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```
sudo apt install build-essential bc git bison flex libssl-dev zip libncurses-dev make git
```

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```
mkdir $HOME/l4t-gcc-toolchain
cd $HOME/l4t-gcc-toolchain
```

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```
wget https://developer.nvidia.com/downloads/embedded/l4t/r36_release_v3.0/toolchain/aarch64--glibc--stable-2022.08-1.tar.bz2
tar xf aarch64--glibc--stable-2022.08-1.tar.bz2
```

- □□□□□□□□□□□□□

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

- □□□□

```
 ./source_sync.sh -k -t <release-tag> #<release-tag>□□□□□□□□□□□□□ jetson_36.4.3
```

??????????

Intel????

□□ [□□□□](#) □□□□□□□□□□□ `/usr/lib/modules/$(uname -r)/updates` □□ ko□□□

□□□□□□□□□ `Linux_for_Tegra/rootfs/lib/modules/5.15.148-tegra/updates/` □□□

realtek 8125??

□□□□□□□□□□□ ko□□□□ `Linux_for_Tegra/rootfs/lib/modules/5.15.148-tegra/updates/dkms`

□□□□□□□□□□□□□□□□□ **r8125.ko**

```
sudo depmod -a
sudo modprobe r8125
```

4G??

参考 4G模块使用说明 2.2

需要改动内核镜像

??HDMI 4K

修改 `tegra234-dcb-p3737-0000.dtsi`
替换 `nvidia,dcb-image` 字段，对应的 HDMI-dcb二进制串可在源码的 `source/hardware/nvidia/t23x/nv-public/overlay/tegra234-dcb-p3767-0000-hdmi.dts` 中找到。

USB???

修改 `tegra234-p3768-0000.dtsi` 的 `padctl@3520000` 节点
添加 usb3-2相关设置

```
padctl@3520000 {
□□□status = "okay";

□□□pads {
□□□□usb2 {
□□□□□lanes {
□□□□□□usb2-0 {
□□□□□□□nvidia,function = "xusb";
□□□□□□□status = "okay";
□□□□□□};

□□□□□□usb2-1 {
□□□□□□□nvidia,function = "xusb";
□□□□□□□status = "okay";
□□□□□□};

□□□□□□usb2-2 {
□□□□□□□nvidia,function = "xusb";
□□□□□□□status = "okay";
□□□□□□};
□□□□□};
□□□□};
```

```
□□□□usb3 {
□□□□□□lanes {
□□□□□□□usb3-0 {
□□□□□□□□nvidia,function = "xusb";
□□□□□□□□status = "okay";
□□□□□□□};

□□□□□□□usb3-1 {
□□□□□□□□nvidia,function = "xusb";
□□□□□□□□status = "okay";
□□□□□□□};
□□□□□□□
□□□□□□□usb3-2 {
□□□□□□□□nvidia,function = "xusb";
□□□□□□□□status = "okay";
□□□□□□□};
□□□□□□};
□□□□};
□□□};

□□□ports {
□□□□/* recovery port */
□□□□usb2-0 {
□□□□□□mode = "otg";
□□□□□□vbus-supply = <&vdd_5v0_sys>;
□□□□□□status = "okay";
□□□□□□usb-role-switch;
□□□□};

□□□□/* hub */
□□□□usb2-1 {
□□□□□□mode = "host";
□□□□□□vbus-supply = <&vdd_1v1_hub>;
□□□□□□status = "okay";
□□□□};

□□□□/* M.2 Key-E */
□□□□usb2-2 {
□□□□□□mode = "host";
```

```
                vbus-supply = <&vdd_5v0_sys>;
                status = "okay";
            };

            /* hub */
            usb3-0 {
                nvidia,usb2-companion = <1>;
                status = "okay";
            };

            /* J5 */
            usb3-1 {
                nvidia,usb2-companion = <0>;
                status = "okay";
            };
            usb3-2 {
                nvidia,usb2-companion = <2>;
                status = "okay";
            };
        };
    };

    usb@3550000 {
        status = "okay";

        phys = <&{/bus@0/padctl@3520000/pads/usb2/lanes/usb2-0}>,
               <&{/bus@0/padctl@3520000/pads/usb3/lanes/usb3-1}>;
        phy-names = "usb2-0", "usb3-0";
    };

    usb@3610000 {
        status = "okay";

        phys = <&{/bus@0/padctl@3520000/pads/usb2/lanes/usb2-0}>,
               <&{/bus@0/padctl@3520000/pads/usb2/lanes/usb2-1}>,
               <&{/bus@0/padctl@3520000/pads/usb2/lanes/usb2-2}>,
               <&{/bus@0/padctl@3520000/pads/usb3/lanes/usb3-0}>,
               <&{/bus@0/padctl@3520000/pads/usb3/lanes/usb3-1}>,
               <&{/bus@0/padctl@3520000/pads/usb3/lanes/usb3-2}>;
        phy-names = "usb2-0", "usb2-1", "usb2-2", "usb3-0",
```

```
□□□□    "usb3-1", "usb3-2";
□□};
```

?????????????

2.3 ????

> □□□□□□□□□□□□□□□□□

- □□□□□□□

```
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 ../kernel/
```

- □□ 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_for_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/
```

???????

- □□□□

```
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 internal
```

- 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
```

???QSPI???

- □□□□

```
sudo ./flash.sh -c bootloader/t186ref/cfg/flash_t234_qspi.xml --no-systemimg jetson-orin-nano-devkit nvme0n1p1
```

- super□□

```
sudo ./flash.sh -c bootloader/t186ref/cfg/flash_t234_qspi.xml --no-systemimg jetson-orin-nano-devkit-super nvme0n1p1
```

□□□ #30
□ edit □□□ 20 □□ 2025 09:50:00
□ edit □□□ 29 □□ 2025 09:35:16