

ISO9001:2015 Quality System Certification

ASTG043W023-L480X272R

SERIES SPECIFICATION



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1. Model Definition

The model number of the product is defined in the figure below:

ASTG043W023-L480X272R-0T0C	
ASTG	ASTG Serial Screen Series;
043	LCD screen size is 4.3 inches;
W02	Memory capacity and FLASH type: W01:32MB DDR2+ NAND FLASH; W02:32MB DDR2+ NOR FLASH; W11: 8MB DDR2+ NAND FLASH; W12: 8MB DDR2+ NOR FLASH;
3	FLASH CAPACITY: 2Mbyte=1;4Mbyte=2; 8Mbyte=3 ;16Mbyte=4;32Mbyte=5;64Mbyte=6;128Mbyte=7;256Mbyte=8;512Mbyte=9;1Gbyte=X
L480X272	LCD resolution of L480X272;
R	R: Resistance TP; C: capacitive TP; N: no touch;
0	0: 5V supply; 1:9~30V power supply;
T	Serial port 1 communication mode: T: TTL communication; D: RS485 communication; E: RS232 communication;
0	Serial port 2 communication mode 0: None; D: 485 communication; E: 232 communication;
C	0:No communication; C:RTC; N:No RTC;

2.Product Description

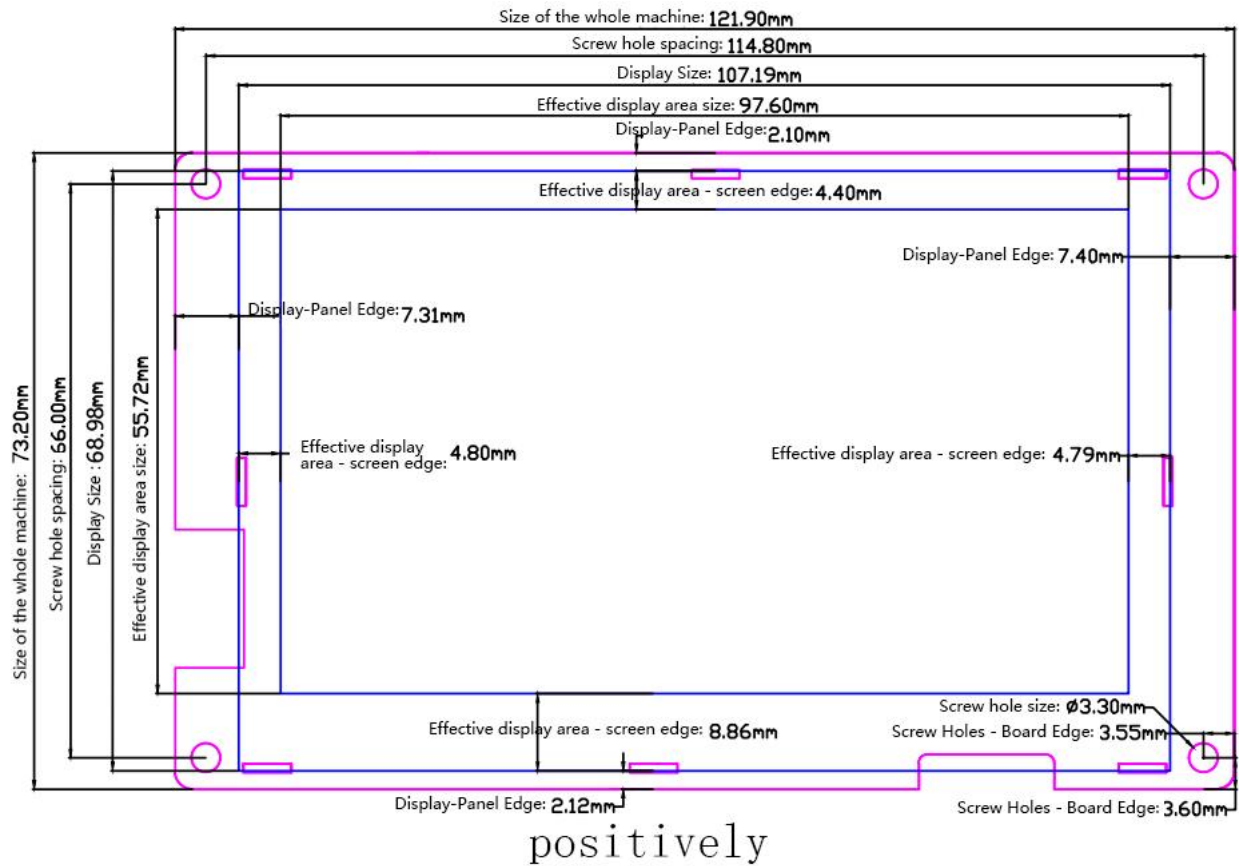
2.1 Product Model

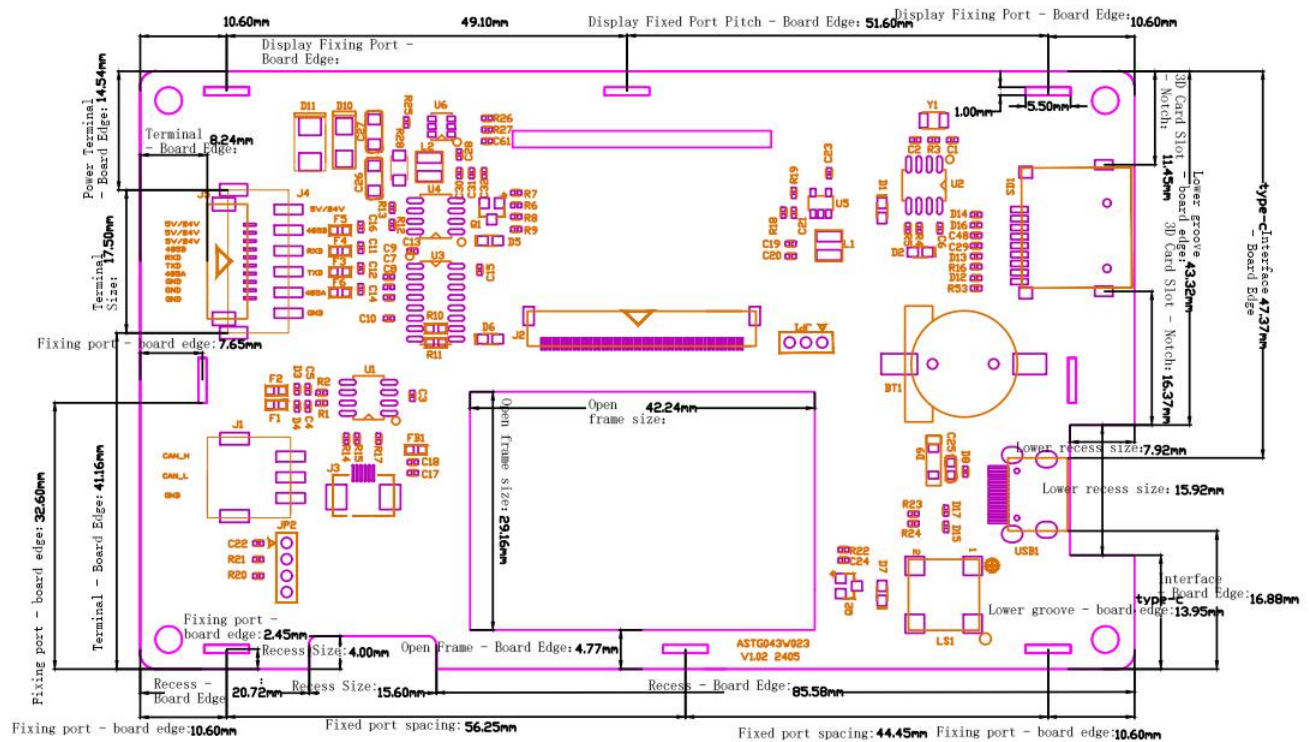


model number	Specification
ASTG043W023-L480X272R-0T0C	ASTG Series, 4.3-inch 480X272 resolution display, DC5V power supply, one TTL serial port, 10Mbyte SPI NOR Flash, resistive touch.
ASTG043W023-L480X272R-1D0C	ASTG Series, 4.3-inch 480X272 resolution display, DC5~30V power supply, one RS485 serial port, 10Mbyte SPI NOR Flash, resistive touch.
ASTG043W023-L480X272R-1E0C	ASTG Series, 4.3-inch 480X272 resolution display, DC5~30V power supply, one RS232 serial port, 10Mbyte SPI NOR Flash, resistive touch.

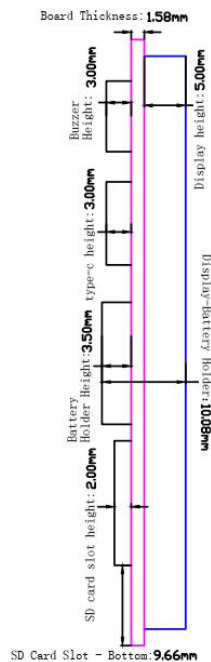
2.2 Product Size

Display size	Product Series	Size of the whole machine	Effective display area size	Display Size	Screw hole size
4.3 inches	ASTG043W023-L480X272R	121.90mm*73.20mm*12.88mm	97.60mm*55.72mm	107.19*68.98mm	114.80*66mm

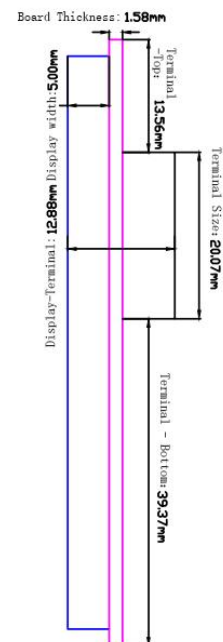




backside



left diagram



right diagram

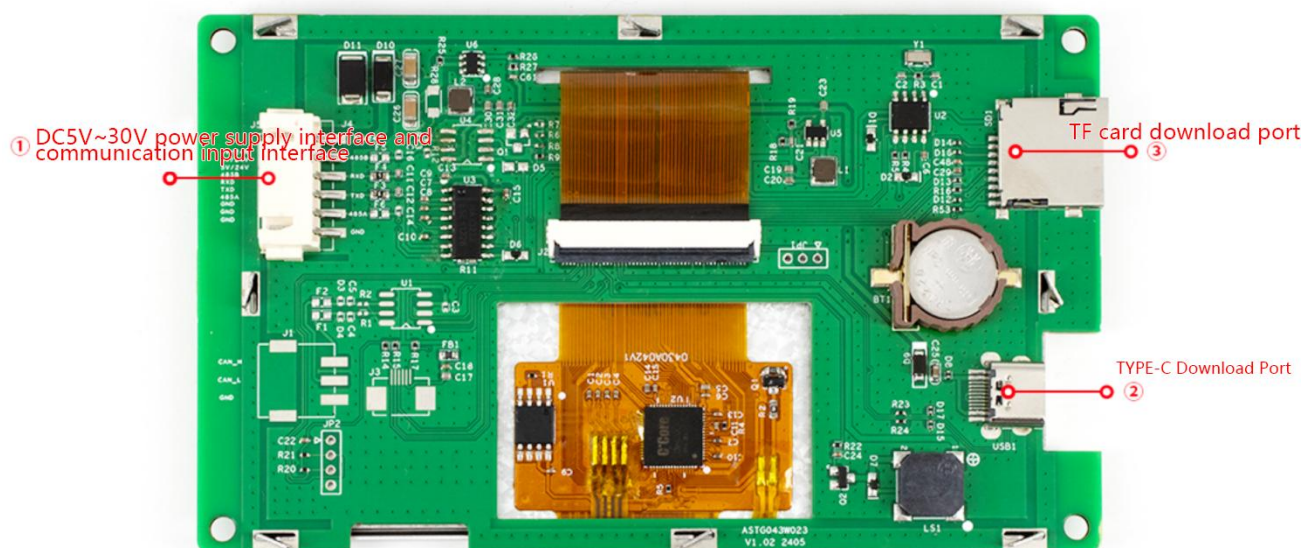
2.3 Product Parameters

Product Specification		
hardware performance	model number	ASTG043W023-L480X272R-0T0C
	monitor	4.3" TFT LCD
	Resolution (Px)	480X272
	coloration	240,000
	luminance	250 cd/m ²
	Backlight	LED (Does not support backlight adjustment)
	LED Lifetime	20,000 hours
	touchscreens	resistive touchscreen
	CPU	200MHz ARM Cortex-M4F Built-in 2MB PSRAM memory;
	memory (unit)	On-chip 2Mbyte SPI NOR Flash; Off-chip 8Mbyte SPI NOR Flash;
	RTC	be in favor of
	buzzers	be in favor of
	Power down data saving	3S autosave
	Program download method	TF card/TYPE-C Download Port
Electrical Specifications	communication port	ASTG043W023-L480X272R-0T0C:1 channel TTL communication ASTG043W023-L480X272R-1D0C:1 channel RS485 communication ASTG043W023-L480X272R-1E0C:1 channel RS232 communication
	Plug specification	6Pin XH2.54mm Terminal Block
	rating	Maximum 1.5W
	voltage range	TTL: DC5V 485/232: DC5~30V
	Permissible loss of power	<5ms
ESD testing		Contact discharge: +/-4KV; Air discharge: +/-6KV

	EFT Testing	IEC 61000-4-4 national standard 4 (voltage: $\pm 4\text{KV}$; frequency: 5KHZ; time: 120S), no restart, no display abnormality, no touch abnormality and other phenomena, test function is normal
Environmental specifications	operating temperature	-20°C~60°C
	Storage temperature	-30°C~70°C
	Environmental humidity	10~90%RH (non-condensing)
	seismic defenses	10-25 Hz (X, Y, Z directions, 2g/30 min)
	Cooling method	natural air cooling
Product Size	Size of the whole machine	121.90mm*73.20mm*12.88mm
	Effective display area size	97.60mm*55.72mm
	Display Size	107.19*68.98mm
	Screw hole size	114.80*66mm
	Product weight	100g
	corresponding software	Top: HMILite2.2

3. Hardware Introduction

3.1 5Pin PH2.0mm terminal block pin definition



3.2 The following picture is the TF card used in our products, the format is FAT32, the capacity of 32GB or less.

The chart below is for reference only



Port Definition	
Device Location Number	clarification
①	DC5V~24V power supply interface and communication input interface
②	TYPE-C Download Port
③	TF card download port

6Pin PH2.54mm Terminal Block			
Pin	define	Power Input	TTL
1	+5V	Power Input	
2	NC	unoccupied	
3	RXD		3.3V TTL RXD
4	TXD		3.3V TTL TXD
5	NC	unoccupied	
6	GND	POWER GROUND	

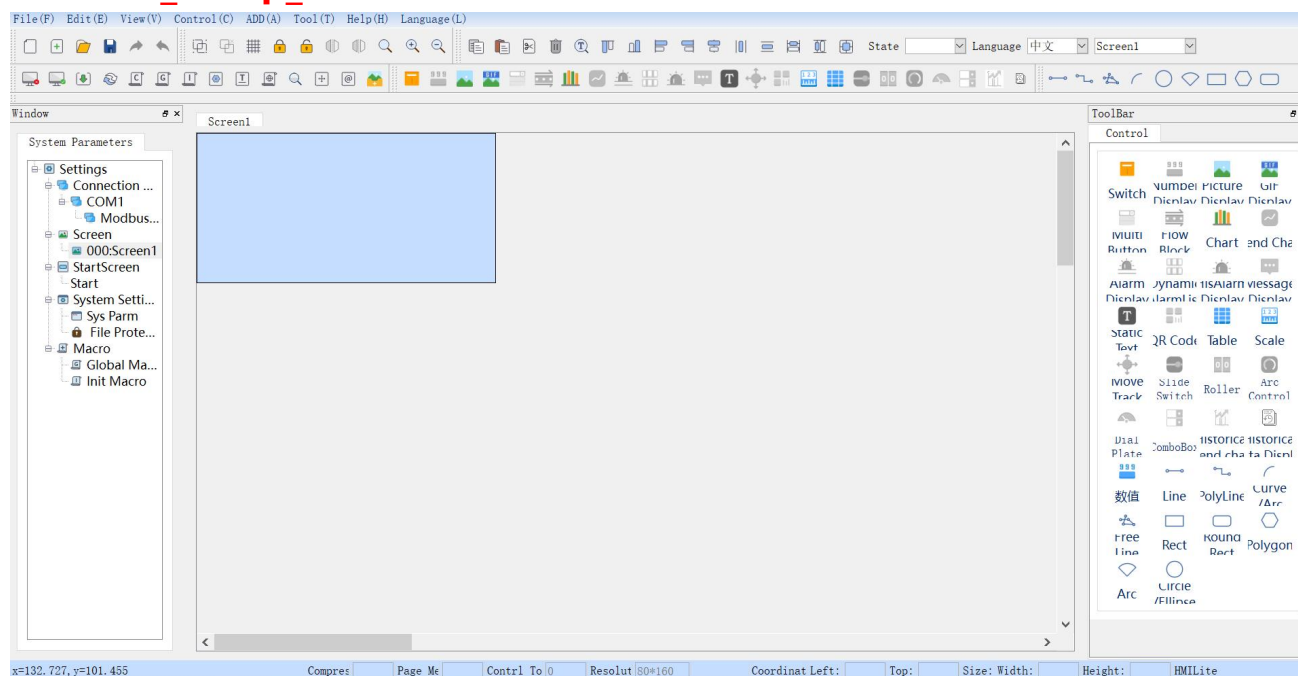
6Pin PH2.54mm Terminal Block			
Pin	define	Power Input	RS232
1	+24V	Power Input	
2	NC	unoccupied	
3	232 RX		reception
4	232 TX		dispatch
5	NC	unoccupied	
6	GND	POWER GROUND	

6Pin XH2.54mm Terminal Block			
Pin	define	Power Input	RS485
1	+24V	Power Input	
2	RS485 B		RS485 B
3	NC	unoccupied	
4	NC	unoccupied	
5	RS485 A		RS485 A
6	GND	POWER GROUND	

4. Description of the upper configuration software

4.1 Development software - --corresponding software

HMILite_Setup_V2.2



The configuration software **HMILite** is a set of upper software that can be edited by the customer at will. The customer's applications are all developed on the basis of the upper software, which consists of a rich set of controls that can be combined at will in order to realize the functions desired by the customer:

Controls are included:

switch button	Includes "bit buttons", "word buttons", "indicator lights", "screen buttons", "function buttons", and "multistate buttons". "Function buttons" and "Multistate buttons" can be used to touch the connected device and monitor the status.
Numerical input and display	Includes multiple binary inputs and displays, ASCII inputs and displays for displaying monitored address values(Up to 16 ascii displays + QR code controls on a single screen)
mobile block	Animated graphics that simulate the state of liquid flow in a pipe
Static text/table/scale	A variety of basic shapes, including lines, circles, ellipses, rectangles, etc.

Image display and gif animation	Picture display box showing one or more pictures
meter	Bar graphs, gauges, circles, showing some state value of the data
trend chart	Real-time dynamic display of monitoring address data trend graphs(Real-time dynamic display of monitoring address data trend graph)
Historical Data Display	Display the data acquired by the data collector in tabular form
Historical Trend Chart	Real-time dynamic display of the trend graph of the data acquired by the data collector(Trend charts + historical trend charts up to 4 supported)
Multi-function buttons	An on/off button, with which all functions can be easily and quickly accessed(Add up to 2 functions)
trajectory	Control address data by dragging a scrolling block
two-dimensional barcode	Dynamically generated QR code, access to web site by scanning, payment and other functions(Up to 6 ascii displays + QR code controls for a single screen)
Alarm display	Displays the current alarm information of the device (divided into digital alarms and analog alarms), you must configure the alarm settings before you use the control (you can do up to(Up to 128 digital alarms can be created)
Dynamic Alarms	Used to display the current alarm, which is different from the alarm control in that the dynamic alarm bar displays the current alarm in the form of scrolling text.
Historical Alarm Display	Displays all generated alarm messages, 3S detection saved, up to 3 saved
drop-down box	Drop-down list to select the corresponding item/status
slide switch	Create a slider area to change the value of the specified word address by pressing the slider left/right/up/down.

tire	Create a data area and scroll up and down to modify the current value
circular adjustment	Use the arc style to display the current value, and adjust the current value by dragging the slider to modify it.
meter dial	Use dials to display time, progress, speed and other data

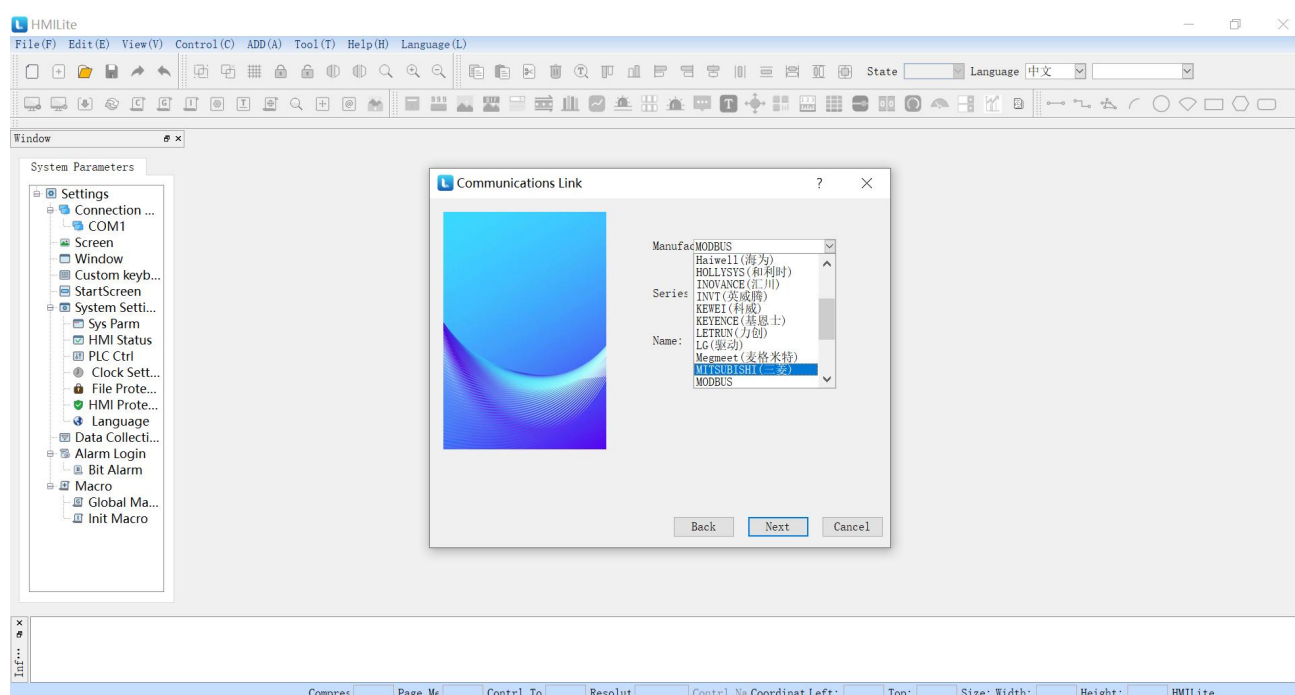
Extended functionality of the host machine configuration software:

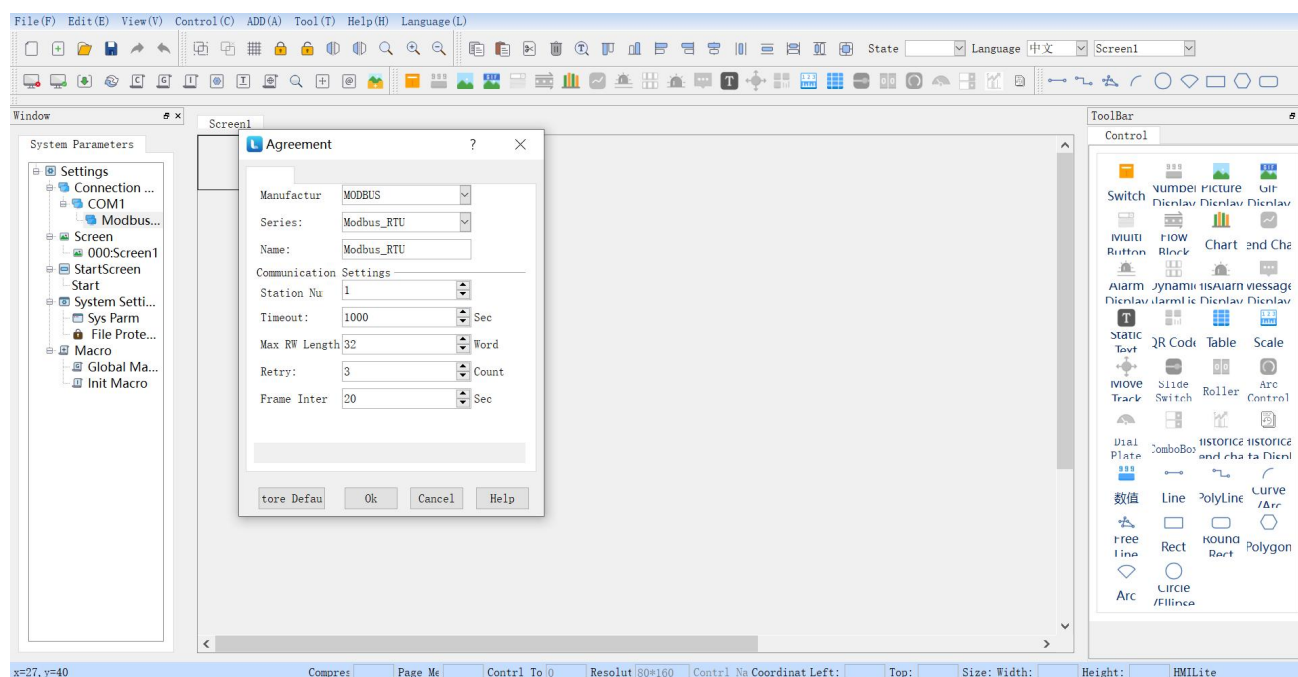
macro instruction	C programming to implement a variety of more complex logic or functions(Macro program (MarcoRun.dat) max. 136KB, max. 100 custom protocols, max. 100 read-only or read/write variables for macros)
PLC control	HMI control via PLC
HMI Protection	The HMI can be used normally within a certain period of time, if the time exceeds the time specified by the user, the HMI will jump to the specified screen previously set by the user, in the specified screen, the user only places the function button below the "panel protection unlock button".(only 3 levels supported)
document protection	Do you need to enter a password to open the project?
User password level	Set user privileges and passwords, access to the appropriate privileges need to enter the appropriate passwords
data acquisition	Data acquisition of temperature, pressure, humidity, etc. is possible.(Data acquisition supports up to 64KB)
multilingualism	Multi-language support(Support up to 4 languages, alarm display, message display and drop-down box only support English and Chinese display)
boot screen	User can customize the boot-up Logo screen
Offline simulation	Before compiling and downloading the screen to the HMI device, you can use the offline simulation function that comes with HMILite to check the correctness of the configuration screen and the effect of the display.
Online Simulation	Online simulation allows you to communicate with plc's and other devices via your personal computer (HMILite configuration software must be installed first) without the use of an HMI.
Supports multiple controller communication protocols	Suitable for a variety of PLC, inverter, servo controller, microcontroller control system, etc. (Mitsubishi, Panasonic, Omron, Delta, Xinjie, Yonghong, Siemens, Keens, LG, modbus, customized and other communication protocols) the user only needs to operate directly in the software to select the call can be!

Custom Add Gallery	Support for customizing the gallery, users can intercept their favorite images loaded into a custom gallery to call according to need
image archive	Rich gallery, support Png, Jpg, Gif, Bmp and other formats of the picture, vector gallery, any zoom non-aliased
Customized Keyboards	Support custom keyboard, according to their own needs to do keyboard style

4.2 Protocol Configuration

Users can run MODBUS RTU, Mitsubishi, Siemens, Delta, Xinjie and other protocols through the upper computer configuration. Open **HMLite** configuration software, click **[New Project]**, you can select the desired communication protocol in **[New Project]**, you can also modify the project to select your desired communication protocol, open the com1 port settings below the protocol to change, the following figure.





5. Reliability Testing

All products have been subjected to a series of processed reliability tests: ESD test, high and low temperature aging test, group pulse and other tests. Ensure product quality.

5.1 ESD testing

Implementation standard: IEC 61000-4-2

Test process: Place the product flat on the test bench, and conduct contact and air discharge for the touch screen iron buckle periphery and display area in turn, as shown in the figure below. Observe whether the screen resets and restarts, display abnormalities and other phenomena.



Test Data

Product Model	Type of discharge	discharge value	Test results
ASTG043W023-L480X272R	exposure	+/-4KV;	No reboot, crash, splash screen and other abnormal phenomena, the function is normal
	atmosphere	+/-6KV;	No reboot, crash, splash screen and other abnormal phenomena. Normal function

5.2 High and low temperature aging test



Test environment: high and low temperature aging test box in the

Test Temperature: -20°~60

Test process: Place the product in the high and low temperature aging test box. Through the 60 ° high temperature, -20 ° low temperature, high and low temperature alternately change the aging test, observe the test process and test after the test whether there is a reset restart, display anomalies, functional anomalies and other phenomena.

Test Data

Product Model	temp	humidit y level	Test results
ASTG043W023- L480X272R	High temperature 60°	60%	No reboot, crash, splash screen and other abnormal phenomena. Normal function
	Low temperature -20°	60%	No reboot, crash, splash screen and other abnormal phenomena. Normal function
	Alternating high and low temperatures (-20°~60°)	60%	No reboot, crash, splash screen and other abnormal phenomena. Normal function

5.3 Group Pulse Test

Implementation standard: IEC 61000-4-4

Test process: Place the product flat on the test bench, and power the screen through the power supply after coupling the pulse group by the pulse group generator. The following figure. Observe the screen to see if there are abnormal phenomena such as reset and restart, display abnormality and so on



Test Data

Product Model	test standard	test port	Test results
ASTG043W023-L480X272R	EFT +/-4KV;	power and communication ports	2KV screen without flickering, no reboot, crash, splash screen and other abnormal phenomena. Normal function

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