

- **Purpose**

- Program images (fip.bin/emmcboot.itb/rootfs.sqsh/gpt.img) to eMMC via USB starting from ROM

- **Preliminaries**

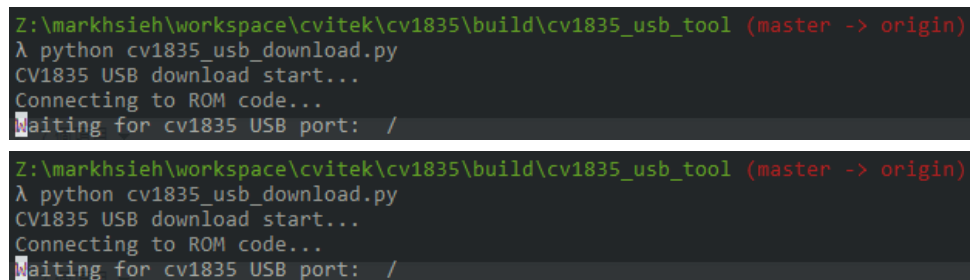
- Install python3 (Note 1)
 - <https://www.python.org/downloads/>
- Install python module
 - `python -m pip install pyserial`

- **Steps**

- 1. Copy images to build/cv1835_usb_tool (the path is under build.git)
 - Fip.bin/emmcboot.itb/rootfs.sqsh/gpt.img

- 2. Launch USB host tool on PC

- `python cv1835_usb_download.py`



```
Z:\markhsieh\workspace\cvitek\cv1835\build\cv1835_usb_tool (master -> origin)
λ python cv1835_usb_download.py
CV1835 USB download start...
Connecting to ROM code...
Waiting for cv1835 USB port: /

Z:\markhsieh\workspace\cvitek\cv1835\build\cv1835_usb_tool (master -> origin)
λ python cv1835_usb_download.py
CV1835 USB download start...
Connecting to ROM code...
Waiting for cv1835 USB port: /
```

- 3. Connect device and PC via USB, and then **reboot device**
- 4. Wait until PC tool shows message “done”
 - PC log

```

Z:\markhsieh\workspace\cvitek\cv1835\build\cv1835_usb_tool (master -> origin)
λ python cv1835_usb_download.py
CV1835 USB download start...
Connecting to ROM code...
COM19ng for cv1835 USB port: |
USB VID:PID=30B1:1000 SER=123456789ABC LOCATION=1-2

cv_dl_magic.bin is 128 bytes
Send to address 0x4003000
--- 0.01 Seconds ---
done
Send fip.bin...
fip.bin is 546816 bytes
Send to address 0xc040000
--- 4.68 Seconds ---
done
Send magic number for USB boot...
done
Send magic number for USB download...
done
Connecting to u-boot...
COM14ng for cv1835 USB port: |
USB VID:PID=30B1:1001 SER=123456789ABC LOCATION=1-2

Send fip.bin
fip.bin is 546816 bytes
Send to address 0x120000000
--- 0.8 Seconds ---
done
Connecting to u-boot...
COM14ng for cv1835 USB port: \
USB VID:PID=30B1:1001 SER=123456789ABC LOCATION=1-2

Send emmcboot.itb
emmcboot.itb is 6342662 bytes
Send to address 0x120000000
--- 7.76 Seconds ---
done
Connecting to u-boot...
COM14ng for cv1835 USB port: |
USB VID:PID=30B1:1001 SER=123456789ABC LOCATION=1-2

Send rootfs.sqsh
rootfs.sqsh is 127242240 bytes
Send to address 0x120000000
--- 148.52 Seconds ---
done
Connecting to u-boot...
COM14ng for cv1835 USB port: \
USB VID:PID=30B1:1001 SER=123456789ABC LOCATION=1-2

Send gpt.img
gpt.img is 17408 bytes
Send to address 0x120000000
--- 0.03 Seconds ---
done

```

- Device log

```

BL1: Load userconf...
BL1: g7909e78f
BL1: Secure boot 1
Hit SPACE to stop autoboot: 0
BL1: Load data...
BL1: 0x4000010 = 0x0
BL1: USB enumeration done
BL1: USB stop
BL1: Enter USB download mode
BL1: DL flag is detected
BL1: Locate FIP in memory
BL1: Check booting info
BL1: Check boot loader info
BL1: Prepare bld done
BLD: sys_pll_init done
BLD: DDR3-1866
BLD: bist_result/odd/even=0/400000/400000
BLD: bist_result/odd/even=1/0/0
BLD: DDR BIST pass
BL1: Check booting info
BL1: Check boot loader info
BL1: Booting BL2
BL2: BL2: cv1835_asic:v1.4(release):ge3abf20e
BL2: BL2: Built : 15:32:30, Feb 18 2020
Hit SPACE to stop autoboot: 0
BL2: DL flag is detected
BL2: BL2: FIP source 0x3
BL2: SD initializing 100000000Hz, SD Tran Freq 6000000
BL2: Locate FIP in memory
BL2: Check booting info
BL2: Check boot loader info
BL2: Check boot loader info
BL2: Check boot loader info
BL1: Booting BL31
NOTICE: BL31: cv1835_asic:v1.4(release):ge3abf20e
NOTICE: BL31: Built : 15:32:38, Feb 18 2020
NOTICE: BMSP: cv1835_asic:v1.4(release):ge3abf20e
NOTICE: BMSP: Built : 15:32:48, Feb 18 2020
NOTICE: BMSP: Total memory base : 0x100018000
NOTICE: BMSP: Total memory size : 0x7000 bytes

U-Boot 2017.07-00033-g221b0e462f-dirty (Feb 18 2020 - 15:31:09 +0800) cvitek_cv1835

DRAM: 256 MiB
Relocation Offset is: 07f59000
Relocating to 10ff59000, new gd at 10f6d8e10, sp at 10f6d68e0
step1. eth phy ctrl = 0x00000942
step2. eth phy ctrl = 0x00000940
step3. eth phy ctrl = 0x00000944
pinmux 38
pinmux 25

```

- 5. Reboot device, now EVB boots from eMMC

Note 1:

- PC python scripts are compatible with python 2.x and 3.x
- No PC USB driver is necessary