

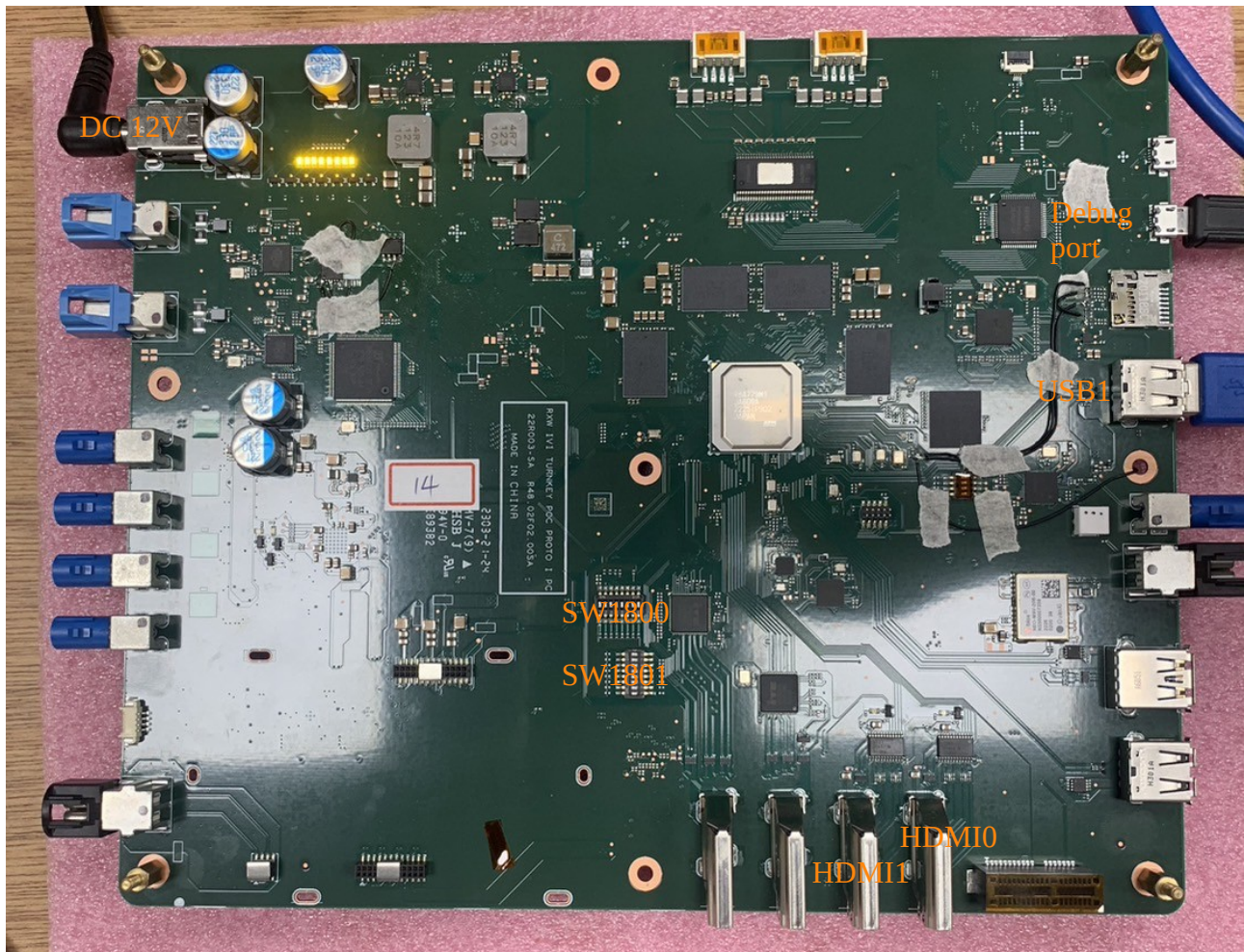
# RTX-IVI

Start-Up Guide for Android

v0.0.1

# Introduction

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

\$ ./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

#### 2.1 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   |

#### 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

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
=> 
```

## 2.4 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
```

## 2.5 Execute below commands on host PC

```
$ ./fastboot oem format
```

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

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

2.6 Start up to Android if flash images is finished.

Connect HDMI0 or HDMI1 to Monitor.

Appendix 1:

**PS. The reference document is RENESAS\_RCH3M3M3N\_Android\_10\_ReleaseNote\_2020\_09E.pdf**