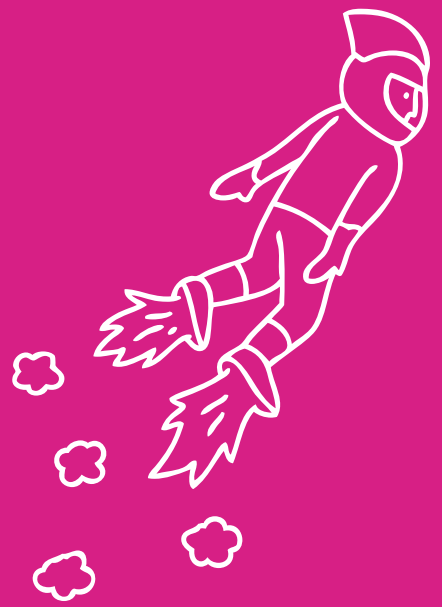
Doc No: CS6001-H7H-TND-V1.0EN

Version: V1.0

ELT Logging Guide

A guide to help you start logging messages with ELT



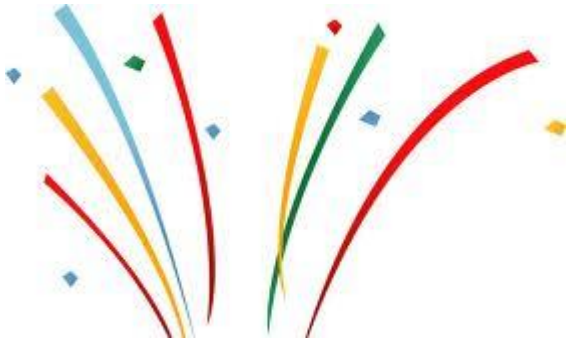
2017/12/14

Revision History

Revision	Date	Description
1.0	2017/12/14	Initial version

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

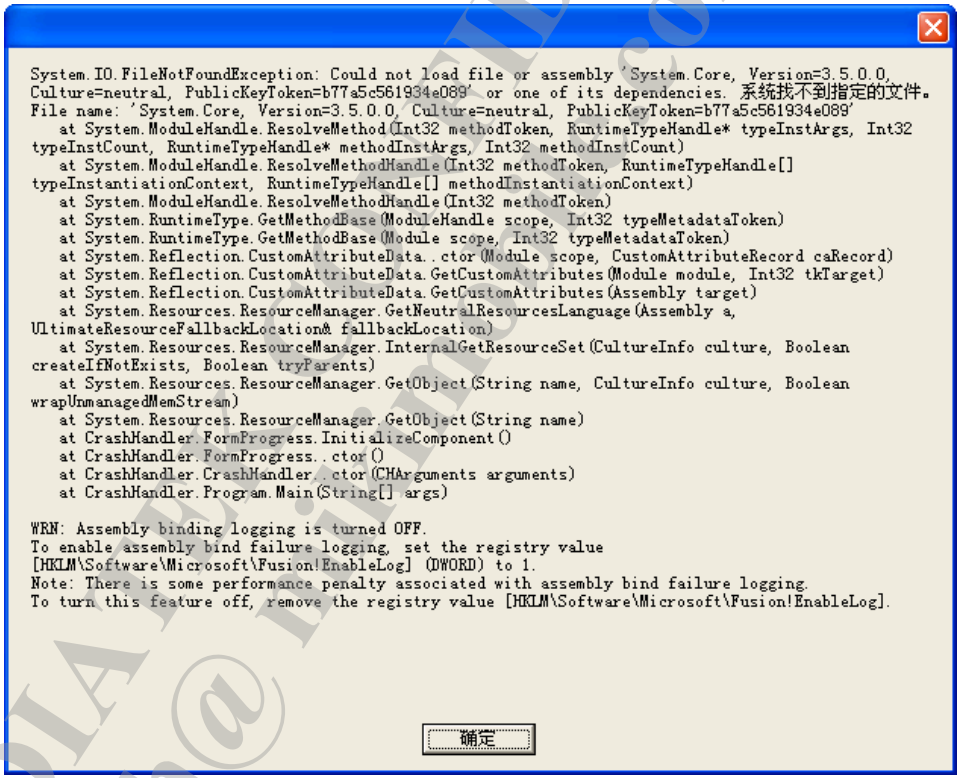


ELT Overview

- System requirements
  - A computer must meet the following requirements, or ELT may not be executed successfully
    - 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



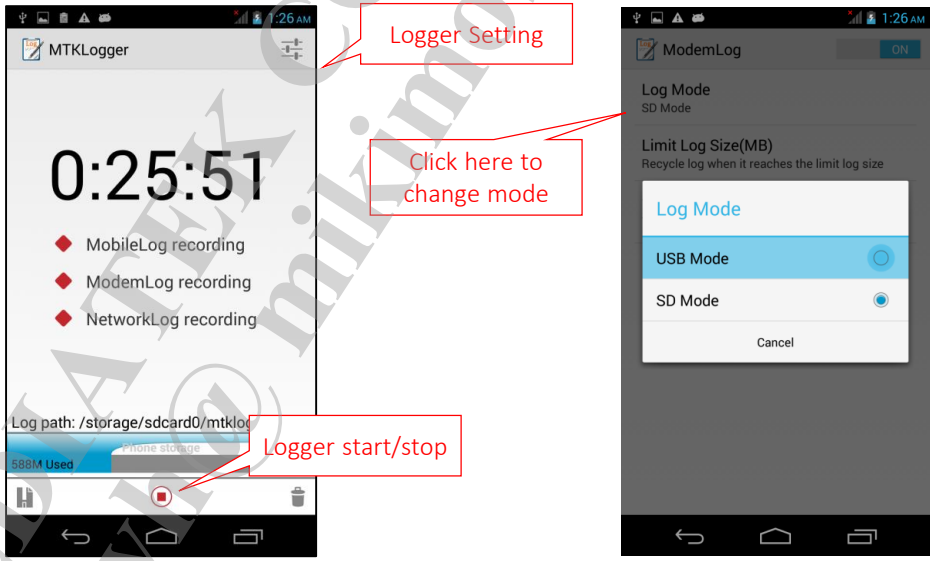
USB Mode (1/6)

- Hardware requirement
  - Mediatek LTE smart phone
- Software requirement
  - PC Tool: ELT v2.1523.0 or higher

USB Mode (2/6)

- **Step 1.** Set USB logging mode on the phone

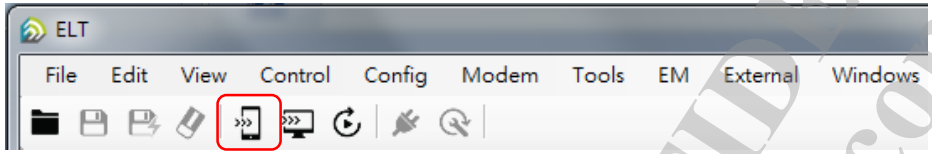
1. Dial *#*#3646633#*#* to enter engineering mode/ Launch MTKLogger
2. Press red circle button “STOP” to stop logging
3. Press “Setting” at the top right corner
4. Press “Modem Log” to enter modem log setting
5. Press “Log Mode” and select “USB Mode”
6. Start logging by pressing “START” on the main page



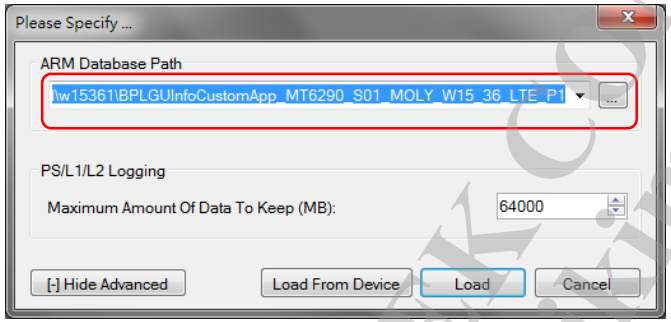
USB Mode (3/6)

- **Step 2.** Set up ELT for logging

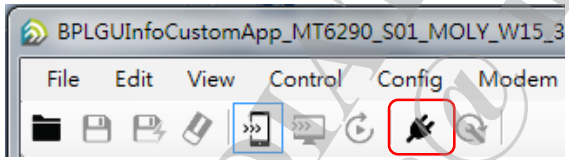
1. Click “Target Logging Mode” button

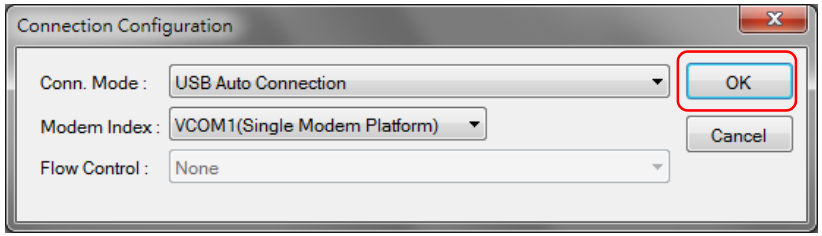


2. Select database file



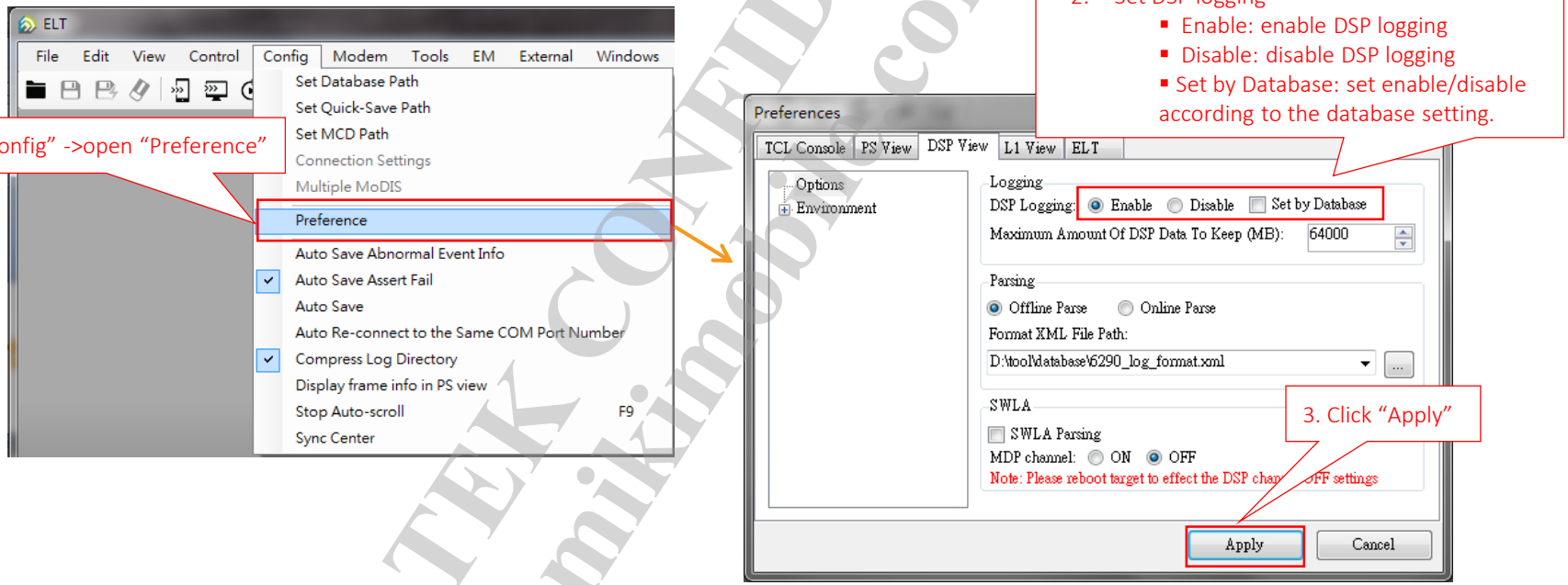
3. Click “Connect” button and set “USB Auto Connection”





USB Mode (4/6)

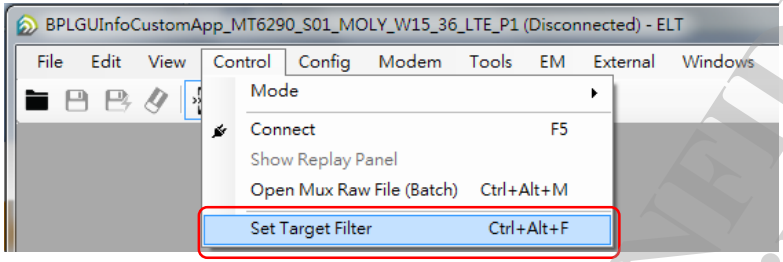
- How to check if DSP logging is enable/disable ?
  - Note: You have to set DSP logging before the connection



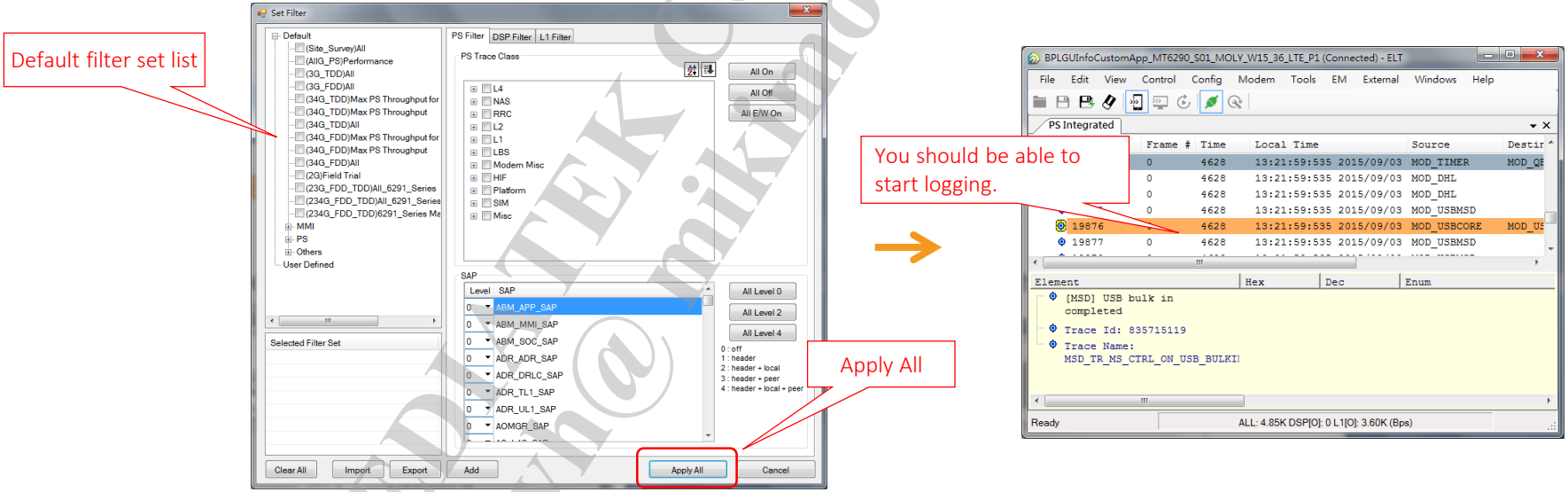
USB Mode (5/6)

- **Step 3.** Set up default filter

1. Select “Set Target Filter” in “Control” menu



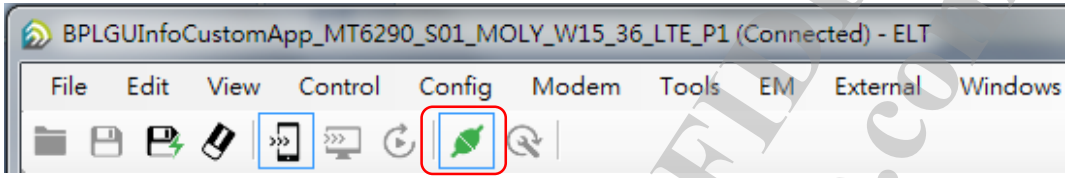
2. Select the appropriate filter in the list and click “Apply All”



USB Mode (6/6)

- **Step 4.** Save log

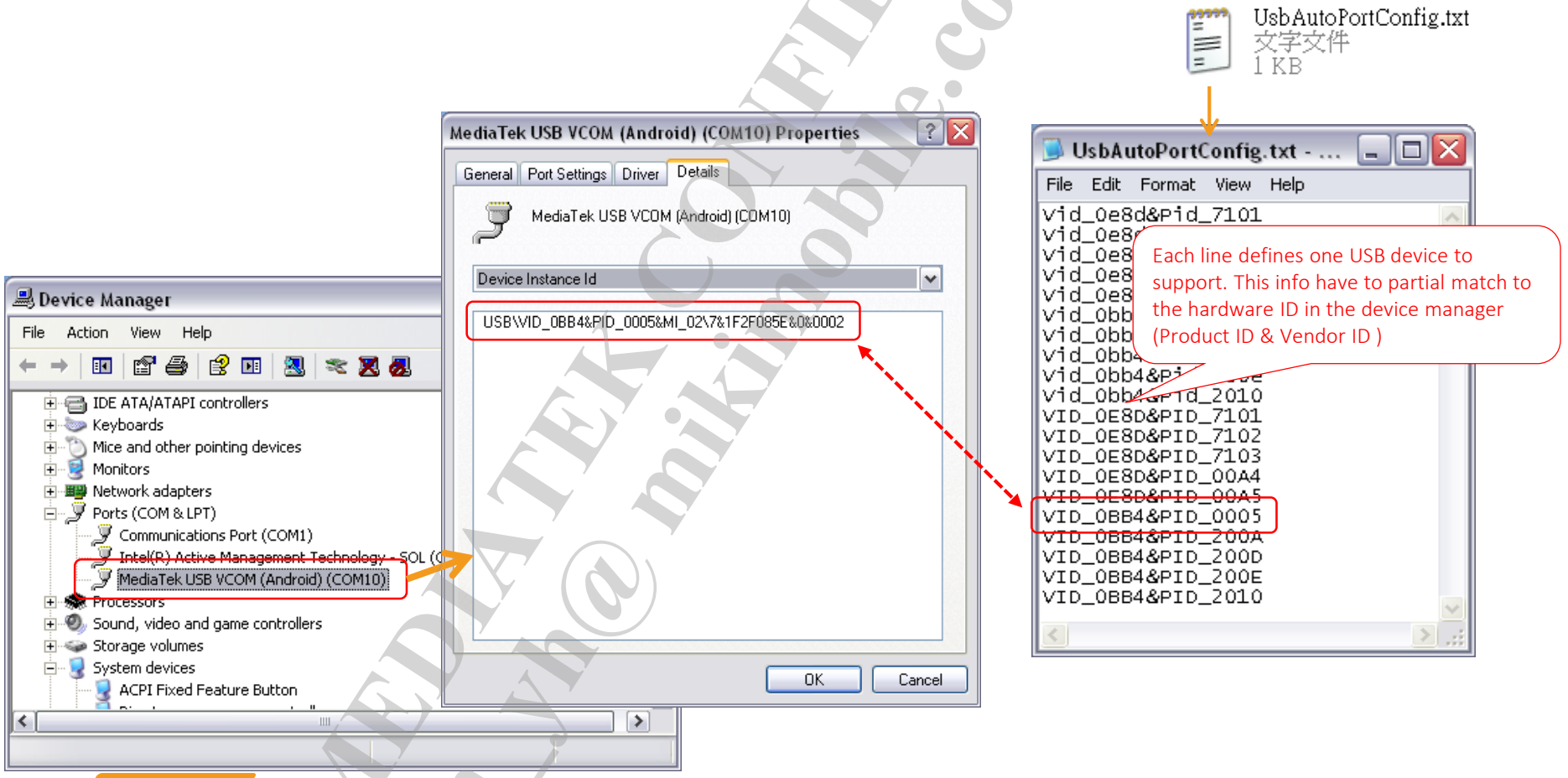
1. Click “Disconnect” button (The same as connect)



2. Click “Save Log” to save .elg file

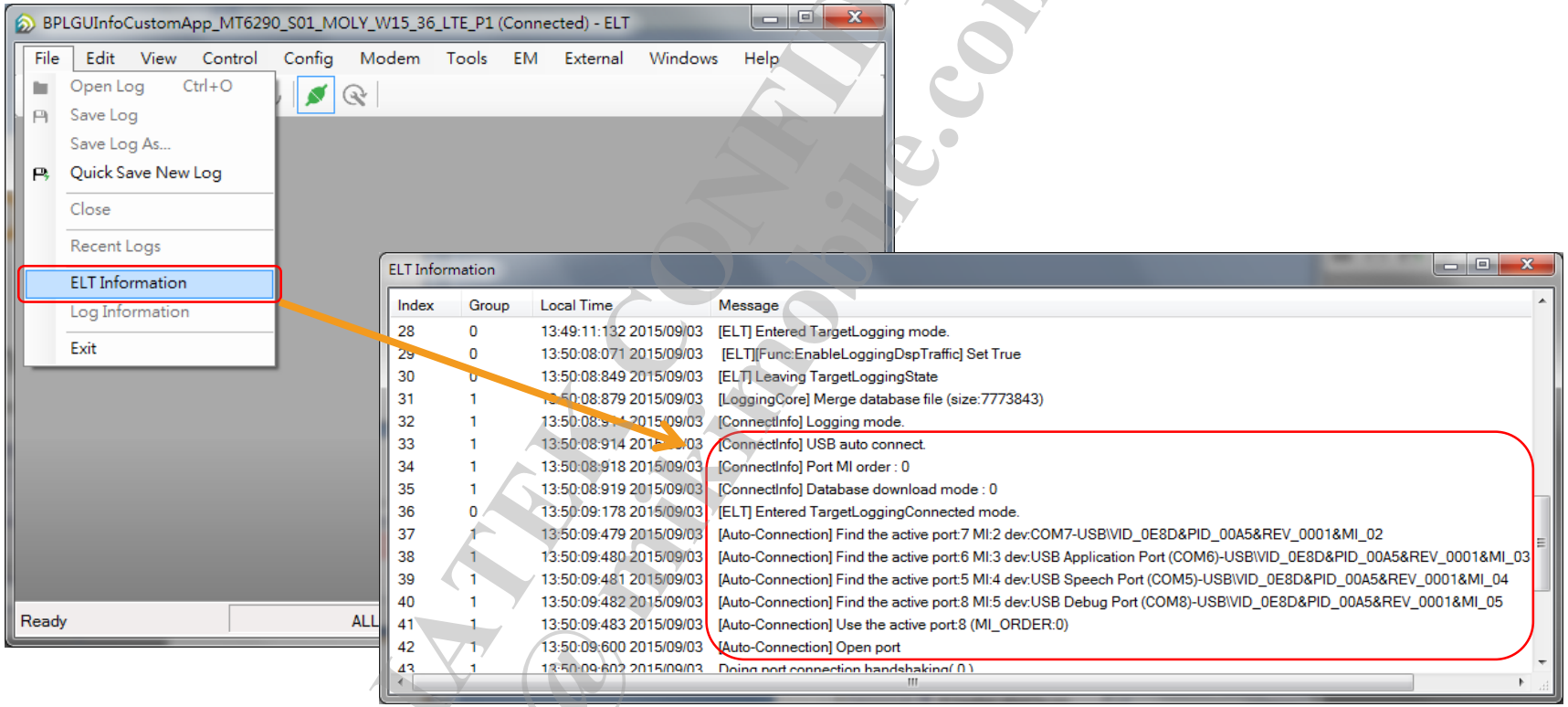
FAQ

- 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.



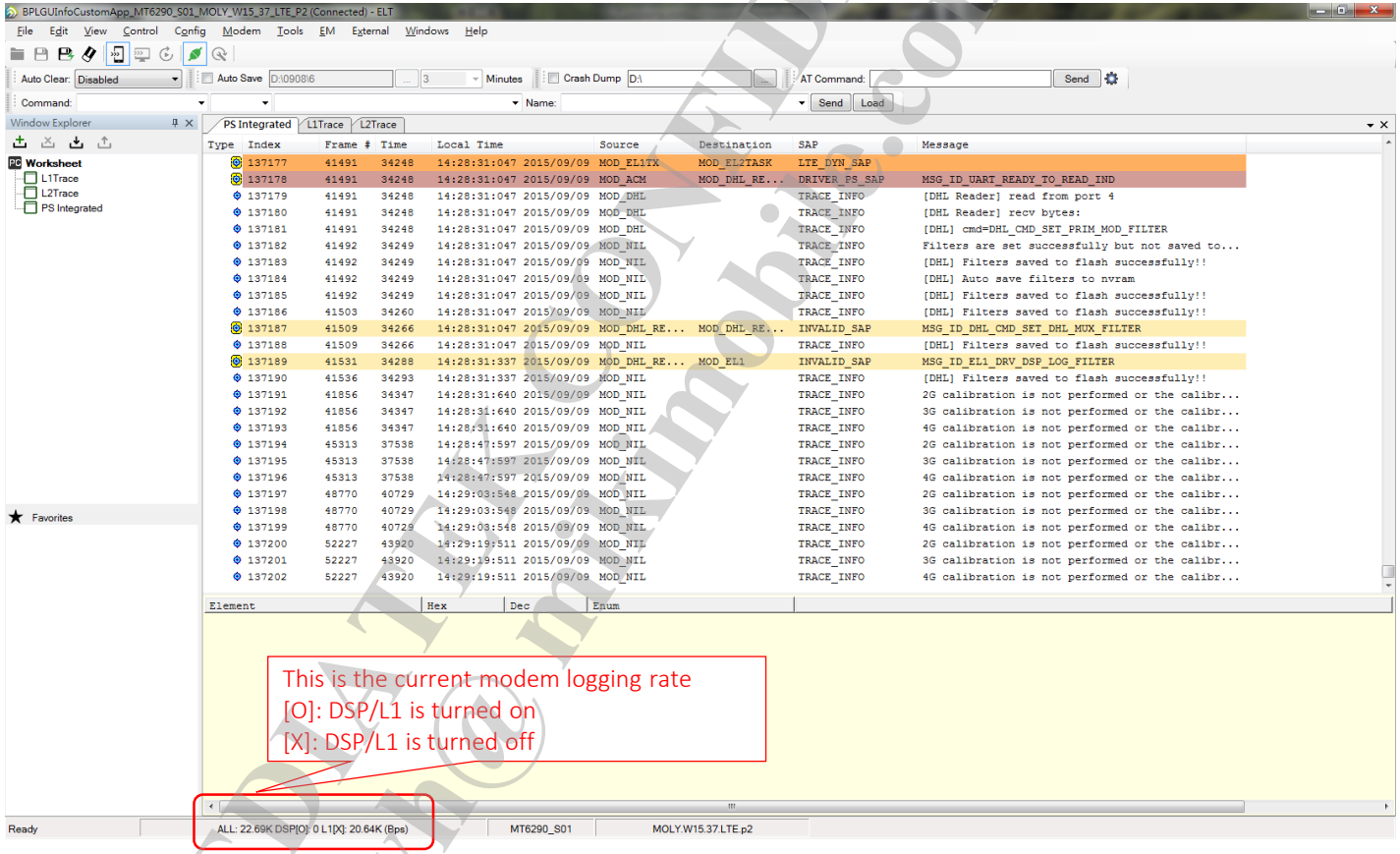
FAQ

- 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
  - [O] and [X] are symbols of DSP/L1 switch



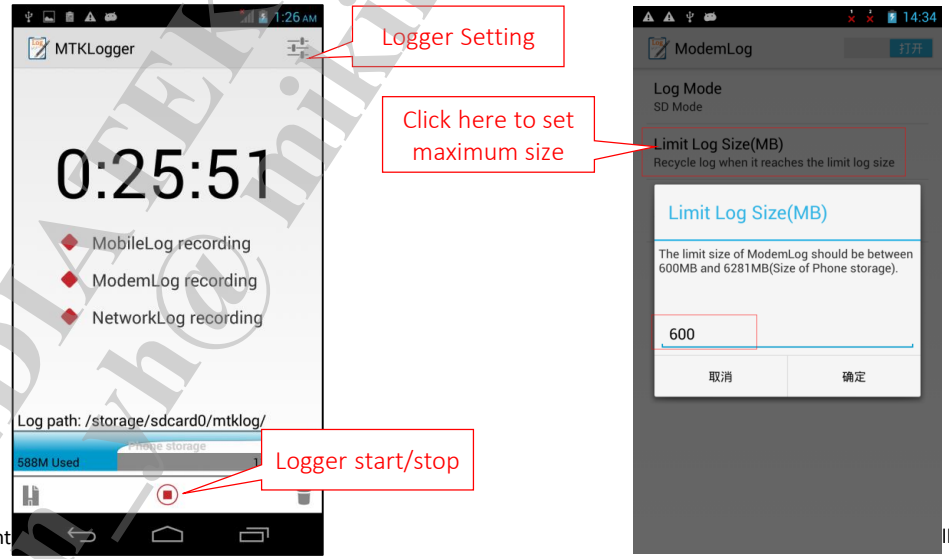
SD Mode (1/3)

- 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
  - Internal storage: 5+ MB/s write speed.
    - Internal storage is used to temp log cache before SD card is ready. Poor read/write performance of internal storage may cause ANR or performance drop of Android system.

SD Mode (2/3)

- **Step 1.** Set SD logging mode on the phone

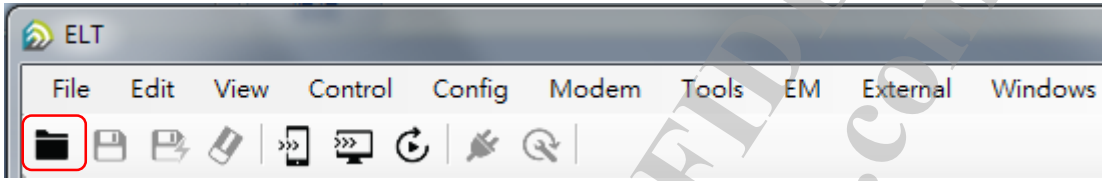
1. Dial *#*#3646633#*#* to enter engineering mode / Launch MTKLogger
2. Press red circle button “STOP” to stop logging
3. Press “Setting” at the top right corner
4. Press “Modem Log” to enter modem log setting
5. Press “Log Mode” and select “SD Mode”
6. Press “Limit Log Size” and enter the amount of 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



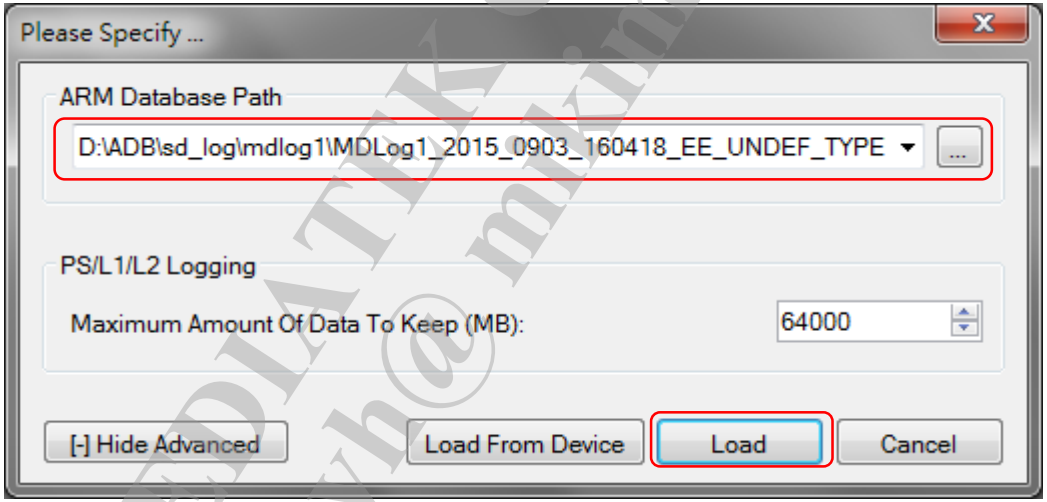
SD Mode (3/3)

- **Step 2.** Open Mmuxraw/muxz in ELT

1. Press “Open Log”.



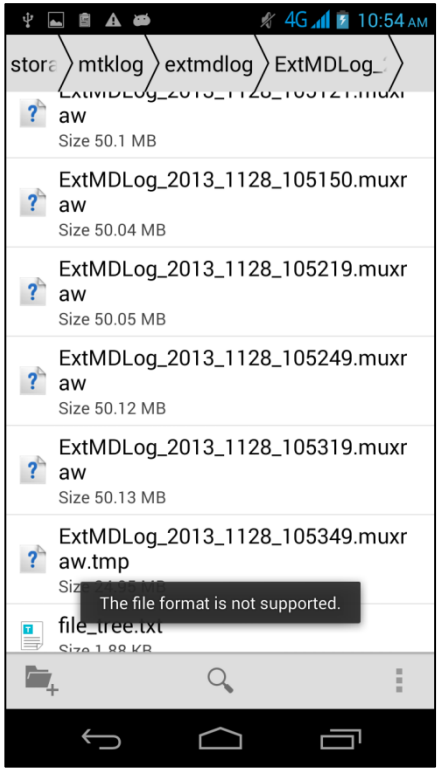
2. Choose one or multiple *.muxraw/ *muz file
3. Select a database if necessary
4. Click “Load”



FAQ

- How to change default filter?
  - Follow SOP *"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**" 

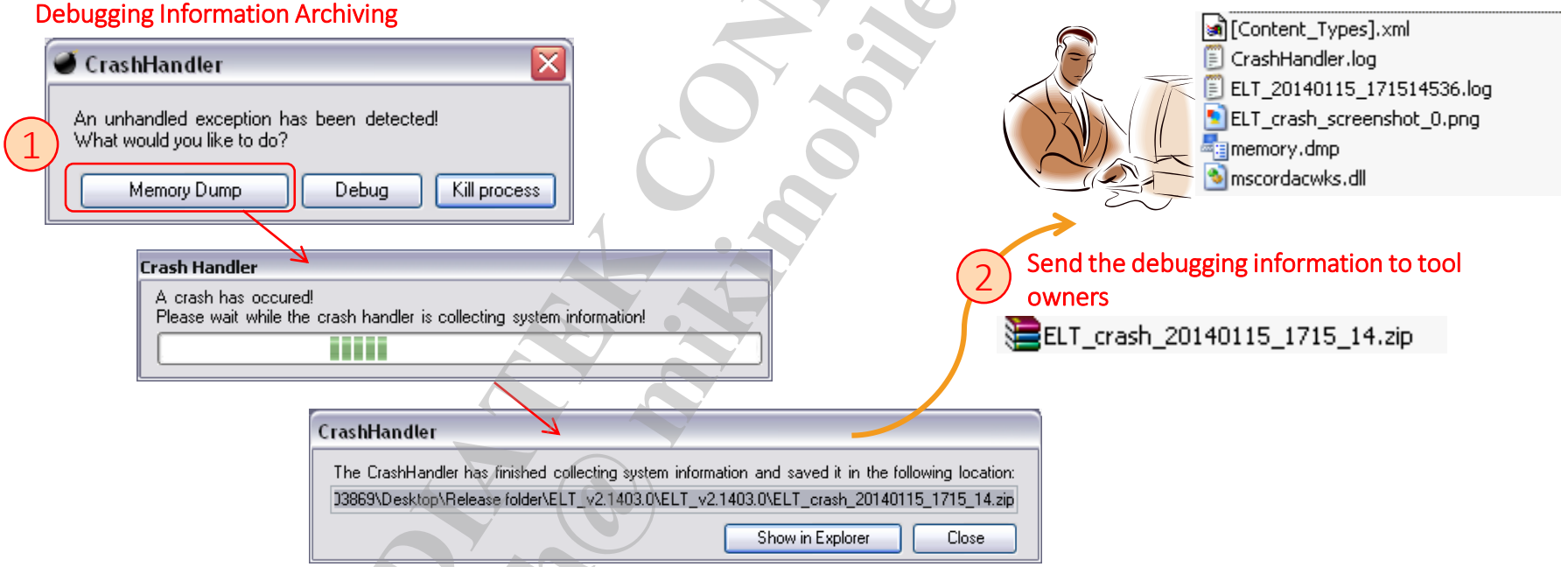
  - Check if the files in the following path grow periodically
    \Phone Storage (or SD card)
    mtklog\extmdlog\ExtMDLog_<latest date>
- How to get current logging rate?
  - Switch to USB logging mode and use ELT tool to confirm
    (Refer to USB logging guide for details)
- How to split log into different folders?
  - Pause and resume logging from MTKLogger APP



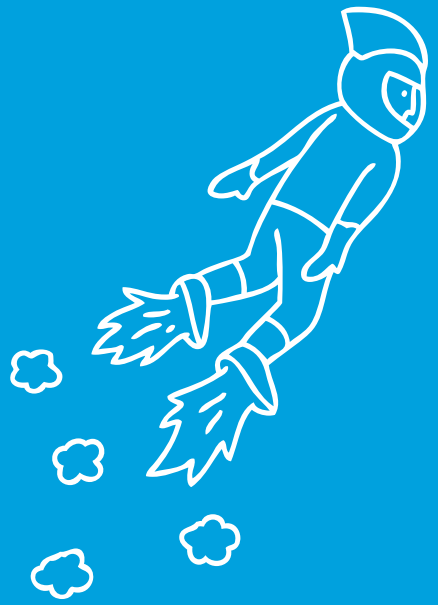
FAQ

- 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



Catcher_filter.bin Generation SOP with ELT



2017/12/14

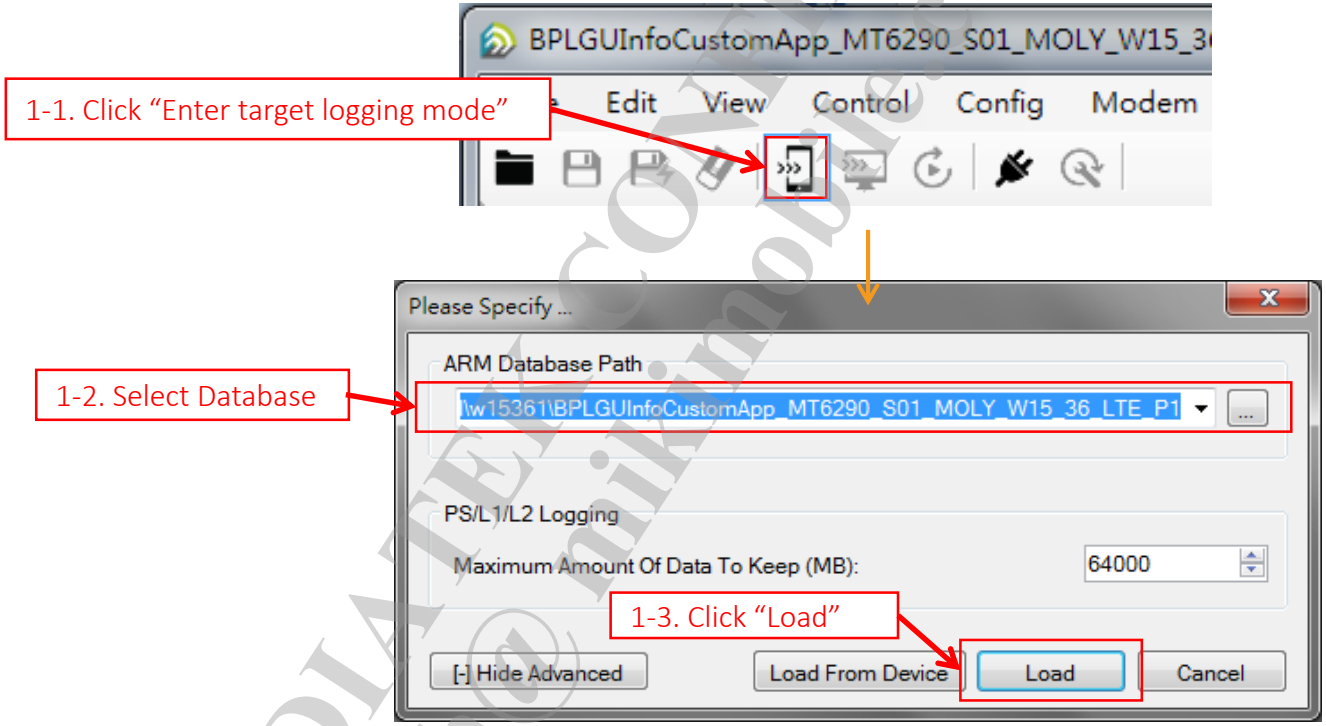
Introduction

- This document illustrates how to generate a catcher_filter.bin for LTE Log2SD on smart phone
- catcher_filter.bin on LTE contains both **MCU** and **DSP** filters
  - Put catcher_filter.bin into SD card to enable the filter you set
- You can generate catcher_filter.bin via
  - ELT
    - This feature is supported since ELT_v2.1409.0
  - Cgen

How to generate catcher_filter.bin via ELT (1/3)

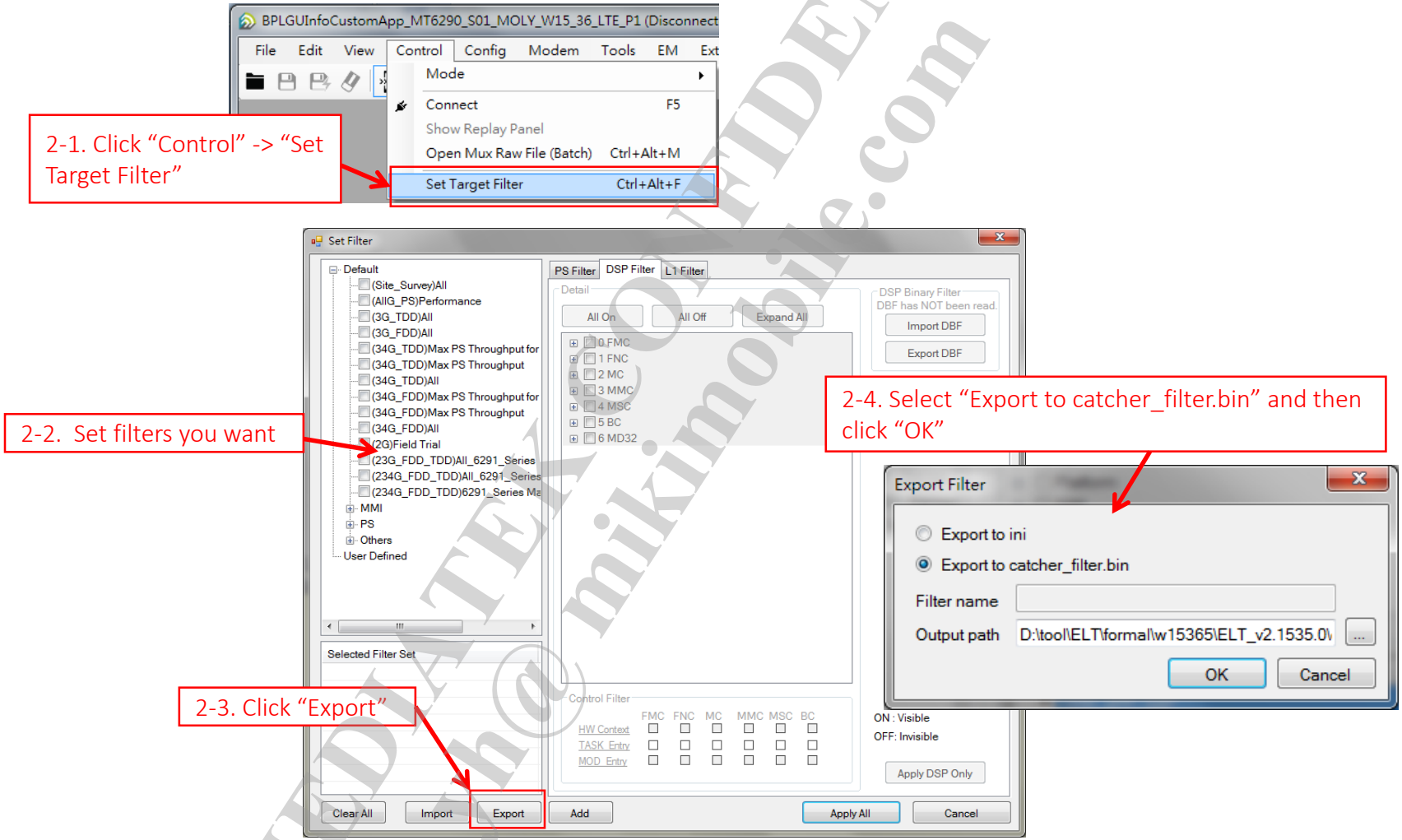
Step1: Enter target logging mode

- The database should be the same as the one of the load used on the target
- [database path] mcu\build\$(project_name)\$(flaver_name)\dhl\database



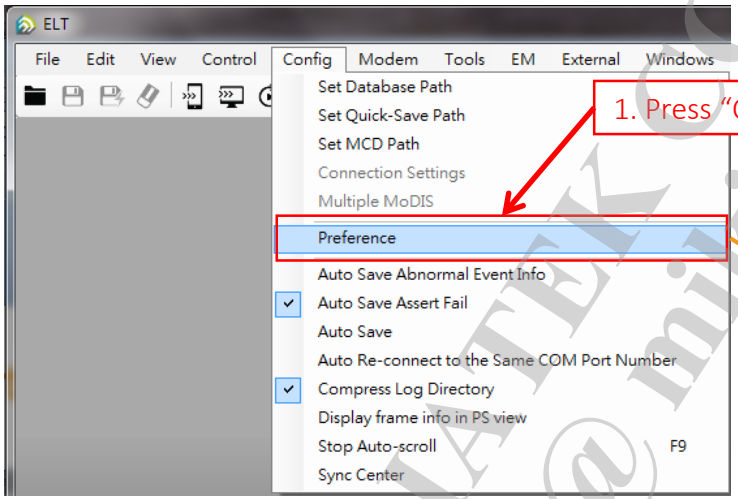
How to generate catcher_filter.bin via ELT (2/3)

- Step2: Set target filter and export



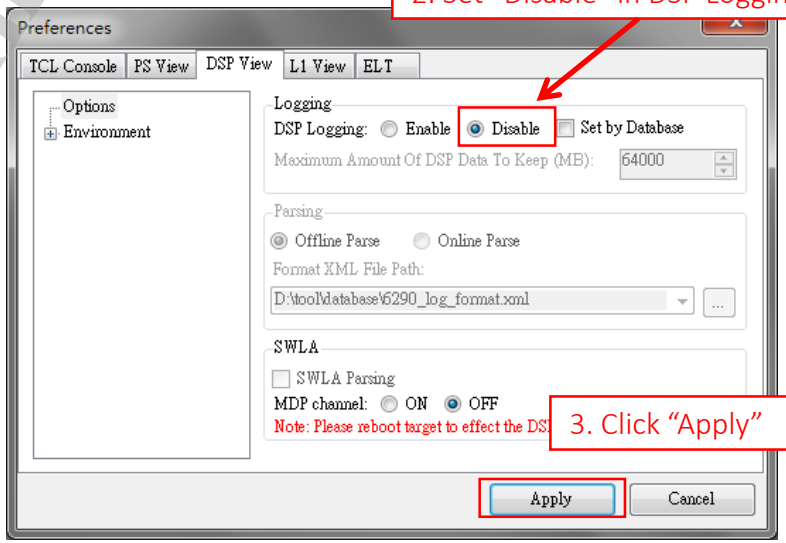
How to generate catcher_filter.bin via ELT (3/3)

- Note: How to generate a catcher_filter.bin which can disable DSP?
  - Step1: You have to disable DSP before exporting the filter
    - Load the database
    - Disable DSP: ELT → Config → Perference → DSP view → Logging → Disable
  - Step2: Set target filter and export



1. Press "Config" -> Open "Preference"

2. Set "Disable" in DSP Logging



3. Click "Apply"

Update Catcher_filter.bin (1/2)

- Step 1: Rename the file with a postfix according to the platform
  - For M10 → catcher_filter_1_lwg_n.bin or 1_ltg_n.bin
  - For M20 → catcher_filter_1_ulwctg_n.bin
- Step 2: Put the file into SD card
  - Catcher_filter.bin path
    - M10/M20/M30/M21: [SD card]/mtklog/mdlog1_config
    - M30/M21/... : /vendor/firmware
  - For example
    - *adb push catcher_filter_1_lwg_n.bin /vendor/firmware/catcher_filter_1_lwg_n.bin*

Update Catcher_filter.bin (2/2)

- Note
  - You can put the file to internal storage or external SD card .
  - You should be aware that the filter applied will be the one in the log path set in MTKLogger, i.e., if the log path you set is in the external SD card, the filter will be the one in the external SD card as well.
  - If the filter you applied is in the external SD card, it will be invalid once you remove the SD card.
  - MDLogger will check whether the filter is updated and resend it if necessary.