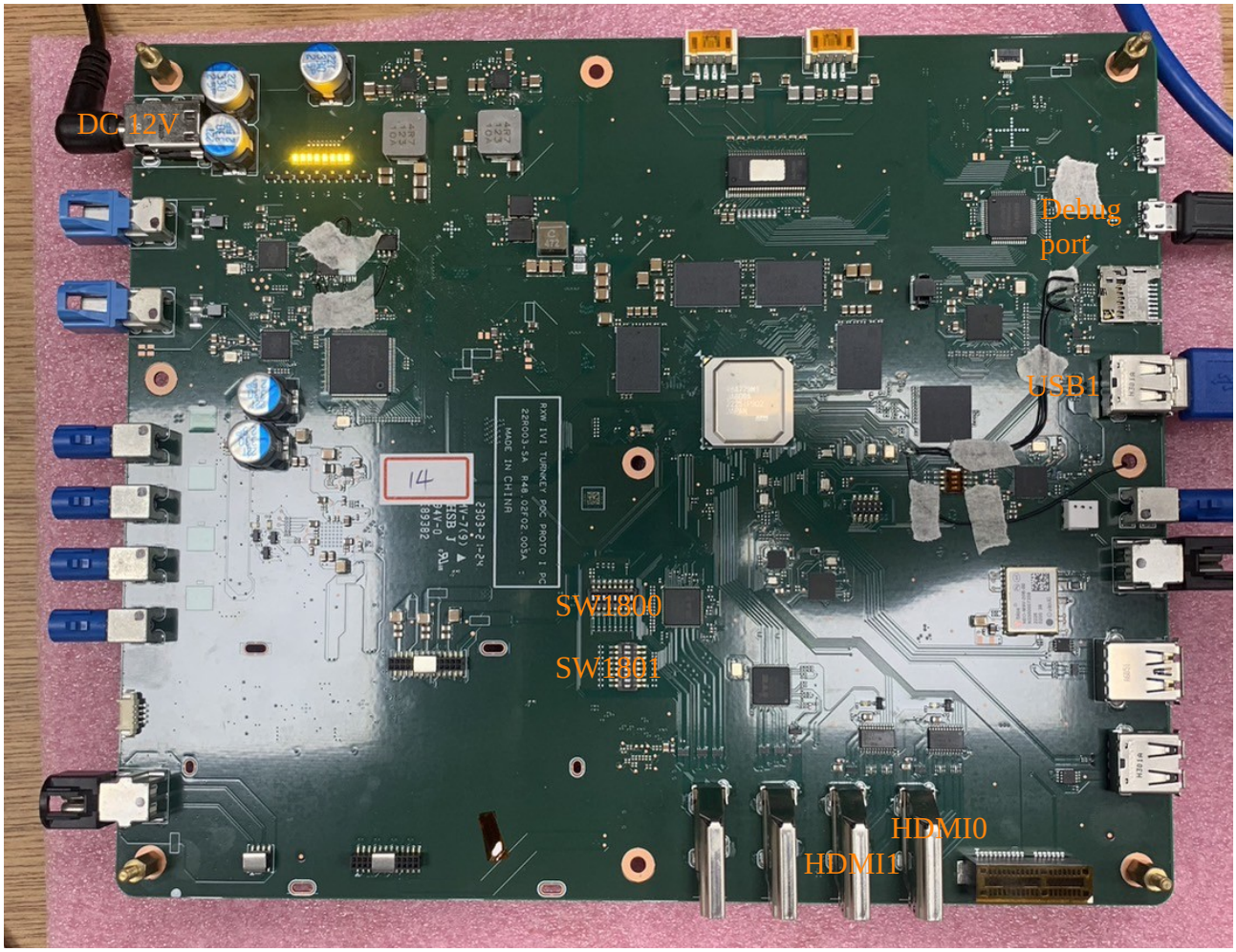
RTX-IVI

Start-Up Guide for Android

v0.0.1

Introduction

PCBA port:



USB cables:

1. Buiding 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

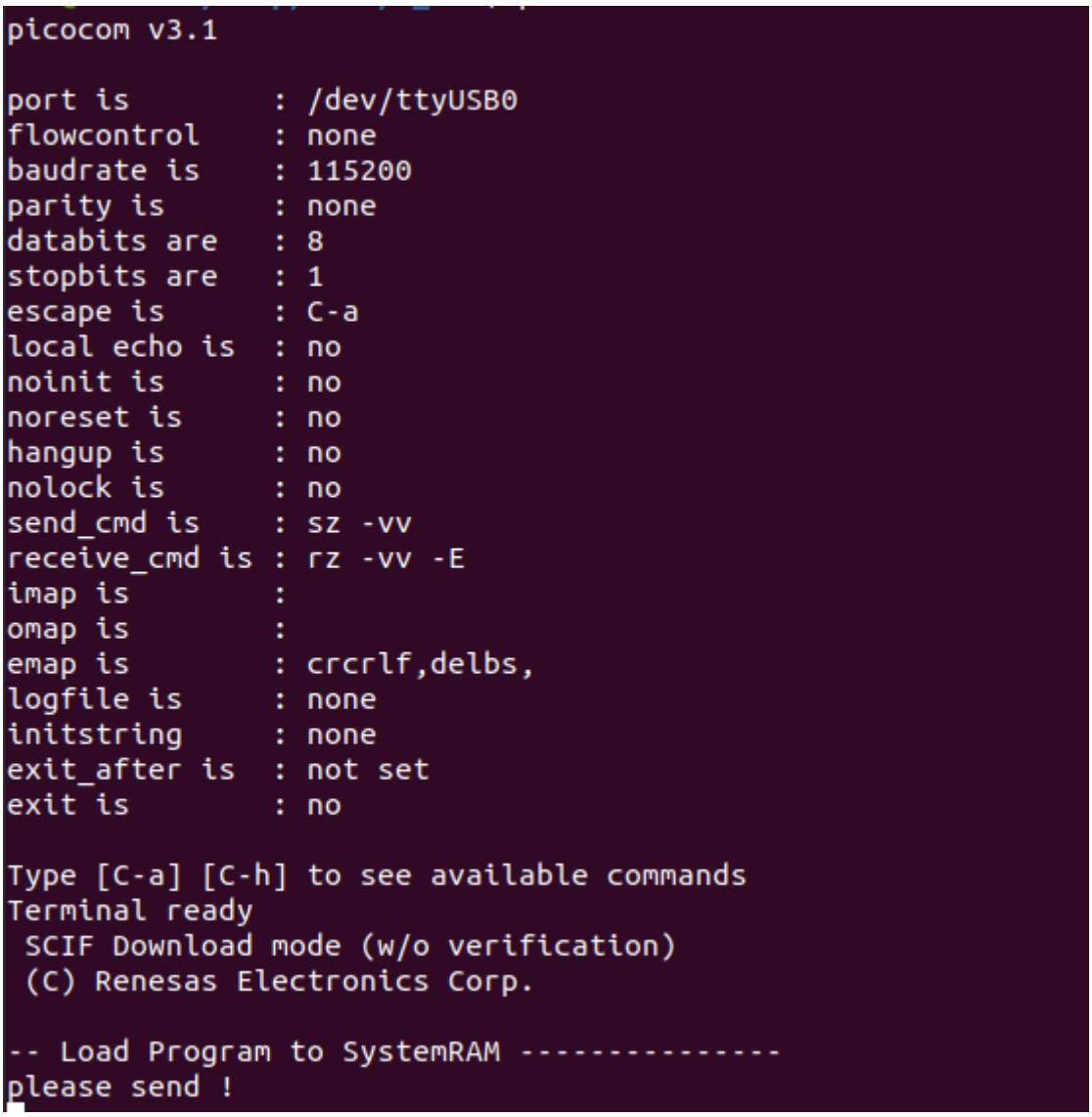
SW Number	Pin1	Pin2	Pin3	Pin4	Pin5	Pin6	Pin7	Pin8
1800	ON	ON	ON	OFF	OFF	OFF	OFF	ON
1801	ON	ON	ON	ON	OFF	ON	ON	ON

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.



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.

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=xxxxxxxxxx
“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