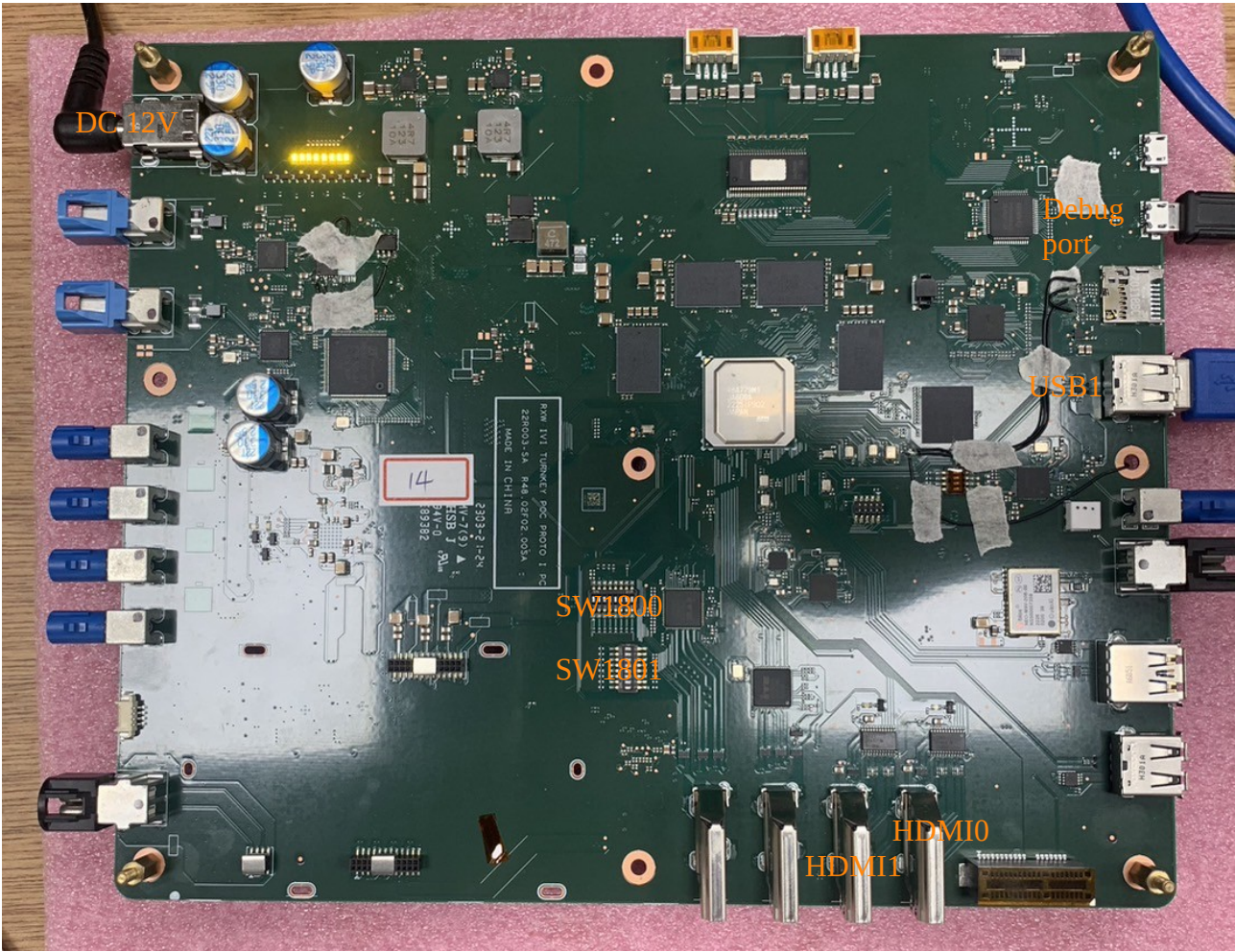


RTX-IVI

Start-Up Guide for Android

v0.0.2

PCBA port:



USB cables:



1. Building Android10

1.1. Tools & Dependency packages

Prerequisite packages for building the Android Filesystem (Note: This is with reference to Ubuntu 18.04 64-bit). Ubuntu 64-bit is required for the cross-compilation of Android Filesystem.

Setup build environment according to Google Android setup guide:

<https://source.android.com/source/initializing.html#setting-up-a-linux-build-environment>

1.2. Download source

Download source form <https://github.com/RetronixTechInc/rcar-bsp.git>
command :

\$ git clone <https://github.com/RetronixTechInc/rcar-bsp.git> -b IVI_android10

1.3. Building Android, IPL, U-Boot, and Kernel sources

\$ cd rcar-bsp => Entry download fold.

\$./build.sh => download source code / patch / building

That will create **IVI-16G-Android10** fold if the build is successful.

2. Write IPL

2.1 Enter Download Mode

Dip switch configuration for download mode

SW Number	Pin1	Pin2	Pin3	Pin4	Pin5	Pin6	Pin7	Pin8
1800	ON	ON	ON	OFF	OFF	OFF	OFF	ON
1801	ON	ON	ON	ON	OFF	ON	ON	ON

2.2 Connect USB cable to Host

micro usb cable connected debug port and PC.

Type A cable connected USB1 and PC.

2.3 Open Terminal (like picocom)

Execute picocom ap.

\$ picocom b 115200 /dev/ttyUSB0

Plug in DC 12V then you can see Download mode message.

```

picocom v3.1

port is       : /dev/ttyUSB0
flowcontrol   : none
baudrate is   : 115200
parity is     : none
databits are  : 8
stopbits are  : 1
escape is     : C-a
local echo is : no
noinit is     : no
noreset is    : no
hangup is     : no
nolock is     : no
send_cmd is   : sz -vv
receive_cmd is : rz -vv -E
imap is       :
omap is       :
emap is       : crcrlf,delbs,
logfile is    : none
initstring    : none
exit_after is : not set
exit is       : no

Type [C-a] [C-h] to see available commands
Terminal ready
  SCIF Download mode (w/o verification)
  (C) Renesas Electronics Corp.

-- Load Program to SystemRAM -----
please send !

```

2.3 Start write IPL

Entry **IVI-16G-Android10** fold.

\$ cd IVI-16G-Android10

\$ **sudo ./write.sh**

Wait about 3 minutes. You can see message like bellow If finished.

Load FlashWriter ./AArch64_Gen3_H3_M3_Scif_MiniMon_V5.13.mot.....

sudo dd if=./AArch64_Gen3_H3_M3_Scif_MiniMon_V5.13.mot

of=/dev/ttyUSB0

[sudo] password for tom:

1207+1 records in

....

6513+1 records out

3334786 bytes (3.3 MB, 3.2 MiB) copied, 36.0727 s, 92.4 kB/s

write finished!!!

3. Write Android image

3.1 Enter Boot Mode

Dip switch configuration for boot mode

SW Number	Pin1	Pin2	Pin3	Pin4	Pin5	Pin6	Pin7	Pin8
1800	ON	ON	ON	ON	OFF	ON	ON	ON
1801	ON	ON	ON	ON	OFF	ON	ON	ON

3.2 Connect USB cable to Host

micro usb cable connected debug port and PC.

Type A cable connected USB1 and PC.

3.3 Open Terminal (like picocom)

Execute picocom ap.

\$ picocom b 115200 /dev/ttyUSB0

Replug in DC 12V. Press enter key when you can see “Hit any key to stop autoboot” to interrupt autoboot.

```
U-Boot 2018.09-00139-g20736d6d70-dirty (May 10 2023 - 10:
Selecting default config 'r8a7795-salvator-x-u-boot'
CPU: Renesas Electronics R8A7795 rev 3.0
Model: Renesas H3e-2GHz-IVI board based on r8a7795 ES3.0
DRAM: 15.9 GiB
Bank #0: 0x048000000 - 0x0bfffffff, 1.9 GiB
Bank #1: 0x500000000 - 0x5fffffff, 4 GiB
Bank #2: 0x600000000 - 0x6fffffff, 4 GiB
Bank #3: 0x700000000 - 0x7fffffff, 4 GiB
Bank #4: 0x480000000 - 0x4fffffff, 2 GiB

MMC: sd@ee100000: 0, sd@ee140000: 1, sd@ee160000: 2
Loading Environment from MMC... OK
Saving Environment to MMC... Writing to MMC(1)... OK
In: serial@e6e88000
Out: serial@e6e88000
Err: serial@e6e88000
Net:
Error: ethernet@e6800000 address not set.
eth-1: ethernet@e6800000
Setting bootmode 'android'
Hit any key to stop autoboot: 0
=> 
```

3.4 Execute below commands on target board

Erase bootloader in eMMC (See “3.3. Boot sequence of IPL”)

```
=> mmc dev 1 1
=> mw.b 4f000000 0 200000
=> mmc write 4f000000 0 1000
=> mmc dev 1 2
=> mw.b 4f000000 0 200000
=> mmc write 4f000000 0 1000
=> reset
```

Please interrupt autoboot

Set environment values on U-boot

```
=> env default -a
=> setenv ethaddr <board MAC addr>
=> editenv serialno
```

Set board serial number to serialno: 0000XXXX (where XXXX = board number like 0585)

```
=> editenv bootargs
```

Edit bootargs: video=XXXX-X:d init_time=xxxxxxxxxxx

“video” variable needs to set parameter related to display configuration. The default setting is below.

Salvator case:

video=LVDS-1:d video=VGA-1:d

“init_time” variable needs to set UNIX time.

You can get it by executing “date +%s” command on host PC.

The board don't have any RTC.

If time and date is not accurate, a few issues will be happened.

```
=> saveenv
```

```
=> reset
```

Interrupt autoboot

```
=> fastboot
```

3.5 Execute below commands on host PC

```
$ sudo ./fastboot oem for mat
```

```
$ sudo ./fastboot reboot bootloader
```

```
$ sudo ./fastboot.sh --noresetenv
```

3.6 Start up to Android if flash images is finished.

Connect HDMI0 or HDMI1 to Monitor.

Appendix 1:

The reference document is RENESAS_RCH3M3M3N_Android_10_ReleaseNote_2020_09E.pdf