



QUICK START GUIDE

VIA SOM-9X50-STK

Yocto 3.1 EVK



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Revision History

| Version | Date | Remarks |
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| 1.01 | 15/04/2022 | Updated introduction and product naming |
| 1.00 | 22/02/2022 | Initial release |

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1. Introduction

This Quick Start Guide provides an overview on how to boot the Yocto image for the VIA SOM-9X50-STK and configure the supported hardware functions in the build.

Note:

The VIA SOM-9X50-STK includes the VIA SOM-9X50 module and the VIA VAB-950 reference carrier board.

The VIA SOM-9X50-STK Yocto 3.1 EVK is developed based on the MediaTek Yocto 3.1 BSP, and it enables the hardware features of the VIA SOM-9X50-STK.

1.1 EVK Package Contents

There are three folders in the package listed as below.

| Firmware folder | Description |
|--|-------------------|
| VIA_SOM-9X50-STK_Yocto_3.1_EVK.zip | Yocto image |
| Document folder | Description |
| VIA_SOM-9X50-STK_Yocto_3.1_EVK_Quick_Start_Guide.pdf | Quick Start Guide |
| Tool folder | Description |
| VIA_Android_USB_Driver.zip | VIA USB driver |

1.1.1 Firmware Folder Contents

VIA_SOM-9X50-STK_Yocto_3.1_EVK.zip: Contains the precompiled Yocto image for evaluating the VIA SOM-9X50-STK.

1.1.2 Document Folder Contents

VIA_SOM-9X50-STK_Yocto_3.1_EVK_Quick_Start_Guide.pdf: This Quick Start Guide provides an overview on how to boot the Yocto image for the VIA SOM-9X50-STK and configure the supported hardware functions in the build.

1.1.3 Tool Folder Contents

VIA_Android_USB_Driver.zip: VIA USB driver.

1.2 Version Information and Supported Features

- Kernel version: 4.14.141
- Evaluation image: Yocto 3.1
- Development based on MediaTek Yocto 3.1 BSP
- Supports eMMC boot
- Supports HDMI display
- Supports HDMI audio output
- Supports MIPI DSI capacitive touch panel
 - AUO 10.1 B101UAN01.7 (1920x1200)
 - eGalax I2C touch
- Supports COM1 as RS-232 mode (TX/RX) and COM as debug port
- Supports two 10/100Mbps Ethernet ports
- Supports MediaTek MT6358 Headphone and Mic-in
- Supports MediaTek MT7668 Wi-Fi 802.11ac and Bluetooth 5.0
- Supports VIA EMIO-2574 (SIM7600JC-H) 4G LTE mobile broadband miniPCIe module
- Supports MIPI CSI OV5648 camera module
- Supports MediaTek NeuroPilot AI APU hardware acceleration

2. Image Installation

This section explains the setup requirements for booting from the eMMC.

The precompiled images are provided in the "Firmware" folder.

2.1 Installing with the Fastboot Mode

The first step is to prepare the "fastboot tool" and install the "VIA USB driver" into your Windows 10 host machine.

To get the "fastboot tool" for Windows, please refer to the "SDK Platform Tools release notes" chapter on the Android developer website (<https://developer.android.com/studio/releases/platform-tools>).

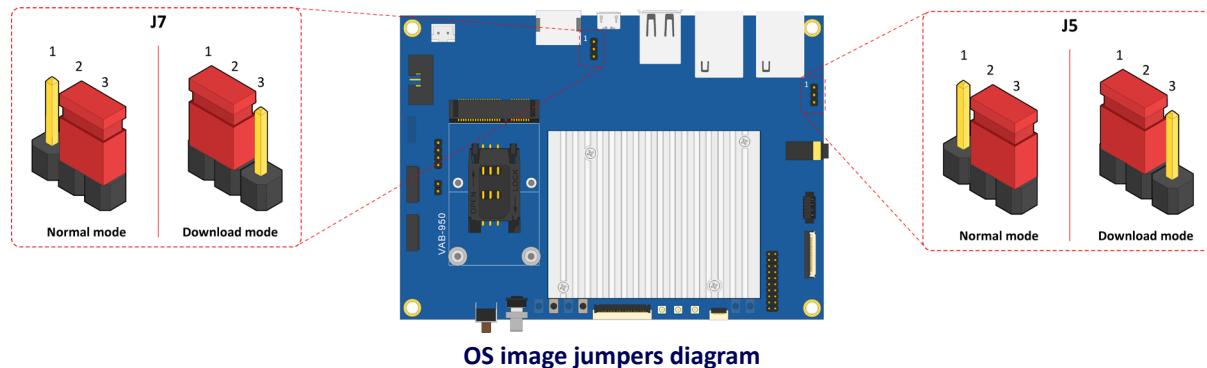
To install the "VIA USB driver", right-click on the mouse button to install the "android_winusb". When finished, it will show "The operation completed successfully".

Then connect the Windows 10 host machine and the VIA SOM-9X50-STK through the Micro USB 2.0 port using the Micro USB cable.



Micro USB 2.0 port diagram

Next, on the VIA SOM-9X50-STK, set the two OS image jumpers (J7 and J5) to download mode as shown in the diagram below.



OS image jumpers diagram

| J5 and J7 Settings | Pin 1 | Pin 2 | Pin 3 |
|-----------------------|-------|-------|-------|
| Normal mode (default) | Open | Short | Short |
| Download mode | Short | Short | Open |

OS image jumper settings

Plug in the AC-to-DC power adapter to power on the VIA SOM-9X50-STK.

The VIA SOM-9X50-STK will stop at "fastboot: processing commands" as shown in the debug console below.

```
[1202] [USB] HS is detected  
[1202] [USB] USB: speed HS!!  
[1202] [USB] [INTR] Reset  
[1591] [USB] USB: speed HS!!  
[1591] fastboot: processing commands
```

Fastboot Mode



Note:

Make sure the Windows 10 host machine detects the VIA SOM-9X50-STK as an Android device.

Extract the VIA_SOM-9X50-STK_Yocto_3.1_EVK.zip file on your Windows 10 host machine.

To install the image, use the following command:

```
D:\VIA_SOM-9X50-STK_Yocto_3.1_EVK>set PATH=D:\platform-tools;%PATH%
D:\VIA_SOM-9X50-STK_Yocto_3.1_EVK>viaflash.exe
+++++
VIAFlash version v1.0.0
(built: Feb 10 2022 09:53:25 UTC)

+++++
To let this tool work well, please
ensure the system is at fastboot mode!

If yes, please press any key to continue.
+++++
>> Image OS is "Yocto"

Addr: [0x0 - 0x100000] size: 0x100000
Addr: [0x0 - 0x7ff]
Addr: [0x0 - 0x8000] size: 0x8000
Addr: [0x0 - 0x3f]
Addr: [0x8000 - 0x208000] size: 0x200000
Addr: [0x40 - 0x103f]
Addr: [0x208000 - 0x408000] size: 0x200000
Addr: [0x1040 - 0x203f]
Addr: [0x408000 - 0x2408000] size: 0x2000000
Addr: [0x2040 - 0x1203f]
Addr: [0x2408000 - 0x4408000] size: 0x2000000
Addr: [0x12040 - 0x2203f]
Addr: [0x4408000 - 0x5308000] size: 0xf00000
Addr: [0x22040 - 0x2983f]
Addr: [0x5308000 - 0x6208000] size: 0xf00000
Addr: [0x29840 - 0x3103f]
Addr: [0x6208000 - 0x7108000] size: 0xf00000
Addr: [0x31040 - 0x3883f]
Addr: [0x7108000 - 0x7208000] size: 0x100000
Addr: [0x38840 - 0x3903f]
Addr: [0x7208000 - 0x7308000] size: 0x100000
Addr: [0x39040 - 0x3983f]
Addr: [0x7308000 - 0x7408000] size: 0x100000
Addr: [0x39840 - 0x3a03f]
Addr: [0x7408000 - 0x7908000] size: 0x500000
Addr: [0x3a040 - 0x3c83f]
Addr: [0x7908000 - 0x7e08000] size: 0x500000
Addr: [0x3c840 - 0x3f03f]
Addr: [0x7e08000 - 0x4c208000] size: 0x44400000
Addr: [0x3f040 - 0x26103f]
Addr: [0x4c208000 - 0x90608000] size: 0x44400000
Addr: [0x261040 - 0x48303f]
Addr: [0x90608000 - 0x9128e400] size: 0xc86400
Addr: [0x483040 - 0x489471]
Addr: [0x9128e400 - 0x9128e400] size: 0x0
Addr: [0x489472 - 0x489471]
Addr: [0xffff0080 - 0xffff8080] size: 0x8000
Addr: [0x7fff80 - 0x7fff8bf]
+++++
MBR : OK
bl2.img : OK
boot.img : OK
boot.img : OK
cam_vpu_a.img : OK
cam_vpu_b.img : OK
cam_vpu_c.img : OK
spmfw.img : OK
sspm-fit.img : OK
sspm-fit.img : OK
tee.img : OK
tee.img : OK
system.ext4 : OK
```

```
system.ext4          : OK
logo.bmp            : OK
userdata.ext4       : OK
+++++
=====
Start to flash images --> Yocto
=====
Sending 'preloader' (283 KB)           OKAY [ 0.046s]
Writing 'preloader'                   OKAY [ 0.016s]
Finished. Total time: 0.180s

Erasing 'pgpt'                      OKAY [ 0.016s]
Finished. Total time: 0.024s

Sending 'pgpt' (17 KB)                OKAY [ 0.026s]
Writing 'pgpt'                       OKAY [ 0.009s]
Finished. Total time: 0.068s

-----
Platform will be rebooted and continue soon,
please wait for flash completed
-----
Rebooting into bootloader             OKAY [ 0.004s]
Finished. Total time: 0.006s

< waiting for any device >
(bootloader) display: hdmi
Warning: skip copying boot image avb footer (boot partition size: 0, boot image size: 20877906).
Sending 'boot_a' (20388 KB)           OKAY [ 1.033s]
Writing 'boot_a'                     OKAY [ 0.453s]
Finished. Total time: 1.608s

(bootloader) display: hdmi
Warning: skip copying boot image avb footer (boot partition size: 0, boot image size: 20877906).
Sending 'boot_b' (20388 KB)           OKAY [ 0.864s]
Writing 'boot_b'                     OKAY [ 0.457s]
Finished. Total time: 1.358s

(bootloader) display: hdmi
(bootloader) display: hdmi
(bootloader) display: hdmi
Sending 'cam_vpu_a' (1614 KB)        OKAY [ 0.072s]
Writing 'cam_vpu_a'                  OKAY [ 0.040s]
Finished. Total time: 0.130s

(bootloader) display: hdmi
(bootloader) display: hdmi
(bootloader) display: hdmi
Sending 'cam_vpu_b' (14647 KB)       OKAY [ 0.620s]
Writing 'cam_vpu_b'                  OKAY [ 0.321s]
Finished. Total time: 0.963s

(bootloader) display: hdmi
(bootloader) display: hdmi
(bootloader) display: hdmi
Sending 'cam_vpu_c' (135 KB)         OKAY [ 0.008s]
Writing 'cam_vpu_c'                  OKAY [ 0.008s]
Finished. Total time: 0.043s
```

```
(bootloader)    display: hdmi
(bootloader)    display: hdmi
(bootloader)    display: hdmi
Sending 'spmfw' (38 KB)                                OKAY [  0.003s]
Writing 'spmfw'                                         OKAY [  0.005s]
Finished. Total time: 0.030s

(bootloader)    display: hdmi
(bootloader)    display: hdmi
(bootloader)    display: hdmi
Sending 'sspm_a' (486 KB)                               OKAY [  0.022s]
Writing 'sspm_a'                                         OKAY [  0.015s]
Finished. Total time: 0.056s

(bootloader)    display: hdmi
(bootloader)    display: hdmi
(bootloader)    display: hdmi
Sending 'sspm_b' (486 KB)                               OKAY [  0.023s]
Writing 'sspm_b'                                         OKAY [  0.016s]
Finished. Total time: 0.057s

(bootloader)    display: hdmi
(bootloader)    display: hdmi
(bootloader)    display: hdmi
Sending 'tee_a' (1021 KB)                               OKAY [  0.045s]
Writing 'tee_a'                                         OKAY [  0.026s]
Finished. Total time: 0.090s

(bootloader)    display: hdmi
(bootloader)    display: hdmi
(bootloader)    display: hdmi
Sending 'tee_b' (1021 KB)                               OKAY [  0.045s]
Writing 'tee_b'                                         OKAY [  0.027s]
Finished. Total time: 0.094s

(bootloader)    display: hdmi
(bootloader)    display: hdmi
Invalid sparse file format at header magic
(bootloader)    display: hdmi
Sending sparse 'system_a' 1/12 (64504 KB)             OKAY [  2.727s]
Writing 'system_a'                                     OKAY [  1.459s]
Sending sparse 'system_a' 2/12 (57428 KB)             OKAY [  2.429s]
Writing 'system_a'                                     OKAY [  1.385s]
Sending sparse 'system_a' 3/12 (65532 KB)             OKAY [  2.768s]
Writing 'system_a'                                     OKAY [  1.444s]
Sending sparse 'system_a' 4/12 (65532 KB)             OKAY [  2.769s]
Writing 'system_a'                                     OKAY [  1.452s]
Sending sparse 'system_a' 5/12 (64588 KB)             OKAY [  2.731s]
Writing 'system_a'                                     OKAY [  1.445s]
Sending sparse 'system_a' 6/12 (65532 KB)             OKAY [  2.768s]
Writing 'system_a'                                     OKAY [  1.429s]
Sending sparse 'system_a' 7/12 (65532 KB)             OKAY [  2.770s]
Writing 'system_a'                                     OKAY [  1.442s]
Sending sparse 'system_a' 8/12 (65532 KB)             OKAY [  2.770s]
Writing 'system_a'                                     OKAY [  1.454s]
Sending sparse 'system_a' 9/12 (65020 KB)             OKAY [  2.748s]
Writing 'system_a'                                     OKAY [  1.424s]
Sending sparse 'system_a' 10/12 (65532 KB)            OKAY [  2.769s]
Writing 'system_a'                                     OKAY [  1.450s]
Sending sparse 'system_a' 11/12 (65532 KB)            OKAY [  2.779s]
Writing 'system_a'                                     OKAY [  1.432s]
Sending sparse 'system_a' 12/12 (6116 KB)              OKAY [  0.263s]
Writing 'system_a'                                     OKAY [  0.149s]
Finished. Total time: 47.460s

(bootloader)    display: hdmi
(bootloader)    display: hdmi
Invalid sparse file format at header magic
(bootloader)    display: hdmi
Sending sparse 'system_b' 1/12 (64504 KB)             OKAY [  2.727s]
Writing 'system_b'                                     OKAY [  1.465s]
Sending sparse 'system_b' 2/12 (57428 KB)             OKAY [  2.427s]
```

```

Writing 'system_b'
Sending sparse 'system_b' 3/12 (65532 KB)
Writing 'system_b'
Sending sparse 'system_b' 4/12 (65532 KB)
Writing 'system_b'
Sending sparse 'system_b' 5/12 (64588 KB)
Writing 'system_b'
Sending sparse 'system_b' 6/12 (65532 KB)
Writing 'system_b'
Sending sparse 'system_b' 7/12 (65532 KB)
Writing 'system_b'
Sending sparse 'system_b' 8/12 (65532 KB)
Writing 'system_b'
Sending sparse 'system_b' 9/12 (65020 KB)
Writing 'system_b'
Sending sparse 'system_b' 10/12 (65532 KB)
Writing 'system_b'
Sending sparse 'system_b' 11/12 (65532 KB)
Writing 'system_b'
Sending sparse 'system_b' 12/12 (6116 KB)
Writing 'system_b'
Finished. Total time: 47.431s

(bootloader)    display: hdmi
(bootloader)    display: hdmi
(bootloader)    display: hdmi
Sending 'logo' (6750 KB)                                OKAY [  0.287s]
Writing 'logo'                                         OKAY [  0.151s]
Finished. Total time: 0.463s

(bootloader)    display: hdmi
(bootloader)    display: hdmi
(bootloader)    display: hdmi
Sending 'userdata' (22528 KB)                           OKAY [  0.952s]
Writing 'userdata'                                     OKAY [  0.500s]
Finished. Total time: 1.477s

=====
Finished. Re-Starting system ...
Rebooting                                              OKAY [  0.001s]
Finished. Total time: 0.004s

D:\VIA_SOM-9X50-STK_Yocto_3.1_EVK>

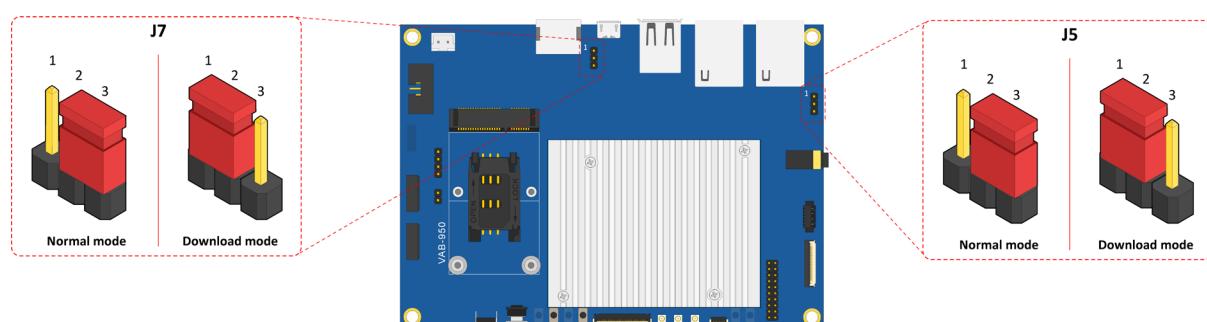
```

If you have already installed the image, use the following command to enter the Fastboot Mode on your Windows 10 host machine.

```
D:\platform-tools>adb reboot bootloader
```

Unplug the AC-to-DC power adapter to power off the VIA SOM-9X50-STK.

Set the two OS image jumpers (J7 and J5) back to the normal mode setting.



OS image jumpers diagram

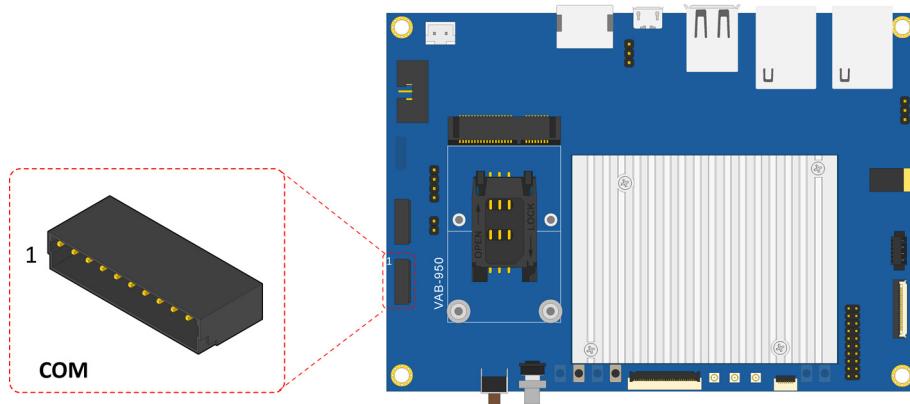
Unplug the Micro USB cable, press the Power Button for 2 seconds, then release it to power on the VIA SOM-9X50-STK. When the boot process has completed, you will see the Yocto 3.1 desktop.

3. Hardware Functions

This section explains how to enable and test the hardware functions precompiled in the Yocto 3.1 EVK including using the debug console.

3.1 Using the Debug Console

The first step is to connect the host machine and the VIA SOM-9X50-STK through the COM connector labeled as "COM". Use a serial port communication program such as PuTTY or Tera Term to connect the debug console. Set the console Baud Rate to "921600".



COM connector diagram

Next, power on the VIA SOM-9X50-STK to initiate the boot process.

When the boot process has completed, log in to the debug console. The default account is "username: root / password: root".

3.2 Changing Kernel Debug Level

To disable kernel messages, modify the debug level using the following command:

```
root@aiv8385-linux:~# echo 3 > /proc/sys/kernel/printk
```

3.3 Checking BSP Version

To check the BSP version, use the following command:

```
root@aiv8385-linux:~# cat /proc/version
```

3.4 DVFS

To verify the DVFS (Dynamic Voltage Frequency Scaling) function and list all the supported features, use the following commands:

```
root@aiv8385-linux:~# ls -al /sys/devices/system/cpu/cpu0/cpufreq/
total 0
-rwxr-xr-x 1 root root 4096 Dec 31 10:21 affected_cpus
-rwxr-xr-x 1 root root 4096 Dec 31 10:21 cpufreq_cur_freq
-rwxr-xr-x 1 root root 4096 Dec 31 10:21 cpufreq_max_freq
-rwxr-xr-x 1 root root 4096 Dec 31 10:21 cpufreq_min_freq
-rwxr-xr-x 1 root root 4096 Dec 31 10:21 cpufreq_transition_latency
-rwxr-xr-x 1 root root 4096 Dec 31 10:21 related_cpus
-rwxr-xr-x 1 root root 4096 Dec 31 10:21 scaling_available_frequencies
-rwxr-xr-x 1 root root 4096 Dec 31 10:21 scaling_available_governors
-rwxr-xr-x 1 root root 4096 Dec 31 10:21 scaling_cur_freq
-rwxr-xr-x 1 root root 4096 Dec 31 10:21 scaling_driver
-rwxr-xr-x 1 root root 4096 Dec 31 10:21 scaling_governor
-rwxr-xr-x 1 root root 4096 Dec 31 10:21 scaling_max_freq
-rwxr-xr-x 1 root root 4096 Dec 31 10:21 scaling_min_freq
-rwxr-xr-x 1 root root 4096 Dec 31 10:21 scaling_setspeed
drwxr-xr-x 2 root root 0 Dec 31 10:21 stats
```

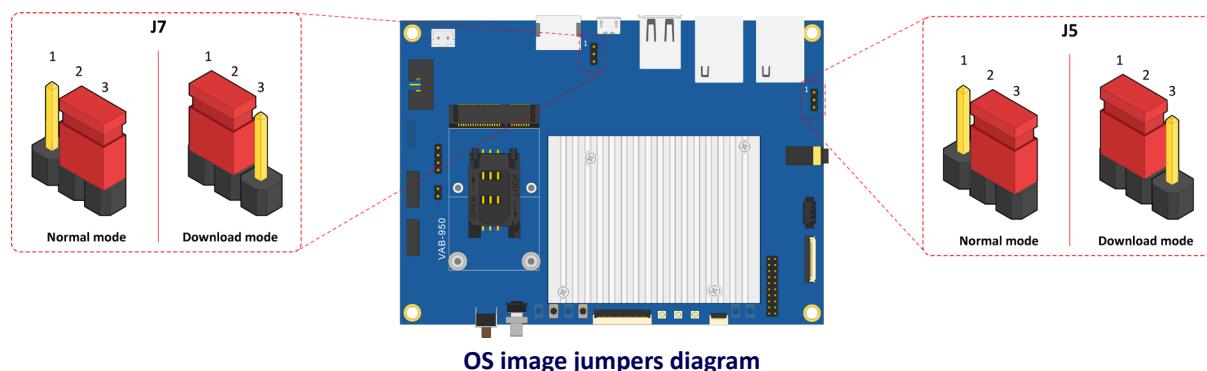
To check the supported and current CPU frequency, use the following commands:

```
:~# cat /sys/devices/system/cpu/cpu0/cpufreq/scaling_available_frequencies
1989000 1924000 1846000 1781000 1716000 1677000 1625000 1586000 1508000 1417000 1326000
1248000 1131000 1014000 910000 793000
:~# cat /sys/devices/system/cpu/cpu0/cpufreq/cpuinfo_cur_freq
793000
```

3.5 Display

The VIA SOM-9X50-STK supports a choice of HDMI and LCD Panel display devices. To set the display device, first connect the Windows 10 host machine and the VIA SOM-9X50-STK through the Micro USB 2.0 port using a Micro USB cable.

Then set the two OS image jumpers (J7 and J5) to the download mode.



Plug in the AC-to-DC power adapter to power on the VIA SOM-9X50-STK.

Use the following command to enter the Fastboot Mode.

```
root@aiv8385-linux:~# reboot bootloader
```

Make sure there is a "fastboot: processing commands" message in the debug console.

Next, run the cmd.exe on your Windows 10 host machine.

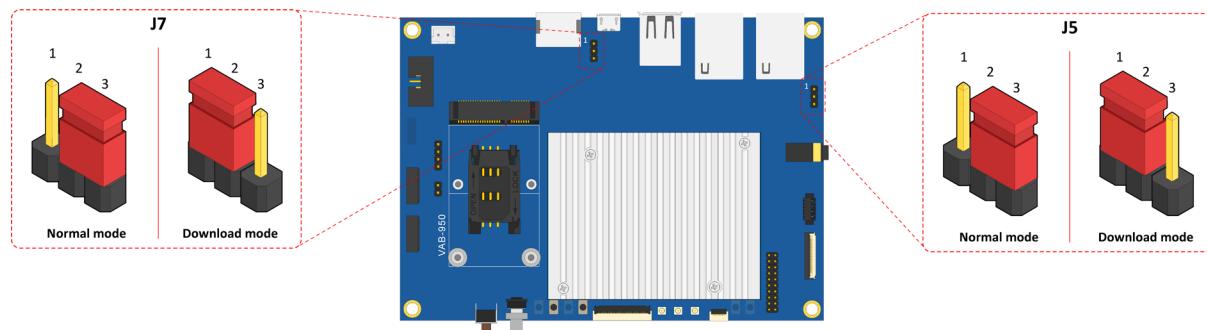
Use the fastboot.exe to set the display device by using the following commands:

```
D:\platform-tools>fastboot.exe oem display dsi
D:\platform-tools>fastboot.exe oem display hdmi
```

Use the following command to check the current display device. In the example below, the current display device is the LCD panel output.

```
D:\platform-tools>fastboot.exe getvar all
 bootloader) display: dsi
 bootloader) is-userspace: no
 bootloader) max-download-size: 0x4000000
 bootloader) version: 0.5
 all: Done!!
 Finished. Total time: 0.009s
```

Power off the VIA SOM-9X50-STK and set the two OS image jumpers (J7 and J5) back to the normal mode setting.



OS image jumpers diagram

Unplug the Micro USB cable, and then power on the VIA SOM-9X50-STK.

When the boot process has completed, the LCD panel output will be set as the display device



Note:

The default display device is HDMI output. After changing the display device, you must restart the VIA SOM-9X50-STK.

To control the LCD backlight, use the following commands:

```
root@aiv8385-linux:~# cd /sys/devices/platform/backlight_lcd0/backlight/backlight_lcd0/
root@aiv8385-linux:~# cat max_brightness
16
root@aiv8385-linux:~# echo 16 > brightness
```



Note:

There are only 17 levels (0~16) for the LCD backlight control.

3.6 Video Playback

The VIA SOM-9X50-STK supports H.265 and H.264 video decoding up to 1080p@30fps/40Mbps.

To playback video, use the following command:

```
root@aiv8385-linux:~# gst-launch-1.0 playbin flags=0x42 audio-sink="alsasink device=hw:0,28"
video-sink="mtkmdp width=1280 height=640 ! video/x-raw,format=I420 ! mtkwaylandsink"
uri="file:///mnt/test.mp4"
```

3.7 Audio Output and Record

To set up the HDMI audio output, use the following command:

```
root@aiv8385-linux:~# aplay -Dhw:0,28 /data/sda1/test.wav
```

To set up the headphone audio output, use the following command:

```
root@aiv8385-linux:~# amixer cset numid=1 1
root@aiv8385-linux:~# amixer cset numid=2 1
root@aiv8385-linux:~# aplay -Dhw:0,0 /data/sda1/test.wav
```

To disable the headphone audio output, use the following command:

```
root@aiv8385-linux:~# amixer cset numid=1 0
root@aiv8385-linux:~# amixer cset numid=2 0
```

To set up the speaker audio output, use the following command:

```
root@aiv8385-linux:~# amixer cset numid=4 1
root@aiv8385-linux:~# aplay -Dhw:0,0 /data/sda1/test.wav
```

To disable the speaker audio output, use the following command:

```
root@aiv8385-linux:~# amixer cset numid=4 0
```



Note:

Before changing to different audio output device, you must make sure the previous audio output device is disabled.

To change the audio volume, use the following command:

```
root@aiv8385-linux:~# amixer cset numid=10 17
numid=10,iface=MIXER,name='Lineout_PGAL_GAIN'
; type=ENUMERATED,access=rw----,values=1,items=20
; Item #0 '8Db'
; Item #1 '7Db'
; Item #2 '6Db'
; Item #3 '5Db'
; Item #4 '4Db'
; Item #5 '3Db'
; Item #6 '2Db'
; Item #7 '1Db'
; Item #8 '0Db'
; Item #9 '-1Db'
; Item #10 '-2Db'
; Item #11 '-3Db'
; Item #12 '-4Db'
; Item #13 '-5Db'
; Item #14 '-6Db'
; Item #15 '-7Db'
; Item #16 '-8Db'
; Item #17 '-9Db'
; Item #18 '-10Db'
; Item #19 '-40Db'
: values=17
root@aiv8385-linux:~#
```

To set up the Mic-in audio recording, use the following command:

```
root@aiv8385-linux:~# amixer cset numid=36 ADC2
root@aiv8385-linux:~# amixer cset numid=23 1
root@aiv8385-linux:~# amixer cset numid=24 1
root@aiv8385-linux:~# amixer cset numid=27 IN_ADC2
root@aiv8385-linux:~# amixer cset numid=45 IN_ADC2
root@aiv8385-linux:~# arecord -Dhw:0,1 -c 2 -r 48000 -f S16_LE /data/sda1/t1.wav
```

3.8 Camera

To preview an image from the CSI camera, use the following command:

```
root@aiv8385-linux:~# gst-launch-1.0 v4l2src device=/dev/video5 io-mode=mmap ! video/x-raw,format=YUY2, width=1280,height=720, framerate=30/1 ! mtkmdp width=1280 height=720 ! mtkwaylandsink sync=false
```

To capture an image from the CSI camera, use the following command:

```
root@aiv8385-linux:~# gst-launch-1.0 -v v4l2src device=/dev/video5 num-buffers=1 ! video/x-raw, format=YUY2, width=1280,height=720, framerate=30/1 ! jpegenc ! filesink location=/data/sdal/test.jpg
```

To record a video file from the CSI camera, use the following command:

```
root@aiv8385-linux:~# gst-launch-1.0 -v v4l2src device="/dev/video5" ! video/x-raw,format=(string)YUY2,width=1280,height=720 , framerate=30/1 ! mtkmdp width=1280 height=720 ! video/x-raw,format=I420 ! v4l2h264enc bitrate= 9000000 gop=1 ! avimux ! filesink location=/data/test.avi
```

To playback a record video file from the CSI camera, use the following command:

```
root@aiv8385-linux:~# gst-launch-1.0 -q playbin uri=file:/data/test.avi flags=0x42 video-sink="mtkmdp width=640 height=480 ! mtkwaylandsink" audio-sink="fakesink"
```

3.9 Wi-Fi

To check the current Wi-Fi AP "ssid" and "psk", use the follwing command:

```
root@aiv8385-linux:~# cat /data/wifi/wpa_supplicant.conf
ctrl_interface=/tmp/wpa_supplicant
update_config=1
network={
    ssid="via_test"
    psk="12345678"
    key_mgmt=WPA-PSK
    priority=100
}
p2p_no_group_iface=1
config_methods=display push_button keypad
driver_param=use_p2p_group_interface=1
wowlan_triggers=disconnect
wps_cred_processing=2
p2p_disabled=1
root@aiv8385-linux:~#
```

To change the Wi-Fi AP "ssid" and "psk", use the following command:

```
root@aiv8385-linux:~# vi /data/wifi/wpa_supplicant.conf
```

The output will be displayed as follows. Update the "ssid" and "psk" values to the desired values and save.

```
ctrl_interface=/tmp/wpa_supplicant
update_config=1
network={
    ssid="via test"
    psk="12345678"
    key_mgmt=WPA-PSK
    priority=100
}
p2p_no_group_iface=1
config_methods=display push_button keypad
driver_param=use_p2p_group_interface=1
wowlan_triggers=disconnect
```

```
wps_cred_processing=2  
p2p_disabled=1
```

To verify the Wi-Fi function, use the following command:

```
root@aiv8385-linux:~# ps | grep wpa_supplicant  
 569 root      8596 S    wpa_supplicant -Dnl80211 -iwlan0 -c /data/wifi/wpa_supplicant.conf  
754350 root      3536 S    grep wpa_supplicant  
root@aiv8385-linux:~# kill -9 569  
root@aiv8385-linux:~# wpa_supplicant -Dnl80211 -iwlan0 -c /data/wifi/wpa_supplicant.conf -B  
Successfully initialized wpa_supplicant  
rfkill: Cannot open RFKILL control device  
WPS: Converting display to virtual_display for WPS 2.0 compliance  
WPS: Converting push_button to virtual_push_button for WPS 2.0 compliance  
root@aiv8385-linux:~#
```

To verify if the Wi-Fi connection is workable, enable the interface, with the following command:

```
root@aiv8385-linux:~# udhcpc -i wlan0  
udhcpc: started, v1.31.1  
Failed to revert interface configuration: Connection timed out  
udhcpc: sending discover  
udhcpc: sending select for 192.168.0.106  
udhcpc: lease of 192.168.0.106 obtained, lease time 86400  
/etc/udhcpc.d/50default: Adding DNS 192.168.0.1
```

Then use the "ping" command to verify the network connection:

```
root@aiv8385-linux:~# ping 8.8.8.8
```

3.10 Bluetooth

To enter "interactive mode" for Bluetooth function verification, use the following commands:

```
root@aiv8362a-linux:~# btmw-rpc-test  
increase the priority of btmw_rpc_test.i4_ret:0 @ main  
set btmw_rpc_test priority done  
[Client]Func:main Line:670--->: IPC/RPC initialize  
YZ rpc_init is called  
...  
...  
<I> [BTMW_RPC_TEST] init ok Normal Mode  
<I> [BTMW_RPC_TEST] running.  
btmw_test_cli>
```

In the example below, use a Bluetooth speaker to test.

First, get the Bluetooth speaker MAC address, which is "41:42:FC:81:75:7F" in this example.

To verify the Bluetooth function, use the following commands (using the speaker's MAC address in line 4):

```
btmw_test_cli> MW_RPC_GAP power 1  
...  
btmw_test_cli> MW_RPC_GAP set conn_disc 1 1  
...  
btmw_test_cli> MW_RPC_A2DP_SRC active_src 1  
...  
btmw_test_cli> MW_RPC_A2DP_SRC connect 41:42:FC:81:75:7F  
...  
btmw_test_cli> MW_RPC_A2DP_SRC write_stream /data/sdal/test.wav  
...  
btmw_test_cli>
```



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