AES-MC-SBC-IMX8M-G
Linux Software User Manual

Directory

1 Introduced

1.1 List of features

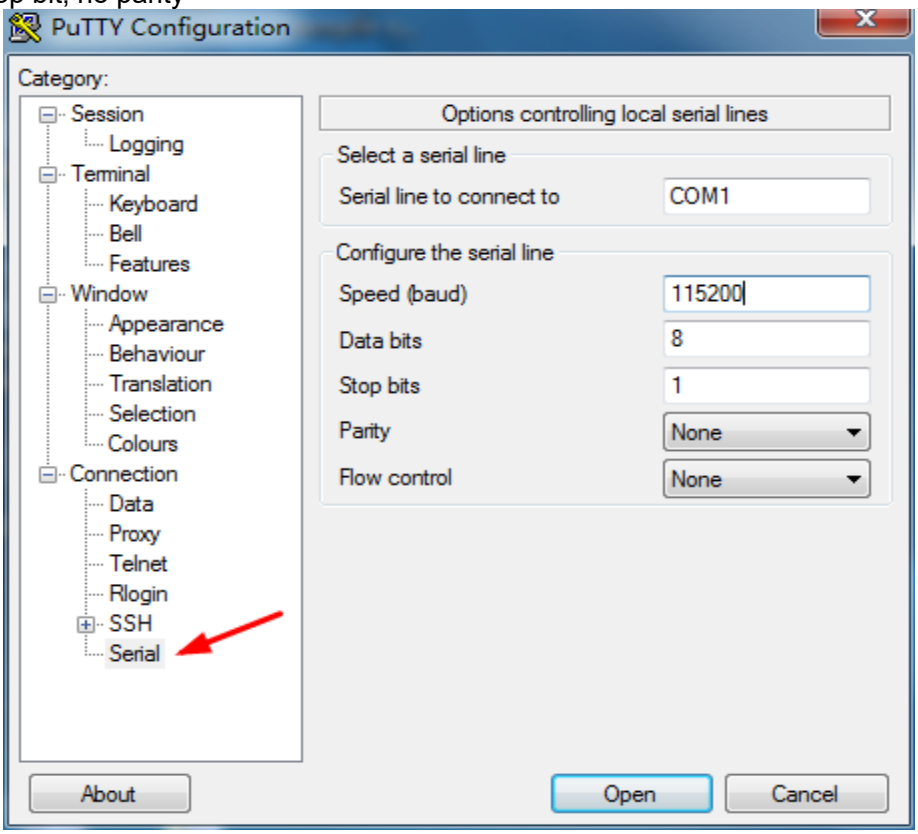
- U-Boot version: 2018.03
- Kernel version: 4.14.78
- Evaluation image Yocto sumo 2.5
- Qt 5.1.1 Library or later
- Desktop
- Development based on NXP i.MX 8M
- Micro SD boot
- HDMI display
- HDMI audio output
- 1 Gigabit Ethernet (RJ45)
- 2 USB 3.0 can work in Host & Device mode
- 3 UART (TTL) include debug port
- External interfaces(I2C, UART,SPI ,SAI and GPIO)
- WIFI & BLE 5.0
- MIPI-LVDS Display
- MIPI-DSI Display
- MIPI camera

2 Quick start

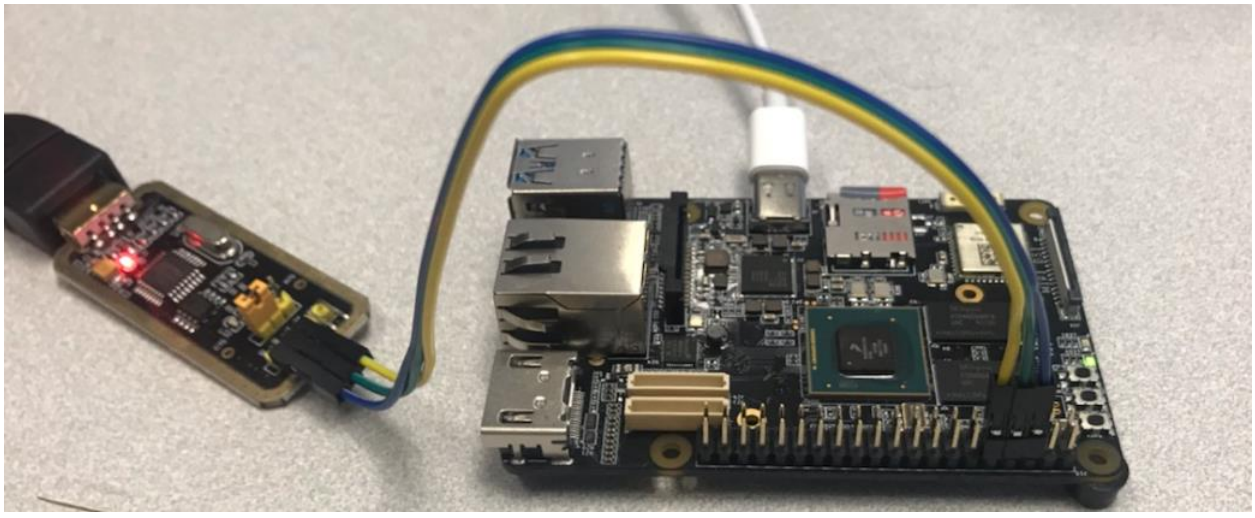
The default version of the AES-MC-SBC-IMX8M-G can only be started from SDCard, and for the latest system image, refer to Chapter 5 Burn and Update System Mirror. For more information on circuit connections and accessories used, please refer to the QSG documentation

2.1 Start the system from SDCard

- Install serial software (e.g. PUTTY) on PC, select the correct port number, port rate 115200, 8 bits, 1 stop bit, no parity



- Connect the Debug pins on the PC and board with the USB-to-TTL module. J10's 6,8,10 pins correspond to THE GND, RXD and TXD of the USB-to-TTL module, respectively



- Insert the prepared SD card into the slot on the board (J19)
- Power the board (J4) with 5V, 2A, Type-C interface power
- After the system is started, the serial terminal prints the following

```
NXP i.MX Release Distro 4.14-sumo imx8mqevk ttymxc0

imx8mqevk login:
```

- Enter the username **root** login

```
NXP i.MX Release Distro 4.14-sumo imx8mqevk ttymxc0

imx8mqevk login: root
Last login: Mon Feb 18 03:31:02 UTC 2019 on tty7
root@imx8mqevk:~#
```

The first time you start the system and log in from a serial port, the demo application will be automatically installed, and after installation, the following information will be prompted to restart automatically.

```
NXP i.MX Release Distro 4.14-sumo imx8mqevk ttymxc0

imx8mqevk login: root
Last login: Mon Mar  4 02:22:34 UTC 2019 on tty7
system will install the demo application automatically
tar: embest/bin/qtfm: time stamp 2019-03-04 02:28:33 is 275.130689584 s in the
tar: embest/bin/Chromium: time stamp 2019-03-04 03:01:04 is 2226.130232864 s in
tar: embest/bin: time stamp 2019-03-04 02:59:23 is 2125.130101104 s in the futu
tar: embest/icon/backgroud.jpg: time stamp 2019-03-04 02:31:11 is 432.998416819
tar: embest/icon/32x32/camera.png: time stamp 2019-03-04 03:00:08 is 2169.99277
tar: embest/icon/32x32/utilities-terminal.png: time stamp 2019-03-04 03:00:08 i
tar: embest/icon/32x32/browser.png: time stamp 2019-03-04 03:00:08 is 2169.9896
tar: embest/icon/32x32/wireless.png: time stamp 2019-03-04 03:00:08 is 2169.988
tar: embest/icon/32x32/file-manager.png: time stamp 2019-03-04 03:00:08 is 2169
tar: embest/icon/32x32/video-x-generic.png: time stamp 2019-03-04 03:00:08 is 2
tar: embest/icon/24x24/camera.png: time stamp 2019-03-04 02:36:53 is 774.982419
tar: embest/icon/24x24/browser.png: time stamp 2019-03-04 02:36:53 is 774.98217
tar: embest/icon/24x24/wireless.png: time stamp 2019-03-04 02:36:53 is 774.9817
tar: embest/icon/24x24/file-manager.png: time stamp 2019-03-04 02:36:53 is 774.
tar: embest/icon/24x24/video-x-generic.png: time stamp 2019-03-04 02:36:53 is 7
tar: embest/icon/24x24/chrome.png: time stamp 2019-03-04 02:33:41 is 582.981321
tar: embest/icon/24x24: time stamp 2019-03-04 02:36:53 is 774.981176298 s in th
system will reboot the system to start the demo application
```

After the restart, the screen will show demo.

3 Configuration and description of the feature

First, refer to Chapter 2 to get the system up and follow the guidelines below to use the features of THE AES-MC-SBC-IMX8M-G.

3.1 USER LED

The user is able to control the LED0 and LED1 on the AES-MC-SBC-IMX8M-G, (usr-led and sys-led, respectively). Enter the following commands in your terminal to turn LED 0 on and off:

Off LED:

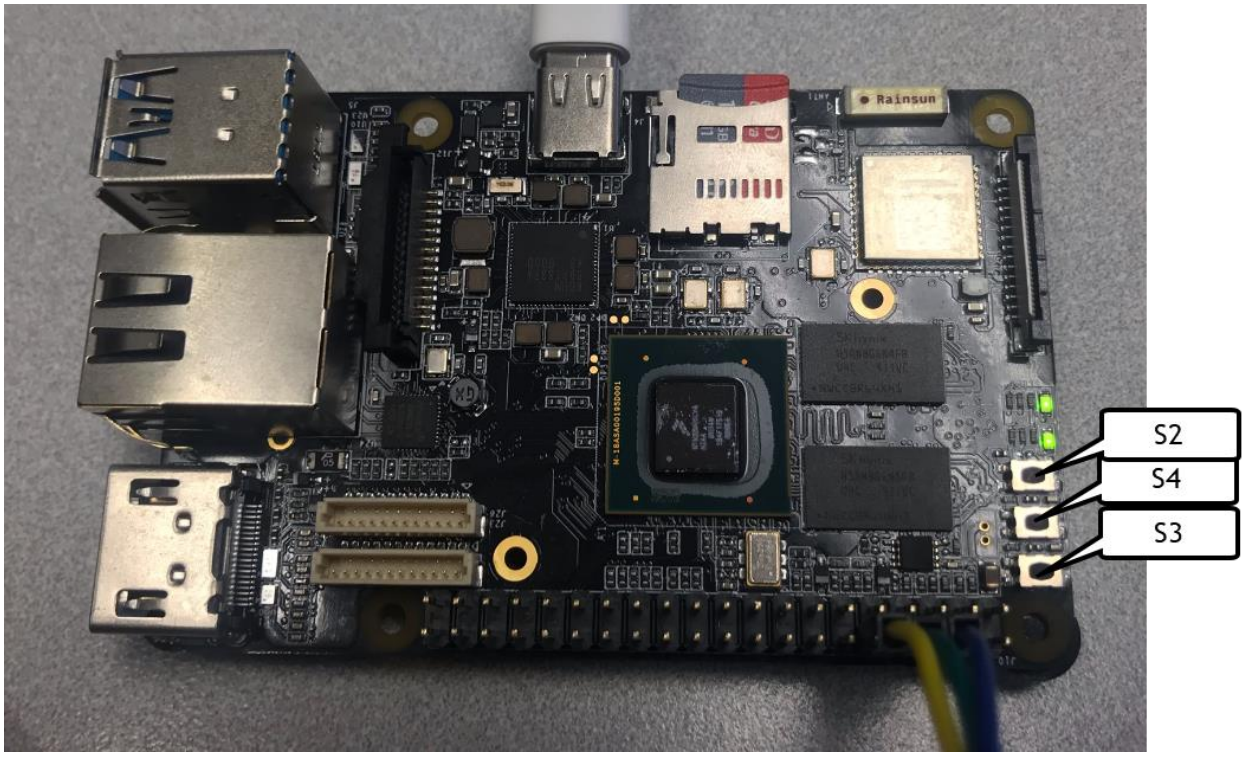
```
root@imx8mqevk:~# echo 0 > /sys/class/leds/usr_led/brightness
root@imx8mqevk:~# echo 0 > /sys/class/leds/sys_led/brightness
```

ON LED:

```
root@imx8mqevk:~# echo 1 > /sys/class/leds/usr_led/brightness
root@imx8mqevk:~# echo 1 > /sys/class/leds/sys_led/brightness
```

3.2 User Buttons

AES-MC-SBC-IMX8M-G User Buttons S2-PWR, S3-BACK, S4-HOME :



1. The BACK(S3) and HOME(S4) keys, are tested by **the evtest** command: select the id for the gpio-keys event and then depress S4 and S3 to replicate results. See below.

```
root@imx8mqevk:~# evtest
No device specified, trying to scan all of /dev/input/event*
Available devices:
```

```
/dev/input/event0:      30370000.snvs:snvs-powerkey
/dev/input/event1:      UVC Camera (046d:0825)
/dev/input/event2:      Logitech USB Optical Mouse
/dev/input/event3:      SIGMACH1P USB Keykoard
/dev/input/event4:      SIGMACH1P USB Keykoard
/dev/input/event5:      gpio_keys
/dev/input/event6:      bd718xx-pwrkey
Select the device event number [0-6]: 5
Input driver version is 1.0.1
Input device ID: bus 0x19 vendor 0x1 product 0x1 version 0x100
Input device name: "gpio_keys"
Supported events:
Event type 0 (EV_SYN)
Event type 1 (EV_KEY)
Event code 102 (KEY_HOME)
Event code 412 (KEY_PREVIOUS)
Properties:
Testing ... (interrupt to exit)
Event: time 1551666241.347922, type 1 (EV_KEY), code 412 (KEY_PREVIOUS), value 1
Event: time 1551666241.347922, ---------- SYN_REPORT ------------
Event: time 1551666241.575856, type 1 (EV_KEY), code 412 (KEY_PREVIOUS), value 0
Event: time 1551666241.575856, ---------- SYN_REPORT ------------
Event: time 1551666246.259856, type 1 (EV_KEY), code 102 (KEY_HOME), value 1
Event: time 1551666246.259856, ---------- SYN_REPORT ------------
Event: time 1551666246.491858, type 1 (EV_KEY), code 102 (KEY_HOME), value 0
Event: time 1551666246.491858, ---------- SYN_REPORT ------------
```

2. Holding the PWR button (S2) for more than 8s will enter the board into sleep mode, and then pressing the PWR button for 1s will restart the device.

   The PWR key also supports short-press detection, which is tested by running the following command and then pressing S2:

   evtest /dev/input/event0

```
root@imx8mqevk:~# evtest /dev/input/event0
Input driver version is 1.0.1
Input device ID: bus 0x19 vendor 0x0 product 0x0 version 0x0
Input device name: "30370000.snvs:snvs-powerkey"
Supported events:
Event type 0 (EV_SYN)
Event type 1 (EV_KEY)
Event code 116 (KEY_POWER)
Properties:
Testing ... (interrupt to exit)
Event: time 1551666457.807550, type 1 (EV_KEY), code 116 (KEY_POWER), value 1
```

```
Event: time 1551666457.807550, ---------- SYN_REPORT ------------
Event: time 1551666458.000081, type 1 (EV_KEY), code 116 (KEY_POWER), value 0
Event: time 1551666458.000081, ---------- SYN_REPORT ------------
```

Note: Press Ctrl-C to exit the program

3.3 Display Interfaces

The AES-MC-SBC-IMX8M-G supports HDMI, MIPI-LVDS, and MIPI-DSI display devices. You can refer to the following table to connect the screen to the development board, and then power up the system. During startup, things like start-up printing information and login interface will be displayed on the screen. At this point, you can connect the keyboard to the AES-MC-SBC-IMX8M-G login file system. The default display device is the HDMI screen.

Screen type	Interface No.
HDMI screen (default display)	J9 (standard HDMI interface)
MIPI-DSI screen	J16
MIPI-LVDS screen	J16

The display device can be switched by modifying the fdt-file parameter in the uEnv.txt file

How to modify:

After starting, modify the uEnv.txt file in the /run/media/mmcblk0p1 directory with the **vi** command, perform **a sync**, and then restart the system for the modification to take effect.

3.3.1 HDMI

The HDMI screen is the default display, and the corresponding fdt-file parameters are modified as follows:

```
fdt_file=em-sbc-imx8m.dtb
```

The system supports HDMI screens with a maximum resolution of 4K

3.3.2 MIPI-DSI

When selecting the MIPI-DSI screen, the corresponding fdt-file parameter is modified as follows:

```
fdt_file=em-sbc-imx8m-dcss-dsi.dtb
```

THE MIPI-DSI screen supports backlight adjustment, with a range of 0 to 255, which can be adjusted with the following commands:

```
root@imx8mqevk:~# echo 150 > /sys/class/backlight/backlight/brightness
```

3.3.3 MIPI-LVDS

When selecting the MIPI-LVDS screen, the corresponding fdt-file parameter is modified as follows:

```
fdt_file=em-sbc-imx8m-dcss-lvds.dtb
```

THE MIPI-LVDS screen supports backlight adjustment, with a range of 0 to 7, which can be adjusted with the following commands:

```
root@imx8mqevk:~# echo 5 > /sys/class/backlight/lvds_backlight/brightness
```

3.4 Touchscreen

MIPI-DSI screen and MIPI-LVDS screen support touch screen and can be calibrated with the following commands

```
root@imx8mqevk:~# ts_calibrate
```

Follow the on-screen prompts and click on the "plus" icon 5 times to complete the calibration.

3.5 HDMI Audio

Connect HDMI monitors and matching playback devices to play audio files

```
root@imx8mqevk:~# aplay audio_sample.wav
root@imx8mqevk:~# gst-play-1.0 audio_sample.wav
```

The play command supports the audio file in wav format, and the gst-play command supports audio files in wav, mp3 and aac format.

3.6 UART

THE AES-MC-SBC-IMX8M-G has two UARTs. The correspondence is as follows:

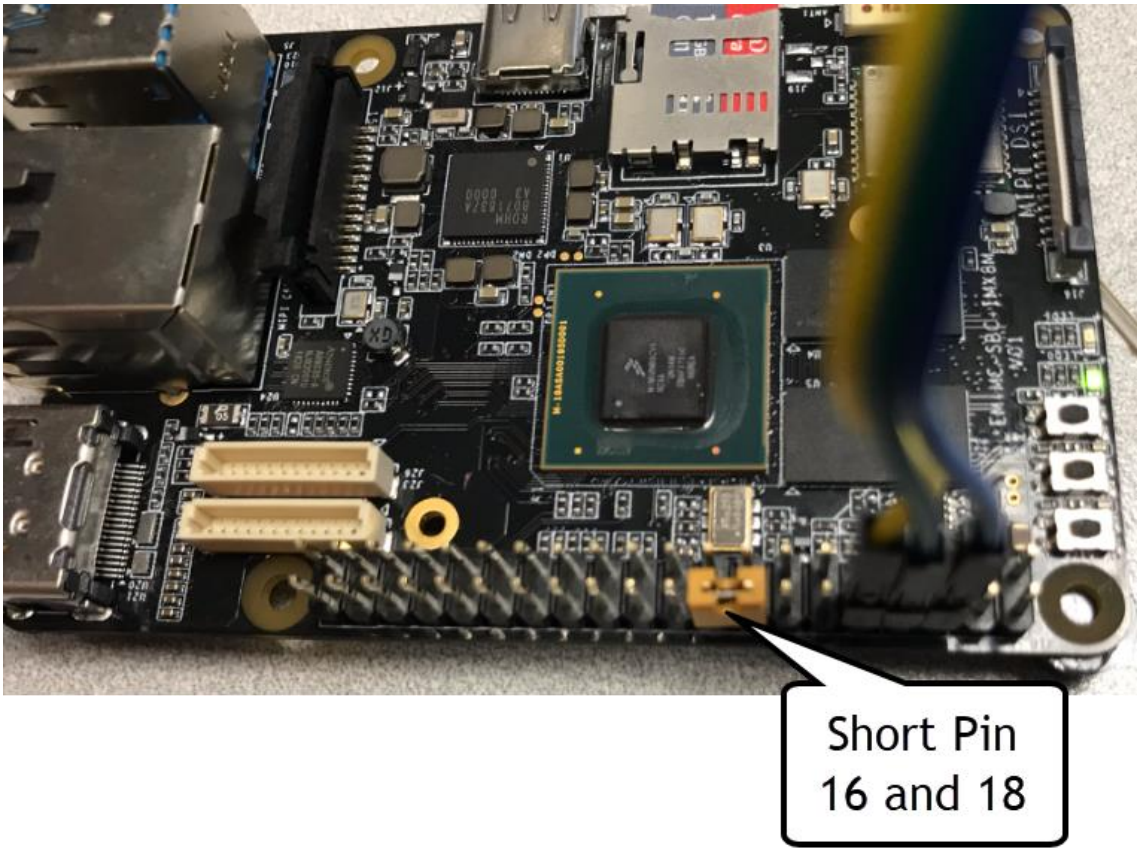
AES-MC-SBC-IMX8M-G(CPU)	Interface type
UART1	UART TTL (debug serial)
UART2	UART TTL

3.6.1 UART2

UART2 node in the system is /dev/ttymxc2

Users can use the system's own uart_test program to do spontaneous self-receiving testing.

Short base plate J10 No. 16, 18 pin,



Enter the following in the serial terminal: You will see the following being looped back through the shorted UART.

```
root@imx8mqevk:~# ./uart_test -d /dev/ttymxc1 -b 115200
/dev/ttymxc1 RECV 10 total
/dev/ttymxc1 RECV: 1234567890
```

THE RESULT OF THE RECV, AS ABOVE, INDICATES THAT THE TEST WAS SUCCESSFUL

Note: Press Ctrl-C to exit the program

3.7 On-board gigabit net

Connect the network cable to J13, enter the following command in the serial terminal to set the IP address: (THE following IP address is only an example)

3.7.1 Configure auto-fetch IP

After connecting the cable, the AES-MC-SBC-IMX8M-Gwill automatically get ip by default, view the IP information with the **ifconfig** command and perform the network test with the following command:

```
root@imx8mqevk:~# ping www.avnet.com
PING e317.a.akamaiedge.net (2.16.110.70) 56(84) bytes of data.
64 bytes from a2-16-110-70.deploy.static.akamaitechnologies.com (2.16.110.70): i
cmp_seq=1 ttl=56 time=14.9 ms
```

3.7.2 Configure static IP

If you need to set a static IP address for AES-MC-SBC-IMX8M-G, execute the following command:

Add routing information as follows:

```
route add default gw 192.168.8.254
```

Set the IP address:

```
root-imx8mqevk:-ifconfig eth0 192.168.8.119
```

Network testing:

```
root@imx8mqevk:~# ping www.avnet.com
```

3.8 USB 3.0

HUB1 has two USB 3.0 interfaces, the one below is USB 0, and the one above is USB1.

Both USB0 and USB1 support USB Host, while USB 0 also supports USB Device mode.

3.8.1 USB Host

Plug the USB drive into USB 0 or USB1 and the disk information will be displayed in the serial terminal:

```
[  541.484723] usb 2-1: new SuperSpeed USB device number 2 using xhci-hcd
[  541.548910] usb-storage 2-1:1.0: USB Mass Storage device detected
[  541.558886] scsi host0: usb-storage 2-1:1.0
[ 542.593679] scsi 0:0:0:0: Direct-Access Kingston DataTraveler 3.0 PQ: 0 ANSI: 6
[  542.604306] sd 0:0:0:0: [sda] 30218842 512-byte logical blocks: (15.5 GB/14.4 GiB)
[  542.612602] sd 0:0:0:0: [sda] Write Protect is off
[  542.618045] sd 0:0:0:0: [sda] Write cache: disabled, read cache: enabled, doesn't support DPO or FUA
[  542.632439]  sda: sda1
[  542.636616] sd 0:0:0:0: [sda] Attached SCSI removable disk
[  542.817343] FAT-fs (sda1): Volume was not properly unmounted. Some data may be corrupt. Please run fsck.
```

Enter the following command at the serial terminal:

```
root@imx8mqevk:~# ls /dev/sd*
/dev/sda  /dev/sda1
```

The device node sda1, or USB drive, under /dev can mount the device with the mount command for subsequent operations.

Other USB devices, such as keyboards, mice, etc. can also be connected.

3.8.2 USB Device

USB0 supports USB Device functionality, which can be used to burn mirrors or to be used as a USB card.

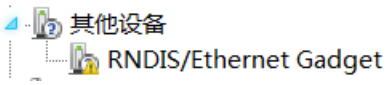
3.8.2.1 *USB card function*

WHEN USB0 MAKES A NETWORK CARD, YOU NEED TO MODIFY THE FDT-FILE PARAMETER IN THE UENV.TXT FILE AND START IT

fdt_file=em-sbc-imx8m-usb0-device.dtb

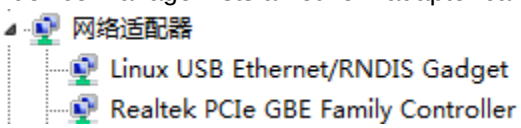
When this parameter is selected, the supported display is the HDMI display.

After starting, connect USB 0 (USB port below HUB1) to the PC side, turn on the device manager, and identify the following devices:



Follow these steps to test (in the case of the Windows 7 system):

1) Install the Linux USB Ethernet driver (the Linux Tools directory in the software release package), and after installing the device manager lists a network adapter called Linux USB Ethernet/RNDIS Gadget:



2) Perform the following command to set and view the IP address of the USB OTG port (the ip address below is an example only, you can select a different IP address, but you need to ensure that the IP address is in a different segment from the PC's Ethernet port IP);

```
root-imx8mqevk:-ifconfig usb0 up
root-imx8mqevk:-ifconfig usb0 192.168.1.115
root-imx8mqevk:-ifconfig
```

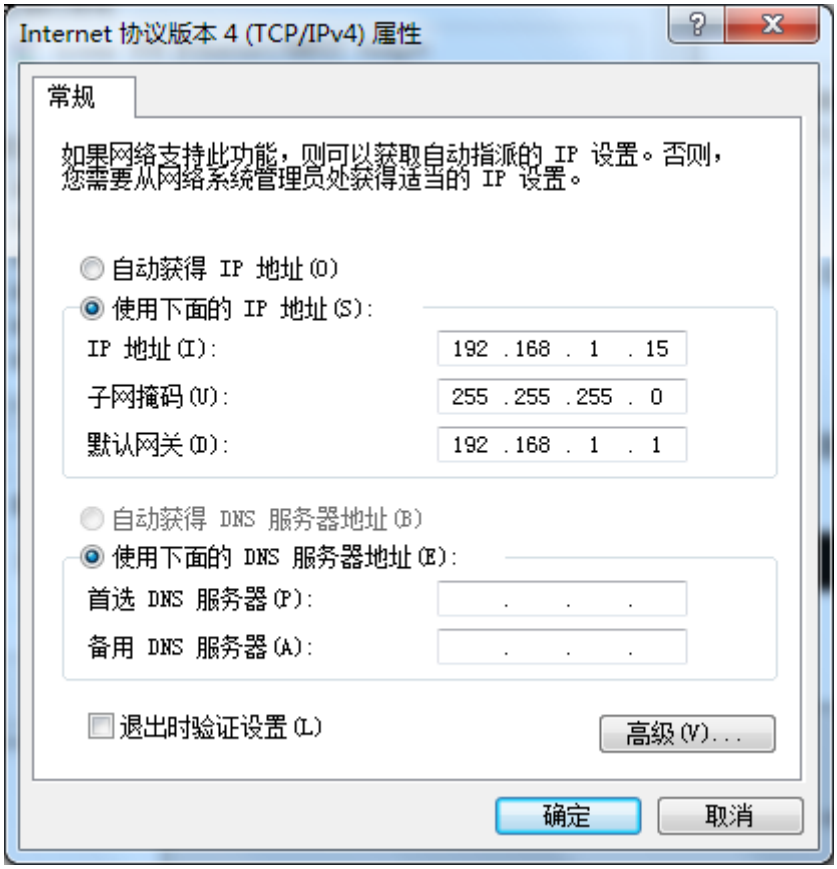
The terminal window displays the following information:

```
usb0      Link encap:Ethernet  HWaddr 92:a9:b6:be:8b:3f
inet addr:192.168.1.115  Bcast:192.168.1.255  Mask:255.255.255.0
Inet6 addr: fe80:: 90a9: b6ff: Febe: 8b3f/64 Scope: Link
UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
RX packets:167 errors:0 dropped:0 overruns:0 frame:0
TX packets:28 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:12180 (11.8 KiB)  TX bytes:7075 (6.9 KiB)
```

3) Right-click Network on the PC desktop and select Properties to enter the network connection window, and then click the Change adapter settings button to see a new local connection icon in the window, as shown in the following image:

4) Right-click on the new local connection and select Properties, then double-click Internet Protocol Version 4 (TCP/IPv4) in the pop-up window to open the following window, set the IP address to the

same segment as the USB OTG port of the board, and then click OK



5) Perform the following command at the serial terminal to test the network connection;

```
root@imx8mqevk:~# ping 192.168.1.15
PING 192.168.1.15 (192.168.1.15) 56(84) bytes of data.
64 bytes from 192.168.1.15: icmp_seq=1 ttl=64 time=0.865 ms
64 bytes from 192.168.1.15: icmp_seq=2 ttl=64 time=0.464 ms
64 bytes from 192.168.1.15: icmp_seq=3 ttl=64 time=0.259 ms
```

The above information indicates that the network connection is normal.

3.9 Wi-Fi

The on-board Wi-Fi module supports 2.4G/5G networking.

3.9.1 Connect to a Wi-Fi network

Enter the following commands to connect to Wi-Fi at the serial terminal:

```
root@imx8mqevk:~# ./wifi_sta_connect.sh Avnet 1234
```

Example Network SSID - **Avnet**, Password - **1234**。

If the connection is successful, the following prompts appear:

```
udhcpc: sending discover
udhcpc: sending select for 192.168.1.141
```

```
udhcpc: lease of 192.168.1.141 obtained, lease time 86400
/etc/udhcpc.d/50default: Adding DNS 192.168.1.1
```

Test wifi connection with ping command

```
root@imx8mqevk:~# ping www.avnet.com -I wlan0
PING www.a.shifen.com (103.235.46.39) 56(84) bytes of data.
64 bytes from 103.235.46.39: icmp_seq=1 ttl=50 time=122 ms
```

3.9.2 Disconnect wi-Fi

Enter the following command to disconnect Wi-Fi at the serial terminal:

```
root@imx8mqevk:~# ./wifi_stop.sh
```

If the operation is successful, the following prompts appear:

```
Terminating DHCP
3907

Terminating hostapd

Terminating wpa_supplicant
root 3887 1 0 09:25 ? 00:00:00 wpa_supplicant -B -i wlan0 -c /etc/wpa_supplicant.conf -D
nl80211
sending signal 15 to procs
wlan0 has been disconnected on STA mode and AP mode !
```

3.9.3 Turn on Wi-Fi hotspots

Connect the networking cable to J13 and enter the following command at the serial terminal to open the Wi-Fi hotspot:

```
root@imx8mqevk:~# ./wifi_ap_start.sh
Configuration file: /etc/hostapd_mx8.conf
rfkill: Cannot open RFKILL control device
wlan0: Could not connect to kernel driver
Using interface wlan0 with hwaddr 80:c5:f2:7f:6e:cd and ssid "wifi_testAP"
wlan0: interface state UNINITIALIZED->ENABLED
wlan0: AP-ENABLED
```

At this time, you can use a wireless device (Phone/Computer) to connect the hotspot, the default hot spot ssid is wifi_testAP, password is 12345678, if you need to modify, you can use **vi to modify /etc/hostapd_mx8.conf** and then open the hotspot to take effect.

Close Hotspots: Use the **./wifi_stop.sh** command

3.10 Bluetooth 5.0

Enter the following commands in the serial terminal:

```
root@imx8mqevk:~# ./bluetooth_start.sh
```

The system will turn on Bluetooth and scan the Bluetooth device.

3.11 Camera

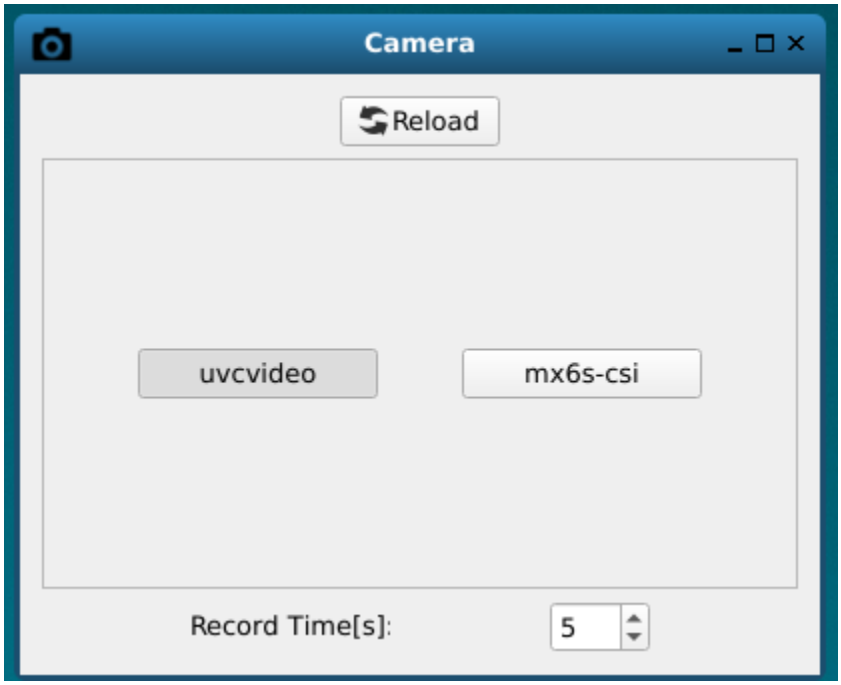
The AES-MC-SBC-IMX8M-G supports USB Camera and MIPI-CSI Camera, and offers a Camera application in the system that can be previewed, photographed, and recorded in a desktop environment.

Connect the display, Camera to AES-MC-SBC-IMX8M-G, to confirm that the desktop environment is starting normally.

Execute the following command in the serial terminal:

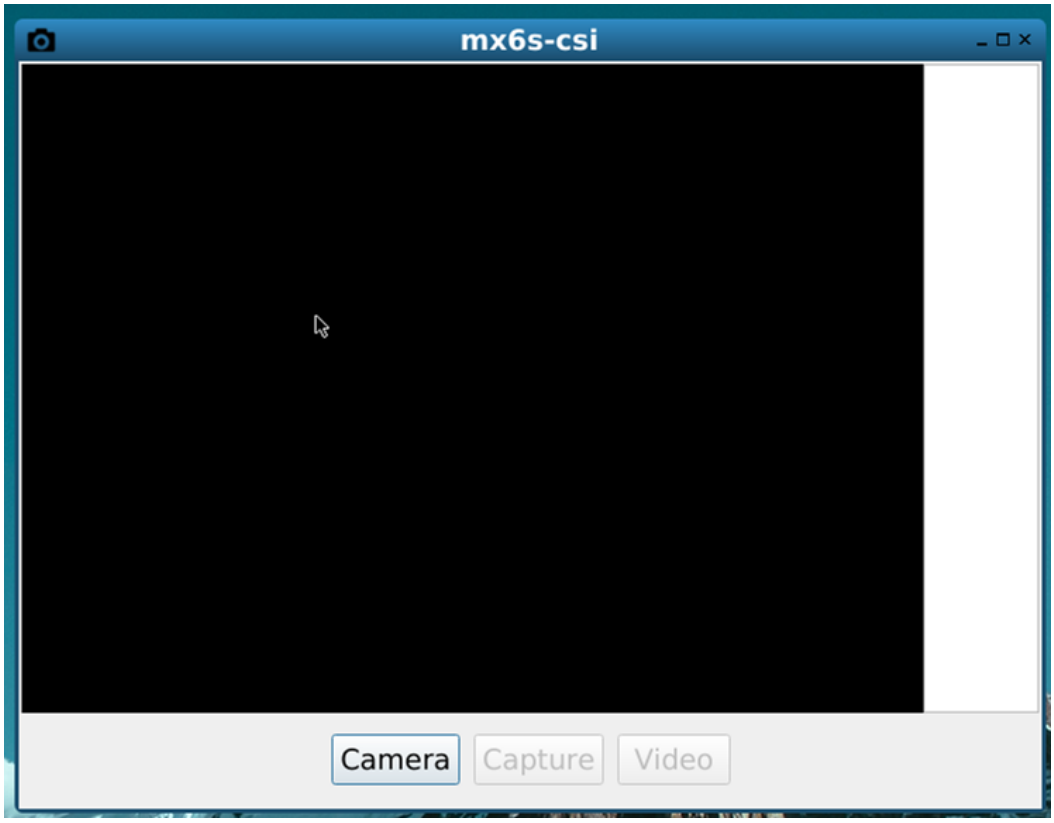
```
root@imx8mqevk:~# ./Camera
```

The Camera app will be displayed on the screen:

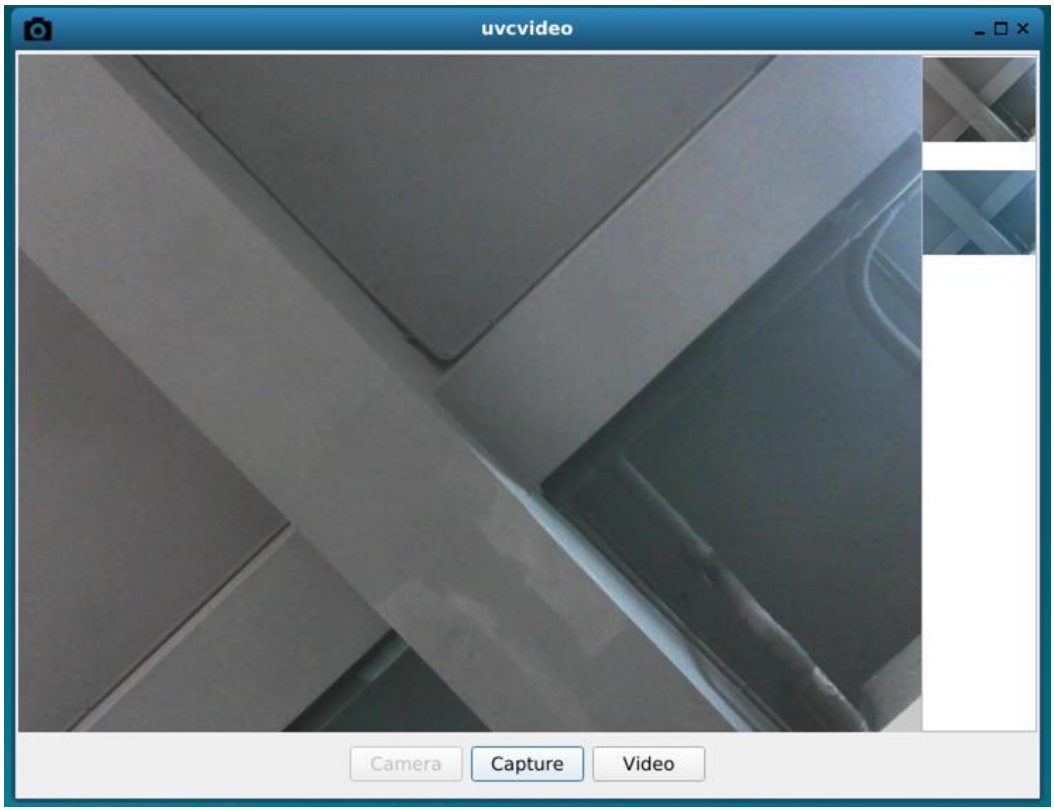


Click video when using the USB camera, and select mx6s-csi when using the MIPI-CSI camera.

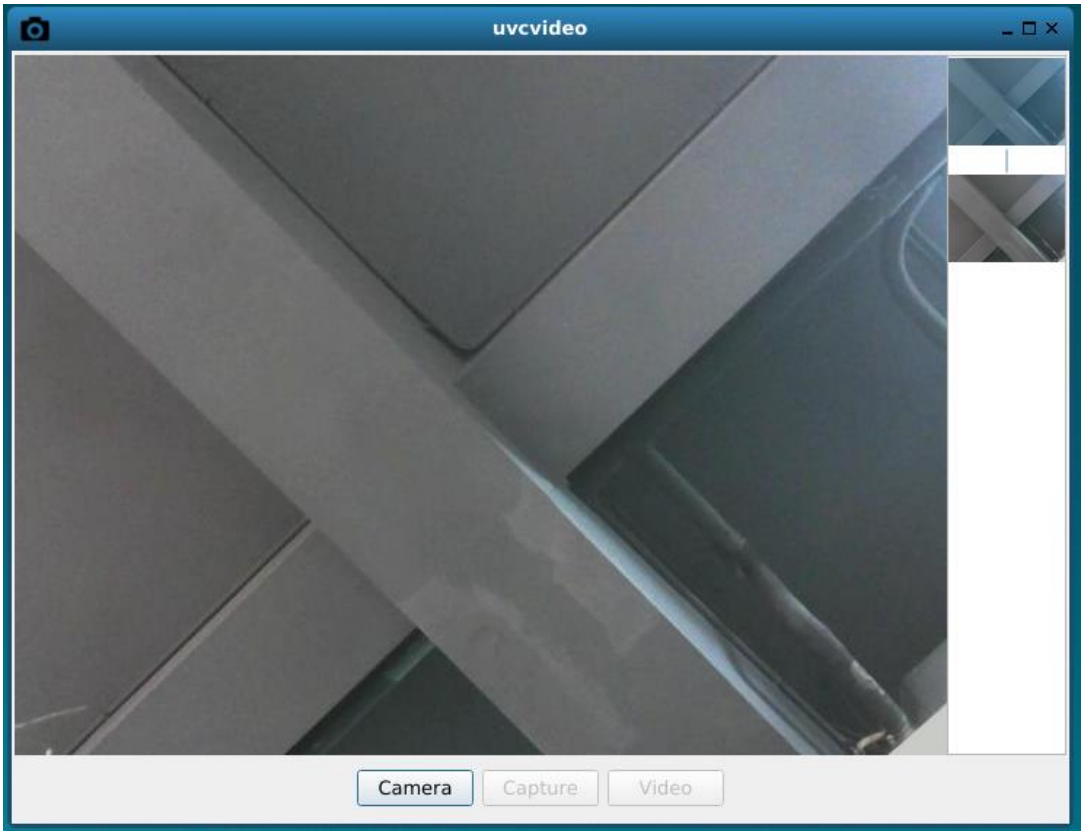
Click the Camera button on the screen to open the Camera and preview the image.



Click the Capture button, take a picture and display a thumbnail on the right side of the window, click Video, record a video file in yuv format, which can be copied to your computer for viewing with pyuv.exe.



Click on the thumbnail to close the Camera preview and display the full picture in the current window.



The captured images are stored in the $HOME/images/directory.

Note: Press Ctrl-C or click x on the screen to exit the program

3.12 Auto-mount

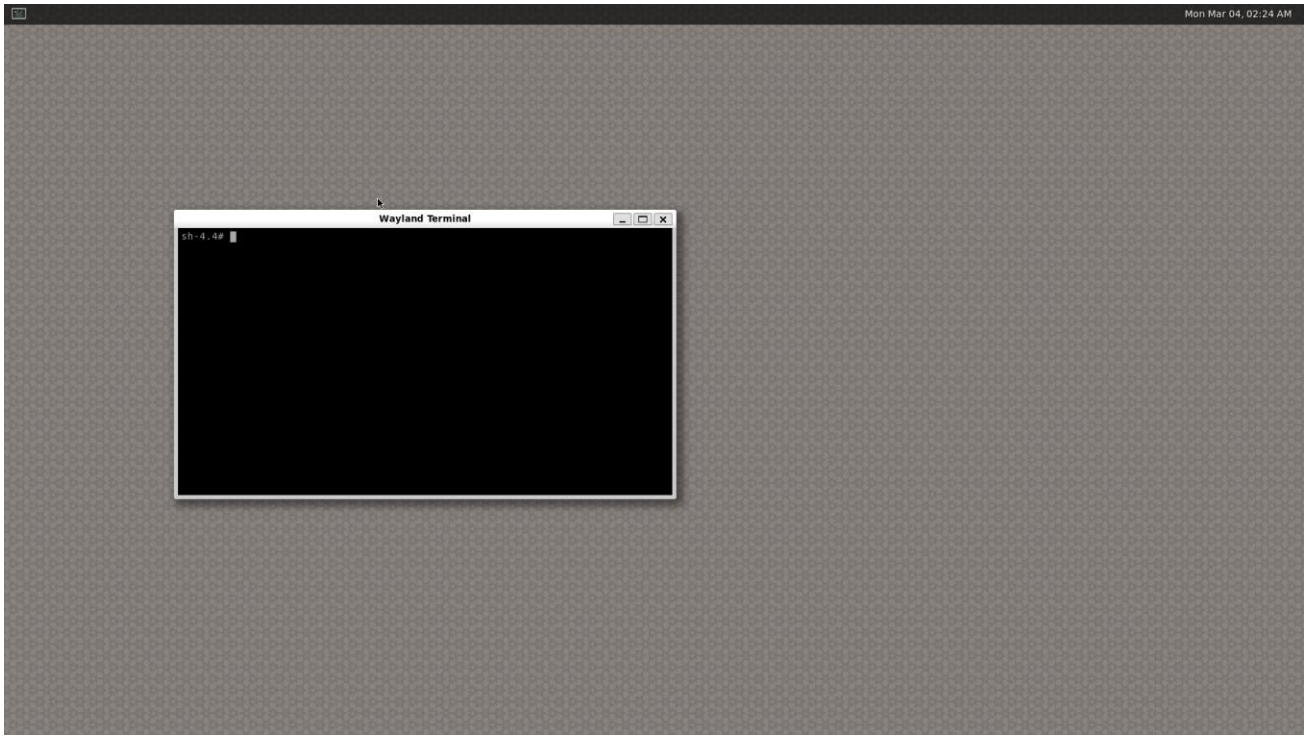
When connecting a storage device to a Yocto system, the system will automatically mount the storage device to /run/media/directory, as follows:

```
root@imx8mqevk:~# ls /run/media/
mmcblk0p1  sda1
```

Among them, mmcblk0p1 is the first partition of the SD card, sda1 is the USB stick.

3.13 Desktop environment

Connect the display to the AES-MC-SBC-IMX8M-G and the desktop environment will run automatically when the system is started. You can connect the keyboard mouse to the development board and open Wayland Terminal for operation.



If you log in to the board from a serial port, the system will automatically install Demo application, the introduction of Demo is detailed in the next chapter.

3.14 QT&GPU

The Yocto file system integrates QT5.9.4 and GPU-related development libraries (e.g. EGL, OpenCV, Open CL, open VG, etc.) and provides some test programs.

GPU testers are kept in /opt/directory and all test programs can be run. Such as:

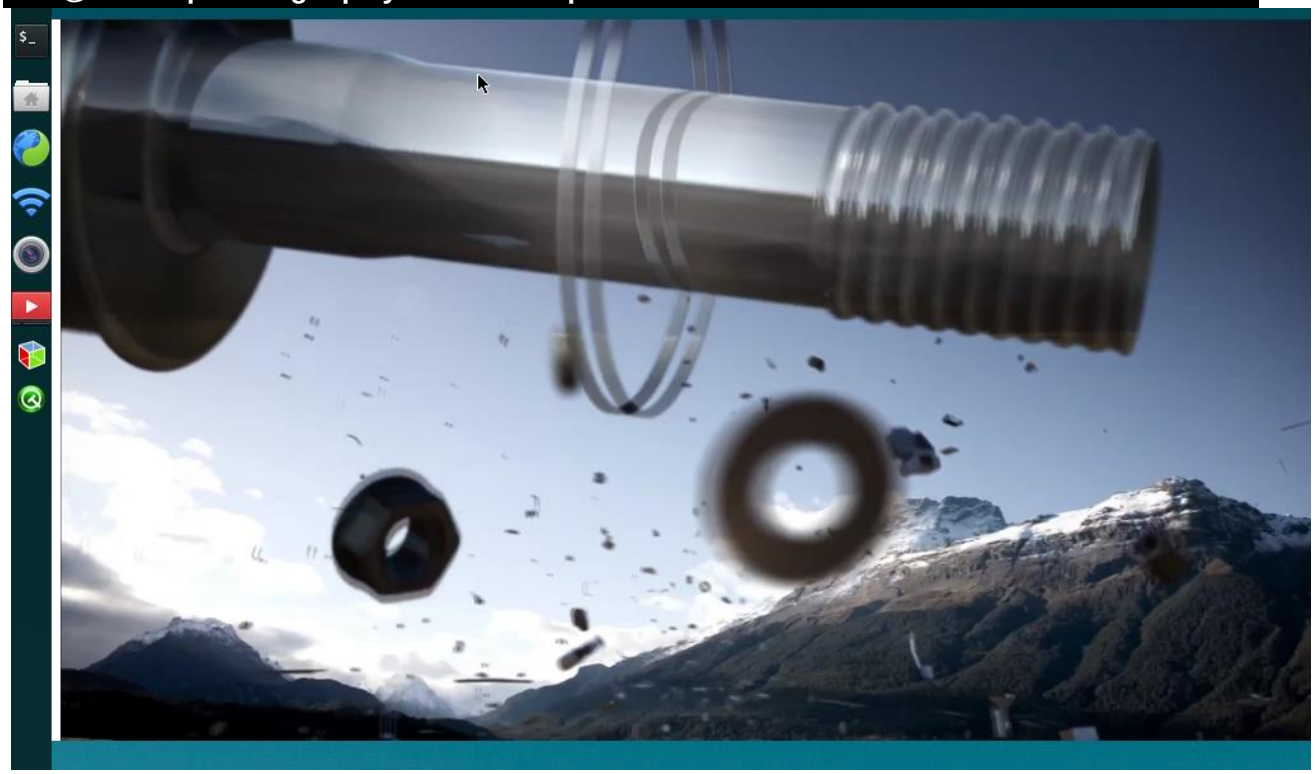
```
root@imx8mqevk:~# /usr/share/qt5/examples/gui/openglwindow/openglwindow
root@imx8mqevk:~# /opt/imx-gpu-sdk/GLES3/Skybox/Skybox_Wayland
root@imx8mqevk:~# /opt/imx-gpu-sdk/OpenVG/Example3/Example3_Wayland
root@imx8mqevk:~# /opt/viv_samples/tiger/tiger
```

Note: Press Ctrl-C to exit the program

3.15 Play video

The Yocto system supports playback of video files in MP4 format with a maximum resolution of 4K, with the following commands to be entered in the serial terminal to play:

```
root@imx8mqevk:~# gst-play-1.0 4ktest.mp4
```



4 Demo Application

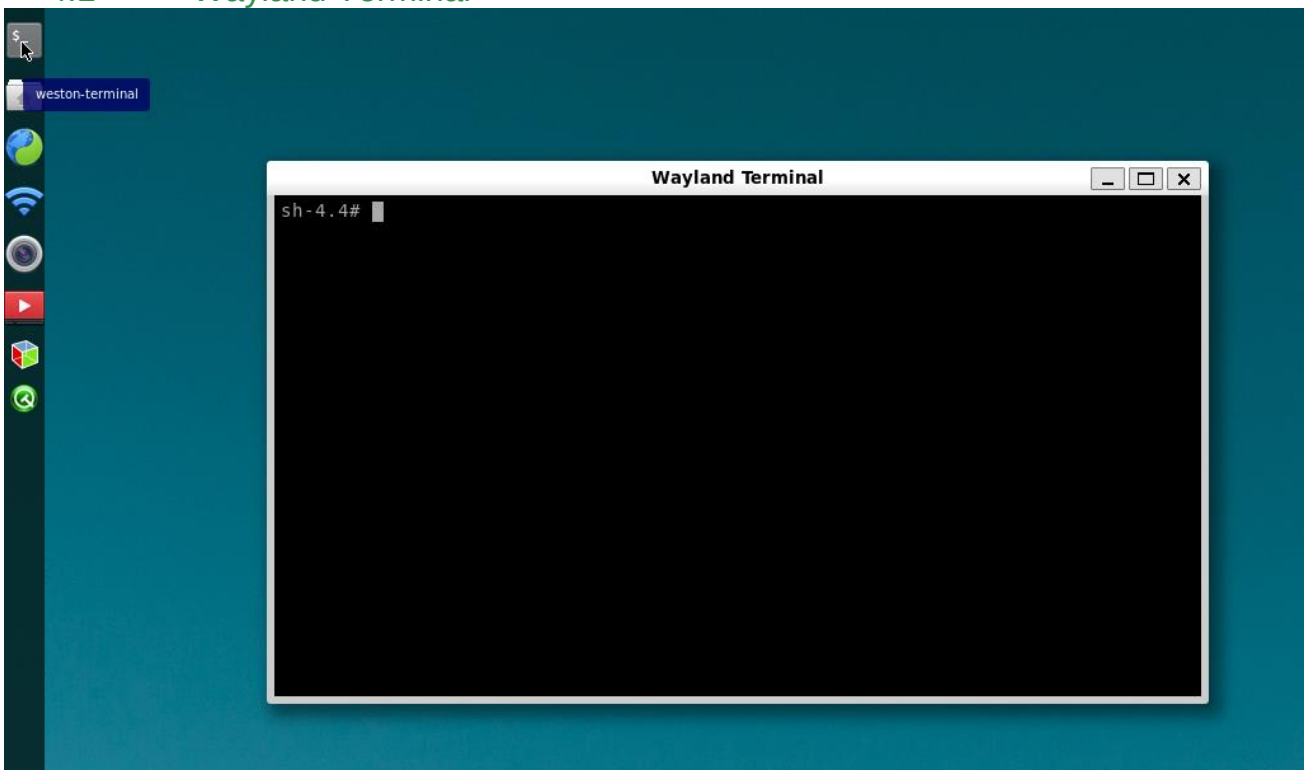
The first time you start the system and log in from a serial port, the system will automatically install the demo application and restart it, and the screen will display the demo after the restart.

This desktop program can display and operate normally when connected to an HDMI screen or an MIPI-LVDS screen. Users can connect the keyboard mouse to operate

These apps are implemented in Demo and can be opened from the menu bar on the left side of the screen, in order:

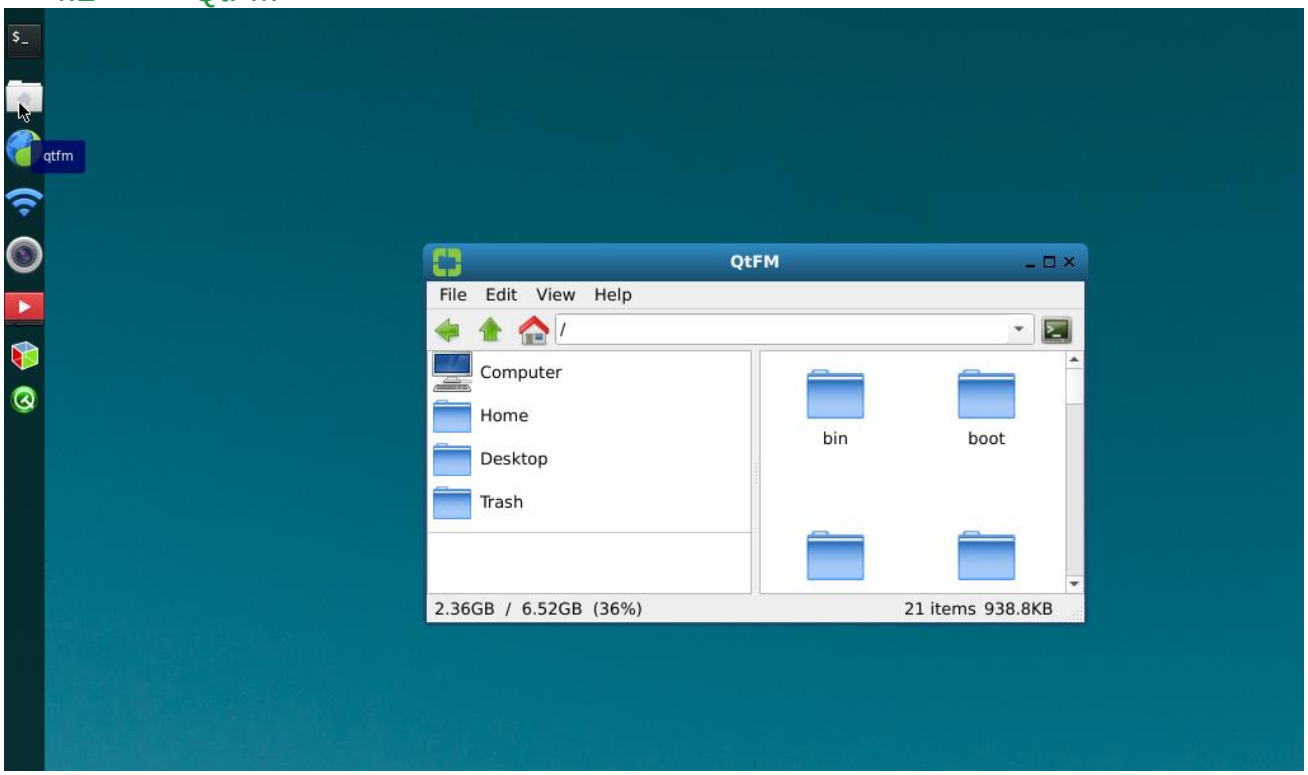
- Wayland Terminal
- QtFM
- Chromium
- WiFi-Config
- Camera
- Video
- 3D Example
- QT Examples

4.1 Wayland Terminal



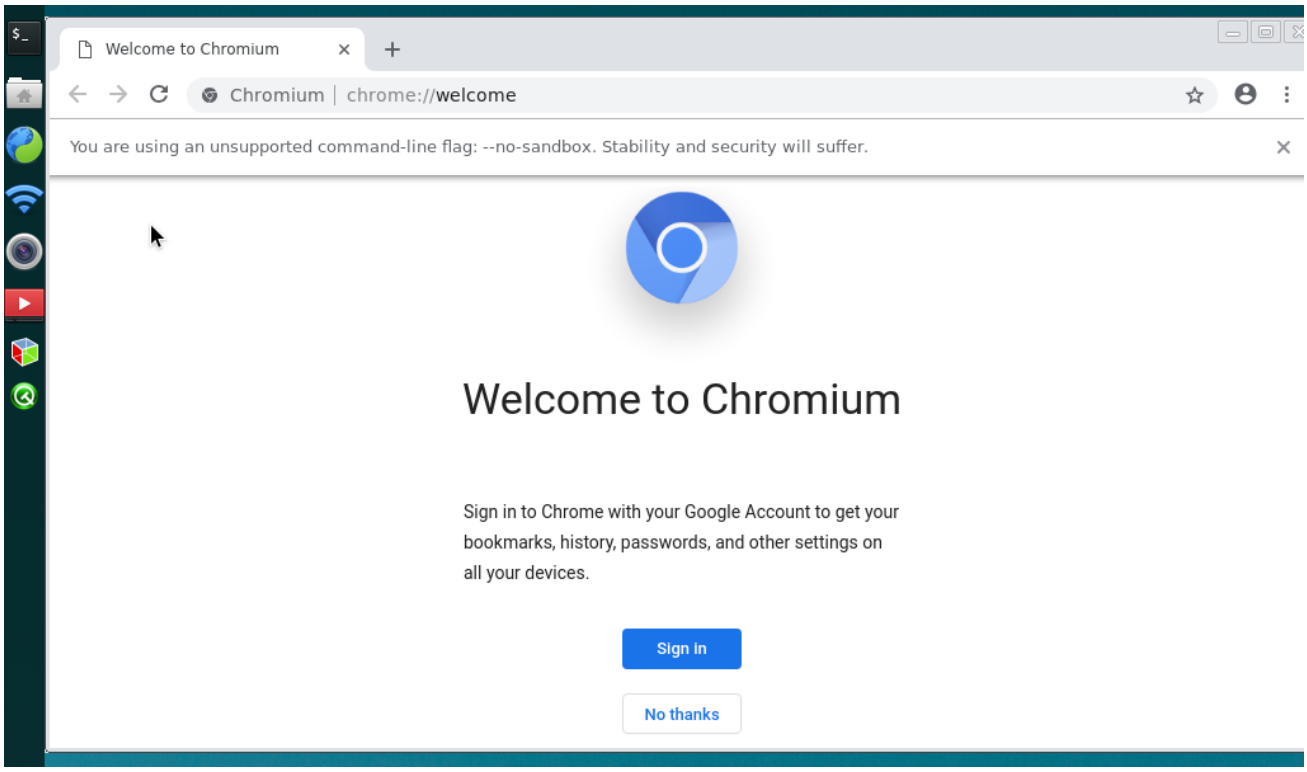
Terminal program, can be connected to the keyboard and mouse operation

4.2 QtFM



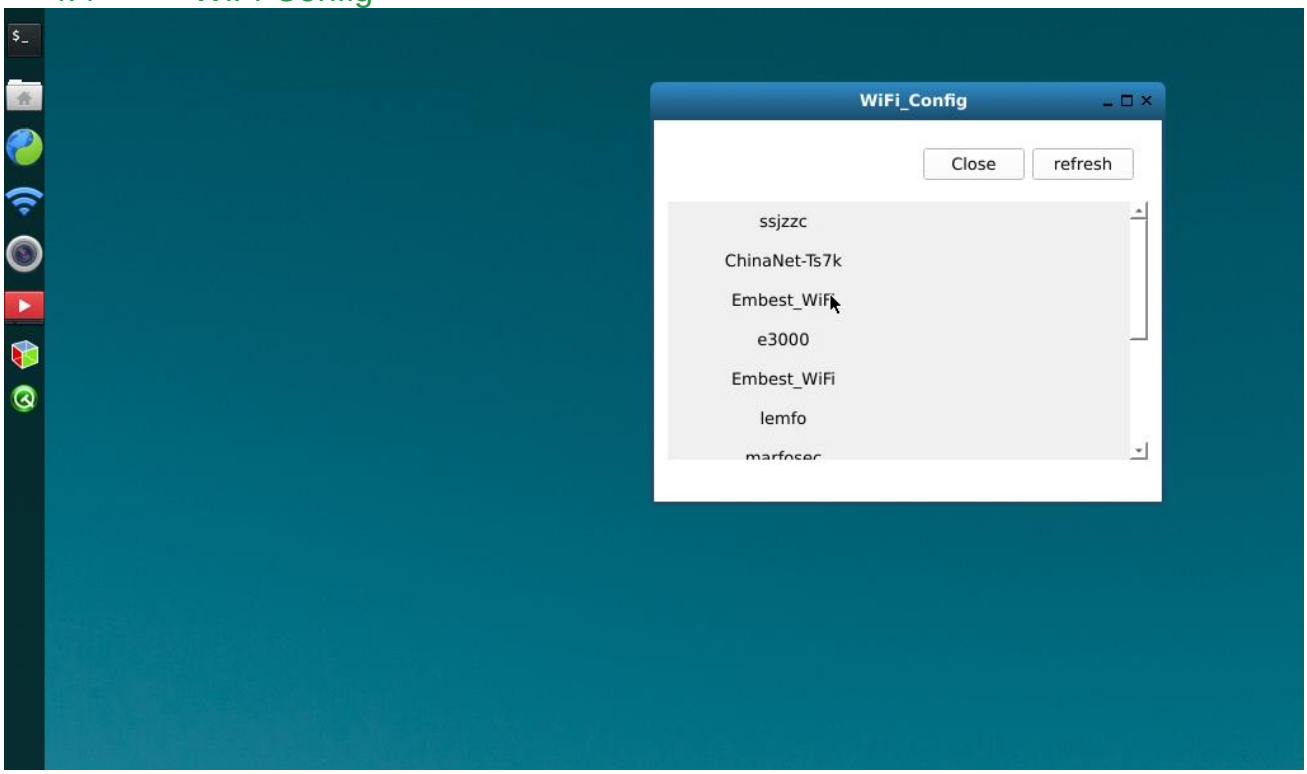
QT-based file manager, you can view the system's files, file properties and other information, copy, cut, paste, delete, compress and other operations.

4.3 Chromium

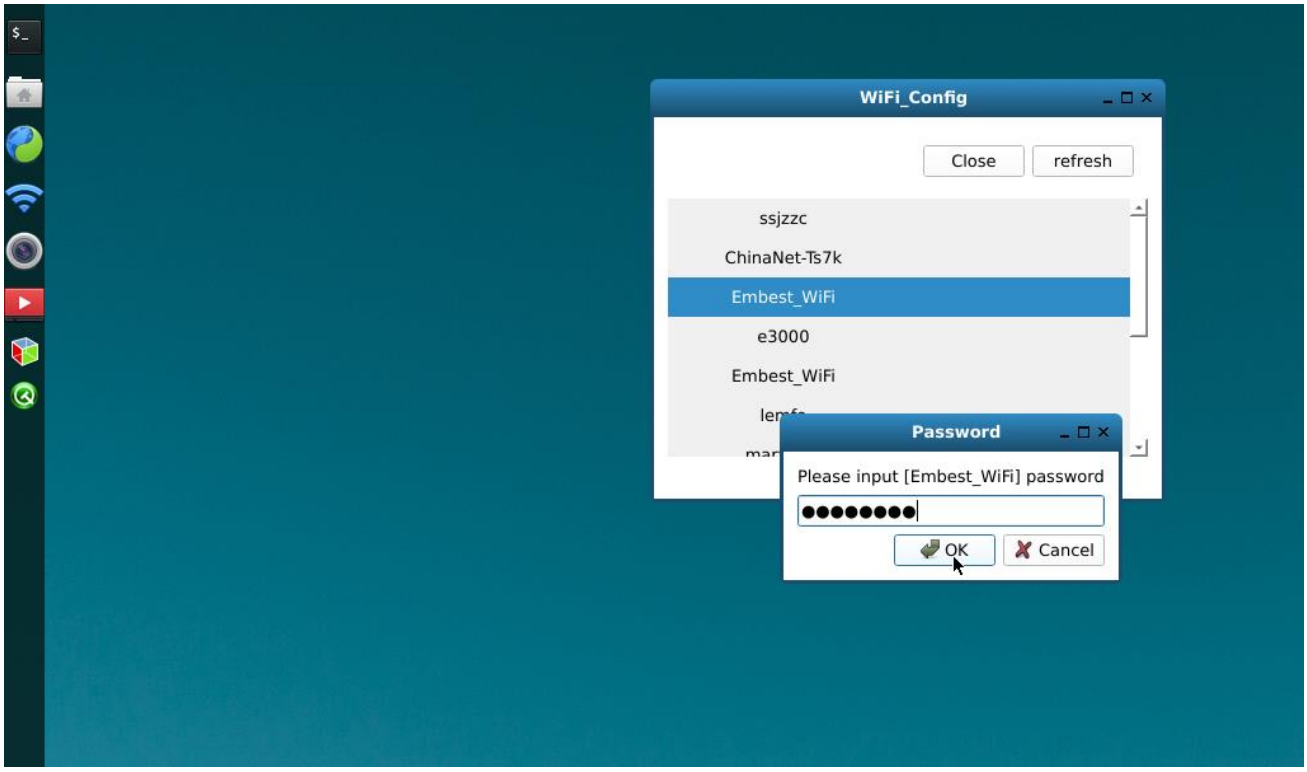


Once connected to the Internet, you can access the web page through this program.

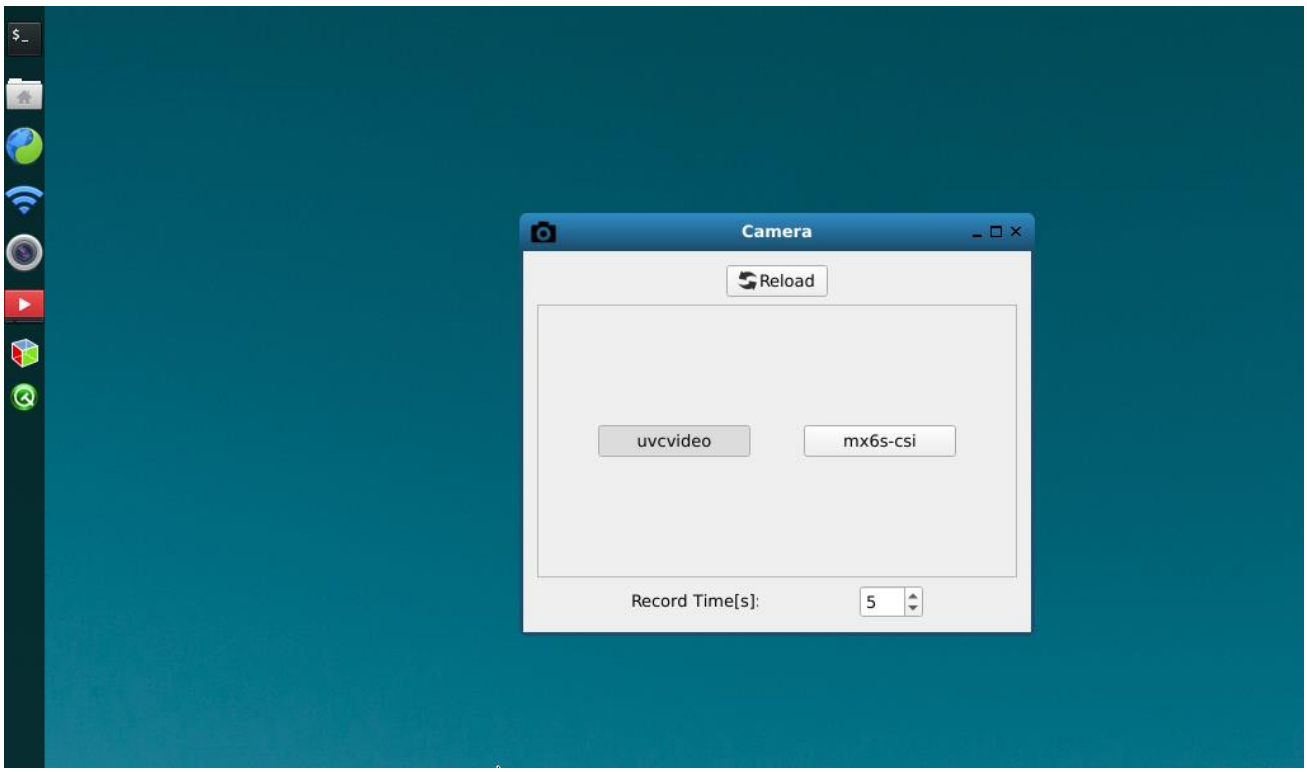
4.4 WiFi-Config



When the WiFi-Config program is turned on, the Wi-Fi module will be turned on automatically and the on-board Gigabit network card will be turned off automatically. The system will scan the Wi-Fi network. Click on the WiFi SSID to enter your password to connect. Users can also disconnect from Wi-Fi through the program, refresh the Wi-Fi network, turn off Wi-Fi, turn on gigabit network cards, and more.



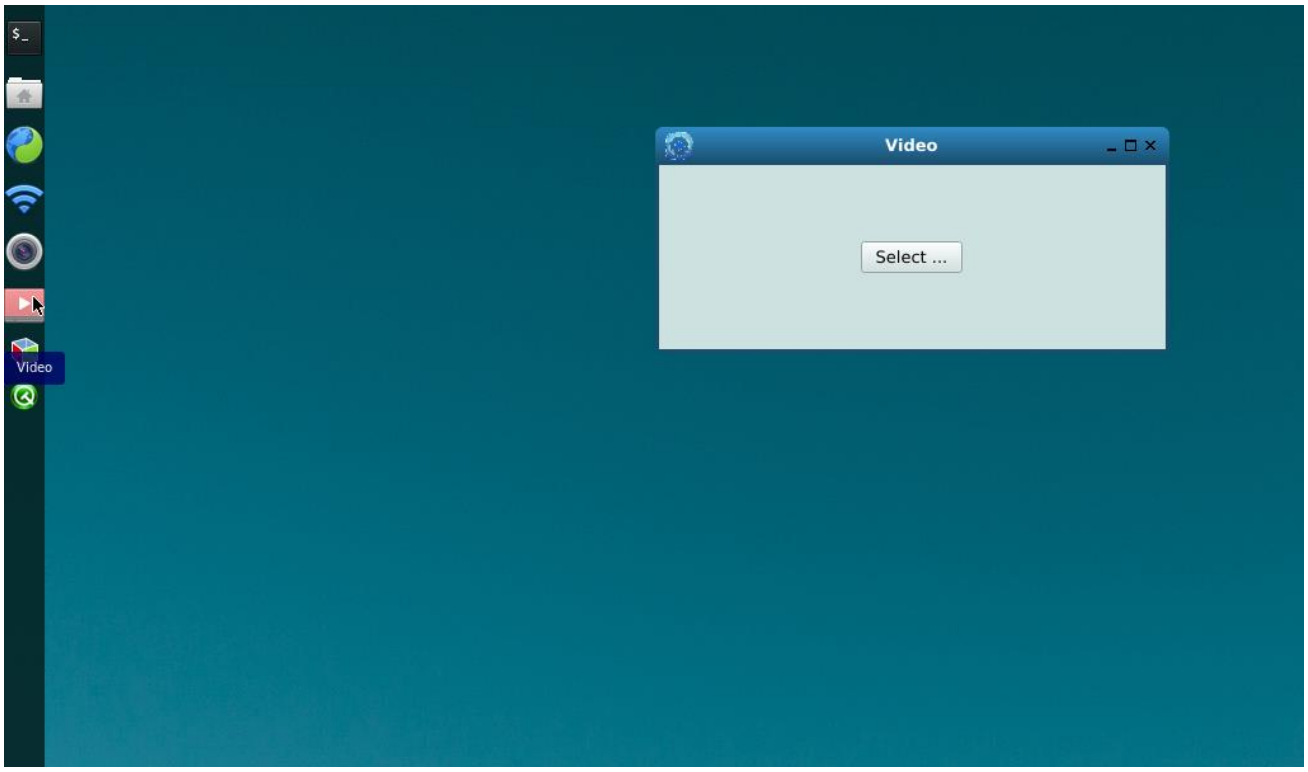
4.5 Camera

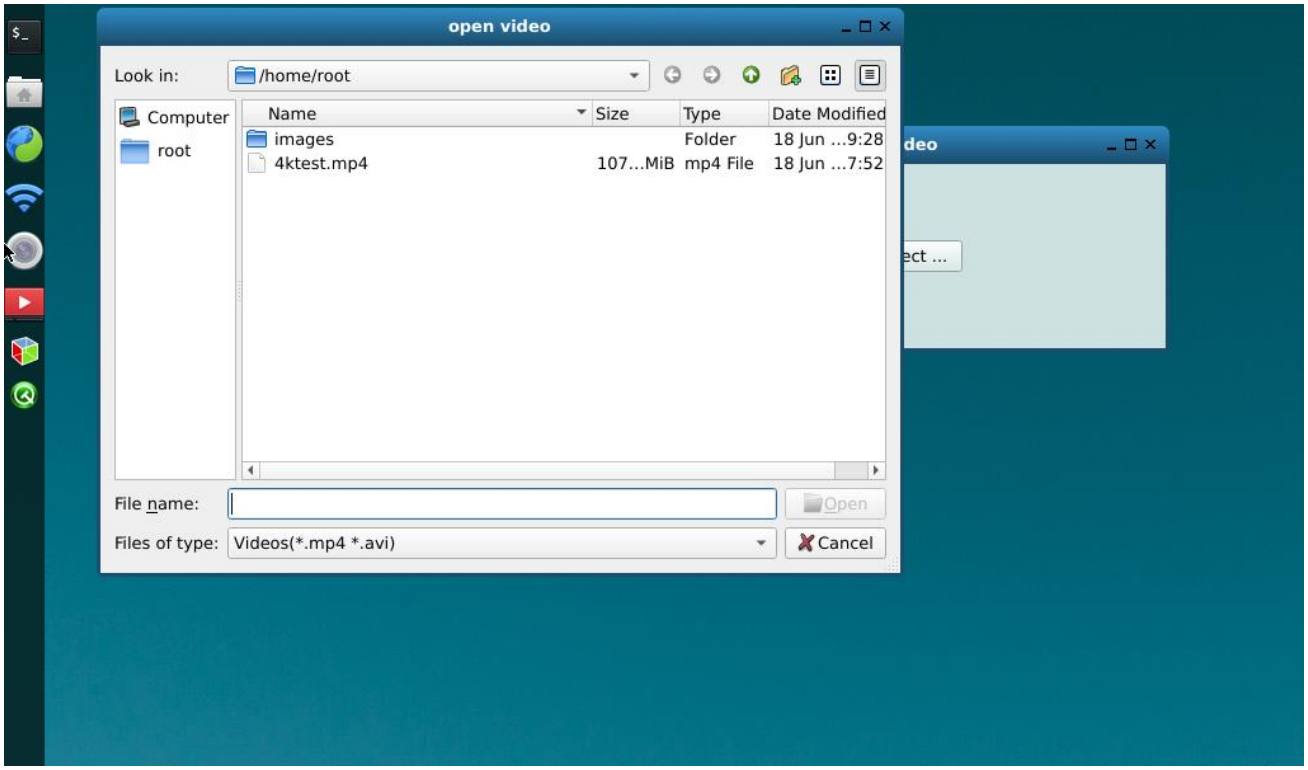


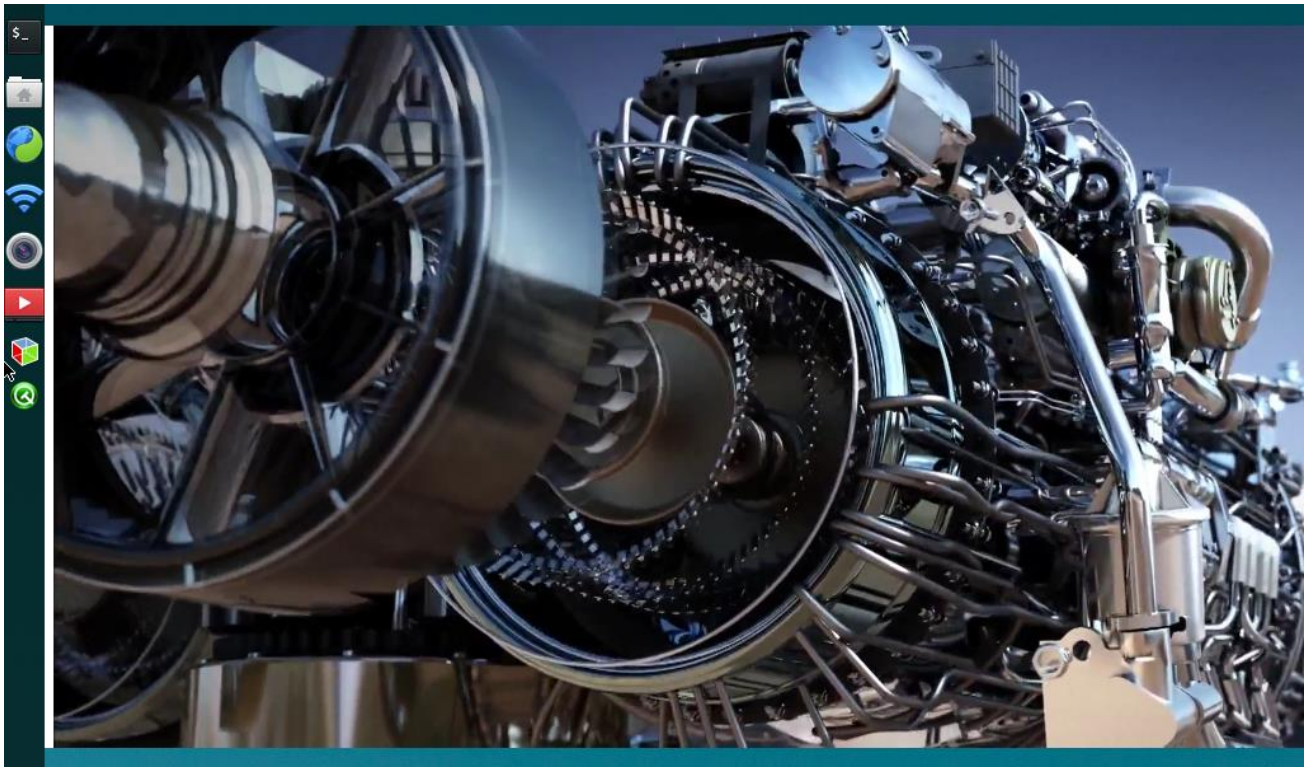
Camera app supports USB Camera, preview of MIPI-CSI Camera, take-up, recording mode, exactly the same as the Camera app in the Yocto system, please refer to the Camera section

4.6 Video

The Video program supports the playback of video files in mp4 and avi format. The maximum support resolution is 4K. Users can select the files to play

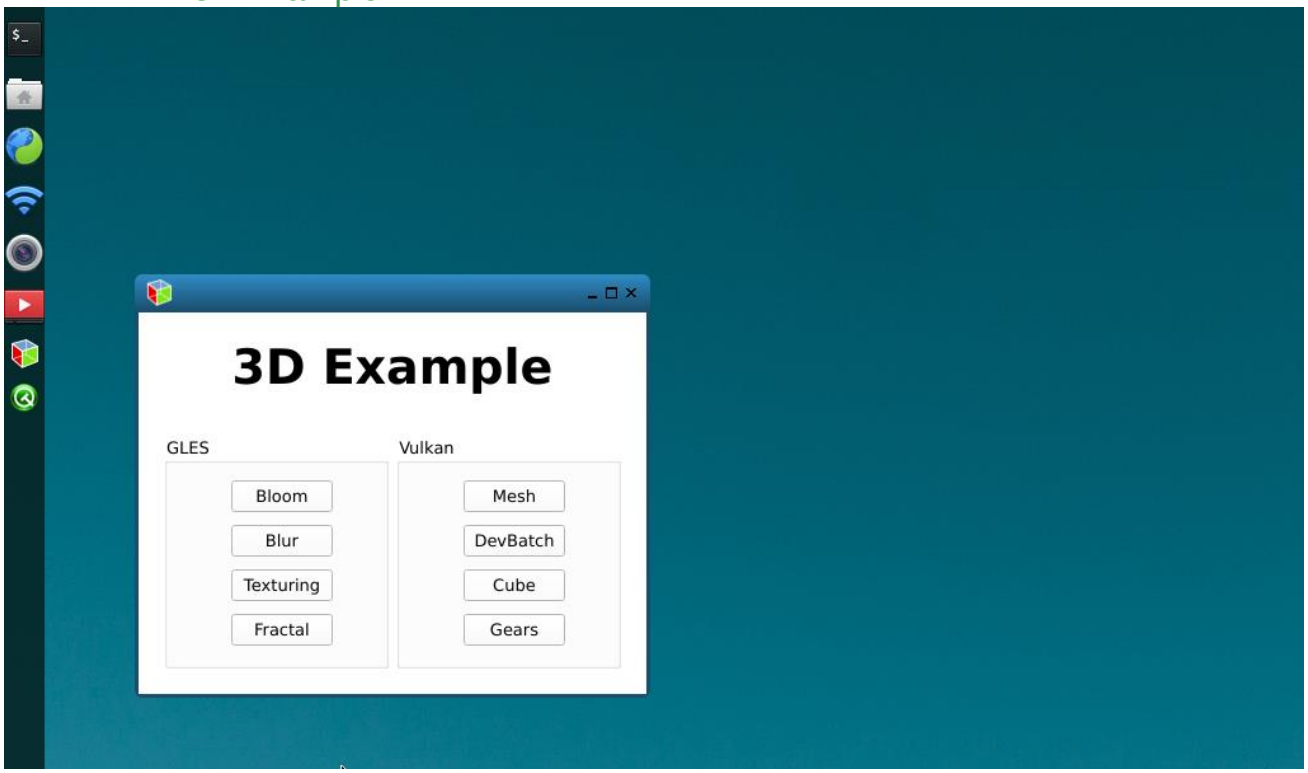






The video ends automatically and returns to the file selection page after the video playback.

4.7 3D Example

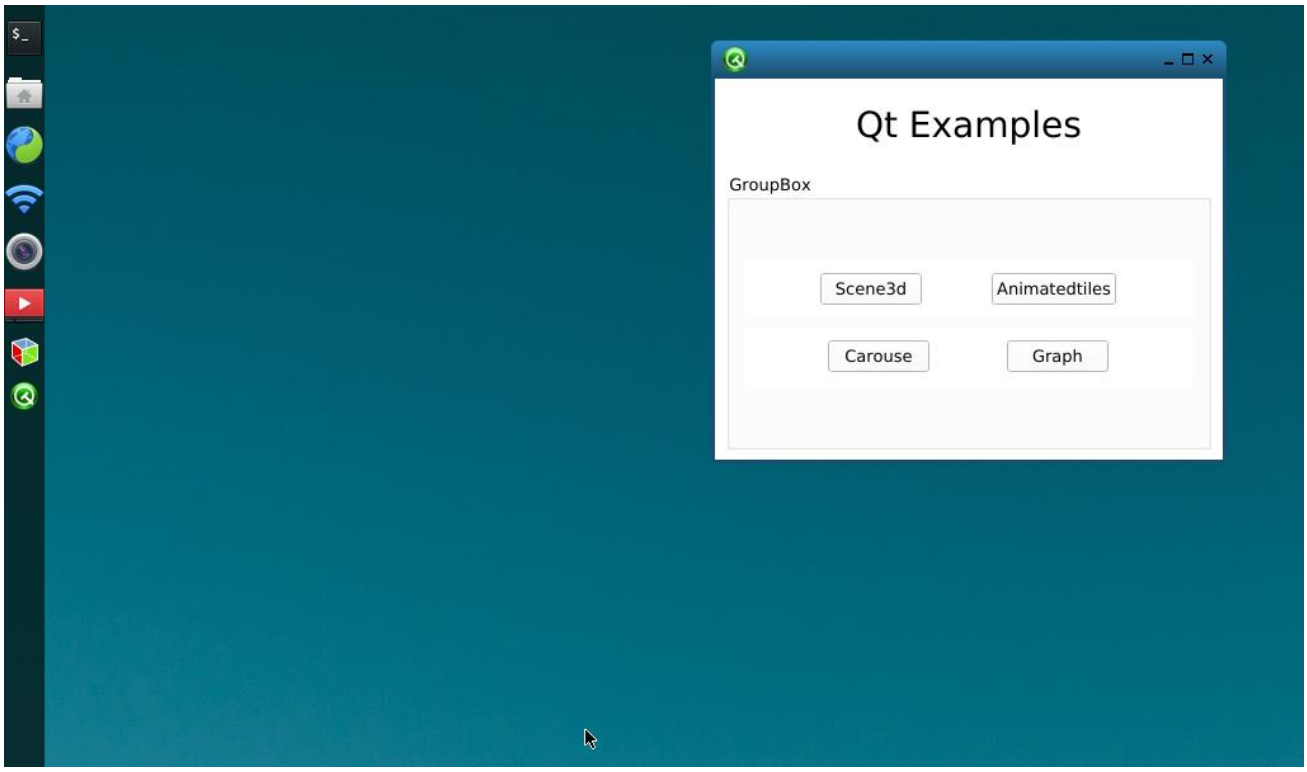


3D Example provides 8 3D test routines that you can click on the name of the example to open the app and press Esc to exit the app.

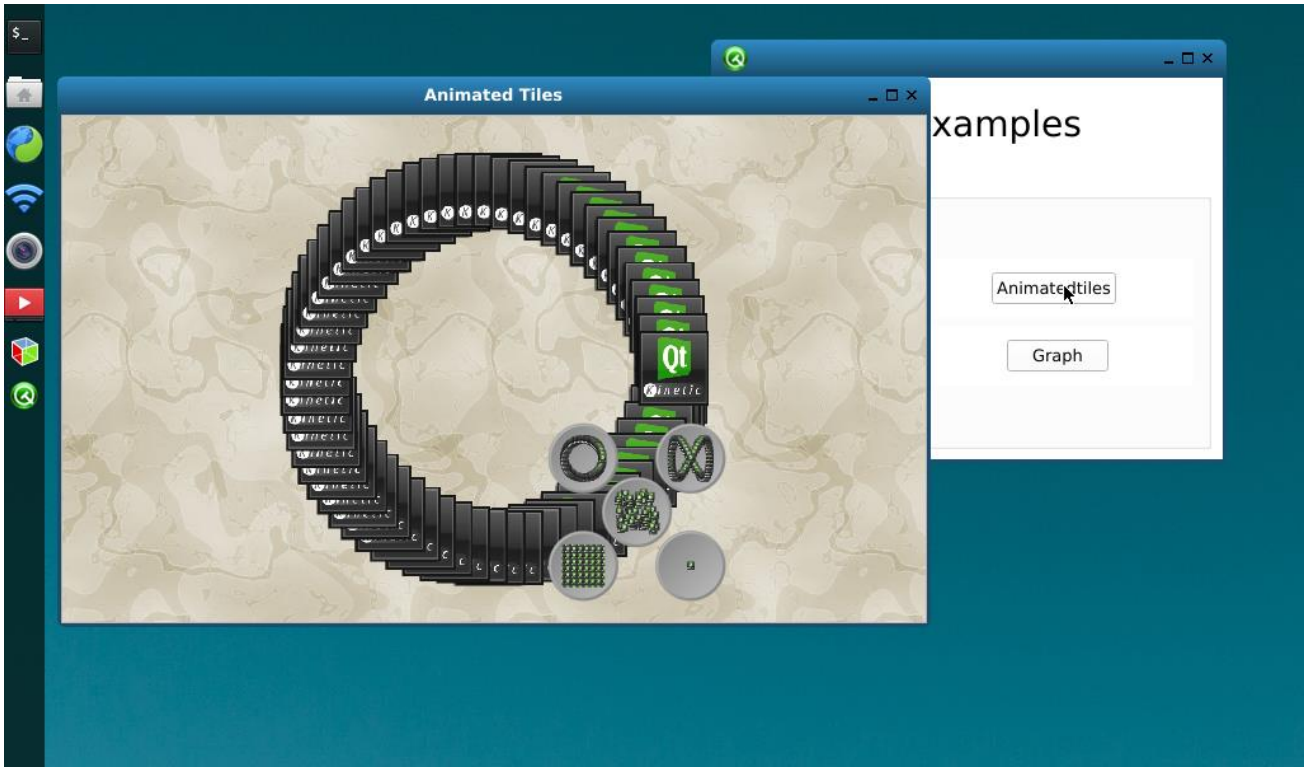
Note: Only one example can be opened at a time, closing the example with the keyboard's Esc key

4.8 QT Examples

QT Examples provides 4 QT test routines that can be opened by clicking on the name of the example, clicking the button in the example, etc., clicking the X button to exit the example



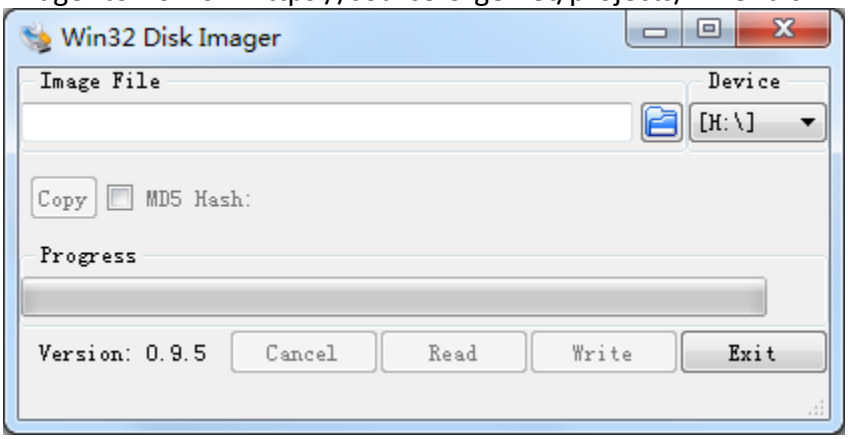
Note: Only one example can be opened at a time, close the example with the X button on the interface


Animated Tiles
xamples
Animatedtiles
Graph

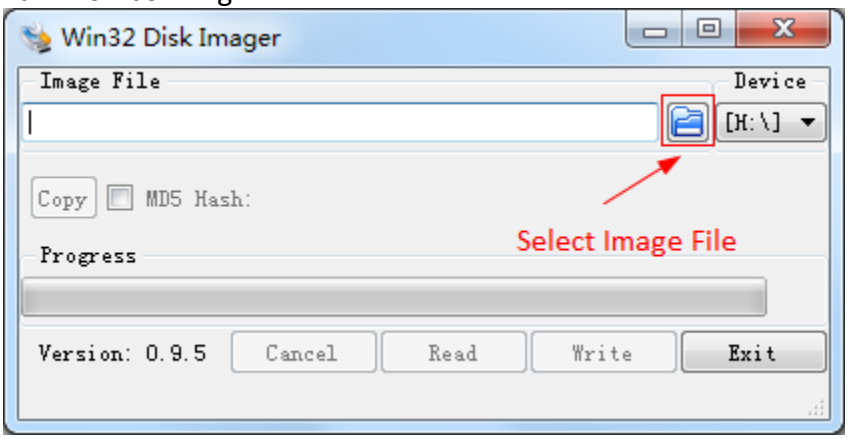
5 Burning and updating system images

5.1 Burn mirrors to SD cards in Windows environment

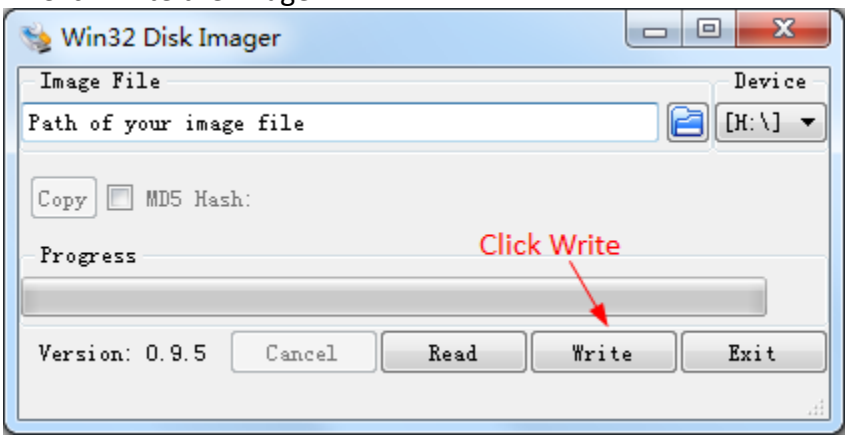
1. First, prepare an SD card that is not less than 8G
2. Then, https://sourceforge.net/projects/win32diskimager/ download and install Win32 Disk Imager to PC from https://sourceforge.net/projects/win32diskimager/



3. Select images that need to be burned, such as: AES-MC-SBC-IMX8M-G-Yocto-Image-SDcard-V1.0.1b02.img



4. Click write the image:



5.2 Burn mirrors to SD cards in Linux environment

In Ubuntu or Debian systems, mirrorimages can be burned to sD cards using the bmap-tool tool to publish the mirror AES-MC-SBC-IMX8M-G-Yocto-Image-SDcard-V1.0.1b02.img as an example:

1. Install bmap-tools tools

```
$ sudo apt install bmap-tools
```

2. Enter the following command on the command line to view the SD card number, in this case sdc

```
$ ls /dev/sd*
/dev/sda  /dev/sda2  /dev/sdb  /dev/sdb2  /dev/sdc  /dev/sdc2
/DEV/SDA1/dev/sda5/dev/sdb1/DEV/SDB5/DEV/SDC1
```

3. If the SD card is automatically mounted, you will also need to enter the following command to cancel the mount

```
$ sudo umount /dev/sdc1
$ sudo umount /dev/sdc2
```

4. Burn with the following commands

```
$ bmaptool Create-o burn. Map AES-MC-SBC-IMX8M-G-Yocto-Image-SDcard-V 1.0.1 b02. img
$ sudo bmaptool copy --bmap burn.map AES-MC-SBC-IMX8M-G-Yocto-Image-SDcard-
V1.0.1b02.img /dev/sdc
```

5.3 Update the mirror in EMMC

USB 0 (USB port below HUB1) supports burn-mirror mode. Connecting USB0 and PC before powering up the board, the board will enter burn mode, where the user can burn the mirror file to the development board via the uuu tool. SeeAES-MC-SBC-IMX8M-G EMMC Burning Guide

6 Appendix

6.1 Hardware

For more hardware description, please refer to theAES-MC-SBC-IMX8M-G Hardware User Manual

7 Revision History

Date	Version	Revision
03 Oct 19	01	Initial Release