

# Technical Note

TN# MCSTN290

Rev# 1.0

Release Date : 2023 / 8 / 21

Category: Software

Support Model: ATC3530 / ATC3540

## Subject

How to recovery image without recovery mode in ATC3530\_3540 serial

## Introduction

The step of recovery image with with console

## Trouble Shooting Step-by-Step

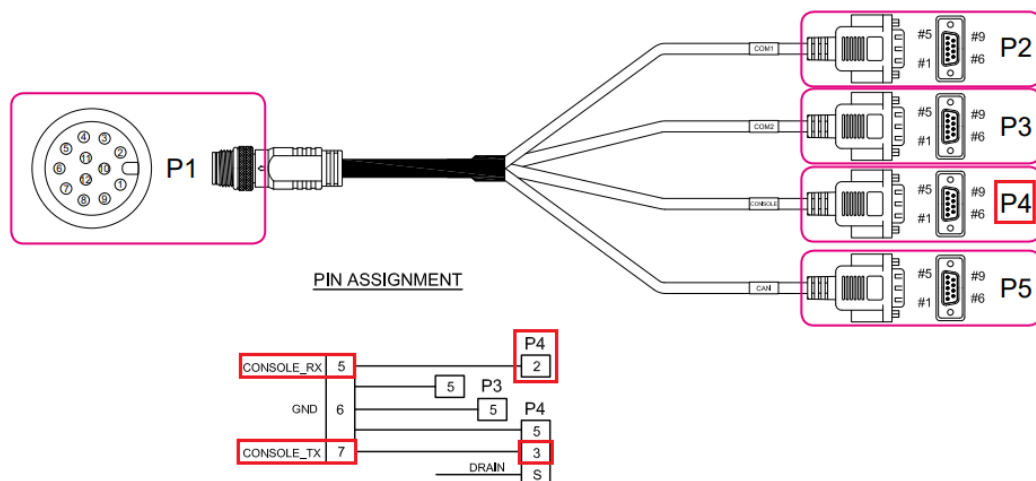
### Prepare materials

1. One system with Ubuntu OS and install Putty.
2. USB to RS232 transfer tool as below picture (any brand will do):



3. Connect the RX/TX of USB to RS232 transfer tool to Multi Port External Cable P4 Pin2/3.

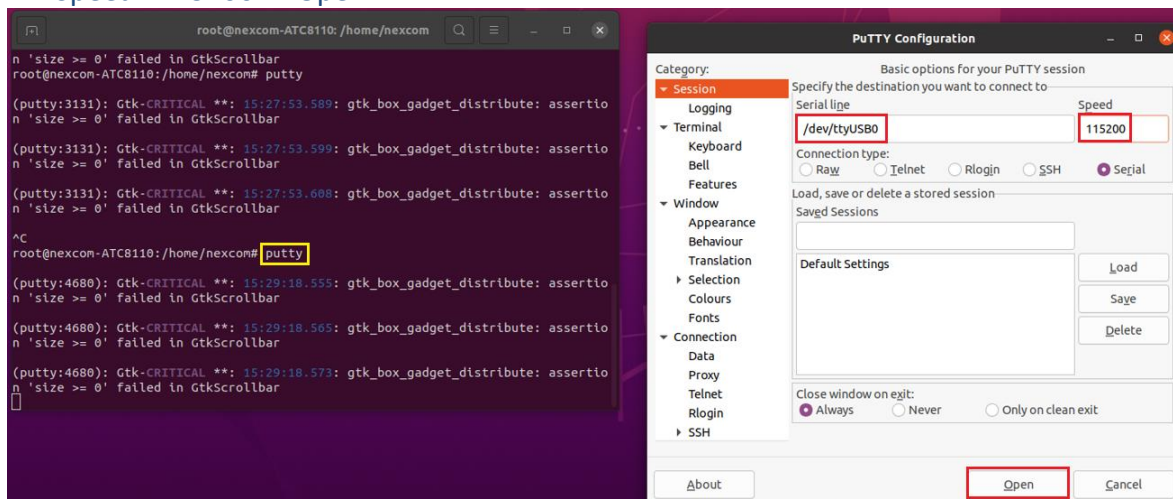
### Multi Port External Cable (P/N: 6030000475X00)



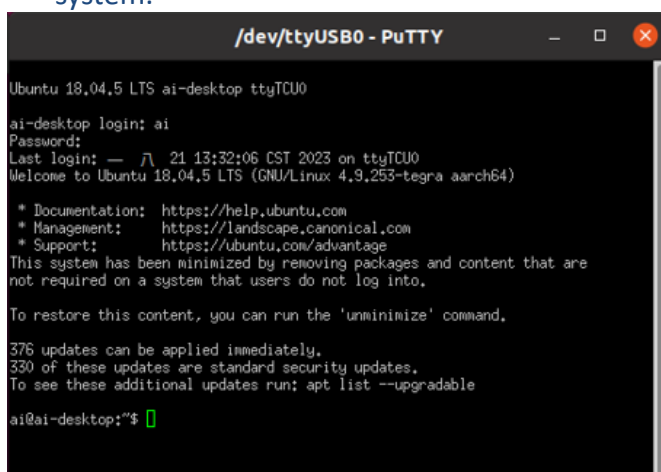


## Recovery

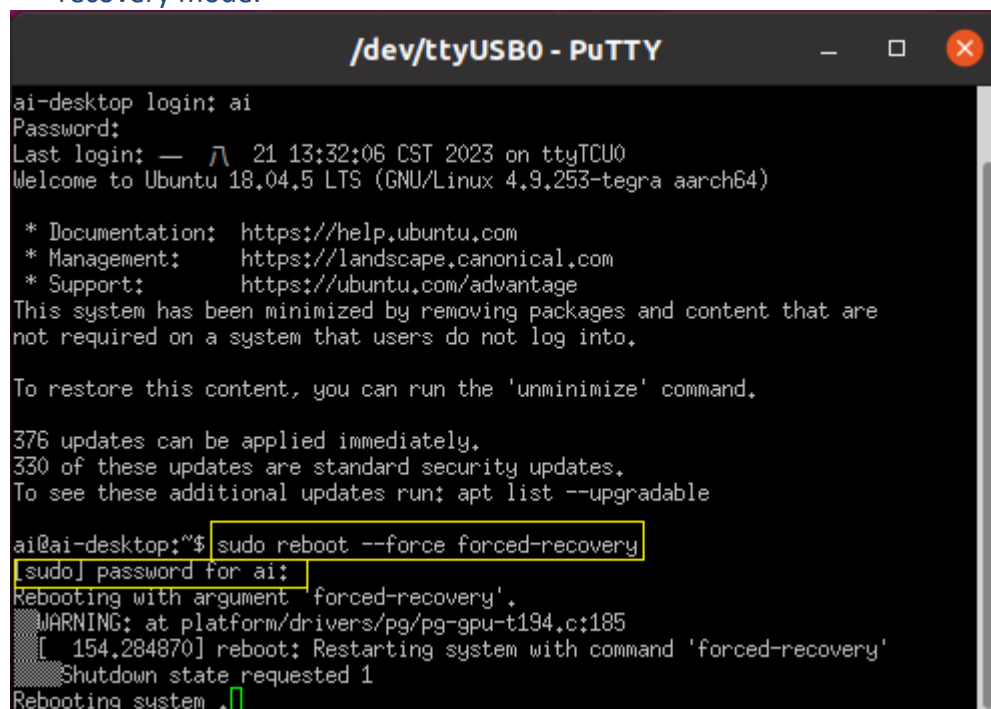
1. Execute Putty in host system.  
Serial Line : /dev/ttyUSB0  
Speed : 115200 → Open



2. Press Enter in Putty window and entry password, it will show the information about updated system.



- Entry command : `sudo reboot --force forced-recovery` and password then ATC serial into recovery mode.



```

/dev/ttyUSB0 - PuTTY
ai-desktop login: ai
Password:
Last login:  21 13:32:06 CST 2023 on ttyTCU0
Welcome to Ubuntu 18.04.5 LTS (GNU/Linux 4.9.253-tegra aarch64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage
This system has been minimized by removing packages and content that are
not required on a system that users do not log into.

To restore this content, you can run the 'unminimize' command.

376 updates can be applied immediately.
330 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

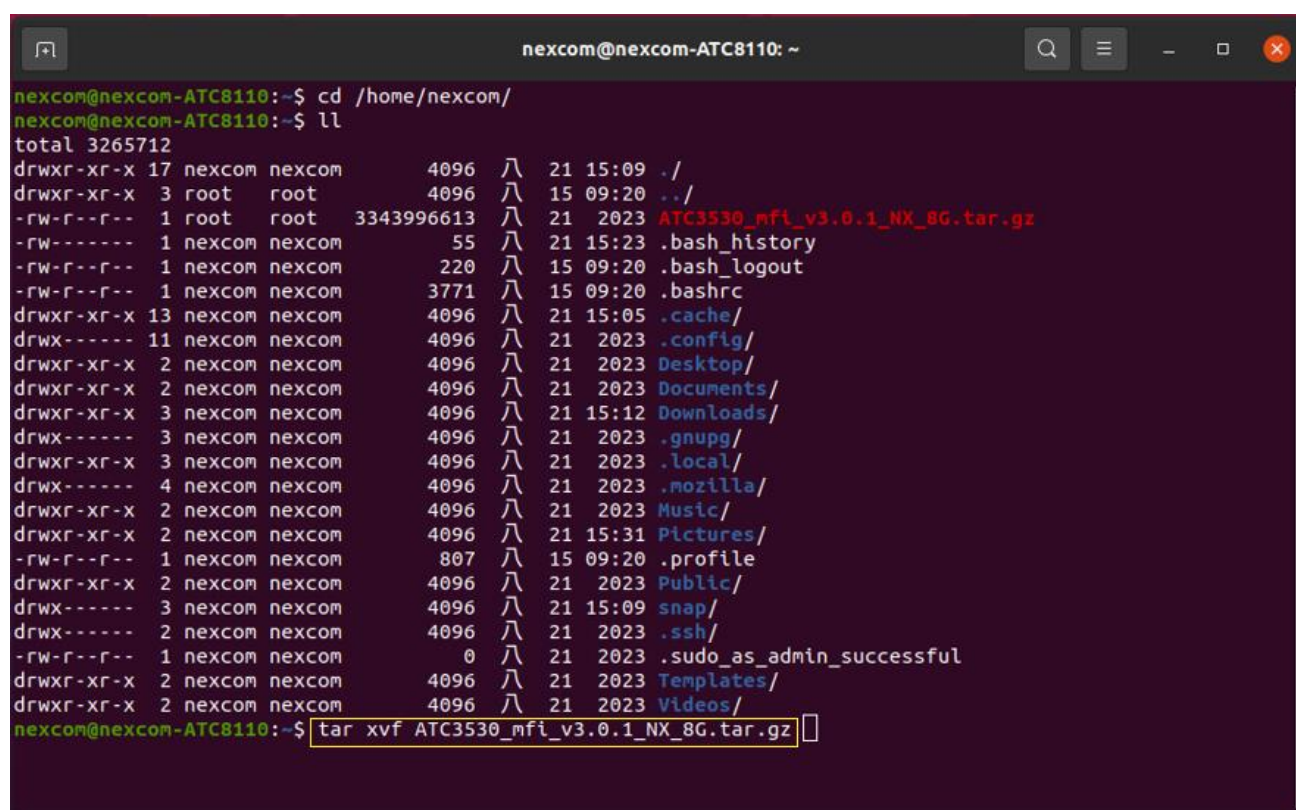
ai@ai-desktop:~$ sudo reboot --force forced-recovery
[sudo] password for ai:
Rebooting with argument 'forced-recovery'.
WARNING: at platform/drivers/pg/pg-gpu-t194.c:185
[ 154.284870] reboot: Restarting system with command 'forced-recovery'
Shutdown state requested 1
Rebooting system .

```

- Go back to image folder and un-tar image file:

`# tar xvf ATC3530_mfi_v3.0.1_NX_8G.tar.gz`

Note. The commands need to be modified according to different file names.



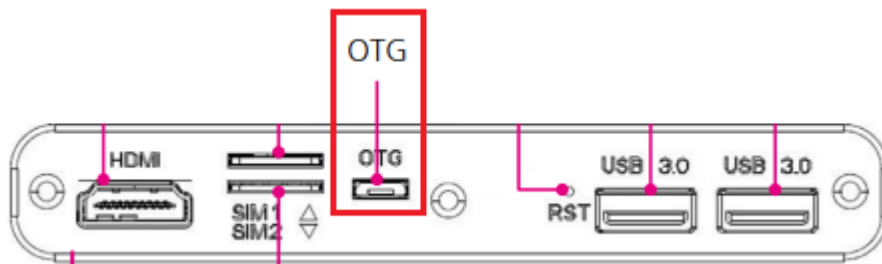
```

nexcom@nexcom-ATC8110: ~
nexcom@nexcom-ATC8110:~$ cd /home/nexcom/
nexcom@nexcom-ATC8110:~$ ll
total 3265712
drwxr-xr-x 17 nexcom nexcom      4096  21 15:09 ./
drwxr-xr-x  3 root  root       4096  21 09:20 ../
-rw-r--r--  1 root  root    3343996613  21 2023 ATC3530_mfi_v3.0.1_NX_8G.tar.gz
-rw-----  1 nexcom nexcom        55  21 15:23 .bash_history
-rw-r--r--  1 nexcom nexcom       220  21 09:20 .bash_logout
-rw-r--r--  1 nexcom nexcom     3771  21 09:20 .bashrc
drwxr-xr-x 13 nexcom nexcom      4096  21 15:05 .cache/
drwx----- 11 nexcom nexcom      4096  21 2023 .config/
drwxr-xr-x  2 nexcom nexcom      4096  21 2023 Desktop/
drwxr-xr-x  2 nexcom nexcom      4096  21 2023 Documents/
drwxr-xr-x  3 nexcom nexcom      4096  21 15:12 Downloads/
drwx-----  3 nexcom nexcom      4096  21 2023 .gnupg/
drwxr-xr-x  3 nexcom nexcom      4096  21 2023 .local/
drwx-----  4 nexcom nexcom      4096  21 2023 .mozilla/
drwxr-xr-x  2 nexcom nexcom      4096  21 2023 Music/
drwxr-xr-x  2 nexcom nexcom      4096  21 15:31 Pictures/
-rw-r--r--  1 nexcom nexcom       807  21 09:20 .profile
drwxr-xr-x  2 nexcom nexcom      4096  21 2023 Public/
drwx-----  3 nexcom nexcom      4096  21 15:09 snap/
drwx-----  2 nexcom nexcom      4096  21 2023 .ssh/
-rw-r--r--  1 nexcom nexcom         0  21 2023 .sudo_as_admin_successful
drwxr-xr-x  2 nexcom nexcom      4096  21 2023 Templates/
drwxr-xr-x  2 nexcom nexcom      4096  21 2023 Videos/
nexcom@nexcom-ATC8110:~$ tar xvf ATC3530_mfi_v3.0.1_NX_8G.tar.gz

```



5. Using Micro USB cable connects Host to ATC serial OTG USB port.



6. Execute recovery command :

**`sudo ./tools/kernel_flash/l4t_initrd_flash.sh --flash-only --massflash 1`**

Start to recovery image.

```
nexcom@nexcom-ATC8110: ~/ATC3530_mfi_v3.0.1_NX_8G
Preparing to unpack .../sshpas_1.06-1_amd64.deb ...
Unpacking sshpass (1.06-1) ...
Setting up sshpass (1.06-1) ...
Processing triggers for man-db (2.9.1-1) ...
nexcom@nexcom-ATC8110:~/ATC3530_mfi_v3.0.1_NX_8G$ sudo ./tools/kernel_flash/l4t_initrd_flash.sh --flash-only --massflash 1
/home/nexcom/ATC3530_mfi_v3.0.1_NX_8G/tools/kernel_flash/l4t_initrd_flash_internal.sh --usb-instance 1-7 --device-instance 0 --flash-only atc3530-xavierNX mmcblk0p1
*****
* Step 1: Build the flashing environment *
*****
Create flash environment 0
/home/nexcom/ATC3530_mfi_v3.0.1_NX_8G/bootloader /home/nexcom/ATC3530_mfi_v3.0.1_NX_8G
/home/nexcom/ATC3530_mfi_v3.0.1_NX_8G
Finish creating flash environment 0.
*****
* Step 2: Boot the device with flash initrd image *
*****
/home/nexcom/ATC3530_mfi_v3.0.1_NX_8G/temp_initrdflash/bootloader0 /home/nexcom/ATC3530_mfi_v3.0.1_NX_8G
./tegraflash.py --bl nvtboot_recovery_cpu_t194.bin --sdram_config tegra194-mb1-bct-memcfg-p3668-0001-a00.cfg,tegra194-memcfg-sw-override.cfg --odmdata 0x88190000 --overlay dtbo tegra194-p3668-p3509-overlay.dtbo,L4TRootfsInfo.dtbo --bldtb tegra194-p3668-all-atc3530-0000.dtb --applet mb1_t194_prod.bin --cmd "rcmboot" --soft_fuses tegra194-mb1-soft-fuses-l4t.cfg --cfg flash.xml --chip 0x19 --miniratchet_config tegra194-mb1-bct-ratchet-p3668.cfg --device_config tegra19x-mb1-bct-device-qspl-p3668.cfg --misc_cold_boot_config tegra194-mb1-bct-misc-l4t.cfg --misc_config tegra194-mb1-bct-misc-flash.cfg --pinmux_config tegra19x-mb1-pinmux-atc3530-a01.cf
```

7. Recovery finished, it will shows " Success ".

```
nexcom@nexcom-ATC8110: ~/ATC3530_mfi_v3.0.1_NX_8G
writing item=60, 1:3:RECR00TFS, 15328608256, 104857600, , , fixed-<reserved>-17,
[ 392]: l4t_flash_from_kernel: Warning: skip writing RECR00TFS partition as no image is specified
writing item=61, 1:3:esp, 15433465856, 67108864, esp.img, 67108864, fixed-<reserved>-18, be7b5daf995f0e0fc096952e16aeb655f3514696
Writing esp partition with esp.img
Get size of partition through connection.
67108864 bytes from /home/nexcom/ATC3530_mfi_v3.0.1_NX_8G/tools/kernel_flash/images/internal/esp.img to /dev/sdb: 1KB block=65536 remainder=0
dd if=/home/nexcom/ATC3530_mfi_v3.0.1_NX_8G/tools/kernel_flash/images/internal/esp.img of=/dev/sdb bs=1K skip=0 seek=15071744 count=65536
65536+0 records in
65536+0 records out
67108864 bytes (67 MB, 64 MiB) copied, 10.8078 s, 6.2 MB/s
Writing esp partition done
writing item=62, 1:3:UDA, 15500574720, 257408512, , , expand-<reserved>-19,
[ 403]: l4t_flash_from_kernel: Warning: skip writing UDA partition as no image is specified
writing item=63, 1:3:secondary_gpt, 15757983232, 16896, gpt_secondary_1.3.bin, 16896, fixed-<reserved>-0, 807ebe6bb13e7fd5bbb59fa68bee4dcca3976032
[ 403]: l4t_flash_from_kernel: Successfully flash the emmc
[ 403]: l4t_flash_from_kernel: Flashing success

Reboot target
Run command: sync; nohup reboot &>/dev/null & exit on root@fe80::1%usb0
SSH ready
Success
Cleaning up...
Log is saved to Linux_for_Tegra/initrdlog/flash_1-7_0_20230821-154000.log
nexcom@nexcom-ATC8110:~/ATC3530_mfi_v3.0.1_NX_8G$
```

8. In ATC serial side, it will start to configure the system.

