Foshan Qingjun Electronics Co., Ltd.

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File information

Writer		The date of writing	
Reviewer		The date of the review	
Approver		The date of approval	

Change records

date	author	version	Change instructions

Change review

date	Reviewer	opinion

1. Contact Us

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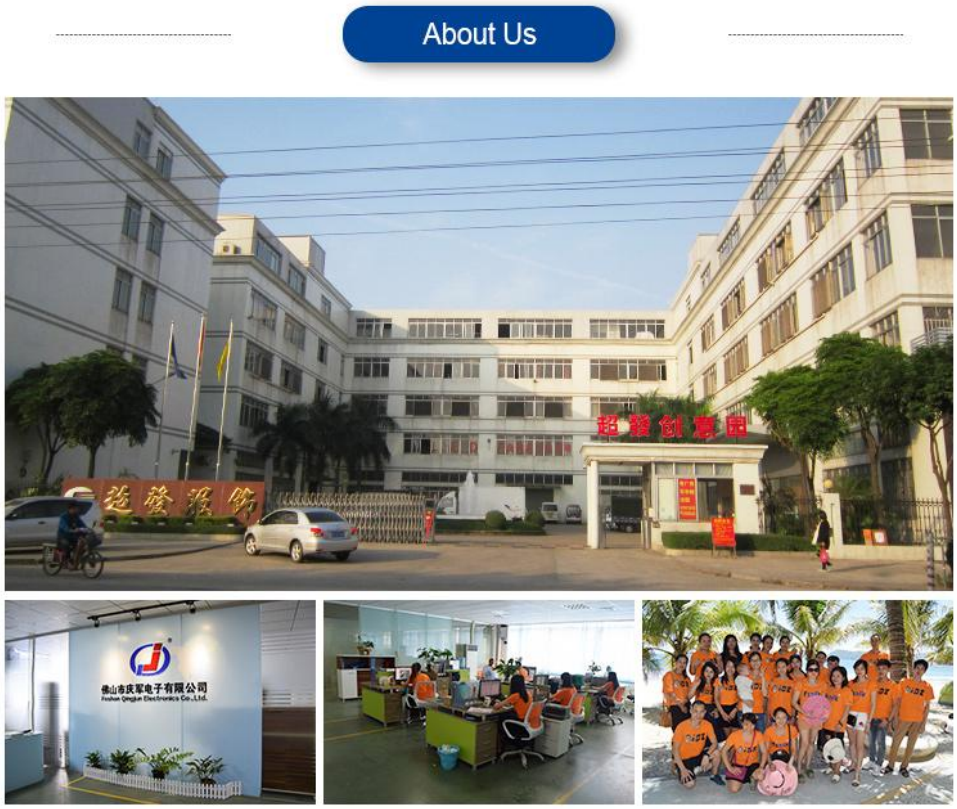
2. Company Environment

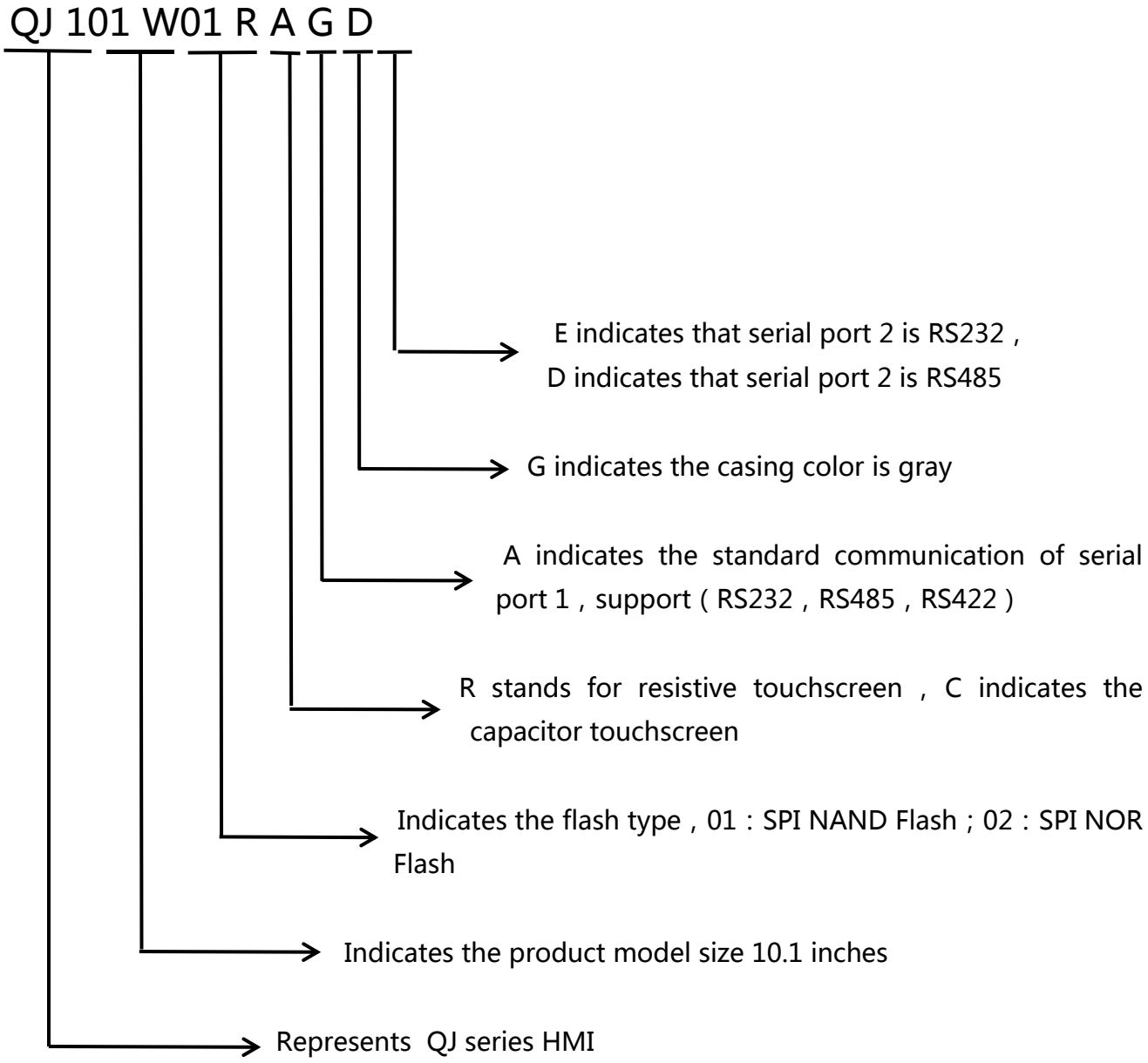


3. Product Description
3.1 Product Models

Module	Specifications
QJ-A010T2/4+ **G**	**QJ series, 10.1 inch, 10 to 30 V, a single serial port: RS232 / RS485 / RS422, 128 Mbyte SPI Nand, Resistive touch screen**
QJ-A010T2/4+ **D**	**QJ series,10, 1 inch,10-30V, serial port 1: RS232/RS485/RS422, serial port 2: RS485, 128Mbyte SPI Nand Flash, Resistive touch screen**
QJ-A010T2/4+ **E**	**QJ series,10.1 inch,10-30V, serial port 1: RS232/RS485/RS422, serial port 2: RS232, 128Mbyte SPI Nand Flash, Resistive touch screen**

Model Definitions

Figure Shows：

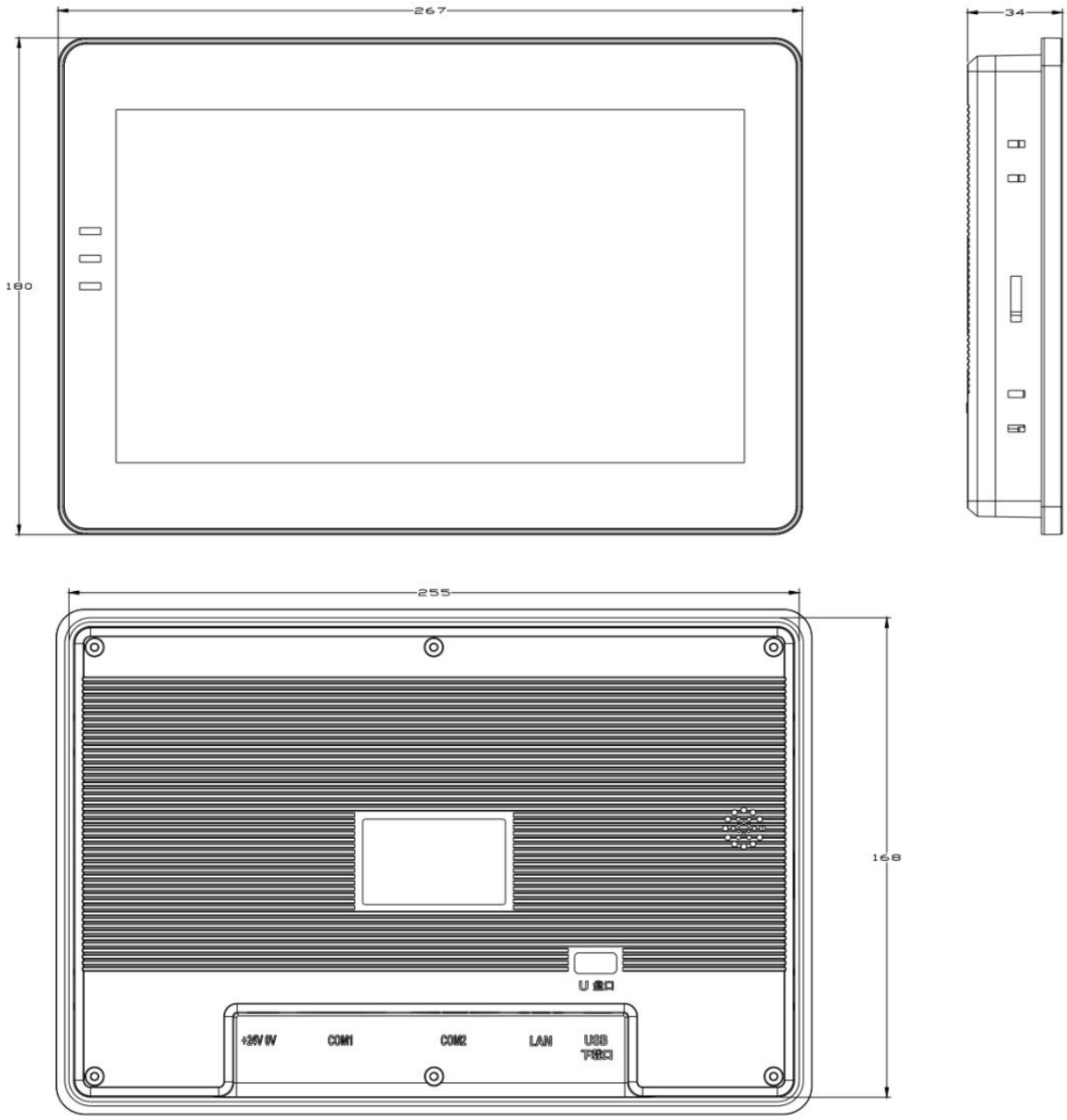


3.2 Products Features

Power Voltage	DC10--30V
Backlight Adjustment	Support
Touch	4-wire resistive touch screen
LCD resolution	1024X600
USB1	TYPE C， Download port
USB2	TYPE A，U disk interface
LCD	TN TFT LCD，250cd/m2
COM1 communication	RS422,RS232/RS485 communication（3 choose 1）
COM2 communication	RS232/RS485 communication（2 choose 1）
Storage	128Mbyte SPI NAND FLASH
Power Protection	To prevent the reverse，Distinguish the positive and negative poles of power supply
RTC	Support
Save power failure data	Support
Download	SD card，USB download，U disk

3.3 Products Size

Display Size	Product Model	Overall Dimension	Display Visual Area	Panel Cutout	Overall Thickness
10.1 in.	QJ-A010T2/4+	267*180mm	225*128mm	255*168mm	34mm


267
180
34
255
168
U 盘口
+24V 0V
COM1
COM2
LAN
USB
下载口

3.4 Products Parameters

Product Specification		
Hardware Performance	Module	**QJ-A010T2/4+**
	Display Size	10.1" TFT LCD
	Resolution	1024X600
	Colors	260000
	Brightness	250 cd/m^2
	Backlight	LED
	LED life	20000 hours
	Touch screen	4-wire resistive touch screen touch screen（Surface hardness 4H），
	CPU	32-bit 600MHz ARM9 built-in 32MB DDR2 memory
	Memory	128Mbyte SPI Nand Flash
	RTC	Real-time clock built-in
	Ethernet	Unsupported
	Save power failure data	Support
	USB1	TYPE C USB，Download interface
	USB2	TYPE A USB，U-disk
	Program download Mode	USB，U disk，SD card
	U disk	Support
	Communication port	COM1: RS232,RS485,RS422 .3 choose 1 COM2：RS232,RS485d.Only one type is supported
Electrical	Maximum power	3.5 W

Specifications	consumption	
	The rated voltage	DC 10-30V
	Power protection	+/-2KV lightning surge protection capability
	The allowed loss of power	<5ms
	CE&ROHS	Comply with EN61000-6-2:2005, EN61000-6-4:2007 standards;Lightning surge +/ -2kV, EFT: +/ -4kV;Electrostatic contact discharge +/-8KV;Electrostatic air discharge +/-15KV.
Environmental Specifications	Operating temperature	-20℃~60℃
	Storage temperature	-30℃~70℃
	Environmental humidity	10-90% RH(non-condensing)
	Vibration	10-25Hz (X, Y, Z direction, 2g/30 min)
	Cooling way	Natural air cooling
The Other Parameters	Protection grade	The front panel conforms to IP65 (with flat plate cabinet installation), and the rear panel conforms to IP20
	Display Active Area	225mmX128mm
	Panel Cutout	255mmX168mm
	Overall dimensions	267mmX180mm
	The weight	745g

4. Hardware Introduction

4.1 Definition of terminal pin

Port Definitions	
Device Position Number	**Descriptions**
①	Power interface
②	COM1 communication：D-sub9 interface
③	USB TYPE A port
④	TYPE C USB port
⑤	SD card interface
⑥	COM2 communication： D-sub9 interface

Power supply interface -- ①		
Pin	**Definition**	**Descriptions**
1	+24V	Positive input of power supply, DC10-30V
2	GND	Negative power input

COM1 D-sub9 interface -- ②				
Pin	**Define**	**RS232**	**RS485**	**RS422**
1	N.C.			
2	RXD	RS232 receiver , connected to RS232 driver of the controller		
3	TXD	RS232 driver, connected to RS232 receiver of the controller		
4	N.C.			
5	GND	RS232/RS422/RS485 Ground		
6	RX-			RS422 receiver -, and connects to RS422 driver - of the controller
7	RX+			RS422 receiver + and connects to RS422 driver + of the controller
8	TX-		RS485 B-	RS422 driver -, connect to RS422 receiver - of the controller
9	TX+		RS485 A+	RS422 driver +, connected toRS422 receiver + of the controller

COM2 communication interface --⑥			
Pin	**Define**	**RS232**	**RS485**
1	N.C.		
2	RXD	RS232 receiver , connected to RS232 driver of the controller	
3	TXD	RS232 driver, connected to RS232 receiver of the controller	
4	N.C.		
5	GND	RS232/RS485 Ground	
6	RX-		
7	RX+		
8	TX-		RS485 B-
9	TX+		RS485 A+

Notes: COM2's 2 connects 8, and 3 connect 9. And the definition of the communication wire's pin.

5. Reliability Test

All products of company have carried out a series of reliability tests before mass production , including ESD test, high and low temperature aging test, EFT and so on, to ensure the quality of products .

5.1 ESD Test

Execution standard：IEC 61000-4-2

Test process: Lay the product flat on the test table, and conduct contact and air discharge in turn around the touch screen iron buckle and the display area, as showing above. Check the screen is weather reset and displayed abnormally.

Testing Data

Product Models	Discharge type	Discharge value	Test Results
QJ-A010T2/4+ G	Contact	+/-8KV ;	No reboot, system halt or Abnormal display. Function is normal
	Air	+/-15KV ;	No reboot, system halt or Abnormal display. Function is normal
QJ-A010T2/4+ D	Contact	+/-8KV ;	No reboot, system halt or Abnormal display. Function is normal
	Air	+/-15KV ;	No reboot, system halt or Abnormal display. Function is normal
QJ-A010T2/4+ E	Contact	+/-8KV ;	No reboot, system halt or Abnormal display. Function is normal
	Air	+/-15KV ;	No reboot, system halt or Abnormal display. Function is normal

5.2 High low Temperature Aging Test

Test Environment: high and low temperature aging test box

Test Temperature: -20° to 70°

Test Process: Place the product in the high and low temperature aging test box. Through 70° high temperature, -20° low temperature, high and low temperature alternating transformation aging test. Observing the product whether resets ,restarts and shows abnormal display, abnormal function, and other phenomena during the test process.

The Test Data

Product model	The temperature	Humidity	The test results
QJ-A010T2/4+	The high temperature of 70 °	60%	No reboot, system halt or Abnormal display. Function is normal
	Low temperature - 20 °	60%	No reboot, system halt or Abnormal display. Function is normal
	Alternating high and low temperature (-20°~70°)	60%	No reboot, system halt or Abnormal display. Function is normal

5.3 Electrical Fast Transient test

Implementation Standard :IEC 61000-4-4

Test Process: Lay the product flat on the test bench and supply power to the screen through the pulse group generator, coupling pulse group. The diagram above. Check the product whether resets, restarts, and shows abnormal display on the screen.

The Testing Data

Product Models	Test Standard	Test Port	The Test Results
QJ-A010T2/4+ G	EFT +/-4KV;	The power port	There is no flicker under 1KV , and flicker above 1KV on the screen, but there is no reboot, system halt or abnormal display. Function is normal.
		Communication port	There is no flicker under 2.5KV , and flicker above 2.5KV on the screen, but there is no reboot, system halt or abnormal display. Function is normal.
QJ-A010T2/4+ D	EFT +/-4KV;	The power port	There is no flicker under 1KV , and flicker above 1KV on the screen, but there is no reboot, system halt or abnormal display. Function is normal.
		Communication port	There is no flicker under 2.5KV , and flicker above 2.5KV on the screen, but there is no reboot, system halt or abnormal display. Function is normal.
QJ-A010T2/4+ E	EFT +/-4KV;	The power port	There is no flicker under 1KV , and flicker above 1KV on the screen, but there is no reboot, system halt or abnormal display. Function is normal.
		Communication port	There is no flicker under 2.5KV , and flicker above 2.5KV on the screen, but there is no reboot, system halt or abnormal display. Function is normal.

5.4 Lightning Surge Test

The Test Data

Product Models	Test Standard	Impedance	The Test Results
QJ-A010T2/4+ G	+/-2KV	12Ω	There is no flicker under 1KV , and flicker above 2KV on the screen, but there is no reboot, system halt or abnormal display. Function is normal.
QJ-A010T2/4+ D	+/-2KV	12Ω	There is no flicker under 1KV , and flicker above 2KV on the screen, but there is no reboot, system halt or abnormal display. Function is normal.
QJ-A010T2/4+ E	+/-2KV	12Ω	There is no flicker under 1KV , and flicker above 2KV on the screen, but there is no reboot, system halt or abnormal display. Function is normal.

6. Software Download

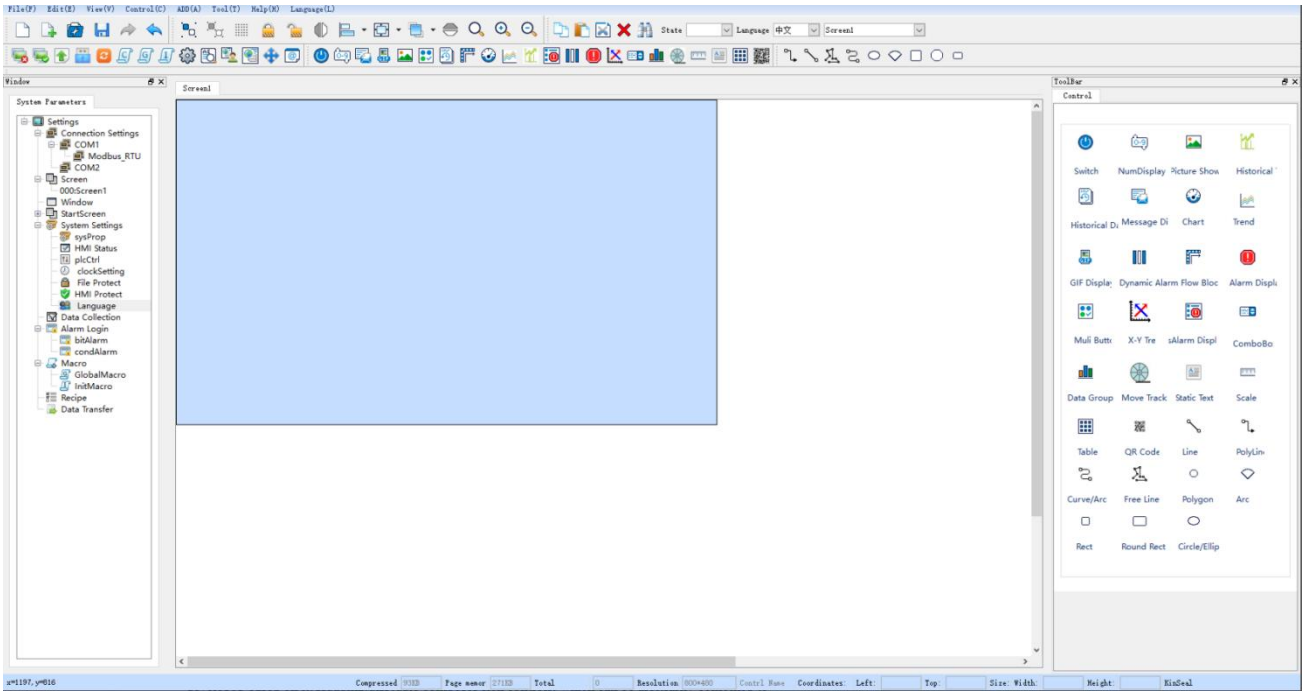
Products configuration software and driver installation method, please go to the official website of Huaqingjun Intelligent Control company download center to download the following files:

《Huaqingjun_setup_v3.1 configuration software》、**《HuaqingjunStudio software installation manual》**、**《HuaqingjunStudio software driver installation manual》**。

Notes: For Windows 7, the system will automatically install the driver after installing HuaqingjunStudio software. For Windows XP and Windows 8, the driver installation fails due to operating system limitations，According to the first **《Manual for Disabling digital signatures for Windows 8 and 10》** Disabling digital Signatures，then according to the **《Software driver installation manual》** Manually install the driver.

7. Description PC Configuration Software

7.1 Develop software



PC Software HuaqingjunStudio is a tool that users can edit arbitrarily. All application programs are developed based on it. HuaqingjunStudio composes rich controls, which can be arbitrarily combined to achieve the functions that users want：

Features Includings：

Switch Button	Including "Bit Button" "Word Button" "Indicator" "Screen Button" "Function Button" "Polymorphic Button" touch the connected device to monitor the status
Numerical Input and Display	Including a variety of base input and display, ASCII code input and display, used to display the monitoring address value;Another time display is used to display the real-time time
Flow Block	An animated graphic that simulates the flow of liquid in a pipe
Static text/table/scale	A variety of basic shapes, including lines, circles, ellipses, rectangles, etc
Image Display and GIF animation	A picture display box that displays one or more pictures
Instrument	Bar chart, meter, ring, showing a value of some state of data
Message Display	Displays messages that be edited by user
Alarm Display	Display the alarm information of the current device (divided into digital alarm and analog alarm), Alarm settings must be configured before using the control
Dynamic Alarm	Used to display the current alarm, which is different from the alarm control is the dynamic alarm bar in the form of text scrolling display the current alarm content
X Y Curve	Real time and dynamic display of data trend of data collector
History Curve	Displays the data saved by the history collector in curvilinear form
Recipe	Create a recipe like menu
Multifunction Button	A switch button, through the button can be very convenient to achieve a variety of functional requirements
Trend Chart	Draw reference curves of multiple data to accurately and intuitively judge the change trend of a certain value in a period of time
Dropdownlist	Used to select the corresponding state function
Data group	To display the data change from register address N to register address N as a curve
Motion trail	Control address data by dragging a scroll block
Qr code	Dynamic generation of QR code, through scanning into the url, payment and other functions

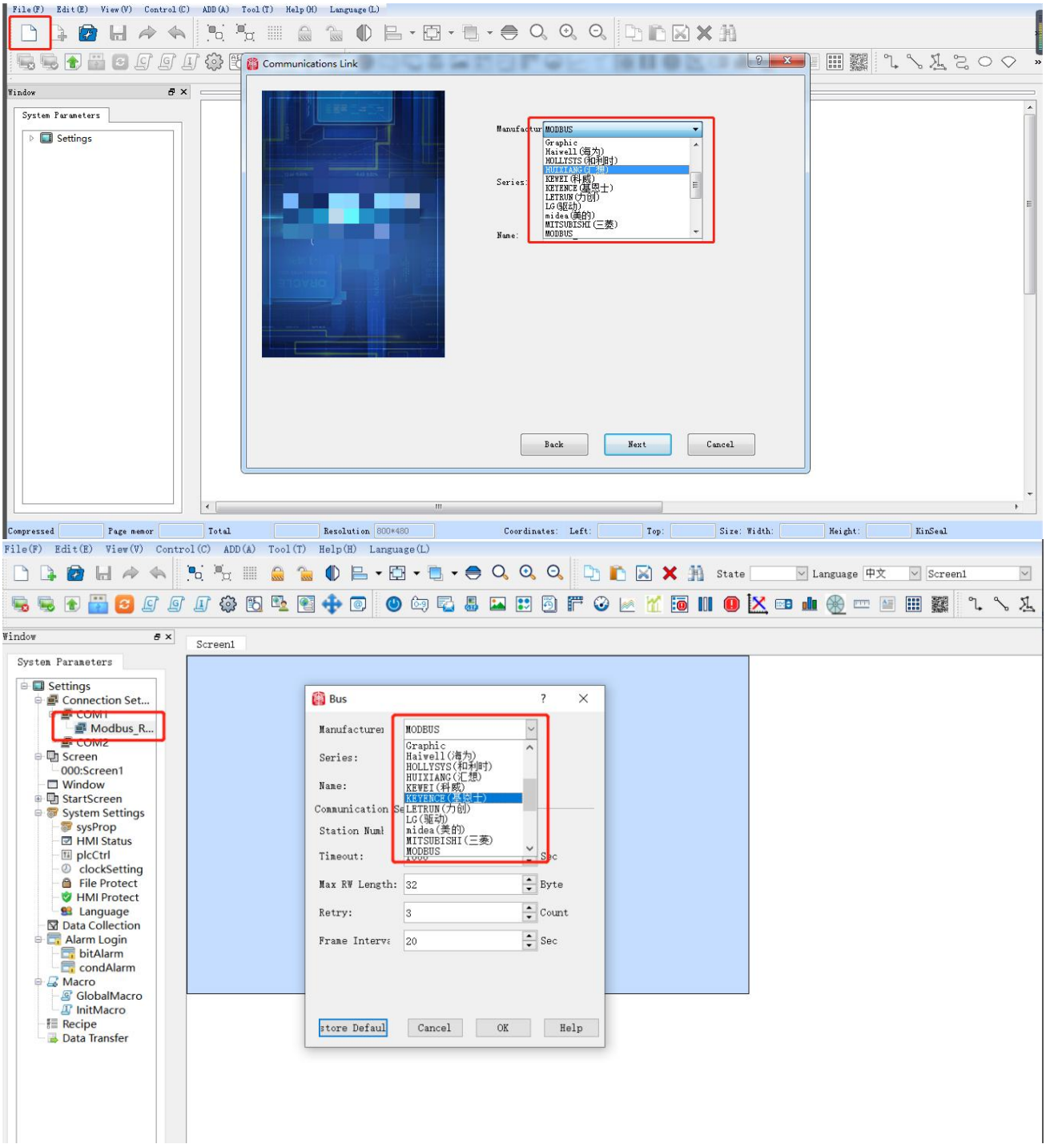
Extended Function Of Host Configuration Software：

Macro Instruction	C programming language, to achieve a variety of more complex logic or functions
PLC Control	HMI is controlled by PLC
Language	Support for multiple languages
Data Collection	Data acquisition for temperature, pressure, humidity, etc
Data Transmission	Refers to the transmission of data over the same type of address. The transmission mode can be periodic (how many seconds) or triggered
HMI Protection	It is set that HMI can normally use HMI within a certain period of time. If the time exceeds the time specified by the user, HMI will jump to the specified screen previously set by the user. In the specified screen, the user only places the "Panel protection unlock button" under the function button.
File Protection	Whether to enter a password when opening the project
User password Level	Set the user permission and password. Enter the password to access the corresponding permission
Boot Screen	Users can customize the startup Logo screen
Online Simulation	Online simulation enables you to communicate with relevant devices such as PLC through personal computer (HMI configuration software needs to be installed first) without HMI
Offline Simulation	Before the picture is compiled and downloaded to the HMI device, the offline simulation function of HMIStudio can be used to check the correctness of the configuration picture and the effect display
Supports Multiple Controller Communication Protocols	Suitable for a variety of PLC, inverter, servo controller, SCM control system (Mitsubishi, Panasonic, Omron, Delta, Letter Jie, Fatek, Siemens, Keens, LG, and other major PLC) user operation only need to choose to call directly on the software
Custom Add Gallery	Support custom add gallery, users can according to the need to intercept their favorite picture loaded into the custom gallery to call
Keyboard	Support Chinese and English keyboard input, users can freely switch to use
Gallery	Image library rich, support Png, Jpg, Gif, Bmp and other formats of pictures, vector image library, arbitrary zoom without aliasing
Baud Rate Range	Support serial baud rate range of 1200-230400

7.2 Protocol Configuration

Users can run MODBUS RTU, Mitsubishi, Siemens, Delta,Xinje and other protocols through the configuration of the upper computer.

Open HuaqingjunStudio configuration software and click on new project to select the desired communication protocol in new project. You can also modify the communicate on protocol you need in the project by opening the protocol under COM1 port Settings. The diagram below.



8. Development Of The Document

In order to complete the products development more faster, beginners could contact us for technical documents. For more technical knowledge, please call: 86-17708670771 or e-mail fsqjdz@foxmail.com

Committed To Creating The Best

Intelligent Control Terminal