MEDIATEK

ELT Logging

2014/08/19

ELT Logging

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  - Capture SIM2 Logs for MT6732/6752 DSDA Platform

ELT Overview

- Evolved Logging Tool (ELT) is a PC-side application tool used to log primitives and debug information passed between modules for Mediatek LTE smart phone products, which aids lab engineers in analyzing the behavior of smart phones.

- Compare with Catcher, the tool for Mediatek GSM/GPRS products, ELT has following improvements:
  - ✔ Higher logging throughput
  - ✔ Higher performance
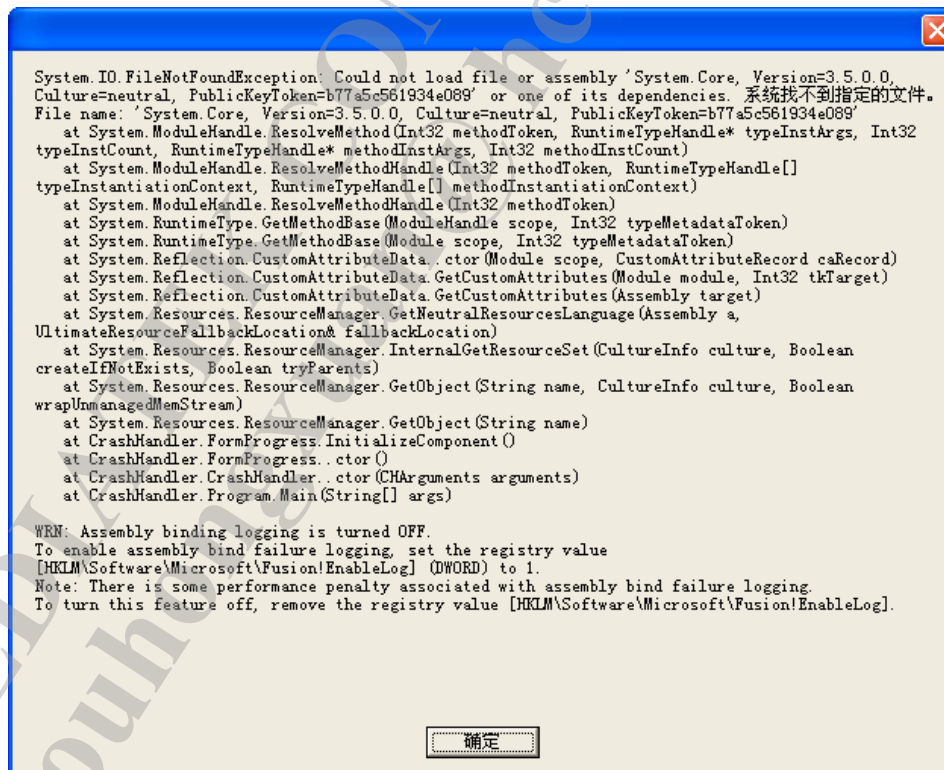 - ✔ Add-in based modulization design

ELT Overview

- ELT system requirements

  - Windows XP SP3 32bits/ Windows 7 64bits

  - .NET Framework 3.5 SP1

    - http://www.microsoft.com/en-us/download/details.aspx?id=25150

  - For security concern, executing ELT on a network disk drive is not supported. i.e. ELT must be run on a local disk.

FAQ

- If you get following error while starting ELT, your machine might need to install .NET Framework 3.5 SP1.
  - http://www.microsoft.com/en-us/download/details.aspx?id=25150

USB Mode (1/6)

- Hardware requirement
  - Mediatek LTE smart phone
- Software requirement
  - PC Tool: **ELT v2.1412.0** or higher

Step 1. Set USB logging mode on the phone

1. Dial *#*#3646633#*#* to enter engineering mode
2. Press red circle button "STOP" to stop logging
3. Press "Setting" at the top right corner
4. Press "Modem Log" to enter modem log setting
5. Press "Log Mode" and select "USB Mode"
6. Start logging by pressing "START" on the main page
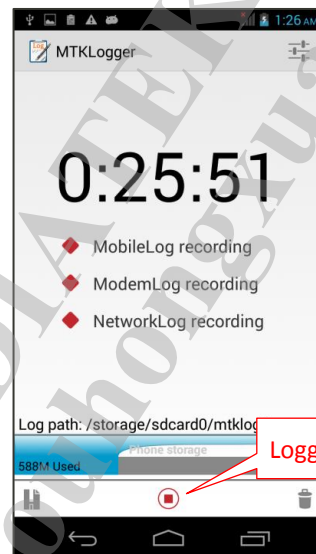
Logger Setting

Click here to change mode

Logger start/stop
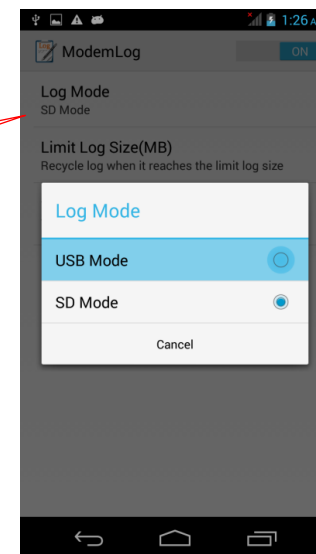
Step 2. Set up ELT for logging

1. Click "Target Logging Mode" button

2. Select database file
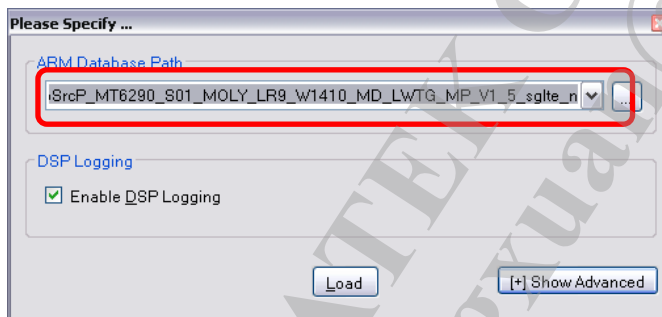
3. Click "Connect" button and set "USB Auto Connection"
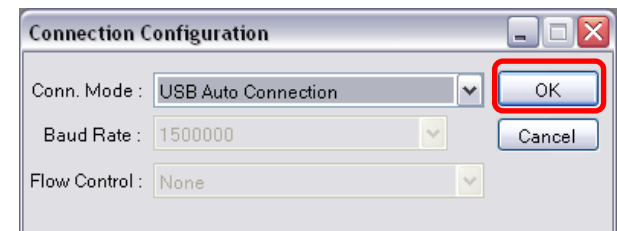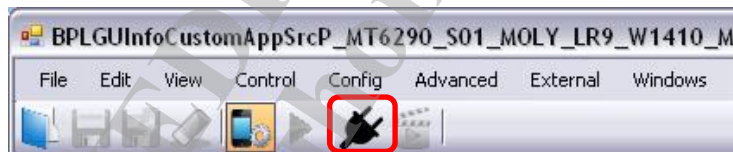
Step 3. Set up default filter

1. Select "Set Target Filter" in "Control" menu
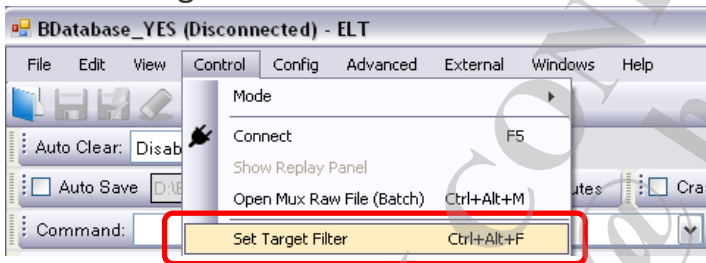
2. Select the appropriate filter in the list and click "Apply All"

Default filter set list
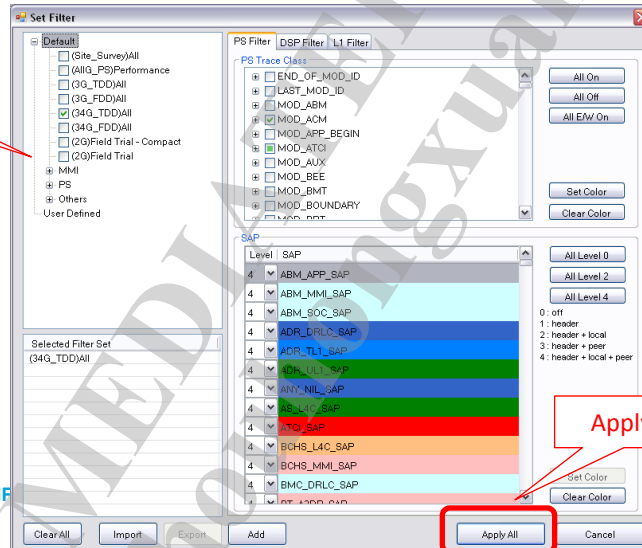
You should be able to start logging.

Apply All
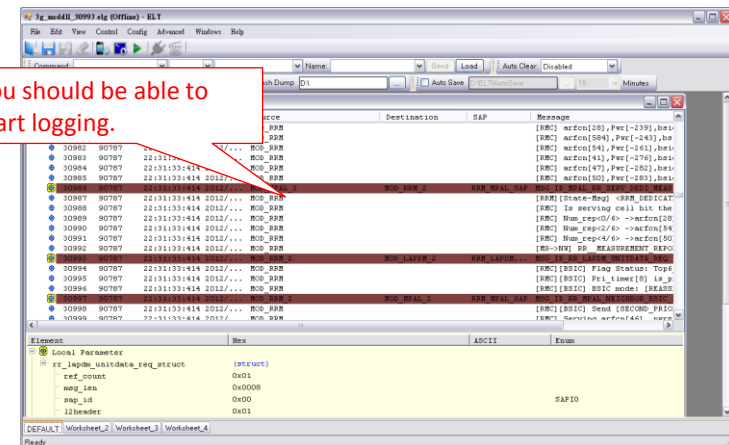
3. Import DBF file

If the database you loaded does not contain DSP modules information, import DSP Binary Filter (DBF) file to set up DSP filter.

DBF file path：*mcu\modem\dsp_bin\common\DSP_Default.dbf*
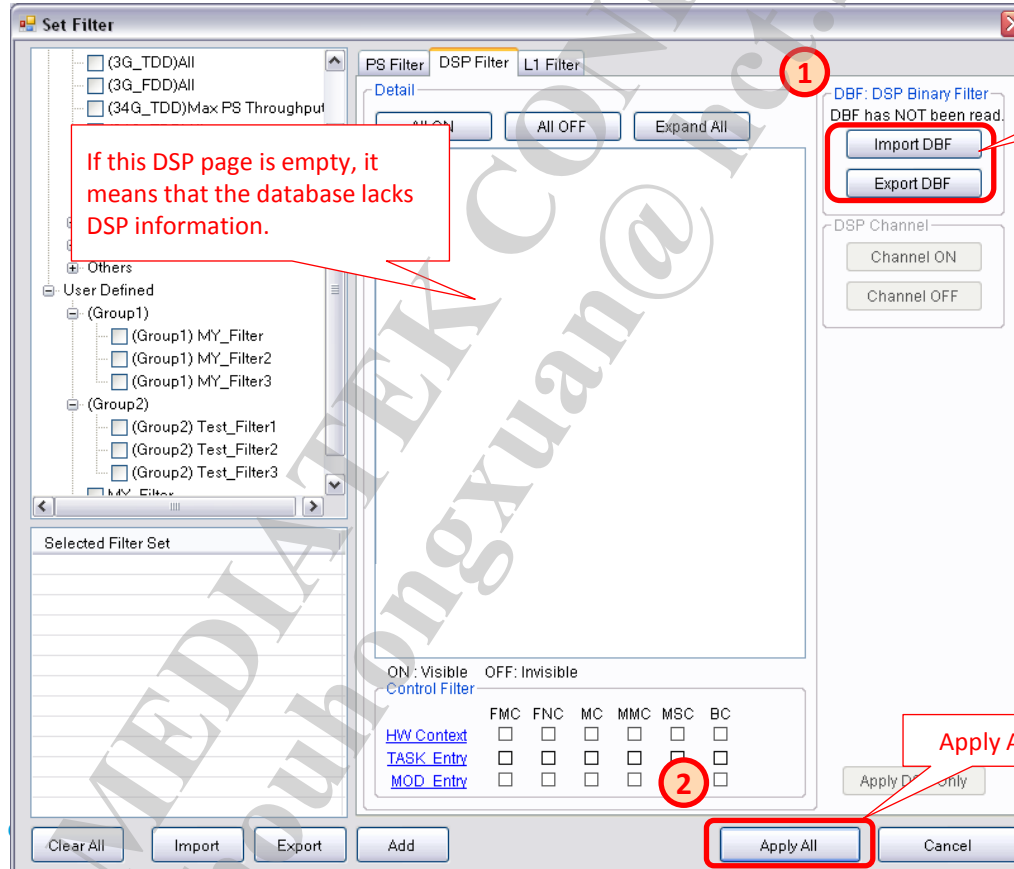
You need to import **DBF file** for DSP filter setting.

If this DSP page is empty, it means that the database lacks DSP information.

Apply All

USB Mode (6/6)

- ## **<u>Step 4.</u>** Save log

    1. Click "Disconnect" button (The same as connect)
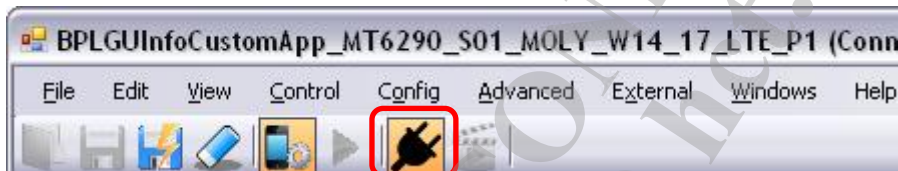
    2. Click "Save Log" to save .elg file

    IR_03_01.elg
    ELG File
    786,210 KB
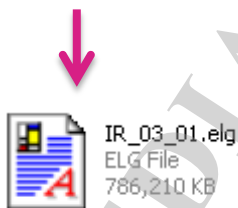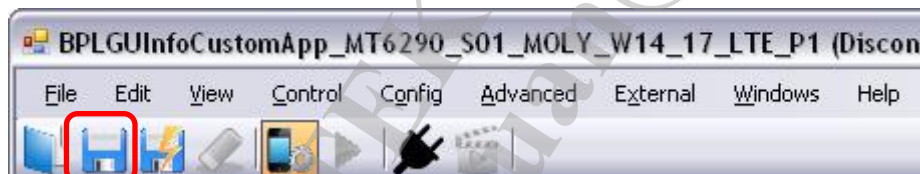
FAQ

- ## How to add PID/VID for USB port?

  - ELT uses the hardware ID information to perform port detection. The hardware ID is pre-defined in UsbAutoPortConfig.txt in ELT folder.
  - You could add PID/VID to UsbAutoPortConfig.txt for your USB if it is not in the list.

Each line defines one USB device to support. This info have to partial match to the hardware ID in the device manager (Product ID & Vendor ID)
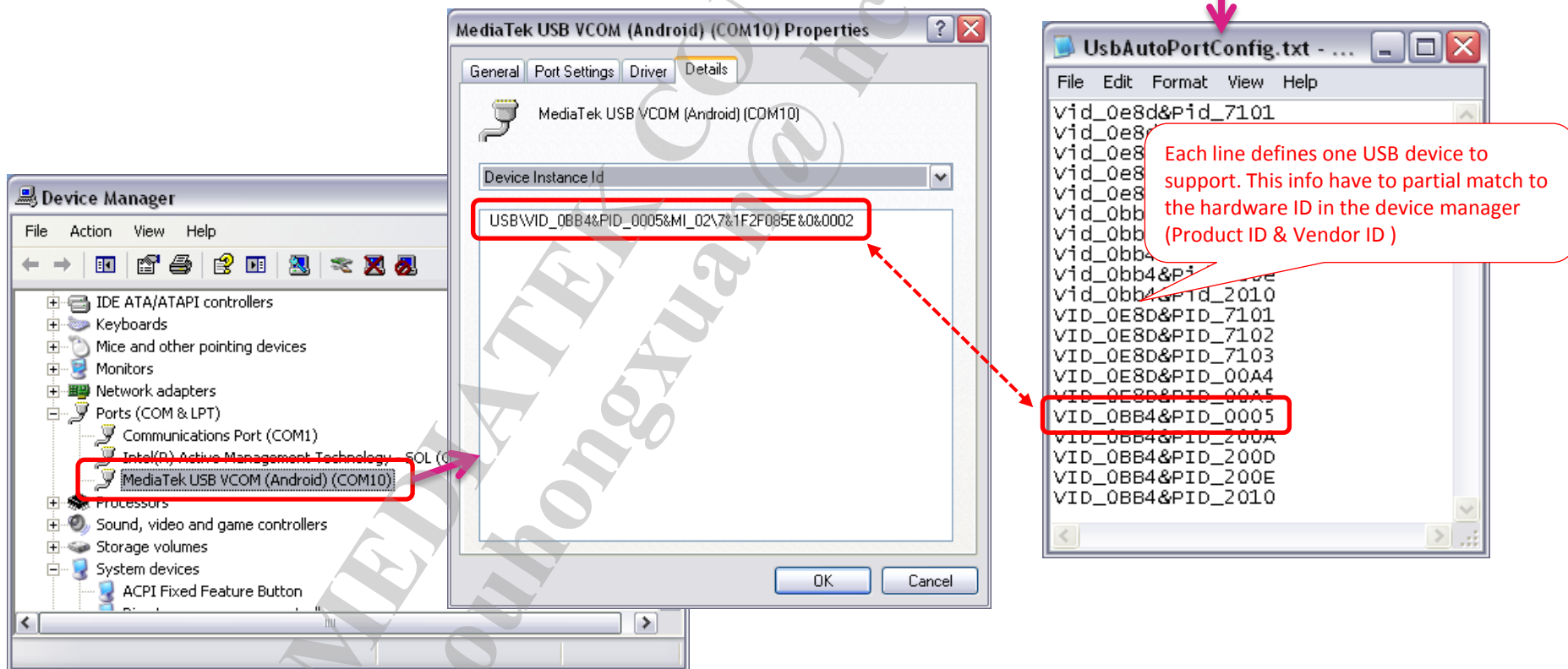
FAQ

- How to check USB connection?
  - You could use ELT Information window to see how ELT detects the logging port.
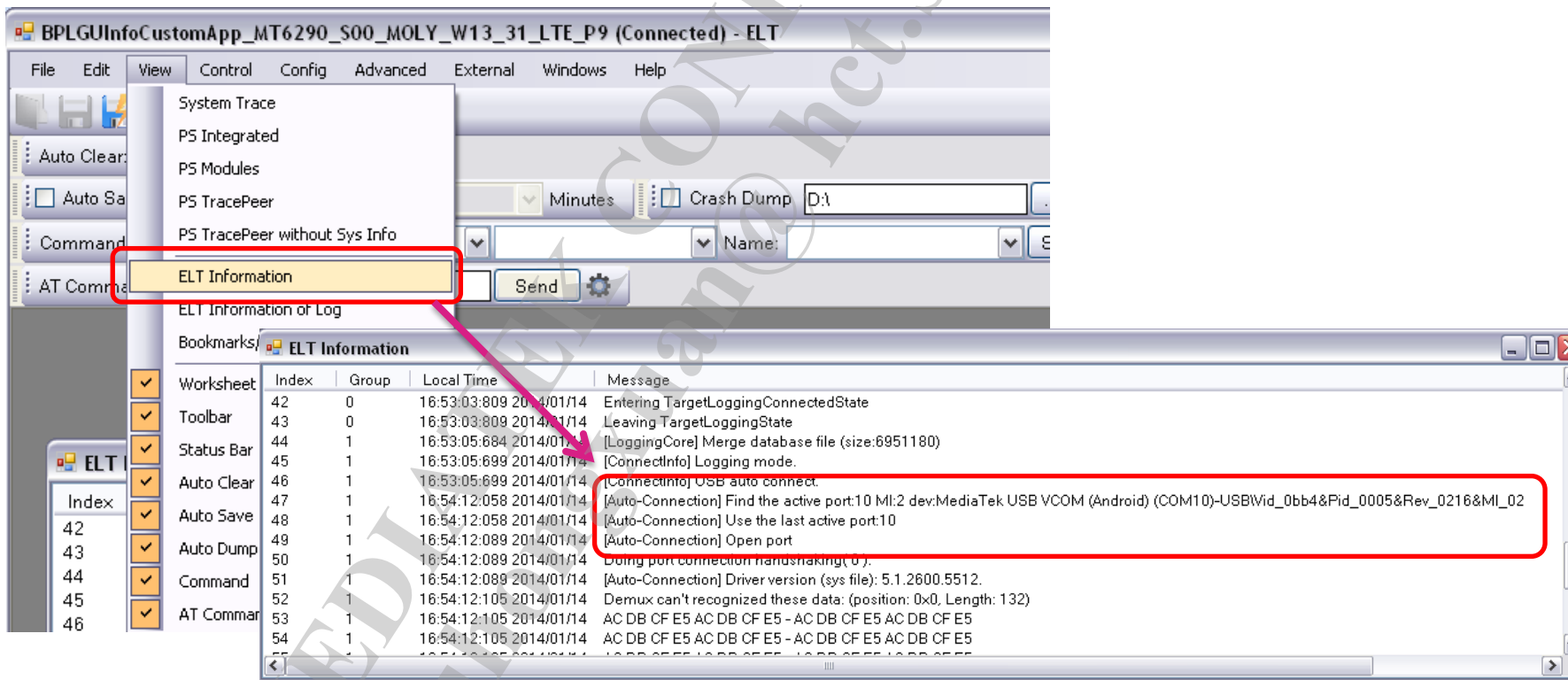
FAQ

- How to get current logging rate?
  - Logging rate is displayed at the bottom left corner

This is the current modem log rate
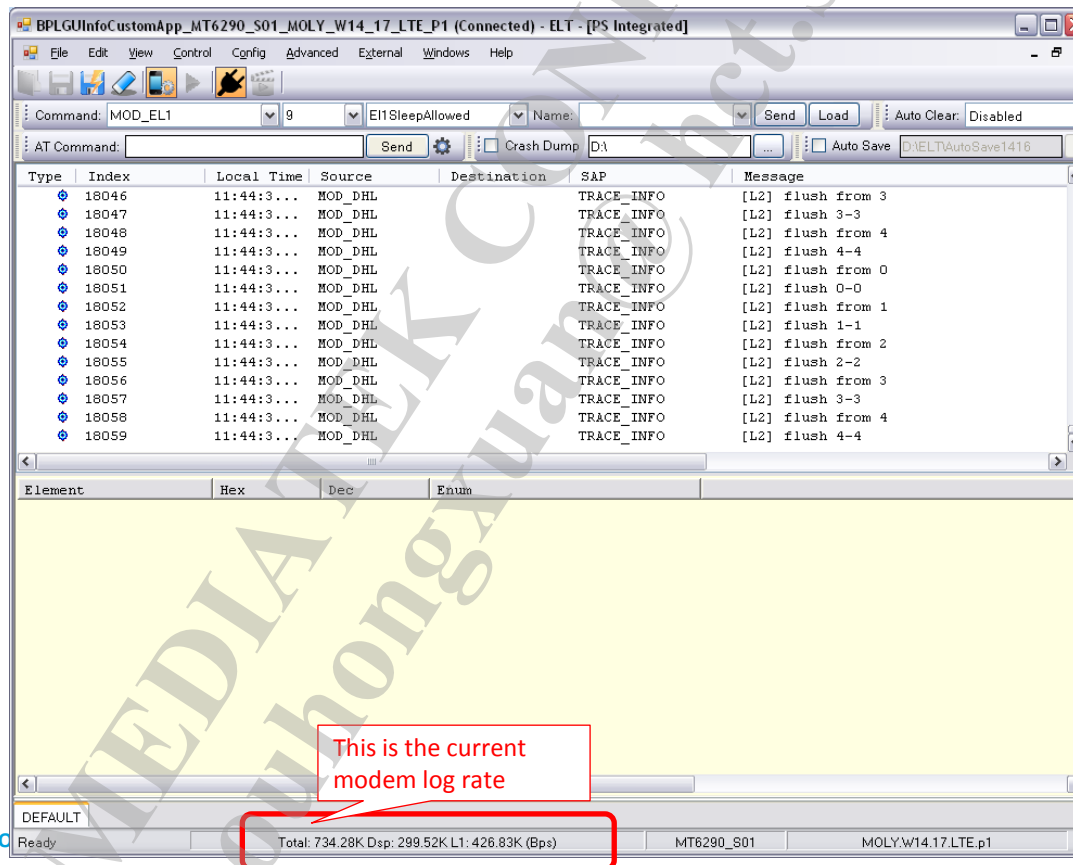
SD Mode (1/3)

- Hardware requirement
  - Mediatek LTE smart phone
  - SDIO card
    - SDHC/SDXC class 10 or higher
      - Verified card: Transcend class10 16GB
      - Not recommended: SanDisk Ultra UHS-1 series
  - eMMC
    - It's better to support 5+ MB/s write speed.
    - eMMC is used to temp log cache before SD card ready. Poor read/write performance of eMMC may cause ANR or performance drop of Android system.
      - Only happened in SD card mode is enabled.

SD Mode (2/3)

- ## **<u>Step 1.</u>** Set SD logging mode on the phone

  1. Dial ***#*#3646633#*#*** to enter engineering mode
  2. Press red circle button "STOP" to stop logging
  3. Press "Setting" at the top right corner
  4. Press "Modem Log" to enter modem log setting
  5. Press "Log Mode" and select "SD Mode"
  6. Press "Limit Log Size" and enter the amount of maximum log size to be kept (older logs will be deleted). You can also set it to maximum size to prevent deletion, and the logging will stop when it runs out of space.
  7. After setting, "START" on the main page to start the logging

Logger Setting

Click here to set maximum size

Logger start/stop
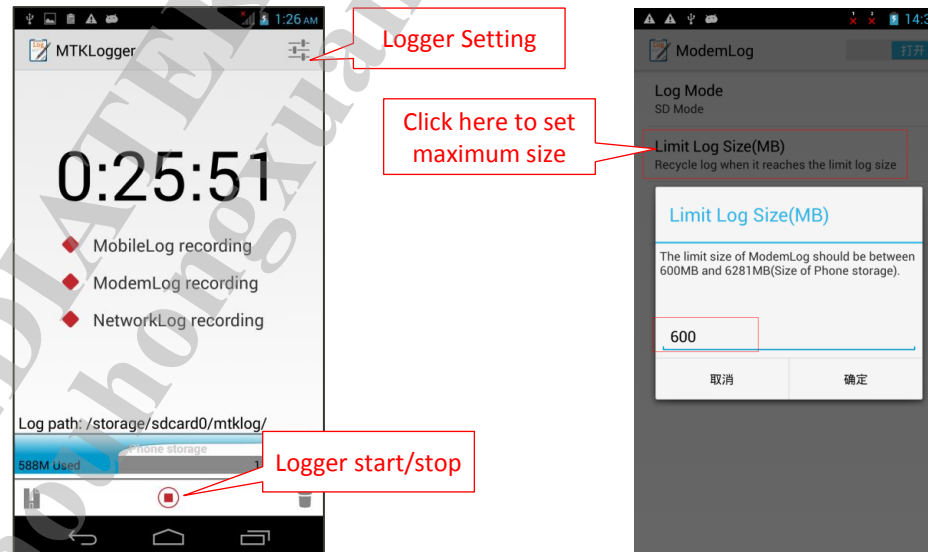
SD Mode (3/3)

- ## **Step 2.** Open file in ELT

  1. Use ***adb pull*** to transfer files to PC
     `adb pull /sdcard/mtklog/extmdlog/`
  2. Press "Target Logging Mode" and select database file
  3. Press "Control -> Open Mux Raw File"
  4. Press "Add" and select *.muxraw files
  5. Press "OK". ELT will save a <FirstMuxRawFileName>_merge.elg after finishing.
  6. Open the saved .elg file in ELT.
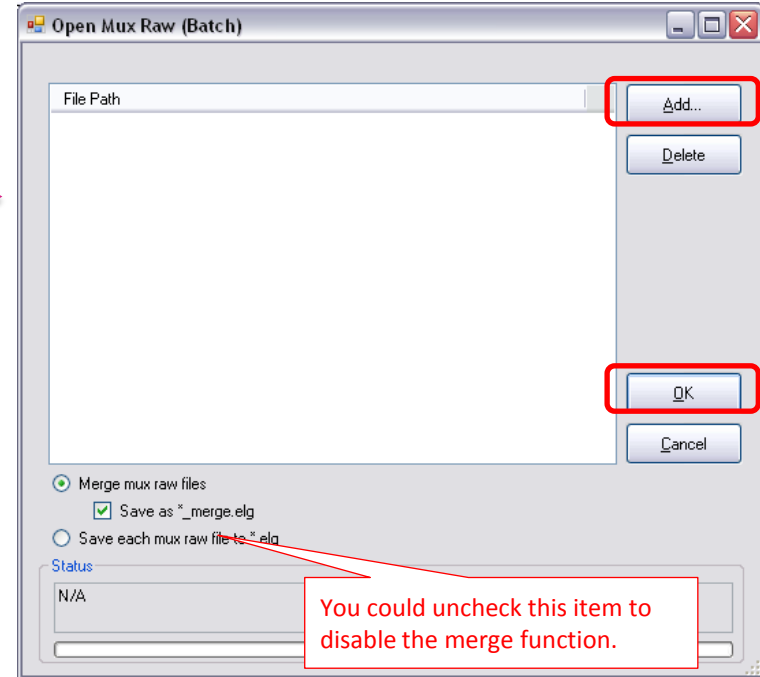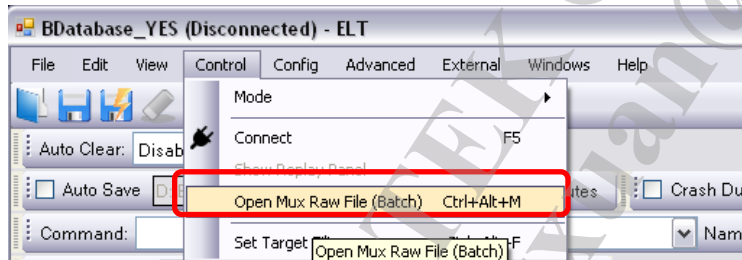
Open .elg file

You could uncheck this item to disable the merge function.

FAQ

- ## How to change default filter?
  - Follow SOP *"[LTE] Catcher_filter.bin Generation SOP with ELT"* to generate *catcher_filter.bin*
  - Place the filter binary in */sdcard/mtklog/extmdlog_config/catcher_filter.bin*
    ```
    adb push catcher_filter.bin
    /sdcard/mtklog/extmdlog_config/catcher_filter.bin
    ```

- ## How to confirm that is logging started?
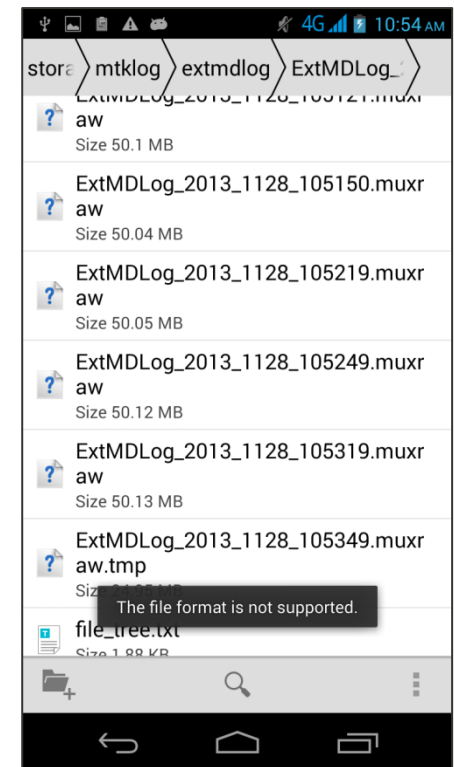 - Use "**File Manager**"

  - Check if the files in the following path grow periodically *\Phone Storage (or SD card)\ mtklog\extmdlog\ExtMDLog_<latest date>*

- ## How to get current logging rate?
  - Switch to USB logging mode and use ELT tool to confirm (Refer to USB logging guide for details)

- ## How to split log into different folders?
  - Pause and resume logging from MTKLogger APP

FAQ

- ## When ELT crash…
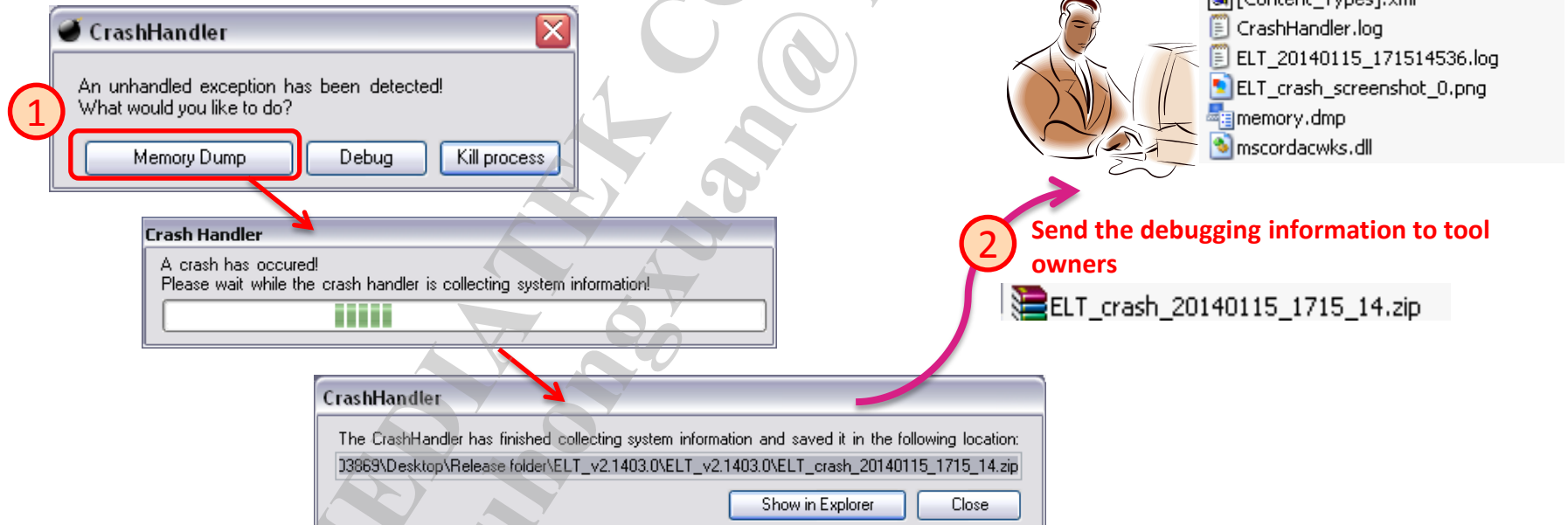 - When ELT encounters unhandled exception, there is an auto crash diagnostic program to archive debugging information for further issue analysis.
  - Please send the debugging information to ELT tool owners for further inspection.

Debugging Information Archiving

①

② **Send the debugging information to tool owners**

[LTE] Catcher_filter.bin Generation SOP with ELT

2014/04/15

Introduction

- This document is to illustrate how to generate catcher_filter.bin for LTE Log2SD on Smartphone.

- Catcher_filter.bin on LTE contains MCU and DSP filters.

  - You need to push catcher_filter.bin to SD card to enable it
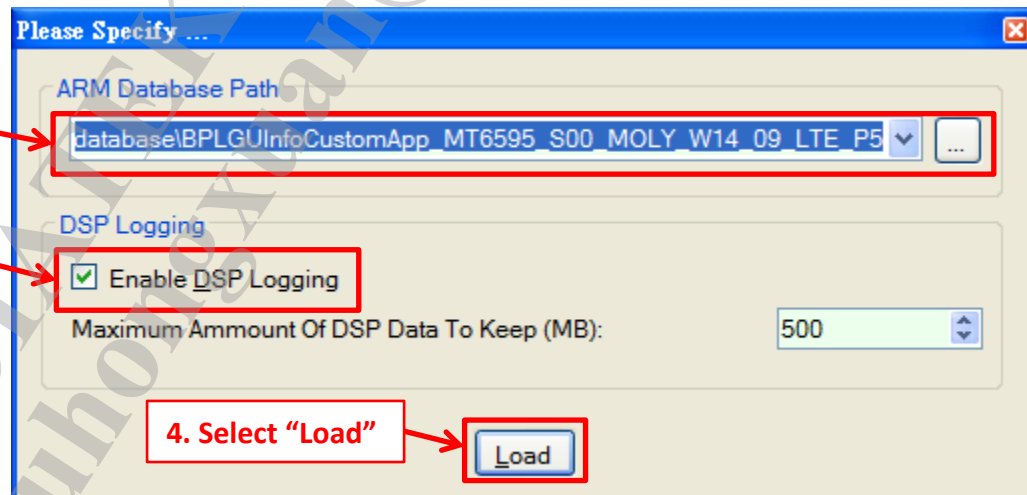
- This feature is supported since ELT_v2.1412

How to generate catcher_filter.bin via ELT (1/2)

- Enter target logging mode. Load DB
  - [database path] mcu\build\$(project_name)\$(flaver_name)\dhl\database
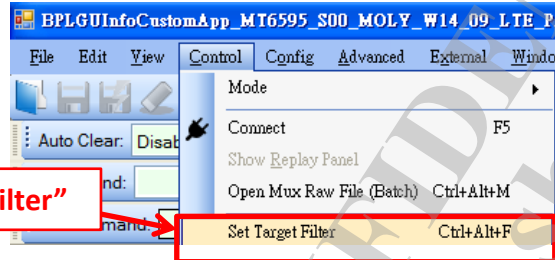

1. Click "Enter target logging mode"

2. Select Database

3. Select "Enable DSP Logging"

4. Select "Load"

How to generate catcher_filter.bin via ELT (2/2)

What is DBF?
DSP config file
1. Can be generated by ELT
2. Can be generated during the DSP building phase
   [Path] mcu\modem\dsp_bin\common\DSP_Default.dbf

5. Select "Control" -> "Set Target Filter"

6.1 (Optional) If you use legacy load, you may not see detail options in DSP Filter page, you need to select "Import DBF"

6. Select on or off in PS/DSP/L1 filter page
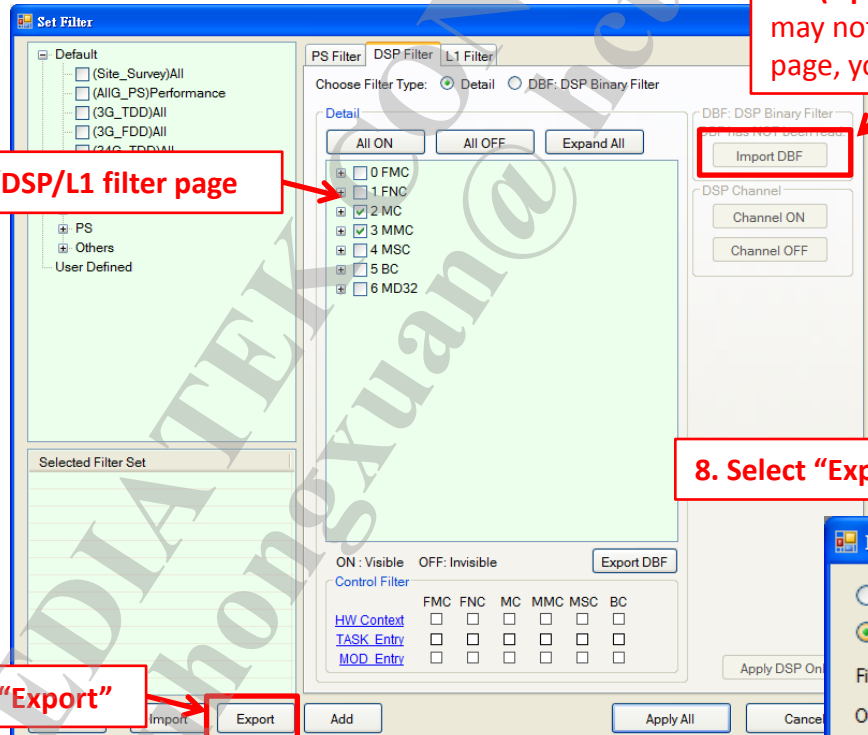
8. Select "Export to catcher_filter.bin", then "OK"

7. Select "Export"
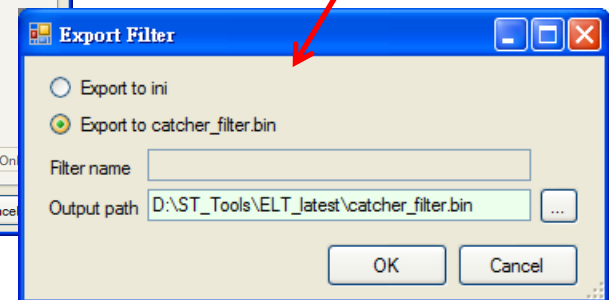
Update Catcher_filter.bin step

- Place catcher_filter.bin into **(SDCARD)** /mtklog/extmdlog_config/catcher_filter.bin
    - In 82LTE phone for example

      (SDCARD) **/mnt/sdcard**   for internal storage

      /mnt/sdcard2 for external SD cards
    - `adb push catcher_filter.bin /sdcard/mtklog/extmdlog_config/catcher_filter.bin`

    - MTK Logger will check whether the filter is updated and resend it if necessary in 5-second interval

# Capture SIM2 Logs for MT6732/6752 DSDA Platform

2014/08/19

SIM2 Logging for DSDA Projects

- On DSDA projects, SIM2 logs could be captured separately from SIM1 logs.
  - SIM1/SIM2 logs are captured to different SD card paths and ELT Tools.
- Both SIM1/SIM2 logs support USB/SD channel.
  - The UI option on MTKLogger for SIM1/SIM2 is identical.
  - Once you enable MDLogging on MTKLogger, both SIM1 and SIM2 logs are captured.
- The following slides illustrate how to enable SIM2 logging.

USB Mode

- **Step 1.** Set USB logging mode on the phone
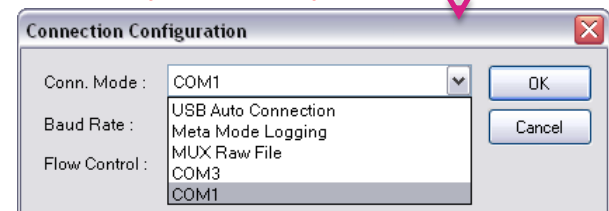
- **Step 2.** Set up ELT for logging
  1. Load database
  2. Click "Connect" button and set "USB Auto Connection" and COM port
     - Selecting modem index, "VCOM1" or "VCOM2", to connect MD logger.
       - In general, VCOM1 is for SIM1 and VCOM2 is for SIM2.
     - You could also set COM manually.
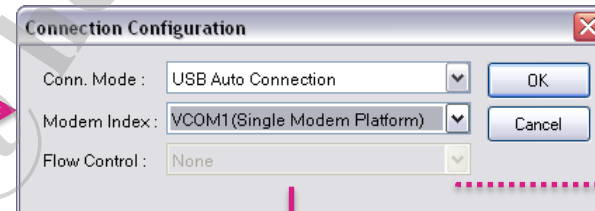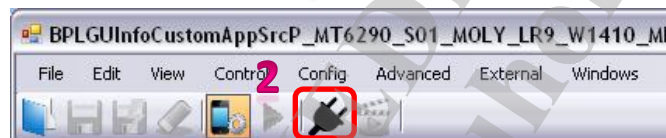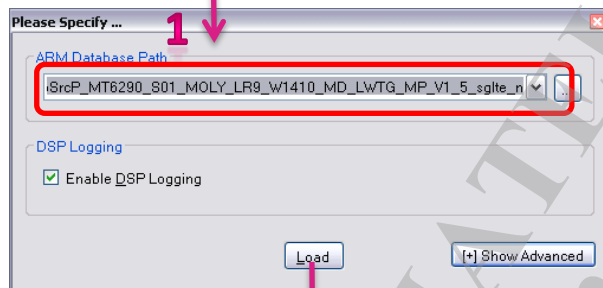
1. Auto connection: select modem index
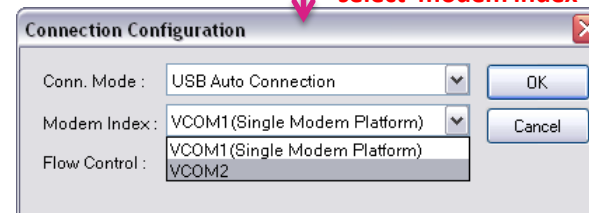
2. Manually: select COM port

SD Mode

- **<u>Step 1.</u>** Set SD logging mode on the phone and start logging

- **<u>Step 2.</u>** Open file in ELT

- **<u>Note.</u>**

  - After the logging finish, the logs are under: *{$SDcard_path}/mtklog/mdlogX, e.g.*

    - SIM1 log folder: *storage/sdcard0/mtklog/mdlog1/*
    - SIM2 log folder: *storage/sdcard0/mtklog/mdlog2/*

FAQ

- **How to set/get "VCOMx - SIM" mapping table from Device?**

Stop Logger and go to Modem Log setting page

You can find the mapping table here.
By default, VCOM1 is for SIM1, and VCOM2 is for SIM2

You can also change the mapping table.

FAQ

- **If the connection is abnormal…**
  - Please make sure that
    - **MD Logger has been switched to USB mode**
    - **ADB connection is correct**
    - **USB driver is OK**
      - VCOMs are showed in device manager
      - If not, please update the latest VCOM driver
  - If ADB is attached correctly and VCOMs are showed in device manager, but ELT still can not build connection with VCOM ports
    - **Please replug USB cable.**
    - **If it doesn't work, please restart ELT and plug in USB cable again.**
    - *Note: When ELT is connected with the device, please press "Disconnect[F5]" on ELT before unplugging USB cable. Otherwise, you may need to restart ELT.*