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Beijing DWIN Technology Co., Ltd

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Terminal Assistant V6.0

Help Documents

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Chapter One

Software Configuration

1.1Software Operating Environment Creation

This software is suitable for Window7 or XP system, about 50M space is needed.

Tools needed are listed as follows:

1.1.1 USB Driver

A, CP2102 chip USB driver

B, XR21V1410 Chip driver

You can choose from the two drivers below based on the serial port of your UART UCM and choose installing driver. Chip on the left needs CP2102 chip USB driver.Chip on the right needs XR21V1410 Chip driver.

1.1.2 Terminal Assistant Operating Environment（.Net Framework 2.0）

Download the terminal assistant from the company's web site(http://www.dwin.com.cn/download.aspx?id=12) unzip the downloaded Framework2.0.rar and dotnetfx2.0.exe to finish the installation.

1.1.3 Files Included in DWIN Terminal Assistant v6.0

Chapter Two

Software Operating Instruction

2.1 Software Introduction

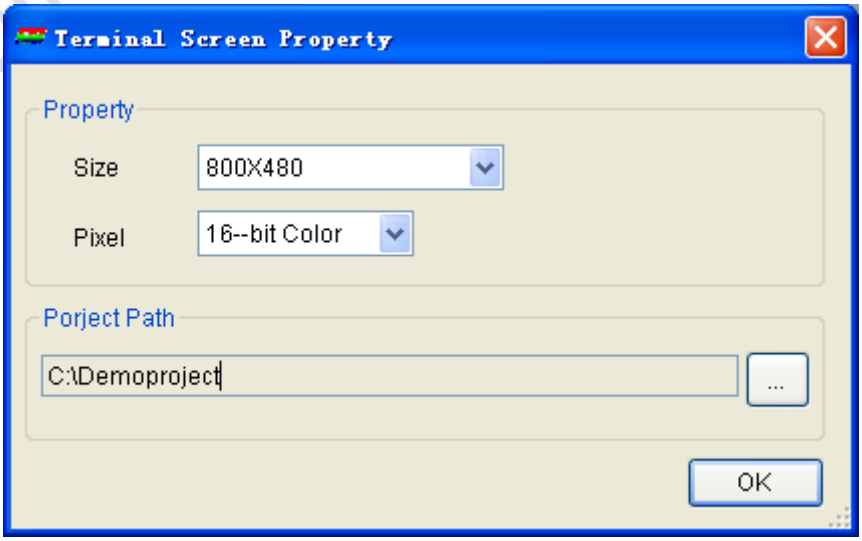
First, the introduction of the concept of project management can achieve the separate management of images and configuration files based on applications. For different applications, users can establish a different project file to manage pictures and touch configuration. It is easy for users to maintain and management different products.

Second, by adding basic graphics operation and demonstration interface, users can carry out simple drawing demonstration operation, making the operation more intuitive. They all can be unified to the DWIN screen for presentations.

Third, enhance the operation logging function, users can record pictures and font download instructions, for users' reference in the process of programming.

Four, enhanced touch configuration management make it more convenient than the previous version in the operation and configuration management.

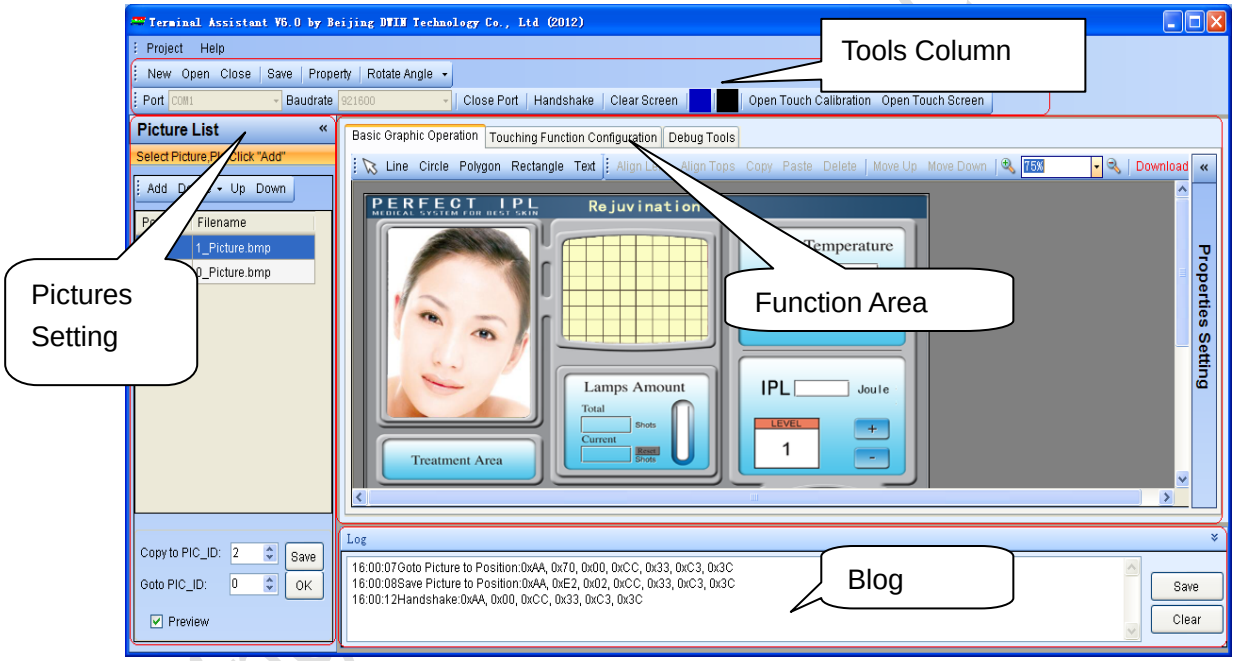
2.2 Software Operating Instruction



Start "DWIN Terminal Assistant 6.0", the following interface will show up, set the storage path, and click OK to enter the main program. If previously used project exist in the storage path, the system will automatically open the project file under the path and read and deal with the size and pixels. If you want to modify the size and pixels, please do it in [DWIN Property] of the main program. Otherwise, the system will do the initialization in accordance with the current set size and pixel.

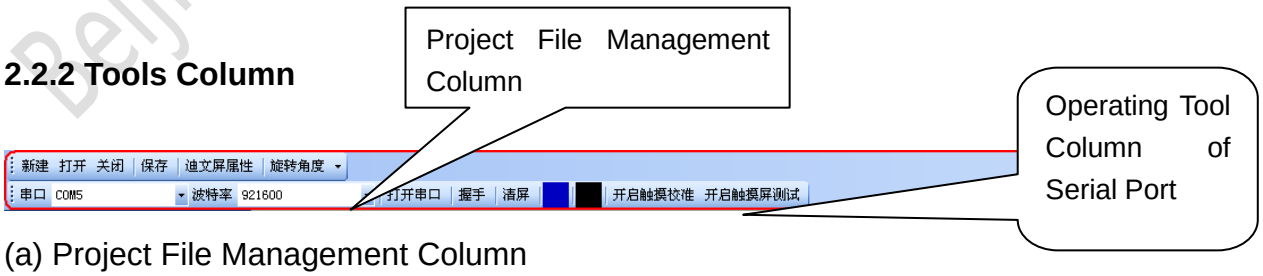
2.2.1 Interface Window Introduction

The main interface introduction is as follows:



You can see tools column, picture setting, function area and blog above.

2.2.2 Tools Column

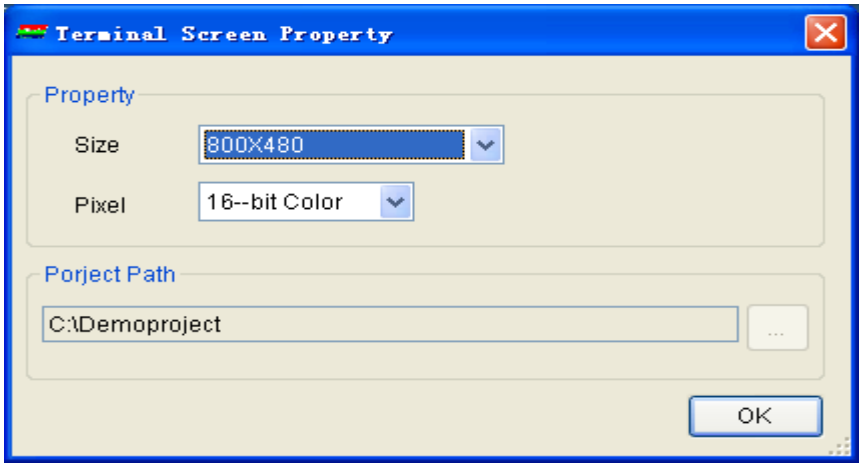


(a) Project File Management Column

Including buttons of New, Open, Close, Save and Screen Property

Function Description：

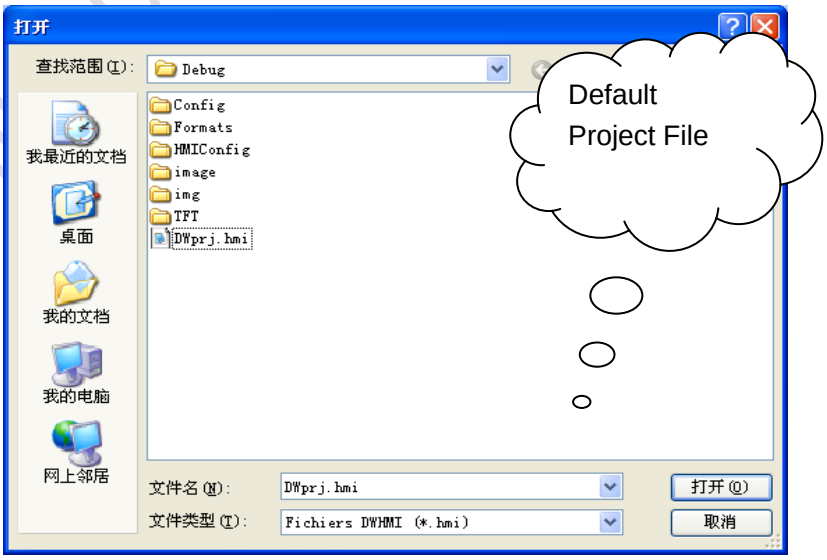
【New】 Click New as shown follows:



Step One: In order to enable DWIN UART UCM's image and graphics operations, please choose pictures corresponding to the screen size and image pixels.

Step Two: Select the storage path, the default path is the current directory of debugging assistant 6.0 executable file. If you want to make application configuration management, it is recommended to select a new file path (Click button  to select). In the operation process, the system will save your image files and configuration files in a unified directory of your chosen directory, the next time you open the system, the system will load all of your configuration automatically to facilitate further change and adjustment.

【Open】open the project file stored here, see the following picture：



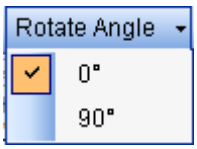
The system will load the project file（DWprj.hmi）to the system to make it convenient for modification and configuration.

【Close】 Close the current project file.

【Save】Save the current project file to modify next time.

【Property of DWIN UART UCM】 The current property of the UART UCM, adjusting the screen size and pixel in Screen Property.

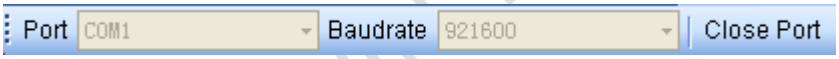
【Rotate Angle】 choose the image showing ways, 0 degree and 90 degree two ways.



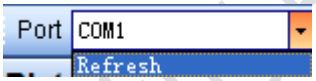
(b) Operating Tool Column of Serial Port

Serial port tool column is mainly used to realize human-computer interaction between PC and DWIN UART UCM. Select the correct serial port channel and baud rate, and click to open the serial port, then you can enter the human-computer interaction.

【Port】: as it is shown in the following pictures , only by opening the serial port, can the interaction between UART UCM be realized.



If you can not find the corresponding serial port in the list, please open the serial port choosing list:



Click 【refresh】, the system will refresh the list automatically, and show all the serial port in the operation system.

【Handshake】 to examine whether DWIN UART UCM is connecting properly, if so ,go back to the current version information and system configuration information of the serial port.

【Screen Clearance】 send the screen clearing instruction and clear the screen.

【  】 Background color setting

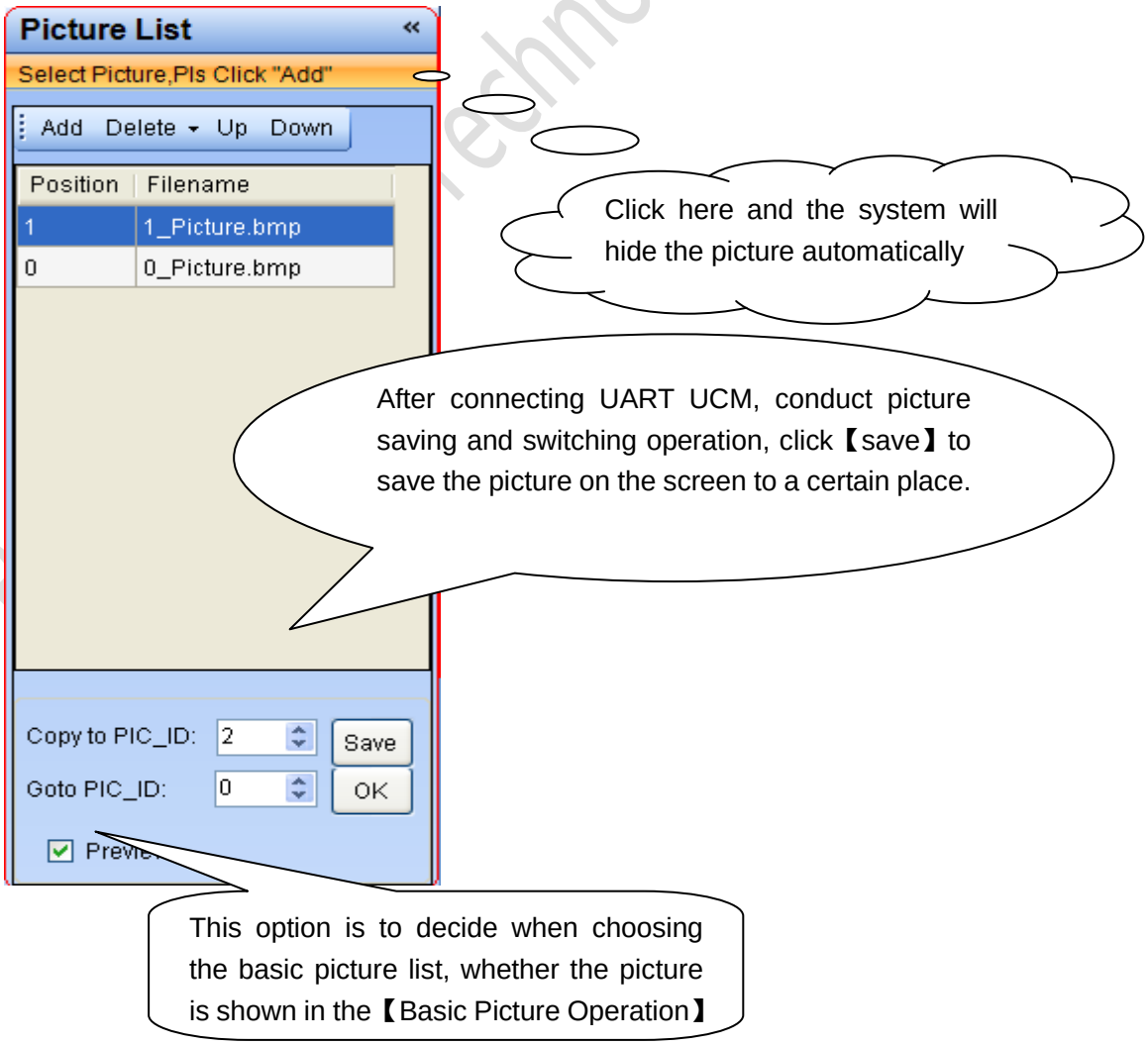
【 】 Front color setting

【 Touch Calibration】 Send the touch calibration instruction, and then DWIN UART UCM enters the calibration interface, click the cross cursor on upper left, upper right, lower right to complete the calibration operation.

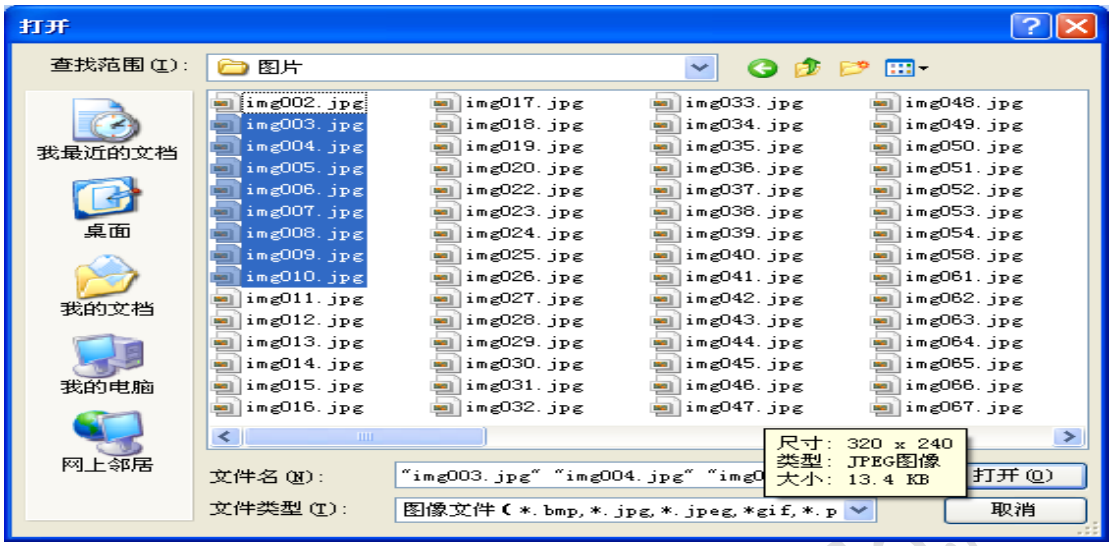
【 Touch Screen】After it is started, once the user presses the touch screen, there will be a red solid circle displayed in the corresponding coordinates to facilitate users to test touch screen accuracy.

2.2.3 Picture Setting

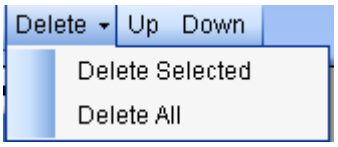
The current picture of the project will require a unified management, click【Add 】button to add a picture to the project, and adjust the position value and picture order. (After adding images, the software will copy the image file under the project directory and make the unified management). Figure:



【Add】 to add buttons，see the following picture：



Choose the picture that need added, click open, then the system will add the picture in the list.【Delete】Including delete the selected rows and delete all. Click to delete the selected row to delete the line of selected pictures. Click the Delete all, then the system will clear all the pictures in the list.



【Up】Move the line selected up one line.

【Down】Move the line selected down one line.

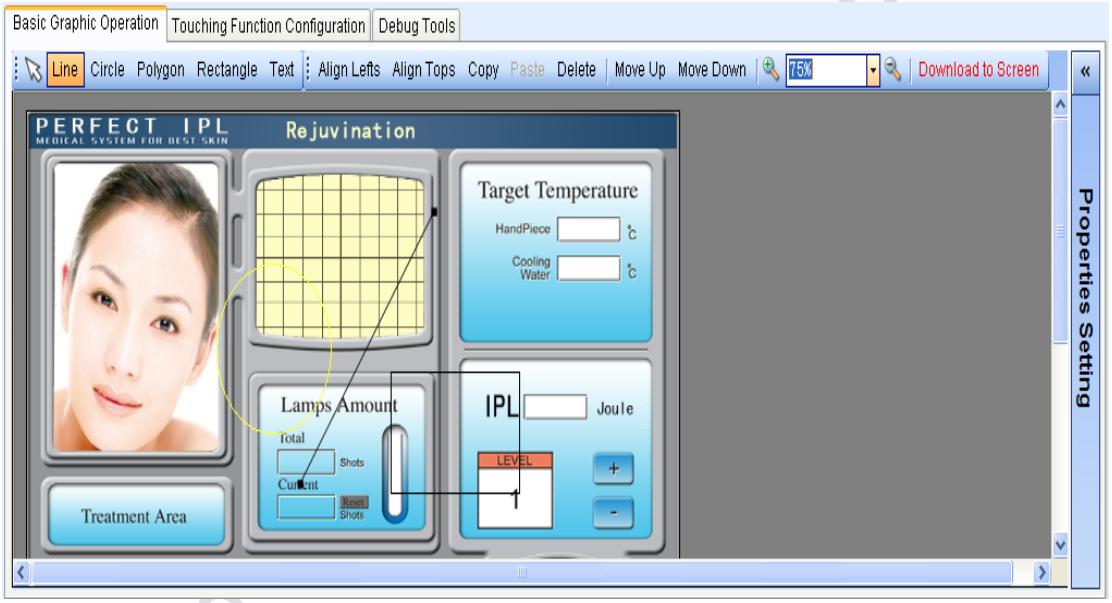
Chapter Three

Software Function Instruction

Function Instruction of the software includes 【Basic Graphic Operations】, 【Touching Function Configuration】 and 【Debug Tools】.

3.1 Basic Graphic Operations

The user can conduct simple graphics and text presentations in the demo screen. Figure:



Click the [send] button on the tool column , then the drawing graphics will be sent to DWIN UART UCM as shown in the picture.

Operation Example：

Step 1: Click the button representing different graph in the tool column,

Step 2 ： Click the displaying screen and move it until it is in proper size, then get loose of the mouse and start drawing.

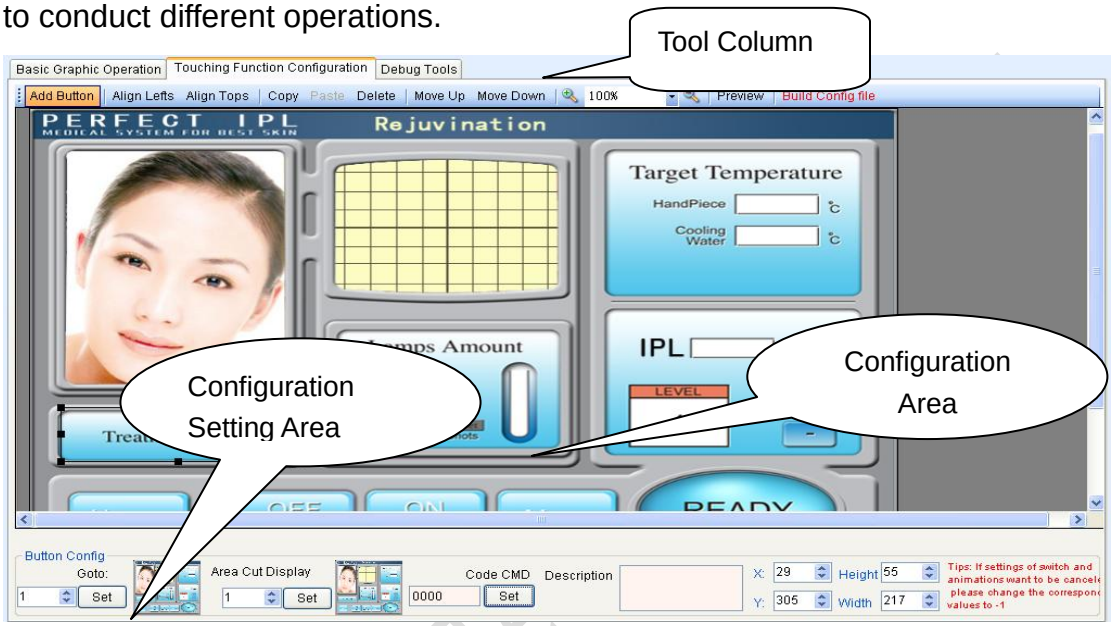
Step 3: If clients want to draw more graphs, repeat the second step and repeat the first step if clients want to draw other graphs.

Screen Size Management: input number or click "+" or "-" to realize the

adjustment of size.

3.2 Touching Function Configuration

Function Instruction: set touch configuration area in pictures to facilitate clients to conduct different operations.



3.2.1 Tool Bar

【Add Button】click and conduct area setting in configuration area, specific operation: move the mouse to configuration area and conduct the setting. Figure: add a touch configuration area  in the picture, the interface change into setting status**.**

【Align Left】users can select more than one configuration areas, click on this button, then the system will conduct left-aligned based on the first selected region.

【Align Top】Ditto.

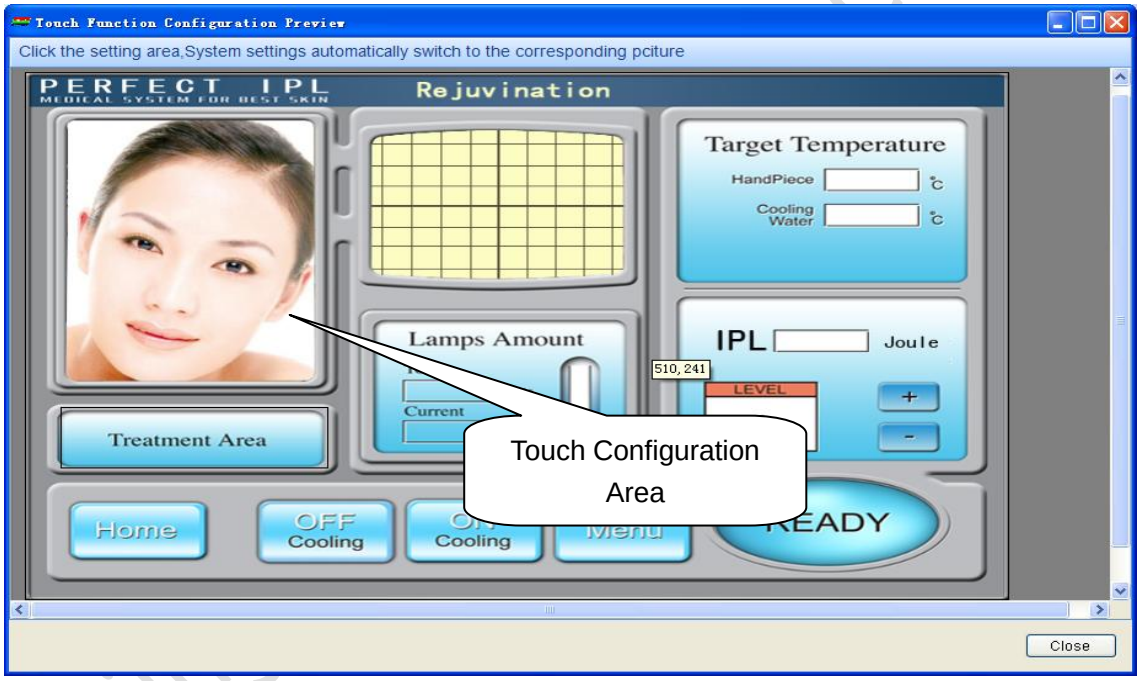
【Copy】to select one or more regions and copy.

【Paste】only take effect by clicking "Copy" and paste buttons, and copy the

area to the configuration area, If you want to paste it onto the configuration page of another picture, click on the corresponding picture in the picture list, and then click the Paste button.

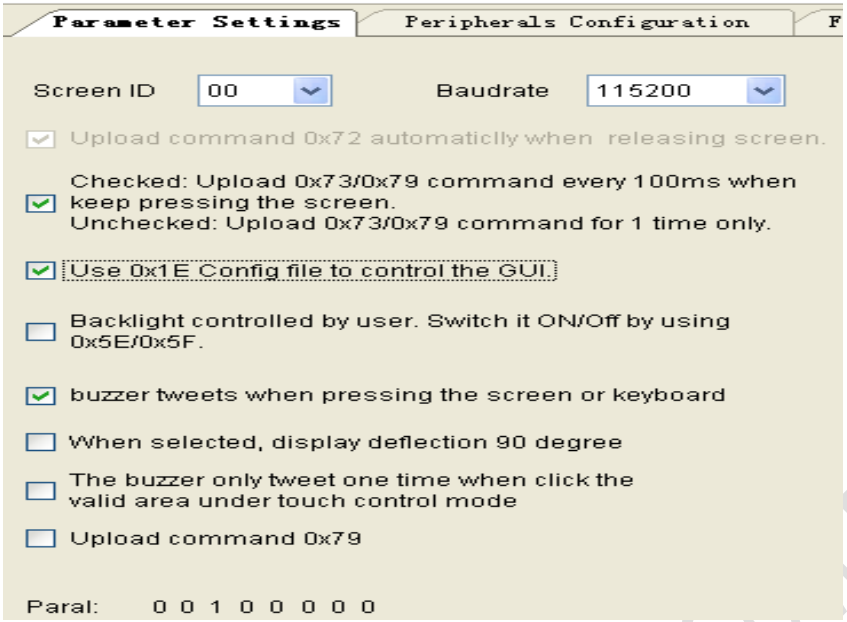
【Move up】 【Move down】 move up or down of the configuration area for user-friendly purpose. Screen size Management: Figure, you can enter a number and click "+", "-" button control the size.

【Preview】after setting up the touch region, click the Preview button, then you can test whether the picture jumping setting is correct or not. Figure:



Click touch configuration area, the system will switch image location according to your settings, automatically jump to the corresponding picture.

Touch configuration generation, in order to generate touch configuration file, users can use the 【Configuration File Deliver】 in the 【Debug Tools】, and send the configuration file to the screen. In order for UART UCM to follow the configuration file order to realize picture switch and instruction uploading function, please set it based on terminal parameter mode setting in the debug tools.



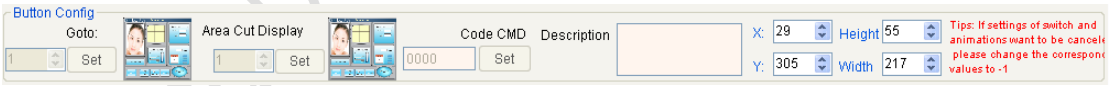
3.2.2 Configuration Area

Display the chosen picture in the picture-setting area, users can set one or more touch configurations for the need of DWIN UART UCM.

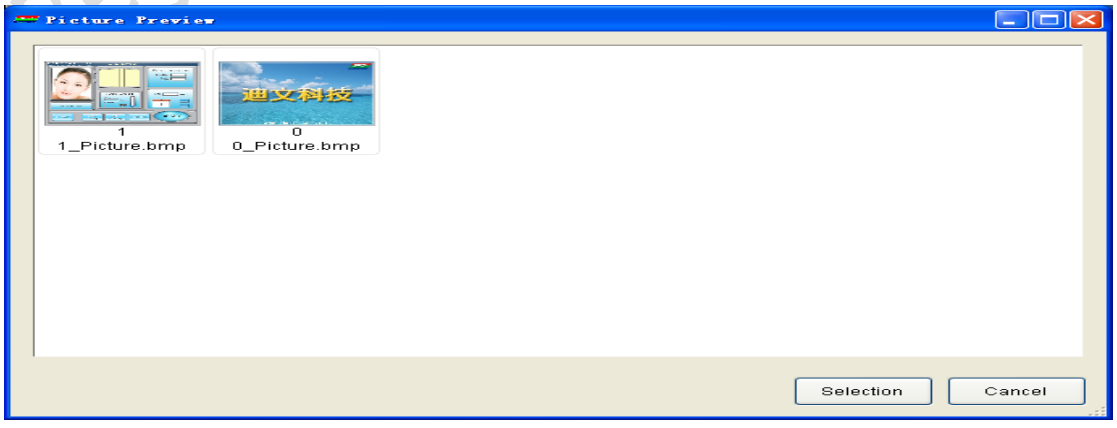
3.2.3 Touch Configuration Function Setting Area

Conduct setting in the chosen touch configuration area, for example, 【Go to】, 【Area Cut Display】and 【Code CMD】.

Shown as follows:

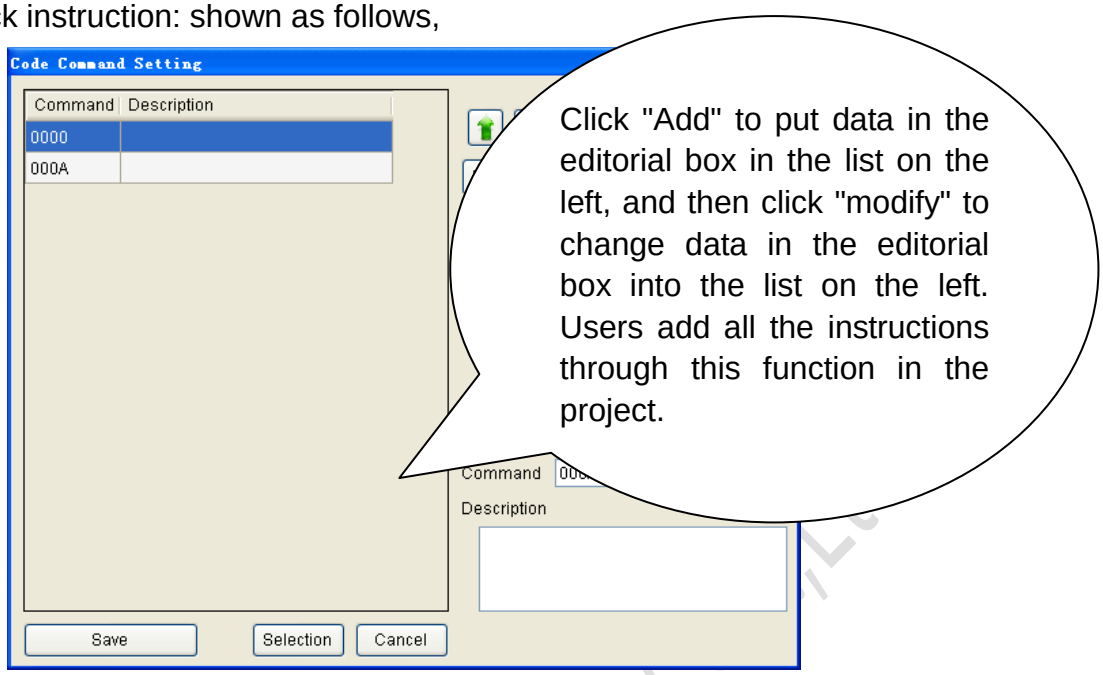


Click 【Go to】 and the【set】 button on the left of animation effect, please choose the picture

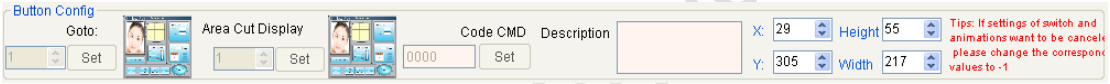


Click the 【Selection】 button on the right of the code instruction to set

button-back instruction: shown as follows,



Click 【Selection】 button to go back to the chosen data in the specified line, shown as the picture:

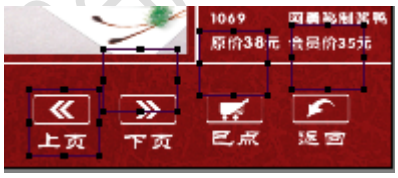


If there are many touch configuration areas to set, repeat the operations above to realize the setting. If you want to set other pages, choose the corresponding pictures on the left to repeat the operations to set the configuration.

3.2.4 Configuration Area Composing Techniques:

When there are many touch configurations on the page, the aligning method can be tricky, in V6.0 version, left-aligned and up-aligned are provided .

For example,



There are four touch configuration, if you want to align quickly,

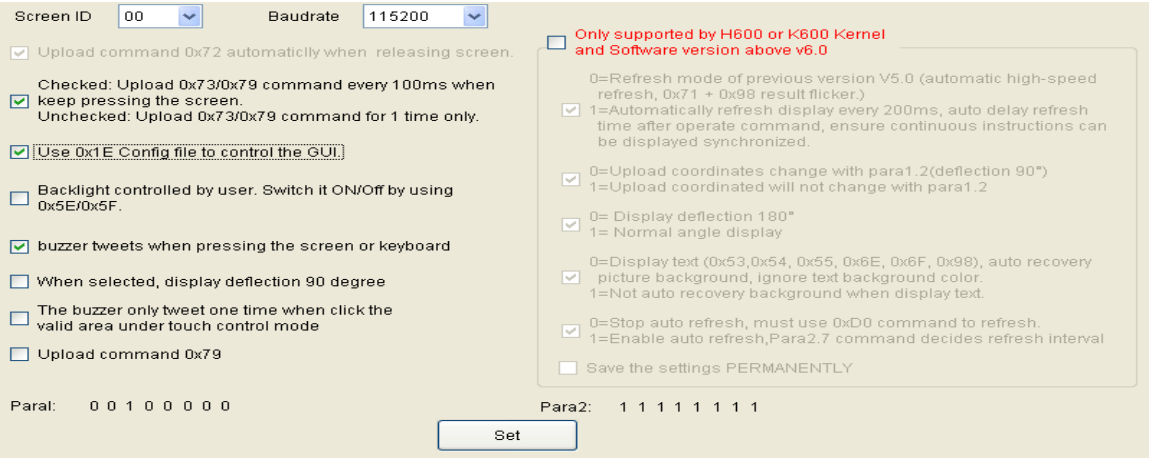
Step 1: use the mouse to click on other places on the screen and pull to the specified area

Step2: click align button Align Lefts Align Tops, then the system will make the up-aligning, if you want to conduct left-aligning, do as above.

3.3 System Setting and Instruction Debugging

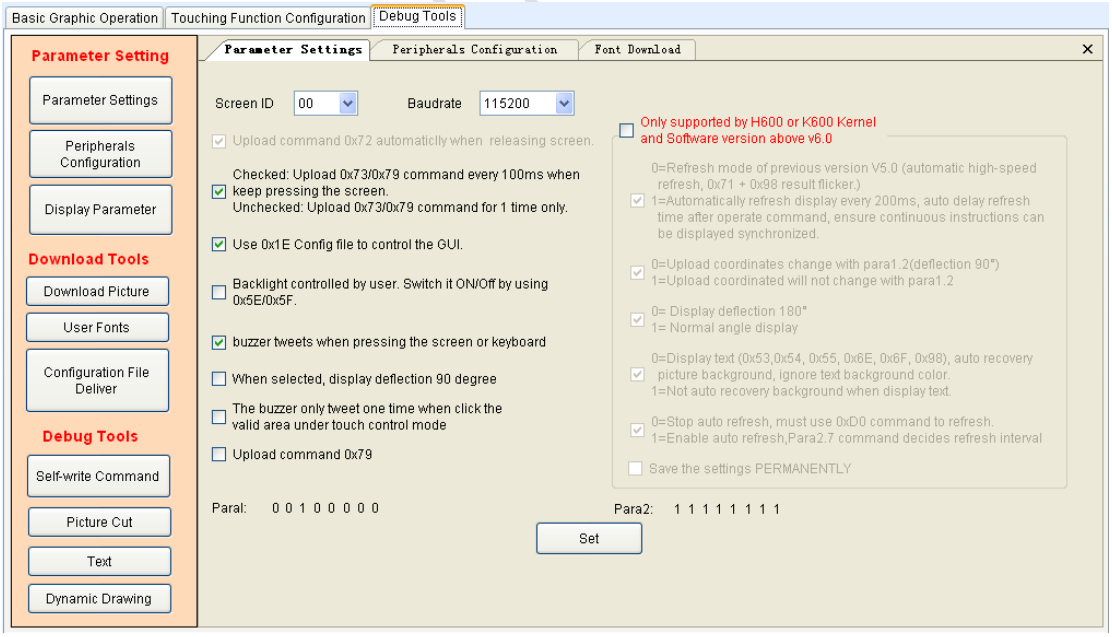
Function Description:

Management tool to set and conduct debugging to DWIN UART UCM



As the picture shows, the left of the interface is the tool column, including all kinds of functional management button related to DWIN UART UCM.

Click the corresponding button and show the function displayed on the right of the window (shown in the picture below), users can set and conduct instruction-debugging based on need.



3.3.1 Terminal Mode Parameter Configuration

Click 【Set】to send the following instruction：

Tx: AA E0/E3 55 AA 5A A5 <TFT_ID> <Bode_Set> <Para1> CC 33 C3 3C

Or AA E0/E3 55 AA 5A A5 <TFT_ID> <Bode_Set> <Para1> <Para2> CC 33 C3 3C 仅 H600、K600+support

DWIN UART UCM will reply:

Rx: AA E0/E3 <TFT_ID> <Bode_Set> <Para1> CC 33 C3 3C

Or AA E0/E3 <TFT_ID> <Bode_Set> <Para1> <Para2> CC 33 C3 3C only H600、K600+support

0xE3 Instruction only support version above V6.0; what is different with 0xE0 instruction is that version above V6.0 do not save data when 0xE0 instruction change the parameter, but 0xE3 instruction will save under the same circumstances.

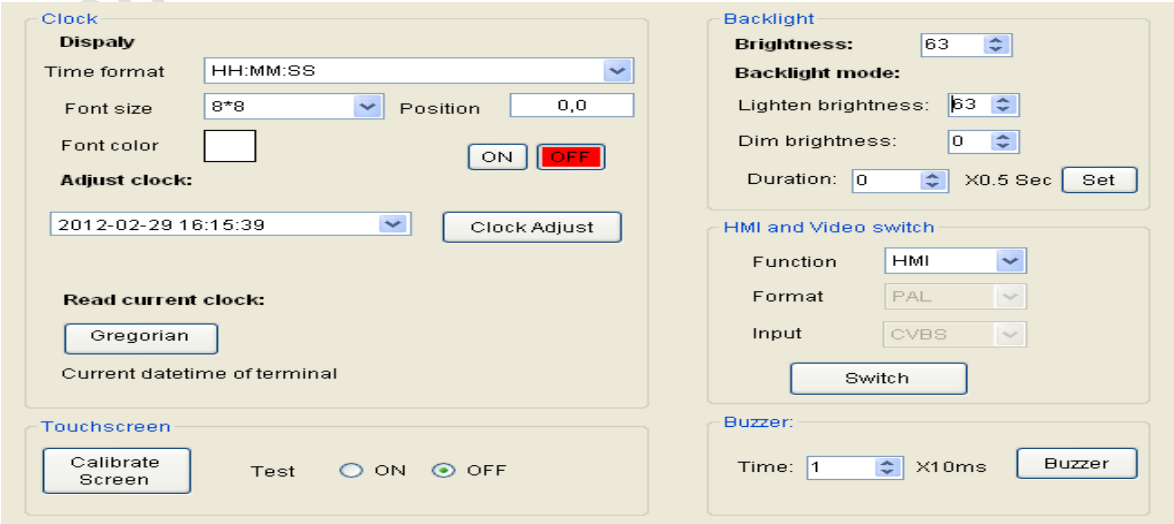
- <TFT_ID> configuration TFT screen parameter; (versions after V5.3 are not open to clients, 0x00 will be fine)
- <Bode_Set> Set the serial communication baud rate as follows (DWIN UART UCM factory default is 0x07):

Such as: on the map, click on Settings in the operating log, see the following data:

Terminal Mode parameter settings: 0xAA, 0xE0, 0x55, 0xAA, 0x5A, 0xA5, 0x00, 0x07, 0x00, 0xCC, 0x33, 0xC3, 0x3C

Reception: AAE0020700CC33C33C

3.3.2 Terminal Peripheral Configuration



(a) Clock

Function ：Set the system clock displaying mode, adjust the system time of the UART UCM and read the clock

Clock displaying mode: Click the [Open] or [OFF] button, conduct the display settings, adjust the parameters according to the input bar.

Clock Adjustment:

【System Time】set the actual time to DWIN UART UCM.

【Definition of Time】clients can input date and time, and set the time to DWIN UART UCM .

Read DWIN UART UCM clock:

【Gregorian calendar 】date is displayed based on Gregorian calendar

2012年02月06日，星期1　17:34:26

【 Lunar calendar 】 date is displayed based on Gregorian calendar

农历2012年01月15日， 龙年　壬辰

(b) Back Light Setting

Tx: AA 5E 55 AA 5A A5 <V_ON> <V_OFF> <ON_TIME> CC 33 C3 3C

Rx: nothing

<V_ON> click the touch screen(or keyboard), the back light is on automatically, 0x00-0x3F

<V_OFF> the back light go off automatically if no touch of screen or keyboard for a while, 0x00-0x3F

<ON_TIME> the time the back light is on，every 0.5s，0x00-0xFF（127.5s at most）

Back light mode set will be preserved. When the back light turns off, the first click will only be lit back light but not process. Backlight brightness touch (keyed) function should use the 0xE0 instruction .

(c)Buzzer

Set the length of the buzzer

Tx: AA 79 <On_Time> CC 33 C3 3C

Rx: no

<On_Time> 0x01-0xFF，unit is 10mS

(d) HMI and Video Switch

Simulated Video Play

Tx: AA 7A <Work_Mode> <Video_Mode> <Video_CH> CC 33 C3 3C

Rx: no

<Work_Mode> 0x00=HMI 0x01=Video

<Video_Mode> 0x00=PAL 0x01=NTSC

<Video_CH> 0x00=CVBS interface input video signal 0x01=S terminal input video signal

Digital Video Display based on SD Card

Tx: AA 7A <Work_Mode> <KEY_VALUE> CC 33 C3 3C

Rx: no

<Work_Mode> 0x00=HMI 0x01=Video display

<KEY_VALUE> under video displaying mode, function key, defines as

KEY_VALUE	Function key instruction
0x00	Key up
0x01	Play/Pause Press
0x02	turn on the sound
0x03	turn off the sound
0x04	Menu Operation：confirm Press
0x05	Menu Operation：move right Press
0x06	Menu Operation：move forward Press
0x07	Menu Operation：quit Press
0x08	Menu Operation：volume up Press
0x09	Menu Operation：volume down Press
0x0A	Menu Operation：Chinese/English Press

(d) Touch Screen Function

Including Touch Calibration and Touch Screen.

【Touch Calibration】

Tx: AA E4 55 AA 5A A5 CC 33 C3 3C

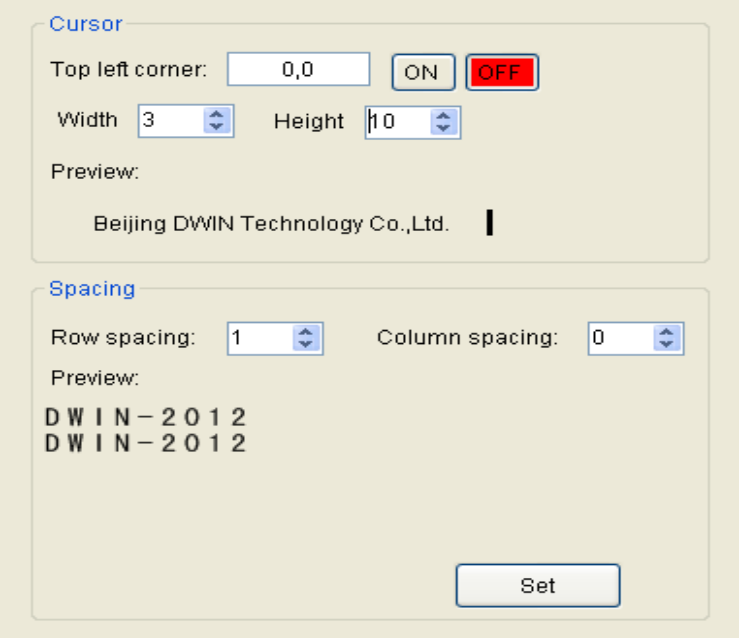
Send commands, follow the on-screen prompts, then click the touch position on the screen, the "upper left" , "upper right" "lower left" ; when the calibration is complete, the HMI will upload the following command:

Rx: AA E4 4F 4B CC 33 C3 3C

Unless the user re-assemble the touch screen, the DWIN unique drift compensation technology will ensure that the touch screen only needs one calibration during product assemble, we guarantee that in the product life cycle no calibration will be needed again !

【Touch Screen】: after the click of a button, once the user presses the touch screen it will be displayed in the corresponding coordinates by a red solid circle in order to facilitate the users to test touch screen accuracy. Click [Off] to cancel the test.

3.3.3 Displaying Parameter Setting



There are three buttons【ON】、【OFF】、【Set】， set the figure of the input box and click the corresponding button to set DWIN UART UCM.

e.g. ：

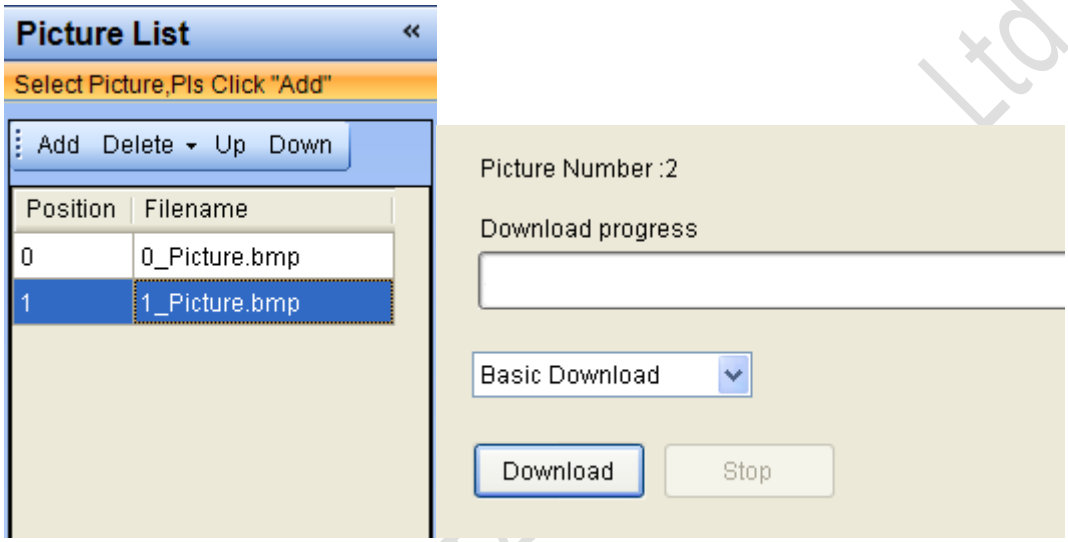
Cursor Setting - open：0xAA, 0x44, 0x01, 0x00, 0x00, 0x00, 0x00, 0x03, 0x0F, 0xCC, 0x33, 0xC3, 0x3C

Cursor Setting-close： 0xAA, 0x44, 0x00, 0x00, 0x00, 0x00, 0x00, 0x03, 0x0F, 0xCC, 0x33, 0xC3, 0x3C

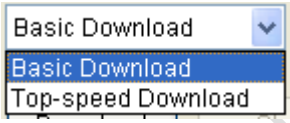
Character Space： 0xAA, 0x41, 0x00, 0x00, 0xCC, 0x33, 0xC3, 0x3

3.3.4 Picture Download

Picture downloading function will download all the pictures to DWIN UART UCM, there are basic download and top-speed download.

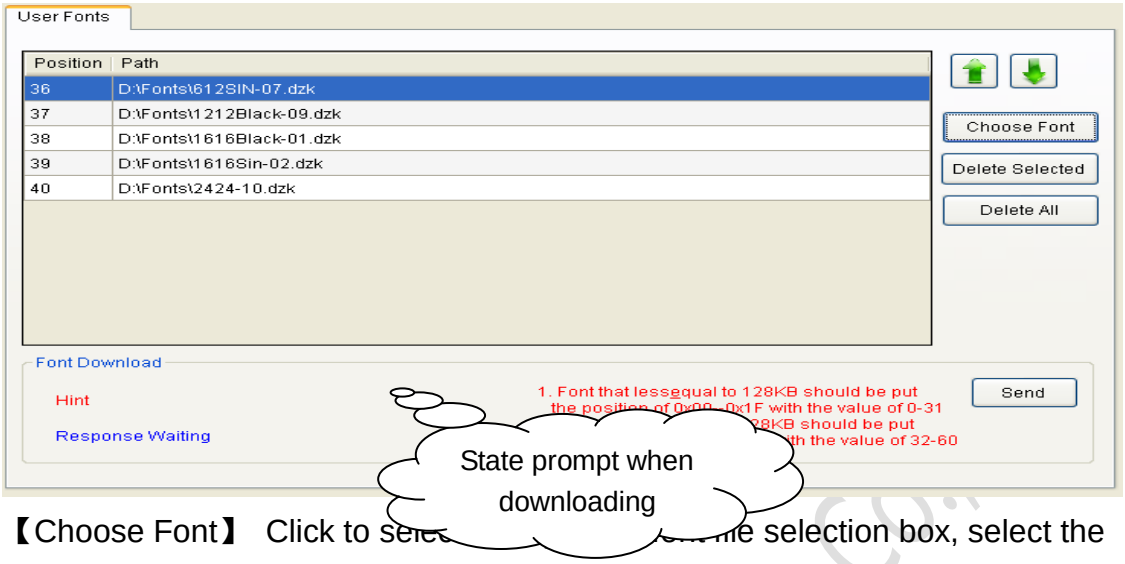


【Basic Download】the system will download according to serial port baud rate



【Top-speed Download】The system will automatically switch to high-speed baud rate (6.225 million) picture download. High-speed downloading, the screen does not automatically refresh, only when all the download is complete, then it will update the screen.

3.3.5 Font Download



【Choose Font】 Click to select the selection box, select the font that you need to download

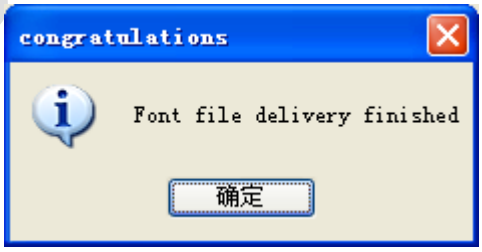
【Delete Selected】 to delete lines in the list【Delete all】clear all items in the list

【Send】 send font file in the list in order to DWIN UART UCM. Issued a document when the state changes are as follows:

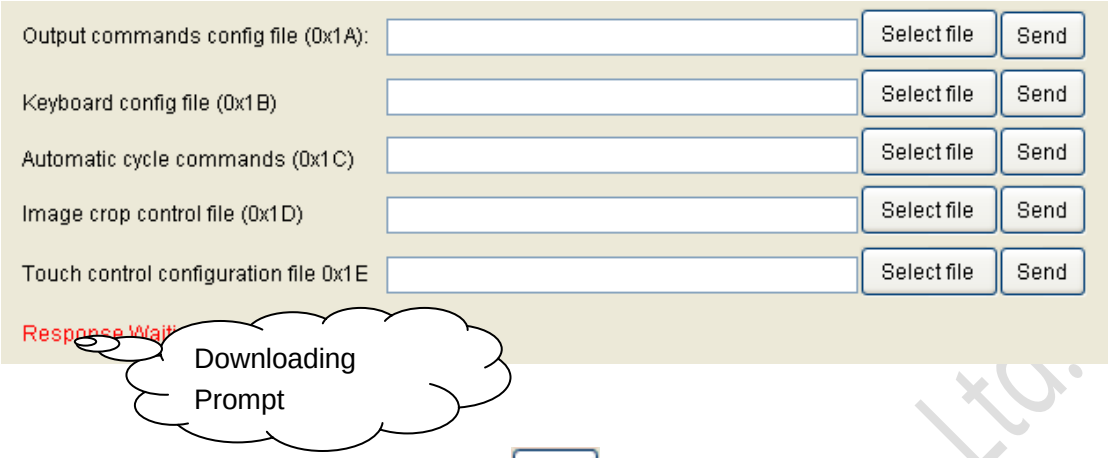
Issued process tip: Please TX Text_Lib

Issued complete tip: One Text_Lib Save OK.

If there are more than one font, then the system will send the next one, repeat the above prompt, specify to pop-up the following dialog box.



3.3.6 Configuration File Download



In the corresponding place, click 【 . . . 】to choose the configuration file to send to DWIN UART UCM.

The corresponding file include:

【Output Commands Configuration File0x1A 】

【Keyboard Configuration File 0x1B 】

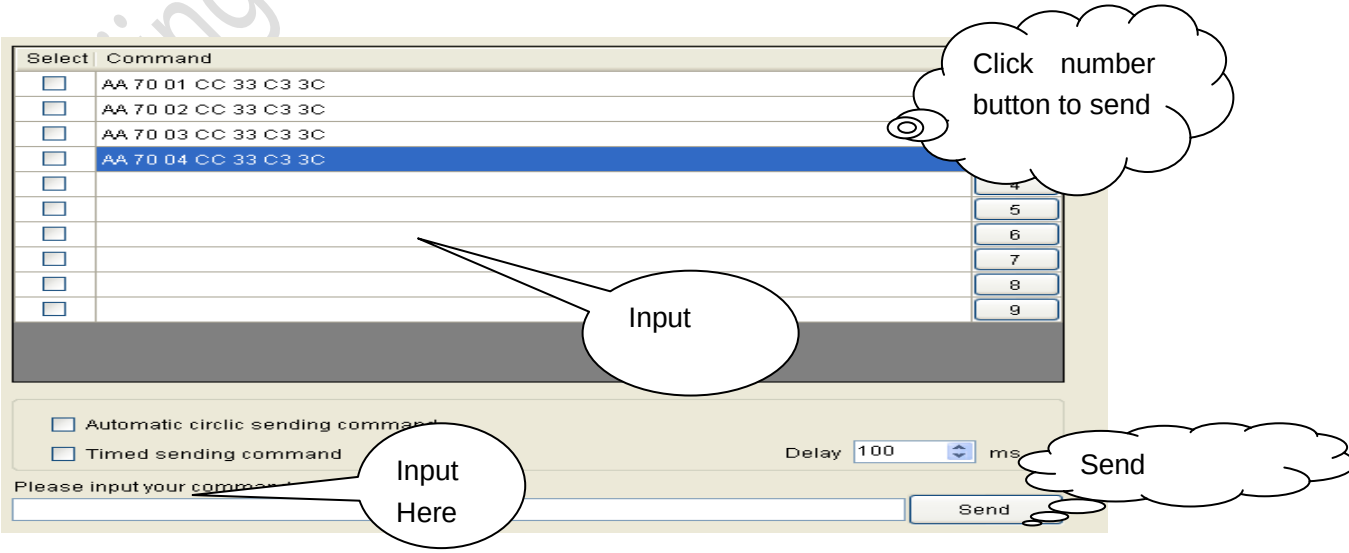
【Automatic Cycle Commands 0x1C】

【Image Crop Control File 0x1D】

【Touch Control Configuration File 0x1E】

Click on the corresponding input box to the right of the [Send] button to send the configuration file.

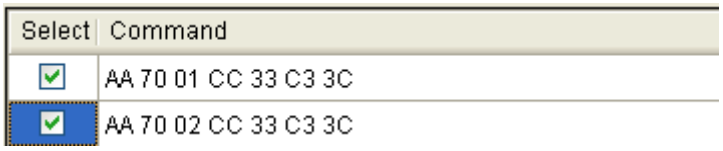
3.3.7 Self-write Instruction



For purpose of letting clients to input HMI instructions conveniently, it provides

tools for clients to send instructions themselves.

Click【 ☐ Automatic circlic sending command 】, then the system will automatically repeat sending selected instructions according to time [interval] in the command list. As shown:



Click【 ☐ Timed sending command 】, then the system will automatically repeat sending instructions according to time [interval] in the "instruction input column". As shown:

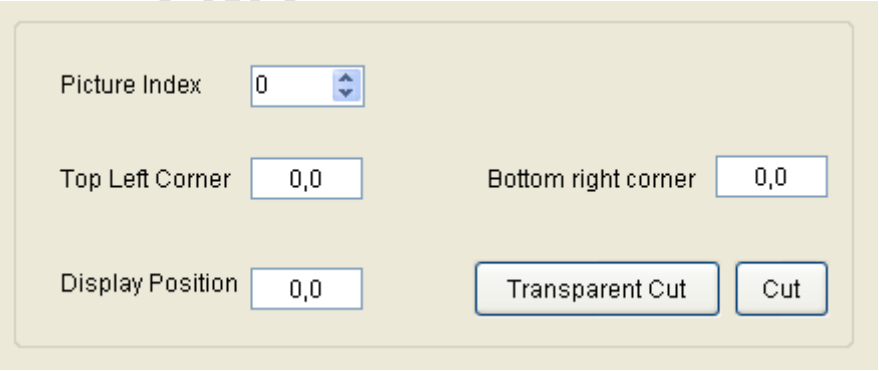
3.3.8 Picture Cut

Cut pictures in the corresponding storing location based on the size range from 【Top Left Corner】to 【Bottom Right Corner】 and display in the displaying 【Display Position】 on the screen.

Corresponding Instruction ：

Tx: AA 71 <Pic_ID> <Xs> <Ys> <Xe> <Ye> <X> <Y> CC 33 C3 3C

or：AA 9C <Pic_ID> <Xs> <Ys> <Xe> <Ye> <X> <Y> CC 33 C3 3C

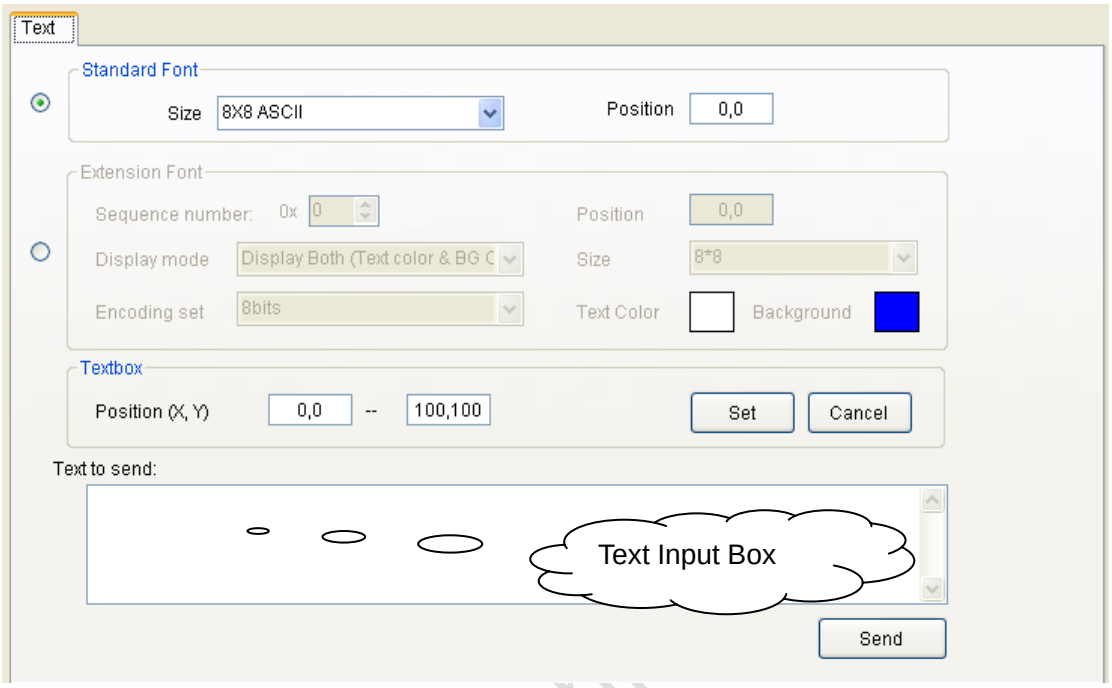


【Transparent Cut】: 0x9C instruction does not display the background color of the shear picture, it will put on "transparent" effect; before 0x9C instruction executing, it will automatically restore the background;

【CUT】: 0x71 Instruction

3.3.9 Text Display

For testing the correctness of the font sent to DWIN UART UCM



The fonts are divided into standard font and extended font.

- Standard Font ：

Tx: AA <CMD> <X> <Y> <String> CC 33 C3 3C

Rx: no

<CMD>

0x53: 8 * 8 dot matrix ASCII string;

0x54: 16 * 16 dot matrix expansion of the Chinese Character string (ASCII characters display as the half-width 8*16 dot matrix);

0x55: 32 * 32 dot matrix expansion of the Chinese Character string (ASCII characters display as the half-width 16*32dot matrix);

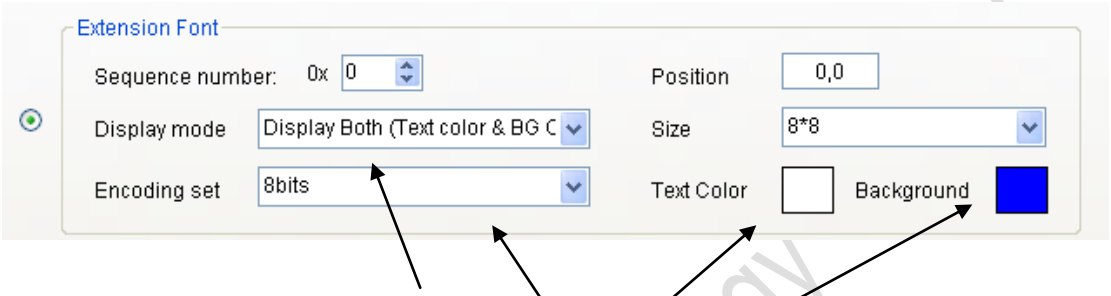
0x6E: 12 * 12 dot matrix expansion of the Chinese Character string (ASCII characters display as the half-width 6*12 dot matrix);

0x6F: 24 * 24 dot matrix expansion of the Chinese Character string (ASCII characters display as the half-width 12*24 dot matrix);

The <X> <Y> show the start of the string (the first character in the upper-left corner of coordinates)

<String> is to display character string, and Chinese using GB2312 (0x55, 0x6F; internal code) or GBK (0x54, 0x6E, Internal Code) encoding, displaying color is set by the 0x40 instruction, displaying the character space is set by 0x41 instruction, the line will be changed automatically at the end. 0x0D, 0x0A be processed as a "enter and line-change".

3.3.10 Extended character



Tx: AA 98 <X> <Y> <Lib_ID> <C_Mode> <C_dots> <Fcolor> <Bcolor> <String> CC 33 C3 3C

Rx: no

<X> <Y> Display the first character of the upper-left corner indicators;

Font select 【Sequence Number】, the range of 0x00-0x3B, corresponding to the location of the 0xF2 instruction to save the font;

The HMI kernel has 32MB font memory, divided into fonts of 60 different size, Lib_ID defined as follows:

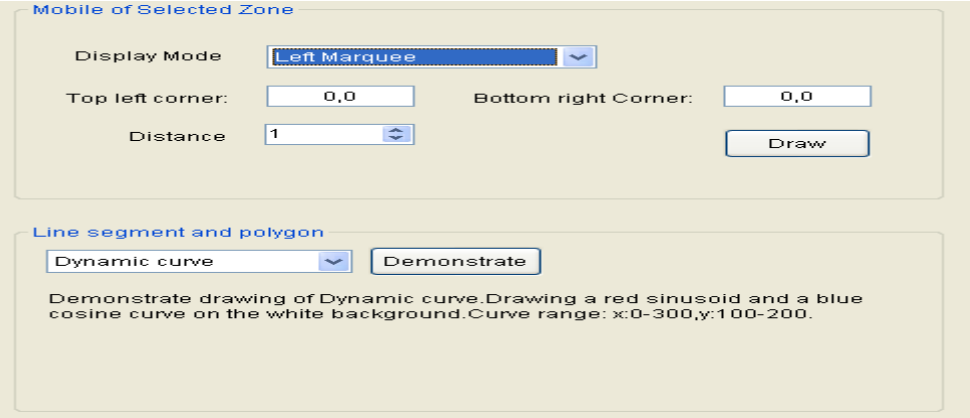
Lib_ID	Volume	Instruction	Factory Default
0x00-0x1F	128KB	32 small fonts with 128KB at most are normally used to design special icon clients needed or ASCII characters with different typeface .	0x00=ASCII Font，do not modify 0x01＝Fonts use Pinyin 0x02－0x19：empty 0x1A-0x1F：touch configuration file
0x20-0x3B	1MB	28 fonts with 1MBspace at most A single font can hold GBK enlarged fonts under 16 lattice	0x20＝12 Lattice GBK Sumsun 0x21＝16Lattice GBK Sumsun

		（12×12or16×16 lattice） or GB2312 secondary font within 32 lattice（12×12、16×16、24×24、32×32）； Fonts can be used assembly, a 28MB large lattice fount can be assembled at most. When fonts are used assembly, Lib_ID of 0x98 or 0xF2 refers to the address of the first fount; for example, a 32 lattice UNICODE font will take 8MB space, we can give it space Lib_ID=0x20-0x27, then the next font start with 0x28, when 0x98 instruction is used for displaying, Lib_ID＝0x20.	0x22 ＝ 24Lattice GB2312Sumsun 0x23 ＝ 32Lattice GB2312 Sumsun 0x24－0x3B：empty

Choose the code above, send characters to text box, click the [Send] button, then send text to screen and display.

3.3.11 Dynamic Graphics

We can conduct the simple drawing on TFT displaying screen, some animated effect need to go with DWIN UART UCM, so we can see the following displaying function: （Tips: do not switch the interface or do other operations before animation display）



Regional movement:

0x60 selected area move and shift to the right: from right to left, from the left-most region moved to the far right.

0x61 selected area move and shift to the left: from left to right, from the right-most region moved to the far left.

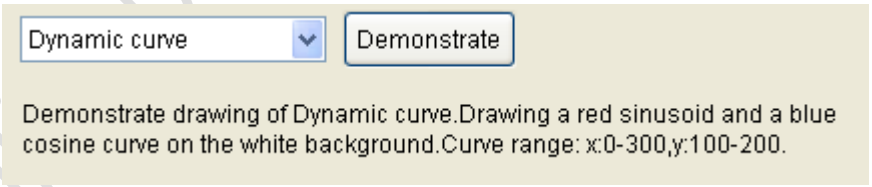
0x62 selected region shifted to the right: from right to left, the left-most region lost , the right-most area filled with the background color (0x40 instruction).

0x63 selected region shifted to the left: from left to right, the right-most region is lost, the left-most area filled with the background color (0x40 instruction set).

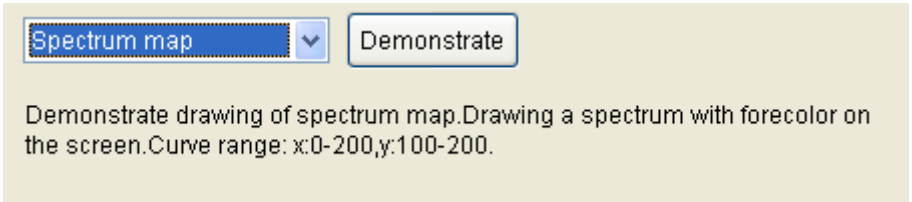
(Corresponding to the display mode)

Line and multi-deformation:

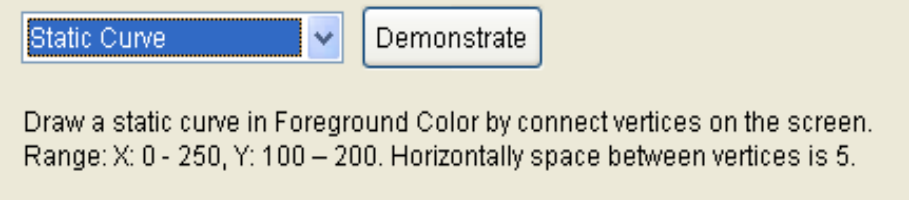
(a)Dynamic graph:



(b)Spectrogram



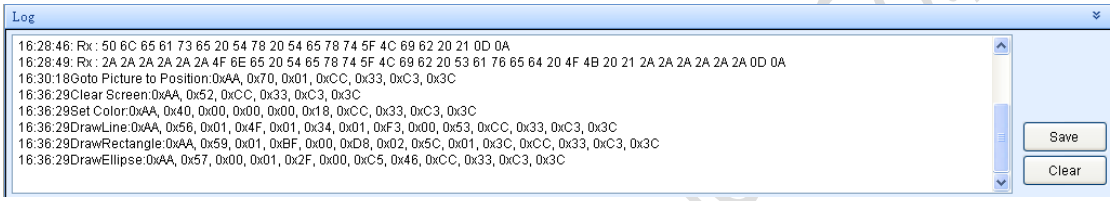
(c)Line Chart



【Demonstrate】Click the display button to show the corresponding curve in DWIN UART UCM.

3.4 Operation Blogs

Records and the operation records of the serial ports communication, as shown:



[Save] save operational records as a file for later viewing.

[Clear] to clear the data in the display area

Click on the arrow buttons on the top right , the operation log can be narrowed down to the bottom of the screen, as shown: