JETSON_ORIN_NANO_TARGETS/Linux_fo  
r_Tegra/rootfs/ # [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  
sudo -E make modules_install
```

- [] [] [] [] DTB

```
export CROSS_COMPILE=$HOME/l4t-gcc-toolchain/aarch64--glibc--stable-2022.08-1/bin/aarch64-  
buildroot-linux-gnu-  
export KERNEL_HEADERS=$PWD/kernel/kernel-jammy-src  
make dtbs
```

- [] [] [] [] dtb [] [] [] [] [] [] [] []

```
cp kernel-devicetree/generic-dts/dtbs/* ../kernel/dtb/
```

2.4 ????

- [] [] [] [] [] [] [] [] [] [] [] []

```
cd  
$HOME/nvidia/nvidia_sdk/JetPack_6.2.1_Linux_JETSON_ORIN_NANO_TARGETS/Linux_for_Tegra/source #
```

```
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```

```
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```

- super□□

```
sudo ./tools/kernel_flash/l4t_initrd_flash.sh --external-device nvme0n1p1 -c
tools/kernel_flash/flash_l4t_t234_nvme.xml -p "-c bootloader/generic/cfg/flash_t234_qspi.xml"
--showlogs --network usb0 jetson-orin-nano-devkit-super internal
```

- □□□□

```
sudo ./flash.sh jetson-orin-nano-devkit-nvme internal
```

2.5 ?????

- □ Quetel_Qconnectmanager□□□□□□
- □□□□□

```
unzip Quetel_QConnectManager_Linux_V1.6.5.zip
cd Quetel_QConnectManager_Linux_V1.6.5
make
```

```
□□□□□□ 4G□□□□
```

```
jetson@jetson-desktop:~/Downloads/Quetel_QConnectManager_Linux_V1.6.5$ sudo ./quetel-CM
[08-08_11:39:04:415] QConnectManager_Linux_V1.6.5
[08-08_11:39:04:416] Find /sys/bus/usb/devices/1-2.2 idVendor=0x2c7c idProduct=0x125,
bus=0x001, dev=0x007
[08-08_11:39:04:416] Auto find qmichannel = /dev/cdc-wdm0
[08-08_11:39:04:417] Auto find usbnet_adapter = wwan0
[08-08_11:39:04:417] netcard driver = qmi_wwan_q, driver version = V1.2.6
[08-08_11:39:04:417] Modem works in QMI mode
[08-08_11:39:04:447] cdc_wdm_fd = 7
[08-08_11:39:04:523] Get clientWDS = 5
[08-08_11:39:04:557] Get clientDMS = 1
[08-08_11:39:04:589] Get clientNAS = 2
[08-08_11:39:04:620] Get clientUIM = 1
[08-08_11:39:04:653] Get clientWDA = 1
[08-08_11:39:04:684] requestBaseBandVersion EM05CNFDR08A03M1G_ND
[08-08_11:39:04:812] requestGetSIMStatus SIMStatus: SIM_READY
[08-08_11:39:04:876] requestGetProfile[pdp:1 index:1] ctnet///0/IPV4V6
```

```
[08-08_11:39:04:908] requestRegistrationState2 MCC: 460, MNC: 11, PS: Attached, DataCap: LTE
[08-08_11:39:04:940] requestQueryDataCall IPv4ConnectionStatus: DISCONNECTED
[08-08_11:39:04:941] ip addr flush dev wwan0
[08-08_11:39:04:947] ip link set dev wwan0 down
[08-08_11:39:05:003] requestSetupDataCall WdsConnectionIPv4Handle: 0x8723e530
[08-08_11:39:05:132] ip link set dev wwan0 up
[08-08_11:39:05:141] No default.script found, it should be in '/usr/share/udhcpc/' or
'/etc//udhcpc' depend on your udhcpc version!
[08-08_11:39:05:142] busybox udhcpc -f -n -q -t 5 -i wwan0
udhcpc: started, v1.30.1
udhcpc: sending discover
udhcpc: sending select for 10.21.181.66
udhcpc: lease of 10.21.181.66 obtained, lease time 7200
[08-08_11:39:05:282] ip -4 address flush dev wwan0
[08-08_11:39:05:286] ip -4 address add 10.21.181.66/30 dev wwan0
[08-08_11:39:05:292] ip -4 route add default via 10.21.181.65 dev wwan0
```

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```
jetson@jetson-desktop:~$ ifconfig wwan0
wwan0: flags=193<UP,RUNNING,NOARP> mtu 1500
    inet 10.21.181.66 netmask 255.255.255.252
    inet6 fe80::5804:41ff:feda:ce83 prefixlen 64 scopeid 0x20<link>
    ether 5a:04:41:da:ce:83 txqueuelen 1000 (Ethernet)
    RX packets 9 bytes 2304 (2.3 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 22 bytes 1854 (1.8 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

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```
[08-08_13:35:08:924] Get clientNAS = 2
[08-08_13:35:08:956] Get clientUIM = 1
[08-08_13:35:08:988] Get clientWDA = 1
[08-08_13:35:09:020] requestBaseBandVersion EM05CNFDR08A03M1G_ND
[08-08_13:35:09:148] requestGetSIMStatus SIMStatus: SIM_READY
[08-08_13:35:09:212] requestGetProfile[pdp:1 index:1] ctnet///0/IPV4V6
[08-08_13:35:09:244] requestRegistrationState2 MCC: 460, MNC: 11, PS: Attached,
DataCap: LTE
[08-08_13:35:09:276] requestQueryDataCall IPv4ConnectionStatus: DISCONNECTED
[08-08_13:35:09:276] ip addr flush dev wwan0
[08-08_13:35:09:281] ip link set dev wwan0 down
[08-08_13:35:09:341] requestSetupDataCall WdsConnectionIPv4Handle: 0x86d75fc0
[08-08_13:35:09:468] ip link set dev wwan0 up
[08-08_13:35:09:474] No default.script found, it should be in '/usr/share/udhcpc
/' or '/etc//udhcpc' depend on your udhcpc version!
[08-08_13:35:09:474] busybox udhcpc -f -n -q -t 5 -i wwan0
udhcpc: started, v1.30.1
udhcpc: sending discover
udhcpc: sending select for 10.21.181.66
udhcpc: lease of 10.21.181.66 obtained, lease time 7200
[08-08_13:35:09:645] ip -4 address flush dev wwan0
[08-08_13:35:09:649] ip -4 address add 10.21.181.66/30 dev wwan0
[08-08_13:35:09:657] ip -4 route add default via 10.21.181.65 dev wwan0
```

```
jetson@jetson-desktop: ~  
564 bytes from 150.171.28.10 (150.171.28.10): icmp_seq=9 ttl=115 time=95.7 ms  
64 bytes from 150.171.28.10 (150.171.28.10): icmp_seq=10 ttl=115 time=96.9 ms  
64 bytes from 150.171.28.10 (150.171.28.10): icmp_seq=11 ttl=115 time=105 ms  
64 bytes from 150.171.28.10 (150.171.28.10): icmp_seq=12 ttl=115 time=105 ms  
64 bytes from 150.171.28.10 (150.171.28.10): icmp_seq=13 ttl=115 time=96.4 ms  
64 bytes from 150.171.28.10 (150.171.28.10): icmp_seq=14 ttl=115 time=105 ms  
64 bytes from 150.171.28.10 (150.171.28.10): icmp_seq=15 ttl=115 time=106 ms  
64 bytes from 150.171.28.10 (150.171.28.10): icmp_seq=16 ttl=115 time=103 ms  
64 bytes from 150.171.28.10 (150.171.28.10): icmp_seq=17 ttl=115 time=96.0 ms  
64 bytes from 150.171.28.10 (150.171.28.10): icmp_seq=18 ttl=115 time=104 ms  
64 bytes from 150.171.28.10 (150.171.28.10): icmp_seq=19 ttl=115 time=103 ms  
64 bytes from 150.171.28.10 (150.171.28.10): icmp_seq=20 ttl=115 time=104 ms  
64 bytes from 150.171.28.10 (150.171.28.10): icmp_seq=21 ttl=115 time=101 ms  
64 bytes from 150.171.28.10 (150.171.28.10): icmp_seq=22 ttl=115 time=101 ms
```

#30

edit ## 5 ## 2025 06:44:19

edit ## 28 ## 2025 09:10:22