A Beginner's Guide to Beijing DWIN Technology LCD Demo on DMT10768T150_ 18WT

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1 Preparing a SD card

We have used 32GB SD card for development. we first make a partition then make a 4GB volume using disk management.Then we format the card using fat32 file system and we will make 4kb sectors, as shown in the figure below.

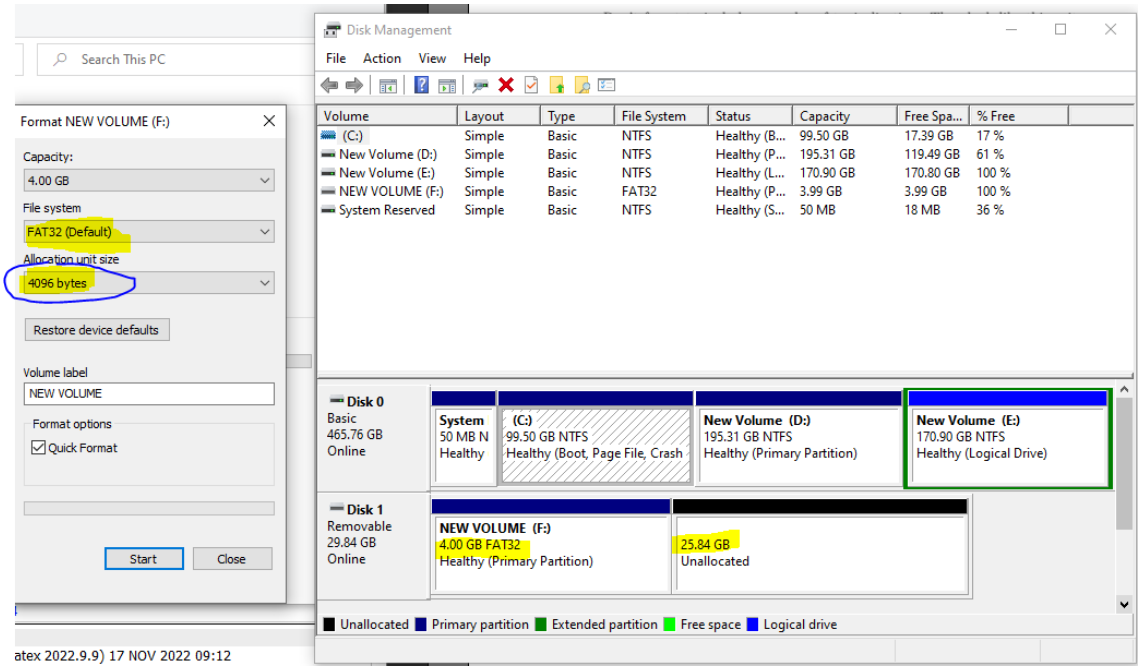


Figure 1: SD card formatting procedure.

Note: For 16GB card we dont have to make 4GB volume. We can directly make 4kb sector in format

2 How to insert image in DGUS

First open the software (DGUS_V5.08.exe) then make a new project (or open existing one), then inset the image using the plus sign at the left of the software interface. Then press "Save" button, then press "Generate" button (these button are present on the home tab of the top bar)

Note: We recommend that image should be in bmp format. since we are facing some issues in 16bit so we are making images in 24bit format (windows)

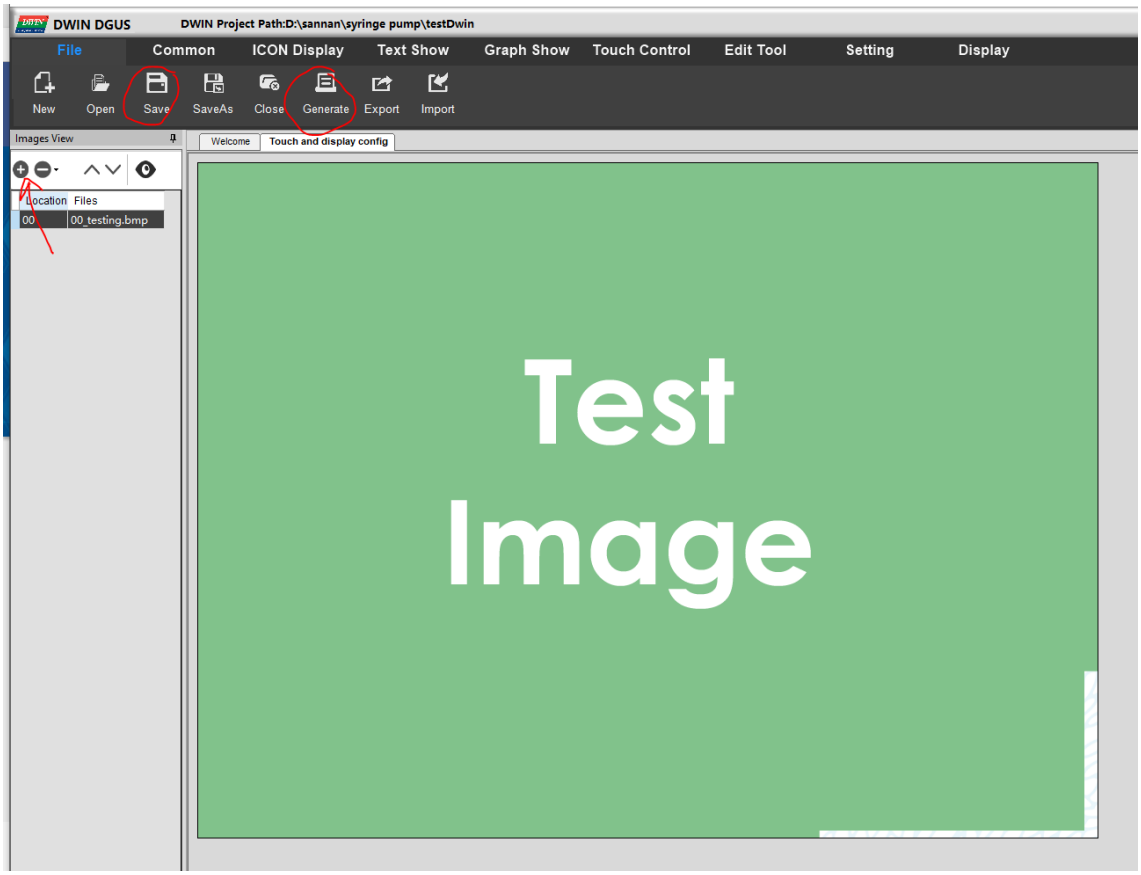


Figure 2: Insert background image.

3 How to insert image animation in DGUS

for image animation to work the image should be in bmp and of 24bit. insert the image animation from the top bar. and select the start and end image as shown in the figure below.

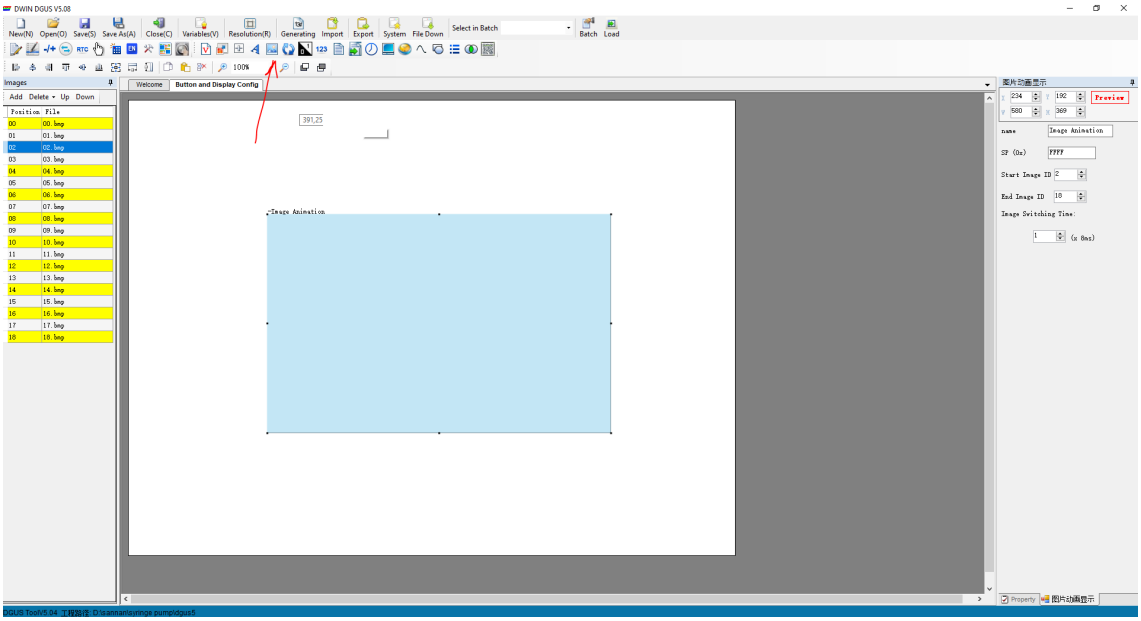


Figure 3: Insert image animation.

Note: For Converting the image from png to BMP of 24bit we can use the following python script (Adjust numbering in python script as needed)

Link for python script

(But we need to change the name of the images in the output folder)

4 How to insert Basic touch control in DGUS

insert basic touch control from the top bar. in button effect, select the map image (touch color image). In jump to, select the page where you want to jump.

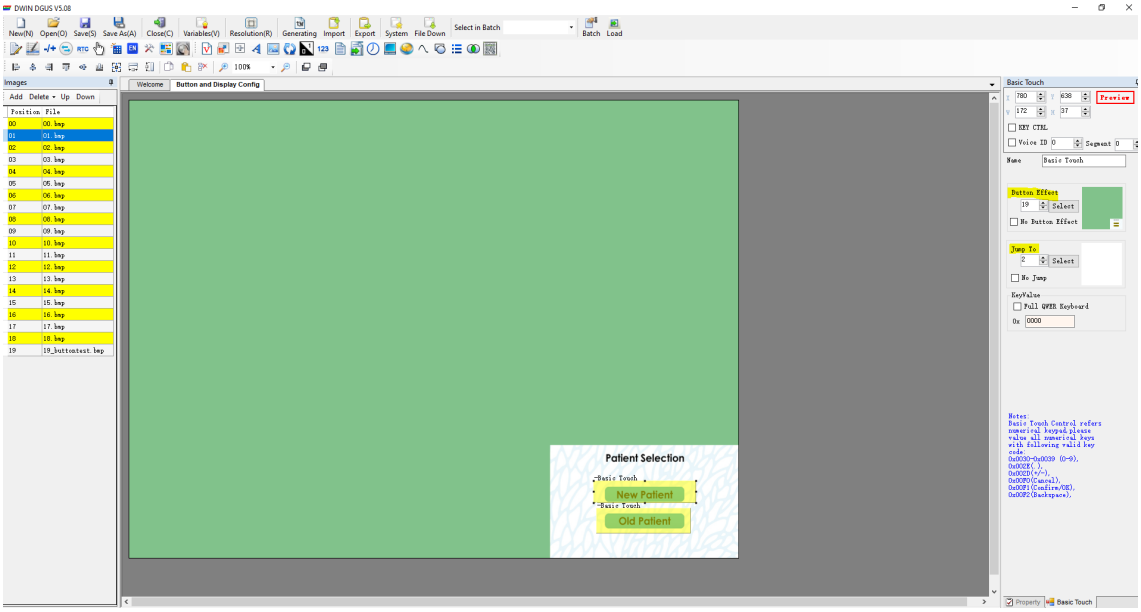


Figure 4: Insert basic touch button.

For basic touch control, we have to made two images. One for foreground and other for background.

5 How to insert Data Variable and Return key code in DGUS

insert data variable from the top bar. in data variable, set the vp address (variable address), text color, var type etc.

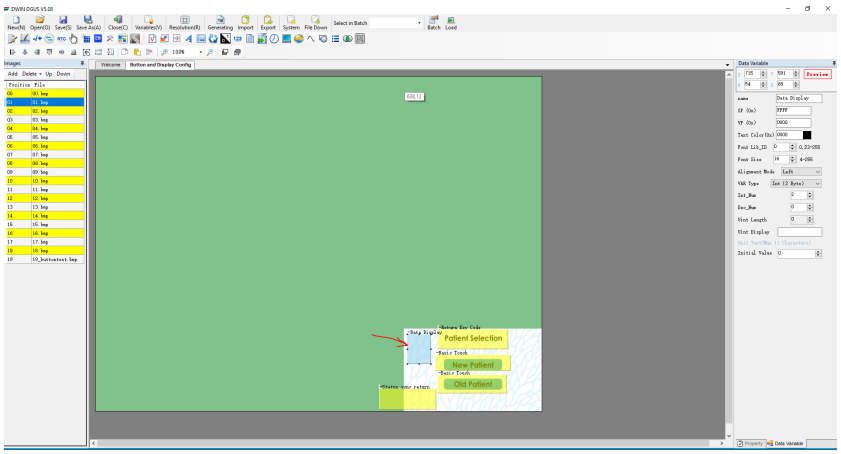


Figure 5: Insert data display.

We can use "Return key code" to set the value in the Data variable. we van also use button effect and jump to.

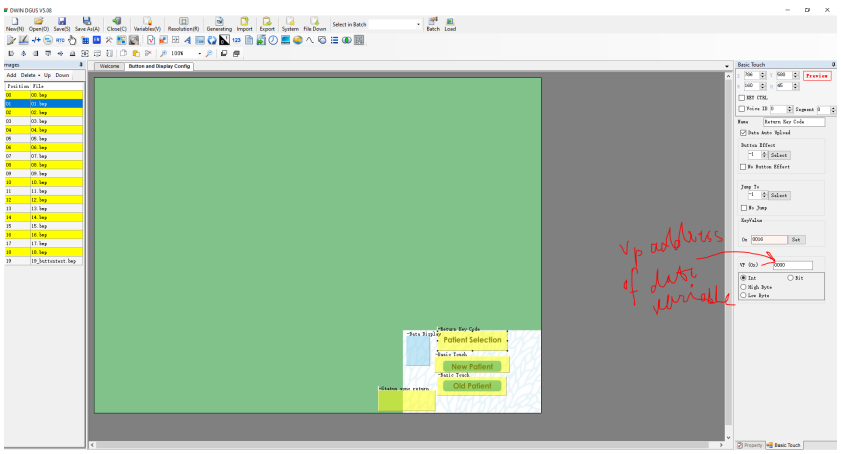


Figure 6: Insert return key code.

6 How to change system configuration in DGUS

system configuration can be changed from the DGUS software or by changing the config file. as follows.

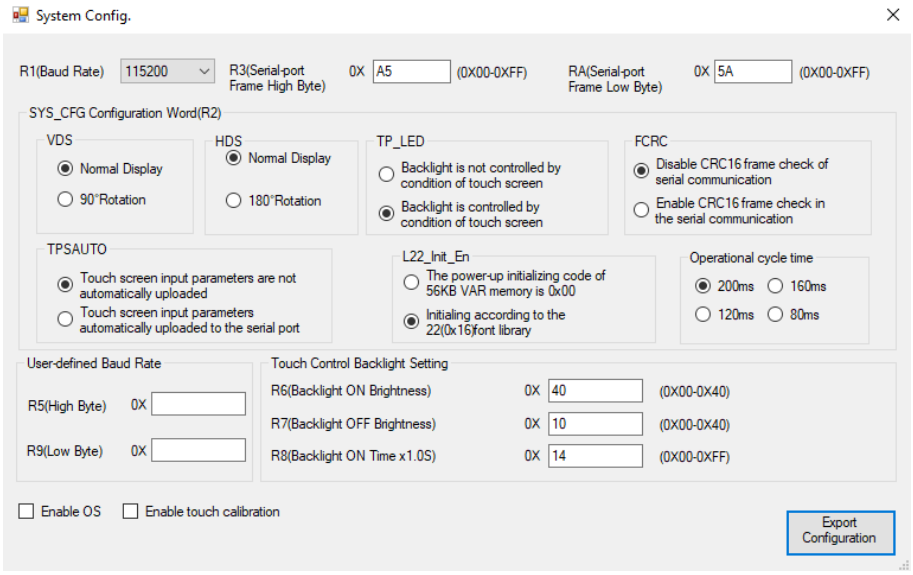


Figure 7: system configuration.

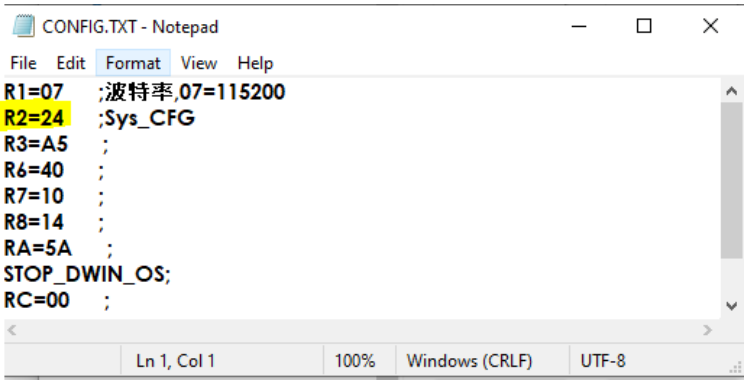


Figure 8: config text file in dwin folder.

7 How to Receive & Send data Serially in DGUS

We can send data to MCU using "Status sync return", which Return different data to the VP/UART/Register during Press, Continuous press, Loosen press.

Return Mode: 0x00 means no data return;

- 0x01 means return the data to the VP
- 0x02 means return the data to the UART
- 0x03 means return the data to the Register/System Variables interface

For T5L series, only have 0x01 mode, but could support VP, UART, Register/ System Variables interface together

Note: If LCD supports RS485 then use Max485 to convert data to Rx or Tx.

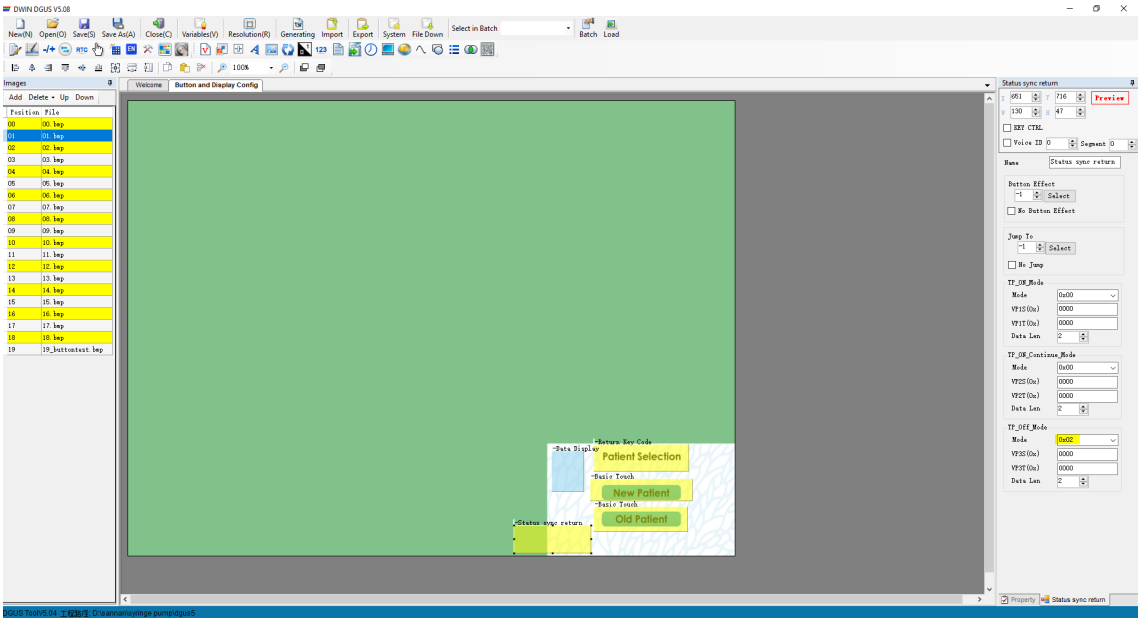


Figure 9: Status Sync Return.

We can use "Return key code" to set the value in the Data variable. we van also use button effect and jump to.

For data to send serially insert the configuration file "CONFIG.TXT" in the DWIN_SET folder.

Paste the following in the CONFIG.TXT file

R1=07 ; Baud rate, 0x07: 115200bps.
R2=20 ; SYS_CFG, enable sleep mode if no operation.
R6=40 ; Brightness of backlight, 0x40: 100% brightness.
R7=10 ; Brightness of backlight of sleep mode, 0x10: 25% brightness.
R8=14 ; Light-up time,units: 1.0 seconds,0x14=20 seconds.
R3=A5 ; High-byte of frame header: 0xA5.
RA=5A ; Low-byte of frame header: 0x5A.
STOP_DWIN_OS;

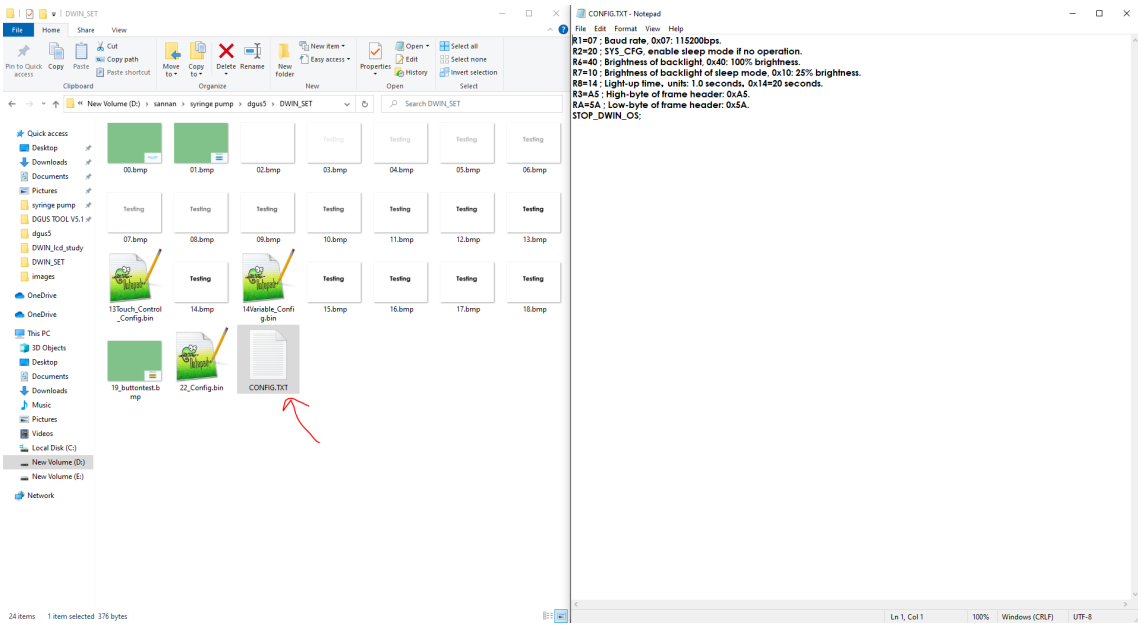


Figure 10: CONFIG file in DWIN_SET folder.

For sending the data to LCD (DGUS) we use the following command.

0xa55a058200000010

We can send the command using termite.

Note: Following setting need to be done in termite for sending the data. we send the data as shown in the figure.

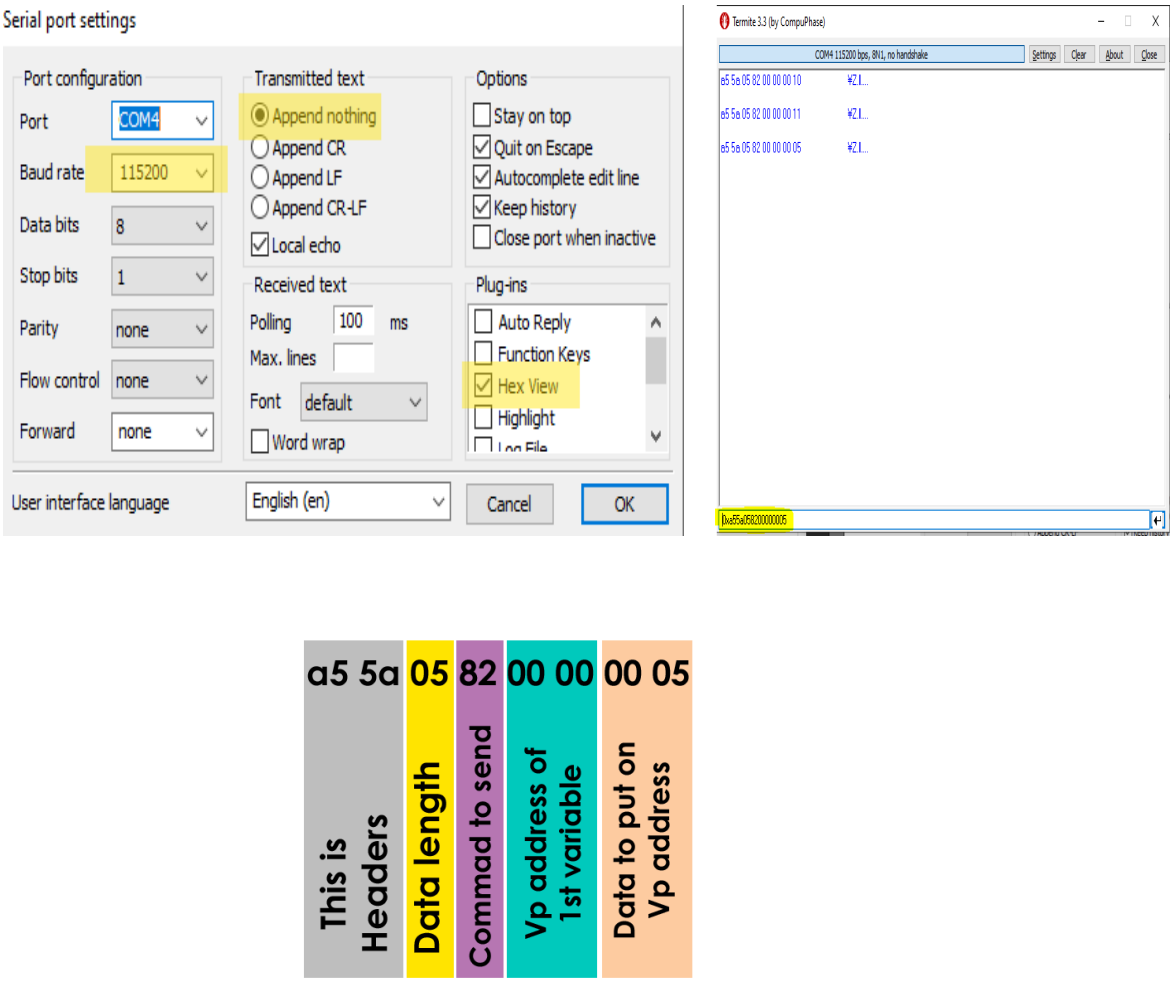


Figure 11: Send command to LCD

8 How to insert keyboard in DGUS

Insert text display, where you want to show the text. Also insert text input on top of the text display. insert following settings.

- Data Auto Upload
- Insert the vp address (vp address of text input should be same as the text display)
- input mode: Re-open
- text lenght: 10
- Click Keyboard Settings. (to select the keyboard image)
- clipping rectangle will be used to crop the keyboard.
- paste location can be same as first coordinate.
- in the keyboard diagram, make basic touch for buttons.

"Text input" parameters is shown in the below figure.

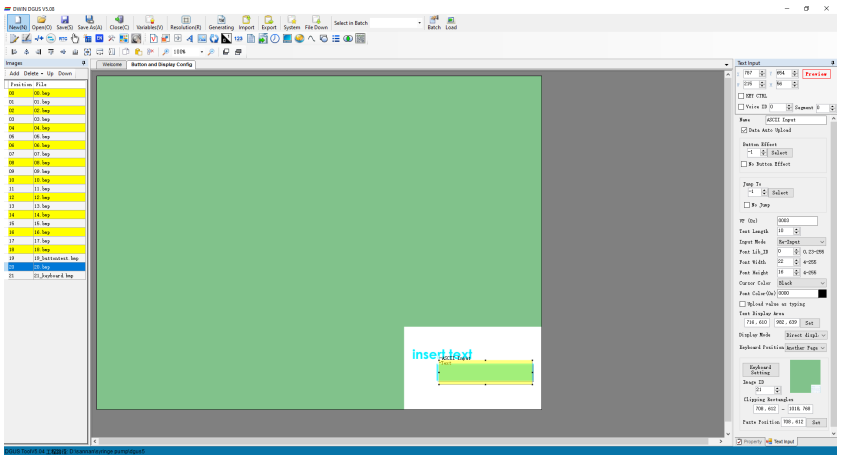


Figure 12: Text Input parameters.

9 How to change font 0 in DGUS

In the welcome page of DGUS software (DGUS V5.08), Click "No. 0 font lab" button. to open the software that creates fonts. *Note: limitation is that, we can only make single font (in DGUS V5.08). In new version of software we can use Gray font ID and Unicode.*

Show different Font ID, comparison for each other

No.	Font	Where to generate	Show content	Function	Store place
1	0 word bank ID	Software tool itself	Digital number, english characters, not more than 256	Size:4*8 to 64*128 Only one font type each time	Software tool itself
2	Gray font ID	Software tool itself	Digital number, english characters, not more than 256	More fluent in the shape than 0 word bank ID, support different font type, font size, more flexible	Depends on you
3	Unicode	Font Generator	Per your requirement	Support different language	Depends on you

Figure 13: Font generation types.

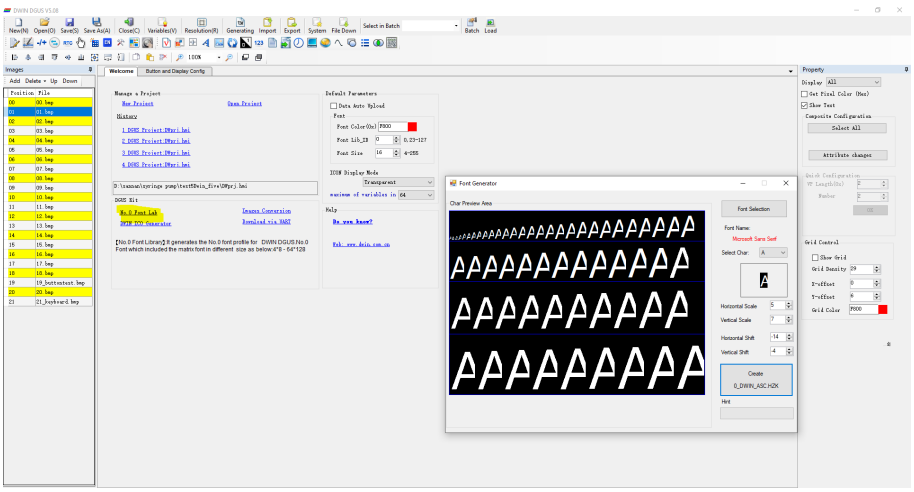
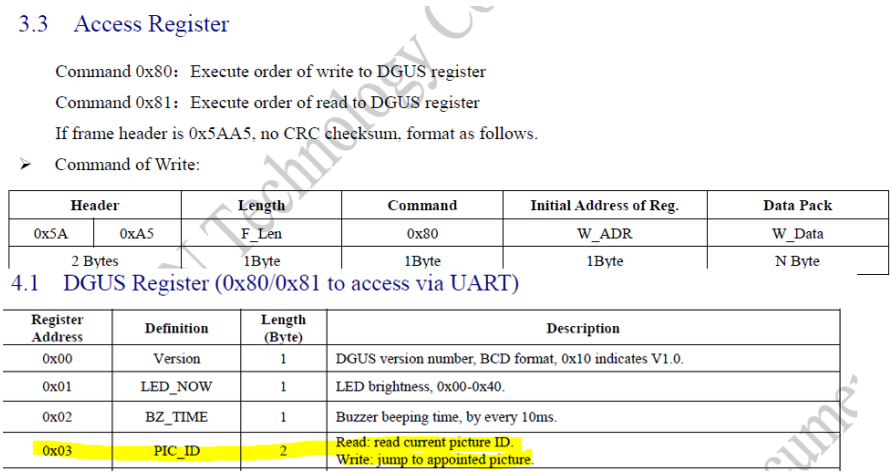


Figure 14: Font generator.

10 How to change page in DGUS

In order to change the page in dmt10768t150_18wt (obselete). We to send the following command to change the value of the register (0x03).

0xa55a0480030002



3.3 Access Register

Command 0x80：Execute order of write to DGUS register

Command 0x81：Execute order of read to DGUS register

If frame header is 0x5AA5, no CRC checksum, format as follows.

- Command of Write:

Header		Length	Command	Initial Address of Reg.	Data Pack
0x5A	0xA5	F_Len	0x80	W_ADR	W_Data
2 Bytes		1Byte	1Byte	1Byte	N Byte

4.1 DGUS Register (0x80/0x81 to access via UART)

Register Address	Definition	Length (Byte)	Description
0x00	Version	1	DGUS version number, BCD format, 0x10 indicates V1.0.
0x01	LED_NOW	1	LED brightness, 0x00-0x40.
0x02	BZ_TIME	1	Buzzer beeping time, by every 10ms.
0x03	PIC_ID	2	Read: read current picture ID. Write: jump to appointed picture.

Figure 15: page Change.