



# Catcher SD Card Logging Usage Guideline



# Outlines

- [Feature phone user guide](#)
- [Smartphone user guide](#)

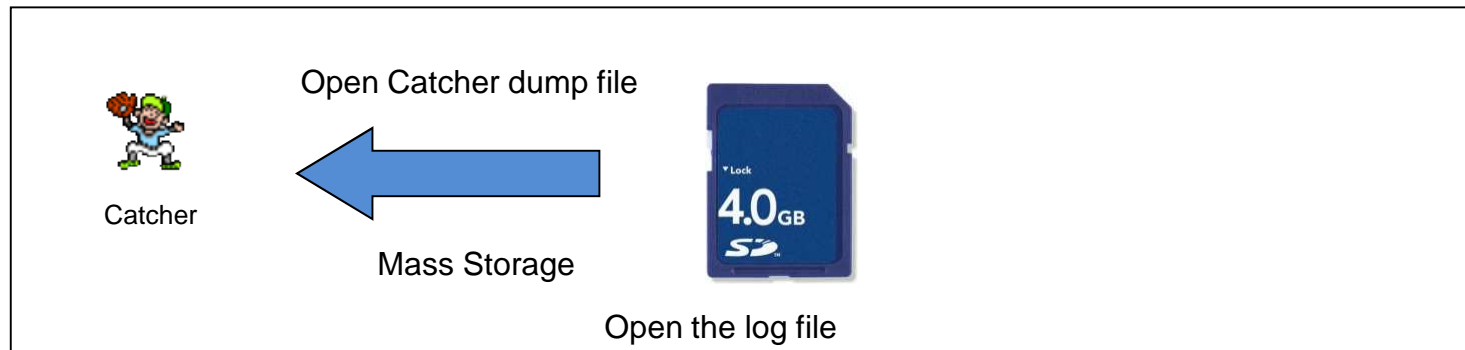
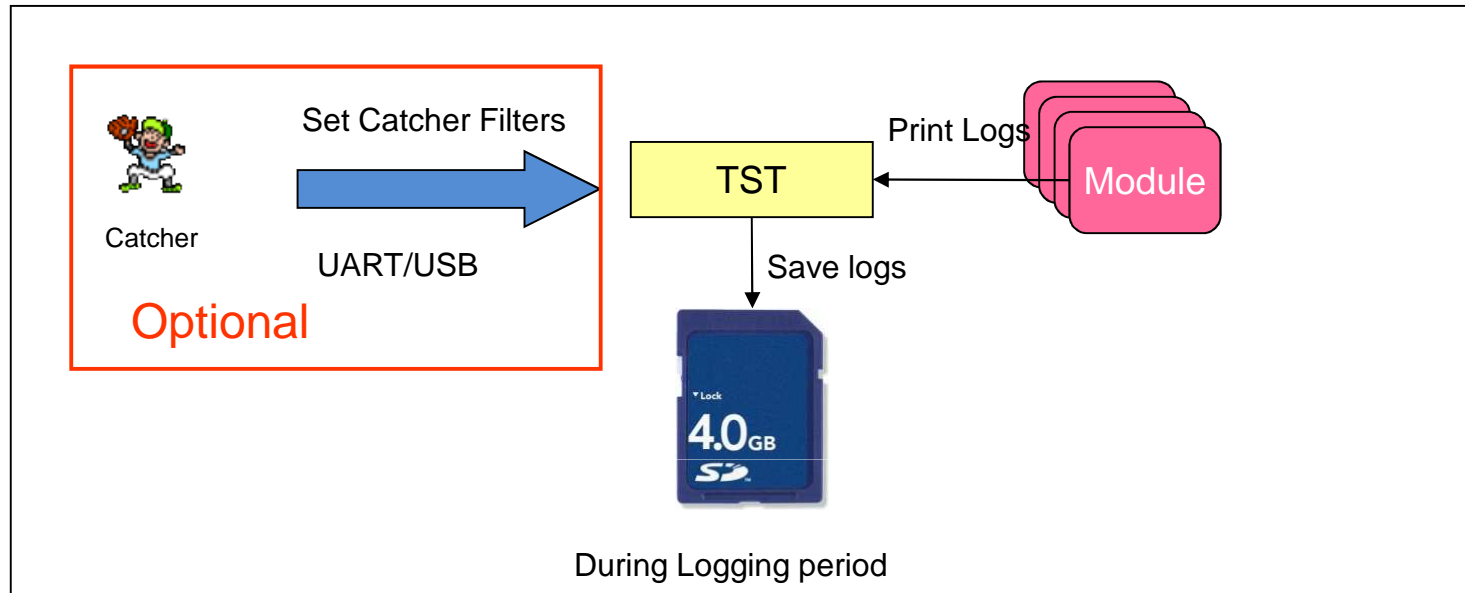
# Feature phone Usage Introduction (1/2)

- This feature aims to provide additional debug connection besides UART/USB.
- As long as the target phone has an external memory storage, TST can save logs into the memory card
  - TST will turn it off if there is no memory card detected
- All the catcher logs could be saved in the SD card.
  - All logs and the memory dump are saved in the SD card.
  - This feature could be enabled by Engineer mode

# Feature phone Usage Introduction (2/2)

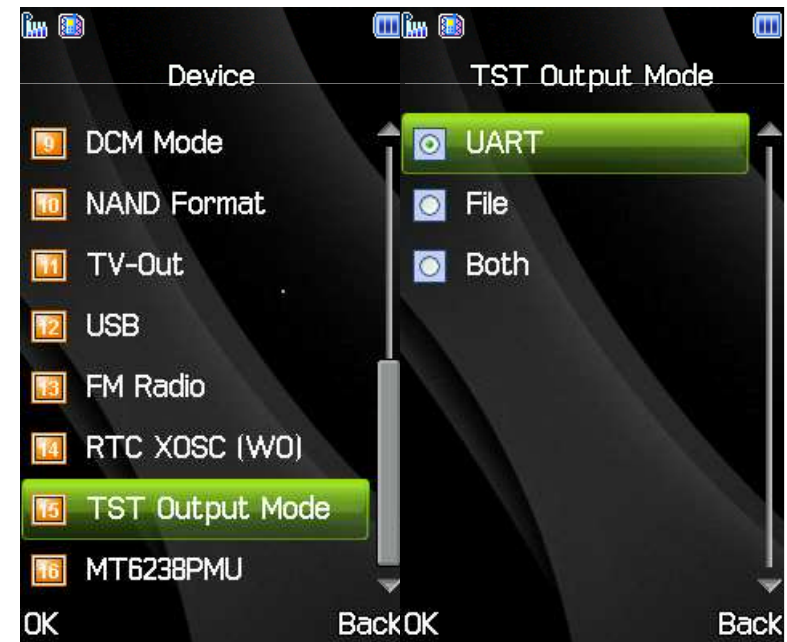
- Enable methods
  - Enable from Engineer mode
  - Enable from META
- Support branch
  - This feature is supported **since 09A**.
    - No customer switchable.
  - From **11AW1112MP** and **10AW1108MP**, customers could switch on/off **this feature by themselves**.
    - ON->OFF: switchable
    - OFF->ON: switchable
    - Modify TST\_WRITE\_TO\_FILE and rebuild the whole load.
- Catcher filter settings
  - Use **Catcher** to set
  - Put a **catcher\_filter.bin** onto **SD card**.
    - Reboot the phone after uploading filters on the fly
  - In addition, there is a **default filter in the NAND** flash.

# Usage Scenario



# Operating mode

- When “Write logs to files” is enabled, engineers can select different operating modes in Engineer mode of the target
  - 2) Device -> 15) TST Output Mode
- There are three modes
  - Write to UART
    - Work as before
  - Write to File
    - **Recommended**
  - Write to UART and File both
    - Dump the same data twice
    - Not preferred

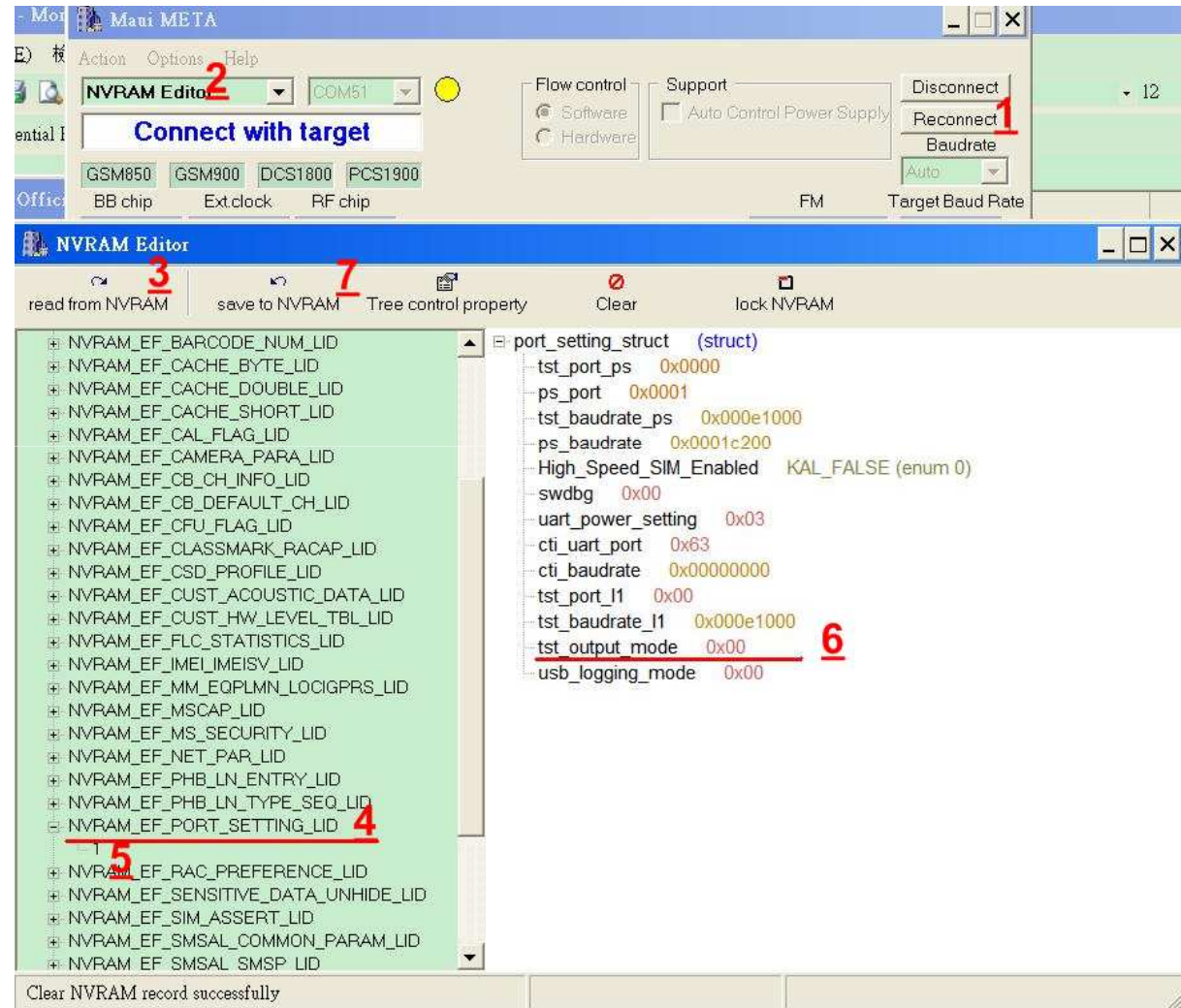


# Set from META (1/2)

- For some projects, the external MMI is applied and no engineer mode is available. META could help us set “TST Output Mode”.
- Usage:
  - Connect to META mode
  - Open the NVRAM editor
  - Select NVRAM\_EF\_PORT\_SETTINGS\_LID
  - Read the LID
  - Modify tst\_output\_mode
    - 0: Write to UART
    - 1: Write to File
    - 2: Write to UART and File both
  - Save to nvram
  - Reboot

# Set from META (2/2)

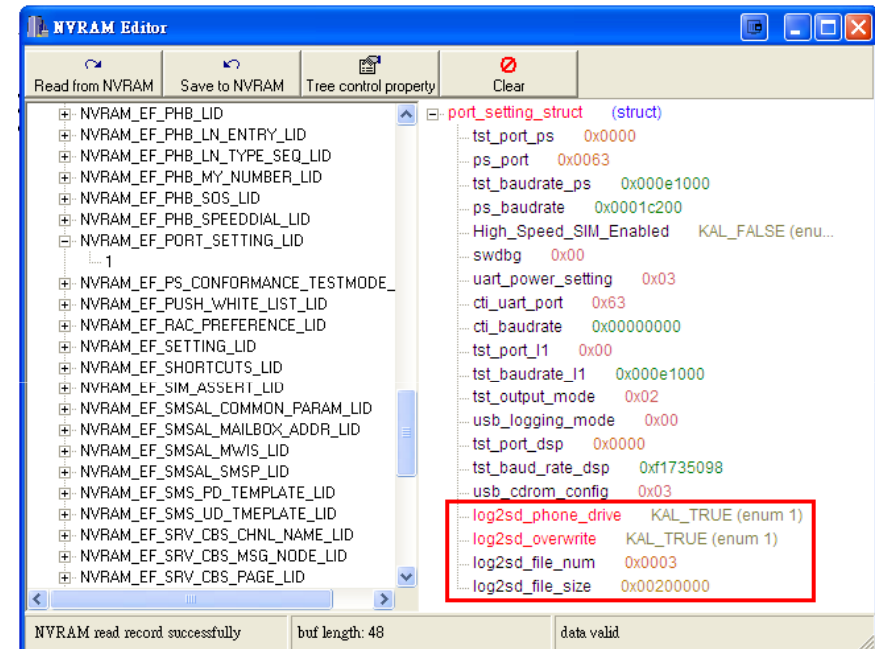
- Please follow the steps 1-7





# Save to phone drive

- For some projects, TST supports to save log to phone drive and overwrite older log files
  - Define `__TST_LOG2SD_OVERWRITE_ENABLE__`, and and rebuild the whole load.
  - Set from META
    - `log2sd_phone_drive`
      - `KAL_TRUE`: Save to phone drive
      - `KAL_FALSE`: Save to SD card
    - `log2sd_overwrite`
      - `KAL_TRUE`: Only keeps the latest few files
      - `KAL_FALSE`: Save until the disk is full
    - `log2sd_file_num`
      - For overwrite function, max number is 10
    - `log2sd_file_size`
      - For overwrite function, min size is 0x00100000 (1MB)

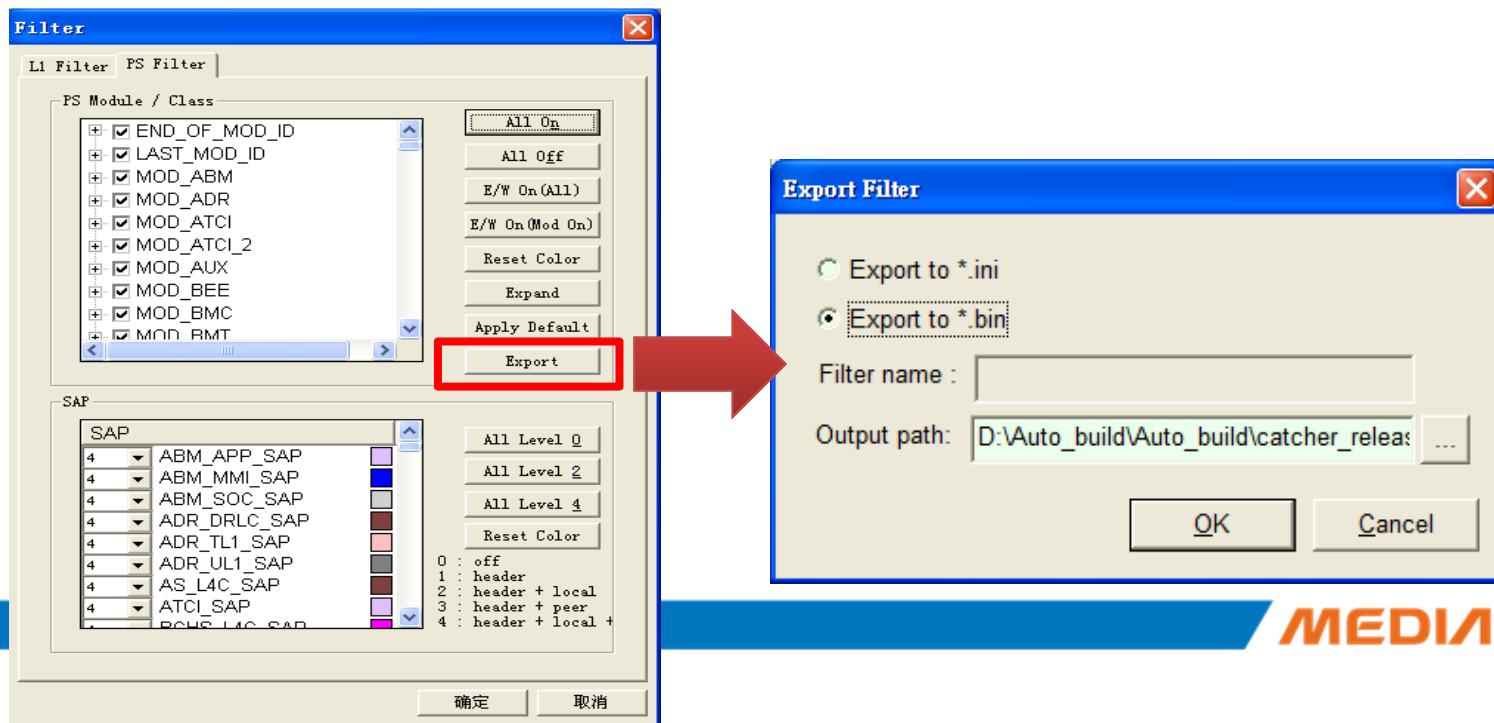


# Filter Priority

- With Write2SD, the Catcher filters are decided by the following orders.
  - `SD:\PsLog\catcher_filter.bin`
  - Catcher filters in NVRAM (if we have set them from catcher)
  - The default filters in the built image.
- If the high priority one exists, the filters will be taken.

# Update Catcher\_filter.bin steps (1/2)

- 1. Use Catcher to generate catcher\_filter.bin
  - 1.1 Enter logging mode, set DB
  - 1.2 Press “Connect”
  - 1.3 Press “Filter” -> select filter -> Export
  - 1.4 Choose “Export to \*.bin”, then click OK.



## Update Catcher\_filter.bin steps (2/2)

- 2. Put catcher\_filter.bin into \$SD:\PSLog\

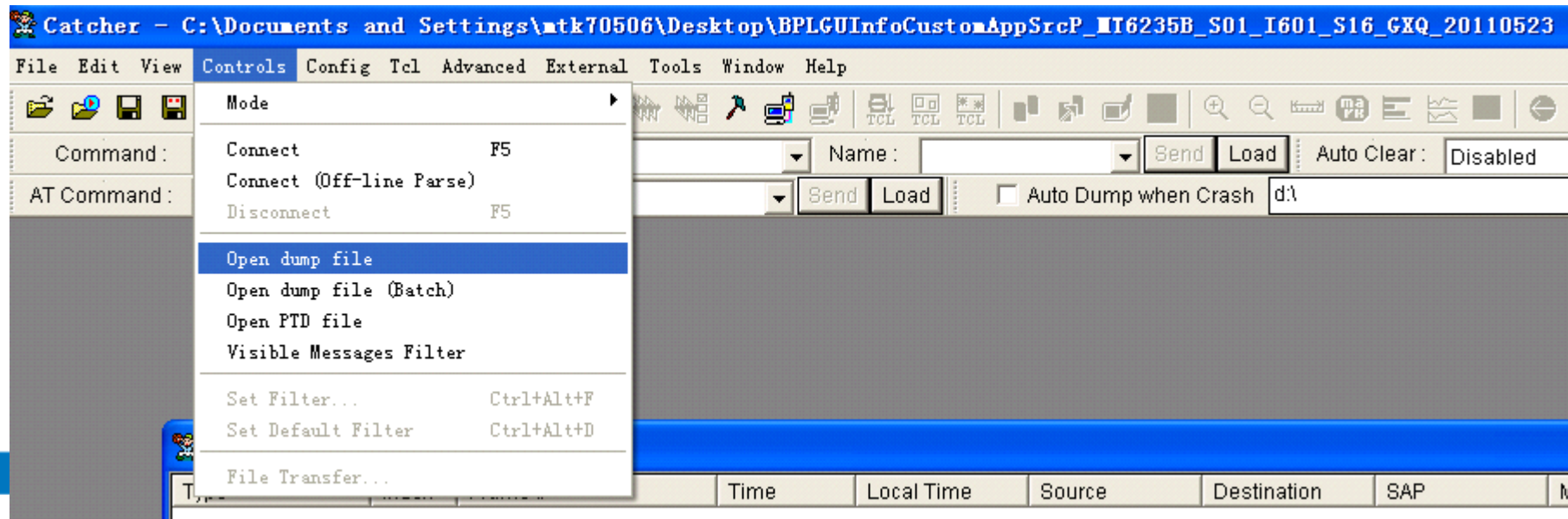


# How to modify the default filter in built image

- The default filters are generated during the codegen phase and users could change it by modifying `tst\database\log2sd_filter.ini`
  - Run “make codegen”
  - Run “make r custom”
  - Format and download the new image
- Once users set filters from Catcher, the new filters will be applied instead of the default filters.

# Open Dump File on Catcher

1. Select the database
  - Config->Set Database Path
2. Get into the logging mode
  - Controls->Mode->Logging
3. Open the dump file
  - Controls->Open dump File



# Memory Dump

- When Log2SD is enabled from the engineer mode or META, memory dump will be save into the SD card automatically.
  - When the exception (assert or fatal errors) happens, TST will create a folder on SD and save the memory dump there.
  - After the memory dump completes, “Memory Dump to File Done” shows on LCD.
  - After the memory dump to files completes, you **can** dump memory from Catcher.

## Related Concerns

- This feature requires frequent file system read/write. That will degrade normal file system operation.
  - If we don't enable it from the engineer mode, there is no effect at all.



# Outlines

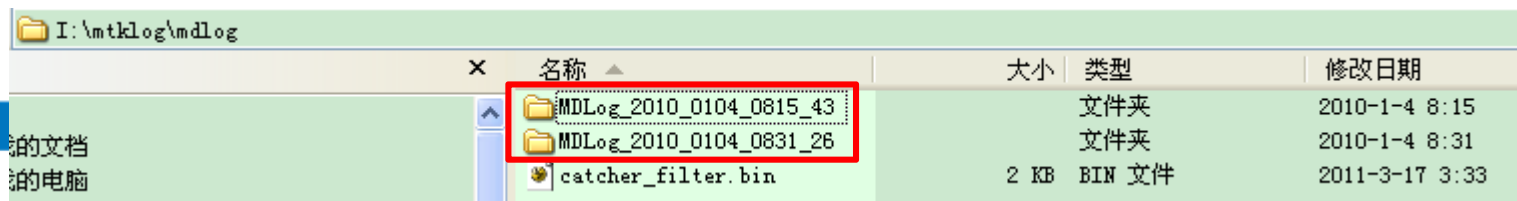
- Feature phone user guide
- Smartphone user guide
- Tools

# Smartphone Usage Introduction (1/2)

- SD card logging is used to save Modem logs into SD cards.
  - It's also called modem logging or MDLogger
  - Both L1/PS logs are saved.
  - In addition, memory dump can be saved as well.
    - For internal load, memory dump files are always stored and no silent reboot occur.
    - For production release loads, memory dump needs to enable from Engineer mode
      - \*##3646633#\*##
      - Once you reboot the phone, you need to set it again.
  - This feature could be enabled by Engineer mode

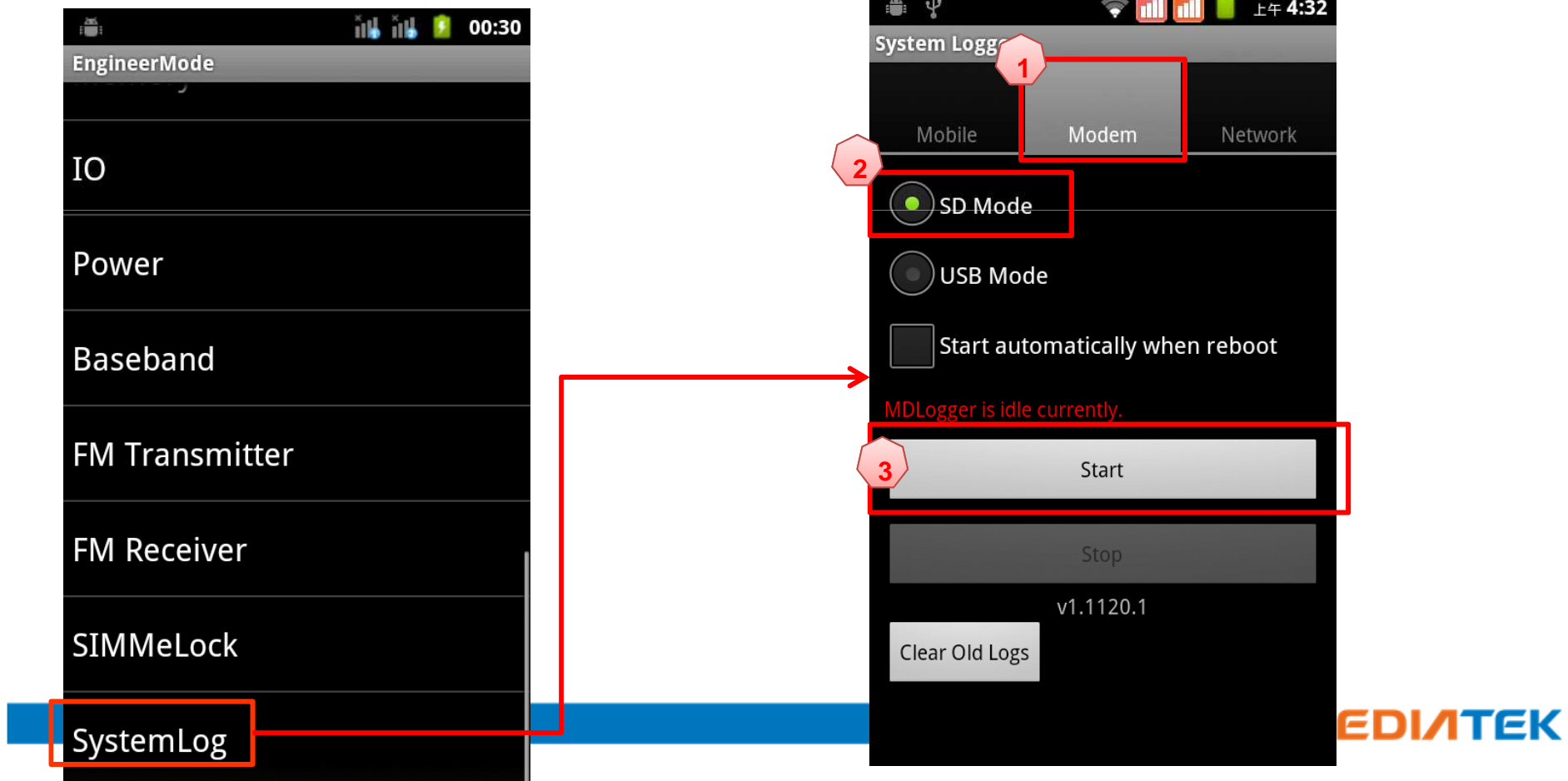
## Introduction (2/2)

- This feature is enabled since 11A\_MDW1119SP.
- Catcher filter settings
  - Upload **catcher\_filter.bin** onto SD card.
    - Please reboot the phone if we update **catcher\_filter.bin** on the fly.
  - Use the default **catcher\_filter.bin** in the flash. (Since 1126MP)
- Log path
  - The logs are saved under **sdcard/mtklog/mdlog/**.
    - MDLog\_Year\_Day\_Min\_Sec folder is created. The related logs are saved under this folder.
      - MDLog\_0\_2011\_xxxx\_xxxx\_xx.dmp is **PS** log file
      - MDLog\_1\_2011\_xxxx\_xxxx\_xx.dmp is **L1** log file.
      - **Memory\_0\_2011\_xxxx\_xxxx\_xx.bin** is the memory dump file.
    - Users can open .dmp files by Catcher



# How to enable SD card logging

- You could enable this feature from engineer modes.
  - `***#3646633#**`
  - More status indications could be found in appendix sections.

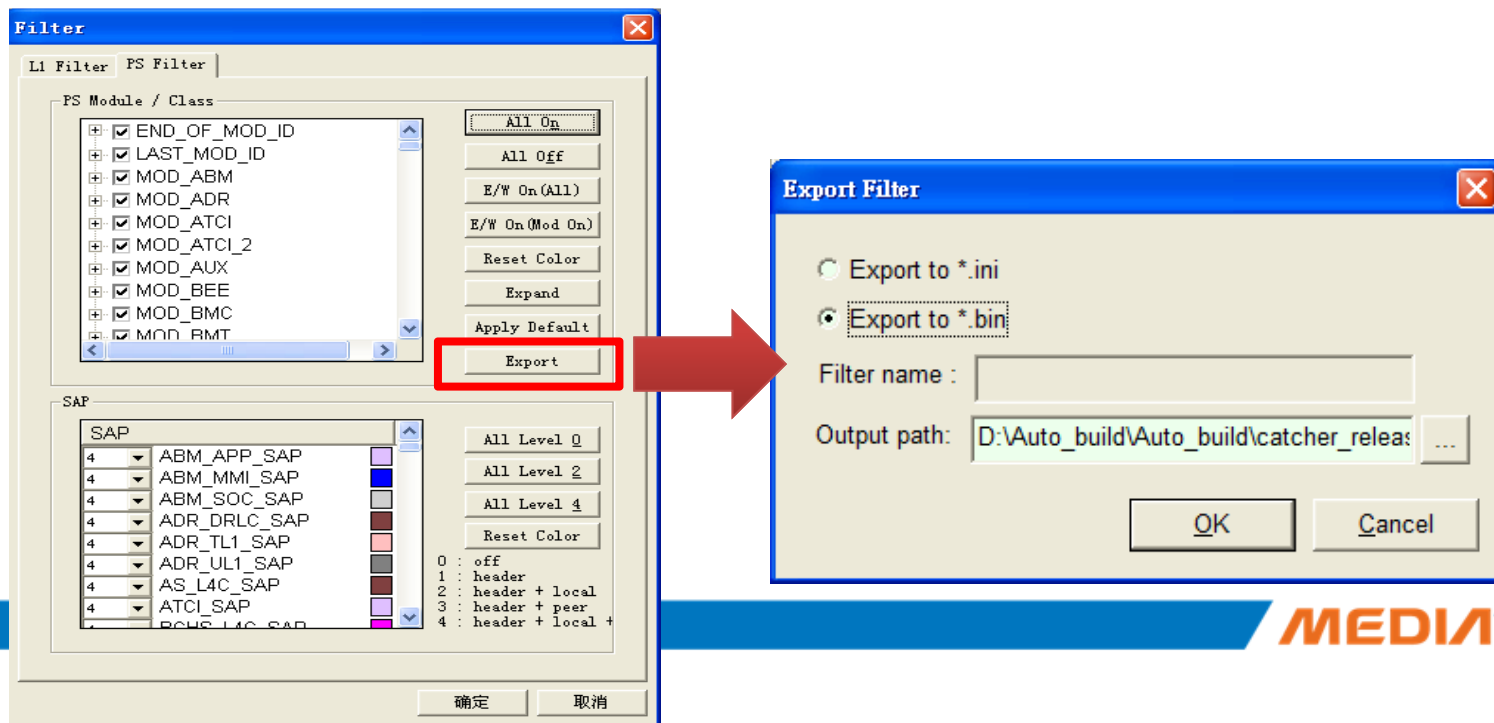


# Filter Settings

- For SD card logging, the Catcher filters are decided by the following orders.
  - `sdcard/mtklog/mdlog/catcher_filter.bin`
  - The default catcher\_filter.bin in the built image
- We can upload catcher\_filter.bin to sdcard by adb push
  - Adb push catcher\_filter.bin  
/mnt/sdcard/mtklog/mdlog/catcher\_filter.bin
  - Please reboot the target if catcher\_filter.bin is updated by adb push

# Update Catcher\_filter.bin steps (1/2)

- 1. Use Catcher to generate catcher\_filter.bin
  - 1.1 Enter logging mode, set DB
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  - 1.3 Press “Filter” -> select filter -> Export
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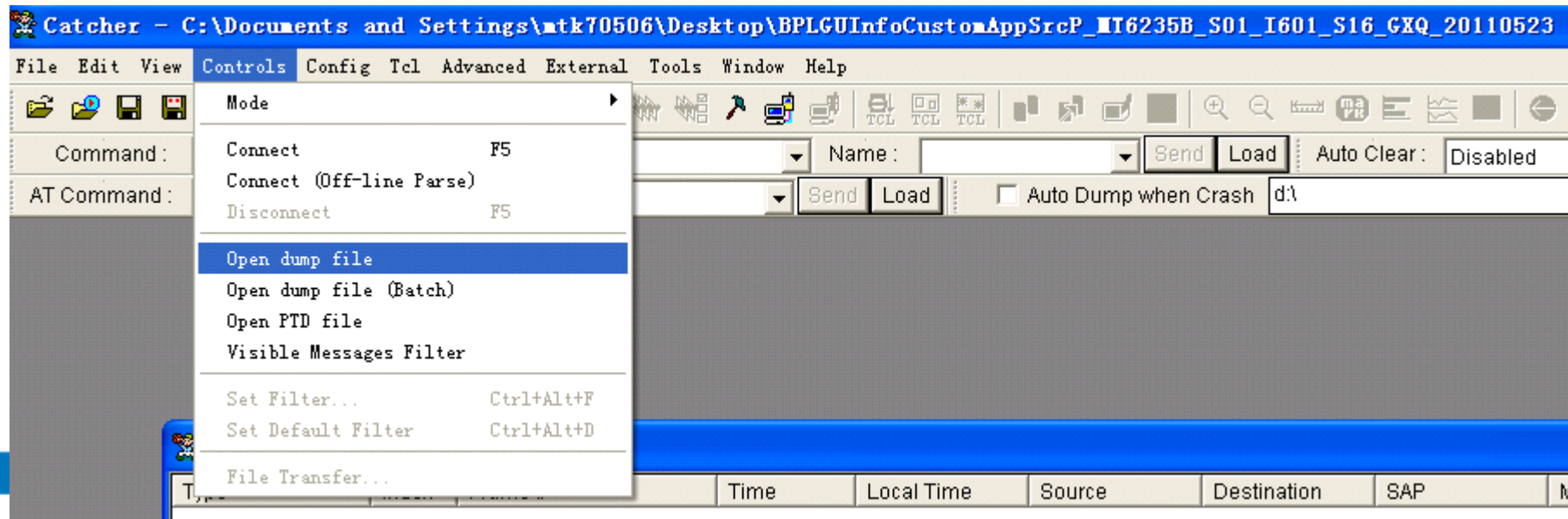


## Update Catcher\_filter.bin steps (2/2)

- Put catcher\_filter.bin into  
**sdcard/mtklog/mdlog/catcher\_filter.bin**
  - Adb push catcher\_filter.bin  
/mnt/sdcard/mtklog/mdlog/catcher\_filter.bin
  - **Please reboot the target if catcher\_filter.bin is updated by adb push**

# Open Dump File on Catcher

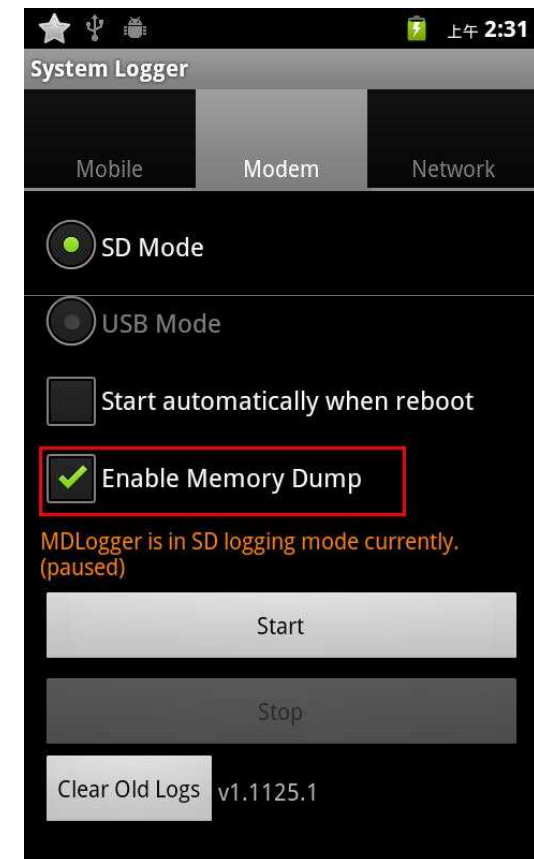
1. Select the database
  - Config->Set Database Path
2. Get into the logging mode
  - Controls->Mode->Logging
3. Open the dump file
  - Controls->Open dump File





# Memory Dump

- Memory dump is saved automatically in the internal load.
- For the production release load, we need to set “Enable Memory Dump” from Engineer mode.
  - The engineer mode item supports from 11AMD\_W1119SP W1126MP.
- After memory dump completes, a message box shows up to notify you.





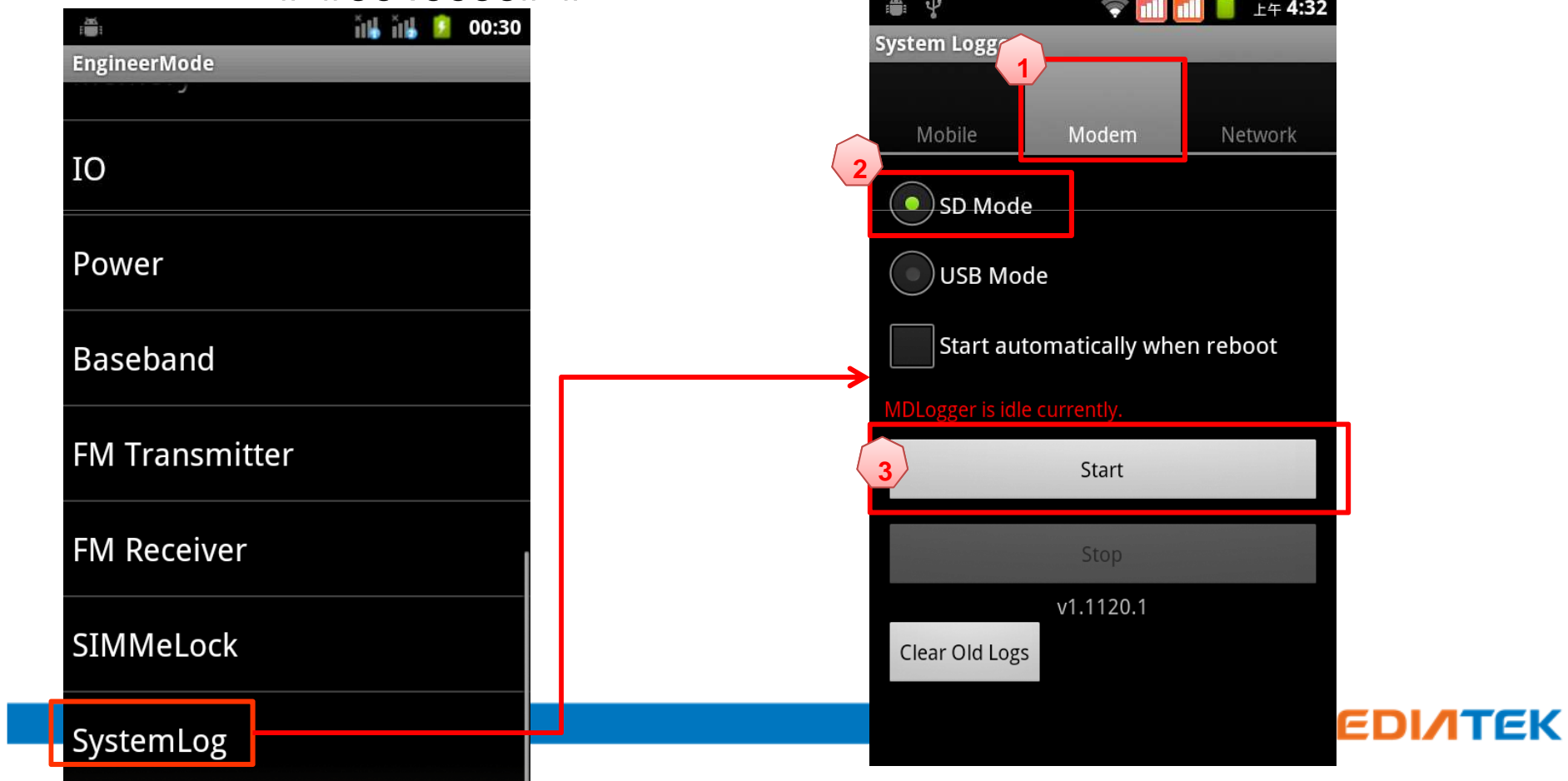
# Appendix



**Mediatek**

# How to enable SD card logging (1/6)

- You could enable this feature from engineer modes.
  - `*##3646633#*##`



# How to enable SD card logging (2/6)

## - Start

- Select “SD Logging Mode” and then click “Start”:

Make sure ModemLog is in idle state. You cannot switch ModemLog from USB logging mode to SD logging mode.

1

2

MDLogger is idle currently.

Start

Stop

v1.1120.1

Clear Old Logs

System Logger

Mobile Modem Network

SD Mode

USB Mode

Start automatically when reboot

MDLogger is in SD logging mode currently.

Start

Stop

v1.1120.1

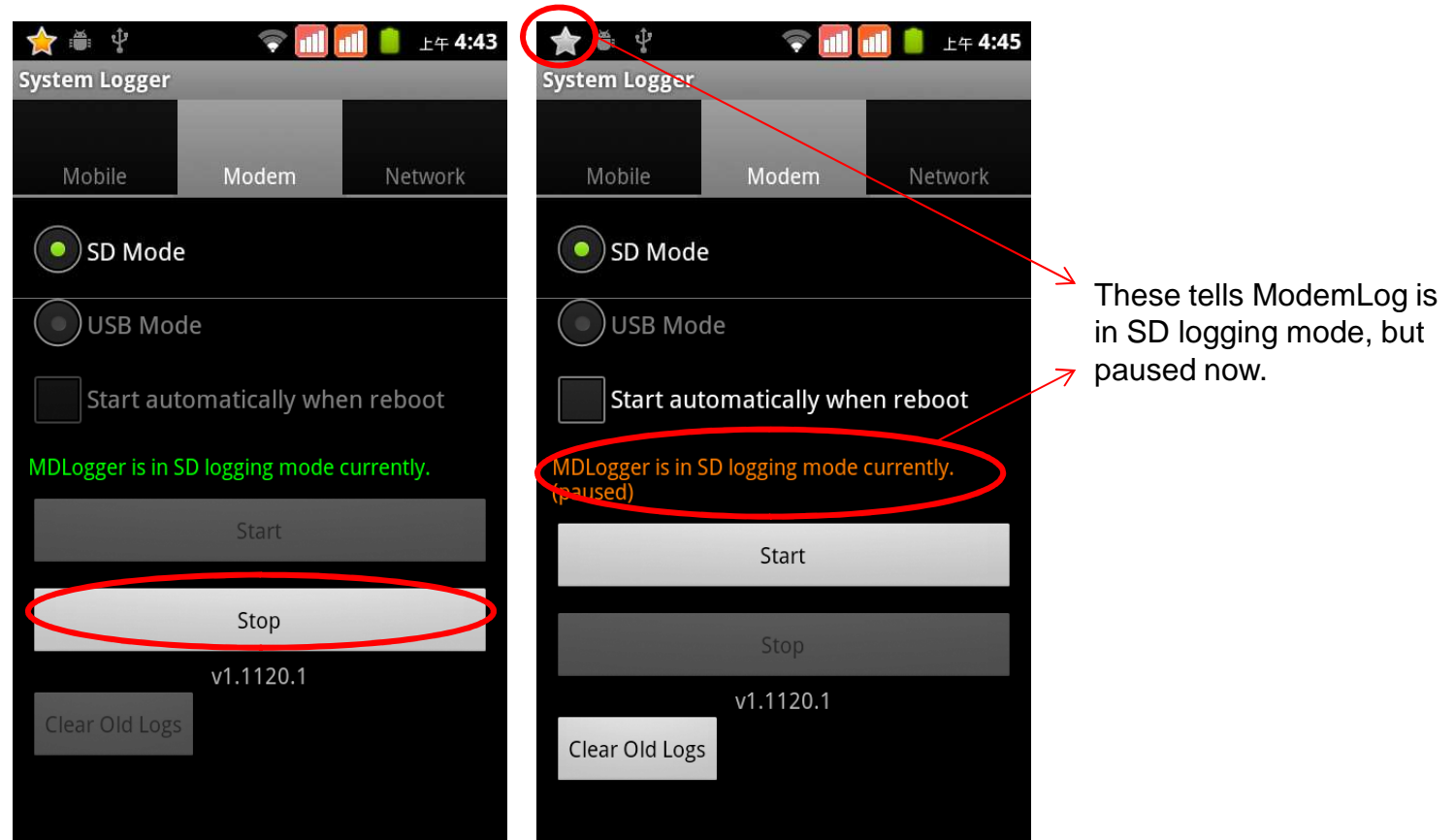
Clear Old Logs

These tells ModemLog is in SD logging mode now.

# How to enable SD card logging (3/6)

## - Pause

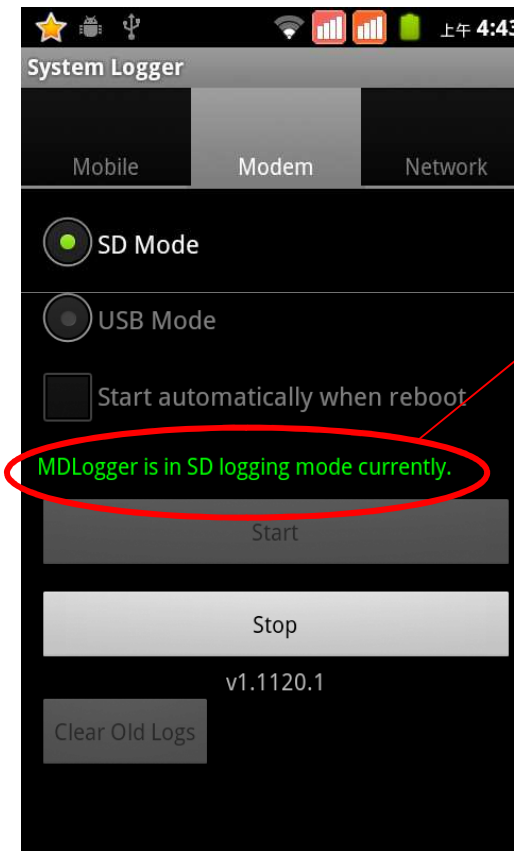
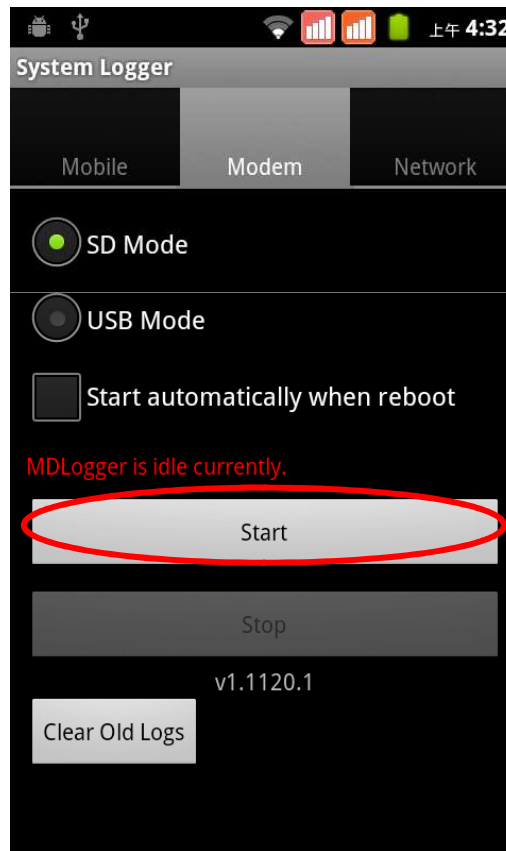
- Click “Stop” to pause logging:



# How to enable SD card logging (4/6)

## - Resume

- Click “Start” again to resume logging:



These tells ModemLog is in SD logging mode now.

# How to enable SD card logging (5/6)

Internal Use

## - Auto Start

- “Start automatically when reboot” button
  - ModemLog will auto start in when boot up phone.
- “Start” button
  - Check the checkbox **automatically**

