

MTK - Project Baoshan

Ubuntu Desktop 24.04

genio-desktop CERT Image Release Notes

Canonical Devices and IoT, Customer Engineering

Project: Baoshan

Milestone: Ubuntu Desktop 24.04 - genio-desktop24-cert-08-20 release

Release Date: Aug 20, 2026

Goal of Release and Delivery Summary

This image is a CERT image on MediaTek Genio G350/G510/G520/G700/G720/G1200 EVK running with Ubuntu 24.04 Desktop image.

Image Release Deliverables

This is the genio-desktop CERT release for the Mediatek Genio Ubuntu project.

Release image (For G350/G510/G520/G700/G720/G1200 with eMMC):

<https://oem-share.canonical.com/partners/baoshan/share/genio-desktop-24.04/genio-desktop-24-cert-08-20/genio-classic-desktop-noble-emmc-20260820-57.tar.xz>

Release image (For G520/G720/G1200 with UFS):

<https://oem-share.canonical.com/partners/baoshan/share/genio-desktop-24.04/genio-desktop-24-cert-08-20/genio-classic-desktop-noble-ufs-20260820-57.tar.xz>

Manifest:

<https://oem-share.canonical.com/partners/baoshan/share/genio-desktop-24.04/genio-desktop-24-cert-08-20/filesystem.manifest>

Details published on oem-share:

<https://oem-share.canonical.com/partners/baoshan/share/genio-desktop-24.04/genio-desktop-24-cert-08-20/>

Linux package

This release contains the following Linux package

Linux package	linux-mtk (6.8.0-1006.6)
GIT Repository	http://git.launchpad.net/~canonical-kernel/ubuntu/+source/linux-mtk/+git/noble
Tag	Ubuntu-mtk-6.8.0-1006.6

Boot assets tarballs

Boot assets tarballs are built based on [rity-scarthgap-v26.0](#)

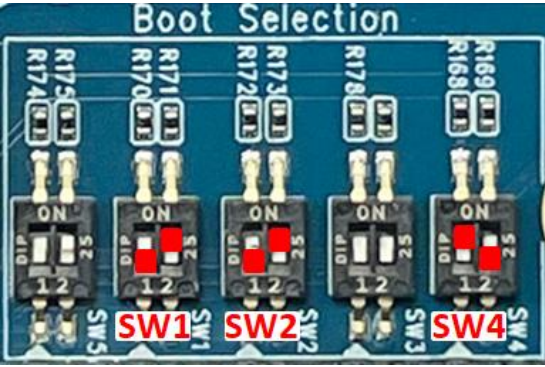
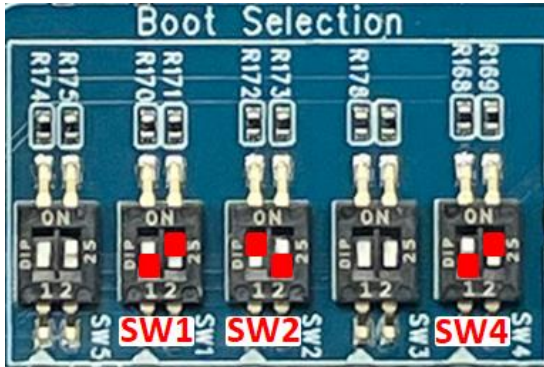
Installation Instructions

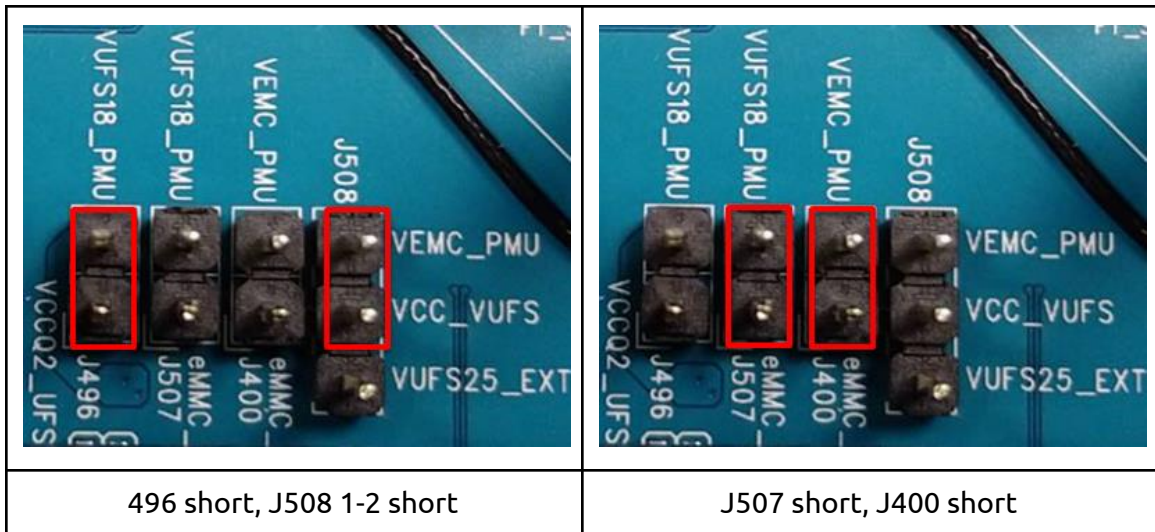
Hardware and software requirements

1. A laptop with Ubuntu desktop image installed
2. A released Ubuntu Classic Desktop image from Canonical
3. A released Mediatek boot assets tarball
4. Mediatek Genio g350, g510, g520, g700, g720, or g1200-evk board with power adapter
5. Two USB cable for flashing image and UART Debug port (baudrate: 921600) depends on your board

Flash the installation image to the MTK board

1. (For G520/G720) Make sure you have set your board in correct boot mode

UFS	eMMC
	
SW1 1: OFF, 2: ON (Default) SW2 1: OFF, 2: ON SW4 1: ON, 2: OFF	SW1 1: OFF, 2: ON (Default) SW2 1: ON, 2: OFF SW4 1: OFF, 2: ON



2. Plug the power adapter

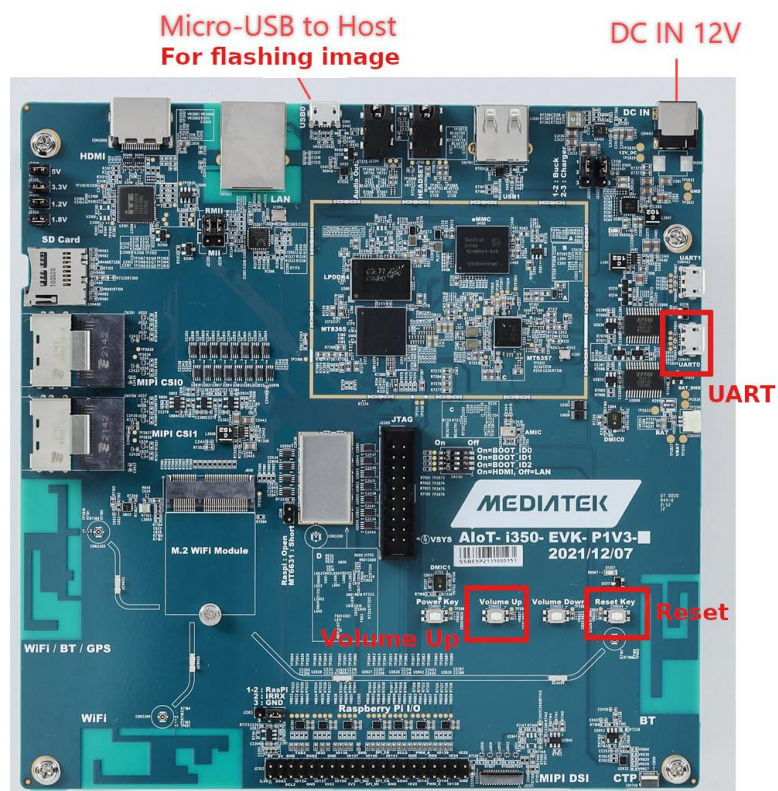


Figure 1: Mediatek Genio g350 EVK board

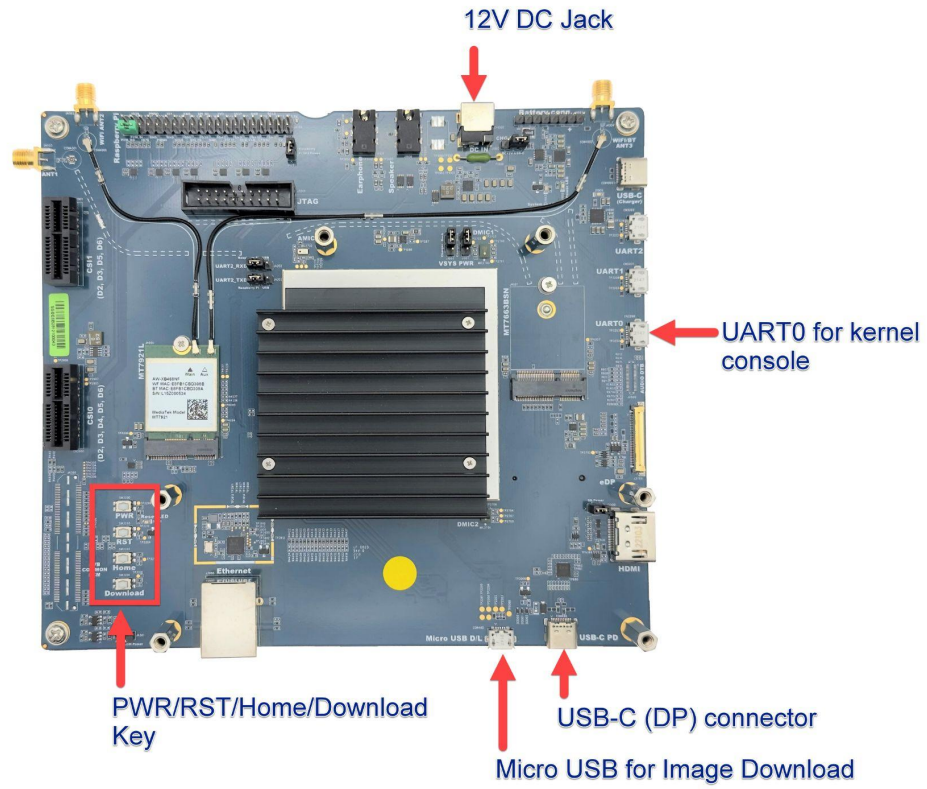


Figure 2: Mediatek Genio g510/g700 EVK board

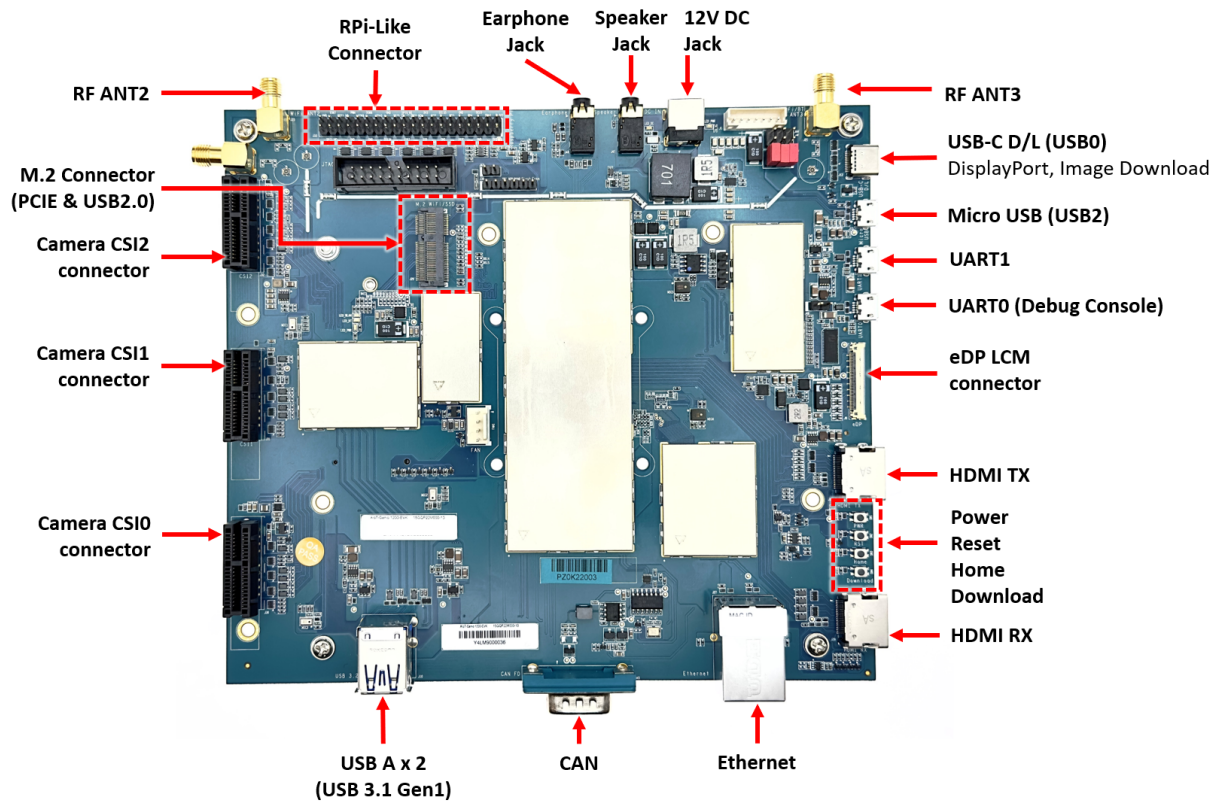


Figure 3: Mediatek Genio g1200-evk board

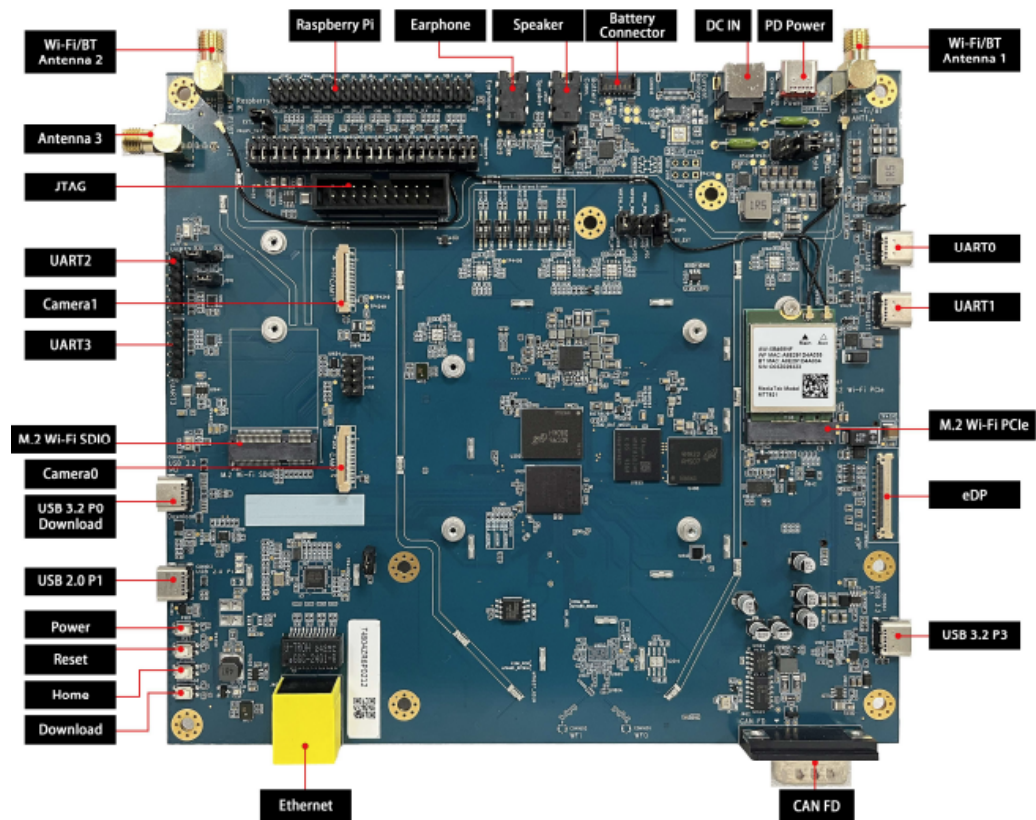


Figure 4: Mediatek Genio g520/g720-evk board

3. Connect your laptop to the Image Download port (USB Micro USB or Type-C port).
4. Connect your laptop to the USB-UART DEBUG port (micro-USB. Serial devices will be generated in your laptop after you connect your laptop to the debug port:

```
$ sudo tio -b 921600 /dev/ttyUSB0
```

5. Open a terminal on your laptop by shortcut key: Ctrl + Alt + T.
6. Install the flash tool

```
$ sudo snap install genio-tools --devmode
genio-tools 1.7.2 from Tzu-Hsien Kao (tzuhsien-kao) installed

$ eval "$(snap run genio-tools.udev-script)"
+ Adding user 'ubuntu' to the 'dialout' group for USB device access...
+ Installing udev rules for Mediatek Genio devices...
+ Reloading udev rules...
✓ udev rules successfully installed.
```

 Please ****reconnect your USB device**** to apply the new rules.
 Please ****log out and log back in**** (or open a new terminal) for group changes to take effect.

Then, log out the current user and log back in.

7. Extract the released tar file and then run genio-flash

```
$ tar -xvf genio-classic-desktop-noble-emmc-X.tar.xz
$ tar --strip-components=1 -xvf genio-BOARD-evk-boot-assets-X.tar.xz -C
  genio-classic-desktop-noble-emmc-X/
$ cd genio-classic-desktop-noble-emmc-X
$ genio-flash
Genio Tools: v1.7.2
Ubuntu Image:
    edition:  Ubuntu classic/core images
    version:  24.04
    codename: noble
```

Note:

The **"X"** and **"BOARD"** need to be replaced with the actual name of the image and board.

8. Press and hold the "Download" key and then press the "Reset" key
9. Release the "Download" key after seeing the message "Connected to MediaTek SoC"
10. Wait for the flash process to complete.

```
$ genio-flash -e ethaddr="02:00:00:12:34:56"
Genio Tools: v1.7.2
Ubuntu Image:
...
Looking for MediaTek SoC matching USB device 0e8d:0003
Opening /dev/ttyACM4 using baudrate=115200
Connected to MediaTek SoC: hw_code[0x8168]
Sending bootstrap to address: 0x201000
Jumping to bootstrap at address 0x201000 in AArch64 mode
...
```

NOTE: **02:00:00:12:34:56** is just an example of an ethernet mac address. If this is only for testing, you may replace the digits in the '12:34:56' portion with random hexadecimal digits. Please note that devices with identical MAC addresses on the same network will be unable to access the network properly.

11. The system will auto reboot and boot to the login screen after flashing is complete.

12. The Default account/password: ubuntu/ubuntu

At first boot, Cloud-init will create the account and initialize the system.
Please stay tuned. It will take 2~3 minutes to finish the initialization.

Release Verification

Tested on the Hardware

- G1200-EVK
 - CID: [202307-31859](#)
 - CID: [202404-33953](#)
- G700
 - CID: [202409-35342](#)
 - CID: [202412-36144](#)
- G720
 - CID: [202511-38135](#)
 - CID: [202511-38134](#)
- G510
 - CID: [202312-33205](#)
 - CID: [202405-34023](#)
- G520
 - CID: [202605-38735](#)
 - CID: [202605-38736](#)
- G350 (Not suitable for testing desktop images, so this platform was removed for this test)
 - ~~CID: [202309-32029](#)~~
 - ~~CID: [202405-34022](#)~~

Known Issues and Limitations

-

Image Changes and Bugs Fixed

Critical

- [LP#2144622](#) [Classic][24.04][G1200] DPoC not working and the drm connecting status is disconnected
- [LP#2144972](#) [Desktop][24.04][G720] Failed to put the system to sleep and auto resume back w/ black screen
- [LP#2146302](#) [Classic][24.04][G350] Suspend w/ auto resume
- [LP#2153535](#) [Desktop][22.04][G720][G520] Earphone only plays center sound from Gnome Setting
- [LP#2153538](#) [Desktop][24.04][G720] No display via DPoC
- [LP#2153986](#) [Desktop][24.04][G520] No display via DPoC
- [LP#2153539](#) [Desktop][24.04][G720][G520] Low microphone input volume when recording through earphones
- [LP#2154171](#) [24][Classic][G1200/G700/G510/G350] Missing the audio cards when using the audio-sof.dtbo
- [LP#2154249](#) [Classic][24.04][G720|G520] Unable to play sound via DPoC because of lacking the sink option
- [LP#2144623](#) [Desktop][24.04][G1200] Missing the HDMI/DP Audio jack
- [LP#2144999](#) [Classic][24.04][G1200|G700|G510|G350] Camera isn't available to use w/ Imgsensor or v4l2sensor

High

-

Reopened Bugs

New Bugs found during QA validation

Critical

-

High

-

Open Bugs

All open bugs can be found at: <https://bugs.launchpad.net/baoshan>

Appendix A: How To Add Device-Tree Overlays

1. Press any key to stop U-Boot autoboot

```
U-Boot 2022.10 (Jul 24 2023 - 09:23:45 +0000)
...
eth0: usb_ether
Hit any key to stop autoboot:  0
=>
```

2. Get the number of the firmware partition

```
=> part list mmc 0 (For eMMC)
=> part list scsi 2 (For g1200-evk-ufs)

Partition Map for MMC device 0  --  Partition Type: EFI

Part      Start LBA      End LBA      Name
      Attributes
      Type GUID
      Partition GUID
...
  3      0x00004400      0x000143ff      "firmware"
      attrs: 0x0000000000000000
      type:   384e979b-eb76-435a-a3a6-1a071dbad91d
              (384e979b-eb76-435a-a3a6-1a071dbad91d)
      guid:   31ed96c7-d17c-4cf4-aca4-755c0053fed4
...

```

3. Find all supported DTBO files

```
# BOARD: genio-350-evk, genio-510-evk, genio-520-evk, genio-700-evk,
genio-720-evk-ufs, genio-1200-evk
=> fatls mmc 0:3 FIRMWARE/mediatek/BOARD/
...
    3693  display-dsi.dtbo
    4252  display-edp.dtbo
   39069  camera-ar0830-ap1302-csi2.dtbo
     609  display-hdmi.dtbo
...

```

4. Add DTB files to list_dtbo

```
# Current list_dtbo
=> echo $list_dtbo
apusys.dtbo video.dtbo

```

```
# Add a dtbo file to list_dtbo. Take display-hdmi.dtbo as an example:
=> setenv list_dtbo "apusys.dtbo video.dtbo display-hdmi.dtbo"
=> saveenv
# Reboot system to make new settings work
=> reset
```

NOTE: Please make sure the name of dtbo exists. It might be different from the dtbos in jammy.

Appendix B: How to Enable MediaTek Imgsensor

MediaTek ImgSensor is a camera architecture for G1200/G700/G510 devices.

1. (G510) Please ensure these jumper has been setup correctly ([LP#2092700](#))
 - Set J4207, J4208, J4209, and J4215 all to [1-2].
 - <https://mediatek.gitlab.io/aiot/doc/aiot-dev-guide/master/sw/yocto/ap-p-dev/peripheral/peripheral-g700-evk.html#id2>
 - Do not set a jumper on RPI hat 19 (SPI2_MOSI) & 21 (SPI2_MISO)
 - <https://mediatek.gitlab.io/aiot/doc/aiot-dev-guide/master/sw/yocto/ap-p-dev/peripheral/peripheral-g700-evk.html#id1>
2. Based on the sensors you have connected to the device, you need to select a dtbo according to [this table](#).
 - For example, if you are using Genio 1200-EVK, you have an IMX214 connected via CSI0 port, an AP1302+ AR0830 connected via CSI1 port, and an IMX214 connected via CSI2 port, then you should use camera-imx214-csi0-ar0830-ap1302-csi1-imx214-csi2.dtbo
3. Run this command to install the following packages:
 - Please run this command to install userspace driver:
 - For G1200

```
$ sudo apt-get install mediatek-camd-genio1200
```
 - For G700, please run this command:

```
$ sudo apt-get install mediatek-camd-genio700
```
 - For G510, please run this command:

```
$ sudo apt-get install mediatek-camd-genio510
```
4. For ap1302 module, you also need to install firmware
 - Please download firmware from https://github.com/ONSemiconductor/ap1302_binaries/tree/main/MediaTek_Genio and save to /lib/firmware/

- Please make sure using the “Download raw file” button to download the file

5. Check systemd service “mediatek-camd-genio1200” is running

- Please replace genio1200 to genio700 or genio510 if you are running on G510/G700

```
ubuntu@mtk-genio:~$ sudo systemctl status
mediatek-camd-genio1200
● mediatek-camd-genio1200.service - V4L2 COMMON Daemon
   Loaded: loaded
   (//lib/systemd/system/mediatek-camd-genio1200.service; enabled;
   vendor preset: enabled)
   Active: active (running) since Thu 2024-12-19 15:49:24
   CST; 49s ago
     Main PID: 105810 (camd)
        Tasks: 6 (limit: 9257)
       Memory: 1.0M
          CPU: 7ms
      CGroup: /system.slice/mediatek-camd-genio1200.service
              └─105810 /usr/bin/camd

Dec 19 15:49:24 mtk-genio systemd[1]: Started V4L2 COMMON
Daemon.
Dec 19 15:49:24 mtk-genio camd[105810]: camd without fuse
Dec 19 15:49:24 mtk-genio camd[105810]: [v4l2] open vcu fd=3
Dec 19 15:49:24 mtk-genio camd[105810]: camd:
shmем_length=12288, shmем=0xffff842ba000
Dec 19 15:49:24 mtk-genio camd[105810]: The firmware version is
0.2.13
Dec 19 15:49:24 mtk-genio camd[105810]: --[v4l2]
create_rt_thread,line:320
```

- If camd raise this error, please check if your dtbo has been correctly load in U-Boot and the jumper is in correct state (G510/G700)

```
Jun 06 02:57:15 mtk-genio camd[5043]: [v4l2] open vcu failed
(No such file or directory)
Jun 06 02:57:15 mtk-genio systemd[1]:
mediatek-camd-genio1200.service: Main process exited,
code=exited, status=255/EXCEPTION
Jun 06 02:57:15 mtk-genio systemd[1]:
mediatek-camd-genio1200.service: Failed with result
'exit-code'.
```

6. You can refer to [the MediaTek documentation](#) for how to use the camera.

Appendix C: How to use realtime kernel

The realtime kernel is a technical preview. This kernel is patched and configured to minimize latency and guarantee predictable response times for time-critical tasks.

You can install the realtime kernel with this command:

```
$ apt-get install linux-mtk-realtime
```

After the new package has been installed, you need to reconfigure grub to make sure grub shows the boot menu so you can select the new realtime kernel.

```
$ echo 'GRUB_TIMEOUT=3' | sudo tee 99-custom.cfg  
$ sudo update-grub
```

Then, reboot your device

```
$ sudo reboot
```

During the system boot process, you will see this GRUB menu in your UART console.

```
GNU GRUB  version 2.12  
  
Ubuntu  
*Advanced options for Ubuntu  
  
Use the ▲ and ▼ keys to select which entry is highlighted.  
Press enter to boot the selected OS, `e' to edit the commands before  
booting or `c' for a command-line. ESC to return previous menu.
```

You need to use the Up and Down key to select the “Advanced options for Ubuntu” and press Enter. Then, you select a realtime kernel and press Enter again.

```
GNU GRUB version 2.12

Ubuntu, with Linux 6.8.0-9034-mtk
Ubuntu, with Linux 6.8.0-9034-mtk (recovery mode)
*Ubuntu, with Linux 6.8.0-1002-mtk-realtime
Ubuntu, with Linux 6.8.0-1002-mtk-realtime (recovery mode)

Use the ▲ and ▼ keys to select which entry is highlighted.
Press enter to boot the selected OS, `e' to edit the commands before
booting or `c' for a command-line. ESC to return previous menu.
```

Finally, the system will boot with a realtime kernel.