User Manual

User Manual

Customer Support

Display Configuration UI Tool User Guide

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MediaTek Inc.

Postal address

No. 1, Dusing 1st Rd. , Hsinchu Science Park, Hsinchu City, Taiwan 30078

MTK support office address

No. 1, Dusing 1st Rd. , Hsinchu Science Park, Hsinchu City, Taiwan 30078

Internet

http://www.mediatek.com/

Document Revision History

Revision	Date	Author	Description
0.1	2013/8/25	Xiaokuan Shi	Initial Draft
0.4	2017/01/25	Le Yang	Remove dump layer

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1 Introduction

1.1 Overview

The purpose of ***Display Customization Tool*** is to simplify the actions of adjustment for LCM Driver IC parameters, and also the adjustment of DSI settings.

One can adjust the parameters of LCM Driver and DSI by using this tool, without modify the source code or compile it and download.

Basically, we use ADB shell to input commands or configuration files which indicate the specific Driver IC command queue or DSI parameters, as shown in Figure 1.

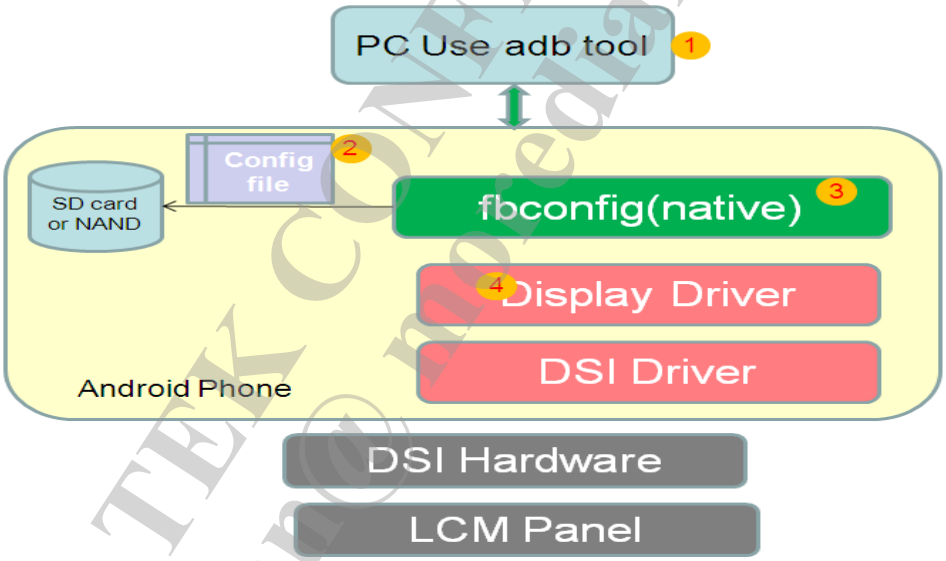


Figure 1

In order to simplify the operation, we import the UI tool . As shown in Figure 2.

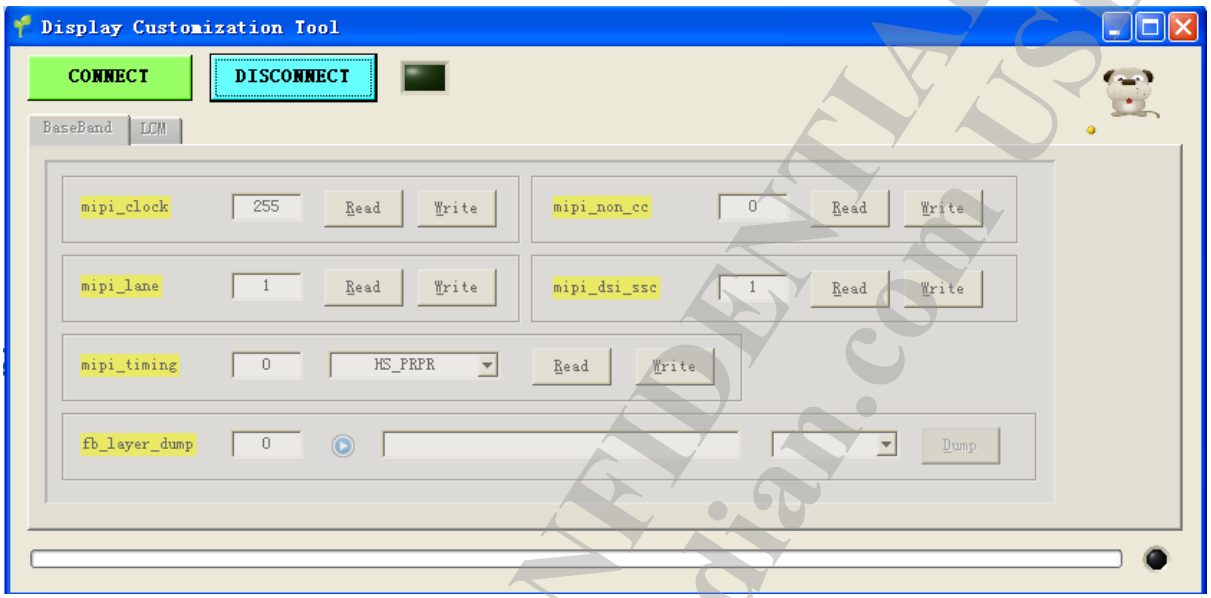


Figure 2

1.2 Display Customization UI tool

Display Customization UI tool can be found :

\\glbfs14\sw_releases\Wireless_Global_Tools\Tool_Release\@Audio Tuning Tool\Display_Customization_Tool\2013_0825\Display_Customization_Tool

You need to install it before using .the process of installation is very simple.

As the figure above shown, we have two pages: one is for BaseBand ,the other is for LCM. Before you can use this UI tool, you need to CONNECT this tool by clicking the CONNECT button . please make sure you have connected your phone with PC via usb cable.

After connect correctly, the functions on both BaseBand page and LCM page turn to be active, and you can also switch the page from BaseBand to LCM page. You can also notice the chip id about the phone on the UI tool, and the light is on, as shown below:

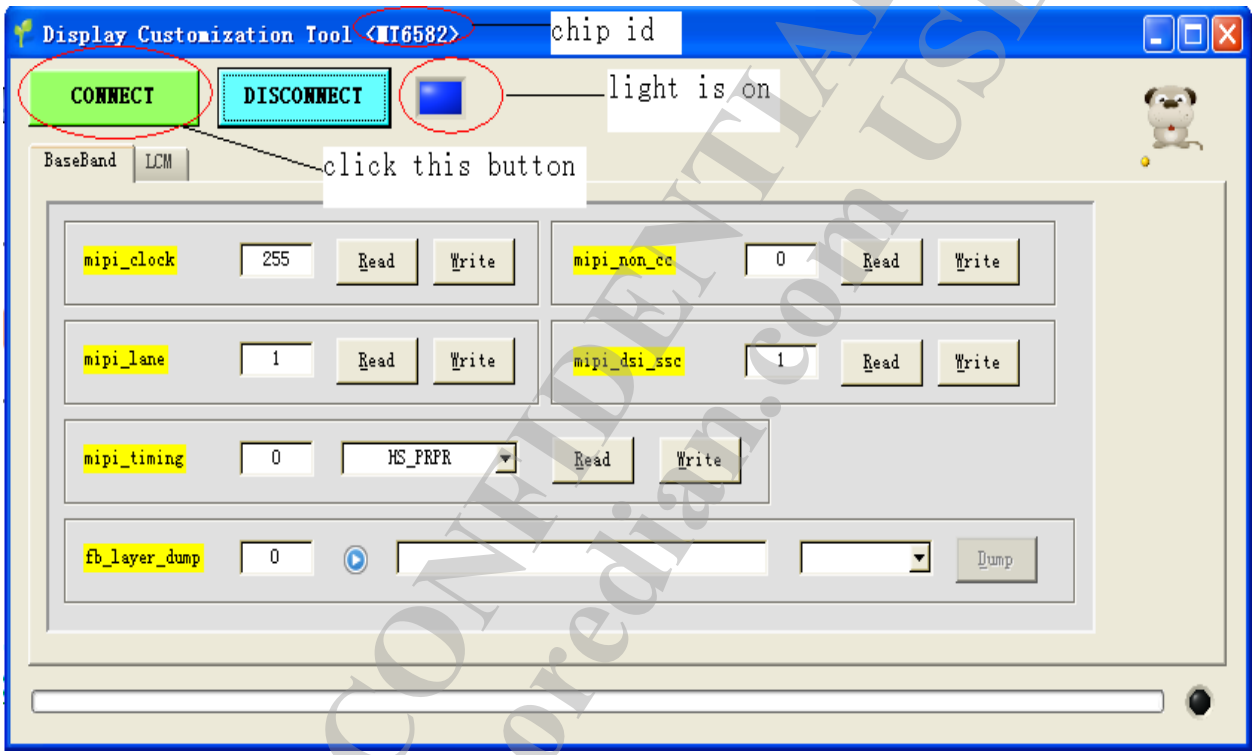


Figure 3: Connect UI tool

The functions on BaseBand page is shown above ,and the functions on LCM page is as Figure 4 shown :

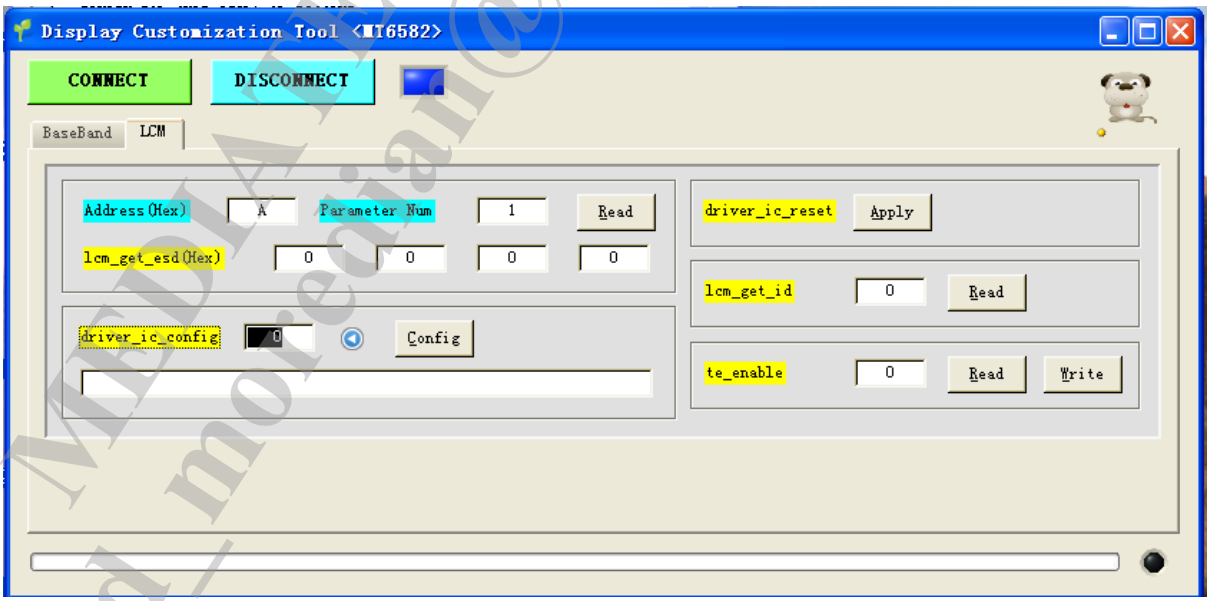


Figure 4:LCM page

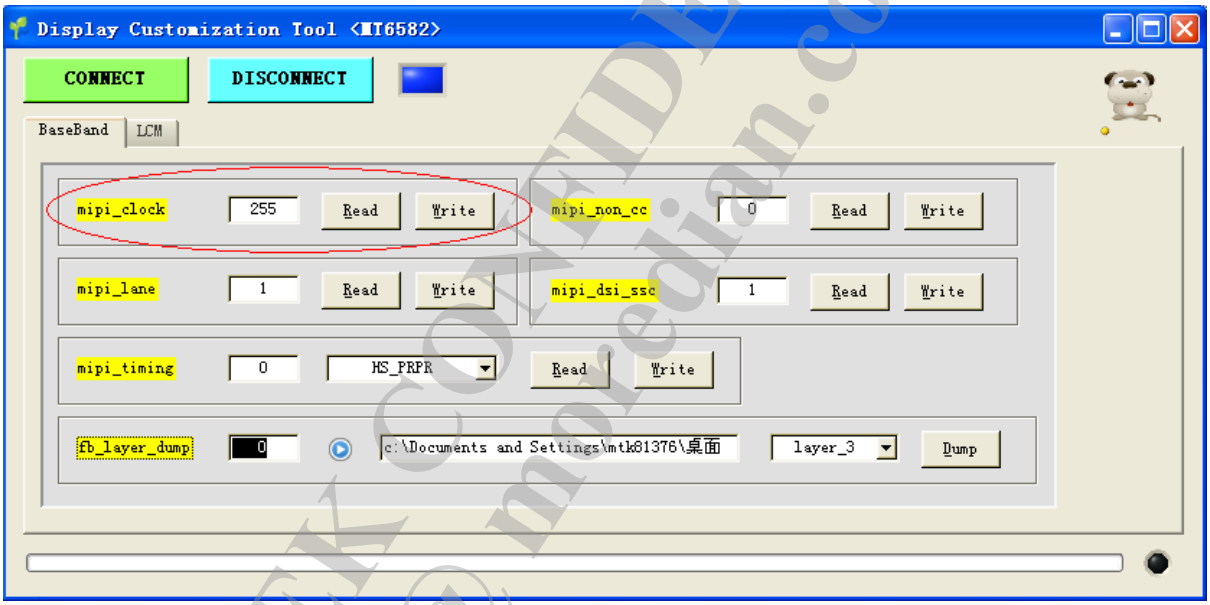
You can also notice the Log view which is used to show some logs when you execute some command ,as shown Figure 5.

Figure 5 : log view

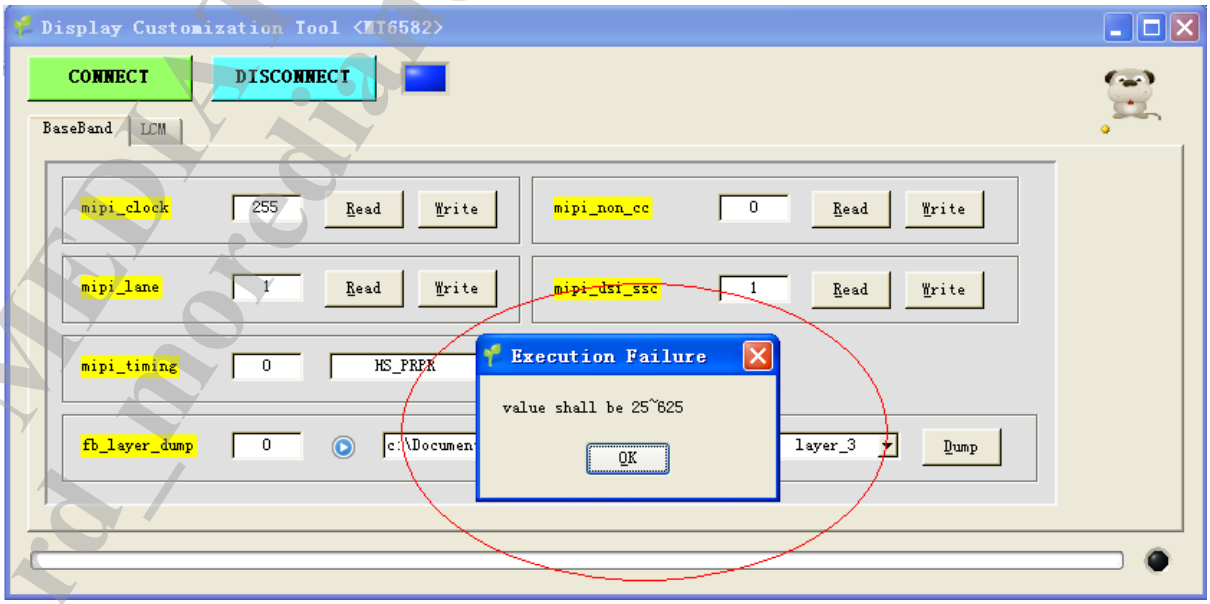
2 Display customization UI tool functions

2.1 BaseBand：mipi_clock

In order to change MIPI clock to 255(MHz), please fill 255 in the box and then click **write** button;
If you want to get the current clock, just click the **read** button.

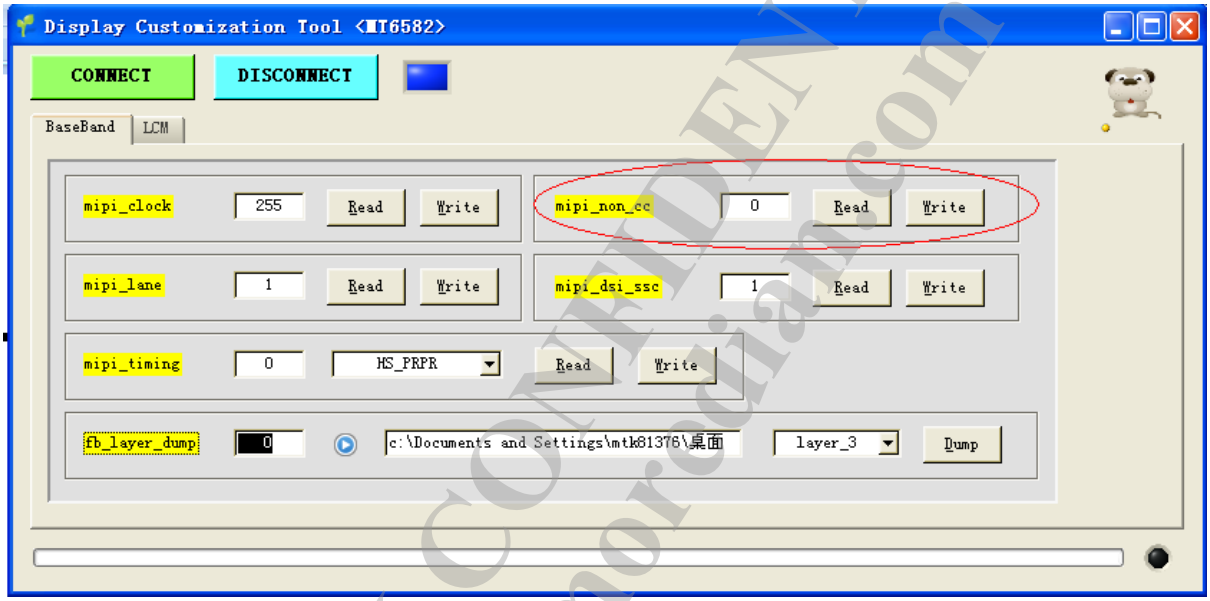


The value you can set for clock must be in [25,625]. If the value you set is out of this range, you will get the message as below:



2.2 BaseBand: mipi_non_cc

You can set non-continuous mode for HS clock Lane via this item: fill the value 1 or 0 in the box and then click the **write** button to set non-continuous mode; you can also get the current state by clicking the **read** button :

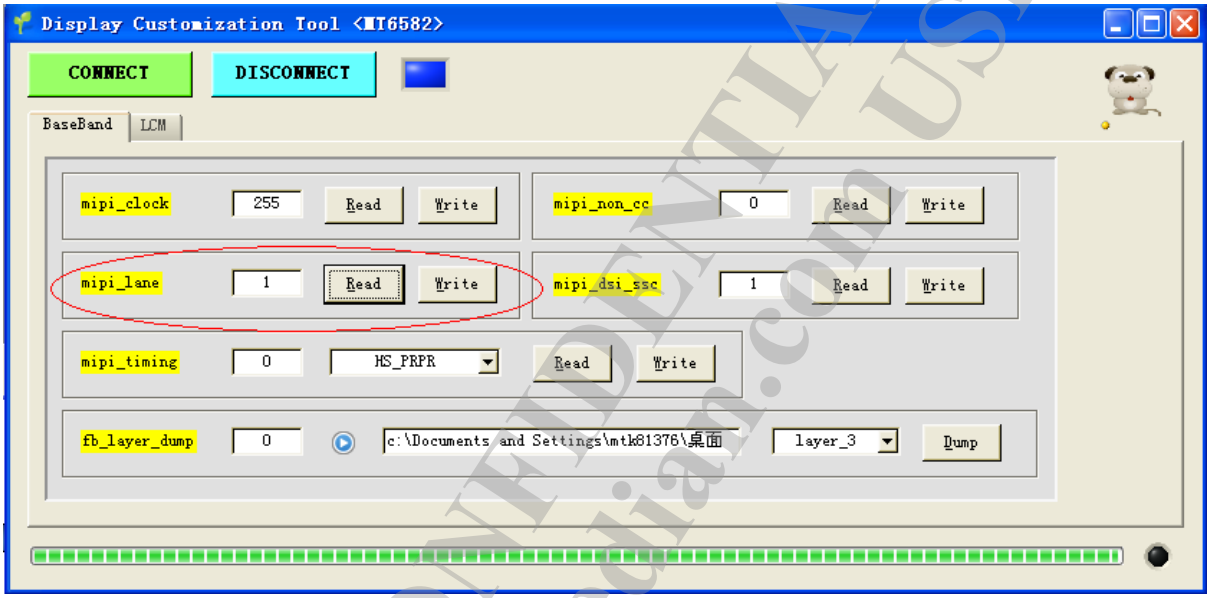


2.3 BaseBand: mipi_lane

The lane number in Driver IC side should also be changed if DSI Lane number is changed to another value .This means Driver IC should be re-configure after you change Lane number for DSI. The steps for change Lane number is as below :

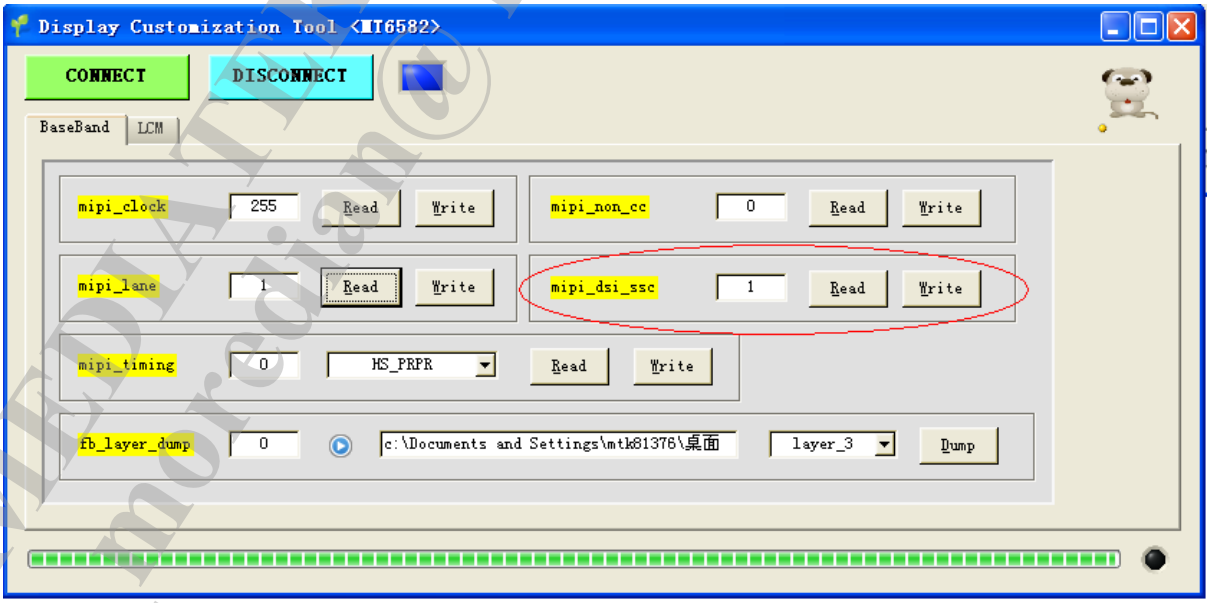
(1)set MIPI Lane number;

(2)configure Driver IC(will be discussed later);

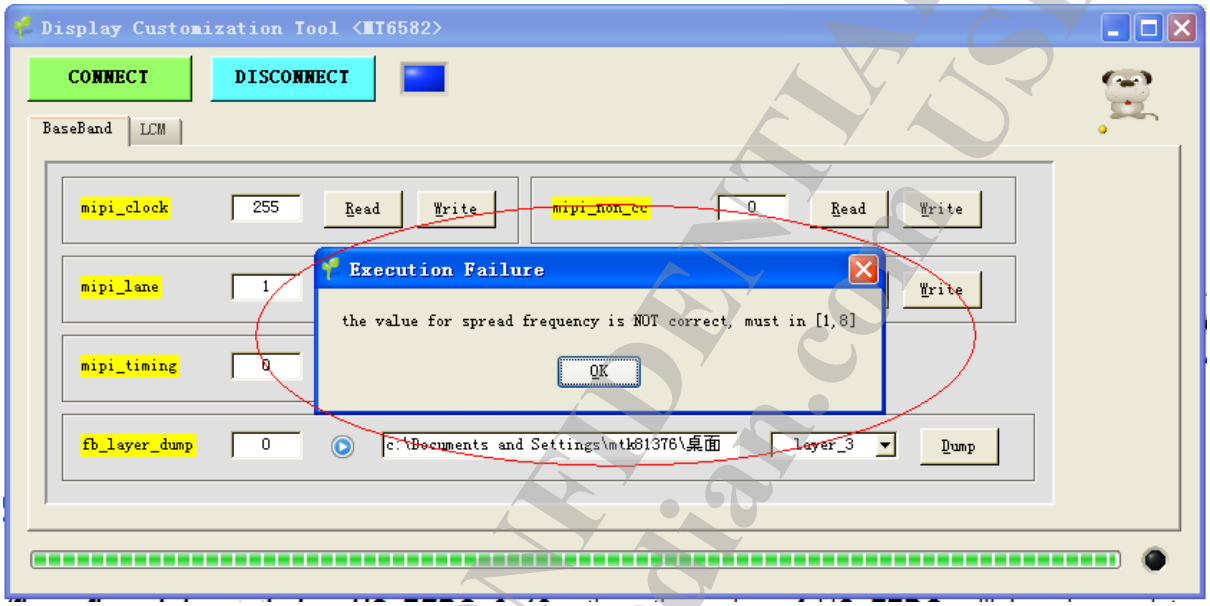


2.4 BaseBand: mipi_dsi_ssc

You can set spread spectrum via this item: fill the value in the box and then click the **write** button to set spread spectrum; you can also get the current SSC state by clicking the **read** button :

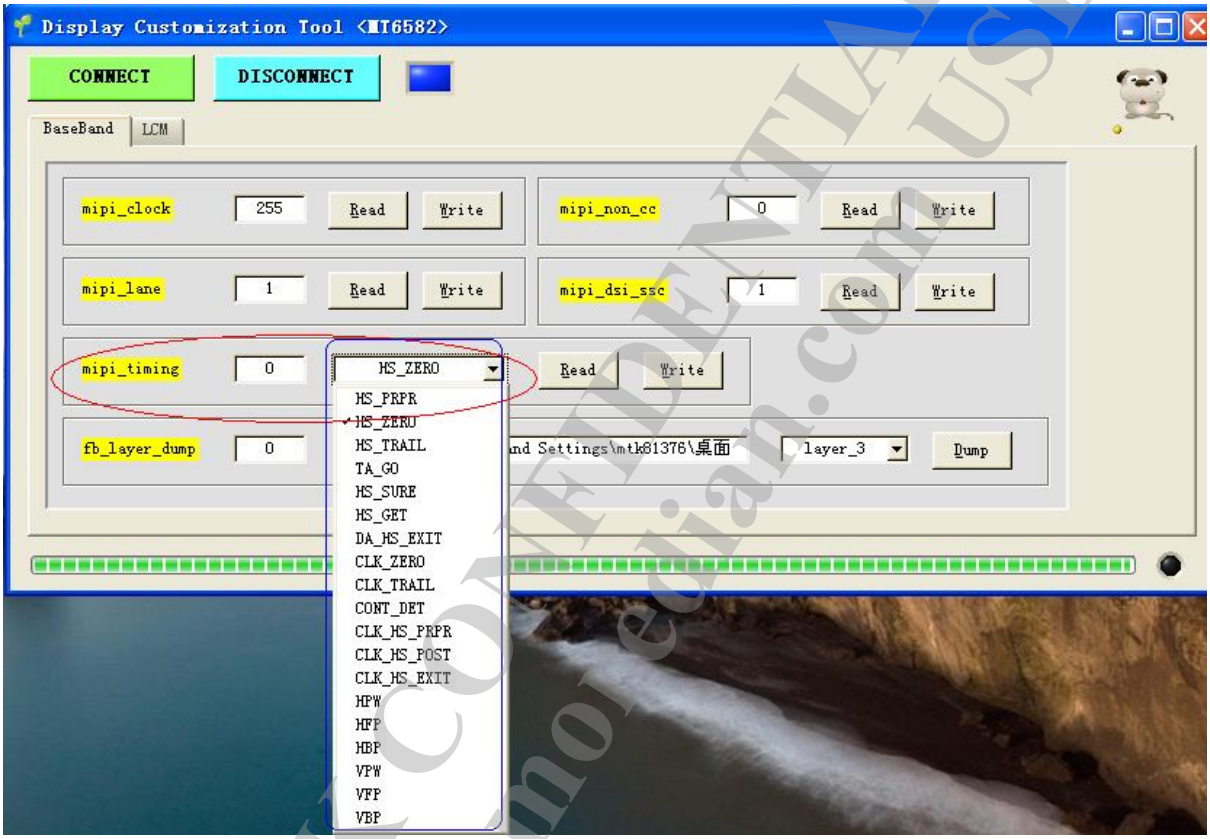


The value to set must be in [1,8], otherwise you will get the message as shown below：



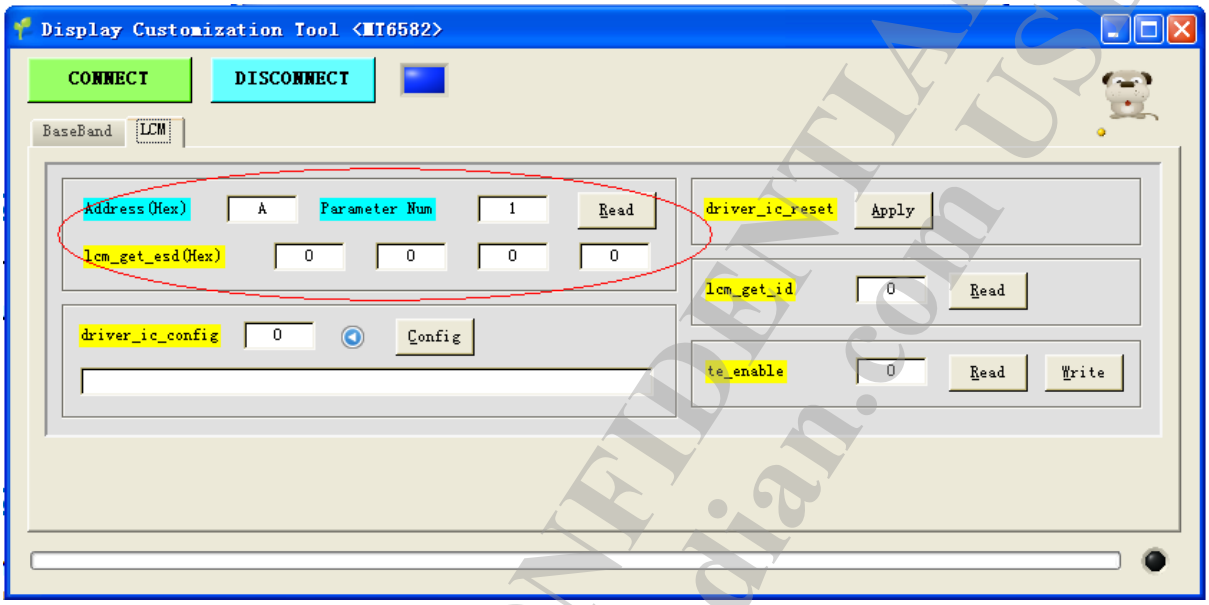
2.5 BaseBand: mipi_timing

You can set MIPI Timing (and video timing for video mode)via this item: select the item need to be modified, fill the value in the box and then click the **write** button to set value; you can also get the current value by clicking the **read** button ; you can click the drop-down button to check which MIPI Timing (and video timing for video mode) are supported now :



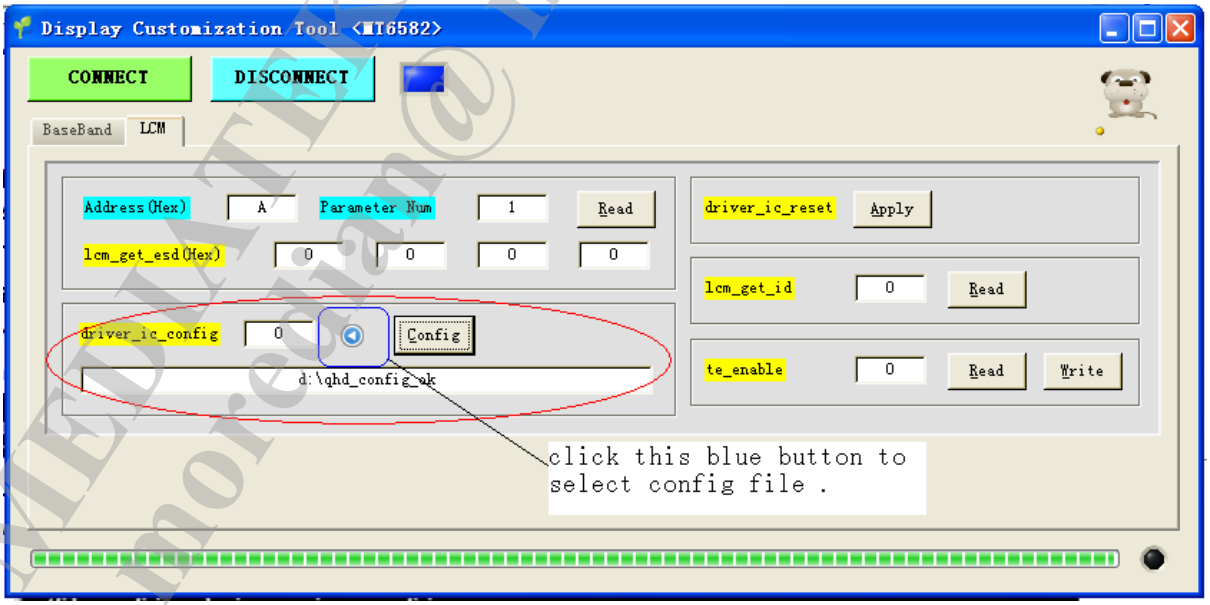
2.6 LCM: lcm_get_esd

This option can get register value and ECC, Error Report in Driver IC side. You can get the values by just clicking the **read** button; Please notice that the ADDRESS should be written in HEX format.

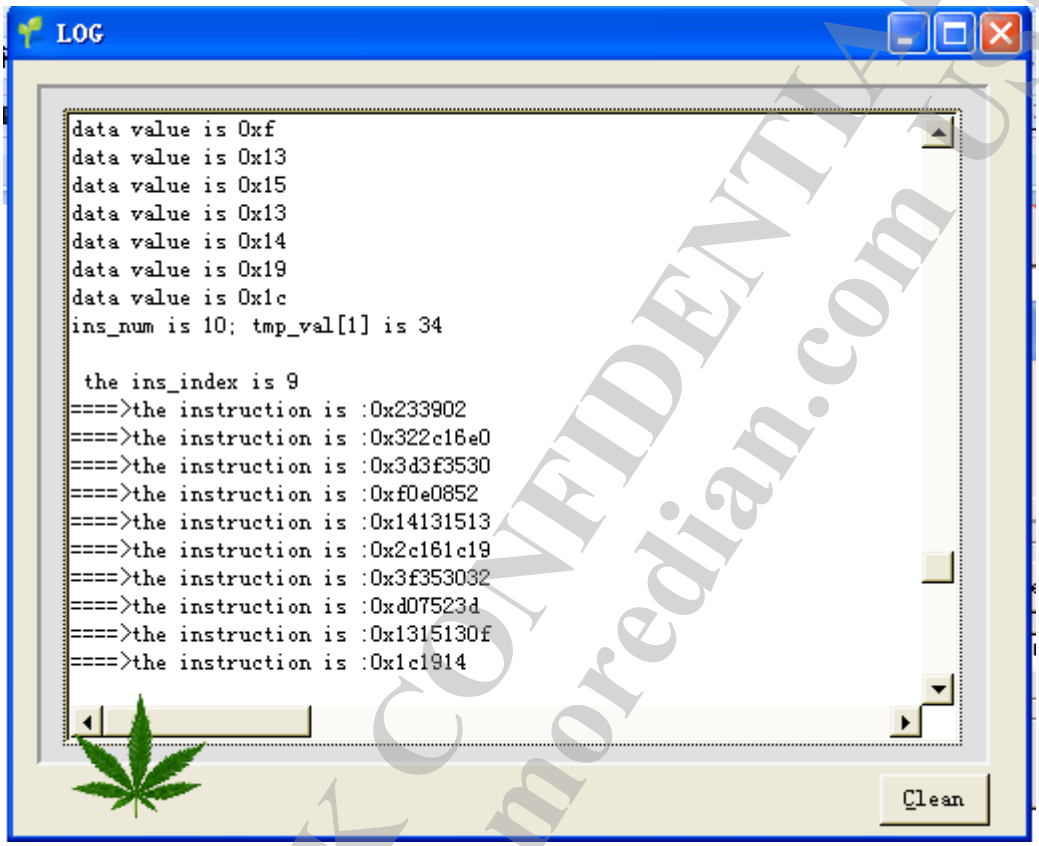


2.7 LCM: driver_ic_config

If you want to configure Driver IC, you need to click the blue button to select the configuration file, and then click the **Config** button as shown below. You can also notice the configure process through the Log view.



The log in Log View when processing the configuration file is shown below:



The example of configuration file is as below :

```
MS:0x28
PIN:0x01
MS:0x05
TYPE:0x39:CMD:0xFF:0x01:{0xEE }
MS:0x02
TYPE:0x39:CMD:0x26:0x01:{0x08 }
MS:0x02
TYPE:0x39:CMD:0x26:0x01:{0x00 }
MS:0x02
TYPE:0x39:CMD:0xFF:0x01:{0x00 }
MS:0x14
PIN:0x00
MS:0x01
PIN:0x01
MS:0x28
TYPE:0x39:CMD:0xC2:0x01:{0x08 }
TYPE:0x39:CMD:0xBA:0x01:{0x02 }
TYPE:0x39:CMD:0x44:0x02:{0x02,0x80 }
TYPE:0x15:CMD:0x35:0x01:{0x00 }
TYPE:0x05:CMD:0x11:0x00:{}
MS:0x78
TYPE:0x05:CMD:0x29:0x00:{}
```

MS:0x28 means you want to sleep 40ms,in hex format ,that is ***msleep(0x28)***;

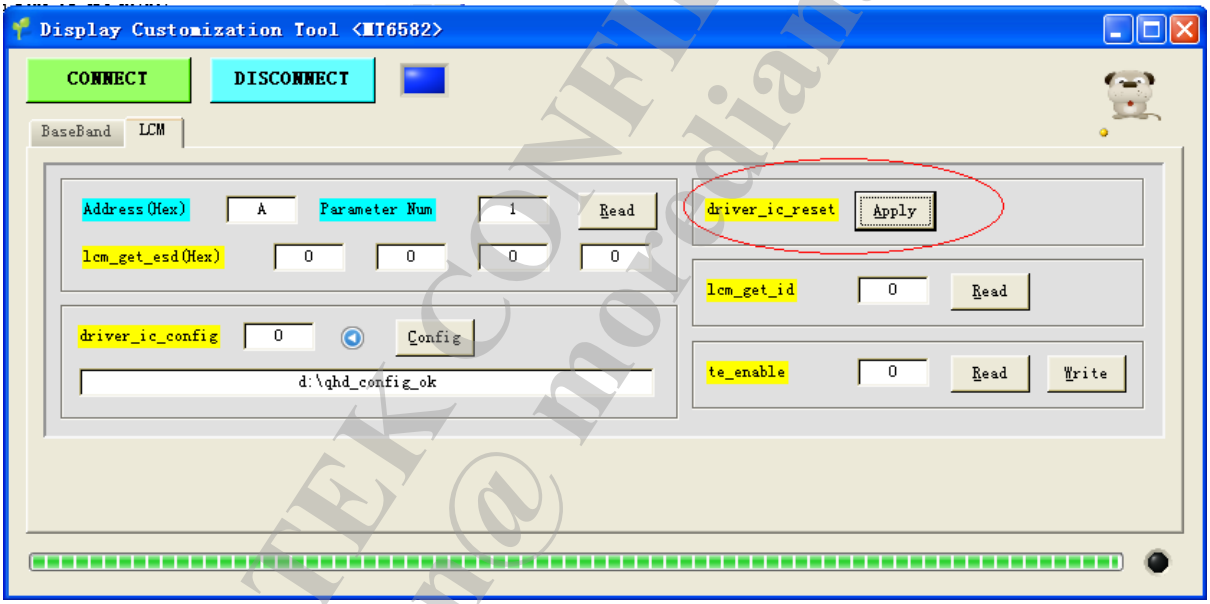
PIN:0x01 means you want to set pin here;

PIN:0x00 means you want to reset pin here ;

And TYPE:0x39:CMD:0xFF:0x01:{0xee } means the TYPE for this command 0x39 ,and address is 0xff, the number of parameters is 0x01 ;
Please MAKE SURE the “x” for hex format must be lower case in every line;
Please MAKE SURE there should be one **SPACE** before the last “}”;
You can put any number of lines command in the configuration file as you want .The commands can be loaded into Driver IC directly and immediately.

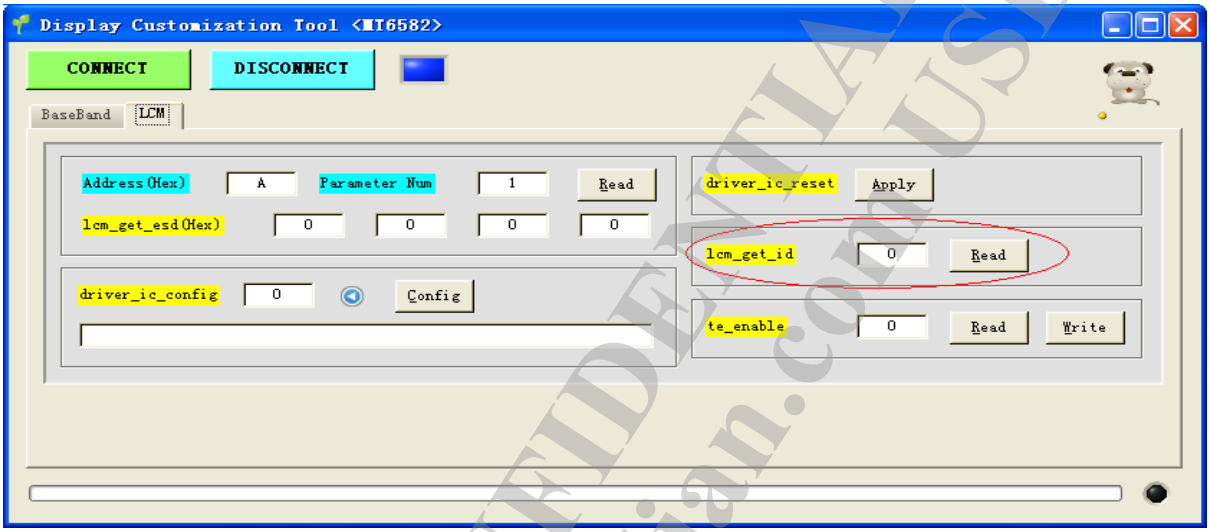
2.8 LCM: driver_ic_reset

In order to Reset Driver IC configuration to LCM initial setting after you have configured the Driver IC(Using the driver_ic_config item)， you can click **Apply** button on this item.



2.9 LCM: lcm_get_id

You can get LCM ID via this item by clicking the **read** button:



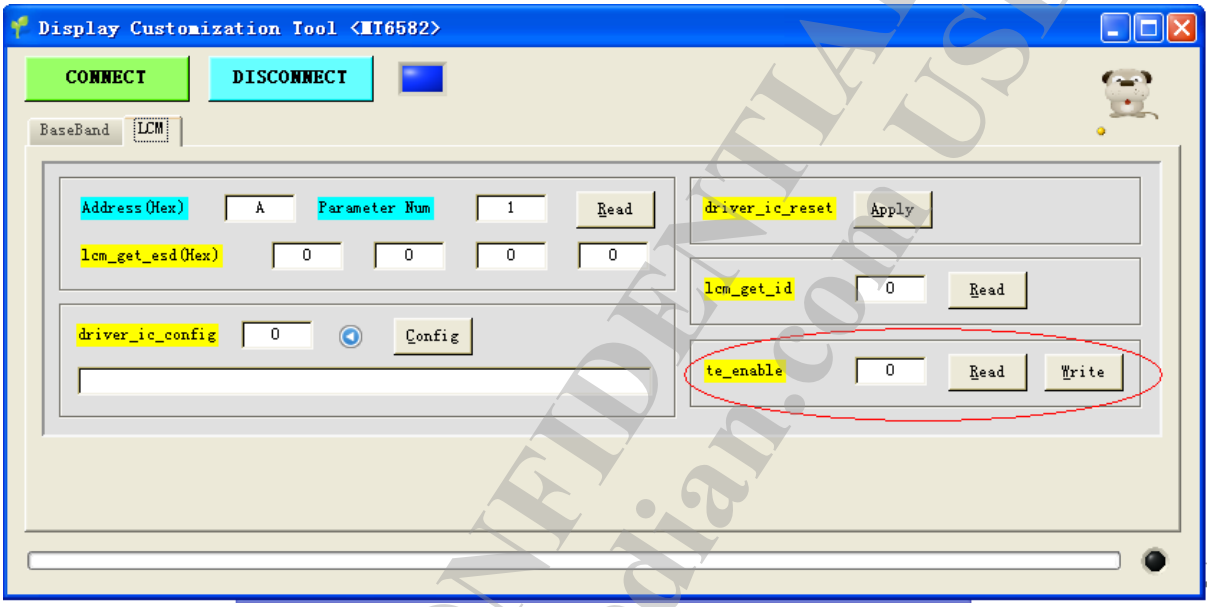
But ***lcm_drv->get_lcm_id()*** should be implemented for specific lcm driver in advance .

You will definitely get zero, if you have not implemented it in lcm driver ,because the current flow is shown as below :

```
case LCM_GET_ID:
{
    LCM_DRIVER * lcm = lcm_drv;
    // get_lcm_id() need implemented in lcm driver ...
    #if 0
    unsigned int lcm_id =lcm->get_lcm_id();
    #else
    unsigned int lcm_id = 0 ;
    #endif
    return copy_to_user(argp, &lcm_id,  sizeof(lcm_id)) ? -EFAULT : 0;
}
```

2.10 LCM: te_enable

You can enable TE via this item: fill the value in the box and then click the **write** button to enable/disable TE; you can also get the current TE enable state by clicking the **read** button:



3 Contact

Please feel free to contact me if you have any question about Display Config Tool. We are willing to hear your feedback and kindly advice.

le.yang@mediatek.com EXT: 60406